Draft Remedial Investigation Report

Volume II (Appendices)

BOEING KENT SPACE CENTER FACILITY South 208th Street KENT, WASHINGTON

December 2017

Prepared by:

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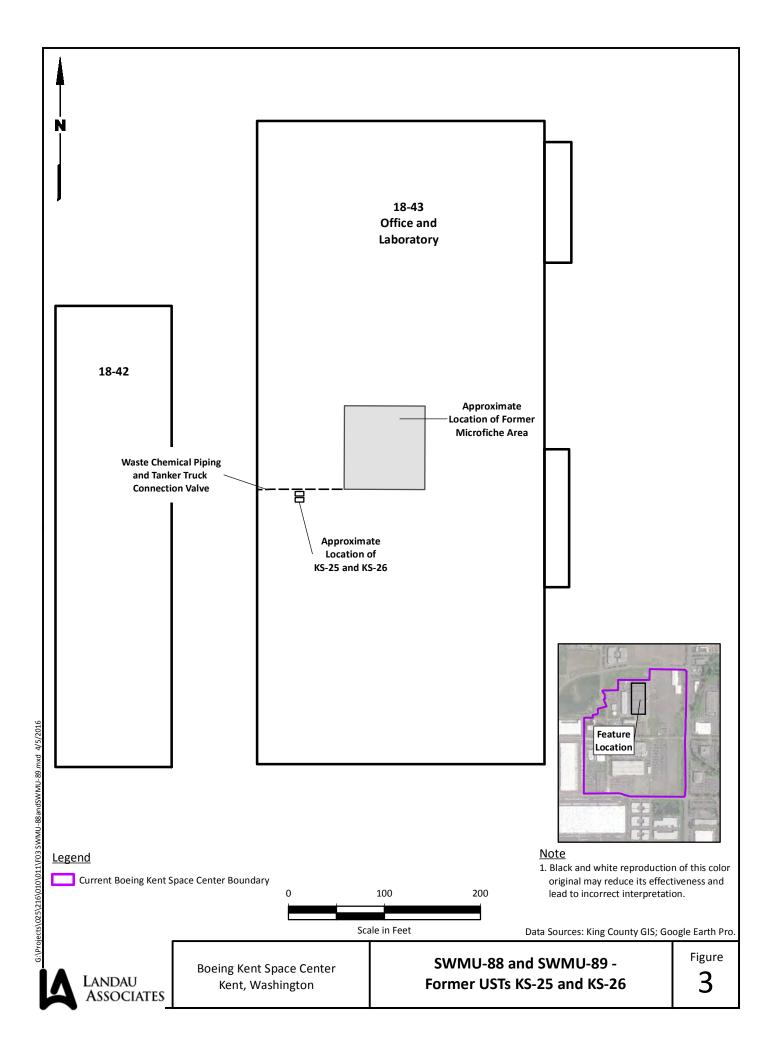
Prepared for:

THE BOEING COMPANY Seattle, Washington



Appendix A

SWMU and AOC Area Maps (from RI Work Plan)



18-54 Mechanical **Equipment General Support** KS-5 .ocation Legend <u>Note</u> 1. Black and white reproduction of this color 40 80 Former UST original may reduce its effectiveness and lead to incorrect interpretation. Current Boeing Kent Space Center Boundary Scale in Feet

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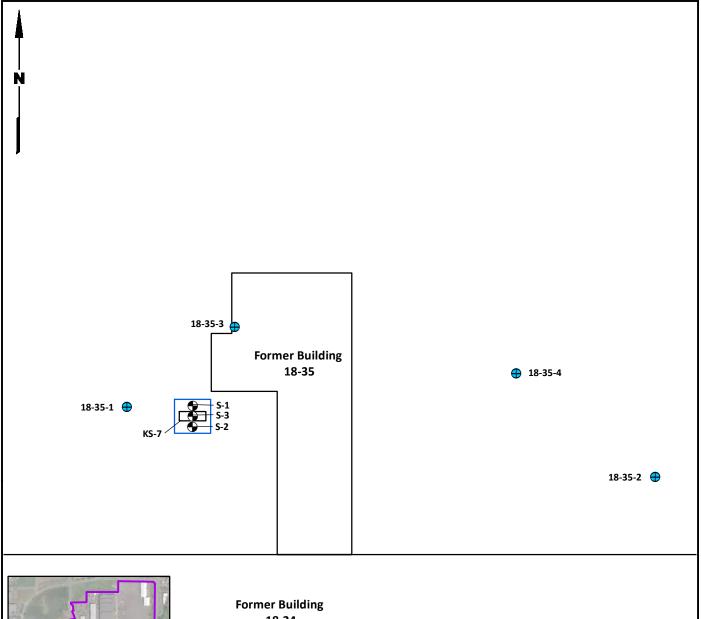
Boeing Kent Space Center Kent, Washington

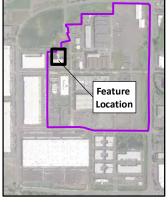
AOC-1 and AOC-3 - Former USTs KS-5 and KS-6

Figure

Data Sources: King County GIS; Google Earth Pro.

4





18-24

40

Scale in Feet

<u>Legend</u>

- Groundwater Sample (Clearwater 2002-2003)
- Soil Sample Location (2015)
- Former UST
- Excavation Footprint
- Current Boeing Kent Space Center Boundary

<u>Note</u>

80

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

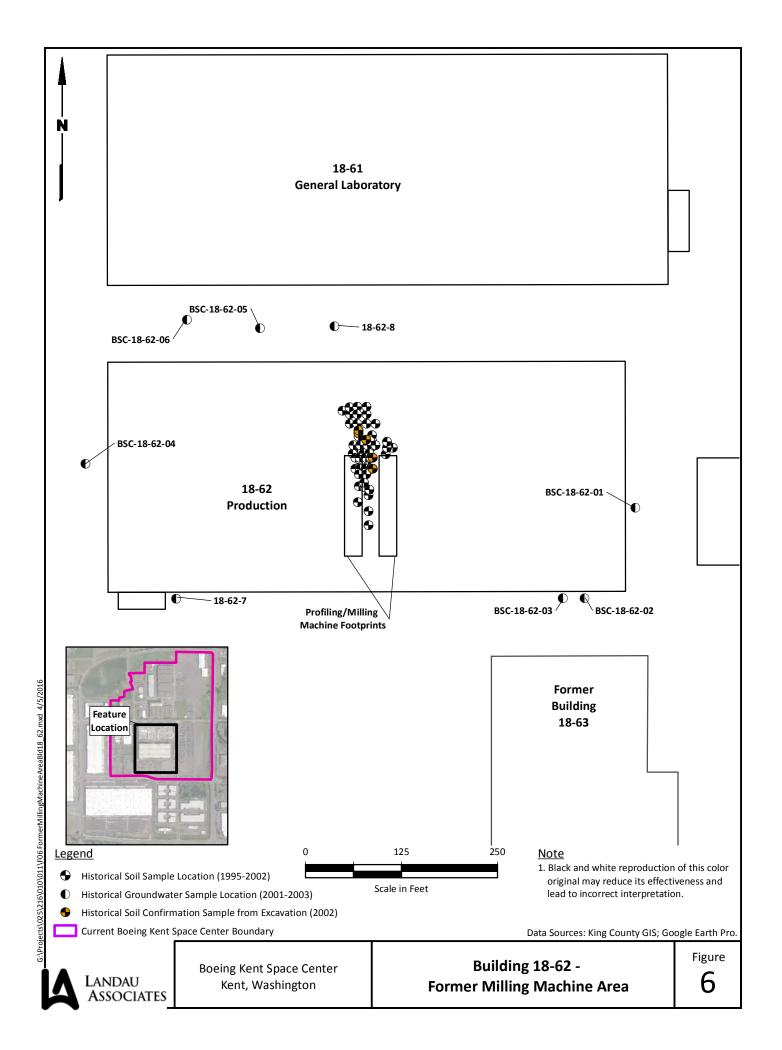
Data Sources: King County GIS; Google Earth Pro.

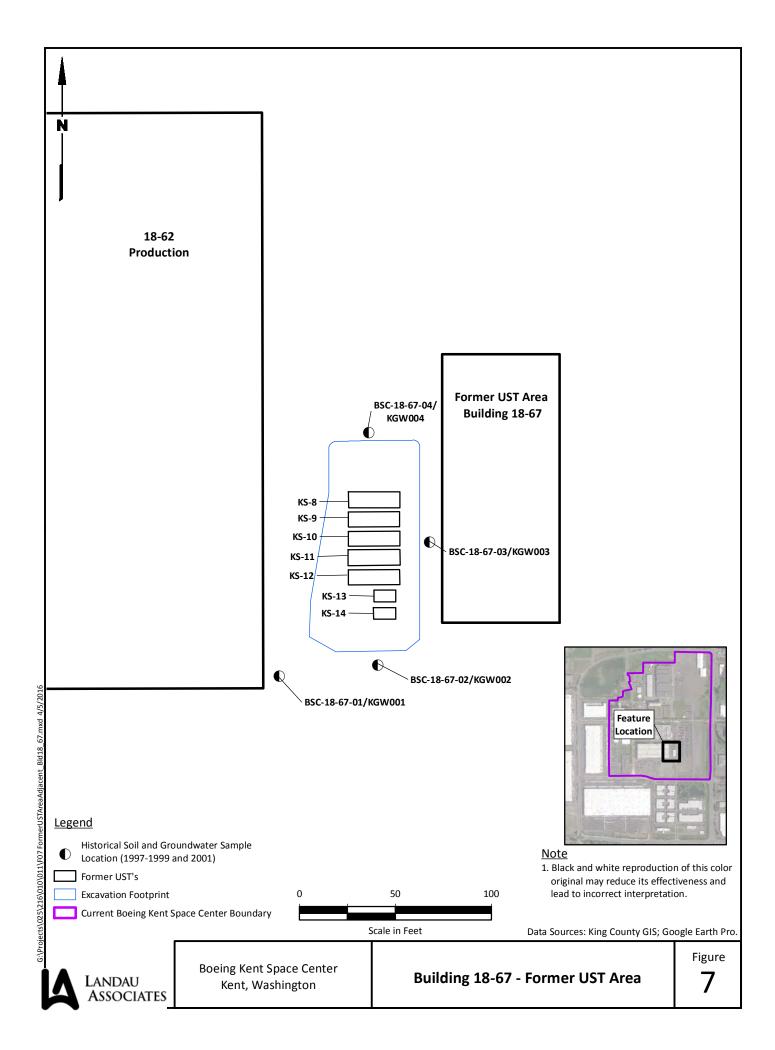


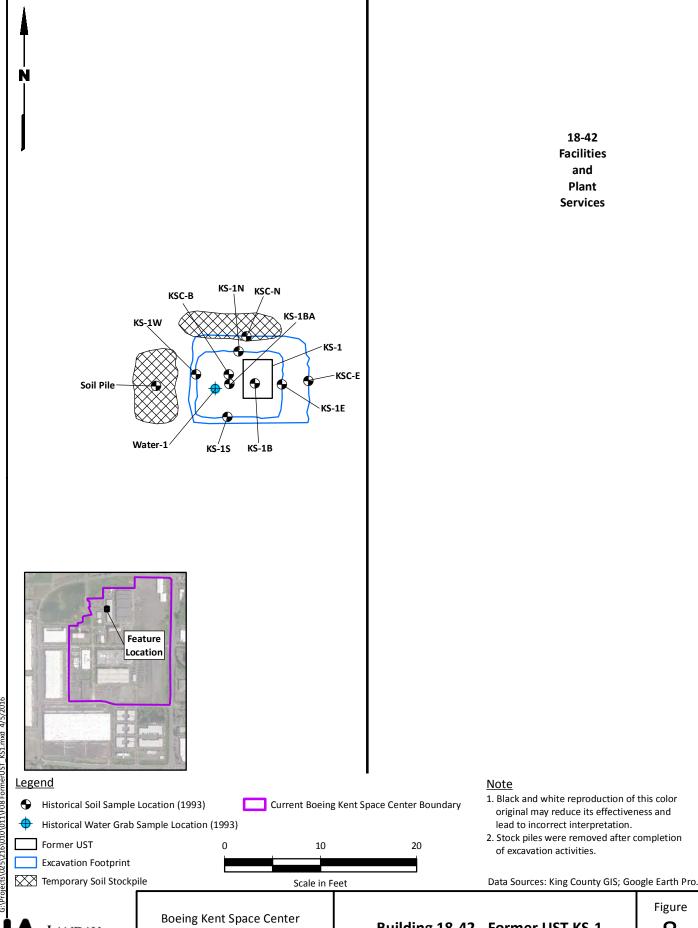
Boeing Kent Space Center Kent, Washington

AOC-2 - Former UST KS-7

Figure



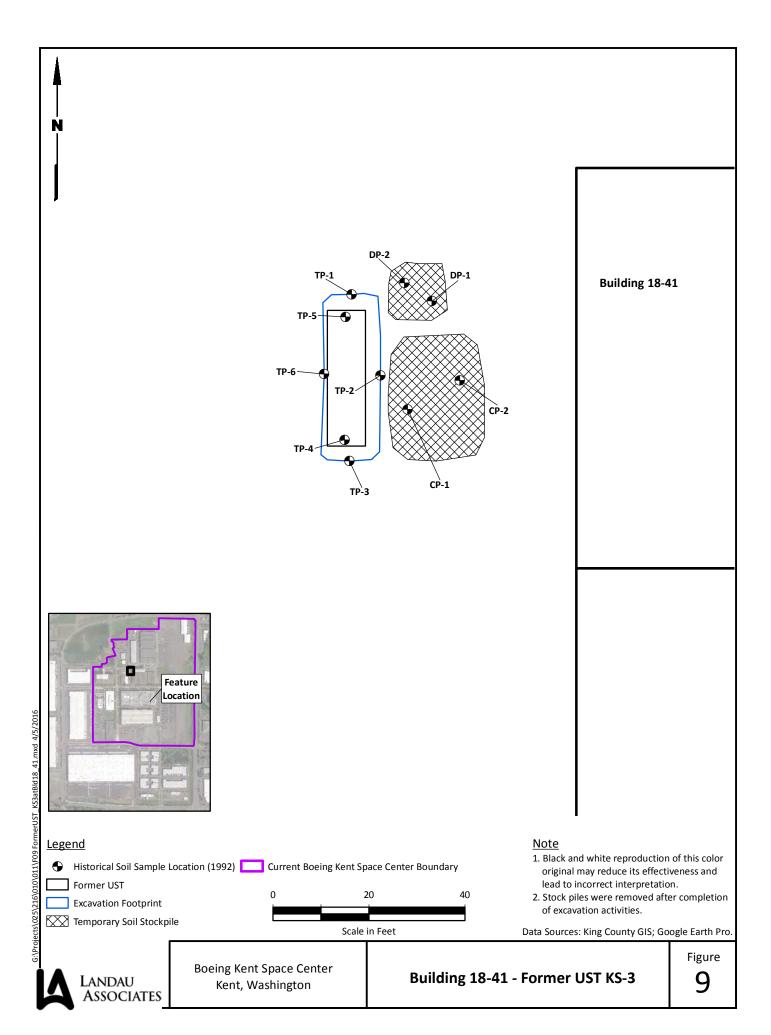




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Building 18-42 - Former UST KS-1



Appendix B Boring Logs

B-1 2017 RI Boring Logs





				37.	FLEVAND						Sheet 1 of 1
PROJEC						OORDINATES: 157007	N 12	28868	6 E (NAD8	3)
1						URFACE ELEVATION:					
DRILLIN						ATE: 1/24/17 OTAL DEPTH OF BORIN	IC. 1	ור ט'			
DRILLIN					•			15.0			
						OGGED BY: D. Cooper ESPONSIBLE PROF.: D.		nor			REG. NO.: 1600
					and auger from 0-4.5'	ESPONSIBLE PROF D.	C00	реі			KEG. NO 1000
NOTES.		SAM			VISUAL SOIL DESCRIPTION			\/\/F	-11 (ONST	RUCTION DETAILS
					V130/12 3 312 3 2 3 3 1 1 1 3 1 1						RILLING REMARKS
ΕĐ		Sample Recovery			Soil Group Name (USCS): color, moisture, density/c	onsistency, grain size,					
DEPTH (feet)	Lab Sample	Rec	oot	m)	other discriptors						
	Sam	ole	's/F	ldd)							
	ab S	am	Blows/Foot	PID (ppm)							
	ت	S	В	Ь	8-inch concrete slab (Indoo	r)					
_					o men concrete sido (maco		-				
1							_				
_				0.3							
2 —							_				
3 —											
-						_					
4 —				0.2	POORLY GRADED SAND WITH GRA						
-		\sqcup			brown (7.5YR-5/3), moist, 20% gravel, 75	_					
5 —		XI					_				
_	ŀ	\leftarrow		0.0			-				
6 —		\		0.0			_				
_		\					-				
7		\					_				
_		\		0.0			-				
8 —		\setminus			-becoming wet, but not saturated		_				
9 —		\			-						
		\setminus					_				
10 —				0.1	SILT (ML):						
-		$\setminus / $			gray (7.5YR-5/1), wet, 100%	silt	-				Temporary
11		Λ					_	∇	\perp		Stainless Steel
_		\longrightarrow		0.1			-	$\overline{\Delta}$			screen set for
12 —	SB1	\		0.1							groundwater grab sample:
_	S	\					-				KSC-SB1-GW
13 —		$\setminus \mid$					1-			¥	
14 —		\		0.0	POORLY GRADED SAND (SP):					
14 —		\			dark gray (7.5YR-4/1), saturated, 100	% fine sand	_				
15 —		\setminus									
-					Bottom of Boring 15.0 feet		_				
16 —					Backfilled with bentonite chip.						
_							-				
17 —											
_							-				
18 —											
_							-				
19 —											
20 -											
20 —							_				





				37.5	JLEVAND						Sheet 1 of 1
PROJEC						OORDINATES: 157004	N 12	8864	1 E (NAD8	3)
						URFACE ELEVATION:					
DRILLIN						ATE: 1/24/17 OTAL DEPTH OF BORIN	ic. 1	וה חי			
DRILLIN						OGGED BY: D. Cooper		15.0			
						ESPONSIBLE PROF.: D.		ner			REG. NO.: 1600
					and auger from 0-4.5'	ESI ONSIBLE I NOI D.	COO	реі			NEG. NO.: 1000
		SAM			VISUAL SOIL DESCRIPTION			WE	ELL (CONST	RUCTION DETAILS
		Σi						Al	ND/	OR DR	RILLING REMARKS
at (j		Sample Recovery			Soil Group Name (USCS): color, moisture, density/o	consistency, grain size,					
DEPTH (feet)	Jple	Rec	-oot	m)	other discriptors						
	San	ple	vs/F	dd)							
	Lab Sample	Sam	Blows/Foot	PID (ppm)							
_					8-inch concrete slab (Indoo	r)	_				
1 -											
							_				
2 —				0.0							
_							-				
3 —											
_		0.1 POORLY GRADED SAND WITH GRAVEL (SP):									
4 —			0.1 POORLY GRADED SAND WITH GRAVEL (SP): brown (7.5YR-5/3), moist, 20% gravel, 75% sand, 5% silt								
_		\forall		510W11 (7.5111-5/5), 111015t, 2070 gravet, 75	70 3d11d, 370 311t	_					
5 —											
_		\									
6 —		\									
7 —		\									
′ –		\					_				
8 —		\		0.0							
_		\setminus					_				
9 —		\setminus									
_		\		0.0	SILT (ML):		_				
10 -				0.0	gray (7.5YR-5/1), wet, 98% silt, 2%	organics					
_		XI			gray (7.3111 3) 1), wee, 3370 3110, 270	organics	_				Temporary
11 —	1							\sum			Stainless Steel screen set for
12 —		\		0.0				_			groundwater
	SB2	\					_				grab sample:
13 —		$\setminus \mid$								\checkmark	KSC-SB2-GW
_		\setminus					_				
14		\setminus		0.0	·						
_		\			dark gray (7.5YR-4/1), saturated, 100	% fine sand	_				
15					Bottom of Boring 15.0 feet						
					Backfilled with bentonite chip.		-				
16 —					Backfilled with bentonite chip.						
17 —											
17 —							_				
18 —											
-											
19 —											
_											
20 —											
_							_				
1	1			1			1	ì	Ī		





					SLEVAND						Sheet 1 of 1
	ROJECT: Boeing KSC RI COORDINATES: 15 OCATION: Kent, WA - West of Bldg. 18-54 SURFACE ELEVATION								4 E (I	NAD8	3)
						SURFACE ELEVATION:					
DRILLIN						DATE: 1/27/17					
						TOTAL DEPTH OF BORIN		.5.0'			
DRILLIN						LOGGED BY: D. Cooper					
						RESPONSIBLE PROF.: D.	Coo	per			REG. NO.: 1600
NOTES:	Bori			l by v	ac-truck from 0-5'		1				
			PLES		VISUAL SOIL DESCRIPTION	V					TRUCTION DETAILS
		Sample Recovery			Soil Group Name (USCS): color, moisture, density,	Consistancy grain size		Ar	י/טוי	OK DE	RILLING REMARKS
DEPTH (feet)	<u>e</u>	SCO	ot		other discriptors	consistency, grain size,					
DE (f	Lab Sample	e R	Blows/Foot	PID (ppm)	·						
	o Sa	mρl	'SMC	3) (
	Lal	Sal	BIC	Ы							
_					Grass Sod		_				
1							_				
_							_				
2 —				_							
_				0.0			-				
3 —											
_					POORLY GRADED SAND WITH SILT AND O	CDANEL (CD CNAN	-				
4					brown (7.5YR-5/3), moist, 20% gravel, 70	, ,					
_				0.0		770 Saliu, 1070 Siit	_	-			
5 —		\Box		0.0							
_		\bigvee									
6 —		$/\backslash$				_					
_		$\overline{}$									
7		\		0.1							
_				0.1_							Temporary
8 —		$\setminus \mid$							\equiv		Stainless Steel screen set for
_		$\setminus \mid$			SILT (ML):			$\sum_{}$			groundwater
9 —	SB3	$\setminus \mid$			gray (7.5YR-5/1), wet, 100% silt, tra	ce organics		=			grab sample:
10 —		\		0.0							KSC-SB3-GW
10 _		\times			dark gray (7.5YR-4/1), saturated, 100	0% fine sand	_				
11 -											
_		\			SILT (ML):		_				
12 -					gray (7.4YR-5/1), wet, 100%	silt					
_		$\setminus \mid$		0.0			_				
13 —		$\setminus \mid$									
_		$\setminus \mid$									
14		$ \cdot $			POORLY GRADED SAND (S	•					
_		\			dark gray (7.5YR-4/1), saturated, 100	D% fine sand	_				
15		\		0.0			-		-		
_					Bottom of Boring 15.0 feet		-				
16 —					Backfilled with bentonite chip.		-				
_							-				
17 —											
_							-				
18 —							_				
_							-				
19 —							_				
_											
20 —											
-											





				FUC	JLEVAND						Sheet 1 of 1
PROJEC	CT: Bo	eing	KSC I	RI		COORDINATES: 156309	N 12	8814	9 E (NAD8	3)
LOCATI	ON:	Kent,	WA -	· Wes	t of Bldg. 18-54	SURFACE ELEVATION:					
DRILLIN						DATE: 1/27/17					
						TOTAL DEPTH OF BORIN		15.0'			
DRILLIN	IG MI	THO	D: Di	rect-	Push	LOGGED BY: D. Cooper					
						RESPONSIBLE PROF.: D.	Coo	per			REG. NO.: 1600
NOTES:	: Bori			by v	ac-truck from 0-5'						
		SAM	PLES		VISUAL SOIL DESCRIPTIO	N					RUCTION DETAILS
		ery			6 11 6 11 (11995)			Al	ND/	OR DR	RILLING REMARKS
DEPTH (feet)	l e	Sample Recovery	ţ		Soil Group Name (USCS): color, moisture, density other discriptors	consistency, grain size,					
DEI (fe	Lab Sample	e Re	Blows/Foot	PID (ppm)	other discriptors						
	Saı	nple	/sw	d)							
	Lab	San	Blo	PID							
_					Grass Sod		_				
1 -											
							_				
2 —											
_				0.0	POORLY GRADED SAND WITH SILT AND (GRAVEL (SP-SM):	_				
3 —					brown (7.5YR-5/3), moist, 20% gravel, 70	brown (7.5YR-5/3), moist, 20% gravel, 70% sand, 10% silt					
_											
4											
· _											
5		Щ		0.0							
_		\setminus / \mid					_				
6 —		XI					_				
_		$\overline{}$					_				
7		\setminus									
_				0.1			_				Temporary
8 —		\setminus							\perp		Stainless Steel
_	4	\			SILTY SAND (SM):		_				screen set for
9 —	SB4				gray (7.5YR-5/1), saturated, 80% sand, 1	7% silt, 3% gravel		$\overline{\Delta}$			groundwater grab sample:
_		\setminus					_				KSC-SB4-GW
10 -				0.0			—				
_		\setminus					_				
11		\									
_		\					-				
12 -		\		0.2	SILT (ML):						
_		\		0.2	gray (7.4YR-5/1), wet, 100%	4 cilt	_				
13 —					gray (7.4111-3/1), wet, 100/	3 3110					
_					>Organics		_				
14 —		\setminus			POORLY GRADED SAND (S	P):	1-				
		\		0.0							
15 —					Bottom of Boring 15.0 feet				\Box		
16 =					Backfilled with bentonite chip.						
16 —					, i						
17 —											
17 —											
18 —							_				
10 -							_				
19 —											
-							_				
20 —											
							_				





				FUC	GLEVAND						Sheet 1 of 1		
PROJEC									6265 N 1288178 E (NAD83)				
LOCATI	ON: I	۲ent,	WA -	Wes	t of Bldg. 18-54	SURFACE ELEVATION:							
DRILLIN	ig co	NTRA	ACTO	R: Ca	ascade	DATE: 1/27/17							
DRILLIN	IG EQ	UIPN	1ENT:	Geo	pprobe 7730DT	TOTAL DEPTH OF BORIN	IG: í	15.0'					
DRILLIN	IG ME	THO	D: Di	rect-	Push	LOGGED BY: D. Cooper							
					•	RESPONSIBLE PROF.: D.	Coo	per			REG. NO.: 1600		
NOTES:				by v	ac-truck from 0-5'		1						
		SAM	PLES		VISUAL SOIL DESCRIPTIO	N					RUCTION DETAILS		
DEPTH (feet)	Lab Sample	Sample Recovery	Blows/Foot	PID (ppm)	Soil Group Name (USCS): color, moisture, density other discriptors	/consistency, grain size,		AI	ND/	OK DR	RILLING REMARKS		
_					Ivy Planter		_						
1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 —				0.0	POORLY GRADED SAND WITH SILT AND brown-gray (7.5YR-5/3-5/1), moist, 20% grav		- - - - - -						
9 — 10 — 11 — 12 — 13 — 14 —	SB5			0.0	POORLY GRADED SAND WITH GR dark gray (7.5YR-4/1), saturated, 10% g SILT (ML): gray (7.4YR-5/1), wet, 100%	gravel, 90% sand	- - - - - -	Σ			Temporary Stainless Steel screen set for groundwater grab sample: KSC-SB5-GW		
15 —					Bottom of Boring 15.0 feet		<u> </u>						
16 —					Backfilled with bentonite chip.								
_							_						
17 —													
							_						
18 -													
							_						
19 —													
-							_						
20 —													
-							_						





											Sheet 1 of 1				
-										156554 N 1287774 E (NAD83)					
						SURFACE ELEVATION:									
DRILLIN						DATE: 1/24/17									
						TOTAL DEPTH OF BORIN	G: 1	15.0'							
DRILLIN						LOGGED BY: D. Cooper	_			ı					
						RESPONSIBLE PROF.: D.	Coo	per			REG. NO.: 1600				
NOTES:					ac-truck from 0-5'		ı								
			PLES		VISUAL SOIL DESCRIPTION	V					RUCTION DETAILS				
		Sample Recovery			Soil Group Name (USCS): color, moisture, density,	consistency grain size		AI	יעטי	OK DK	RILLING REMARKS				
DEPTH (feet)	e	SCO	ot	(other discriptors	consistency, grain size,									
DE (f	Lab Sample	e Re	Blows/Foot	(mdd)											
	o Sa	ηpl	WS,	d) (
	Lal	Saı	Blc	PID			<u> </u>								
_							_								
1															
-							-								
2 —															
_				0.0											
3 —															
_					POORLY GRADED SAND WITH GRAVEL (SP):										
4															
_				0.1		_									
5 —	,	$\downarrow \downarrow$			brown (7.5YR-5/3), wet, 20% gravel, 75%										
_		\bigvee				_									
6 —		\wedge													
_	ĺ	\longrightarrow													
7 —		\setminus													
_		\		0.0		-				Temporary					
8 —		\setminus		0.0					\perp		Stainless Steel				
_		\setminus					-				screen set for groundwater				
9 —								\subseteq			grab sample:				
_		\setminus		0.1	-gray, saturated, fine sand in sampling shoe		_	<u>~</u>			KSC-SB6-GW				
10				0.1	-gray, saturated, fille sand in sampling snoe					¥					
_		\ /					-								
11		\ /													
_		\backslash / \rfloor					_								
12 -		V			No Recovery after three atte	mpts									
		λl			Driving large gravel ahead of sa		_								
13 —		$/\backslash$				•									
_		$/ \setminus $													
14 —		$/$ \setminus													
15 -				0.0											
15 —					Bottom of Boring 15.0 feet		_								
16 —					Backfilled with bentonite chip.										
_							_								
17 —															
_							_								
18 —															
_							_								
19 —															
-							_								
20 —															
-															





											Sheet 1 of 1		
									S: 156522 N 1287761 E (NAD83)				
						URFACE ELEVATION:							
DRILLIN	ig co	NTRA	ACTO	R: Ca	scade	ATE: 1/24/17							
DRILLIN	ig eq	UIPN	1ENT:	Geo	probe 7730DT T	OTAL DEPTH OF BORIN	G: 1	5.0'					
DRILLIN	IG MI	THO	D: Di	rect-	Push L	OGGED BY: D. Cooper							
SAMPLI	ING N	1ETH	OD: 2	2" dia	ı. X 5' Macro w/acrylic liner	ESPONSIBLE PROF.: D.	Coo	oer			REG. NO.: 1600		
NOTES:	Bori	ng cle	eared	by v	ac-truck from 0-5'								
		SAM	PLES		VISUAL SOIL DESCRIPTION			WE	LL (CONST	RUCTION DETAILS		
		λi						1A	ND/	OR DR	RILLING REMARKS		
IH (st		Sample Recovery			Soil Group Name (USCS): color, moisture, density/o	consistency, grain size,							
DEРТН (feet)	ple	Rec	oot	m)	other discriptors								
	Sam	ole	's/F	(mdd)									
	Lab Sample	am	Blows/Foot	PID									
	Ľ	Š	В	Ь									
_							_						
1													
-							-						
2 —				0.0									
-				0.0			-						
3 —													
-							-						
4 —				0.0	DOODLY CDADED CAND WITH CDAY	VEL (CD).							
_				0.0			_						
5 —		\Box			brown (7.5YR-5/3), wet, 20% gravel, 75%	% sand, 5% slit							
_		\ /I					_						
6 —		\ /			6								
_		\backslash / \rfloor			Poor recovery after three atter		_						
7 —		XI			Driving gravel ahead of ssampler								
_		Λ I				_							
8 —		/\											
_		/ \					_						
9 —		\longrightarrow						∇					
_		$\setminus \mid$			-poor recovery, as above		_	\sum			Temporary		
10 —		\longrightarrow		0.0					\perp		Stainless Steel		
_		\ /I					_				screen set for		
11		\ /								J	groundwater grab sample:		
_		\backslash / \rfloor			Poor recovery after three atter		_				KSC-SB7-GW		
12 -		γI			Driving gravel ahead of ssam	oler				\checkmark			
		/					_						
13 —		/\											
_		/ \ 					_						
14													
		$\setminus \mid$			-poor recovery, gravel in shoe		_						
15 —				0.0									
-					Bottom of Boring 15.0 feet		_						
16 —					Backfilled with bentonite chip.								
_							_						
17 —													
' _							_						
18 —													
10							_						
19 —													
19													
]													
20 —													





											Sheet 1 of 1
-	PROJECT: Boeing KSC RI LOCATION: Kent, WA - Former Bldg. 18-35 SURFACE ELEVA								3 E (NAD8	3)
					3	URFACE ELEVATION:					
DRILLIN						ATE: 1/24/17					
					'	OTAL DEPTH OF BORIN	IG: 1	L5.0'			
DRILLIN						OGGED BY: D. Cooper					
						ESPONSIBLE PROF.: D.	Coo	per			REG. NO.: 1600
NOTES:					ac-truck from 0-5'						
			PLES		VISUAL SOIL DESCRIPTION	TION					RUCTION DETAILS
		Sample Recovery			Soil Group Name (USCS): color, moisture, density/c	consistency grain size		AI	י/טוי	OK DK	RILLING REMARKS
DEРТН (feet)	e	900	Σţ		other discriptors	onsistency, grain size,					
DE (f	mp	e Re	/Fo	(mdd)							
	Lab Sample	ηpl	Blows/Foot	d) (
	Lal	Saı	Blc	PID							
_							_				
1 —											
_							_				
2 —				0.3							
_							_				
3 —					POORLY GRADED SAND WITH GRAV						
_					brown (7.5YR-5/3), wet, 20-30% gravel, 65-	_					
4 —				0.4							
_											
5 —		$\downarrow \downarrow$									
_		X		0.0			_				
6 —		\longrightarrow		0.2							
_		\									
7 —											
_				0.1			_				Temporary
8 —		\		0.1	SILT (ML):		_		\equiv		Stainless Steel
_					gray (7.5YR-5/1), wet, 100% s	cil+	_	\sum			screen set for groundwater
9 —		\setminus			POORLY GRADED SAND (SP		_				grab sample:
_		\		0.0	gray (7.5YR-5/1), wet, 95% sand,		_				KSC-SB8-GW
10 —				0.0	gray (7.5111 5/1), wee, 55% saina,	570 SHC	_			¥	
_		\					_				
11 -							_				
_		\		0.0	SILTY SAND (SM):		_				
12 —		\			gray (7.5YR-5/1), saturated, 70% san	d. 30% silt					
-						•					
13 —		\									
14 —		\		0.0							
14 —		\									
15 —											
12					Bottom of Boring 15.0 feet						
16 —					Backfilled with bentonite chip.						
_							_				
17 —											
' _							_				
18											
_							_				
19 —											
_							_				
20 —											
_	-					-					





	Sheet 1 of 1 PROJECT: Boeing KSC RI COORDINATES: 155675N 1288514E (NAD83)															
PROJEC																
LOCATI	ON: I	۲ent,	WA -	Bldg	. 18-62 (indoor)	SURFACE ELEVATION:										
DRILLIN						DATE: 1/25/17										
						TOTAL DEPTH OF BORIN	G: 1	L5.0'								
DRILLIN						LOGGED BY: D. Cooper										
						RESPONSIBLE PROF.: D.	Coo	per			REG. NO.: 1600					
NOTES:				by h	and-auger from 0-3'											
	1		PLES		VISUAL SOIL DESCRIPTION	V					RUCTION DETAILS					
		Sample Recovery			Soil Group Name (USCS): color, moisture, density,	Consistancy grain size		AI	ND/	OK DE	RILLING REMARKS					
DEРТН (feet)	<u>e</u>	9CO	χ	(other discriptors	consistency, grain size,										
DE (f	Lab Sample	e R	Blows/Foot	PID (ppm)	·											
	b Sa	mpl	SMC	J) (
	Lal	Sa	Blc													
_					8-inch concrete slab		_									
1					6 inches of pea gravel/washed rock bedding		_									
_							_									
2 —				0.0												
_				0.0	POORLY GRADED SAND WITH GRA	\\/EL_(SD\)	_									
3 —					brown (7.5YR-5/3), wet, 20% gravel, 75											
_					510WH (7.511K 5/5/), Wee, 20/0 graves, 75	70 Sarra, 570 Sire	_									
4							_									
		\bigvee		0.0												
5 —		\triangle					_									
6 —		\setminus														
_							_									
7 —		$\setminus \mid$														
_		\setminus		0.1			_				Temporary					
8 —		\setminus					-		\equiv		Stainless Steel					
_					POORLY GRADED SAND WITH SILT AND (SRAVEL (SD-SM).	_				screen set for groundwater					
9 —		\setminus			gray (7.5YR-5/1), wet, 20% gravel, 70%			$\bar{\lambda}$			grab sample:					
_		\		0.0		7 501.0) 1070 5110	_				KSC-SB9-GW					
10 —							_									
11 -		\setminus														
_							_									
12 -		$\setminus \mid$														
		$\setminus \mid$		0.2			_									
13 —		\setminus			brown to gray (7.5YR-5/3-5/1), we	t, 100% silt										
_		\setminus					_									
14		\setminus			POORLY GRADED SAND (S	p).	-									
_		\		0.0			_									
15 —					Bottom of Boring 15.0 feet											
16 -					Backfilled with bentonite chip.		_									
16 —							_									
17 —																
_							_									
18 —							_									
_							-									
19 —																
_							-									
20 —																
		-									•					





					P CT Children						Sheet 1 of 1
PROJEC						COORDINATES: 155607	N 12	8848	7 E (I	NAD8	3)
						SURFACE ELEVATION:					
DRILLIN						DATE: 1/25/17					
						TOTAL DEPTH OF BORIN	G: 1	15.0			
DRILLIN						LOGGED BY: D. Cooper					
					•	RESPONSIBLE PROF.: D.	Coo	per			REG. NO.: 1600
NOTES:		ng cle SAM			and-auger from 0-3'	<u> </u>	<u> </u>	\ A / F		CONCT	TRUCTION DETAILS
			PLES		VISUAL SOIL DESCRIPTION	V					RUCTION DETAILS
ΕĐ		Sample Recovery			Soil Group Name (USCS): color, moisture, density,	consistency, grain size,		Ai	VD)	OK DI	MELING REIVIARRO
DEРТН (feet)	ple	Seco	oot	m)	other discriptors						
	am	le l	s/Fo	(mdd)							
	Lab Sample	amp	Blows/Foot	PID (
	۲	Š	В		24-inch concrete slab						
_					24-men concrete slab		_				
1 —											
_							_				
2 —				0.0			_				
_				5.0			-				
3 —		\dashv					_				
_		$\setminus \mid$			POORLY GRADED SAND WITH SILT AND (GRAVEL (SP-SM):	-				
4		\setminus			gray (7.5YR-5/1), wet, 20% gravel, 70-75%		_				
				0.0			_				
5 —		$ egthinspace{1.5em} otag$									
_		\wedge									
6 —	ĺ										
		\					_ —				
7 —		\		0.0							
		\					_				
8 —		\setminus					_				
9 —		\setminus			-no perched water						
_		\setminus					_				
10 -		\		0.0							
_	 						_				Temporary
11 -		\			SILT (ML):				Ш		Stainless Steel
_		\			gray (7.5YR-5/1), wet, 100% silt	, plastic	_				screen set for
12 —		\									groundwater grab sample:
_		\setminus		0.0			_				KSC-SB10-GW
13 —		\setminus					—			×	
_		\			and different distriction		-	$\overline{\Box}$			
14		\			-reddish oxidation		-	$\bar{\sum}$			
-		\		0.0	SILTY SAND (SM):	200/ -:It	_				
15 —				0.0		ie sand, 30% silt	-				
-					Bottom of Boring 15.0 feet		-				
16 —					Backfilled with bentonite chip.		_				
-							_				
17 —											
_							-				
18 —							_				
-							-				
19 —							_				
20 —											





											Sheet 1 of 1
PROJEC						COORDINATES: 155612	N 12	88572	2 E (I	NAD8	3)
						SURFACE ELEVATION:					
DRILLIN	ig co	NTRA	CTO	R: Ca	scade I	DATE: 1/25/17					
DRILLIN	IG EQ	UIPM	IENT:	Geo	pprobe 7730DT	TOTAL DEPTH OF BORIN	G: 1	.5.0'			
DRILLIN	IG ME	THO	D: Di	irect-	Push I	LOGGED BY: D. Cooper					
SAMPLI	ING N	1ETH(OD: 2	2" dia	a. X 5' Macro w/acrylic liner	RESPONSIBLE PROF.: D.	Coo	oer			REG. NO.: 1600
NOTES:	Bori	ng cle	eared	l by h	and-auger from 0-3'						
		SAM	PLES		VISUAL SOIL DESCRIPTION	V		WE	LL C	CONST	RUCTION DETAILS
		Σ						A۱	ND/	OR DR	RILLING REMARKS
TH et)		Sample Recovery			Soil Group Name (USCS): color, moisture, density	consistency, grain size,					
DEРТН (feet)	lple	Rec	oot	m)	other discriptors						
	San	ple	/S/F	(mdd)							
	Lab Sample	am	Blows/Foot	PID							
		$\frac{1}{1}$	<u> </u>		10-inch concrete slab						
_					6 inches of washed rock bedding		_				
1					o inches of washed fock bedding						
_							-				
2 —				0.0							
_				0.0			_				
3 —		$\overline{}$									
_		\			POORLY GRADED SAND WITH SILT AND (SRAVEL (SD-SM):	_				
4 —											
_				0.2	gray (7.5YR-5/1), moist to wet, 20% gravel, 70% sand, 10% silt						
5 —		$\langle \ \rangle$		0.2			_				
_		XI					_				
6 —	ĺ	$\overline{}$									
_		\					_				
7 —		\		0.0							
_		\		0.0			_				
8 —		\									
_		\					_				
9 —		\			-no perched water						
_		\		0.0	-		_				
10 —		\times									_
	ĺ				SILT (ML):						Temporary Stainless Steel
11 -		\			gray (7.5YR-5/1), wet, 100% silt	, plastic					screen set for
12		\									groundwater
12 —		\		0.3							grab sample: KSC-SB11-GW
12		\								\checkmark	K3C-3B11-GVV
13 —		\					_				
14 —		\						$\sum_{i=1}^{n}$			
14 _		\setminus			SILTY SAND (SM):		_	=			
15 —		\setminus		0.2	dark gray (7.5YR-4/1), saturated, 70% fir	ne sand, 30% silt					
13 _					Bottom of Boring 15.0 feet		_				
16 —					Backfilled with bentonite chip.						
10 _							_				
17 —											
1 _							_				
18 —											
-							_				
19 —											
_							_				
20 —											
							_				





	Sheet 1 of 1 ROJECT: Boeing KSC RI COORDINATES: 155489N 1288528E (NAD83)										
						OORDINATES: 155489	N 12	88528	8 E (I	NAD8	3)
						JRFACE ELEVATION:					
DRILLIN						ATE: 1/25/17					
						OTAL DEPTH OF BORIN	G: 1	L5.0'			
DRILLIN						GGED BY: D. Cooper					
						SPONSIBLE PROF.: D.	Coo	per			REG. NO.: 1600
NOTES:	Bori				and-auger from 0-3'						
		_	PLES		VISUAL SOIL DESCRIPTION						RUCTION DETAILS
		/ery			Soil Group Name (USCS): color, moisture, density/co	ansistansy grain siza		Ar	ND/(OK DK	RILLING REMARKS
DEPTH (feet)	<u>e</u>	900	ot	(other discriptors	onsistency, grain size,					
DE (f	Lab Sample	Sample Recovery	Blows/Foot	PID (ppm)	·						
	o Sa	μpl	ws,	d) (
	Lal	Sal	BIC								
_					10-inch concrete slab		_				
1					6-inches of washed rock bedding						
_							_				
2 —				0.0							
_							-				
3 —		$\vdash \vdash$					_				
_				0.0	POORLY GRADED SAND WITH SILT AND GF	DAVEL (CD CNA).	_				
4				0.0	gray (7.5YR-5/1), moist to wet, 20% gravel, 70-7	, ,					
_					gray (7.5111-5/1), moist to wet, 20% graver, 70-7	7 370 3and, 3-1070 3nt	_				
5 —		$\overline{}$									
_		\		0.0			_				
6 —		\		0.0							
		\					_				
7 —		\									
0		\		0.2			_				
8 —		$ \cdot $					_				
9 —											
_		\			-no perched water		_				
10 -				1.2							
_		\sim					_				Temporary
11 -		\			SILT (ML):	. La salta			\perp		Stainless Steel
_		\		0.1	gray (7.5YR-5/1), wet, 100% silt, p	Diastic	_				screen set for groundwater
12 —		\		0.1			-				grab sample:
_		\					_				KSC-SB12-GW
13 —											
_				0.0	-organic silt interbed		-	∇			
14 —				2.3	SILTY SAND (SM):			<u> </u>			
45 -					dark gray (7.5YR-4/1), saturated, 70% fine	sand, 30% silt					
15 —					Bottom of Boring 15.0 feet						
16 —					Backfilled with bentonite chip.						
10 -							_				
17 —											
							_				
18											
							-				
19 —											
_							-				
20 —											
_							-				
1											





COORDINATES: 15513N 1288898E (NAD83)												Sheet 1 of 1
DRILLING CONTRACTOR: Cascade DRILLING EQUIPMENT: Geoprobe 6600 DRILLING METHOD: Direct-Push DRILLING METHOD: 2" dia, X 5" Macro w/acrylic liner SAMPLING METHOD: 2" dia, X 5" Macro w/acrylic liner NOTES: Bornig cleared by a-ctruck from 0-5" SAMPLIS SAMPLES SAMPLES SAMPLES SOLI Group Name (USCS): color, moisture, density/consistency, grain size, other discriptors other discriptors DOORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM): brown (7.5YR-5/3), moist, 22% gravel, 70% sand, 8% silt DOORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM): brown (7.5YR-5/3), moist, 22% gravel, 70% sand, 8% silt DOORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM): brown (7.5YR-5/3), moist, 22% gravel, 70% sand, 8% silt DOORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM): brown (7.5YR-5/3), moist, 22% gravel, 70% sand, 8% silt DOORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM): created by the silt of the								N 12	8889	8 E (NAD8	3)
DRILLING EQUIPMENT: Geoprobe 6600 DRILLING METHOD: Direct-Push LOGGED BY: D. Cooper SAMPLING METHOD: 2" dis. X 5" Macro w/acrylic liner RESPONSIBLE PROF.: D. Cooper REG. NO.: 1600 REG. NO:: 1600 REG.												
DRILLING METHOD: 2" dia. X 5" Macro w/acrylic liner RESPONSIBLE PROF.: D. Cooper REG. NO.: 1600 NOTIS: Borning cleared by vac-truck from 0-5 SAMPLES Soil Group Name (USCS): color, molsture, density/consistency, grain size, other discriptors Soil Group Name (USCS): color, molsture, density/consistency, grain size, other discriptors Soil Group Name (USCS): color, molsture, density/consistency, grain size, other discriptors AND/OR DRILLING REMARKS WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS Soil Group Name (USCS): color, molsture, density/consistency, grain size, other discriptors 4												
SAMPUES Soring cleared by vac-truck from 0-5' NOTES: Boring cleared by vac-truck from 0-5' VISUAL SOIL DESCRIPTION WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS Soil Group Name (USCS): color, moisture, density/consistency, grain size, other discriptors O.D. Soil Group Name (USCS): color, moisture, density/consistency, grain size, other discriptors O.D. A-inch asphalt concrete O.D. POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM): brown (7.5YR-5/3), moist, 22% gravel, 70% sand, 8% silt O.D. POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM): brown (7.5YR-5/3), moist, 22% gravel, 70% sand, 8% silt O.D. POORLY GRADED SAND (SP): gray (7.5YR-5/1), saturated, 100% medium to coarse sand O.D. POORLY GRADED SAND (SP): gray (7.5YR-5/1), saturated, 100% medium to coarse sand O.D. SILT (ML): gray (7.5YR-5/1), wet, 100% silt, plastic SILT (ML): gray (7.5YR-5/1), saturated, 70% fine sand, 30% silt Trace thin roots O.D. Soltom of Boring 15 of feet Backfilled with bentonite chip. O.D.									15.0'			
NOTES: Boring cleared by vac-truck from 0-5' SAMPLES SAMPLES VISUAL SOIL DESCRIPTION Soil Group Name (USCS): color, moisture, density/consistency, grain size, other discriptors Soil Group Name (USCS): color, moisture, density/consistency, grain size, other discriptors AND/OR DRILLING REMARKS AND/OR DRILLING REMAR												
SAMPLES VISUAL SOIL DESCRIPTION AND/OR DRILLING REMARKS Soil Group Name (USCS): color, moisture, density/consistency, grain size, other discriptors AND/OR DRILLING REMARKS AND/OR DRILLING REM							ESPONSIBLE PROF.: D.	Coo	per			REG. NO.: 1600
AND/OR DRILLING REMARKS Soil Group Name (USCS): color, moisture, density/consistency, grain size, other discriptors 4	NOTES				l by v			1				
Hard 100			. 1	PLES		VISUAL SOIL DESCRIPTION						
A-inch asphalt concrete	 		ven			Soil Group Name (USCS): color, moisture, density/o	consistency, grain size.		AI	ילטוי	OK DK	AILLING REIVIARKS
A-inch asphalt concrete	PTI	<u>e</u>	eco	ot	(-		, , , , , , , , , , , , , , , , , , , ,					
A-inch asphalt concrete		J me	le R	/Fo	эрπ							
A-inch asphalt concrete		b Sa	ш	SMC	1) (
1 — 2 — 3 — 4 — 4 — 4 — 5 — 6 — 7 — 0.0 8 — 7 — 0.0 10 — 0.0 10 — 11 — 12 — 0.1 13 — 14 — 0.1 14 — 0.1 15 — 0.1 15 — 0.0 Bottom of Boring 15.0 feet Backfilled with bentonite chip. 17 — 18 — 17 — 18 — 18 — 18 — 18 — 18 —		La	Sa	Ble								
2 —	_					4-inch asphalt concrete						
0.0 POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM): brown (7.5YR-5/3), moist, 22% gravel, 70% sand, 8% silt -	1 -											
0.0 POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM): brown (7.5YR-5/3), moist, 22% gravel, 70% sand, 8% silt -	_							_				
POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM): brown (7.5YR-5/3), moist, 22% gravel, 70% sand, 8% silt	2 —				0.0							
POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM): brown (7.5YR-5/3), moist, 22% gravel, 70% sand, 8% silt 0.0 POORLY GRADED SAND (SP): gray (7.5YR-5/1), saturated, 100% medium to coarse sand 11 - 12 - 13 - 14 - 15 - 16 - 16 - 16 - 17 - 18 - 19 - 10 - 10 - 11 - 11 - 12 - 13 - 14 - 15 - 16 - 16 - 17 - 17 - 18 - 19 - 19 - 10 - 10 - 10 - 10 - 11 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 17 - 18 - 19 - 19 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10	_				0.0			_				
brown (7.5YR-5/3), moist, 22% gravel, 70% sand, 8% silt	3 —							_				
brown (7.5YR-5/3), moist, 22% gravel, 70% sand, 8% silt	_					DOODLY CDADED SAND WITH SILT AND G	DAVEL (SD_SNA).	_				
5 — 6 — 7 — 7 — 7 — 8 — 9 — 9 — 9 — 9 — 9 — 9 — 9 — 9 — 9	4							_				
0.2 Temporary Stainless Steel Screen set for groundwater grab sample: RSC-SB13-GW Stainless Steel Screen set for groundwater grab sample: RSC-SB13-GW RS	_				0.0		70 3ana, 070 3nc	_				
Temporary Stainless Steel Screen set for groundwater grab sample: KSC-SB13-GW	5	1	\forall		0.0							
Temporary Stainless Steel screen set for groundwater grab sample: KSC-SB13-GW			X					_				
8 — 9 — 10 — 10 — 10 — POORLY GRADED SAND (SP): 11 — 12 — 13 — SILT (ML): 13 — SILT (SYR-5/1), saturated, 100% medium to coarse sand	6 —							_				
8 — 9 — 10 — 10 — 10 — POORLY GRADED SAND (SP): 11 — 12 — 13 — SILT (ML): 13 — SILT (SYR-5/1), saturated, 100% medium to coarse sand			\					_				
8 — 9 — 10 — 10 — 10 — POORLY GRADED SAND (SP): 11 — 12 — 13 — SILT (ML): 13 — SILT (SYR-5/1), saturated, 100% medium to coarse sand	7 -		\		0.2							
9 —			\									
9 —	8 —		$\setminus \mid$									
O.0 POORLY GRADED SAND (SP): gray (7.5YR-5/1), saturated, 100% medium to coarse sand O.1 SILT (ML): gray (7.5YR-5/1), wet, 100% silt, plastic O.1 SILTY SAND (SM): O.1 dark gray (7.5YR-4/1), saturated, 70% fine sand, 30% silt O.0 Trace thin roots O.1 Trace thin roots O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Dackfilled with bentonite chip. O.1 Data of Bottom of Boring 15.0 feet Data of Boring 15.0 feet			$\setminus $					_	∇			/I I
10 —	9 _		$\setminus $					_	_			
gray (7.5YR-5/1), saturated, 100% medium to coarse sand 11 — 12 — 13 — 14 — 15 — 16 — 16 — 17 — 17 — 17 — 18 — 19 — 19 — 10 — 10 — 11 — 11 — 12 — 13 — 14 — 15 — 16 — 16 — 17 — 18 — 19 — 19 — 19 — 10 — 10 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 19 — 19 — 19 — 10 — 10 — 10 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 19 — 19 — 19 — 10 — 10 — 10 — 11 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 19 — 19 — 19 — 19 — 10 — 10 — 10 — 11 — 11 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 19 — 19 — 19 — 19 — 10 — 10 — 10 — 10 — 10 — 10 — 10 — 10	10 -		\		0.0	POORLY GRADED SAND (SP):					KSC-SB13-GW
SILT (ML): 13	10 _					gray (7.5YR-5/1), saturated, 100% mediun	n to coarse sand	_				
SILT (ML): 13	11		\									
O.1 SILT (ML): gray (7.5YR-5/1), wet, 100% silt, plastic -			\					_				
O.1 SILT (ML): gray (7.5YR-5/1), wet, 100% silt, plastic -	12 —		\									
SILTY SAND (SM): 14	_		\setminus		0.1			_				
dark gray (7.5YR-4/1), saturated, 70% fine sand, 30% silt Trace thin roots Bottom of Boring 15.0 feet Backfilled with bentonite chip.	13 —		$\setminus \mid$			gray (7.5YR-5/1), wet, 100% silt,	plastic					
dark gray (7.5YR-4/1), saturated, 70% fine sand, 30% silt Trace thin roots Bottom of Boring 15.0 feet Backfilled with bentonite chip.	_		\setminus									
15 —	14 -		$ \cdot $				L 222/ 11/					
Bottom of Boring 15.0 feet Backfilled with bentonite chip. - 17	_		\setminus				e sand, 30% silt	_				
16 —	15 -											
	-							-				
	16 -					Backilled with bentonite chip.						
	_							_				
	17 -							_				
10 	_							_				
	18 -							_				
								_				
	19 -							_				
	20											
	1							-				





											Sheet 1 of 1
PROJEC						COORDINATES: 156944I	N 12	8839	4 E (I	NAD8	3)
						SURFACE ELEVATION:					
DRILLIN						DATE: 1/26/17					
					'	TOTAL DEPTH OF BORIN	G: 1	.5.0'			
DRILLIN						LOGGED BY: D. Cooper	_				
						RESPONSIBLE PROF.: D.	Coop	oer			REG. NO.: 1600
NOTES:	_			l by v	ac-truck from 0-5'		I	14/5		CALCT	TOUGH DETAILS
		SAM	PLES		VISUAL SOIL DESCRIPTION	V					RUCTION DETAILS
T _		Sample Recovery			Soil Group Name (USCS): color, moisture, density/	consistency grain size		AI	יעטי	OK DK	AILLING KEWAKKS
DEРТН (feet)	e	есо	ot		other discriptors	consistency, Brain size,					
D D	Lab Sample	le R	Blows/Foot	(mdd)							
	b Sa	mp	SMC	1) (
	La	Sa	Ble	PID							
_					3-inch asphalt concrete		_				
1 —											
_							_				
2 —				0.0							
-				0.0			-				
3 —											
_					POORLY GRADED SAND WITH SILT AND O	SRAVEL (SP-SM):	_				
4					brown (7.5YR-5/3), moist, 30% gravel, 60						
				0.1		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	_				
5 —	ľ	$\overline{}$									
6 -		X									
6 —		$/\setminus$					_				
7		\									
_		\setminus		0.0			_				
8 —		\setminus									
_		\setminus					_				
9 —											
_		\setminus		0.1	-no perched water		_				
10 —				0.1				∇			
_		\setminus			SILT (ML):		_	\sum			Temporary Stainless Steel
11 -		\			gray (7.5YR-5/1), wet, 100% silt,	, plastic					screen set for
-					, , , , , , , , , , , , , , , , , , , ,	•					groundwater
12 —		\setminus		0.0			_				grab sample: KSC-SB14-GW
13 —										\checkmark	K3C-3B14-GW
_							_				
14		\setminus									
_		\			POORLY GRADED SAND (SI	•	_				
15 —				0.2	9 , ,	0% fine sand					
_					Bottom of Boring 15.0 feet		-				
16 —					Backfilled with bentonite chip.						
-							-				
17 —											
_							_				
18 —											
10 =											
19 —											
20 —											
-											





				200	GLEVAND						Sheet 1 of 1
PROJEC						OORDINATES: 156919	N 12	8837	3 E (I	NAD8	3)
						URFACE ELEVATION:					
DRILLIN						ATE: 1/26/17 OTAL DEPTH OF BORIN	G: 1	15 0'			
DRILLIN						OGGED BY: D. Cooper	G	15.0			
						ESPONSIBLE PROF.: D. ($C_{\Omega\Omega}$	ner			REG. NO.: 1600
					ac-truck from 0-5'	LSI ONSIBLE I NOI D. V	COO	реі			NEG. NO.: 1000
110120			PLES		VISUAL SOIL DESCRIPTION			WE	ELL C	CONST	RUCTION DETAILS
		Z						ΑI	ND/	OR DR	RILLING REMARKS
를 를		Sample Recovery			Soil Group Name (USCS): color, moisture, density/o	consistency, grain size,					
DEPTH (feet)	Jple	Rec	-00t	m)	other discriptors						
	San	ple	vs/F	dd)							
	Lab Sample	Sam	Blows/Foot	PID (ppm)							
_		Ĭ			3-inch asphalt concrete						
1							_				
1							_				
2 —											
				0.1			_				
3 —											
_							_				
4					POORLY GRADED SAND WITH SILT AND G	, ,					
_				0.0	brown (7.5YR-5/3), moist, 30% gravel, 609	% sand, 10% slit	_				
5		\dashv									
-		\bigvee					_				
6 —		$/ \setminus$									
	ľ						_				
7 —		$\setminus \mid$		0.1							
8 —		\setminus									
-		\setminus					_				
9 —		\setminus									
-		\setminus			-organics, grass, roots		_				
10 —		\		0.0				\subseteq			
_		\setminus			CUT (AAL)		_				Temporary
11		\setminus			SILT (ML): gray (7.5YR-5/1), wet, 100% silt,	plactic	_		$\stackrel{\perp}{=}$		Stainless Steel screen set for
_		\			gray (7.51K-5/1), wet, 100% sit,	piastic	_				groundwater
12 -		\setminus		0.1			_				grab sample:
_		\setminus		0.1			_				KSC-SB15-GW
13 —		\setminus			-reddish oxidation						
14 —					POORLY GRADED SAND (SP):					
		\			dark gray (7.5YR-4/1), saturated, 100	% fine sand	_				
15 —		\		0.1	with trace organics						
-					Bottom of Boring 15.0 feet		_				
16 —					Backfilled with bentonite chip.		_				
-							-				
17 —							_				
_							-				
18 —							_				
							_				
19 —											
20 —							_				
							_				





					and the second second						Sheet 1 of 1
PROJEC						COORDINATES: 1568951	N 12	28839	0 E (NAD8	3)
					5	URFACE ELEVATION:					
DRILLIN						DATE: 1/26/17	C. 1	1 . 0 .			
						OTAL DEPTH OF BORIN	G: .	15.0			
DRILLIN						OGGED BY: D. Cooper	Coo				DEC. NO. 1600
					•	RESPONSIBLE PROF.: D.	C00	per			REG. NO.: 1600
NOTES:		SAM			ac-truck from 0-5' VISUAL SOIL DESCRIPTION	1	Π	١٨/٢	:11 (CONST	RUCTION DETAILS
		Т	FLLS		VISUAL SOIL DESCRIPTION						RILLING REMARKS
H T		Sample Recovery			Soil Group Name (USCS): color, moisture, density/	consistency, grain size,		,	,,		WEELTO MENTO MINO
DEРТН (feet)	ole	Seco	ot	n)	other discriptors						
٥)	Lab Sample	le F	Blows/Foot	(mdd)							
	s de	me	OW	PID (
	۲	- Si	Bl		2 in the combalt consents			l			
_					3-inch asphalt concrete		_				
1											
_							_				
2				0.1					$\ \ $		
_				0.1			_		$\ \ $		
3 —									$\ \ $		
_					POORLY GRADED SAND WITH GRA	VEL (SP):	_				
4 —					brown (7.5YR-5/3), moist, 30% gravel, 65		_				
				0.1							
5 —		$\overline{\ }$					_				
6		$\wedge \setminus$									
6 —		\					_				
7 —		\									
		\		0.0			_				
8 —		$\setminus \mid$									
_		\setminus					_				
9 —		\setminus			alle and a discount of						
_		\		0.0	-silty sand grading to silt		_				
10 -		$\overline{}$		0.0				$\bar{\Delta}$			
_		\bigvee			SILT (ML):		_				Temporary Stainless Steel
11 -		$/\setminus$			gray (7.5YR-5/1), wet, 100% silt,	plastic					screen set for
12 -	ĺ						_				groundwater
12 —		\		0.0							grab sample: KSC-SB16-GW
13 —		\								\checkmark	K2C-2D10-GAA
-		\			-reddish oxidation		_				
14 —		\									
_		\setminus			POORLY GRADED SAND (SP		_				
15 —		\		0.0	dark gray (7.5YR-4/1), saturated, 100	% fine sand					
_					Bottom of Boring 15.0 feet		_				
16 —					Backfilled with bentonite chip.		-				
_							-				
17 —											
_							_				
18 —											
19 —							_				
19							_				
20 —											
-							_				





				FUC	GLEVAND						Sheet 1 of 1
PROJEC	T: Bo	eing	KSC I	RI		COORDINATES: 156599	N 12	28839	3 E (NAD8	3)
					Š	SURFACE ELEVATION:					
DRILLIN						DATE: 1/26/17					
					'	TOTAL DEPTH OF BORIN	IG: í	15.0'			
DRILLIN						LOGGED BY: D. Cooper					250 110 1000
						RESPONSIBLE PROF.: D.	Coo	per			REG. NO.: 1600
NOTES:	Bori		earec PLES		ac-truck from 0-5' VISUAL SOIL DESCRIPTION	. 1		14/1	-11 (CONCT	RUCTION DETAILS
			PLES		VISUAL SUIL DESCRIPTION	V					RILLING REMARKS
Ξ÷		Sample Recovery			Soil Group Name (USCS): color, moisture, density,	consistency, grain size,			ND,	OK DI	MELING REMARKS
DEPTH (feet)	ple	Rec	oot	m)	other discriptors						
	am	ole	's/F	ldd)							
	Lab Sample	aml	Blows/Foot	PID (ppm)							
			В		8-inch concrete				П		
_					e men comercie		-				
1											
2 —				0.1			_				
3 —											
_							_				
4					POORLY GRADED SAND WITH SILT AND (, ,					
_					brown (7.5YR-5/3), moist, 30% gravel, 60	% sand, 10% silt	_				
5 —		\dashv		0.0							
-		\bigvee					-				
6 —		$/ \setminus$									
_	ľ	\Box					_				
7		\		0.1			_				
_		\setminus					_				
8 —		\setminus					_				
9 —											
_		\setminus			SILT (ML):		_		Ш		Temporary
10 —		\		0.0	gray (7.5YR-5/1), wet, 100% silt	, plastic		∇			Stainless Steel screen set for
_							-				groundwater
11		\setminus									grab sample:
_		\			POORLY GRADED SAND (S	٥١٠	_				KSC-SB17-GW
12 —		\setminus		0.2		·					
_		$\setminus \mid$		0.2		to meanam sama	_				
13 —		\setminus					_				
14 —		\			SILT WITH ORGANICS (ML-0	DL):					
		\			gray-brown (7.5YR-5/1-5/4), wet, 90% si	lt, 10% organics	_				
15 -				0.0							
_					Bottom of Boring 15.0 feet		-				
16 —					Backfilled with bentonite chip.						
_							-				
17 —											
_							-				
18 —											
10											
19 —							l				
20 —											
_							_				





				36.5	JLEVAND						Sheet 1 of 1
PROJEC						COORDINATES: 156551	N 12	8836	2 E (I	NAD83	3)
					-	SURFACE ELEVATION:					
DRILLIN						DATE: 1/27/17 TOTAL DEPTH OF BORIN	10. 1	ור סי			
_					'			15.0			
DRILLIN						LOGGED BY: D. Cooper					REG. NO.: 1600
					a. X 5' Macro w/acrylic liner ac-truck from 0-5'	RESPONSIBLE PROF.: D.	COO	per			REG. NO.: 1600
NOTES.			PLES		VISUAL SOIL DESCRIPTION	N	l	\ \ /F	:11 (CONST	RUCTION DETAILS
		. 1	LLS		VISOAL SOIL BESCHI TIO						ILLING REMARKS
Ŧ ÷		Sample Recovery			Soil Group Name (USCS): color, moisture, density/	/consistency, grain size,			•		
DEPTH (feet)	ple	Seco	oot	m)	other discriptors						
	am	ole F	s/Fc	ppr							
	Lab Sample	amp	Blows/Foot	PID (ppm)							
	۲	- Si	B		NA/achad graval curfacing						
_					Washed gravel surfacing		_				
1											
-							_				
2 —				0.1					$\ \ \ $		
_				5.1			_		$\ \ $		
3 —											
_					POORLY GRADED SAND WITH SILT AND O	GRAVEL (SP-SM):	_				
4 —					brown (7.5YR-5/3), moist, 20% gravel, 65	5% sand, 15% silt	_				
5 —		Щ									
_		\bigvee					_				
6 —		\triangle									
_		\					_				
7 —		\		0.1							
_		$\setminus \mid$		0.1			_				
8 —		$\setminus \mid$									
_		\setminus			-no perched water		_				
9 —		$\setminus $					_				
10 —				0.0				\sum			
-		\times					_				
11	l 1				SILT (ML):						Temporary
_		\			gray (7.5YR-5/1), wet, 100%	silt	_				Stainless Steel screen set for
12 —		\		0.0			_			J	groundwater
_		$\setminus \mid$		0.2			_				grab sample: KSC-SB18-GW
13 —		$\setminus \mid$					_			\checkmark	K3C-3B18-GVV
_		$\setminus $					_				
14 —		\			SILT WITH SAND (ML):						
15 —		\		0.0		% sand, 5% organics					
15 —					Bottom of Boring 15.0 feet		_				
16 —					Backfilled with bentonite chip.						
_							_				
17 —											
_							_				
18 —							_				
_							-				
19 —							_				
-							_				
20 —											





				FUC	GLEVAND						Sheet 1 of 1
PROJEC	T: Bo	eing	KSC	RI	C	OORDINATES: 156561	N 12	28842	2 E (NAD8	3)
						URFACE ELEVATION:					
DRILLIN						ATE: 1/25/17					
						OTAL DEPTH OF BORIN	G: í	15.0'			
DRILLIN						OGGED BY: D. Cooper	<u> </u>				DEC NO. 4600
					•	ESPONSIBLE PROF.: D.	Coo	per			REG. NO.: 1600
NOTES:	Bori		PLES		ac-truck from 0-5' VISUAL SOIL DESCRIPTION		l	\^/[:11 (CONST	RUCTION DETAILS
		_	LLJ		VISUAL SOIL DESCRIPTION						RILLING REMARKS
Ŧ ÷		Sample Recovery			Soil Group Name (USCS): color, moisture, density/o	consistency, grain size,			,		
DEPTH (feet)	ple	Seco	oot	<u>٦</u>	other discriptors						
	sam	ole I	's/F	ıdd)							
	Lab Sample	amp	Blows/Foot	PID (ppm)							
			В		3-inch asphalt concrete						
_					5 men asphare concrete		_				
1											
2 —				0.1			_				
3 —											
-							_				
4					POORLY GRADED SAND WITH GRA	, ,					
_					brown (7.5YR-5/3), moist, 20% gravel, 75	% sand, 5% silt	_				
5 —		\Box		0.0							
_							-				
6 —		$/ \setminus$									
_		$\overline{}$					_				
7				0.1							
_											
8 —				0.0			_				
9 —											
_		\					_				Temporary
10 -		\longrightarrow						∇	\perp		Stainless Steel screen set for
_		\setminus /					_				groundwater
11		\setminus / \mid									grab sample:
-		X					-				KSC-SB19-GW
12 —		$/ \setminus $			POORLY GRADED SAND WITH SILT	(SP-SM):	_				
_		$/ \setminus$			gray-brown (7.5YR-5/1-3), saturated, 30% silt,		_				
13 —					g , a (, , ,	, , , , , , , , , , , , , , , , , , ,					
14					POORLY GRADED SAND WITH SILT	(SP-SM):					
14 —					dark gray (7.5YR-4/1), saturated, 90% find	e sand, 10% silt	_				
15 -		\		0.0							
_					Bottom of Boring 15.0 feet		-				
16 —					Backfilled with bentonite chip.		_				
_							-				
17 —							_				
_							-				
18 —							_				
							_				
19 —							_				
20 —											
							_				





											Sheet 1 of 1
PROJEC						OORDINATES: 156522	N 12	8838	8 E (NAD8	3)
						URFACE ELEVATION:					
DRILLIN	ig co	NTR/	ACTO	R: Ca	oscade D	ATE: 1/27/17					
DRILLIN	IG EQ	UIPN	1ENT:	: Ged	pprobe 7730DT To	OTAL DEPTH OF BORIN	G: 1	L5.0'			
DRILLIN	IG ME	THO	D: D	irect-	Push L(OGGED BY: D. Cooper					
SAMPLI	ING N	1ETH	OD: 2	2" dia	a. X 5' Macro w/acrylic liner R	ESPONSIBLE PROF.: D.	Coo	per			REG. NO.: 1600
NOTES:	Bori	ng cle	earec	by v	ac-truck from 0-5'						
		SAM	PLES		VISUAL SOIL DESCRIPTION			WE	ELL (CONST	RUCTION DETAILS
		şı						ΙA	ND/	OR DR	RILLING REMARKS
TH et)		Sample Recovery			Soil Group Name (USCS): color, moisture, density/o	consistency, grain size,					
DEРТН (feet)	əldı	Rec	oot	m)	other discriptors						
	San	ple	/s/F	(mdd)							
	Lab Sample	am	Blows/Foot	PID							
		$\overline{}$	В	Ь	Washed gravel surfacing						
_					washeu graver surracing		_				
1							_				
_							_				
2 —				0.1			_				
-				0.1			-		$\ \ $		
3 —											
-					POORLY GRADED SAND WITH SILT AND G	RΔ\/FL (CD_CNA\·	_				
4					brown (7.5YR-5/3), moist, 20% gravel, 65%		_				
_				0.1		70 Sanu, 1570 Siit	_				
5 —	 	\dashv		0.1			_				
_		XI					_				
6 —	(\longrightarrow					-				
_		\					_				
7 —				0.1							
_		\setminus		0.1			_				
8 —							_				
_					-no perched water		_				
9 —					-no perched water		_	∇			
_		\		0.2			_	\sum			Temporary
10 —				0.2					\equiv		Stainless Steel
_		\setminus			SILT (ML):		_				screen set for
11		\			gray (7.5YR-5/1), wet, 100% s	silt	_				groundwater grab sample:
_		\			g.u, (7.311 3, 1), wet, 10070	Site	_				KSC-SB20-GW
12 —		\		0.0			_			¥	
_		\setminus		0.0			_				
13 —		\			POORLY GRADED SAND WITH SILT	(SP-SM)	-				
_		\			gray (7.5YR-5/1), saturated, 30% silt,		_				
14		\setminus			POORLY GRADED SAND (SP		_				
-		\		0.0	-	-	-				
15				3.0	Bottom of Boring 15.0 feet		_				
_					Backfilled with bentonite chip.		-				
16 —											
_							_				
17 —							_				
_											
18											
							_				
19 —							_				
_											
20 —							_				
									•		





220150					JLEVAND			12222	0.0= /	Sheet 1 of 1
PROJEC				RI		COORDINATES: 157218.				D83)
LOCATI				D. ^		SURFACE ELEVATION: 29	9.9	(NAVD8	ర)	
DRILLIN						DATE: 4/13/17		17.0'	F60: 6	CVID. BVA CCZ
DRILLIN						TOTAL DEPTH OF BORING	G:	17.0	IFCOTO	GY ID: BKA-087
						LOGGED BY: D. Cooper				150 NO 1600
						RESPONSIBLE PROF.: D. (00ء	per	Į F	REG. NO.: 1600
NOTES:					vir-Knife from 0-5'	u I		۱۸/۲۱۱	CONCTO	LICTION DETAILS
		SAM	PLES		VISUAL SOIL DESCRIPTION	V				LUCTION DETAILS
I G		Sample Recovery			Soil Group Name (USCS): color, moisture, density,	consistency, grain size.		AINL) OR DRI	LLING KLIVIAKKS
DEPTH (feet)	ple	Seco	Blow Counts	m)	other discriptors					
	Lab Sample	le F	COI	PID (ppm)						
	s q	amp	low) Q						
	Ľ	Š	B	PI	2-inches Asphalt Concrete Pa	aving			T	
_					2	6	_		lacksquare	8" Morris Flush- Mount Well Box
1										
							_		\	2-inch Diameter SCH 40 PVC Casing
2 —	-2.5						_			TOC 29.59 (NAVD88)
2	MW!-2.5									
3 —							_			Concrete
4					POORLY GRADED SAND WITH GRA	AVEL (SP):				
-					brown (7.5YR-5/3), moist to wet, 20% grave	l, 60% sand, 20% silt	_			
5 —										
_		$\setminus \mid$	5	0.1			_			
6 —			3/4/5							
_							_		- XXX	Cetco Medium
7		$\setminus \mid$	8/							Bentonite Chip
_			3/4/8		-becoming wet, but not saturated		_			
8 —		\longrightarrow								
_		$\setminus \mid$	/5	0.0			_			
9 —			4/3/5					****** ********		
_	,	\leftarrow			CUT (AU)		-			
10 -		$\setminus \mid$	3/3/4		SILT (ML):	a:l±				#20-40 Colorado
_			3/3		gray (7.5YR-6/1), wet, 100%	SIIT	-			Silica Sand
11		(-)		0.4						
_		$\setminus \mid$	5/9/2	0.1			_			
12 —			5/			$\overline{}$				
_		()				$\bar{\Sigma}$	_			
13 —			5/9/3							2-inch Diameter
_			2/		POORLY GRADED SAND (S	P):	_			SCH 40 PVC Screen
14 —		\bigcap			gray (7.5YR-5/1), saturated, 90% fine	-				0.010" slot 11.0-16.0'
			3/3/3		with silty interbeds	,	_			0.3' end cap
15 —			3'		,					
16 —		\Box								
16 —			2/2/2				_			
17 —			7		SILT (ML)				1000000000 1000000000 1000000000	
					Bottom of Boring 17.0 feet		_			
18 —										
_							_			
19 —										
_							_			
20 —										
_							_			





					SLEVAND			Sheet 1 of	f 1
PROJEC	T: Bo	eing	KSC I	RI	со	ORDINATES: 156911.0	O N 12	289528.0 E (NAD83)	
LOCAT	ON: I	۲ent,	WA		SU	RFACE ELEVATION: 29	9.0 (NA	AVD88)	
DRILLIN						TE: 4/14/17			_
DRILLIN	IG EQ	UIPN	IENT:	: CMI	E 75 TO	TAL DEPTH OF BORING	G: 14.0	.0' ECOLOGY ID: BKA-089	_
						GGED BY: D. Cooper			_
						SPONSIBLE PROF.: D. C	Cooper	er REG. NO.: 1600	_
NOTES	Bori			by A	ir-Knife from 0-5'				_
		SAM	PLES		VISUAL SOIL DESCRIPTION		,	WELL CONSTRUCTION DETAILS	
		ven			Call Casus Name (UCCC), called gradients described			AND/OR DRILLING REMARKS	
DEPTH (feet)	e e	Sample Recovery	nts	<u></u>	<u>Soil Group Name (USCS):</u> color, moisture, density/co other discriptors	nsistency, grain size,			
E E	Lab Sample	le R	Blow Counts	(mdd)					
	b Sa	mp	ΜC	1) (
	La	Sa	Ble	PID					_
_					2-inches Asphalt Concrete Pavi	ng	_	8" Morris Flush-	
1 -		\Box						Mount Well Box	
_							-	2-inch Diameter	1
2 —	-5:				POORLY GRADED SAND WITH GRAV	, ,		SCH 40 PVC Casing	Ш
_	N2-2				gray (7.5YR-5/1), moist to wet, 20% gravel, 65	% sand, 15% silt	-	TOC 28.58 (NAVD88)	ا
3 —	Ž						 ₩	Concrete	
_							- 2		
4									
_							-	Cetco Medium Bentonite Chip	
5 —		\dashv		0.1			-	Bentonite Chip	
_		$\setminus \mid$	6/4/4	0.1			-		
6 —			/9				— <u>@@</u>	रिस्ति रिस्तिक	
_		$\overline{}$					- SSS		
7 —		$\setminus \mid$	4/6/5						
_			4/		POORLY GRADED SAND (SP):		- 000	*** 	
8 —		$\overline{}$		0.0		nd. 5% silt		#20-40 Colorado	
_		$\setminus \mid$	5/2/5	0.0	g. ay (7.5111 5, 17, satarates, 55% time sa	114, 370 3110	- K(K)	Silica Sand	┚┃
9 —			2/					2-inch Diameter	ı
_		$\overline{}$					- 000	SCH 40 PVC Screen	
10 —			5/4/5					0.010" slot 6.9-11.9'	
111			5					0.3' end cap	
11			~	0.0			_		1
12 -			2/2/3						
_			•				- XX		
13			8		SILT (ML):				
_			5/7/8		gray (7.5YR-6/1), wet, 100% sil		-600		
14					with trace fine sand and organi	cs	8		
_					Bottom of Boring 14.0 feet		-		
15 -									
_							-		
16 —									
_							-		
17 —									
_							-		
18 -									
_							-		
19 —							-		
_							-		
20 —							_		
_							-		





				100	SLEVAND					Sheet 1 of 1
PROJEC	T: Bo	eing	KSC I	RI		COORDINATES: 155979.				AD83)
LOCATI						SURFACE ELEVATION: 28	8.8	(NAVD8	8)	
DRILLIN						DATE: 4/14/17			_	
DRILLIN						TOTAL DEPTH OF BORING	G: :	14.0'	ECOLO	OGY ID: BKA-090
						LOGGED BY: D. Cooper				
						RESPONSIBLE PROF.: D. (Coo	per		REG. NO.: 1600
NOTES:	Bori			by A	ir-Knife from 0-5'					
		SAM	PLES		VISUAL SOIL DESCRIPTION	V				RUCTION DETAILS
		ven			Cail Coassa Nassa (UCCC), and a superintered described	/		AND	O/OR DR	ILLING REMARKS
DEPTH (feet)	<u>e</u>	Sample Recovery	nts	<u></u>	Soil Group Name (USCS): color, moisture, density, other discriptors	consistency, grain size,				
DE (f	Lab Sample	le R	Blow Counts	PID (ppm)	other distriptors					
	b Sa	mp	ΛC	l) (
	La	Sa	Ble	PII						
_					2-inches Asphalt Concrete Pa	aving	_	_	_``\	8" Morris Flush-
1									100000000000000000000000000000000000000	Mount Well Box
_							_			2-inch Diameter
2	5:				POORLY GRADED SAND WITH GRA	·				SCH 40 PVC Casing
_	MW3-2.5				gray (7.5YR-5/1), moist to wet, 20% gravel,	60% sand, 20% silt	_			TOC 28.47 (NAVD88)
3 —	M									\
_							_			Concrete
4										
_							_			Cetco Medium
5 —	,	\vdash		0.0						Bentonite Chip
_			2/2/2	0.0			_			
6 —			2/		SILT (ML):					
-	1	$\overline{}$			gray (7.5YR-6/1), wet, 100% silt, tra	ce organics	_			
7 —			2/2/3		gray (7.5111 0) 1), wet, 10070 sitt, tro	ce organics				
_			2/			∇	_		= 22222	
8 —		\Box		0.0		<u>~</u>				#20-40 Colorado
_			1/1/1							Silica Sand
9 —			1						**************************************	2-inch Diameter
10 -	ľ		_							SCH 40 PVC Screen
10 —			3/3/4				_			0.010" slot
11 -			(1)		POORLY GRADED SAND (S	P):				7.7-12.7' 0.3' end cap
_	ĺ	\setminus	8	0.0	gray (7.5YR-5/1), saturated, 95% fine	sand, 5% silt	_			
12 -			7/8/8		with silt clasts and silt interb	peds				
_							_			
13 —		\setminus	/2							
_			7/10/2				_			
14		\longrightarrow								
_					Bottom of Boring 14.0 feet		_			
15 —							-			
_							_			
16 —										
_							_			
17 —							_			
_							_			
18 —							-			
-							_			
19 —							_			
-							_			
20 —							_			
							_			





					JLEVAND				Sheet 1 of 1
PROJEC				RI		COORDINATES: 155134.		•	.D83)
LOCATI						SURFACE ELEVATION: 29	9.2 (N	AVD88)	
DRILLIN						DATE: 4/14/17			
DRILLIN						TOTAL DEPTH OF BORING	G: 14.	.0' ECOLO	GY ID: BKA-091
					ollow-Stem Auger	LOGGED BY: D. Cooper	_		
					a. Split-Spoon w/ 300# Hammer	RESPONSIBLE PROF.: D. (Coope	er [f	REG. NO.: 1600
NOTES:	Bori			by A	ir-Knife from 0-5'				
		SAM	PLES		VISUAL SOIL DESCRIPTIO)N			RUCTION DETAILS
 -		Sample Recovery			Soil Group Name (USCS): color, moisture, density	//consistency grain size		AND/OR DRI	LLING REMARKS
DEPTH (feet)	e e	Seco	Blow Counts	(ر	other discriptors	// consistency, grain size,			
B ±	Lab Sample	le R	Cou	PID (ppm)	, , , , , , , , , , , , , , , , , , , ,				
	b S	mp	MΩ	l) d					
	La	Sa	Ble	PII					
_					2-inches Asphalt Concrete F	aving	_		8" Morris Flush-
1									Mount Well Box
_							-		2-inch Diameter
2 —	5.				POORLY GRADED SAND WITH GR		—		SCH 40 PVC Casing
_	V4-2.				gray (7.5YR-5/1), moist to wet, 20% grave	, 60% sand, 20% silt	-		TOC 28.86 (NAVD88)
3 —	×						<u>—</u>		\
_							- ≋		Concrete
4							≋		
_			,				- 8		Cetco Medium
5 —		Щ					8		Bentonite Chip
_		$\setminus \mid$	2/2/1	0.0			- ≋		
6 —			2/2		SILT (ML):	the section	— <u>88</u>	7000	
_		\longrightarrow			gray (7.5YR-6/1), wet, 100% s	iit, sort	-86		
7 —			/2/3		DOODLY CRADED SAND WITH SH	T (CD CM).			
_			2/2		POORLY GRADED SAND WITH SIL gray (7.5YR-5/1), moist to saturated, 70		$-\frac{200}{200}$		
8 —		$\overline{}$		0.1	gray (7.51K-5/1), moist to saturated, 70	7% Saliu, 50% Siit			#20-40 Colorado
_			2/4/4	0.1			- 800 800		Silica Sand
9 —			7/2						
_		$\overline{}$					- XX		2-inch Diameter SCH 40 PVC Screen
10 -			4/4/4		POORLY GRADED SAND (S	SP):	— <u></u>		0.010" slot
_			4/		gray (7.5YR-5/1), saturated, 100%	•	- 933 333		7.7-12.7'
11		$\overline{}$		0.1	with silt interbeds		— <u> </u>		0.3' end cap
			3/4/4				- ex-		
12 —			3'						
_		\Box							
13 —			<i>L/L/</i> 9						
14 —			9						
_					Bottom of Boring 14.0 feet		-		
15 —									
_									
16 —									
_							_		
17 —									
-							_		
18 —									
-							_		
19 —							_		
_							_		
20 —							_		
-							_		
<u></u>									





Sheet 1 of 1									
							5231.7 N 1288197.2 E (NAD83)		
LOCATION: Kent, WA SURFACE EI						SURFACE ELEVATION: 30	EVATION: 30.3 (NAVD88)		
						DATE: 4/14/17			
DRILLING EQUIPMENT: CME 75 TOTAL DEPTH OF BC							G: :	15.5' ECOLOGY ID: BKA-092	
DRILLING METHOD: 4" ID Hollow-Stem Auger LOGGED BY: D. Coop								<u> </u>	
SAMPLING METHOD: 3" dia. Split-Spoon w/ 300# Hammer RESPONSIBLE PROF.:							Coo	oper REG. NO.: 1600	
NOTES:	NOTES: Boring cleared by Air-Knife from 0-5'								
		SAMPLES VISUAL SOIL DESCRII				N	WELL CONSTRUCTION DETAILS		
		ver			Soil Group Name (USCS): color, moisture, density/consistency, grain size,			AND/OR DRILLING REMARKS	
PTI	DEPTH (feet)			(ر	other discriptors				
B +	Sample Recovery	Blow Counts	PID (ppm)						
	Lab Sample	mp	οw) Q					
	La	Sa	Bl	Ы					
_					2-inches Asphalt Concrete Pa	aving	_	8" Morris Flush-	
1								Mount Well Box	
_							-	2-inch Diameter	
2 —	2.5							SCH 40 PVC Casing TOC 29.83 (NAVD88)	
_	W5-2						-	- TOC 29.83 (NAVD88)	
3 —	Σ								
_							-	Concrete	
4					POORLY GRADED SAND WITH GR.	AVFL (SP):		-	
_					brown (7.5YR-5/3), moist to wet, 20% grave	, ,	_	-	
5 —	l	egthanking		0.1	poor recovery to 9.5', grading				
_			3/3/4		, , ,	,			
6 —			3				_	Cetco Medium	
			_				_	Bentonite Chip	
7 —			6/6/4				_	_	
8 —			•					_	
-		$\setminus \mid$,2	0.0			_	- aaaa	
9 —			5/2/2					-	
_		\longrightarrow					_	- 333	
10 -		$\setminus \mid$	/2					-	
_			3/4/5				-	#20-40 Colorado Silica Sand	
11		\longrightarrow		0.3	SILT (ML):				
_		$\setminus \mid$	3/4/4	0.2	gray (7.5YR-6/1), wet, 100%	(cil+	_		
12 —			3/		soft, organic silt interbeds, grav			2-inch Diameter	
_	1	$\overline{}$			sort, organic site intersects, grav	Ci Ciasts	_	0.010" slot	
13 —			8/15/15				_	10.2-15.2' 0.3' end cap	
_			8/7				_		
14 —			15		POORLY GRADED SAND (S	P):	_		
15 —			7/14/15		gray (7.5YR-5/1), saturated, 100%	fine sand			
13 _			7		with silt clasts				
16 —					Bottom of Boring 15.5 feet			_	
-							_	-	
17 —								-	
_							-	-	
18 —							-	-	
_							-	-	
19 —								-	
_							-	-	
20 —]	
_							_]	





					JLEVAND				Sheet 1 of 1
PROJEC				RI		COORDINATES: 156258.			·
LOCATI				D. Ca		SURFACE ELEVATION: 29	9.5 ((NAVD88)	
DRILLIN DRILLIN						DATE: 4/13/17 TOTAL DEPTH OF BORING	G. 1	140'	ECOLOGY ID: BKA-088
							G: J	14.0	ECOLOGY ID: BKA-088
						LOGGED BY: D. Cooper	Coo	nor	REG. NO.: 1600
					a. Split-Spoon w/ 300# Hammer uir-Knife from 0-5'	RESPONSIBLE PROF.: D. (C00	per	REG. NO.: 1000
NOTES.	БОП	SAM			VISUAL SOIL DESCRIPTIO	M I		WELL C	CONSTRUCTION DETAILS
		_	PLES		VISUAL SOIL DESCRIPTION	V			OR DRILLING REMARKS
Ξ÷		Sample Recovery	S		Soil Group Name (USCS): color, moisture, density,	/consistency, grain size,		727	
DEPTH (feet)	Lab Sample	Rec	Blow Counts	m)	other discriptors				
	Sam	ple	, Co	dd)					
	ab	am	low	PID (ppm)					
	1	S	В	<u>а</u>	2-inches Asphalt Concrete Pa	aving		l '	
_					2 menes Aspirate concrete 1	aviiig	_	▎	8" Morris Flush- Mount Well Box
1							_		
					POORLY GRADED SAND WITH GRA	AVEL (SP):	_		2-inch Diameter SCH 40 PVC Casing
2 —	-2.5				brown (7.5YR-5/3), moist to wet, 20% grave		_		TOC 29.17 (NAVD88)
_	MW6-2.5				, , , , , , , , , , , , , , , , , , , ,	, ,			
3 —	~								Canacata
_									Concrete
4 —									
5 —			1	0.0			_		Cetco Medium
6			3/3/4		SILT (ML):		_		Bentonite Chip
6 —			(1)		gray (7.5YR-6/1), wet, 100%	silt	_		
7 —			4		with fine sandy interbeds belo	w 6.5 '			
' _			2/2/4				_		99999 99999
8 —		$\overline{}$					_		#20 40 Calarada
_		\setminus	4	0.0			_		#20-40 Colorado Silica Sand
9 —			2/3/4						
_		\longrightarrow					_		99999 99999
10 -		\setminus	/2			()			2-inch Diameter
_			6/4/5		POORLY GRADED SAND and SILT		_		SCH 40 PVC Screen
11		$\overline{}$			gray (7.5YR-5/1), saturated, 95% fine				0.010" slot
-			3/4/3	0.2	interbedded with 30% fine sand	, 70% SIIL	_		8.7-13.7' 0.3' end cap
12 -			3/7						90000 L
_		$\overline{}$					_		
13 —			6/5/5				_		00000 00000
_			/9				_		
14 —					Bottom of Boring 14.0 feet		_	ererere!	[1000]
15 —					-				
15 —									
16 —									
16 —									
17 —									
							_		
18 —									
-							_		
19 —									
-							_		
20 —									
_							_		
<u></u>									

Note: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.





				30.00	SLEVAND			Sheet 1 of 1
PROJEC				RI		OORDINATES: 156575.		
LOCATI						JRFACE ELEVATION: 28	8.3	(NAVD88)
DRILLIN						ATE: 4/13/17		11.01
DRILLIN						OTAL DEPTH OF BORING	G: :	14.0' ECOLOGY ID: BKA-086
						OGGED BY: D. Cooper		
						SPONSIBLE PROF.: D. (Coo	oper REG. NO.: 1600
NOTES:					Air-Knife from 0-5'	1		WELL CONSTRUCTION RETAILS
		SAM	PLES		VISUAL SOIL DESCRIPTION			WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
ļ ∓ ⊋		Sample Recovery	S		Soil Group Name (USCS): color, moisture, density/co	onsistency, grain size,		AND/OR DRILLING REMARKS
DEPTH (feet)	Lab Sample	Rec	Blow Counts	m)	other discriptors			
	Sam	ole	S	(mdd)				
	ab §	am	low	PID				
	۲	S	В	Ь	2 inches Asphalt Congrete Day	ing		
_					2-inches Asphalt Concrete Pavi	ing	_	8" Morris Flush- Mount Well Box
1								- Would well box
_					POORLY GRADED SAND WITH SILT and GR	Δ\/FL (SP-SM)·	_	2-inch Diameter
2 —	2.5				brown to gray (7.5YR-5/3-5/1), moist			SCH 40 PVC Casing TOC 27.92 (NAVD88)
_	MW7-2.5				20% gravel, 60% sand, 20% si		_	
3 —	2				20/0 g. ave., 00/0 3ana, 20/0 3.			
_							_	Concrete
4 —							_	
5 —							_	_
			2	0.0			_	Cetco Medium
6 —			2/2/2		SILT (ML):			Bentonite Chip
_		$\overline{}$			gray (7.5YR-6/1), wet, 100% silt, p	olastic	_	-
7		$\setminus \mid$	4	0.1				-
_			2/3/4				_	-
8 —		\leftarrow						#20-40 Colorado
_		\	3/4/5	0.0			_	- Silica Sand
9 —			3/4					- 8888 8888
_		$\overline{}$		0.0			_	-
10 -		\setminus	4/6/5	0.0	POORLY GRADED SAND (SP):			2-inch Diameter
_			4/		gray (7.5YR-5/1), saturated, 95% fine sa		_	SCH 40 PVC Screen
11 —		\Box		0.0		,		0.010" slot 8.8-13.8'
-			7/8/7					0.3' end cap
12 —			7				_	
13 —			∞					
_			8/L//				_	-8888
14								
_					Bottom of Boring 14.0 feet		-	-
15 —							-	-
-							-	-
16 —							-	-
_							-	-
17 —							_	1
10 =							_	[
18 —							_	
19 —							_	_
19 -							_	_
20 —							_	_
-							_	-

Note: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

B-2 Regional Boring Logs

								P-01		
	SAMF	LE I	DATA				SOIL PR	OFILE	GROUNDWATER	1
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo Ground Elevation (ft):		Water Level	
2	1	d3		0.0		SP/ SM	Brown, fine to mediu gravel (no odor, no si dense, damp) [Fill]	n SAND with silt and neen) (medium		
6	2	d3		0.0	(55)	ML	Gray, SILT with clay (medium stiff, wet) [h	(no odor, no sheen) lative]	∑ atd	
10	3	d3		0.0						
14	4	d3		0.0		SP SP	Gray, sitty, fine SANI (medium dense, wet			
18	5	d3		-						-
—20 Bigging	Notes:	1. Str 2. Re 3. Re	ratigraphi eference t efer to "So	c conta o the te oil Class	cts are ext of this	based of s report n Syster	in field interpretations and a is necessary for a proper um and Key" figure for explain	are approximate. Inderstanding of subsurface conduction of graphics and symbols.	ditions.	
	LAN ASS	DAU OCL	ATES		k		ect Striker Washington	Log of E	Boring DP-01	Figure B-2 (1 of 2)

				P-01		
	SAMPLE DATA		SOIL PR	OFILE	GROUNDWATER	2
(ii) iiidaa 20	Sample Number & Interval Sampler Type Blows/Foot	PID (ppm) Graphic Symbol	Drilling Method: Geo		Water Level	
	Boring Complete Total Depth of Borin	ed 07/28/10 ng = 20.0 ft.				
22						
6						
8						
0						
2						
4						
8						
10	Notes: 1. Stratigraphic 2. Reference to 3. Refer to "Soil	contacts are ba the text of this r Classification S	used on field interpretations and a report is necessary for a proper u System and Key' figure for explar	are approximate. inderstanding of subsurface cond tation of graphics and symbols.	ditions.	
Δ	LANDAU ASSOCIATES	F	Project Striker ent, Washington		Boring DP-01	Figure B-2

							D	P-02		
	SAM	PLE	DATA	١			SOIL PRO	OFILE	GROU	NDWATER
Depth (ft)	Sample Number	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method:Geo Ground Elevation (ft): .		Water Level	
-0 	1	d3		0.0		SP/ SM	Brown, fine SAND wil odor, no sheen) (med [Fill]	th silt and gravel (no dium dense, damp)		
-4 6	2	d3		0.0		SP/ SM	Gray, fine to medium gravel (no odor, no sh dense, moist to wet)	SAND with silt and		
-10	3	d3		0.0		ML	Gray, SILT with clay a odor, no sheen) (med [Native]	and organics (no flum stiff, wet)	Ų ATD	
-12	4	d3		0.0						
-16	5	d3		0.0						
-20	Notes:	1. St 2. Re 3. Re	ratigrap eference efer to "	hic contai e to the te Soil Class	cts are t	pased of report in System	n field interpretations and a is necessary for a proper u n and Key" figure for explar	are approximate. nderstanding of subsurface co ation of graphics and symbols.	ditions.	
Δ	LAN Ass	IDAU SOCI	r ATES		K		ect Striker Vashington	Log of	Boring DP-02	Figure B-3 (1 of 2)

	SAMP	LE [DATA				SOIL PR	OFILE		GR	OUNDWATER
)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo Ground Elevation (ft):			vatel Level	
)					ĬĬ	ML	Gray, SILT with sand (medium stiff, wet)	i (no odor, no sheen)			
	6	d3		0.0		SP/ SM	Gray, fine SAND with sheen) (medium den	n silt (no odor, no ise, wet)			
	7.	Borin	ig Comp	oleted 07	/29/10						
	10	ы ре	:ptii oi E	Boring = 2	24.U II.						
	Notes:	1. Str 2. Re 3. Re	ratigrap eference efer to "{	thic contains	icts are I	based d s report	on field interpretations and, is necessary for a proper m and Key' figure for explar	are approximate. Inderstanding of subsu nation of graphics and	urface condition symbols.	S.	

SAME	PLE I	DATA				SOIL PR	OFILE	GRO	UNDWATER
Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geo</u> Ground Elevation (ft):		Water Level	
1	d3		0.0		SP/ SM	Brown, fine to mediur gravel (no odor, no sl dense, moist to wet)	m SAND with silt and heen) (medium Friil)		
2	d3		35		SP/ SM	Gray, fine to medium gravel (odor, sheen)	SAND with silt and (medium dense, wet)		
3	d3		20		SP/ SM	Brown to gray, fine to silt, clay and gravel ((medium dense, wet)	,		
4	d3								
	otal De	g Comple pth of Bo	ring = 1	6.0 ft.	based o	n field interpretations and a	are approximate.		
	2. Re 3. Re	eference t efer to "So	to the te	xt of this sification		is necessary for a proper un and Key" figure for explar	inderstanding of subsurface nation of graphics and symbo	or Boring DP-03	

Drilling Method: Geoprobe TM Ground Elevation (ft): Public P	Brown, silty, fine SAND with gravel (no odor, no sheen) ML Brown, SiLT with sand and gravel (no odor, no sheen) ML Gray, SiLT with sand and gravel (no odor, no sheen) ML Gray, SiLT with sand and gravel (no odor, no sheen)	SAMP	LE	DATA			SOIL PR	OFILE	GROUNDWATER
2 d3 0.0 ML Brown, SILT with sand and gravel (no odor, no sheen) (medium stiff, wet) [Native] MIL Gray, SILT with sand and gravel (no odor, no sheen) (medium stiff, wet) (Native) SP Gray, Fine to medium SAND with gravel (no odor, no sheen) (medium dense, damp to	Brown, silty, fine SAND with gravel (no odor, no sheen) ML Brown, SiLT with sand and gravel (no odor, no sheen) (medium stiff, wet) ML Gray, SiLT with sand and gravel (no odor, no sheen) ML Gray, SiLT with sand and gravel (no odor, no sheen) ML Gray, SiLT with sand and gravel (no odor, no sheen) (medium stiff, wet) ML Gray, SiLT with sand and gravel (no odor, no sheen) (medium stiff, wet) SP Gray, SiLT with clay (no odor, no sheen) Boring Completed 07/29/10	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	Drilling Method: Geo		Water Level
ML Brown, SILT with sand and gravel (no odor, no sheen) ML Gray, SILT with sand and gravel (no odor, no sheen) SP Gray, Fine to medium SAND with gravel (no odor, no sheen) (medium dense, wet) ML Gray, SILT with clay (no odor, no sheen)	ML Brown, SILT with sand and gravel (no odor, no sheen) (medium stiff, wet) ML Gray, SILT with sand and gravel (no odor, no sheen) (medium stiff, wet) SP Gray, fine to medium SAND with gravel (no odor, no sheen) (medium dense, wet) ML Gray, SILT with clay (no odor, no sheen) Boring Completed 07/29/10						Brown, silty, fine SAN odor, no sheen) (med	ID with gravel (no ilium dense, damp to	
no sheen) (medium stiff, wet) SP Gray, fine to medium SAND with gravel (no odor, no sheen) (medium dense, wet) 3 d3 0.0 TI ML Gray, SILT with clay (no odor, no sheen)	no sheen) (medium stiff, wet) SP Gray, fine to medium SAND with gravel (no odor, no sheen) (medium dense, wet) ML Gray, SILT with clay (no odor, no sheen) Boring Completed 07/29/10	2	d3		0.0	MI	odor, no sheen) (med	d and gravel (no dium stiff, wet)	. ∑ ATD
	Boring Completed 07/29/10 Total Depth of Boring = 12.0 ft.	3	d3		0.0	SF	no sheen) (medium s Gray, fine to medium odor, no sheen) (medium s	SAND with gravel (no lium dense, wet)	
Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate. 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions. 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.			 Re 	ference	to the te:	xt of this rep	ort is necessary for a proper u	nderstanding of subsurface con-	ditions.

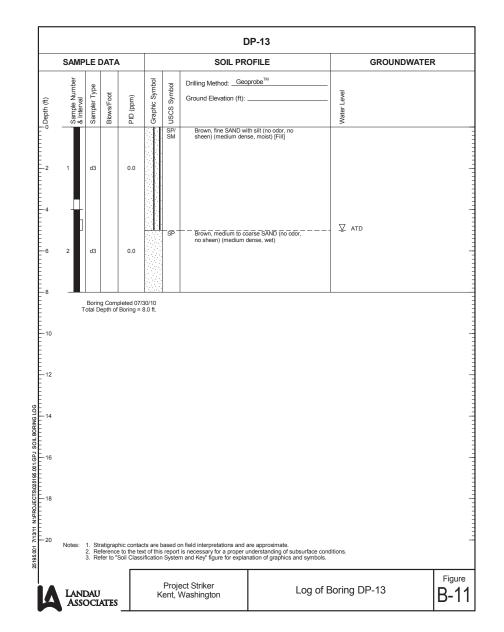
								P-05			
	SAMP	LE [DATA				SOIL PR	OFILE		GROUNDWATER	l l
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo Ground Elevation (ft):		Water Level		
2	1	d3		0.0		SP/ SM	Brown, fine to mediu gravel (no odor, no si dense, damp) [Fill]	n SAND with silt and neen) (medium			
-4	2	d3		0.0		SM SP/ SM	Brown, silty, fine to m gravel (no odor, no si dense, damp) Brown, fine to mediu gravel (no odor, no si dense, moist to wet)	m SAND with silt and			
8	3	d3					-No recovery 8-16 ft		. ∑ ATD		
-12 14	4	d3		_							
-16 18 18 20	Notes:	1. Str	g Complet pth of Bori	contact	ts are t	pased of s report in System	on field interpretations and . is necessary for a proper u m and Key [®] figure for explan	are approximate inderstanding of subsurface con attorn of graphics and symbols.	ditions.		
14	LANI ASS	DAU OCL	ATES _		K	Proje (ent, \	ect Striker Washington	Log of E	Boring DP	-05	Figure B-6

SAME	E D	ATA				SOIL PRO	FILE	GROUNDWATE
Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geopre</u> Ground Elevation (ft):	bbe TM	Water Level
0,00	0)		ш.		SP	Brown, medium SAND odor, no sheen) (loose,	with gravel (no damp) [Fill]	
1	d3		0.0		SP/ SM	Gray, fine SAND with si sheen) (medium dense	t (no odor, no moist to wet)	
2	d3		0.0		ML	Gray, SILT with clay (no (medium stiff, wet) [Nat	odor, no sheen) ve]	Ţ ATD
Notes: 1	. Strat L. Refe L. Refe	tigraphi erence t	c contai	cts are t	pased d report	n field interpretations and are is necessary for a proper und n and Key ^e figure for explanat	approximate. erstanding of subsurface on of graphics and symb	e conditions.

							P-08			
	SAMP	LE DA	ГА			SOIL PR	OFILE		GROUNDWATER	l
Depth (ft)	Sample Number & Interval	Sampler Type Blows/Foot		PID (ppm) Graphic Symbol	USCS Symbol	Drilling Method: Geo Ground Elevation (ft):		Water Level		
2	1	d3	C	1.0	AC SP/ SM	Asphalt Brown, fine to mediu gravel (no odor, no si dense, damp to mois	m SAND with silt and heen) (medium t) [Fiii]			_
6	2	d3	C	1.0	ML	Gray, SILT with clay (medium stiff, wet) [N	(no odor, no sheen) lative]	∑ ATD		_
10	Т	Boring Co otal Depth	mplete of Bori	d 07/29/10 ng = 8.0 ft.						
14										
18	Notes:	Stratigi Refere	raphic c	ontacts are l	based o	on field interpretations and is necessary for a proper i	are approximate.	onditions		
M	LANI				Proje	ect Striker Washington	Inderstanding of subsurface or nation of graphics and symbols	Boring DF	P-08	Figure B-8

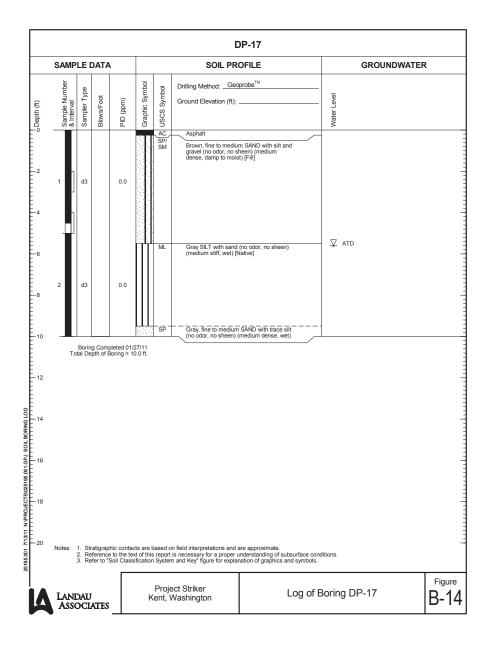
								P-09		
	SAMP	LE	DATA				SOIL PR	OFILE	GROUNDWATER	2
ο Deptn (π)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo		Water Level	
U						AC OD/	Asphalt			
2	1	d3		0.0		SP/ SM SP/ SM	Brown, fine to mediu gravel (no odor, no si dense, damp) [Fill] Gray, fine SAND with odor, no sheen) (med	heen) (medium 		
4		d3		0.0			wet)		Ų atd	
3	3	d3		0.0		ML	Gray, SILT with clay (medium stiff, wet) [N	(no odor, no sheen) lative]		
2					100 101	SP/	— Gray, fine SAND with	silt/no odor. no		
4	4	d3		0.0		SM	sheen) (medium den			
6	То	Borin ital De	g Complepth of Bo	eted 07/ oring = 1	29/10 6.0 ft.					
6 8 8										
	Notes:	1. Str 2. Re 3. Re	ratigraph eference efer to "S	ic contact to the te oil Class	cts are t xt of this sification	pased of report of System	n field interpretations and a is necessary for a proper un and Key" figure for explar	are approximate. Inderstanding of subsurface con nation of graphics and symbols.	ditions.	
Λ	LANI		ATES		K		ect Striker Washington	Log of I	Boring DP-09	Figure B-9

)P-11		
	SAMP	LE	DATA				SOIL PR	OFILE	GROUNDW	ATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo		Water Level	
2	1	d3		0.0		SP/ SM	Brown, fine SAND wi sheen) (medium den [Fill]	th silt (no odor, no se, damp to moist)		
8	3	d3		0.0		ML	Gray, SILT with clay (medium stiff, wet) [N	(no odor, no sheen) lative]	Ţ ATD	
12	4	d3		0.0		SP/ SM	Gray, fine SAND with sheen) (medium den	i silt (no odor, no se, wet)		_
16	То	Borin tal De	g Comp pth of B	leted 07/ oring = 1	/30/10 6.0 ft.	ML	Gray, SILT with sand (medium stiff, wet)	(no odor, no sheen)		-
-20	Notes:	1. Str 2. Re 3. Re	ratigraph eference efer to "S	nic conta to the te soil Class	cts are lext of this	based of s report n Syster	in field interpretations and a is necessary for a proper un and Key" figure for explai	are approximate. Inderstanding of subsurface of nation of graphics and symbol	onditions. S.	Figure
A	LANI ASSO	DAU DCL	ATES		k		ect Striker Washington	Log of	Boring DP-11	B-10



								P-15		
	SAMP	LE I	DATA				SOIL PR	OFILE	GROUNDWAT	ER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo		Water Level	
						SP	Brown, medium to co gravel (no odor, no si dense, damp) [Fill]	oarse SAND with heen) (medium		_
-2 	1	d3		0.0		SP	Gray, fine to medium (no odor, no sheen) (to moist)	SAND with trace silt medium dense, damp		-
						SP/ SM	odor, no sheen) (med wet)		- -	
8	2	d3		0.0			Gray, SILT with clay (medium stiff, wet) [N	(no odor, no sheen) Aative]	Ţ ATD	-
10 12	3	d3		0.0		ML	Gray, sandy SILT (no (medium stiff, wet)	odor, no sheen)		
-14	4	d3		0.0		SP/ SM	Gray, fine to medium odor, no sheen) (med	SAND with silt (no line dense, wet)		-
-16 	To	Borin tal De	g Comple pth of Bo	eted 07/ ring = 1	/30/10 6.0 ft.					
	Notes:	1. Str 2. Re 3. Re	ratigraphi eference t efer to "So	c conta o the te iil Class	cts are l ext of this sification	pased of report	in field interpretations and a is necessary for a proper un and Key" figure for explar	are approximate. inderstanding of subsurface con artion of graphics and symbols.	ditions.	-
Δ	LANI ASS	DAU DCL	ATES		K		ect Striker Washington	Log of E	Boring DP-15	Figure B-12

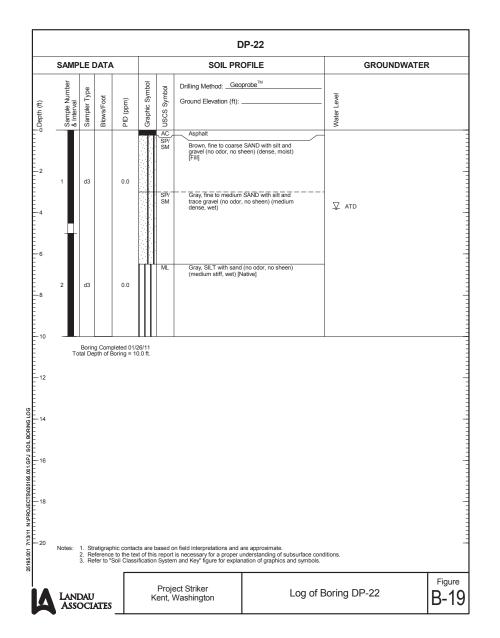
SAM	PLE	DATA				SOIL PRO	OFILE	GRO	UNDWATER
Sample Number	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo		Water Level	
1	d3		0.0		SP/ SM SP/ SM SP/ SP/ SMJ SP/ SMJ	Brown, medium to co (no odor, no sheen) (damp) [Fill] Gray, fine to medium gravel (no odor, no st dense, damp) Gray, fine SAND with sheen) (medium den gravel (no odor, no st dense, damp) Gray, fine to medium gravel (no odor, no st dense, damp to mois brown, fine to medium gravel (no odor, no st dense, moist to wet)	SAND with silt and heen) (medium as it (slight odor, no se, damp) (SAND with silt and heen) (medium as the sen) (medium as the		
3	d3		0.0		ML SP/ SM	Gray, SILT with clay (medium stiff, moist the stiff, mois	to wet) [Native]	¥ ATD	
4	- d3		0.0		ML SP/ SM	Gray, SILT with clay isheen) (medium stiff, Gray, fine SAND with sheen) (medium dens	silt (no odor, no		
Notes:	Total De	epth of B	oring = 1	6.0 ft.	ased o report Systen	n field interpretations and a is necessary for a proper u	are approximate. Inderstanding of subsurface o nation of graphics and symbol	onditions.	
TAN	NDAU	r				ect Striker Vashington	Log of	Boring DP-16	



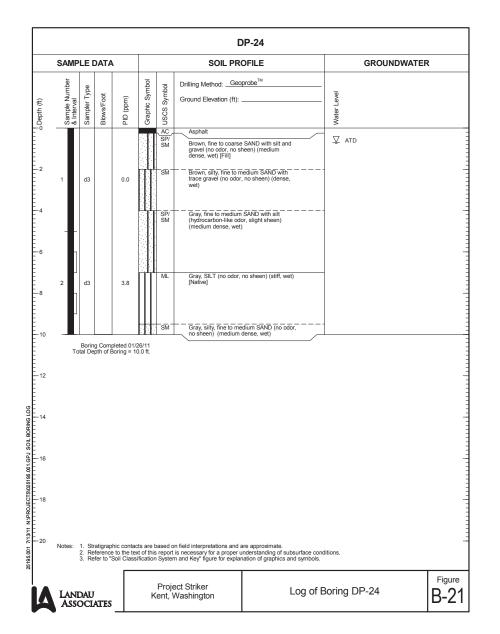
SAIVII	PLE I	DATA				SOIL PROFILE		GROUNDWATE
Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft):		Water Level
1	d3		0.0		SP/ SM	Brown, fine to medium SAND with gravel, and trace organics (no odo sheen) (medium dense, moist) [Fill	, no	
					SM	Gray, silty, fine to medium SAND (in o sheen) (medium dense, wet) Gray SILT (no odor, no sheen) (mestiff, wet) [Native]		Ţ ATD
2	d3		0.0		SP/ SM	Gray, fine SAND with silt (no odor, sheen) (medium dense, wet)	no	
Т	Borin otal De	ng Comp epth of E	oleted 01/. Boring = 1	27/11 0.0 ft.				
Т	Borin otal De	ng Comp	oleted 01// oring = 1	27/11 0.0 ft.				
Т	Borin	ig Comp	oleted 01/1/ Boring = 1	27/11 0.0 ft.				
	1 St	rationapara	hic contain	cts are b	ased o report Systen	n field interpretations and are approxima is necessary for a proper understanding n and Key [*] figure for explanation of graph	e. of subsurface condit ics and symbols.	tions.

							С	P-19		
	SAMP	LE I	DATA				SOIL PR	OFILE	GROUNDWATE	R
ODepth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method:Geo Ground Elevation (ft):		Water Level	
2	1	d3		0.0		SP/SM	Asphalt Brown, fine to medium gravel (no odor, no si dense, moist) filii] Gray, fine to medium gravel (no odor, no si Brown, fine to medium trace gravel (no odor moist to wet) Gray, SilLT with sand (medium stiff to stiff,	SAND with silt and neen) (dense, moist) in SAND with silt and no sheen) (dense, moist) in SAND with silt and no sheen) (dense,	Ų atd	
12	То	Borintal De	g Comp	oleted 01/ loring = 1	27/11 0.0 ft.					-
IA	LANI ASSO	2. Re 3. Re	eference efer to "S	hic conta to the te Soil Class	ext of this sification	Proje	n field interpretations and a is necessary for a proper u n and Key' figure for explar ect Striker Washington	inderstanding of subsurface cor nation of graphics and symbols.	Boring DP-19	Figure B-16

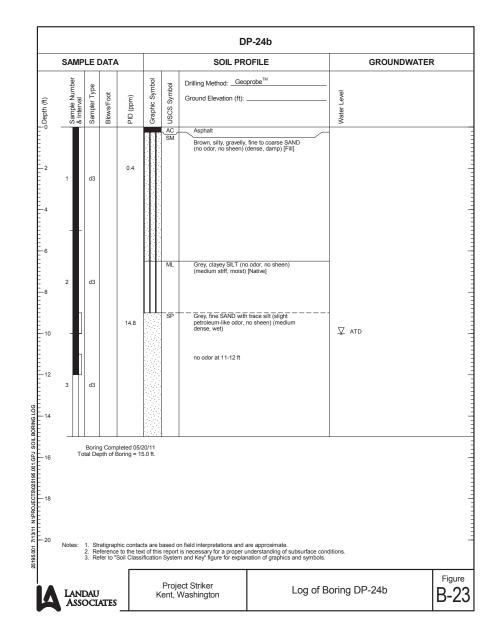
							С	P-21			
	SAMP	LE D	ATA				SOIL PR	OFILE		GROUNDWATER	2
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo		Water Level		
2	1	d3	C	0.0		SM SP/ SM	Dark Brown, organic medium SAND (orga sheen) (medium den Brown, fine to medium concrete fragments a no sheen) (dense, mo sheen) (dense, mo odor, no sheen) (m SAND with silt, and and gravel (no odor, loist to wet)			
6	2	d3	(0.0		SM	Gray, silty, fine SANE (medium dense, wet	(no odor, no sheen)			-
112 100 100 100 100 100 100 100 100 100	Notes:	1. Strate	Complete pth of Bori	contact	ts are b	ased c reportri	in field interpretations and is necessary for a proper in and Key' figure for explai	are approximate. inderstanding of subsurface co action of graphics and symbols	onditions.		
1	LANI Ass	DAU OCIA	ITES _				ect Striker Washington	Log of	Boring D	P-21	Figure B-18



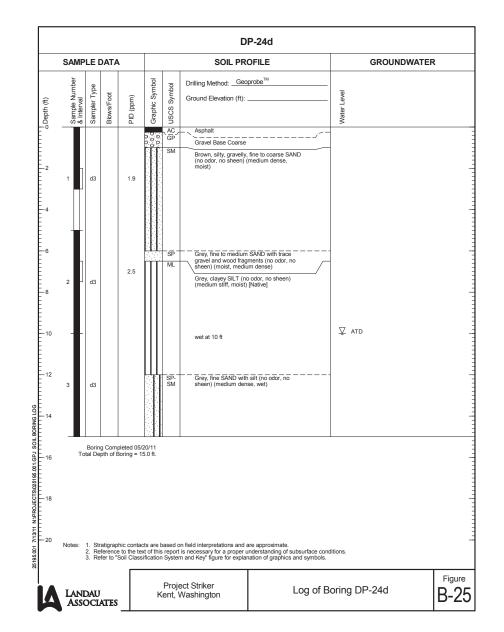
							С	P-23			
	SAM	PLE	DATA				SOIL PR	OFILE		GROUNDWATER	₹
Depth (ft)	Sample Number	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo		Water Level		
-2						AC SP/ SM	Asphalt Brown, fine to coarse gravel (no odor, no si dense, damp) [Fill]	neen) (medium			- - - - -
-4	1	d3		0.0		SP/ SM	Gray, fine to medium trace gravel (no odor dense, moist)				-
6	2	d3		0.0			No recovery, rock in	sampler — — — — — — — — — — — — — — — — — — —	∑ ATD		- - - - - - - - - - - - - - - - - - -
8						SM	Gray, silty, fine to me no sheen) (medium o	dium SAND (no odor, lense, wet) [Native]			
-12		Borir Fotal De	ng Comple epth of Bo	ted 01/ ring = 1	/26/11 IO.0 ft.						-
SOIL BORING LOG											-
NAPROJECISW25195.001.GPJ											-
25195.001 7/13/11	Notes:	1. St 2. Re 3. Re	ratigraphio eference to efer to "So	conta the te il Class	ects are lext of this	based o s report n Syster	on field interpretations and a is necessary for a proper unand Key" figure for explain	are approximate. inderstanding of subsurface cor nation of graphics and symbols.	nditions.		
14	LAN As	NDAU SOCI	I ATES _		k		ect Striker Vashington	Log of I	Boring DI	P-23	Figure B-20



SAMF	PLE I	DATA				SOIL PR	OFILE	GROUNDWAT	ER
Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geo</u> Ground Elevation (ft):		Water Level	
1	d3		8.5	0 0 0 0 0 0 0	AC , GP	Asphalt	e to coarse SAND with neen) (medium	▼ ATD	
2	d3		38.7	2000	GM ML	Brown, silty, sandy, n GRAVEL (no odor, ni dense, damp) Grey clayey SILT (pe sheen) (medium stiff	o sheen) (medium troleum-like odor, no , moist) [Native]		
3	d3		40.9		SP- SM	Strongest petroleum- Grey, fine SAND with sheen) (medium den	silt (no odor, no	↓ ATD	
	1. St 2. Re	pth of B	to the te	5.0 ft. cts are baxt of this	report	in field interpretations and d is necessary for a proper u n and Key' figure for explar	are approximate. Inderstanding of subsurfaces nation of graphics and symb	e conditions.	
Lan Ass	DAU	r				ect Striker Vashington	Logo	of Boring DP-24a	



							D	P-24c		
	SAMP	LE [DATA				SOIL PR	OFILE	GROUND	WATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo		Water Level	
	2	d3		2.1	0 0 0 0 0 0	SM SM	SAND (no odor, no s	ily, silty, fine to coarse heen) (dense, damp)	∑ atd	
12 14 15 16 18 18 18 18 18 18 18 18 18 18 18 18 18	Nates:	1. Sit	g Completing of Bor	. contain	cts are b	wased o	in field interpretations and of is necessary for a proper u m and Key [*] figure for explar	are approximate. Independent of subsurface concation of graphics and symbols.	litions.	Figure
14	LANI Ass	DAU OCL	ATES		K	Proje ent, \	ect Striker Washington	Log of B	oring DP-24c	B-24



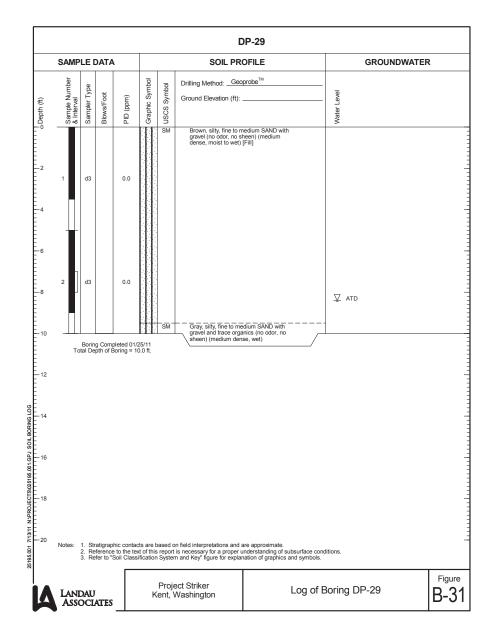
							С	P-25			
	SAME	LE I	DATA				SOIL PR	OFILE		GROUNDWATER	2
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo Ground Elevation (ft):		Water Level		
2	2	d3		0.0		AC SP/ SM	Asphalt Brown, fine to coarse gravel (no odor, no si dense, moist to wet) Geotextile fabric at 8 8 ft due to pea gravel 15 ft west (See DP-2 excavation fill area.	neen) (medium Fill	▼ ATD		
10 10 11 12 10 11 11 11 11 11 11 11 11 11 11 11 11		1 St	g Complete	c contain	cts are b	pased of reports	on field interpretations and, is necessary for a proper i m and Key' figure for explat	ure approximate, nderstanding of subsurface co aution of graphics and symbols	nditions.		Figure
14	LAN ASS	DAU OCL	ATES _		K		ect Striker Washington	Log of	Boring DI	P-25	B-26

	LE DAT	A		SOIL PROF	ILE	GROUNDWATER
Sample Number & Interval	Sampler Type Blows/Foot	PID (ppm)	Graphic Symbol USCS Symbol	Drilling Method: Geoprol Ground Elevation (ft):	Mater Level	
1	d3	0.0	AC SP/ SM	Asphalt Brown, fine to coarse SA gravel (no odor, no sheer dense, moist to wet) [Fill]	n) (medium	ATD
-	d3	6.1	SM	Gray, silty, fine to mediur (hydrocarbon-like odor, n (medium dense, wet)	o sheen)	
			SM	Gray, silty, fine SAND (no (medium dense, wet)	o odor, no sheen)	
To	Boring Con tal Depth of	Boring = 1	126/11 10.0 ft.			
Notes:	Stratigram Reference Reference Reference Reference	phic conta ce to the te "Soil Class	cts are based of this repondat of this repondation Syste	on field interpretations and are is necessary for a proper unde m and Key [*] figure for explanatic	approximate. rstanding of subsurface conditions. n of graphics and symbols.	

								P-26			
	SAMP	LE D	ATA				SOIL PR	OFILE	GRO	DUNDWATER	l
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo		Water Level		
0 2 2 4 4	1	d3		0.0		SP/ SM	Brown, fine to mediu gravel, and organics (cose, moist to wet)	(no odor, no sheen)	⊈ ATD		
8	2	d3		0.0		SP/ SM	Gray, fine to medium trace gravel (no odor dense, wet) [Native] Gray, SILT with sand (medium stiff, wet) [N	, no sheen) (medium			
12	To	Boring otal Dep	Comple oth of Bor	ed 01/2 ing = 10	:5/11 :.0 ft.		(medium stiff, wet) [h	ativej	'		
14											-
18	Notes:	1 Stro	atigraphic	contact	ts are h	nased o	n field interpretations and a	are annovimate			
	LANI ASSO	2. Ref 3. Ref	erence to er to "Soi	the text	t of this fication	Proje	n field interpretations and a is necessary for a proper un n and Key" figure for explain ect Striker Washington	inderstanding of subsurface c nation of graphics and symbol	Boring DP-26	5	Figure B-28

SAMI	PLE	DATA				SOIL PR	OFILE		GROUNDWATER
Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo		Water Level	
1	d3		0.0		SP/ SM	Brown, fine to mediu gravel, and organics (medium dense to de [Fill]	m SAND with silt. (no odor, no sheen) ense, moist to wet)		
2	d3		0.0		ML	Gray, SILT with sand	! (no odor, no sheen)	Ţ ATD	
3	d3		0.0			(medium stiff, moist	to wer) [valive]		
Т	Borir otal De	ng Comp	leted 01/2 oring = 1	25/11 5.0 ft.	ML	Brown, organic rich, sheen) (medium stiff	Silt (organic odor, no ; moist)		
Notes:	1. St 2. Re 3. Re	ratigraph eference efer to "S	nic contact to the tes Soil Class	ets are b et of this ification	ased of report Syster	on field interpretations and is necessary for a proper unand Key'' figure for explai	are approximate. understanding of subsurfac nation of graphics and sym	ce conditions.	
LAN	DAU	J ATES		K	Proje	ect Striker Vashington	Log	of Boring D)P-27

							С	P-28			
	SAM	PLE I	DATA				SOIL PR	OFILE	G	ROUNDWATER	!
Depth (ft)	Sample Number	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo Ground Elevation (ft):		Water Level		
2	1	d3		0.0		SM	Brown, silty, fine to n gravel and trace org sheen) (medium den Gray, fine to medium gravel and trace silt (medium dense, wet	nics (no odor, no se, moist) [Fill] SAND with trace no odor, no sheen)	∇ atd		
8	2	d3		0.0					₹ VID		
-12		Borir Γotal De	ng Complet epth of Bori	ed 01/2 ng = 1	25/11 0.0 ft.						
POT PORING TO											-
NAPROJECTS/025195.001.GPJ											
25195,001 7/13/11 NAPROJECTS(Notes:	1. St 2. Re 3. Re	ratigraphic eference to efer to "Soi	contact the test	cts are b xt of this ification	ased of report System	on field interpretations and a is necessary for a proper un and Key' figure for explan	are approximate. nderstanding of subsurface cond ation of graphics and symbols.	litions.		
1	LAN ASS	IDAU SOCI	I ATES				ect Striker Washington	Log of E	Soring DP-2	28	Figure B-30

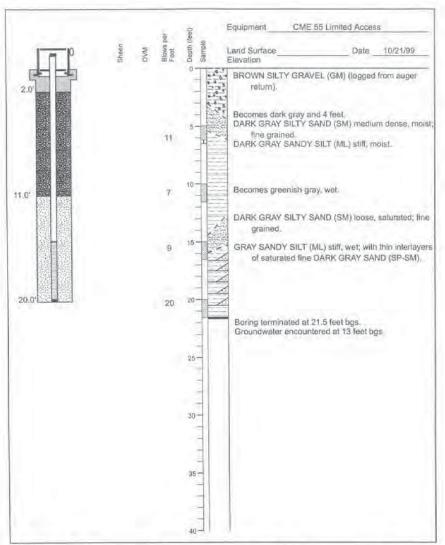


								P-30		
	SAMP	LE C	ATA				SOIL PR	OFILE	GROUNDWATER	₹
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo		Water Level	
2	1	d3		0.0		SP/ SM	Brown, fine to mediul grawel, and organics (medium dense, moi	(no odor, no sheen)	∑ ATD	
8	2	d3		0.0		SP/ SM	Gray, fine to medium trace gravel (no odor dense, wet) Gray, sandy, SILT (n (medium stiff, wet) [1	, no sheen) (medium	-	
12	Тс	Boring	g Comple pth of Bo	eted 01/i ring = 11	25/11 0.0 ft.					
18	Notes:	2. Re 3. Re	ference to fer to "So	c contact o the tes iil Class	xt of this ification	Proje	n field interpretations and a is necessary for a proper in and Key' figure for explait ect Striker Washington	inderstanding of subsurface co nation of graphics and symbols	nditions. Boring DP-30	Figure B-32

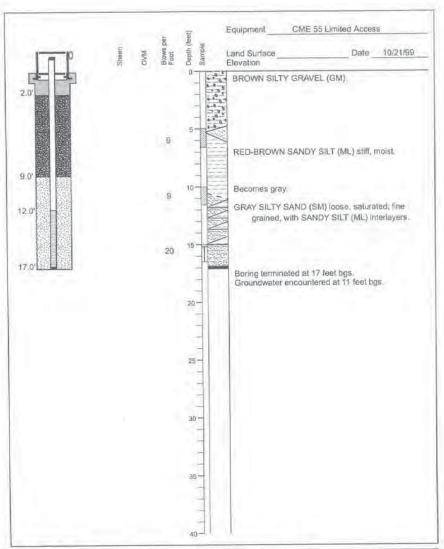
							ILE	GROUNDWA	TER
Sample Number	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geopro	obe TM	Water Level	
					SP/ SM	Brown, fine to medium \$ gravel (no odor, no shee [Fill]	n) (dense, moist)		
2	d3		0.0		SM	Gray, sitly, fine SAND w (no odor, no sheen) (me (Native)	ith trace organics dium dense, wet)		
								∑ ATD	
Notes:	1. SI 2. R 3. R	rratigrapg eference, or "1	hic contains	cts are t t of this	pased d report Syster	n field interpretations and are is necessary for a proper und n and Key' figure for explanat	approximate. erstanding of subsurface on of graphics and symb	r conditions.	

								P-32		
	SAMP	LE C	ATA				SOIL PR	OFILE	GROUNDWA	TER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo		Water Level	
2	1	d3		0.0		SP/ SM	Brown, fine to mediu gravel, and trace org sheen) (medium den	anics (no odor, no		
6	2	d3		0.0		SP/ SM	Gray, fine to medium trace organics (no oc (medium dense, moi	lor, no sheen)	∑ atd	
-8	_	Boring	g Comple	eted 01/2	26/11		Mottling at 7.5 ft			
10	Т	otal Di	epth of B	oring = 8	8.0 ft.					
-10 -										
12										=
- - - -14										
16										
_ _ _ 18										
E 20		 Re' 	ference to	o the tex	ct of this	report	on field interpretations and a is necessary for a proper to and Key" figure for explai	are approximate. Inderstanding of subsurface lation of graphics and symbol	conditions. ols.	
	LANI ASSO		ATES _		K		ect Striker Washington	Log o	of Boring DP-32	Figure B-34

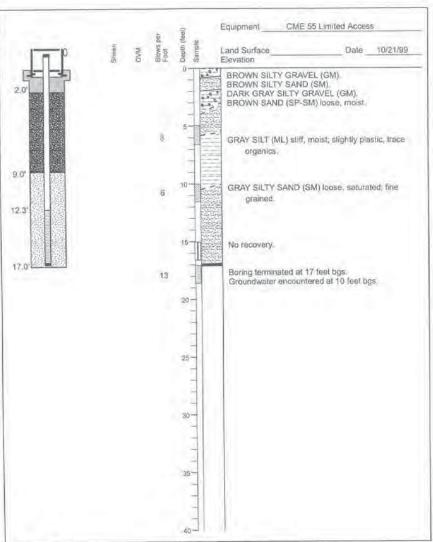
								P-33		
	SAMP	LEI	DATA				SOIL PR	OFILE	GROUNDWATE	R
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geo		Water Level	
2	1	d3		0.0		ML	Brown, SILT with org sheen) (medium stiff [Native]	anics (no odor, no damp to moist)		_
	2	d3		0.0		SP/ SM	— Gray with red motiting SAND with sit and tr odor, no sheen) (med	ace organics (no		
-10 -12	Т	Borin otal D	g Compl epth of E	eted 01/i	26/11 8.0 ft.					
-14 -16										
-18										_
-20	Notes:	1. Str 2. Re 3. Re	ratigraphi ference t fer to "So	c contactor the test oil Class	cts are I kt of this ification	based o s report n Syster	on field interpretations and a is necessary for a proper u m and Key" figure for explar	are approximate. Inderstanding of subsurface of nation of graphics and symbo	conditions. Is.	-
Δ	LANI ASSO	DAU OCL	ATES		K		ect Striker Washington	Log o	f Boring DP-33	Figure B-35



AGI		Bo	lonitoring eing/Kent Gun Kent, Washingt			D3
4327317wl.cdr	14,327,317	PJS	1/19/00	mac -	REMSER	DATE



AGI		Log of Monitoring Well MW1 Boeing/Kent Gun Club Kent, Washington					
4327317wLodi	PROJECT NO. 14.327.317	ORAWN PJS	1/19/00	M15/	REVISED	DATE	



AGI		Во	lonitoring leing/Kent Gun Kent, Washingt	Club		D5
TECHNOLOGIES	PROJECT NO.	DRAWN	DATE	APPROVED	REVISEU	DATE
4327317wl.cdr	14,327.317	PJS	1/19/00	mec		



This is a report of the activities of a licensed Washington well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered.

	rnet	

Type of Well: Geotech Soil Boring Number of Wells: 1 Type of Work: New Method: DirectPush

Drilling Start Date: 6/26/2017 Drilling Completion Date: 6/26/2017 Received by Ecology: 6/26/2017 3:04 PM

Dimensions:

Borehole Diameter: 1.5 in Depth of completed well: 60 ft 4 in

Construction Details

Casings:

N/A

From Depth To Depth Type Diameter Stickup

Perforations:

Type	Size	Total Perforations	From Depth	To Depth
N/A				

Screens:

N/A

screens.				
Manufacturer	Type		From Depth	To Dep

Sand/Gravel Packings:

Material	From Depth	To Depth
N/A		

Individual Well Details

Well	Driller's Identifier	Water Level
1		Dry Hole

Additional Well Construction Information

None

Construction Notice of Intent Number: SE62570 Decommissioning Notice of Intent Number: AE43710 Unique Ecology Well ID Tag Number: N/A Property Owner Name: Iron Mountain Storage Property Owner Address: 19826 S 196th St, Kent, WA 98032 Well Location: Well Street Address: City, State, Zip: WA County: King

Township: 22N Range: 4E Section: 2 in the SE 1/4 of the NW 1/4

Well Head Elevation: Elevation Datum:

Elevation Method:

Latitude (DD): Longitude (DD):

Datum:

Horizontal Coordinate Collection Method:

Tax parcel No.:

		Lithology
Layer: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information.		
From	To	Material
0 ft 0 in	60 ft 4 in	Unconsolidated Sediments

Well Construction Certification: I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards. Material used and information reported above are true to the best of my knowledge and belief.

Driller/Engineer/Trainee Printed Name: KEITH BROWN	Drilling Company: Northwest Cone Exploration
Driller or trainee License Number: 2174	Address:
If trainee, Driller's License Number:	City, State, Zip:

RESOURCE PROTECTION WELL REPORT



This is a report of the activities of a licensed Washington well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered.

Decommissioning

Type of Well: Geotech Soil Boring Number of Wells: 1 Type of Work: New Method: DirectPush

Drilling Start Date: 6/26/2017 Drilling Completion Date: 6/26/2017 Received by Ecology: 6/26/2017 3:04 PM

Dimensions:

Diameter of borehole before decommissioning: 1.5 in Well depth before decommissiong: 60 ft 4 in

Construction Details

Casings:

On

From Depth To Depth Type Diameter Stickup

Perforations:

Type Size Total From To Perforations Depth Depth

Screens:

Manufacturer Type Dia- Slot From To meter Size Depth Depth

Sand/Gravel Packings:

Material From To Depth Depth

N/A

NOT

of

Department

The

Individual Well Details

Well Driller's Identifier Decom Sealing Materials

1 Bentonite Slurry

Additional Well Decommissioning Information

None

Construction Notice of Intent Number: SE62570

Decommissioning Notice of Intent Number: AE43710

Unique Ecology Well ID Tag Number: N/A Property Owner Name: Iron Mountain Storage

Property Owner Address: 19826 S 196th St, Kent, WA 98032

Well Location:

Well Street Address: City, State, Zip: WA

County: King

Township: 22N Range: 4E Section: 2 in the SE 1/4 of the NW 1/4

Well Head Elevation:

Elevation Datum:

Elevation Method:

Latitude (DD): Longitude (DD):

Datum:

Horizontal Coordinate Collection Method:

Tax parcel No.:

Lithology Layer: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information. From To Material 0 ft 0 in 60 ft 4 in Unconsolidated Sediments

Driller/Engineer/Trainee Printed Name: KEITH BROWN	Drilling Company: Northwest Cone Exploration
Driller or trainee License Number: 2174	Address:
If trainee, Driller's License Number:	City, State, Zip:



This is a report of the activities of a licensed Washington well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered.

	ıction

Type of Well: Environmental Investigation - Water Sampling Number of Wells: 5

Number of Wells: 5 Type of Work: New Method: DirectPush

Drilling Start Date: 12/14/2015 Drilling Completion Date: 12/14/2015 Received by Ecology: 2/9/2016 1:14 PM

Dimensions:

Borehole Diameter: 2.25 in Depth of completed well: 20 ft 0 in

Construction Details

Casings:

N/A

From Depth To Depth Type Diameter Stickup

Perforations:

Type	Size	Total Perforations	From Depth	To Depth
NI/A				

creens:

creens.				
/Janufacturer	Type		From Depth	To Depth

Sand/Gravel Packings:

Duna, Gruver rue.	5	
Material	From	To
	Depth	Depth
N/A		

Individual Well Details

weii	Driller's Identifier	water Level
1	wb1	Static Level at: 8 ft 0 in
2	wb2	Static Level at: 8 ft 0 in
3	wb3	Static Level at: 8 ft 0 in
4	wb4	Static Level at: 8 ft 0 in
5	wh5	Static Level at: 8 ft 0 in

Additional Well Construction Information

None

Construction Not	ice of Intent Number: EE05865
Decommissioning	Notice of Intent Number: AE35276
Unique Ecology V	Vell ID Tag Number: N/A
Property Owner N	ame: Little Deli Mart
Property Owner A	ddress: 19243 84th Ave S, Kent, WA 98031
Well Location:	
Well Street Addre	ss: 19243 84th Ave S
City, State, Zip: K	ent, WA, 98031
County: King	
Township: 22N R	ange: 4E Section: 1 in the NW 1/4 of the NW 1/4
Well Head Elevati	on:
Elevation Datum:	
Elevation Method	
Latitude (DD):	Longitude (DD):

Horizontal Coordinate Collection Method:

Tax parcel No : 1253700211

		Lithology
Layer: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information.		
From	To	Material
0 ft 0 in	20 ft 0 in	Fine to silty sands

Well Construction Certification: I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards. Material used and information reported above are true to the best of my knowledge and belief.

Driller/Engineer/Trainee Printed Name: CHRISTOPHER ROSS	Drilling Company: C/O ERI
Driller or trainee License Number: 3018	Address: 815 INDUSTRY DRIVE
If trainee, Driller's License Number:	City, State, Zip: TUKWILA, WA, 98188

RESOURCE PROTECTION WELL REPORT



This is a report of the activities of a licensed Washington well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered.

Decommissioning

Type of Well: Environmental Investigation - Water Sampling

Number of Wells: 5 Type of Work: New Method: DirectPush

Drilling Start Date: 12/14/2015 Drilling Completion Date: 12/14/2015 Received by Ecology: 2/9/2016 1:14 PM

Dimensions:

Diameter of borehole before decommissioning: 2.25 in Well depth before decommissiong: 20 ft 0 in

Construction Details

Casings:

From Depth To Depth Type Diameter Stickup

Perforations:

Type Size Total From To Perforations Depth Depth N/A

Screens:

Data

NOT

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Manufacturer Type Dia- Slot From To meter Size Depth Depth

Sand/Gravel Packings:

Material From To Depth Depth

N/A

Individual Well Details

Well	Driller's Identifier	Decom Sealing Materials
1	wb1	Bentonite
2	wb2	Bentonite
3	wb3	Bentonite
4	wb4	Bentonite
5	wb5	Bentonite

Additional Well Decommissioning Information

None

Construction Notice of Intent Number: EE05865
Decommissioning Notice of Intent Number: AE35276

Unique Ecology Well ID Tag Number: N/A Property Owner Name: Little Deli Mart

Property Owner Address: 19243 84th Ave S, Kent, WA 98031

Well Location:

Well Street Address: 19243 84th Ave S City, State, Zip: Kent, WA, 98031

County: King

Township: 22N Range: 4E Section: 1 in the NW 1/4 of the NW 1/4

Well Head Elevation: Elevation Datum:

Elevation Method:

Elevation Method:

Latitude (DD): Longitude (DD):

Datum:

Horizontal Coordinate Collection Method:

Tax parcel No.: 1253700211

Lithology Layer: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information. From To Material 0 ft 0 in 20 ft 0 in Fine to silty sands

Driller/Engineer/Trainee Printed Name: CHRISTOPHER ROSS	Drilling Company: C/O ERI
Driller or trainee License Number: 3018	Address: 815 INDUSTRY DRIVE
If trainee, Driller's License Number:	City, State, Zip: TUKWILA, WA, 98188



This is a report of the activities of a licensed Washington well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered.

	netion

Type of Well: Geotech Soil Boring

Number of Wells: 5 Type of Work: New Method: DirectPush

Drilling Start Date: 10/4/2016 Drilling Completion Date: 10/4/2016 Received by Ecology: 11/28/2016 12:50 PM

Dimensions:

Borehole Diameter: 1.5 in

Depth of completed well: 50 ft 0 in

Construction Details

Casings:

N/A

From Depth To Depth Type Diameter Stickup

Perforations:

Type	Size	Total Perforations	From Depth	To Depth
N/A				

Screens:

Manufacturer	Type		From Depth	To Depth

Sand/Gravel Packings:

	9	
laterial	From Depth	To Depth

Individual Well Details

Well	Driller's Identifier	Water Level
1	CPT-01	Dry Hole
2	CPT-02	Dry Hole
3	CPT-03	Dry Hole
4	CPT-04	Dry Hole
5	CPT-05	Dry Hole

Additional Well Construction Information

Water table not determined

Construction Notice of Intent Number: SE59794

Decommissioning Notice of Intent Number: AE39577

Unique Ecology Well ID Tag Number: N/A

Property Owner Name: Segale Properties

Property Owner Address: PO Box 88028, Tukwila, WA 98138

Well Location:

Well Street Address: City, State, Zip: Kent, WA

County: King

Township: 22N Range: 4E Section: 2 in the SW 1/4 of the NE 1/4

Well Head Elevation:

Elevation Datum:

Elevation Method:

Latitude (DD): Longitude (DD):

Datum:

Horizontal Coordinate Collection Method:

Tax parcel No.:

Lithology

Layer: Describe by color, character, size of material and structure, and
the kind and nature of the material in each layer penetrated, with at
least one entry for each change of information.

From	To	Material
0 ft 0 in	50 ft 0 in	Unconsolidated sediments

Well Construction Certification: I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards. Material used and information reported above are true to the best of my knowledge and belief.

Driller/Engineer/Trainee Printed Name: KEITH BROWN	Drilling Company: IN SITU ENGINEERING
Driller or trainee License Number: 2174	Address: 6232 195TH AVE SE
If trainee, Driller's License Number:	City, State, Zip: SNOHOMISH, WA, 98290

RESOURCE PROTECTION WELL REPORT



This is a report of the activities of a licensed Washington well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered.

Decommissioning

Type of Well: Geotech Soil Boring

Number of Wells: 5 Type of Work: New Method: DirectPush

Drilling Start Date: 10/4/2016 Drilling Completion Date: 10/4/2016 Received by Ecology: 11/28/2016 12:50 PM

Dimensions:

Diameter of borehole before decommissioning: 1.5 in Well depth before decommissiong: 50 ft 0 in

Construction Details

Casings:

On

Data

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From Depth To Depth Type Diameter Stickup

Slot From

Denth

meter Size Depth

Perforations:

Type Size Total From To Perforations Depth Depth N/A

Screens: Manufacturer

Type

Sand/Gravel Packings:

Material From To
Depth Depth

N/A

Individual Well Details

 Well
 Driller's Identifier
 Decom Sealing Materials

 1
 CPT-01
 Bentonite

 2
 CPT-02
 Bentonite

 3
 CPT-03
 Bentonite

 4
 CPT-04
 Bentonite

 5
 CPT-05
 Bentonite

Water table not determined

water table not determined

Construction Notice of Intent Number: SE59794

Decommissioning Notice of Intent Number: AE39577

Unique Ecology Well ID Tag Number: N/A

Property Owner Name: Segale Properties

Property Owner Address: PO Box 88028, Tukwila, WA 98138

Well Location:

Well Street Address:

City, State, Zip: Kent, WA

County: King

Township: 22N Range: 4E Section: 2 in the SW 1/4 of the NE 1/4

Well Head Elevation:

Elevation Datum:

Elevation Method:

Elevation Method.

To

Latitude (DD): Longitude (DD):

Datum: Horizontal Coordinate Collection Method:

Tax parcel No.:

Lithology

Layer: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information.

Material

50 ft 0 in	Unconsolidated sediments
	50 ft 0 in

Driller/Engineer/Trainee Printed Name: KEITH BROWN	Drilling Company: IN SITU ENGINEERING
Driller or trainee License Number: 2174	Address: 6232 195TH AVE SE
If trainee, Driller's License Number:	City, State, Zip: SNOHOMISH, WA, 98290



This is a report of the activities of a licensed Washington well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered.

	uction

Type of Well: Geotech Soil Boring Number of Wells: 3 Type of Work: New

Method: DirectPush
Drilling Start Date: 5/3/2017
Drilling Completion Date: 5/3/2017

Received by Ecology: 5/8/2017 3:37 PM

Dimensions:

Borehole Diameter: 1.5 in

Depth of completed well: 50 ft 6 in

Construction Details

Casings:

N/A

From Depth To Depth Type Diameter Stickup

Perforations:

Type	Size	Total Perforations	From Depth	To Depth
N/A				

Screens:

Manufacturer Type Dia- Slot From To meter Size Depth Depth

Sand/Gravel Packings

	-	
faterial	From	To
	Denth	Denth

N/A

Individual Well Details

Well	Driller's Identifier	Water Level
1		Dry Hole
2		Dry Hole
3		Dry Hole

Additional Well Construction Information

None

Construction Notice of Intent Number: SE61958 Decommissioning Notice of Intent Number: AE42730 Unique Ecology Well ID Tag Number: N/A

Property Owner Name: Segale Properties
Property Owner Address: PO Box 88028, Tukwila, WA 98138

Well Location:

Well Street Address: City, State, Zip: WA County: King

Township: 22N Range: 4E Section: 11 in the NE 1/4 of the NW 1/4

W. H.Y. A.P.L.	
Well Head Elevation: Elevation Datum:	
Elevation Method:	

Latitude (DD): Longitude (DD):

Horizontal Coordinate Collection Method:

Tax parcel No.:

Lithology Layer: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer nenetrated, with at

From	To	Material
0 ft 0 in	50 ft 6 in	Unconsolidated sediments

Well Construction Certification: I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards. Material used and information reported above are true to the best of my knowledge and belief.

Company: Northwest Cone Exploration
te, Zip:

RESOURCE PROTECTION WELL REPORT



This is a report of the activities of a licensed Washington well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered.

Decommissioning

Type of Well: Geotech Soil Boring Number of Wells: 3

Type of Work: New Method: DirectPush Drilling Start Date: 5/3/2017 Drilling Completion Date: 5/3/2017 Received by Ecology: 5/8/2017 3:37 PM

imensions:

Diameter of borehole before decommissioning: 1.5 in Well depth before decommissiong: 50 ft 6 in

Construction Details

Casings:

On

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From Depth To Depth Type Diameter Stickup

Parforations

Size	Total Perforations	From	To Depth		
	1 CHOIAHOUS	Берш	Берш		
			Size Total From		

Screens:

Manufacturer	Type		From Depth	To Deptl

Bentonite Slurry

Sand/Gravel Packings:

Material	From	To
	Depth	Depth

N/A

Individual Well Details

Well	Driller's Identifier	Decom Sealing Materials	
1		Bentonite Slurry	
2		Bentonite Slurry	

Additional Well Decommissioning Information

None

Construction Notice of Intent Number: SE61958 Decommissioning Notice of Intent Number: AE42730

Unique Ecology Well ID Tag Number: N/A Property Owner Name: Segale Properties

Property Owner Address: PO Box 88028, Tukwila, WA 98138

Well Location:

Well Street Address: City, State, Zip: WA

County: King

Township: 22N Range: 4E Section: 11 in the NE 1/4 of the NW 1/4

Well	Head	Elevation

Elevation Datum:

Elevation Method:

Latitude (DD): Longitude (DD):

To

Datum:

Horizontal Coordinate Collection Method:

Tax parcel No.:

Lithology

Material

Layer: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information.

0 ft 0 in	50 ft 6 in	Unconsolidated sediments

Driller/Engineer/Trainee Printed Name: KEITH BROWN	Drilling Company: Northwest Cone Exploration
Driller or trainee License Number: 2174	Address:
If trainee, Driller's License Number:	City, State, Zip:



This is a report of the activities of a licensed Washington well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered.

Type of Well: Geotech Soil Boring

Number of Wells: 8 Type of Work: New Method: DirectPush

Drilling Start Date: 10/10/2017 Drilling Completion Date: 10/11/2017 Received by Ecology: 10/16/2017 2:57 PM

Dimensions:

Borehole Diameter: 1.5 in Depth of completed well: 50 ft 0 in

Construction Details

Casings:

N/A

From Depth To Depth Type Diameter Stickup

Perforations:

Type	Size	Total Perforations	From Depth	To Depth
N/A				

Screens:

Manufacturer Type Dia-Slot From To meter Size Depth Depth

Sand/Gravel Packings:

Material	From	To
	Depth	Depth
N/A		

Individual Well Details			
Well	Driller's Identifier	Water Level	
1		Dry Hole	
2		Dry Hole	
3		Dry Hole	
4		Dry Hole	
5		Dry Hole	
6		Dry Hole	
7		Dry Hole	
8		Dry Hole	

Additional Well Construction Information

None

Construction Notice of Intent Number: SE63794 Decommissioning Notice of Intent Number: AE45576

Unique Ecology Well ID Tag Number: N/A

Property Owner Name: Segale Properties LLC Property Owner Address: PO Box 88028, Tukwila , WA 98138

Well Location:

Well Street Address: City, State, Zip: WA County: King

Township: 22N Range: 4E Section: 2 in the SW 1/4 of the NE 1/4

Well Head Elevation:

Elevation Datum:

Elevation Method:

Latitude (DD): Longitude (DD):

Datum:

Horizontal Coordinate Collection Method:

Tax parcel No.:

Lithology

Layer: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information.

From	To	Material
0 ft 0 in	50 ft 0 in	Unconsolidated Sediments
		İ

Well Construction Certification: I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards. Material used and information reported above are true to the best of my knowledge and belief.

well construction standards. Material used and information reported above are true to the best of my knowledge and belief.		
Driller/Engineer/Trainee Printed Name: KEITH BROWN	Drilling Company: IN SITU ENGINEERING	
Driller or trainee License Number: 2174	Address: 6232 195TH AVE SE	
If trainee, Driller's License Number:	City, State, Zip: SNOHOMISH, WA, 98290	

RESOURCE PROTECTION WELL REPORT



This is a report of the activities of a licensed Washington well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered.

Decommissioning

Type of Well: Geotech Soil Boring

Number of Wells: 8 Type of Work: New Method: DirectPush

Drilling Start Date: 10/10/2017 Drilling Completion Date: 10/11/2017 Received by Ecology: 10/16/2017 2:57 PM

Dimensions:

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Diameter of borehole before decommissioning: 1.5 in Well depth before decommissiong: 50 ft 0 in

Construction Details

Casings:

From Depth To Depth Type Diameter Stickup

Perforations:

Type Size Total From To Perforations Depth Depth N/A

Screens:

Manufacturer Type Dia-Slot From Tometer Size Depth Dept

Sand/Gravel Packings:

Material From To Depth Depth

N/A

Individual Well Details

Well	Driller's Identifier	Decom Sealing Materials
1		Bentonite Slurry
2		Bentonite Slurry
3		Bentonite Slurry
4		Bentonite Slurry
5		Bentonite Slurry
6		Bentonite Slurry
7		Bentonite Slurry
8		Bentonite Slurry

Additional Well Decommissioning Information

None

Construction Notice of Intent Number: SE63794

Decommissioning Notice of Intent Number: AE45576

Unique Ecology Well ID Tag Number: N/A Property Owner Name: Segale Properties LLC

Property Owner Address: PO Box 88028, Tukwila, WA 98138

Well Location:

Well Street Address: City, State, Zip: WA

County: King

Township: 22N Range: 4E Section: 2 in the SW 1/4 of the NE 1/4

Well Head Elevation:

Elevation Datum:

Elevation Method:

Latitude (DD): Longitude (DD):

Datum:

Horizontal Coordinate Collection Method:

Tax parcel No.:

Lithology

Layer: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information.

the kind and least one en	I nature of the try for each c	material in each layer penetrated, with at hange of information.
From	То	Material
0 ft 0 in	50 ft 0 in	Unconsolidated Sediments

	1 5 6
Driller/Engineer/Trainee Printed Name: KEITH BROWN	Drilling Company: IN SITU ENGINEERING
Driller or trainee License Number: 2174	Address: 6232 195TH AVE SE
If trainee, Driller's License Number:	City, State, Zip: SNOHOMISH, WA, 98290

3-030 Billy			1		
WATER WELL REPORT	CURRENT	CURRENT Notice of Intent No. D 38385			
Original & 1st copy - Ecology, 2nd copy - owner, 3rd copy - driller			_		
Construction/Decommission ("x" in circle) 13789	Unique Ecology Well ID Tag. No.				
Construction	Water Right Permit No.		_		
O Decommission ORIGINAL CONSTRUCTION Notice of Intent Number_	Properly Owner Name LLC 12886 Interurban Ave Well Street Address Seattle, WA 98168 New S				
PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Mumeripal Dewleter ☐ Irrigation ☐ Test Well ☐ Other ☐ Dother	Well Street Address Seattle, WA	th Ave S	-		
TYPE OF WORK: Owner's number of well (if more than one)	City Kent County:	22M AD E	WM .		
Morew Well ☐ Reconditioned Method ☐ Dug Mored ☐ Driven ☐ Cable ☐ Rotary ☐ Jested	Location SW 1/4-1/4 NW 1/4 Sec. 1 Lat/Long: Lat Deg	11/2	or WM		
DIMENSIONS: Drameter of well 30 inches, drilled 30 ft Depth of completed well 30 ft	REQUIRED) Long Deg				
CONSTRUCTION DETAILS	Tax Parcel No.		_		
Casing	Formation Describe by color, character, size of r	naterial and structure, a metrated, with at least o	nd the		
Perforations: Yes No	(USE ADDITIONAL SHEETS IF NECESSARY		3		
Type of perforator used	MATERIAL	7 1196311	0		
SIZE of perfsin. byin. and no. of perfsfromft_toft	Brown top Soil	0 5	,		
Screens: X yes No K-Pac Location		2			
Type PVC Model No.	Coarse + Fine	5' 3	0'		
Diam 10" Slot Size +0.30 from 10 ft to 30 ft	gray Sand	11 11 11 11	=		
Diam. Slot Size from ft, to ft			_		
Gravel/Filter packed: Yes No Size of gravel/sand 1/2 Fea Gravel			_		
Materials placed from 5 fr to 30 fr	RECEIVED	12-11-1	_		
Surface Seal: Myes No To what depth? 0-5 ft Materials used in seal Bentonite		ė.	-		
Did any straia coatain unusable water? □Yes 🖾 No	שרט מי מי מי מי מי מי מי	12			
Type of water? Depth of strata	DEPARTMENT OF ECOLOGY WELL ORILLING UNIT	ALE			
Method of sealing strata off	WELF ORILLING UNIT	65			
PUMP: Manufacturer's Name	E BC	8			
TypeHP	50	-0			
WATER LEVELS: Land-surface elevation above mean sea level ft. Statis level 7 ft below top of well Date 6-19-03	50	-			
Artesian pressurelbs per square inch Date	7-	4			
Artesian water is controlled by					
(cap,valve, etc.)					
WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made ³ ☐ Yes ☒ No 1f yes, by whom ⁹					
Yield gal /min with ft drawdown after hirs					
Yield gal fram with ft drawdown after his Yield gal fram with ft drawdown after his Yield gal fram with ft drawdown after his					
Yieldgal /min_withft_drawdown afterhrs. Recovery data (time taken as zero when pump turned off)/water level measured from					
well top to water level)			-		
Time Water Level Time Water Level Time Water Level					
Date of test					
Bailer test gal /min with ft drawdown after hrs		-	-		
Arriest gal /min. with stem set at ft for hrs Arriestan flow g p m Date	The State of the S	1 10 1	5		
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No	Start Date 6/18/03 Completed D	hate 6 - 17-0	2		
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept resp Washington well construction standards. Materials used and the information in					
			Inc		
Conller Engineer Traince Name (Print) William Hill Jr Driller/Engineer/Traince Signature Lieuns D - Will h	Address 9021 Waller Rd	Е			
Onller or Trainee License No. 1946		98446-2531			
V.000 D. V. 37 W 6 TH 1					
If trainee, licensed driller's	Contractor's SLEADC*325KO Registration No.	Date //6/0	0		
Signature and License no.	- Foulant to an Equal Connection to Employee	ECV 050-1-20 (Paul	VALV		

- 1

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

LICET NIME: Americal LIDENTIFICATION NOn LING METHOD: Probe	1011 12 1	COUNTY: King CONTIONSULVA NWA SOCI TWAZZNAY
LER: F. Lynn Gol	garer sample	TREET ADDRESS OF WELL:
Cascade Drilling,	The	5.196th St & 70th Ave S-Kent
ATUNE: 24)	Table 1	SHOUND SURFACE ELEVATION: N/A
SULTING FIRM Landau NESENTATIVE: J. Buker	1001 10	VSTALLED: 4-2-98
IESENTATIVE: O. INCOME		EVELOPED: W/A
AS-DUILT	8137	
AS-UUILT	WELL DATA	FORMATION DESCRIPTION
	CONCRETE SURFACE SI	SAL 0 - 3 Et. F:11 - ROCK + BRAVE C
	BACKFILL BENTON, CH: f	MED BROWN SIRT + SAND
		RECEIVED MAY 11 1898
	DEPTH OF DORING 15	DEPT OF ECULUGY

METHOD: Probe	Weter Sample STREET AC	SW N New Soc / TWN22N R 4E
E F Lynn Gob ascade Drilling, I		to St & 70th Ave S-Kent VELELEVATION: N/A
ne: Zym 2	alle GROUNDS	UNFACE ELEVATION: N/A
FINGFIRM <u>Landau</u> ENTATIVE: J. Baker	ASSOC INSTALLED	4-2-98
MANUE STORES	Charles and the second	D:
AS-DUILT	8137 WELL DATA	FORMATION DESCRIPTION
		Totalition deadhir fich
रहरा हारू	Calche Geold and	0 - 3 ct.
- K. C. D. S.	CONCRETE SURFACE SEAL	FILL - ROCK + GRAVE L
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	mounts &	1
A	BACKFILL BENTONITE	_3 -15ft.
M	_chif_	MED BROWN SILT + SAND
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W	DEPTH OF BORING 15" 0"	DEPT OF ECULUGY
		-u/ +

PROJECT NAME: Americation No		LOCATIONSWIM NWW SOE / T	wn22N n 46
MILLING METHOD: Probe /	Weter Sample	STREET ADDRESS OF WELL:	
INM: Cascade Drilling, I	nc.	S.1965 St & 705 Ave WATER LEVEL ELEVATION: N/A	S-Kent
	alle	GROUND SURFACE ELEVATION: N/A	
CONSULTING FIRM. Landau CEPRESENTATIVE: J. Baker	ASSOC.	INSTALLED: 4-2-98	
E HESENTATIVE, O FICKOSO	8137	DEVELOPED:A/A	
AS-DUILT :	WELL DATA	FORMATION DESC	PRINTION
			. , 1
TESSESSET	CONCRETE SURFACE	0 - 3 ft.	
1337733	CONCIGETE SUIGNCE	SEAL FILL - ROCK + C	SAUE.
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The state of the s			
	BACKFILL BENTO	. 44	
1		3 - 15 ft	
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	_ DEFIN OF BOILING	3 0	
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MONITORING WELL	REPORT 467497	Well IDA Soil Borings Start Card & SEALWHULE	MONITORING WELL REPORT 467498	Well IDN Soil Boring- Start Card # AEL 9315
	State DA Zip 98032	(6) LOCATION OF WELL By legal description: County NITCO Lectrode Location Location Location Location Our S) Range 4E (5 or W) Section 14 of above section Section of well location Tax let number of well location	Name Antiri Can The Equipment Address 032 S Igleth St zip98032 Sity Kunk Stein 2 Zip98032 (2) TYPE OF WORK Name Entiripation Alternation (Repair/Recondition)	(6) LOCATION OF WELL By legal description: COURTY NICO Latitude Longitude Township 22N (Nor's) Renge HE (E or W) Section I Smell address of well location 1082 5 194th St Kent WA 98032 Tax for number of well location
(3) DRILLING METHOD	Rosery Mod Cable	(7) STATIC WATER LEVEL: Fit below lead surface. Date Ancelean Pressure	Cooversion Deepending Abandon ment	(7) STATIC WATER LEVEL: Fe below lend surface. Date American Processure. Ib/sq. to. Date
4) BORE HOLE CONSTI	Depth of Completed Well 11.51 a	(8) WATER BEARING ZONES: Depth a: which water was first found	(4) BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES: Depth at which waste was first found
Vault Standards Standards	Water-tight cover	Frem To Est. Flow Rate SW L.	Vault Special Standards Water-right cover	From To Set Flow Rate SWL
TO 1	Surface flush vauit Locking rap Locking ap Locking diameter Casing diameter	(9) WELL LOG:	Surface flush vault Locking cap fit. Casing diameter Casing diameter Material	(s) WELL LOG:
Seal E C	Wolded Tareaded Glued	Ground Elevation From To SWL	Material Welded Threaded Glued Control One	Ground Elevation Material From To SW
TO 0000	Well Seal Material Continued Amount hips	Sand & Silt O KILS	TO STORY AMOUNT Chips	Cotton to top O HIS
10.70	Grout weight Borebole diameter	K Signification	Grout weight Grout weight Borehold dismeter	Binton te Chips
	in from ft to in	t PUV 1.9 2012	Borehold diameter in from ft to in from ft t	the Part Court Court Court
Filter (18 g) pack (18 g) f (18 g) TO (18 g) f (18 g)	D. 604	JEHLOF ECOLO: 4	o pack sign Break Screen	MUV W2 2012 UEHT OF ECOLOGY ANDRE J - NVR
то Сурц — п Сурс го со	Short size in Sh	Date stanted 10/12/2012 Completed 10/12/2012	TO SOLD SOLD SOLD SOLD SOLD SOLD SOLD SOL	Date shared 10/12/2012 Completed 10/12/2012
(5) WELL TESTS: Bail Pump Permeability Conductivity Temperature of water Was water analysis done? By whose? Depth of areas to be analysis Remarks:	Size	WELL CONSTRUCTION CERTIFICATION: I constructed analos accept (responsibility for construction of this well, and it is compliance with all Westhington well construction standards. Materials used can be unformation reported above are fue to my best brownedge and bellef. Type of Print Namy PERENT THOMADIN License No. 1882.3 Training Namy PERENT THOMADIN License No. 1882.3 License No. 1883. (Bignet) Address 11412 John Ave. E. Punture Un 98343 Registration No. HOLDCD TO HACH Date 10/22/2012.	Size (5) WELL TESTS: Pump Baller Alz Flowing Artesian Permeability Yield GPM Conductivity FR Temperature of water GF/C Depth artesian flow found Was water analysis done? Ves No By whom? Depth of strats to be analysed. From ft. to Remarks:	WELL CONSTRUCTION CERTIFICATION: Lonerructed and/or incorpt (responsibility for contentration of this well, and its complete on the set, and its complete on the set, and its complete on the set, and its complete on the set incorrection for proported above are true to my best knowledge and belief. Type or Print Name PERDIA THOMADIA License No. Traines Name Chilling Company Holocone Scilling Inc. (Signed) Common No. License No. 2023 Registration No. Holocolocytekty Date 10/22/20

MONITORING WELL REPORT 4674		Start (DH BHR760			
(1) OWNER/PROJECTA WELL : Name FMUTICAN HILL EQUIPMEN Address 1032 S 19LHD St City Keat Stambor	1t zip98032	TOWNSHIP 22N	N or S) Renge 4E	Longitu (E or W) So above section.	ceion_1	
(2) TYPE OF WORK New construction [Alteration (Rapair		Stract address of well Kent WP Tex lot number of we	980,32 980,32	, ideals	T	=
(3) DRILLING METHOD		(7) STATIC WA	below land surface.	Date		_
(4) BORE HOLE CONSTRUCTION:		(8) WATER BE.	ARING ZONES:	7.58	2	
Special Standards Depth of Completed	Well .30_ ft.	From	Te	Est. Flow Ran		SWL
Vault pegal Standards	Water-night cover "Surface flush vauli Locking cap	7700				
1 1	Casing diameter 2" Material PVC	(9) WELL LOG	ound Elevation			
Seal E. (1) F. (1)	Welded Threaded Gived		Material	From	То	SWL
TO FOR FORD	Well Seal: Material Contonite		***			
19 10 20 20 20 20 20 20 20 20 20 20 20 20 20	Groot weight	501	nd & silt	0	30	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Borebole dismoser.		151	(7:1:1·/)=	7.	
Filter pack sage sage sage sage sage sage sage sage	Bentonite plug at least 3 ft, this		16.	6 0 5 Sn15		
H 1 200	Material J" PVC From 11 to	Υ.	ode (JE ECT H	n. "	
30	Filter pack: Material Olorado Sano Size 10/20	WELL CONSTR	UCTION CERTIFICA	moutruction of the	well, and	i Ka
(5) WELL TESTS: Dailer Dail Permeability Dislor	Flowing Artesian	and the information	I Westington well constru reported above are true to	my best knowled	ge and be	sief.
Was water analysis done? Yes No	n artesian flow found fl	Trainee Name Drilling Company (Signed)	olocene bail	Ling In	C. 182	3
Depth of stress to be analyzed. From	ft. toft.	Address (1412	band Are. E. HOLDCDIOHHA	Puyally Don	10/22	4831

ling Method: H5A ler: Branc. 6059 or . n: Cascade Dalling, Inc. nature: For . sulting Firm: De Va Ex resentative: Decek To	Water Level I Ground Surfs Date Installed Date Develope 2073	2/13/0C
AS-BUILT	. WELL DATA	FORMATION DESCRIPTION
	Well Cover — Concrete Surface Seal Depth = 1/ft — Blank Casing 2 " 1/ " Material PVC — Backfill 2 ft Type: bent-Cops	Black self + send
	SealMaterial	ft
	Gravel Pack 16 ft Material: 3/12 Ser d Screen 2 "x 13" Slot Size ,070 Material PVC	RECEIVED MAR 1 1 2002 DEPT OF ECOLOGY
	Well Depth 19 " " Backfill Material Total Hole Depth	

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

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Srian 6.6050 or. Cascade Delling, Inc. :	Water Level Ground Sur Date Installe	68th Ave S Kent, WA Elevation: 9 face Elevation: N/A d: 1/13/07 ped: 1/4 7/13/07
AS-BUILT	- WELL DATA	FORMATION DESCRIPTION
	Well Cover Concrete Surface Seal Depth = 1/ft Blank Casing 2 " 1/ Material PVC Backfill 2 ft Type: Dent. Caps Seal Material	0 - 19 ft Hack self + send
	— Gravel Pack / ft Material: 3/17 Send — Screen 2 "x 15 ' Slot Size 1070 Material PVC Well Depth 19 ' " Backfill Material Total Hole Depth	MAR 1 I 2002 DEPT OF ECOLOGY

. 3	4	
1105	RESOURCE PROTECTION	ON WELL REPORT
111		Start (

illing Method: HSA iller: Bray 6.6056 orm: Cascade Drilling, I gnature: Laboration of the control of the contro	Env. Date Installed:	levation: N/A "Z/13/02
AS-BUILT	. WELL DATA	FORMATION DESCRIPTION
	Well Cover Concrete Surface Seal Depth = 1/ft Blank Casing 2 " 4 " Material P.V.C Backfill 2 ft Type: Sent Chips Seal MA Material MA	0 19th Fine black Silty Sand the
	- Gravel Pack / 6 ft Material: 1/2 Scard - Screen 2 "x 15", Slot Size 0.10 Material P. V.C. Well Depth 19", 2" Backfill MA Material MA	RECEIVED MAR 1 1 2002 DEPT OF ECOLOGY

111055

RESOURCE PROTECTION WELL REPORT

Method: HSA Brian G. (5050) or Cascade Dialling, Inc. e: 1921 ng Firm: Delta Entative: Derek To	Water Level I Ground Surfa Date Installed	
AS-BUILT	+ WELL DATA	FORMATION DESCRIPTION
	Well Cover Concrete Surface Seal Depth = 1/ft Blank Casing 2 " 1/ Material Backfill 2 ft Type: bent. Caps Seal Material	0 - 19 ft Black Self + Send - ft
	— Gravel Pack / ft Material: 3/12 .5cmd — Screen 2 "x 15 " Slot Size 1070 Material / ft Well Depth / " Backfill Material Total Hole Depth	RECEIVED MAR 1 1 2002 DEPT OF ECOLOGY

10	
1105	RESOURCE PROTECTION WELL REPORT

State Identification # A Drilling Method: HSA Driller: Brian 6.605 Firm: Cascade Dallin Signature: Firm: Consulting Firm: Deal Representative: Desce	Street Addres or James Goble g, Inc. Ground Surf a Env. Date Installed	68th Ave S Kent, WA Elevation: 8 ace Elevation: N/A 1: 111167
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	Well Cover Concrete Surface Seal Depth = 1/ft	Black self + said
	Blank Casing 2 " 1/ Material PUT Backfill 2 ft Type: bent. Cups	ft
	Seal Material	ft
	Gravel Pack 16 ft Material: 3/17 5ewd — Screen 2 "x 13"	
	Slot Size 1070 Material PVC	MAR 1 1 2002 DEPT OF ECOLOGY
+	Well Depth 19 " Backfill Material Total Hole Depth	8

ell#	Location: SE Street Addre James Goble 19860 Water Level Ground Suri	1/4 NE1/4 Sec 2 Twn22NR 4E ss of Well: 68+5 Ave 5 Kent, WA Elevation: 9 face Elevation: N/A d: 1/1/167
AS-BUILT	· WELL DATA	FORMATION DESCRIPTION
	Well Cover Concrete Surface Seal Depth = 1/ft Blank Casing 2 " 1/" Material PVC Backfill 2 ft Type: bent Cops Seal Material	# 19 ft Black Self + Sand - ft
	- Gravel Pack / ft Material: 1/12 Screed - Screen 2 "x 15" Slot Size 1070 Material PVC	RECEIVED MAR 1 1 2002 DEPT OF ECOLOGY
	Well Depth 19 , " Backfill Material Total Hole Depth	

Construction/Decommission ("x" in circle Construction O Decommission Original Construction of Intent Number_	1 7/1 d	Z2-9E-Z Type of Well ("x" in circle) ■ Resource Protection ○ Geotech Soil Boring
Property Owner Avco Corpore Unique Ecology Well ID Tag No. A		ddress 19860 68th AVE S. Kent County: King
Consulting Firm Delta Environment Driller or Trainee Signature Driller or Trainee License No.	Andrew Lavior Flagan still RI	on 5E 1/4-1/4 NE 1/4 Sec 2 Twn 32N RAE (mg (s, t, r Lat Deg Lat Min/Sec EQUIRED) Long Deg Long Min/Sec arcel No. N/A
If trainee, licensed driller's Signature and License no.	Work/I	or Uncased Diameter 8 1/2 Static Level Decommission Start Date 4/7/03 Decommission Completed Date 4/8/03
Construction/Design	Well Data 3168	-2 Formation Description
28111111111111111111111111111111111111	Blank Casing 2 " 4 Material PVC Backfill 2 ft Type: Deat. Chi Seal Material	fill material grey silty sand to
Constant of the constant of th	Gravel Pack 16 ft Material 2-12 Screen 2 "x 15 Slot Size 6/6 Material PVC	RECEIVED MAY 0 1 2003 DEPT OF ECOLOGY
	Well Depth 19 0 Backfill Material Total Hole Depth	

RESOURCE PROTECTION WELL REPORT Notice of Intent No. 103491 (SUBMIT ONE WELL REPORT PER WELL INSTALLED) RESOURCE PROTECTION WELL REPORT Notice of Intent No. 2 63491
(SUBMIT ONE WELL REPORT PER WELL INSTALLED) 22-4E-24 22-4E-ZH Construction/Decommission ("z" in circle) Construction/Decommission ("x" in circle) Type of Well ("x" in circle) Type of Well ("x" in circle) 131123 Construction
O Decommission Original Construction Notice Construction
O Decommission Original Construction Notice Resource Protection
O Geotech Soil Boring Well Report. Resource Protection
O Geotech Soil Boring of Intent Number of Intent Number Site Address 19860 68th AVE S. Sile Address 19860 68th AVE S. Property Owner Arco Corporation Property Owner Avco Corporation City Kent County: King Location 5E1/4-1/4 NE1/4 Sec 2 Twn DN RAE EWN irele City Kent County: King Unique Ecology Well ID Tag No. AHP 308 Unique Ecology Well ID Tag No. AHP Location SE14-14 NE1/4 Sec 2 Tun DIN RAE WM Irele Consulting Firm Delta Environmental Consulting Firm Delta Environmental Andrew LavLong (s, t, r Lat Deg Lat Min/Sec Will Fagan Still REQUIRED) Long Deg Long Min/Sec ____ Andrew Lat/Long (s, t, r Lat Deg Lat Min/Sec __ Long Deg Long Min/Sec __ Long Driller or Trainee Name Driller or Trainee Name ____ Driller or Trainee Signature Lander The Driller or Trainee Signature Lader Th-Information 2551 Tax Parcel No. N/A Tax Parcel No. N/A Driller or Trainee License No. 2551 Driller or Trainee License No. Cased or Uncased Diameter 8 1/2 Static Level. Cased or Uncased Diameter 8 1/2 Static Level If trainee, licensed driller's Work/Decommission Start Date 4/7/03 If trainee, licensed driller's Work/Decommission Start Date 4/7/03 Signature and License no. Signature and License no. Work/Decommission Completed Date 4/8/03 Work/Decommission Completed Date 4/6/03 3168-21 and/or the Well Data Well Data 3/68-21 Construction/Design Formation Description Formation Description Construction/Design Well Cover Well Cover Concrete Surface Seal the Data Concrete Surface Seal Depth = / Depth = / Blank Casing 2 " 4"
Material PVC Blank Casing 2 " 4"
Material PVC **NOT Warranty** Backfill 2 ft -Backfill 2 ft Type: <u>Bent</u> Chips Type: Dent. Chips Material does Department of Ecology Gravel Pack 16 Material: 2-12 -Gravel Pack 16 Material: 2-12 Screen 2 "x 15 Screen 2 "x 15 Slot Size 6/0 RECEIVED RECEIVED Slot Size D/D Material PVC Material PVC MAY 0 1 2003 MAY 0 1 2003 DEPT OF ECOLOGY DEPT OF ECOLOGY Well Depth 19 ' 0 " Well Depth 19 . o " The Backfill Backfill Material Material Total Hole Depth Total Hole Depth Page 2 of 4 Page 3 of 4 Scale I"= ECY 050-12 (Rev 2/01) ECY 050-12 (Rev 2/01)

Scale 1"=

The Department of Ecology does NOT Warranty the Data and/or

Construction/Decommission ("x" in circle) Construction O Decommission Original Construction Notice of Intent Number Property Owner Avia Corperation Unique Ecology Well ID Tag No. AHP 310	Tax Parcel No. N/A Cased or Uncased Diameter 8 1/2 Static Level Work/Decommission Completed Date 4/8/53 Work/Decommission Completed Date 4/8/53	RESOURCE PROTE (SUBMIT ONE WELL REPORT PER IN Construction/Decommission ("x" in circle, Construction of Intent Number Property Owner Avo Corperation Unique Ecology Well ID Tag No. Alth Consulting Firm Dalta Environ Driller or Trainee Name Andry F Driller or Trainee Signature Driller or Trainee License No. 255 If trainee, licensed driller's Signature and License no.	VELL INSTALLED 131125 Volice Site Address P 311 City Kent Location SE LayLong (s, t, still REQUIRE Tax Parcel No Cased or Unca Work/Decomn	74-1/4 NE _{1/4} Sec 2 Twn 2017 RAE WWM T Lat Deg Lat Min/Sec D) Long Deg Long Min/Sec
Construction/Design Well Data	711 6 61	Construction/Design	Well Data 3/682	Formation Description
Well Cover Concrete Surfat Depth = Blank Casing Material Py Backfill Type: Bent Scal Material: 2: Screen 2: Slot Size 6/ Material PV Well Depth Backfill Material Total Hole Depth	fill material fill material grey silty sand fill RECEIVED MAY 0 1 2003 DEPT OF ECOLOGY	The Department of Ecology does NOT Warranty the Data and/or	Well Cover Concrete Surface Seal Depth = 1' Blank Casing 2 " 3', Material PVC Backfill ft. Type: Beat Chips Seal Material ft. Material 2-12 Screen 2 "x 5 Slot Size 610 Material PVC Well Depth 8 0 " Backfill Material Total Hole Depth 4	brown fill material grey silty sand RECEIVED MAY 0 1 2003 DEPT OF ECOLOGY

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

RESOURCE PROTECTION WELL REPORT Notice of Intagrammer (SUBMIT'ONE WELL REPORT PER WELL INSTALLED)	22-4E-2H	Geoboring & Developme	72/46/14 -1 ent, Inc. F23 19 151
Construction Decommission Original Construction Notice of Intent Number	Project Well (*x" in circle) Resource Protection Geotech Soil Boring	Resource Protection Well Re	port DEPT. OF ECOLOGY
Consulting Firm Delta Environmental Location SE1/4-1/4 NE1/4 Se	unty: King Drilling Driller	entification # MW - 9 Method HSA 4'' Terry Surn 5 Extra Card Consulting	12 T. ZZN R. 41E 039/67 Film R 24
Driller or Trainee License No. 255 Tax Parcel No. N/A Cased or Uncased Diameter 2	Lat Min/Sec 5	Depth of Soil Log Components Stick up 7	Flush on Monument Casing
If trainee, licensed driller's Signature and License no. Work/Decommission Start Date Work/Decommission Completed Construction/Design Well Data Work/Decommission For	Date 4/6/03 Thation Description	(Oncrete Type of Su	Amount Concrete
Well Cover Concrete Surface Seal Depth = 2' Or	the Data and or Fill worker of St.	Hy iD of Riser Type of Ris	Pipe 2 // Ser Pipe PVC Amount Onnection Thread
Blank Casing 2 "20"	silty sand Marranty th	nds fet. Type of Ba	ackfill around Riser Bart in ite Amount Of Borehole 84
Seal	does NOT	ZZ Screen Sta	ze or Type , 01 PVC
Gravel Pack Material: 3-12 Screen 2 "x 3 Slot Size 0/5 Material 34ainless Steel	RECEIVED 5 18	Sand Screen Size	Iter Material 10-20 Colo Sand Amount
	EPT OF ECOLOGY Rema	rks:	
Backfill Material Total Hole Depth	TP —	Signature	15-45 B-
	ECY 050-12 (Rev 2/01)		

Geoborina &	Development, Inc. FC0 18 (1)	3. 3		221/
	Date 2/5/9/ DEPT 6: ECOLOGY County Mrng / WW 1/4 NW 1/4 Section 17 T. ZZN B. U.F.	PROJECT NAME: BOLLA WELL IDENTIFICATION NO. V DRILLING METHOD: AUCO DRILLER: BRUCE A FIRM: Cascade Drilli SIGNATURE: BRUCE SIGNATURE SIGNATURE: BRUCE SIGNATURE SIGNATU	LOCATION STREET A	START CA
Job # 9/-3/ Depth of Soil Log Components	Start Card 139/67, Consulting Firm R24 Stick up Flus 4 on Monument Casing	CONSULTING FIRM: (1)ES	TON INSTALLE TORUMENTALLE TO	ED
Silt Bertinite Silt Sentinite Silt Sentinite Sand Sand Remarks:	Type of Surface Seal Concrete Amount ID of Riser Pipe Type of Riser Pipe Amount Type of Connection Type of Backfill around Riser Amount Diameter of Borehole Screen Size or Type Type of Filter Material Amount Type of Filter Material Amount	The Department of Ecology does NOT Warranty the Data and/or the Information	WELL DAMPR 05 1993 DEPI. OF ECOLOGY WELL COVER CONCRETE SURFACE SEAL DEPIH = 1/ft PVC BLANK Z "x 5" BACKPILL 3 ft. TYPE: Ch/p 5 PVC SCREEN 2 "x 6" SLOT SIZE: GRAVEL PACK [] ft. MATERIAL: /0/Z/C	O -15 ft. Gray cluy - ft.
	Signature January & Comment of the C	The Del	WELL DEPTH /S "	

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

14E/2K
RDNO. 209600
WN 25WR 4E
68th Ades.

IPTION

ECY 050-12 (Rev. 11/89)

Construction/Decommission ("x" in circ Construction Decommission ORIGINAL INSTALL of Intern Number Consulting Firm ADAPT Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: 1 or responsibility for construction of this well, and its c well construction standards. Manerals used and the true to my best knowledge and belief.	ATION Notice SE 08849 NGINEERING Site Address City Ken Location NE constructed and/or accept compliance with all Washington information reported above are CHRLS NOWAK Tax Parcel No Cased or Une Work/Decomi	Notice of Intent No. HE 875 Type of Well ("x" in circle) O Resource Protection S Geotech Soil Boring ner BOEING ZOAO 3 68 th Ave 5. County: KFNG County: KFNG WMM The County of the County	Construction Decommission ("x" in circ Construction Decommission ORIGINAL INSTALL of Intent Number Consulting Firm ADAPT E Unique Ecology Well ID Tag. No: WELL CONSTRUCTION CERTIFICATION: 16 espansibility for construction of this well, and its evel construction standards. Materials used and the frue to my best knowledge and belief Driller Engineer Trainee Signature Driller or Trainee License No. If trainee, licensed driller's Signature and License no.	ATION Notice SE 08849 NGINEERING Site Address City Ken Constructed and/or accept compliance with all Washington information reported above are CHRIS NOWAK Tax Parcel N Cased or Unc Work/Decom	Notice of Intent No. PC 1875 Type of Well ("x" in circle) O Resource Protection S Geotech Soil Boring ner BOEING 2040 3 68th Ave 5. County KFNG God SE 1/4 Sec 2 Twn 22NR 4 (EWM) irrib. Order one The Lat Deg Lat Min/Sec Long Deg Long Min/Sec
Construction/Design	Well Data	Formation Description	Construction/Design	Well Data	Formation Description
LIZ" OD CPT RODS hole backfilled wy #8 bontonite chips	No well No water Level measured	Sand Sand SAND BOH = 70 FT SECEIVED ABORD ABORD ABORD ABOUNCES.	The Department of Ecology does NOT Warranty the D Cology does	No water Level measured	SAND BOH = 70 FT JAN 24 2011 20 BOTO TO SERVICE STORY BOTO TO SE

Construction/Decommission ("x" in circle Construction Decommission ORIGINAL INSTALLA of Intent Number Consulting Firm ADAPT FA Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION 1 con responsibility for construction of this well, and its cor well ensoruction standards. Macrials used and the in zure to my bees knowledge and belief Donlter Engineer Trainee Name (Print)	ATION Notice SE 98.849 Property Own Site Address City Ken Instructed and/or accept mpliance with all Washington Information reported above are SHRIS NOWAK Tax Parcel No Cased or Unca	Type of Well ("x" in circle) O Resource Protection A Geotech Soil Boring Type of Well ("x" in circle) O Resource Protection A Geotech Soil Boring Type of Well ("x" in circle) O Resource Protection A Geotech Soil Boring Type of Well ("x" in circle) O Resource Protection A Geotech Soil Boring Type of County: County: KFNG County: KFNG County: KFNG County: Lat Mid/Sec Lat Mid/Sec Long Deg Long Min/Sec Static Level, NA	Construction Construction Construction Construction Construction Construction Decommission ORIGINAL INSTALL of Intent Number Consulting Firm Unique Ecology Well ID Tag No WELL CONSTRUCTION CERTIFICATION 10 responsibility for construction of this well, and is a well construction standards. Materials used and the true to my best knowledge and better. Driller Engineer Trainec Name (Print)	CATION Notice SE 98849 NGINEERING Site Address City Ken Description of the Machineton CHRIS NOWAK Tax Parcel No Cased or Unio	Type of Well ("x" in circle) O Resource Protection For Geotech Soil Boring The BOETNG 2040 3 68 th Ave 5, County: KFNG County: KFNG Lat Deg Lat Min/Sec Long Deg Long Min/Sec Do assed Diameter 1/2 " Static Level NA
If trainee, licensed driller's Signature and License no.	Work/Decomm Work/Decomm	aussion Start Date 12-27-10 aussion Completed Date 12-27-10	If trainee, licensed driller's		mission Start Date 12-27-10 mission Completed Date 12-27-10
Construction/Design	Well Data	Formation Description	Construction/Design	Well Data	Formation Description
LIZ" OD CPT RODS hole backfilled wy #8	No water Level measured	clay + Silt Silty Sand	thole backfilled W #8	No well No water Level measured	clay + Silt Silty Sand
boutonite chips		SAND	#		SAND 60
		BOH = 70 PT SCICEIVES JAN 2 4 2011 ECY 050-12 (Rev 2/0)	The The		BOH = 70 PT SECEIVED 80 JAN 2 4 2011 20 ECY 050-12 (Rev 2/9)
Scale I = 20ft	Page of	ECY 050-12 (Rev 2/01)	Scale = 20	Pageot	ECY 050-12 (Rev 2/01)

Construction Decommission ("x" in circle Construction Decommission ORIGINAL INSTALLA of Intent Number Consulting Firm ADAPT FA Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: I consequence of this well, and its conveil construction to this well, and its conveil construction standards. Materials used and the in frue to my best Inowiedge and belief. Desire Bagineer Traince Name (Propo C	Froperty Ow Site Address City Ken Location M. Landon Still REQUIR HRIS NOWAK Tax Parcel N Cased or University Cased or Univers	Notice of Intent No. SE 08 8AY Type of Well ("x" in circle) O Resource Protection S Geotech Soil Boring mer BOEING 20A0 3 68Th Ave S. County: KING County: KING Lat Deg Lat Min/Sec Long Deg Long Min/Sec cased Diameter 1/2 ("Static Level NA")	Construction/Decommission ("r" in circle of Intent Number	ATION Notice NGIVEERING Tonstructed and/or accept compliance with all Washington information reported above are CHRIS NOWAK Tax Parcel N. Cased or Uncolored Cased O	Notice of Intent No. SE 0884 Type of Well ("x" in circle) O Resource Protection M Geotech Soil Boring DE ING County: KENG County: KENG Lat Deg Lat Min/Sec Long Deg Long Min/Sec Dog Deg Static Levei NA
If trainee, licensed driller's Signature and License no.		mission Start Date 12-27-10 mission Completed Date 12-27-10	Driller or Trainee License No. 28 If trainee, licensed driller's Signature and License no.		mission Start Date 12-27-10 mission Completed Date 12-27-10
Construction/Design	Well Data	Formation Description	Construction/Design	Well Data	Formation Description
LIV2" OD CPT RODS hole backfilled wy #8 bontonite chips	No well No water Level measured	SAND SAND BOH = 70-PT BCEIVES SO JAN 24 2011 BCY 050-12 (Rev 2001)	The Department of Ecology does NOT Warranty the Dougle Packtilled And The Power of the Chips	No water Level measured	SAND SAND BOH = 70 FT SECEIVED 80 JAN 24 2011 20 JAN 24 2

RESOURCE PROTE (SUBMIT ONE WELL REPORT PER Construction/Decommission ("x" in circle Construction Decommission ORIGINAL INSTALLA of Intent Number Consulting Firm ADAPT EA Unique Ecology Well ID Tag No:	WELL INSTALLED) 1) 402129 TION Notice Pro Site	Type of Well ("" in circle) O Resource Protection Geotech Soil Boring perty Owner BOEING Address 2040 3 68th A	on this Well Rep	RESOURCE P (SUBMIT ONE WELL RE Construction/Decommission Construction O Decommission ORIGINA of Inten Consulting Firm Unique Ecology Well ID Tag No:
WELL CONSTRUCTION CERTIFICATION: I con responsibility for construction of this well, and its cor well construction standards. Materials used and the in true to my best knowledge and belief	HRIS NOWAK Tax	Long (s, t, r	A (EWM) under VSec Und	WELL CONSTRUCTION CERTIFIC responsibility for construction of this well construction standards. Materials true to my best knowledge and belief. Driller
If trainee, licensed driller's Signature and License no.		rk/Decommission Start Date 12-27- rk/Decommission Completed Date 12-2	7-10 and	If trainee, licensed driller's Signature and License no.
Construction/Design	Well Data	Formation Descript	noi	Construction/Desi
LIZ" OD CPT RODS hole backfilled wy #8	No well No water Lovel meas	clay + Silt uned Silty Sand	The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report	LIZ" OD CPT RO hole back?
bontomite chips		SAND	Trent of Ecolog	bontonite cl
1 1 1		BOH = 70 P	The Depa	
Scale 1'=20	Page of	JAN 2 4 2011 Q	1 (I (Rev 2/01)	Scale 1"= 26

RESOURCE PROTE (SUBMIT ONE WELL REPORT PER Construction/Decommission ("x" in circle Construction O Decommission ORIGINAL INSTALLA of Intent Number Consulting Firm ADAPT EA Unique Ecology Well ID Tag No:	WELLINSTALLED) 402130	Notice of Intent No. DE O Type of Well ("z" in circle) O Resource Protection Second Soil Boring Property Owner BOEING Site Address 2040 3 68th Au City Kent County: KEN	
Driller/Engineer/Trainee Signature	mpliance with all Washington formation reported above are SHRIS NOWAK IN TOWAK	Location US/4 SE/4 Sec Z TwnZ2NR Lat More Still REQUIRED) Long Deg Long Min Tax Parcel No. Cased or Uncased Diameter 1/2 Static Lev Work/Decommission Start Date 12-27-1	vsec
If trainee, licensed driller's Signature and License no.		Work/Decommission Completed Date 12-2	7-10
Construction/Design	Well Data	Formation Description	on.
LIVZ" OD CPT RODS hole backfilled W #8	No water Lovel me	clay + Silt asured Silty Sand	2
bentomite chips		SAND	60
		BOH = 70 FT	80

CT NAME: BORING DENTIFICATION NO. D NG METHOD: HSR ER: LIRU GS	FEB 1 6 199 AGET OF ECOLOGY WATER	START CARD NO. START	
AS-BUILT	WELL DATA	FORMATION DESCRIPTION	— T
1100 SETERN -1-5 BOOK-1	- 0-2 monument in concrete 2-4- Bendonite 4-15-10-20 sand	a of esphalt = 15 gravels/s:H	

The Dep The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

PROJECT NAME: BOEING 186 WELL IDENTIFICATION NO. DRILLING METHOD: HSA DRILLER: BRANT C. MA FIRM: Cascade Drilling, In SIGNATURE:	DETRUCTION	COUNTY: KING- LOCATION SE IN SE IN SOC T TWO ZZNE YE STREET ADDRESS OF WELL: 2043 5 - 68** A/E 5 KENT WATER LEVEL ELEVATION: N/A GROUND SURFACE ELEVATION: N/A INSTALLED: 7-24-95 RECEIV DEVELOPED: N/A AUG 22 19
AS-BUILT	WELL DATA	FORMATION DESCRIPTION OF ECOL
	CONCRETE SURFACE S 2 BACKFILL BENT CHIL	EARGE COBBLE
SCALE: 17 *	DEPTH OF BORING	D

RESOURCE PROTECTION WELL REPORT 22/4/2R START CARD NO. AIZITO COUNTY: KING PROJECT NAME: BOEING- 1862 BLDG LOCATION SE IN SOC 2 TWO ZZNA 4E WELL IDENTIFICATION NO. DRILLING METHOD: HSA STREET ADDRESS OF WELL: 20435-68+2 AVE. S. KENT DRILLER: BRENT C. MALOY N/A WATER LEVEL ELEVATION: GROUND SURFACE ELEVATION: N/A CONSULTING FIRM: / SIME CONSTRUCTION INSTALLED: 7-24-95 RECEIVED REPRESENTATIVE: LATHY KIMBALL NIA DEVELOPED: 5279 AUG 2 2 1995 FORMATION DESCRIPTION DEPT. OF ECOLOGY AS-BUILT WELL DATA CONCRETE SURFACE SEAL LARGE COBBLE BENT. BACKFILL 1 -10 ft. CHIPS SANDY STAVELS (LIGHT GREY DEPTH OF BORING 10 SCALE: 1" -_ PAGE OF

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

EAM OCO 12/04- 11/00)

OJECT NAME: BOE NG 180 ELL IDENTIFICATION NO ILLING METHOD: HSA ILLIER: BRENT C. MA	LOCATION STREET A	KING NSG W SOC 2 TWN ZZNR 4E NOORESS OF WELL: 35-6872 AVE S. KENT
M: Cascade Drilling, Ir	nc. WATER LI	EVEL ELEVATION: N/A
SNATURE:		SURFACE ELEVATION: N/A.
PRESENTATIVE: LIKETHY KI	MBALL DEVELOP	ED: NA RECEIVE
	5279	AUG 2 2 1995
AS-DUILT	WELL DATA	FORMATION DESCRIPTION
		DEPT. OF ECOLOG
10010100		
	CONCRETE SURFACE SEAL	0 - / ft.
ESS 1559	2	LARGE COBBLE
1000		FILL
De Mari		T T
	BACKFILL BENT	1
(A)	The second secon	/ - /0 ft.
N	CHIPS	SANDY SHAVELS
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M.	DEPTH OF BORING 10 "	
	DEFIN OF BOICING /O	T
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The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

RESOURCE PROTECTION WELL REPORT 22/4/2 R START CARD NO. AIZITO PROJECT NAME: BOEING 1862 BLDG. COUNTY: KING LOCATION SE 14 SEC 2 TWO ZZNA 4E WELL IDENTIFICATION NO. DRILLING METHOD: HSA STREET ADDRESS OF WELL: DRILLER: BRENT C. MALOY FIRM: Cascade Drilling, Inc. 20435-68 AVE S KENT WATER LEVEL ELEVATION: SIGNATURE: GROUND SURFACE ELEVATION: N/A INSTALLED: 7-24-95 CONSULTING FIRM: / Save CONSTRUCTION NIA REPRESENTATIVE: LEATHY KIMBALL DEVELOPED: RECEIVED 5279 FORMATION DESCRIPTION 2 2 1995 WELL DATA AS-BUILT O - 1 DEPT. OF ECOLOGY CONCRETE SURFACE SEAL LARGE COBBLE 2' FILL BENT. BACKFILL / - /0 ft. CHIPS SANDY SMUELS (LIGHT GREY) ft. DEPTH OF BORING /0 SCALE: 1"-_ PAGE OF_

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

ECY 050-12 (Boy 11/00)

WELL ID	TNAME: BOEING- 18		COUNTY: KING-	TWN 22NR 4E
	GMETHOD! HSA	0.4 0.1	20435-68+2AVE.S.	VCAIT
DRILLER	ascade Drilling, 1	inc.	WATER LEVEL ELEVATION: N/A	100
SIGNATI	/0		GROUND SURFACE ELEVATION: N/	
		MSTRUCTION)	INSTALLED: 7-24-95	RECEIVE
REPRES	ENTATIVE: LEATHY K	IMBALL	DEVELOPED: N/A-	RECEIVE
	0	5279		AUG 2 2 199
	AS-BUILT	WELL DATA	FORMATION DE	SCRIPTION
T -	AS-BUILT	THE DATE OF THE PARTY OF THE PA	Toringiones	DEPT. OF ECOLO
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1 1	18.20.00 S.S.	CONCRETE SURFACE	0 - / ft	
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1			(11911	SANO)
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2)				- 1
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AS-BUILT WELL DATA FORMATION DESCRIPTION AUG 2.2,199 CONCRETE SURFACE SEAL CONCRETE SURFACE SEAL CHIPS DEPT. OF ECOLO LARGE COBBLE FILL BACKFILL BENT. CHIPS J-10 ft. SANOY GRAVELS (LIGHT GREY) SANO - ft.	RILLING METHOD: HSA RILLER: BRENT C. MA IRM: Cascade Drilling, In IGNATURE: M.	LOCAT STREE TOY C. WATER GROUN USTRUCTION INSTAL	START CARD NO. A12170 Y: KING- ONSE 14 SE 14 Sec 2 TWN ZZNR LE ADDRESS OF WELL: 35-168*9 AVE S. KENT LEVEL ELEVATION: N/A D SUBFACE ELEVATION: N/A LED: 7-24-95 APED: N/A RECEIVE
CONCRETE SURFACE SEAL 2 0 - 1 ft. DEPT. OF ECOLO LARGE COBBLE FILL BACKFILL BENT: OHIPS 1 - 10 ft. SANOY GRAVELS (LIGHT GREY) SANO	AS-BUILT	WELL DATA	FORMATION DESCRIPTION AUG 2 2 1995
DEPTH OF BORING 10		BACKFILL BENT. CHIPS	J-10 ft. SANOY GRAVELS (LIGHT GREY) SANO

PROJECT NAME: BOEANG- 180 WELL IDENTIFICATION NO. DRILLING METHOD: HSA DRILLER: GRENT C MA FIRM: Cascade Drilling, II SIGNATURE: TARE CONSULTING FIRM: SAP CORPRESENTATIVE: KATHV KA	nov	START CARD NO. A121- COUNTY: KING- LOCATION SE IA Sec 2 TWAZZNR 46 STREET ADDRESS OF WELL: 2043 5 - 16872 AVE S. KENT WATER LEVEL ELEVATION: N/A GROUND SURFACE ELEVATION: N/A INSTALLED: 7-24-95 DEVELOPED: N/A	
AS-BUILT	WELL DATA	FORMATION DESCRIPTION	
	CONCRETE SURFACE	SEAL 0 - / ft. LAME LOBBLE FILL RECEI	VE
T E VES		AUG 2 2	1995
PROJECT NAME: BOEL 136-18/ WELL IDENTIFICATION NO. DRILLING METHOD: HS-A DRILLER: GREAT C. MA FIRM: CASCAGE Drilling, TI SIGNATURE: LA CONSULTING FIRM: SAA: CE AS-BUILT AS-BUILT	BACKFILL BEA	I F FF DEPT. OF EU	OLOG - F
	DEPTH OF BORING	<i>5</i> ′_″	

- 12 la	took .
Geoboring & Development, Inc. Resource Protection Well Report Well Identification # 14 P Open Plant Drilling Method # 14 P Open Plant Drilling Method # 14 P Open Plant Drilling Terry 13-17 License # 17 5 3 Job # 91-357 Geoboring & Development, Inc. Resource Protection Well Report County 15 7 Section To 22 N R 4E Start Card To 34 78 Consulting Firm Plantes \$ 1/4 por e City Resource	Geoboring & Development, Inc. Resource Protection Well Report Project Name Joing Fore Space John Date 11/15/91 Wall Identification # Mr - 2 County Ving NE 1/4 50 1/4 Section 2 T. 32M R. 4/12 Stant Card 2559 78 Consulting Firm Janes 7 Moore City Licente
Depth of Components In Feet Type of Surface Seal Service Amount ID of Riser Pipe	Depth of Components in Feet Type of Surface Seal Sent Amount Type of Surface Seal Sent Amount
Type of Riser Pipe Type of Riser Pipe Type of Connection Thread Type of Backfill around Riser Connect Sentinity Grant Amount Diameter of Borehole 52	Type of Riser Pipe
Screen Size or TypeO1 PUC Type of Filter MaterialIO-ZO Colo Sand Amount	Screen Size or Type Of PUC Type of Filter Material 10-20 Cole Sand Amount Amount Amount Amount Amount
Signature Signature	Remarks: Athandored Same day with RECEIVENT DEC 0 6 1991 DEPT. OF ECOLOGY Signature June 1

in they i Geoboring & Development, Inc.
Resource Protection Well Report / 32 48 2 Date Project Name Deing NE 1/4 See 1/4 Well identification # 111w-Drilling Method #\$A 4" Start Card 085478 R. H.B. Driller Terry Consulting Firm Varies P License # /7 City Kenf Depth of on Monument Casing Components Soil Log In Feet Type of Surface Seal ID of Riser Pipe Type of Riser Pipe PUC Amount Type of Connection There of Type of Backfill around Riser Come of Bording Diameter of Borehole Screen Size or Type + 01 Type of Filter Material 10-20 Cal . Jand RECEIVED DEC 0 6 1991 DEPT OF ENDLOGY

- 3/4 - 1

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

Project Name Roeing 6 Well Identification # B 1 T Drilling Method 3½ " HSA Driller Dale SM77, License # 1227 Job # 94 - 103 Depti Soil Log Compo	18-67 Wru B-7	Date 6 - 13 - 94 DEPI. OF ECOLOGY County King Section 2 T. 22 N R. 4 E
Drilling Method 3½ " H SA Driller D41e SM 77, License # 1229 Job # 94 - 103		Start Card A 00268 Consulting Firm Grown Dunter Technology
Soil Log Compo	nents	Stick upon Monument Casing
of 1-7	Convek 1.5	Type of Surface Seal benton to chips + Concrete Amount
Eproum grey sand	1 -	Type of Riser Pipe Amount Type of Connection
arranty th	aligis	Type of Backfill around Riser Amount
NO TON S		Diameter of Borehole
The Department of Ecology does NOT Warranty the Data and or A drawer of Ecology does NOT Warranty the Data and or A drawer of Ecology does NOT Warranty the Data and or A drawer of Ecology does NOT Warranty the Data and or A drawer of Ecology does not be		Screen Size or Type Type of Filter Material
nent of Ec	2'	Amount_
Remarks: No WATE	, All b	ouings end AT 7'

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

22/46/ARECEIVED HOLT DRILLING, INC. FEB 23 1994 Resource Protection Well Report DEPT. OF ECOLOGY Project Name Boing Building 18-67
Well Identification # 47-MW-01
Drilling Method HSA Date 2-17-94 SE & SE W Start Card \$ 17046 Driller Clyde Monre Consulting Firm Tetra Depth of Stick up Flush on Monument Casing Components Soil Log in Feet Fill with ID of Riser Pipe Type of Riser Pipe_ Type of Connection Flush Thrend Fine Silt Type of Backfill around Riser Bentonite 12 Diameter of Borehole Fine SANd Screen Size or Type 10 5/of Type of Filter Material 10-20 Silica Sand

Signature Llyde Moores

Construction/Decommission	37465	3	Type of Well Kesource Protection
Decommission ONIGINAL INSTALLAT of Intent Number	ION Notice		Geotechnical Soil Boring
Consulting Firm GeoEngineers-Rec	mond	Site Address 20403	County 17-King
Unique Ecology Well ID Tag No.		Location 1/4 NE	1/4 SE Sec 2 Town 22N R04E
WELL CONSTRUCTION CERTIFICATION: I comparted		Lat/Long (s.t,r ful Deg	
consumers in the ewell, and in complete twell of Washing		stal Required) Long De	g x Long Mur/Sec
Duller Trainee Name (P(m) Share The	ate	Cased or Uncased Dramete	Static Level
Driller/Uninee Lieense No. 2682		Worls/Decommission Sout	
1) warner, irresped drillers'			
Signantie and License No.			Heled Dire 5.5 = 10
Construction/Design		Well Data W10-229	Formation Description
	BACKFILL	2 FT	Bloom Sand
			_ 0
	DEPTH OF BORIN	. 9	

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DeptotEcology WR-NWRO The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. RESOURCE PROTECTION WELL REPORT CURRENT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Notice of Intent No. SE0713 Type of Well Construction/Decommission 374654 Construction Resource Protection Decommission OFIGINAL INSTALLATION Notice Geotechnical Soil Borng Property Owner Boeing Co. of Intent Number Consulting Firm GeoEngineers-Redmond County 17-King Unique Ecology Well ID Tag No. Lat/Long (s.t.r Let De) still Required) Long Day Work/Decommission Start Date If tranec, (cested drillers) Work/Decommission Completed One 5-5-10 Signature and Luciuse No. Well Data W10-229 Fernianon Description CONCRETE SURFACE SEAL BACKFILL EPTH OF BORING Scale 1 1 Toy 010-12 (Norw 201)

RECEIVED

MAY 13 2010 Deptof Ecology WR-NWRO

Construction Construction [Construction [Decommission ORIGINAL INSTALL of Intent Number	374655 ATTON Notice SE07134	Property Owner	∑Res □ Geo	or Well ource Protection stechnical Soil Box	ng
Consulting Firm GeoEngineers-R	edmond	City Kent	ESTAGE COST PATE		17-King
Unique Ecology Well ID Tag No.		Location	14 NE 14 SE	Sea 2 Towe	22N ROAE or
WELL CONSTRUCTION CRITICISM: I communication of the well, and its completion with all Wash Materials well and the information reported above are true	ingles wall executed to structure	Lat/Long (s,t,r still Required) Tax Parcel No		Lat Min Long M	
Driller/Trainee Signature Driller/Trainee Licerse No. 2682	herate 1	Cased or <u>Uncased</u> Work Decommis		8 '· 5/5/2010	Static Level
If trames, licested drillers' Signature and License No.			ion Completed Date	5-5-	19
Construction/Design	Wel	1Data W10-229		Formation D	escription
	— CONCRETE SURI	2 T Brot		Sown	FT
	DEPTH OF BORING	9	n	0	FT

MAY 1 2 2010 DeptotEcology WR-NWRO The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. RESOURCE PROTECTION WELL REPORT CURRENT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Notice of Intent No. Construction/Decommission Type of Well 374656 Construction Researce Protection Decommission ORIGINAL INSTALLATION Notice Geotechnical Soil Borns of Intent Number SE07/34 Property Owner Boeing Co. Site Address 20403 68th Ave. S Consulting Firm GeoEngineers-Redmond County 17-King Unique Ecology Well ID Tag No. Lat/Long (8,t,r Let Deg. still Required) Long Deg 1 8 Driller/Trainee Signature
Driller/Trainee Licerse No. 2682 5/5/2010 Work/Decommission Start Date If trainer, licesned drillers' Words Decommission Completed Date 5-5-10 Signature and License No. Well Data W10-229 Construction/Design Formation Description CONCRETE SURFACE SEAL BACKFILL Bint DEPTH OF BORING ECV 010-17 (Bio-e 2/3)) RECEIVED MAY 13 2010 Deptof Ecology WR-NWRO

Construction/Decommission Construction Decommission ORIGINAL INSTALLA of Intent Number	& ZO 96 TION Notice	Property Owner I	he Boeing Company	rotection al Soil Boring
Consulting Firm GeoEngineers-Redm	ond	City Kent		y 17-King
Unique Ecology Well ID Tag No. BCH 703		Location 1/4 1	IE 1/4 SE Sec 2	Twa 22N R 4E or
WELL CONSTRUCTION CERTIFICATION I Assemble and and	ecess responsibility. Fix	Lat/Long (s.t.r Lat D	ėg	Lat Min/Sec
compaction of this wall and its pergraphic with all Washington well		still Required) Long		Long Min/Sec
No mercials used in district an information reported above the process my best		Tax Parcel No.		
X Orilles Traine Name (Print) Frank St Driller/Trainee Signature	cott	Cased or Uncased Dian	eter 3"	Static Level
Driller/Trainee License No. 2549		Work/Decommission Star		1,170,000,000
If traince, licensed driller's Signature and License No.		Work/Decommission End	Date 6-9-1	٥
Construction/Design	Well Data	V10-274	For	nation Description
	Blank Casing (dia x de Material Backfill Type Seal Material Gravel Pack Material	3.5 Bont Chip	Brown	10 FT SIND
	Screen (dia x dep) Slot Size Material Well Depth Backfill	010: 010: 010: 010: 010:		12 FT g Tine Sand
	Material Total Hole Depth		т	RECEIVED
Scale I" =		Pageof		JUE 20 2010 Pept of Ecology WR-NWRO

Construction/Decommission Construction	382097		Type of Well Resource P	otection
Decommission ORIGINAL INSTALLA	TION Notice			d Soil Boring
of Intent Number		Property Owner	The Boeing Company	
Consulting Firm GeoEngineers-Redmo	i de la companya de		03 68th Ave. S.	-
Consulting Firm GeoEngineers-Reum	ond	City_Kent	Count	y 17-King
Unique Ecology Well ID RCL	1204	Location 1/4	NE 14 SE S4: 2	
FELL CONSTRUCTION CERTIFICATION 1 (sense used and/o) as		Lat/Long (s.t,r Lat	Deg	Lat Min/Sec
mattention of this see, and its weight also with all Washington well	of collection stead with	still Required) Lor	ig Deg	Long Min/Sec
merch used and the information reported above are obsert my basi	Answirdge and belief	more was a way		
Driller Trume Name (Print) Frank So	coft	Tax Parcel No.		
Oriller/I rainee Signature	enth	Cased or Uncased Di	anxiter 3'1	Static Level 5
Oriller/Trainee License No. 2549 1		Work/Decommission S	fort Date 6/9/2010	
ftramee, licensed driller's Signature and License No.		Work/Decommission E	ind Date 6-9-10	3
Construction/Design	Well Data	W10-274	Cons	nation Description
	Material Backfill Type Seal Material Gravel Pack Material	10.5 2/12 Sam	03 3765 - 3765 - 50	10 Fine
	Screen (dia x dep)	(" x 10' P. E	0 10	12 FT
	Slot Size	.=10	3	
¢ = 3	Material			
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vinninininin	Well Depth	_12	FT	
	Backfill		- 1	
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	Total Hole Depth		FT	RECEIVED

(SUBMIT ONE WELL REPORT PER WELL I Construction/Decommission (select one) Construction Decommission ORIGINAL INSTALLATION No of Intent Number	194749 tice	Type of Well (select one) Resource Protection Geotech Soil Borin wner Boeing Company	n APR
Consulting Firm Landau Associates		ss 20403 68th Avenue South	
Unique Ecology Well ID	Cit. Vant	County King	
Tag No. NA Bocing ID: BSC.	-(8-67-09	w1/4-1/4 NE1/4 Sec // Twn2	7 D VS
WELL CONSTRUCTION CERTIFICATION: 1 cor	nstructed and/or	01/4-1/4/VE1/4 Sec // 1WIIZ	- K.42
accept responsibility for construction of this well, and its compli- Washington well construction standards. Materials used and the	ance with all Lat/Long (s	s, t, r Lat Deg L	at Min/Sec
above are true to my best knowledge and belief.	still REQUI	ID CDV	ong Min/Sec
Driller DEngineer Trainec Name (Print) Chart	Jacob Tax Parcel		ong minutes
Driller/Engineer /Trainee Signature	Jacob Cased or U	Incased Diameter Stati	ic Level 7.96
Driller or Trainee License No. PE 38	240	ommission Start Date 3/28/6	
If trainee, licensed driller's			
Signature and License No.	Work/Deco	ommission Completed Date 3/2	28/06
Construction/Design	Well Data	Formation	Description
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Bentanite			
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ADD 1 3 TRACK BSC-18-62-4 Water Resources Program SAMPLE DATA SOIL PROFILE GROUNDWATER Drilling Method: Hollow-stem Auger Monitoring Well Detail (mdd) Syn Ground Elevation (ft) 29.3 (MSL) Sample 8 & interva USCS Drilled By: Cascade Drilling Inc. DIG Light brown, gravelly, silty, fine to medium SAND (no odor or staining) (loose to very loose, moist to wet) (fill to possible native Flush-mounted monument with locking can Bentonite chips 2-inch diameter, Schedule 40, PVC well 5-1 22 23 ATD. V 20/40 Colorado sand S-2 5 82 154 Gray SILT with fine sand (no odor or staining) (stiff, wet) (alluvium) 2-inch diameter Schedule, 40 PVC screen (0.010-inch slot size) (prepack screen) 17 Dark gray, fine SAND with sit (no odor or SM staining) (medium dense, well) (alluvium) S-4 a2 27 Threaded end can - Native slough Monitoring Well Completed 12/20/01 Elevation at Top of Protective Casing = 29.27 ft Elevation at Top of Monitoring Well Casing = 28.65 ft Total Depth of Monitoring Well = 21.0 ft Boring Completed 12/20/01 Total Depth of Boring = 21.5 ft Stratigraphic contacts are based on field interpretations and are approximate. Reference to the text of this report is necessary for a proper understanding of subsurface conditions. Refer to "Sooi Classification System and Keyr (figure for explanation of graphics and symbols.") Figure Boeing Clearwater Log of Monitoring Well BSC-18-62-4 B-20 ASSOCIATES LANDAU Kent, Washington

RECEIVED

Report. Please print, sign and return by mail to Department of Ecology CURRENT Notice of Intent No. AE 0/667 RESOURCE PROTECTION WELL REPORT Type of Well (select one)

RECEIVED
Resource Protection
Geotech Soil Boring
APR 1 3 2006 (SUBMIT ONE WELL REPORT PER WELL INSTALLED) on this Well Construction/Decommission (select one) Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number NA Property Owner Boeing Company Water Resources Program Department of Ecology Consulting Firm Landau Associates Site Address 20403 68th Avenue South Unique Ecology Well ID
Tag No. NA Boeing ID: BSC - 18-62-05 County King Information Location #W1/4-1/4 NE 1/4 Sec // Twn Z Z R 9E WWM WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Lat Deg Lat Min/Sec Lat/Long (s, t, r Washington well construction standards. Materials used and the information reported still REQUIRED) above are true to my best knowledge and belief. Long Min/Sec Driller/Engineer | Irainee Name (Print) | Clin F Jacob |
Driller/Engineer / Trainee Signature | Clin F Jacob |
Driller or Trainee License No. | FE 18340 Tax Parcel No. the Static Level 7.85 Cased or Uncased Diameter Work/Decommission Start Date 3/28/06 and/or If trainee, licensed driller's 3/28/06 Work/Decommission Completed Date Signature and License No. the Data Well Data Formation Description Construction/Design See attached well Depth Materials (f+ EGS) Abadoment Record and well log **Ecology does NOT Warranty** Rentonite I plug FIR Aller Soud PACK 5 Department dieses Detret Slate The

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ECY 050-12 (Rev. 2/03)

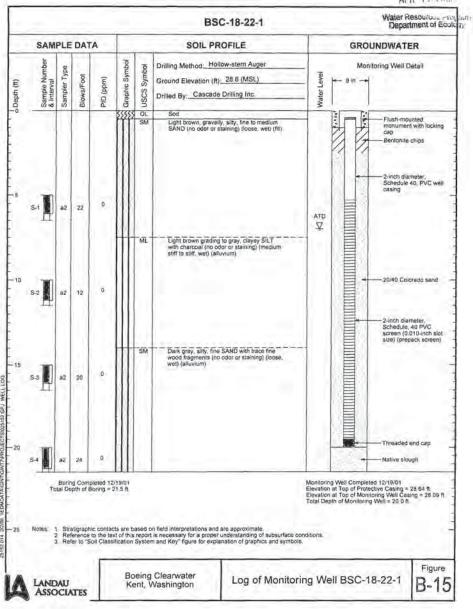
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	SAM	PLE	DAT	A			SOIL PROFI	U.F.	T	GR	Water Resources Provide Department of Ecolog DUNDWATER
Depth (ft)	Sample Number 8 Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-s Ground Elevation (ft) 29 Drilled By: Cascade Drill	stem Auger .9 (MSL)	Water Level		onitoring Well Detail
ū						SM	Asphalt pavement Light brown to gray, sitly, medium SAND (no odor of moist to wet) (fill)	gravely, fine to or staining) (loose.			Flush-mounted monument with locking cap Bentonite chips
5	5-1	a2	24	ō					ATD 又		2-inch diameter, Schedule 40, PVC well casing
10	S-2	a 2	10.	0		ML	Gray grading to light brow iron staining in rootholes : staining) (medium stiff, we	(no odor or			20/40 Colorado sand
15	S-3	a2	28	0		SM	Gray, very sitty, fine SANI sill interbeds (no odor or s medium dense, wet!) (allu	staining) (loose to			2-inch diameter, Schedule, 40 PVC screen (0.010-inch slot size) (prepack screen)
20	S-4	a2	23	ū		SP. SM	Dark gray, fine SAND with interbedded sandy slif (no (loose, wet) (alluvium)	salt and odor or staining)			Threaded end cap Native slough
25	Notes: 1	Sin	itioranh	oleted 12/ loring = 2	ts are ha	ased o	n field interpretations and are as is necessary for a proper under and Key' figure for explanation	pproximate, standing of subsurface co n of graphics and symbols		ing Well Compl n at Top of Pro n at Top of Mo epith of Monitori	eted 12/21/01 tective Casing = 29,86 ft hitoring Well Casing = 29,47 ft ng Well = 20,9 ft.
	LAND			Г	Во	eing		_og of Monitori		ell BSC-	18-62-5 D 0

(SUBMIT ONE WELL REPORT PER WELL IN Construction/Decommission (select one) Construction Decommission ORIGINAL INSTALLATION Notion of Intent Number Of Intent Number Note of Intent Number Of Intent Number Note of Intent Numbe	Property Owner B Site Address 2040 City Kent Location Ne 1/4-1, ce with all formation reported formation reported Tax Parcel No. Cased or Uncased Work/Decommissi	County King
Construction/Design Materials Conete te and the BGS Conete te and	Well Data See attached well Abarbarnet Record and well 109.	Formation Description

WITT SUNDIN

APR 1.4 THUE



RESOURCE PROTECTION WELL R (SUBMIT ONE WELL REPORT PER WELL INSTA Construction/Decommission (select one)	Type of Well (select one) 7 C Resource Protection	1669 E175 13200
Decommission ORIGINAL INSTALLATION Notice of Intent Number Consulting Firm Landau Associates Unique Ecology Well ID Tag No. NA Bock 20: BSC-18-2: WELL CONSTRUCTION CERTIFICATION: I constructed accept responsibility for construction of this well, and its compliance will Washington well construction standards. Materials used and the informat above are true to my best knowledge and belief. Driller Ragineer Trainee Name (Print) Chief Jacob Colling	Property Owner Boeing Company Water Reso Bepartme	cer One E
If trainee, licensed driller's Signature and License No.	Work/Decommission Start Date 3/28/oC Work/Decommission Completed Date 3/29/oC	6
Construction/Design Materials Concrete Seal Concrete Seal Flow & Friday Flow & Friday Acceptable Seal Associated Seal	Well Data Formation Description attached Well downt Pearl well log.	

ECY 050-12 (Rev. 2/03)

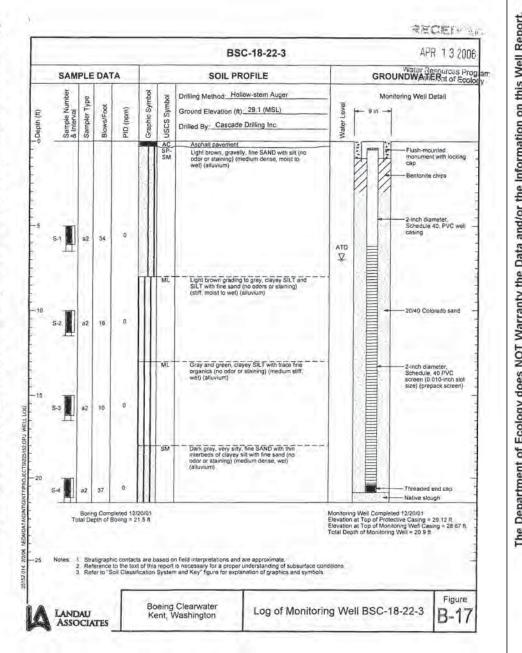
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					_		BSC-18-22-2	_		Water Resources Pro Department of Ecolo	
	SAM	PLE	DAT	A			SOIL PROFILE		GRO	DUNDWATER	
	per	90			lodi	0	Drilling Method: Hollow-stern Auger	Monitoring Well Detail			
	Sample Number & Interval	Sampler Type	too	£	Graphic Symbol	Symbol	Ground Elevation (ft) 28.9 (MSL)	Water Level	- 9 in -	4	
(ii) indan o	mple	eldun	Blows/Foot	PID (ppm)	aphic	uscs s	Drilled By: Cascade Drilling Inc.	ater	-		
1	ගින	SS	Big	ā	Ö		Asphalt pavement	3	121 0		
						SM	Light toown to gray, gravelly, silly, fine to medium SAND (no odor or staining) (medium dense, moist to wet) (fill).			Flush-mounted monument with locking cap Bentonite chips	
					Ш		1		111		
	21				Ш				18	2-inch diameter, Schedule 40, PVC well	
	S-2	a2	50/ 5"	.0	Ш				1-7	casing	
	TE							ATD			
								A			
					H	ML-	Gray and light brown, clayey SILT with	-			
					Ш		zones of fine organics (no odor or staining) (stiff to medium stiff, wet) (alluvium)	1			
					Ш					20110 001111111111111111111111111111111	
9	5.2		13	0	Ш					20/40 Colorado sand	
	5-2	112	13		Ш						
	6.1		Ш		Ш						
					Ш			1		2-inch diameter,	
					Ш	1				Schedule, 40 PVC screen (0.010-inch slot	
					Ш			1		size) (prepack screen)	
5				0	Ш			4			
	S-3	92	12	· ·	Ш			1			
	-				Ш	Ш		1			
					Ш						
			10								
		1.7			Ш			T)			
3	TOT	J)		o	Ш					Threaded end cap	
	S-4	a2	38			SM	Dark gray, silty, fine SAND (odor not recognizable, no staining) (medium dense.		C OF	Native slough	
		Boris	na Com	pleted 12/	19/01		wet) (alluvium)	Monitor	ing Well Compl	eted 12/19/01	
	To	tal De	epth of E	Boring = 2	1.5 ft.			Elevation	on at Top of Pro	stective Casing = 28.93 ft. nitoring Well Casing = 28.44 ft.	
								Total D	epth of Monitori	ing Weil = 20.7 ft.	
	Van State of	d									
i	Notes:	Str. Re	atigraph ference	to the tex	ts are b	report	n field interpretations and are approximate. is necessary for a proper understanding of subsurface co n and Key" figure for explanation of graphics and symbols	nditions.			
	3	Re	ter to "S	oil Classi	rication	System	n and Key Inguite for explanation of graphics and symbols				
					-	-		_		Figure	
4	LAND						Clearwater Log of Monitori	na W	ell BSC-		
ø	ASSC	LOT I			Ke	ent, V	Vashington Log of Monitori	5	200 100	ID-10	

N=4 E

(SUBMIT ONE WELL REPORT PER WELL II Construction/Decommission (select one) Construction Decommission ORIGINAL INSTALLATION Not of Intent Number Consulting Firm Landau Associates Unique Ecology Well ID Tag No. WA Boeing 20: BSC-18	194756 ice NA Property Owner Bo Site Address 20403 City Kent	68th Avenue South Water Resources County King
WELL CONSTRUCTION CERTIFICATION: I com accept responsibility for construction of this well, and its complia Washington well construction standards. Materials used and the above are true to my best knowledge and belief. Driller Tengineer Trainee Name (Print)	structed and/or nee with all information reported information reported still REQUIRED) Tax Parcel No. Cased or Uncased D	Lat Deg Lat Min/Sec Long Deg Long Min/Sec Diameter Static Level 7-45
If trainee, licensed driller's Signature and License No. Construction/Design	Work/Decommission Work/Decommission Well Data	n Completed Date 3/E8/o C Formation Description
Materials Concrete Seal Play Play Litter Sound Pack Slat Slat Slat Slat Depth (f+ EGS)	Abandonment Revord and bell log.	



☐ Construction ☐ Decommission ORIGINAL INSTALL		7	Type of Well (select one) Resource Protection Geotech Soil Boring	APR 132006		
Consulting Firm Landau Associates	ber NA	Property Owner Boeing Company Nater Resources Progra Site Address 20403 68th Avenue South Department of Ecology				
Unique Ecology Well ID		Die Address as the south Fire the Section				
Tag No. NA Boeing 20: L	356-18-23-01	City Kent County King Location NE1/4-1/4 AW1/4 Sec 11 Twn 22 R 4 E				
WELL CONSTRUCTION CERTIFICA accept responsibility for construction of this well, washington well construction standards. Material above are true to my best knowledge and belief. Driller Engineer Trainee Name (Print) Driller/Engineer Trainee Signature Print Driller or Trainee License No. Pti	and its compliance with all sused and the information reported	Lat/Long (s, t, r still REQUIRED) Tax Parcel No Cased or Uncased D Work/Decommission	Lat Deg Lat Long Deg Lon Diameter Static 1 Start Date 3/28/04 1 Completed Date 3/28	Min/Secg Min/Sec		
Signature and License No. Construction/Design		ell Data	Formation De			
Materials Concrete South The South	1+h See atto	acked well at Read				

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_	SAM	PLE	DAT	A			SOIL PROFILE	T	GRO	Water Reso Uspartme UNDWATE	nt of Ecolo
nebut (ii)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stern Auger Ground Elevation (ft): 30.2 (MSL) Drilled By: Cascade Drilling Inc.	Water Level		nitoring Well De	0
						SM	Light brown to gray, silty, gravelly, fine to medium SAND (medium dense, moist) (illi)			Flush-moun monument of cap Bentonite of	with lacking
	S-1	a2.	65	0		ML	Gray to brown, line sandy SILT with interbedded, silty, line sand (no oder or staining) (very stilf, moist) (fill?)			2-Inch diam Schedule 40 casing	eter,), PVC well
						ML	Ught brown to gray, clayey SiLT with Iron staining in reothbles (no oder or staining) (medium stiff, wet) (alluvium)	ATD V		2000 2000	
	S-2	a2	8	0						2-inch diami	eter,
5	S-3	a2	32	ŏ		SM	Dark gray, very slifty, fine SAND (no odor or staining) (loose to medium dense, wet) (allurium)			screen (0.01 size)	0-inch slot
0	S-4	a2	24	ø	1 2000					—Threaded en	
5	Notes: 1	tal De	opth of B	leted 12/ oring = 2 c contact to the tex oil Classi	ts are b	ased or report System	n field interpretations and are approximate, is necessary for a proper understanding of subsurface con and Key' figure for explanation of graphics and symbols.	Elevation Elevation Total De	ng Well Comple n at Top of Prot n at Top of Mon pth of Monitorin	ted 12/19/01 ective Casing = 30 itoring Well Casin g Well = 20.0 ft	9.24 ft. 19 = 29.79 ft.
A	LAND	AU		Γ	Во	eing	Cleanwater Log of Monitorin		ell BSC-1	8-23-1	Figure

(SUBMIT ONE WELL REPORT PER WELL IN. Construction/Decommission (select one) Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number →	194758	Type of Well (select one) Resource Protection Geotech Soil Boring APR 13 20				
Consulting Firm Landau Associates	2.76	Site Address 20403 68th Avenue South Department of Ecol				
Unique Ecology Well ID	City Kent	City Kent County King				
WELL CONSTRUCTION CERTIFICATION; I construction of this well, and its compliant Washington well construction of this well, and its compliant Washington well construction standards. Materials used and the in above are true to my best knowledge and belief. Driller / Engineer Trainee Name (Print) Driller/Engineer Trainee Signature	poted and/or re with all Lat/Long (s, t, r still REQUIRED) Tax Parcel No. Cased or Uncase	Long Deg Long Min/Sec				
Driller or Trainee License No. PE 383 If trainee, licensed driller's	Work/Decommis	sion Start Date 3/28/06				
Signature and License No.	Work/Decommis	sion Completed Date 3/28/04				
110 2000	La Control	A				
Construction/Design	Well Data	Formation Description				
Materials Depth (ff EGS)	See attached hell					
(4+ EGS)	Abandonant Record					
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Concrete 2	And the same	. []				
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RECEIVED APR 137008 Water Resources Program Department of Ecology BSC-18-23-2 SAMPLE DATA SOIL PROFILE GROUNDWATER Graphic Symbol Drilling Method: Hollow-stem Auger Monitoring Well Detail Sym Ground Elevation (ft) 29.0 (MSL) Sample N. & Interval uscs Drilled By: Cascade Drilling Inc. -Flush-mounted Brown, sifty, gravelly, fine to medium SAND (no odor or staining) (dense, moist to wet) monument with locking Bentonite chips 2-inch dlameter. Schedule 40, PVC well casing 50/ 5" a2 0 ATD Gray to green, clayey SILT with thin interbedded sitty, fine sand (no odor or staining) (medium stiff, wet) (alluvium) - 20/40 Colorado sand 0 S-2 32 2-inch diameter Schedule, 40 PVC screen (0.010-inch slot size) (prepack screen) Dark gray, silty, fine SAND (no odor or staining) (loose, wet) (alluvium) 0 S-3 21 a2 Threaded end can 22 17 Native slough Monitoring Well Completed 12/20/01 Elevation at Top of Protective Casing = 29.02 ft. Elevation at Top of Monitoring Well Casing = 28.45 ft. Total Depth of Monitoring Well = 20.1 ft Boring Completed 12/20/01 Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate. 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.

3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols. Figure

Log of Monitoring Well BSC-18-23-2

B-19

ECY 050-12 (Rev. 2/03)

Boeing Clearwater

Kent, Washington

LANDAU

ASSOCIATES

Report. Please print, sign and return by mall to Department of Ecology RESOURCE PROTECTION WELL REPORT CURRENT Notice of Intent No. AE01669 RECEIVED (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Type of Well (select one)
Resource Protection
Geotech Soil Boring on this Well Construction/Decommission (select one) APR 13 2006 Construction Decommission ORIGINAL INSTALLATION Notice Water Resources Program
Department of Ecology of Intent Number __ Property Owner Boeing Company Consulting Firm Landau Associates Site Address 20403 68th Avenue South Unique Ecology Well ID
Tag No. NA Boeing 20: BSC-18-21-01 County King Select One EWM Information Location NE1/4-1/4 NW1/4 Sec // Twn 22 R 4E WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Lat/Long (s, t, r Lat Deg Lat Min/Sec Washington well construction standards. Materials used and the information reported still REQUIRED) above are true to my best knowledge and belief. Long Min/Sec Driller/Engineer Traince Name (Print) Clark Joseph Driller/Engineer /Traince Signature Clark Jews Driller or Traince License No. PE 19242 Tax Parcel No. Cased or Uncased Diameter Static Level 7.20 the Work/Decommission Start Date 3/28 66 and/or If trainee, licensed driller's 3/28/06 Work/Decommission Completed Date Signature and License No. Formation Description Construction/Design Data See attended well Depth Materials Abalount Revol (ft BGS) NOT Warranty the and well log Zentonile. does PVC filter Soud Ecology PACE of The Department Scheet SIL

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							BSC-18-21-1					Nater Resou	roes Progr
	SAM	PLE	DAT	Α			SOIL PROFILE		GROUNDWATER				
	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Drilling Method: Hollow-stem Auger Ground Elevation (ft) 28.6 (MSL) Drilled By: Cascade Drilling Inc.			Water Level	4 9		itoring Well D	letail	
				Y		SP. SM	Dark gray, gravelly, fine SAND with allt (no odor or staining) (medium dense, moist to well) (fill) (strong solvent-like odor in soil cuttings)		ř			Flush-mo monumer cap Bentonite	l with locking
	S-1	a2	52	NA					ATD.			2-inch dia Schedule casing	meter, 40, PVC wel
	S-2	a2	g	NA.		ML	Mottled, dark gray and gray, clayey SiLT with fine sand and trace gravel (no oder or staining) (medium stiff, wet) (fili)			TITITE THE TOTAL PARTY OF THE P	•	20/A0 Col	orado sand
	S-3	a2	6	0	1000	SM	Gray, very sity, fine SAND with interbedded clayery sit with fine sand (no odor or staining) (very loose, well (alluvium)			THE PERSON NAMED IN COLUMN NAM		2-inch dia Schedule, screen (0, size) (pres	meter, 40 PVC 010-inch slot lack screen)
	S-4	a2	15	ō		SP- SM	Dark gray, fine SAND with sit and trace fine organics (no odor or staining) (foose, wel) (alluvium)	25				Threaded Native slo	end cap
	Notes: 1	Stra	pth of B	to the lex	ts are b	report	n field interpretations and are approximate, is necessary for a proper understanding of subsurfac and Key [®] figure for explanation of graphics and sym	E E T	levation levation otal De	at Top	of Prote	ted 12/20/01 eclive Casing = toring Well Cas g Well = 21.3 ft	29.47 /t ing = 28.65 ft
-	LAND		TES		Bo	eing ent, V	Clearwater Vashington Log of Monit	oring	g We	ell BS	C-1	8-21-1	Figure B-1

the Information on this Well Report. Please print, sign and return by mail to Department of Ecology CURRENT Notice of Intent No. AE 01668 RESOURCE PROTECTION WELL REPORT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Type of Well (select one)
Resource Protection
Geotech Soil Boring

APR 1 3 700F Construction/Decommission (select one) ☐Construction
☐ Decommission ORIGINAL INSTALLATION Notice APR 13 700E of Intent Number NA Property Owner Boeing Company Water Resources Fregue.

Department of Ecolog. Consulting Firm Landau Associates Site Address 20403 68th Avenue South Unique Ecology Well ID Tag No. NA Boeing FD: BSC-18-03-01 County King Location NE1/4-1/4 NW1/4 Sec // TwnZZ R4E WELL CONSTRUCTION CERTIFICATION: 1 constructed and/or accept responsibility for construction of this well, and its compliance with all Lat/Long (s, t, r Washington well construction standards. Materials used and the information reported still REQUIRED) above are true to my best knowledge and belief. Long Min/Sec Driller Engineer Trainer Signature Tax Parcel No. Driller/Engineer /Trainee Signature Driller or Trainee License No. Static Level 2.99 Cased or Uncased Diameter Work/Decommission Start Date 3/28/06 If trainee, licensed driller's Ecology does NOT Warranty the Data and/or Work/Decommission Completed Date 3/29/06 Signature and License No. Construction/Design Well Data Formation Description Se attached well Depth Materials Abandonment Record (ft BGS) al well lay Pertonie filter Sand PACK The Department of Scoret 9/04

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ECY 050-12 (Rev. 2/03)

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				WOVECT BOETHO IN-DI KENT		
				DATE COMPLETED TO DECEMBER 1998.		
				DRILLING METHOD 3.3/6" ID HSA		
		= 5	distri	TOP OF EASING 22.88		
		, co	and and	GROUND SURFACE ELEV		
Schools I'll	Sample 40	Blows Per Foot Sample Recovery	Graphic Lng USC Classificat	L00060 BYTim_Fitzgerale	_	_
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PAGE 1 III I		JOB WH	BER DWD-1	DATE APPL 025		

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

the Information on this Well Report. Please print, sign and return by mail to Department of Ecology RESOURCE PROTECTION WELL REPORT CURRENT Notice of Intent No. (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Type of Well (select one)
Resource Protection
Geotech Soil Boring RECEIVE Construction/Decommission (select one) Construction APR 13 2006 Decommission ORIGINAL INSTALLATION Notice of Intent Number NA Property Owner Boeing Company Water Resources Program
Department of Ecology Consulting Firm Landau Associates Site Address 20403 68th Avenue South Unique Ecology Well ID.
Tag No. NA Boeing 20: BSC-18-03-02 County King Location NE 1/4-1/4 Aw1/4 Sec // Twn 22 R 4E WELL CONSTRUCTION CERTIFICATION: 1 constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported Lat/Long (s, t, r Lat Min/Sec still REQUIRED) above are true to my hest knowledge and belief Long Min/Sec Driller/Engineer Trainee Name (Print)

Driller/Engineer Trainee Signature

Driller or Trainee License No. Tax Parcel No. Static Level 7.90 Cased or Uncased Diameter Work/Decommission Start Date 3/28/06 and/or If trainee, licensed driller's Work/Decommission Completed Date 3/29/06 Signature and License No. Well Data Formation Description Construction/Design Ecology does NOT Warranty the Data Se attached well Depth Materials (f+ BGS) Abandonment Revol and well log. filter Sand PACK The Department of Slat SCALE: 1"= Page_of_ Ecology is an Equal Opportunity Employer. ECY 050-12 (Rev. 2/03)

Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. MONITORING WELL MW-02 PROJECT BOEING 18-03 KENT SPACE CENTER DATE COMPLETED O DECEMBER 1882 UNTILLING METHOD __ I J/8" ID HSA TOP OF CASING 20.13 GROUND SURFACE CLEV _ 26.63 LOGGED BY John Filtres aid Lilbotogical Description SANOT GRAVEL (DP), Grawn (18) Hond augus to 4.5-feet REA CHAVEL (GP) Brownsh gray (Op/6/4), minute minute, any to plant, no setor or stars (fall) \$1142579 SAND ISPL Dark graysch brown (IOyr4/2), 65% necoun sand. Six times; declum dense, most, no circl of stem, trailed six 40 DESCRIPTION OF THE PROPERTY OF THE PROPERTY OF THE PARTY SULTY SAND ISHI Dark traval troom 1009-4/31 JUX menus to time sand, 30% set, renium sense, well SILT DILL DAY grayon brown intyracts not us not the same los clay fem well THEOREM. Tutar-degre & 210 The -25 FAGE 1951 JOB REMILLE STILL LEVEL DATE ARRESTS

Report. Please print, sign and return by mail to Department of Ecology CURRENT Notice of Intent No. AE01668 RESOURCE PROTECTION WELL REPORT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Type of Well (select one)

Resource Protection
Geotech Soil Boring RECEIVED on this Well Construction/Decommission (select one) Construction Decommission ORIGINAL INSTALLATION Notice APR 13 2006 of Intent Number Property Owner Boeing Company Vater Resources Program Department of Ecology Consulting Firm Landau Associates Site Address 20403 68th Avenue South Unique Ecology Well ID
Tag No. NA Boeing ID : BSC-18-03-03 County King Location NE1/4-1/4 NW1/4 Sec // Twn 22 R 4E Information WELL CONSTRUCTION CERTIFICATION 1 constructed and/or accept responsibility for construction of this well, and its compliance with all Lat/Long (s, t, r Lat Deg Lat Min/Sec Washington well construction standards. Materials used and the information reported still REQUIRED) above are true to my best knowledge and belief. Long Deg Long Min/Sec Driller / Engineer Traince Name (Print) Clast 10.00 Tax Parcel No. Driller/Engineer /Trainee Signature Static Level 7.68 Cased or Uncased Diameter the Driller or Trainee License No. Work/Decommission Start Date 3/28/06 Data and/or If trainee, licensed driller's Work/Decommission Completed Date 3/29/06 Signature and License No. Construction/Design Formation Description See attached well Depth Materials Abardonnet Revol the (ff BGS) al well log **NOT Warranty** Rentante does DESTRIBITION f. Her Soul) Ecology pack 5 Department dienny Schert SIL The ECY 050-12 (Rev. 2/03) SCALE: 1"= __ Page__of__ Ecology is an Equal Opportunity Employer

MONITORING WELL MW-03 PHOLECT __ BOEING 18-03 KENT SPACE L'ENTER DATE COMPLETED 4 DECEMBER 1992 DHILLING HETHOD _ 1 3/8" ID HS& 10P OF CASING 28.48 GROUND SURFACE ELEV _ 28.70 LOGGED BY TIM Firzgerald Lithological Description SANDY DRAVEL (SP), Brown Hand Juger to S-feet FOORS IN GRADED SAARS WITH GRAVES INFO, Browner's may Tiber S/O. FOX sand. 40% regions planes and sale message above, stone. \$0 W2000 F BANG (SPE Fithersh glas Fithersh BSS resources SE SE ARE RECORD dense moist, no open or other, instruct 10 SILT INC. Data grayer move (10graf) 100 mg mg iniciation of the late and MIRANETTS. Lappin, soldiersted, one 2-year engages or layer Total depth # 21 TLATE PAGE EST. CE NUMBER: 3709-19-01 DATE - SELL INTI

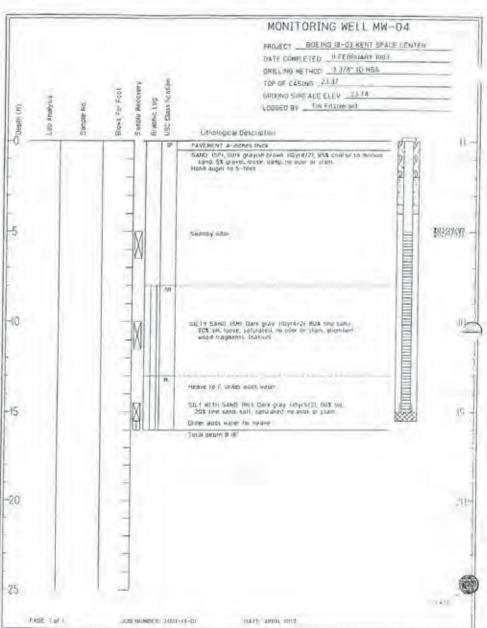
The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

Report. Please print, sign and return by mail to Department of Ecology CURRENT Notice of Intent No. AE01668 RESOURCE PROTECTION WELL REPORT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Type of Well (select one)
Resource Protection
Geotech Soil Boring RECEIVED on this Well Construction/Decommission (select one) ☐ Construction
☐ Decommission ORIGINAL INSTALLATION Notice APR 13 2006 of Intent Number _ 11A Property Owner Boeing Company Copartment of Ecology Consulting Firm Landau Associates Site Address 20403 68th Avenue South Unique Ecology Well ID
Tag No. NA Bocing ID: BSC-18-03-04 County King Location NE 1/4-1/4 Mu1/4 Sec // Twn 22 R 45 Www Information WELL CONSTRUCTION CERTIFICATION: 1 constructed and/or accept responsibility for construction of this well, and its compliance with all Lat/Long (s, t, r Lat Deg Lat Min/Sec Washington well construction standards. Materials used and the information reported still REQUIRED) above are true to my best knowledge and belief. Long Deg Long Min/Sec Driller/Engineer Traince Name (Print) Class F. Joseph Driller/Engineer Traince Signature Driller or Traince License No. Tax Parcel No. Static Level 4.98 Cased or Uncased Diameter the Work/Decominission Start Date 3/28/66 Data and/or If trainee, licensed driller's Work/Decommission Completed Date 3/29/66 Signature and License No. Well Data Formation Description Construction/Design See orthoched well Depth Materials the Abandonment Revent & (f+ BGS) well log does NOT Warranty Rentarite PVE filter Soud Ecology PACE Department of Bereet SIN The

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ECY 050-12 (Rev. 2/03)



on this Well Report. Please print, sign and return by mail to Department of Ecology RESOURCE PROTECTION WELL REPORT CURRENT Notice of Intent No. 4E01668 (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Type of Well (select one)
Resource Protection
Geotech Soil Boring RECEIVED Construction/Decommission (select one) Construction Decommission ORIGINAL INSTALLATION Notice APR 13 2006 of Intent Number Property Owner Boeing Company Vivater Resources Progra Consulting Firm Landau Associates Site Address 20403 68th Avenue South Unique Ecology Well ID Tag No. NA Boeing ID: BSC-18-03-05 County King Location NE 1/4-1/4 MW1/4 Sec // Twn 22 R 4E Information WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Lat/Long (s, t, r Lat Deg Lat Min/Sec Washington well construction standards. Materials used and the information reported still REQUIRED) above are true to my best knowledge and helief. Long Min/Sec Long Deg Driller/Engineer Trainee Signature

Driller/Engineer Trainee Signature

Driller or Trainee License No. Tax Parcel No. Static Level 201 the Cased or Uncased Diameter 3/28/06 Work/Decommission Start Date the Data and/or If trainee, licensed driller's Work/Decommission Completed Date 3/29/0C Signature and License No. Construction/Design Well Data Formation Description See attached well Depth Materials Abirlogment Record (f+ BGS) al well log does NOT Warranty Pontonite 2.10 filter Sand Ecology PACK Department of

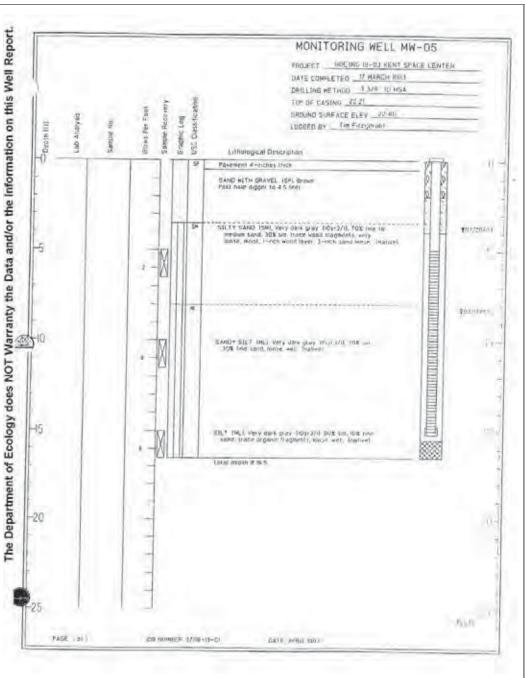
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ECY 050-12 (Rev. 2/03)

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114851 RESOURCE PROTECTION WELL REPORT START CARD NO 503778 on this Well Report. Pacific Gateway Bus Palk COUNTY_ PROJECT NAME LOCATION SWA NEW SOC 2 TWN 2NR4E WELL IDENTIFICATION NO STREET ADDRESS OF WELL, S, ZOOTH St. & 62nd Ave. So. DRILLING METHOD Keith Brown DRILLER Cong Exploration WATER LEVEL ELEVATION ____ 13' 865 GROUND SURFACE ELEVATION _ CAKROWN
INSTALLED 5/13/2 SIGNATURE Terra CONSULTING FIRM REPRESENTATIVE DEVELOPED and/or the Information AS BUILT WELL DATA FORMATION DESCRIPTION Interpedded sand fr bentouite groot surface to B.O.H groot ring Data the NOT Warranty RECEIVED JUN 1 0 2002 DEPT OF ECOLOGY Ecology does l Department of 70 OF SCALE 1 = PAGE_

ECY 050 12 (Rev 11/89)

RESOURCE PROTECTION WELL REPORT 22/4/3 J Job #5410 RESOURCE PROTECTION WELL REPORT 22(4/2) J6+5410 COUNTY: King START CARD NO. RO3476 START CARD NO. RO3476 PROJECT NAME: BOEING RESEARCH OF COUNTY: King
LOCATION: NEW SEW SOC & TWO ZEN & 4E PROJECT NAME: Boeing Research OF The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. LOCATION: NEW SE IN SUC 2 TWO 22NR 46 WELL IDENTIFICATION NO. ARE DRILLING METHOD: PROBE DRILLING METHOD: PROBE STREET ADDRESS OF WELL: Hwy 181 \$ S. 204th St. Kent STREET ADDRESS OF WELL:

HING 18 | \$ 5.20175 \$

WATER LEVEL ELEVATION: N/A DAILLER: MICHTAEL COLBERT DRILLER: MICHAEL COLPERT WATER LEVEL ELEVATION: N/A FIRM Cascade Drilling Toc. GROUND SURFACE ELEVATION: N/A SIGNATURE MUSELLIN GROUND SURFACE ELEVATION: N/A INSTALLED: 10 - 12 - 95 CONSULTING FIRM BOBING CO INSTALLED: 10 - 12 - 95 S. Ryan DEVELOPED: N/A DEVELOPED: N/A REPRESENTATIVE: REPRESENTATIVE 5410 5410 FORMATION DESCRIPTION WELL DATA FORMATION DESCRIPTION WELL DATA AS-BUILT AS-BUILT CONCRETE SURFACE SEAL CONCRETE SURFACE SEAL BACKFILL BENTON, TE BACKFILL BENTONITE 3 -16 ft. 3 -16 ft. MED GRAY SILTY CLAY MED GRAY SILTY CLAY W/SMALL COBBLES W/SMALL COBBLES FICEIVED RECEIVED 1. V 06 1995 NOV 06 1995 L. . or ECOLOGY DEPT. OF ECOLUGY DEPTH OF BORING 16'0 DEPTH OF BORING 16' 6 SCALE: 1" . ECY 050-12 (Rov. 11/89) ECY 050-12 (Rev. 11/89)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

JECT NAME: 130E1 NO. 2 LIDENTIFICATION NO. 2 LING METHOD: PROBE	LOCATIONAL STREET ADDRI	M SE M Sec 2 TWN 22N R 4E
LER: MULTAGE CON	Inc. WATER LEVEL	elevation: N/A
NATURE: HINE BOESA	GROUND SURF	ACE ELEVATION: _N/A
RESENTATIVE: S. R.	DEVELOPED:	N/A
	5410	FORMATION DESCRIPTION
AS-BUILT	WELL DATA	Porting to the second state of the second state of the second sec
VIO	CONCRETE SURFACE SEAL	0 - 3 ft. F:11
1	BACKFILL BENTON, TE	3 -16 ft.
		MED GRAY SILTY CLAY - W/SMALL COBBLES
		W/ SMALL COORES
		ft.
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	1	- ecemen
		RECEIVED
		NOV 06 1995
		DEFT. OF ECOLOGY
<u>∠</u>	DEPTH OF BORING 16'6"	

PROJECT NAME: SOCIALO WELL IDENTIFICATION NO. DRILLING METHOD: PROBE DRILLER: MICHAEL C	STREET ADDRE	181 X S. 20 45 St. Ke
FIRM: Cascade Drilling, In		ELEVATION: N/A ACE ELEVATION: N/A
REPRESENTATIVE: 8. RUS	CO INSTALLED:	10-12-95 N/A
	5410	
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
TOTAL	CONCRETE SURFACE SEAL	0 - 3 ft. F://
+		Σ.
1	BACKFILL BENTONLE	3 -16 ft.
+		MED GRAY SLATY CLAY W/SMALL COBBLES
		ft.
1		CEIVED
		JV 06 1995
+		. Or ECOLOGY
<u> </u>	DEPTH OF BORING 16'0"	
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TNAME: BOELING ENTIFICATION NO. AT S METHOD: PROBE TO MICHAEL COLL Cascade Drilling, In	CERT COUNTY: LOCATION NE STREET ADDRE HWY WATER LEVEL 1	IN SE IN SOC & TWO DONA HE SS OF WELL: 181. 4 S. 20 45 St Kand ELEVATION: N/A
JRE: MUNCH	GROUND SURF	ACE ELEVATION: N/A 10 - 12 - 95
TINGFIRM: BOENIE ENTATIVE: S. Ry	DEVELOPED:	
0	5410	YORKUTION DESCRIPTION
AS-BUILT	WELL DAYA	FORMATION DESCRIPTION
	CONCRETE SURFACE SEAL	0 - 3 ft. F:II
	BACKFILL BENTONE IE	3 -16 ft. MED GRAY SILTY CLAY
		W/SMALL COBBLES
		ft.
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		DEPT. OF EUDLUGY
	DEPTH OF BORING 16'0"	
	DETA OF BOILING TO D	

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

URFACE ELEVATION: N/A	W.Valley WATER LEVEL E GROUND SURF, INSTALLED: DEVELOPED:	PROJECT NAME: Boeing Space Center WELL IDENTIFICATION NO. DRILLING METHOD: PROPIC / WATER Sample DRILLER: F. Lynn Bobbe FIRM: Cascade Drilling, Inc. SIGNATURE: Lynn Tobbe CONSULTING FIRM: Actra Tech REPRESENTATIVE: Rack Osepood 6258						
FORMATION DESCRIPTION		WELL DATA	AS-BUILT					
0 - 1 ft. F:11	CE SEAL	CONCRETE SURFAC						
	NITE	BACKFILL BENTO						
MED BROWN SILTY SAN WITH LAYELS OF DARK G SILTY CLAY		снір						
RECEIVED JUL 17 1996 DEPT. OF ECOLOGY								
	19'6"	DEPTH OF BORING	×					

EDV 068 10 ID ... 11 MM

SCALE: 1"=

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RESOURCE PROTECTION WELL REPORT 22/4/2 R

DENTIFICATION NO. IG METHOD: PROCE / R: F. Lynn Bol Cascade Drilling, 1 URE: June 1 URE: June 1 DENTATIVE: Rack	The Sample STREET W.Va	NOTE IN SECOND TWO 22N IT LAND ADDRESS OF WELL: MEN HINY & S. 2012 Konst EVEL ELEVATION: N/A SURFACE ELEVATION: N/A ED: 4-7-94 PED: N/A
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	CONCRETE SURFACE SEAL	0 - 1 ft. K:11
	BACKFILL BENTONITE	MED BROWN SILTY SAND WITH LAYERS OF DARK GRA, SILTY CLAY
		RECEIVED JUL 17 1996 DEPT. OF ECULOG
	DEPTH OF BORING 19'6"	

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RESOUTH DE PROTECTION WELL	REPORT	22/4/2 R

LLER: F. Lynn Bob M: Cascade Dilling, II NATURE: June NSULTING FIRM: Dichra T. PRESENTATIVE: RACK I	Zoll GROUND	
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	CONCRETE SURFACE SEAL	0 - 1 ft.
	BACKFILL BENTONITE	.7:3
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		SILTY CLAY
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The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

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RESOURCE PROTECTION WELL B	FF

PORT 22/4/2R

R: F. Lynn Bol Cascade Drilling, I URE: Ayun TING FIRM: Detra T	ATTER Sample STREET A WATER LE GROUNDS INSTALLET DEVELOPE 6258	
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	CONCRETE SURFACE SEAL	0 - 1 ft. F:11
	BACKFILL BENTONITE	
	CHIP	MED BROWN SILTY SAND WITH LAYERS OF DARK GRAY SILTY CLAY
		JUL 17 1996
	DEPTH OF BORING 1916"	

(SUBMIT ONE WELL REPORT P. Construction/Decommission ("x" in a			Notice of Intent No. 1 1001 Type of Weli ("x" in circle)
O Construction Decommission ORIGINAL INSTA	1.7000		Resource Protection Geotech Soil Boring
of Intent Number	7	Property Owner P	Socing - Space Cent
Consulting Firm Landau		Site Address	403 68th AVE S.
Unique Ecology Well ID Tag No:		cityKent	County: King AE EM
WELL CONSTRUCTION CERTIFICATION: responsibility for construction of this well, and it well construction standards. Materials used and it true to my best knowledge and belief.	the information reported above are	The second secon	Lat Deg Lat Min/Sec Long Deg Long Min/Sec
Drifter Engineer Trainer Name (Print)	Theye Goe	Tax Parcel No.	~
Driller/Engineer/Trainee Signature	214UT	Cased or Uncased I	Diameter 2" Static Level
Driller or Trainee License No.	61941	Work Decommissio	n Start Date 3/37/00
If trainee, licensed driller's Signature and License no.		Work/Decommission	Completed Date 3-27-06
Construction/Design	Wall Date	1 Wob-193	Formation Description
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	BACKFILL DOATO	- Chips	
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HOLT DRILLING, INC.

22/4/29

Resource	Protection	Weil	Repor
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u 11		111	100	Type of Riser Pipe Stainless Steel
Olive-sand			W 1	Type of Connection Fluid Taxand
our p	- 4		N. W.	
			11-15	Type of Backfill around Riser_ Name Amount
				Diameter of Borehole 3/4"
		13'		
				Screen Size or Type open
		334		Type of Filter Material None
		14	= +	Type of Filter Material None RECEIVE
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pirasere	ground from	betton up	10 time	ONES

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Decommission ORIGINAL INSTAL of Intent Number		Property Owner Boein	Georgeological Soil Boring g Space Center	
Consulting Firm Landau Assoc	ates-Edmonds	Site Address 20403 68 City Kent	Sth Ave. S. County 17-King	
nique Ecology Well ID ag No.		Location 1/4 NE	IASE Sec 2 Town 22N R	E GWM
ELL CONSTRUCTION CERTIFICATION: 1 course struction of tris will, mailly compounds with all W strongs used and the information reported above tre	addington well dominaction standards	Lat/Long (s,Lr Lat Deg atill Required) Long Deg Tax Parcel No.		ı,
Driller Trainee Name (Print) Kase	y Goble	The state of the s	2" State	Level 5
tiller Traince Licerse No. 2501 6	, ,	World Decommission Start Du	1/25/12	
in aires, licesned drillers'			ed Date 1/25/12	
Construction/Design	1	Vell Data W12-044	Formation Description	ar.
	BACKFILL	G FT BENJAMITE CHIPS	Beaun GREY Somoy SILT	FT FT
	DEPTH OF BORIN	0 <u>10</u> FT		

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the state of the state of the state of	of terminal is		Resource Protection
Decommission ORIGINAL INSTA of Intent Number		Property Owner Br	Geotechnical Soil Boring being Space Center
9,1111,111			3 68th Ave. S.
Consulting Firm Landau Associ	gates-Edmonds	City Kent	County 17-Kin
Unique Ecology Well ID Tag No.		Location 1/4 N	E IN SE Sec 2 Town 22N
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Driller/Trainge Linease No 2501	07		
If trainee, licesned drillers'		WORD Decommission Sta	Date
Signature and License No.		Work/Decommission Cos	npleted Date 1/25/12
Construction/Design	1	Well Data W12-044	Formation Descript
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	DEPTH OF BORIN	G 10FI	C

Construction/Decommission Construction			Type of Well Resource Protection Geotechnical Soil Boring
of Intent Number Consulting Firm Landau Associates		Property Owner <u>Boein</u> Site Address <u>20403 61</u> City Kent	ng Space Center Bith Ave. S. County 17-King
Unique Ecology Well ID Tag No.		7	I/4 SE Sec 2 Town 22N R4E TOWN
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Signature and License No. Construction/Design		Work/Decommission Completell Data W12-044	Formation Description
	— BACKFILL	9 FT BEWEINTE CHIPS	03-10 IT BROWN GREY SINDOY SILT
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Construction/Decommission	44241	4	Type of Well
A Construction	976-11		Resource Protection
Decommussion ORIGINAL INST.			Geotechnical Soil Boring
of Intent Number			ng Space Center
Consulting Firm Landau Asso	ociates-Edmonds	City Kent	8th Ave. S. County 17-King
Unique Ecology Well ID		Location 1/4 NE	1/4 SE Sec 2 Town 22N R4E
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Driller/Trainec Signature Driller/Trainec License No. 2501	Zoh	Cased or <u>Unessed</u> Dranteter	Static L
		Work/Decommission Seart D	1/25/12
If trainee, licesned drillers' Signature and License No.		Work/Decommence Cornel	ated Date 1/25/12
Construction/Design		d Vell Data W12-044	Formation Description
	BACKFILL	BECHUNTE CHIPS	Brown GREY Sanoy SILT
4	DEPTH OF BORING) 10 FT	CEL

T		5	Type o	Well	
Construction	44241	0	X Resi	ource Protection	
Decommission ORIGINAL INSTALLAT				technical Soil Boring	
of Intent Number		Property Owne	Boeing Space	Center	
Consulting Firm Landau Associate	Edmonde	Site Address City Kent	20403 68th Ave.		Total Control
	S-Editionas	City Kent		County 17-k	EWM
Inique Ecology Well ID ag No.		Location		Sec 2 Town 22N	[WWW.
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trainee, licested drillers'				- 10 - 17	
ignature and Livense No.		Work/Decommis	ion Completed Date	1/25/12	
Construction/Design	N.	Vell Data W12-044		Formation Descr	
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Construction/Decommission	442416		Type of Well
≥ Construction			Resource Protection
Decommission ORIGINAL, INSTALL	ATION Notice		Geotechnical Soil Boring
of Intent Number			ng Space Center 8th Ave. S.
Consulting Firm Landau Associa	tes-Edmonos	City Kent	County 17-King
Unique Ecology Well ID Tag No.		Location 1/4 NE	I/I/SE Sec 2 Town 22N R4E
WELL CONSTRUCTION CERTIFICATION: 1 constru	ted and/or eccept responsibility for	Lat/Long (3.1.1 Lat Deg	x Lat Min/Sec
construction of the well, and its complete constitute with all West	Carrie of the second of the second	still Required) Long Deg	a Long Min/Sec
Materials used and the information reported above are true		Tax Parcel No.	
Monther Trainer Name (Print) Kasey Driller/Trainer Signature	Ser	Cased or Unexised Diameter	2" Static Lev
Driller/Trainee Lipense No 2501			
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Signature and License No.		Word/Deconunision ("outpe	ered Date 1/25/12
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Construction/Design	1	Well Data 1112 911	Formation Description
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	DEPTH OF BORIN	9 <u>10</u> гт	a F
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Construction/Decommission ///	417	Type of Well	Et03823
Aconstruction 990	-917	Resource P	
Decommission ORIGINAL INSTALLATION Notice		Geotechnic	
of Intent Number	Property Own		A CONTRACTOR OF THE PROPERTY O
		20403 68th Ave. S.	
Consulting Firm Landau Associates-Edmonds	City Kent		County 17-King
Unique Ecology Well ID Tag No.	Location	1/4 NE 1/4 SE Sec 2	Town 22N R4E WWW
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Oriller/Trainum Signature Oriller/Trainum Signature 2501	Cased or Uncase	od Diameter2	Static Level 5'
oriner/ range Libertae No. 2004	Work/Decount	inon Start Date	125/12
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Signature and License No.	Wark/Deconung	immi Completed Date	1/25/12
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lf tramer, licesned drillers' Signature and License No.	Work/Decembision Completed Date 1/25/12
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Construction/Decommission 447	417 Type of Well
Construction	X Resource Protection
Decommission ORIGINAL INSTALLATION Natice of Intent Number & 603	Property Owner Boeing Space Center
	Sire Address 20403 68th Ave. S.
Consulting Firm Landau Associates-Edmonds	City Kent County 17-King
Unique Ecology Well ID Tag No.	Location I/ANE 3/4SE Sec 2 Town 22N R4E 3/4WM
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metric tion of this wall, and its compliance with all Washington wall construction	estandards still Required) Long Deg x Long Min/Sec x
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Signature and License No.	Word/Decontrasion Completed Histor 1/25/.2
Construction/Design	Weil Data W12-044 Formurion Description
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DEPTING	Page of BCY and FEB 2.4.201

Construction/Decomussion	1111117		ice of Intent No. Type of Well	87-00	rit
bionstruction	44242	0	Resource P	anner Co	
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of Intent Numbe	, EE03823	Property Owner Bos	no Space Cente		
			68th Ave. S	a surredite	
Consulting Firm Landau Asso	cales-comonds	City Kent		County 17-King	(EWA
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Construction/Decommission / 16	(12)117 (Notice of Intent No. Type of Well	r(E10)
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of Intent Number EEO		Geotechnical Sot! Boring Boeing Space Center	
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Consulting Firm Landau Associates-Edmond	S City Kent	County 17-King	
Juique Ecology Well ID Jug No.	Location	1/4 <u>NE 1/4 SE</u> Sec 2 Town 22N R4E	BWM
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miler/Trainee License No. 2501	49.7.7.9.		
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agruture and License No.	Wort/Deconumistic	on Completed Date	
Construction/Design	Well Data W12-044	Formation Description	
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Construction/Decommission	LINSTALEDI 4424Z.	2	Notice of Inter	Well	AEIU
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Consulting Firm Landau Associates	-Eamonas	Site Address Cuy Kent	20403 68th Ave.	S. County 17-King	
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Signature and License No. Construction/Design		Work/Decommus	aion Completed Date	Formation Description	
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T Recommission () BIGINAL INSTALL			100	
of Intent Number	ITTOW W		Resource Protection	
	EE03823	Property Owner Deal	Georgeomical Soil Boring	
471		Site Address 20403 6	58th Ave. S.	
Consulting Firm Landau Associa	ales-Edmonds	City Kent	County 17-Kir	
Unique Ecology Well ID Tag No.		Location 141 NE	14 SE Sec 2 Town 22N	RAE ST
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Consulting Firm Landau As	ssociates-Edmonds	City Kent	3 68th Ave S. County 17-King
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WILL CONSTRUCTION CERTIFICATION: construction of diswell, and the quantities were talled to the construction of the constructi	ell Wedington well construction standarts to the thir to my bed knowledge and belief		ner 7" Static Level 5"
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Signature and License No.			ipleted Date 1/25/12
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	BACKFILL	9 FT BENEVOTE CHIPS	Brown Jarry Sanoy Selt
Scale 1* =	DEPTH OF BORING	IC FT	TO VE 1 S

Construction/Decommission	442425			
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Decommission ORIGINAL INSTAL of Intent Number	EE03823	Property Owner Boei	Gentechnical Soil Boring ing Space Center	
		Site Address 20403 6	S8th Ave. S.	
Consulting Firm Landau Assoc	ciates-Eamonds	City Kent	County 17-King	7.500
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Apriller Trainee Name (Print) Kase		Tax Paroel No.		-
Driller/Trainee Signature	3200	Cased or Uncased Diameter	Sistic	Level 5
Driller Trainee Liverse No. 2501		Work/Decommission Burn D	nue 1/25/12	
If trainee, livesned drillens'				
Signature and Lucense No.			ered Date 1/25/12	
Construction/Design	We	ill Data W12-044	Formation Description	11-
	BACKFILL	BELLEVITE CHIPS	Brewn I GROY Saway Silt	rt rt
	DEPTH OF BORING	FT		ST.
Scole 1 = 4		age of	10/00	DIE V

(SUBMIT ONE WELL REPORT PER Construction/Decominission	1111-110		tice of Intent No.	HE
	44242	-6	Type of Well	
t_onstruction			Resource Protestion	
Decommission ORIGINAL INSTAL	EE03823	December Communication	Geotechnical Soil Boring	
og intent (xamper	E C C C S S S S		6ing Space Center 68th Ave. S.	-
Consulting Firm Landau Assoc	ates-Eamonds	Ciry Kent	County 17-King	
Unique Ecology Well ID		Location 1/4 NF	Mag Sin Turing her	EWM
Tag No.		Poesings IN-WE	MSE Sec 2 Town 22N R4E	www
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Driller Trainee Name (Print) Kasey Driller/Trainee Signature	C DU	Cased or Macaged Discours	ey 2" Static Les	151
Onller/Trainee License No. 2501	77			EL 3
If trained, licesned drillers		Work/Decommission Store	Dute 1/25/12	
Signature and License No.		Work/Decongrasion Com-	pleted D/ce	
			1123/16	_
Construction Design	W	ell Data W12-044	Formation Description	_
	BACKFILL.	A FT BELLEVITE CHIPS	Brown Grey Savoy Silt	
	DEPTH OF BORING	10 FT	CEIVE	<u> </u>
Scale i * -		Fage of	FEB 2.4.	2015

Construction/Decommission 4414		Type of Well
Construction Decommission ORIGINAL INSTALLATION Notice		Resource Protection Geotechnical Soil Boring
of Intent Number	Property Owner B	geing Space Center
Consulting Firm Landau Associates-Edmonds	Site Address 2040 City Kent	3 68th Ave. S. County 17-King
Unique Ecology Well ID		S MOS See 2 Town DOM BAS
Tag No.	Location 174 N	E 1/4 SE Sec 2 Town 22N R4E or
WELL CONFIRMATION CERTIFICATION: I constructed and/or soccept responsibility		eg x Lat Min/Sec x
construction of this well, and its compliance with all Washington well construction attach. Materials used and the information reported above are true to my best knowledge and but		
Oriller Trainec Name (Print) Lynn Goble	Tax Fallout 1944	
Driller/Trainee Signature Bayon Taidale	Cased or Uncosed Diam	ectrs 2 Static Level
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If traines, licessed drillers' Signsture and License No.	Work Decommision Co.	emplesed Date 2-9-12
A STATE OF THE STA	Well Dain W12-044B	No. of the second second second
Construction/Design	Well Dain W12-0440	Formation Description
BACKFILL	BENTONITE CHIP	T 02-10 FT MEO BALL-3:27 4 DASK SAND
DEPTH OF BO	ORING	ECYGRO-13 Gam-1 JOS

Construction/Decommission L/C	141924	Type of Well
Construction	20.00	Resource Protection
Decontains on ORIGINAL INSTALLATION Notice	and and a	Geotechnical Soil Boving
of Intent Number	Site Address 204	Rosing Soace Center
Consulting Firm Landsu Associates-Edmonds	Day Keni	Cotony 17-King
Inique Reology Well ID	Location 1/4	NE IMSE Son 2 Town 22N RAE
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Deliber Tentene Limene No. 2582		24.4
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trainine, Someond children Speakers and Lisonae No.	Wart Description C	September 2-9-12
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Construction Design	Well Date W12-044B	Formation Description
BACKFO	BENTONITE CHIP	T 02 10 TT MED BELL SAT Y DARK SAND
DEP.ULOS	Pageat	REC!

	Notice of Lintent No. EEO3823
Construction/Decommission 4449	25 Type of Well
Construction	Resource Protection
Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring
of Intent Number	Property Owner Boeing Space Center
Consulting Firm Landau Associates-Edmonds	Site Address 20403 68th Ave. S. City Kent County 17-King
Juique Ecology Well ID Fag No.	Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E WWW
VELL CONSTRUCTION CERTIFICATION: I constructed and a supepi respondi	dity is Lut Long (s,t,r Lot Deg s Lut Min/Sec s
enstruction of Uss well, and his compliance with all Washington well construction in	and still Required) Long Deg 1 Long Min/Sec 1
isistrials used and the information reported above ore true to my treat knowledge and	Issued Tax Purget No.
Driller Trainee Name (Print) Lynn Goble Driller/Traines Signature	Cased or Unessed Diameter 3 Static Level 16
Driller/Traines Signature Jugan Parille Driller/Traines License No. 2982	
	World/Decommission South Date 2-8-12
f trainer, livesned drillers'	2.4
ignatine and Lipense No.	Work/Decommusion Cumpleted Date 2-9-12
Construction/Devicti	Well Data W12-044B Formation Description
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Construction/Decommission	444926		Type of We	1
Construction	11111		Resource	Protection
Decommission ORIGINAL INSTALL		24 304		ical Soil Boring
of Intent Number			Boeing Space Cer 20403 68th Ave. S.	nter
Consulting Firm Landau Associa	des-Edmonds	City Kent	20403 00III AVC. 53	County 17-King
Unique Ecology Well ID		Location	1/4 NE 1/4 SE Sec	Town 2041 BAE
Tag No.		Localita	THE THE	TWV
WELL CONSTRUCTION CHETERCATION: I WHILE			Lat Deg x	
construction of this well, and its congitions with all wa			Long Deg x	Long Min/Sec 1
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Driller Trainee Name (Print) Lynn (- Felde	Cased or Unexis	d Diameter	5 Static Level 15
Driller/Traince License No. 2982		Work/Decomm	ision Start Date 2	-8-12
If trained, lipesmed drillers'			7 10 10 10 10 10 10 10 10 10 10 10 10 10	
Signature and License No.		_		-8-12
Construction/Design	v	Vall Data W12-04	4B	Formation Description
	BACKFILL	19 BE. NEWIT CH: P	FT	SROWN SILT SAND
Scale 17 "	DEPTH OF BORIN	9 <u>20</u>	of_	ECY 0.00-12 (Zec-+ £0.1

Construction/Decomments/	444927		Type of Well	3823
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	r amount in its		Geoteciment Soil E	
Decemmana ORIGINAL HISTALLATION Nation of Intest Number		Property Owner Box		ong.
MA SIMONE LOUISON		Site Address 20403		
Consulting Firm Lunday Assoc	iales-Edmonds	City Kent		17-King
hique Ecology Well ID		Location 1/4 NE	MSE Seg Ton	
ag No.				herrisi
ELL CONTRACTOR UNDERCORDE: 1 mm	condende some reproduit y la	Lathing (s.tr., Lathy	_ Luk	fis/lec a
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different for the statement opportunities as		Tix Peopl No		
Drafte Traiser Horn Street, Lynn			" 2 ⁺	- 1A
riller Tesinor Signature 2012	Malily	Cood or Unioned Ductor		seociana 70
Hiller/Training Literature No. 2302	9	Work/Decomentation State	mm 2-8-12	
Charles Kormed Williams				
lysmer and Lineau Ne.		Work/Decomment Com	Dated Dies 2-6-16	7
Construction/Draign	W	ell Data W12-0448	Permetical	Description
	BACKFILL	PRACE SEAL IT IT RESTENSTA CHIP	1	## ## ## ### ### ### ### ### ### ### #
	DEPTH OF BORDS	20_n		

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Construction/Decommission 444		re of Intent No. BEO3823 Type of Well Resource Protection
Decommission ORIGINAL INSTALLATION Notice of Intent Number	Property Owner Boei Site Address 20403 6	Geotechnical Soil Boring ng Space Center 8th Ave. S.
Consulting Firm Landau Associates-Edmonds Unique Ecology Well ID	City Kent Location 1/4 NE	County 17-King SWN 1/4 SE Sec 2 Town 22N R4E SW
Tag No. WELL CONSTRUCTION CERTIFICATION: I constitution of a seeple responsibility is constructed on this will, analysis complicace with all varieties on which construction canada Materialis used and the information reported above see to be the statement and sales The construction of the construction	still Required) Long Deg	E Long Min/Sec E
Driller Traines Name (Print) Lynn Goble Driller/Traines Signature Driller/Traines Literus No. 2982		2 State Level <u>13</u>
If trainer, licessed dallers' Signature and Licesse No. Construction/Design	Work/Decommission Compl Well Data W12-044B	sted Date 2-9-12 Formation Description
	SURFACE SEAL / FT	6 . 2 FT
BACKFILL	14 FT BENTONITE CHIP	02-15 FT MED BREWN 5:27 4 DAKK SAND
		FT
DEPTH OF BO	ring <i>13</i> ft	

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UBMIT ONE WELL REPORT PER WELL INSTALLED)	Notice of Intent No. BED3823
onstruction/Decommission 44497	Z9 Type of Well
Construction	Resource Protection
Decommission ORIGINAL INSTALLATION Notice of Intent Number	Property Owner Boeing Space Center
oj mina Hamoer	Property Owner Boeing Space Center Site Address 20403 68th Ave. S.
onsulting Firm Landau Associates-Edmonds	City Kent County 17-King
nique Ecology Well ID g No.	Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E WWW.
LL CONSTRUCTION CENTERCATION: I obsciruoted and/or vorupe responsibility for	Lat/Long (s,t,r Lat Deg x Lat Min/Sec x
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Iller/Trainee License No. 2982	
AND THE STATE OF T	World/Decommission Surt Date 2-8-12
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Construction Design	Well Data W12-044B Formation Description
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RESOURCE PROTECTION WELL RE (SUBMIT ONE WELL REPORT PER WELL INSTALLED)	PORT	CURRENT Notice of Intent No	. EE03823 AE
Construction/Decommission 444 930		Type of Wel	
Construction		Resource	Protection
Decommission ORIGINAL INSTALLATION Notice			cal Soil Boring
of Intent Number EE03823		Boeing Space Cen	ter
Consulting Firm Landau Associates-Edmonds	City Kent	20403 68th Ave. S.	County 17-King
Unique Ecology Well ID	Location	1/4 NE 1/4 SE Sec 2	
Tag No.	2	-	lv.
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Driller/Traince Signature Langua Parlace	Ossed or Unrased	Diameter 2	Static Level
Driller/Trainee License No. 2982	Work/Decommis	diva Stan Dale 2	-8-12
If trained, linesmed drillers'	130111133		
Signature and License No.	Work/Decommis	ion Completed Date 2	-9-12
Construction Design We	ell Data W12-0449	B F	emation Description
BACKFILL	BENTENI CHIP	TE MED O	- 1/2 FT AL-V- 5:2 T K SM W D - FT
DEPTH OF BORDING		_FT	

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onstruction/Decommission 44493/		re of Juteni No. PED3823 Type of Well	
Construction		Resource Protection	
Decommission ORIGINAL INSTALL ATTON Natice		Geotechnical Soil Boring	
of Intent Number EE03823	Property Owner Boein	ng Space Center	
		8th Ave. S.	
onsulting Firm Landau Associates-Edmonds	City Kent	County 17-King	
nique Ecology Well ID ag No.	Location 1/4 NE	MSE Sec 2 Town 22N R4	E WWW
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terials used and the information reported above are true to my heal imperialize and build!	Tax Parcel No.		
Driller Traince Name (Prim) Lynn Goble			
niller/Trainee Signature Tomas Tarteli	Cased or <u>Unexced</u> Diameter	2 Static	Level &
illes/Trainze License No. 2982			7
and the second delifying	World/Decoraminion Start Da	11 _ 2-8-12	
trainee, licensed didless'		2 0 10	
gristing and Liberise No.	World/Decommission Complete	led Date 2-9-12	_
Construction/Design	Well Data W12-044B	Formation Description	
BACKFILL	9 FT BENTONITE CHIP	02-10 1 MEO BALV-5:27 Y DARK SAND	T
DEPTH OF BORD	NG <u>/&</u> FT		

MAR 20 2012 DEPT OF ECOLOGY NWRO - WR

444932 RESOURCE PROTECTION WELL REGULANT ONE WILL REPORT PER WILL INSTALLED.	CPORT CURRENT
Construction/Decommission Construction Notice of Intent No. PED 382.3 PEI Type of Well Resource Projection Geotoclarical Soil Portra Property Owner Boging Space Center	
Consulting Firm Landau Associates-Edmonds	She Address 20463 68th Ave. S. City Kent County 17-King
Unique Ecology Well ID Tag No.	Location I/ANE NASE Sec 2 Town 22N RAE
WELL CONSTRUCTION CERTURICATION. I reconstructed under scrept temporalistic for consciention of this well, grid as compliance with all Washington well commission attainments as after a construction of the undermoston is proved above for this is only one a subsection and Sellief	Lat/Long (s,L: Lat Dog x Lat Min/Sec x still Required) Long Dog x Long Min/Sec 4 Tak Parcel No.
Monther Trainee Name Orino Lyrin Gobile	Cased or <u>Unexact</u> Diameter 2 State Level 1 Work/Decommission Start Date 2 - E = 1/2
If minee, Irossned drillers' Signature and License No.	World Decomption Completed Date 2-9-12
CONCRETE SUR BACKFILL	FACE SEAL FT 0 2 FT FT 0 2 12 FT FENTANTE MED BROWN SEAT FOREX SAND
DEPTH OF BORING	

RESOURCE PROTECTION WELL REPORT CURRENT Notice of Intent No. BED3823 AEI6161 (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Type of Well Construction/Decommission Resource Protection Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number EE 65823 Geotechnical Soil Boring Property Owner Boeing Space Center Site Address 20403 68th Ave. S. Consulting Firm Landau Associates-Edmonds City Kent County 17-King 1/4 NE 1/4 SE Sec 2 Town 22N R4E Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION: I contracted unifer a coupt responsibility for Lat/Long (s,Lr Lat Deg Lat Min/Sec still Required) Long Deg 1 rengration of this well, and he compared with all Washington well construction stands Long Min/Sec Tax Parcel No. Driller Traince Name (Print) Lynn Goble
Drilles/Traince Signature
Drilles/Traince Lácense No. 2982 Cased or Uncased Diameter 2-5-12 World Decommission Stent Date If minus, licested drillers' Words/Decommunicion Completed Date 2-8-12 Signature and Livense No. Well Data W12-0448 Construction/Design Formation Description CONCRETE SURFACE SEAL BACKFILL BARK BROWN SIT SAND BEJTENITE Some GRAY SUT 5.2Ty 54:00 DEPTH OF BORING 20 RECEIVED

on this Well

Information

The Department of Ecology does NOT Warranty the Data and/or

MAR 20 2012 DEPT OF ECOLOGY NWRO - WR

Construction/Decommission	Type of Well
Construction	Resource Protection
Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring
of Intent Number EE03823	Property Owner Boeing Space Center
a de maria	Site Address 20403 68th Ave. S.
Consulting Firm Landau Associates-Edmonds	City Kent County 17-King
Linique Ecology Well ID	Location 1/4 NE 1/4 SE Sec 2 Town 22N R4
Tag No.	
WELL CONSTRUCTION CERCEPTCATION: I commissed under scrept responsibility for	Lat Min/Sec still Required) Long Deg x Long Min/Sec
construction of this well, and its compliance with all Weshington well construction attractors historials are d and the information reported above are two to my best knowledge and belief	
Donner Traince Name (Print) Lynn Goble	Tax Parcel No
Briller Trainer Signature Zan Malile	Cased or Uncased Diameter 2" Static
Diffler/Trainee License No. 2982	World/Decommission Surt Date 2-8-12
if trainer, licesned केवीशार्थ	
Signature and Livense No.	Work/Decommunion Completed Date 2-1-12
- Construction/Design	Well Data W12-044B Formation Description
BACKFILL	FT 02-20

44493 ESOURCE PROTECTION WELL RI IBMIT ONE WELL REPORT PER WELL INSTALLED)	EPORT CURRENT Notice of Intent No. BED3823 AET6161
nstruction/Decommission	Type of Well
Contraction	Resource Protection
Decommission ORIGINAL INSTALLATION Natice	Geotechnical Soil Boring
of Intent Number EE03823	
nsulting Firm Landau Associates-Edmonds	Site Address 20403 68th Ave. S. City Kent County 17-King
ique Ecology Well ID 3 No.	Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E WWM
L CONSTRUCTION CERTIFICATION: I executated so o' o' extent responsibility for	Lut/Long (s,t,r Lut Deg x Lut Mis/Sec x
ruction of this well, status compliance with all Washington well construction standards	still Required) Long Deg x Long Min/Sec x
rials used and the information reported above are true to my best knowledge and based	Tax Parcel No.
oriter Trainee Name (Print) Lyan Gable	Cased or Uncased Diameter 2 Static Level 23
ler/Traines Lioense No. 2982 /	
ines, licemed drillers'	Work/Decommission Start Date 2-8-12
name and Liourse No.	Wort/Decommission Completed Date 2 -1 - 12
	3 1942 0440
Construction Design V	Well Data W12-044B Fermation Description
BACKFILL	1 FT All 14 FT 02-55 FT PENTENCE POST ASSET OF SERVICE CHIP TORSE SALD
DEPTH OF BORING	FT

MAR 20 2012 DEPT OF ECOLOGY NWRO - WR

SUBMIT ONE WELL REPORT PER WELL	LINSTALLED)	Noti	RRENT co of Intent No. EED3823 AEI 611
Construction/Decommission			Type of Well
Construction	ataut A.		Resource Protection
Decommission ORIGINAL INSTALLATI of Intent Number &	E 03823	Property Owner Boei	Geotechnical Soil Boring
		Site Address 20403 6	8th Ave. S.
Consulting Finn Landau Associates	-Edmonds	City Kent	County 17-King
Unique Ecology Well ID		Lossian 1/4 NE	IMSE Sec 2 Town 22N R4E
Tag No.			IVWM
WELL CONSTRUCTION CERTIFICATION: Constructed of construction of this well, and it's compliance with all Washington	1000	Lat/Long (s,Lr Lat Deg still Required) Long Deg	
Materials used and the information repetied above use true to		Tax Parcel No.	
Driller Trainee Name (Print) Lynn Gobl			2
Driller/Trainer Signature Driller/Trainer License No. 2982	Table		2 State Level 3
		World/Decremmission Start D	nte 2-6-12
If trainee, licested dillers' Signature and License No.		World/Decommission Compl	eted Date 2-9-12
		d Vell Data W12-044B	
Construction Design	T. W	ell Data	Formation Description
	CONCRETE SUI	PEACE SEAL	0 - 2 FT
	CONCRETE SOI	A 17-32 MILLS	Fal
			701
	BACKFILL	lel pr	02 15 FT
	DACKI ILL	BENTENITE	MED BALLES 312 T
		CHIP	
			4 DARK SAND
	1		
	1		a - FT
173-2	1		7"
1 1 1 1 1	A.,		
A 107 DO 607	1		
ap Section 2	DEPTH OF BORING	15 FT	

Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number Decommission ORIGINAL INSTALLATION Notice of Intent Number Site Address 20403 889h Ave S City Kent County 17-King Inquire Ecology Well ID Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E Inquire Ecology Well ID Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E Inquire Ecology Well ID Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E Inquire Ecology Well ID Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E Inquire Ecology Well ID Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E Inquire Ecology Well ID Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E Inquire Ecology Well ID Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E Inquire Ecology Well ID Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E Inquire Ecology Set Lat Min/Sec 2 It and the secretarian regions are with all weekings and leavest policy and the secretarian regions are with all weekings and leavest policy and the secretarian regions are with all weekings and leavest policy and the secretarian regions are with all weekings and leavest policy and the secretarian regions are with all weekings and leavest policy and the secretarian regions are the secretarian regions and leavest policy and leavest policy and leavest policy and leavest po	SUBMIT ONE WELL REPORT PER I		EPORT	CURRENT Notice of Intent No.	EE03823
Decomministic ORIGINAL INSTALLATION Notice of Intern Number Site Address Site Addr	construction/Decommission			Type of Well	
Onsulting Firm Landau Associates-Edmonds City Kent County 17-King City Kent County 17-King Construction			Resource Pi	rotection	
Site Address 20403 68th Ave S. Country 17-King Country 17-King Country 17-King Depth of Boring 2000 FT BackFill 2000					
Onsulting Firm Landau Associates-Edmonds City Kent Location Loc	of Intent Number		Property Owner	Boeing Space Cente	T
Total Description Constitute Ecology Well ID Location	Consulting Firm Landau Associa	ates-Edmonds			
State of the walk, and its configuration and an internation reported power are true to target to target and walked profiter of Trainers Name (Prison). Lyrin Sobles Text Pasced No. Text Pasced	hique Ecology Well ID ag No.		Location 1	/4 NE 1/4 SE Sec 2	Town 22N R4E
Delte Trainer Name (Prince) Lynn Gobbs Tax Parcel No.		and the second s			
Delite Traines Name (New) Lynn Gobie Cased or Lineaged Diameter 2" State Level Elevel				ong Deg x	Long Min/Sec z
State Level State Level 2882	And the second s				
Training, licensed drillers' grante and License' No Construction/Design Well Data W12-044B Formatica Description CONCRETE SURFACE SEAL FT BACKFILL BA	rilles/l'mature Signature Lynn				
Construction/Design Well Data W12-044B Formation Description CONCRETE SURFACE SEAL FT BACKFILL BEATEWITE CHIP DEPTH OF BORING DEPTH OF BORING Well Data W12-044B Formation Description FOR BORING FOR BORING FOR BORING PORT OF STATE SURFACE SEAL O Z FT FILL DARK BROWN 5:27/SANO Some CRAY 5:27 SIZTY SANO FT DEPTH OF BORING			Work/Decemmias	ni Stert Diste	2-8-12
CONCRETE SURFACE SEAL CONCRETE SURFACE SEAL BACKFILL BEATERITE CHIP DEPTH OF BORING			Work/Decompanies	in Completed Date	N 9 "
CONCRETE SURFACE SEAL O - R FT BACKFILL BACKFILL BENTENITE CHIP DARK BROWN 5:17/SANO Some CRAY 5:17 3:27/ 5ANO O - FT DEPTH OF BORING					To Share W
BACKFILL 19 FT 02-20 FT DARK BROWN 5:17/SANO CHIP Some CRAY 5:17 5:27/ 5ANO 0 - FT DEPTH OF BORING 20 FT DEPTH OF BORING 20 FT FINANCE COLOGY 1.1/RO - W/R	Construction/Design		Well Date WIE-0440	Fo	mation Description
DEPTH OF BORING 20 PT C. THE ECOLOGY 11/NRO - WR		BACKFILL	1047416	5.2Ty 5	9ND
ale 1" - Pegeof		DEPTH OF BORIN	o <u>20</u>	_rτ	
NEC ET V	No. of the last of		Penc	ı I	VCY 050-12 (Recey 2/01)
	ale I" -				RECEIVED

DEPT OF ECOLOGY NWRO - WR

449300 The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. RESOURCE PROTECTION WELL REPORT CURRENT AEI6161 (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Notice of Intent No. Type of Well Construction/Decommission Resource Protection Construction Decommission ORIGINAL INSTALLATION Notice
of Intent Number EE03823 Geotechnical Soil Boring Property Owner Boeing Space Center Site Address 20403 68th Ave. S. Consulting Firm Landau Associates-Edmonds County 17-King IMNE MASE Sec 2 Unique Ecology Well ID Town 22N R4E Location Tag No. WWM WELL CONSTRUCTION CHATIFICATION: I continued and/or accept requiribility for Lai/Long (s,Lr Lat Deg Lat May Sec still Required) Long Deg 1 Long Min/Sec construction of the well, and its compliance with all Washington wall construction standards: Materials used and the information reported above are true to my best knowledge and belief Tax Parcel No. Driller Trainec Nane (Print) Lynn Goble Cased or Uncased Diameter Drilles/Trainec License No. 2982 2-8-12 Wort/Decommission Sver Date If trained, becamed drillers' 21 4 7 Signature and Lioense No. Work/Decommission Completed Dies Well Date W12-044B Construction/Design Formation Description CONCRETE SURFACE SEAL FT BACKFILL 19 BENTERITE MARK BROWN SILT SAND Some bray sur CHIA SLATY SAND RECEIVE MAY 11 2012 DEPTH OF BORING RWRO WHE Scale 1"

RESOURCE PROTECTION WI (SUBMIT ONE WELL REPORT PER WELL INSTALLED Construction/Decommission ("x" in circle) A Construction O Decommission ORIGINAL INSTALLATION Notice of Intent Number Consulting Firm Landau Absolute Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washingto well construction standards. Materials used and the information reported above at true to my best knowledge and belief. Driller/Engineer Draince Name (Print) Kassa bodde Driller/Engineer Traince Signature Driller or Traince License No. If traince, licensed driller's	Type of Well ("x" in circle) Resource Protection 22 4F-2L O Geotech Soil Boring Property Owner Boeing Space Centre Site Address 204 b 3 69th AVE S. City Location NE 1/4 61/14 Sec 2 Twn DN RAE 600 circle of www. Location NE 1/4 61/14 Sec 2 Twn DN RAE 600 circle of www. LavLong (s. t. r Lat Deg Lat Min/Sec www. LavLong (s. t. r Lat Deg Lat Min/Sec Tax Parcel No. N/A Cased of Uncased Diameter 2" Static Level Work/Decommission Start Date 108 65	RESOURCE PROT (SUBMIT ONE WELL REPORT PE Construction/Decommission ("x" in ci A Construction O Decommission ORIGINAL INSTAL of Intent Number, Of Intent Number, Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: 10 responsibility for construction of this well, and its well construction standards. Materials used and the true to my best knowledge and belief. A Driller Engineer Traince Name (Print). Oriller/Engineer/Traince Signature Driller or Traince License No. If traince, licensed driller's Signature and License no.	Property Site Ad City State Ad	Type of Well ("x" in circle) Resource Protection 22-4E. 26 O Geotech Soil Boring y Owner Boeing Space Center dress 20453 Cooth AVE S. Lent County: King NE 1/4 Sul/4 Sec 2 Two 2N RAE Swedicte one WWM one g(s, t, r Lat Deg Lat Min/Sec UNRED) Long Deg Long Min/Sec cel No. N/9 (Incased Diameter 2" Static Level commission Start Date 108/6/58
Signature and License no. Construction/Design Well I		Signature and License no. Construction/Design	Well Data	commission Completed Date 10/9/03 Formation Description
1/4	FILL GAMES 4 - 15 ft. 15 - 20 ft. MED BLACK SAND RECEIVED OCT 1 6 2003 DEPT OF ECOLOGY	The Department of Ecology does NOT Warranty the Data and/or is a second	DEPTH OF BORING 21.0	PILL GRAVEL 4 - 17 Et. DAKE GREY SILTY SAND 17 - 21 Et. MED BLACK SAND RECEIVED OCT 1 6 2003 DEPT OF ECOLOGY
Scale I*= Page 2 of	ECY 050-12 (Rev 2/01)	Scale 1*=	Page/of	ECY 050-12 (Rev 2/01)

TNAME Western CHIFICATIONNO HETHOD Hardan Soft Krugav ascade Drilling, Ind THO FINIA BORNY CHIATIVE Wayne	LOCATION STRICT AC 2 02/5 WATCHLC COPUNO S MATCHLC COPUNO	Wing 22-4E-1M NUM SULV SOCI TWILDON NAE ODICOS OI WCLL TOM AVE S HINT WA VICLELEVATION N/A 9/11/02 0 N/A	Construction/Decommission ("x" in circle Construction Decommission ORIGINAL INSTALL of Intent Number Consulting Firm Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: I ce responsibility for construction of this well, and ite of well construction standards. Materials used and the cut of construction of this well, and ite of well construction standards. Materials used and the	ATION Notice onstructed and/or accept ompliance with all Washington	Type of Well ("x" in circle) Resource Protection 22. 41 O Geotech Soil Boring Property Owner Boeing / Western Property Owne
AS BUILT	WELLDAYA WELLDAYA CONCRETE SUTURACE SEAL	O-94 TL	true to my best knowledge and belief Driller Engineer Traince Name (Print)	Dames Goble	Tax Parcel No. N/A Cased or Uncased Diameter 9" Static Level— Work/Decommission Start Date 4/18/53 Work/Decommission Completed Date 4/18/53
	_ BACKTEL Wolclay _ growt	- a.	NOT Warranty the Data and/or	CONCRETE SURFACE S BACKFILL 16 Beuf	BRIKERIN WY BOUNT LINES _ Et.
	_ рселі ог рогляс 941_ "	\$ 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	The Department of Ecology does	DEPTH OF BORING /	RECEIVED MAY 0 1 2003 DEPT OF ECOLOGY

X Total	22N/4E/12D
A	
GEOBORING & DEVELOPMENT, INC. 941:	5 S.R. 162 PUYALLUP, WA. 98372 (206) 845-6990 MAR 2 9 1993
	tection well report
Project Name BY Static, 65 the 51	
Well Identification # / ^ - /	Section 17 T. 22/1 R. 4 E
Drilling Method H Burn	Start Card 7 - 2727
License # 1733	Consulting Firm 12 A
Job # 93 - 58	1. 1
Depth of	Stick up Flush on Monument Casing
Soil Log Components	Stick up / On Monument Casing
0-1- 0-1- xx xx	
T.C / 50/01/88 88	Type of Surface Seal Cencrete
(9)./	Type of Surface Seal (C r C r C r C r C r C r C r C r C r C
12 5t \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
4 7 7	2"
11.	ID of Riser Pipe
1.45 1.1	Type of Riser Pipe / Amount
211 / 1.0.00	Type of Connection Thread
Det	(1.1.
10	Type of Backfill around Riser /) P/ 17. / . TT
3.2	63"
, -4-	Diameter of Borehole 8 1/
15'	
5'-	5.2
	Screen Size or TypeOZPUC
SNI 5000	2011501
	Type of Filter Material 10 - 20 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
74.	
1,)	
Remarks:	
nemara,	

Project Name 2124 /	Zoad Work	Date 3-14-94
Well Identification # B - 2 Drilling Method 4" #51	Thur 7	Section 12 1. 22 N R. 4
Driller John Rong	SH RECEIVE	D Start Card A 09 325 Consulting Firm Geo Engineer 5
Job # 94-50	APR 1 1 199	
Depth		OGY /
Soil Log Compo	nents	Stick up on Monument Casin
O' AKAMAH	- KXX KXX	
a se		Type of Surface Seal Per 14 E 1-1
Rock		Amount_
8"	2' 🕸 🔯	/
Brown		_ ID of Riser Pipe
sand,		Type of Riser Pipe
gravel	1 05	Amount
Fill	w/	Type of Connection
5'-514	18	Type of Backfill and Ben Sen Amount
Block		1/10
3111115	2	Diameter of Borehole 35/8
4 .	V 6,	/
Traco	一和胃!	
17.5' Pear		Screen Size or Type
Back	_ = +	Type of Filter Material
al saids	19'	Amount
171		
Remarks:		
nemarka.		

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aronappid s DEVELOPMENT IN	IC. 9415 S.R. 162 PUYALLUP, WA. 98372 (206) 845-6990
477.5	
Resour	ce Protection Well Report
d Name 212th Road Wo	rK Date 3-12-94
dentification # 13 - 1	County E'N 9 . NW 1/4 WW 1/4 Section /2 T. 22 N R. 4E
g Method 4" H SA	Start Card A09.325
John Ronish	RECEIVED Consulting Firm Beo EngineerS
94-50	RECEIVED
Depth of	APR 1 1 1994
	DEPT OF EGOLOGY UP on Monument Casing
In Feet	DEFT-AFEGOLOGY -
Asphalt - KX	1 KX
1	₩ 1 - T - T
ROCK	Type of Surface Seal Prenix & JeT seT
, , , , , , , , , , , , , ,	Amount
Brown Z XX	≥ ×4
Sano	
anavel	ID of Riser Pipe A) A
£. //	Type of Riser Pipe
35 20	Amount Type of Connection
Black	A Type of confidential
DIACK	Type of Backfill
5 ly ed	Amount_
T IV	1 25h
tone o.	Diameter of Borehole 85/8
Sand's	
N.	
7.5	
13 lack	Screen Size or Type
med	Type of Filter Material
2inc	Amount
g. Sands 49"	
arks:	
	0 /
	01/0

RESOURCE PROTECTSUBMIT ONE WELL REPORT PER I		ŒPORT.	2000	RENT e of Intent No.	RE10235
Construction/Decommission				Type of Well	
Construction				Resource Pro	tection
Decommission ORIGINAL INSTALL	LATTON Notice			Geotechnical	Soil Boring
of Intent Number		Property Owner	Chevro	n	
m			19918 68th		
Consulting Firm ARCADIS - Seattle		City Kent	_	County	17-King LEWA
Jnique Ecology Well ID	114	Location	1/4 SW	1/4 NW Sec 1	Two 22N R 4E or
rag No. BIO.	4				ww
VELL CONSTRUCTION CERTIFICATION: I constructed and	Carried Control of the Control of th	Lat/Long (s,t,r	The second secon		Lat Min/Sec
are much in of this well, and its compliance with all Washington		still Required)	Long Deg		Long Min/Sec
Laterials used and the information reported above are true to my	best kno wedge and belief	Tax Parcel No.	012204-908	9	
	s Goble			2.0	
Oriller/Trainee Signature		Cased or Uncased	d Diameter	80	Static Level 2
Driller/Trainee License No. 3131		Work/Decommission	on Start Date	7/30/2014	
f trainee, licensed driller's				7.000	
lignature and License No.		Work/Decommission	on End Date	7/31/2014	
Construction/Design	Well Data 10	3-14-1348		Form	ation Description
	101127333				int
	Concrete Surface Seal	2'		0 -	FT
	Depth		FT	(Fil) da	d+ gravel
	Blank Casing (dia x dep)	2"x 5"		Jone o	litt + Debris
	Material	-			
	Backfill	2'	FT		
	Туре	Bent. chip		- 2	0.00
	-28-7		0_	04.	to Med bound
	Seal	×	_	Fine	to Med
45.2	Material	V	-	grey	dr/Ly Sand
	Gravel Pack	16'	PT	-to /	ght brown
	Material	3/12 dend	7	Judy	Silt
	iviaicriai	112 Ound		14.	
					20' FT
1 To 1	Screen (dia x dep)	2" 15		light	brown
	Slot Size	010		2	July 8:14
<u> </u>	Material	Pre		ine o	
	Material	100	_	2/ 20	y druatt gave
	Well Depth	20.	FT		Service Service
	well Lepin				
	Backfill	X		111 3	AUG 21 2014
		X		DI	AUG 21 2014 EPT OF ECOLOGY NWRO - WR

	Control (Doctor)				PR PART 11	
	Construction/Decommission Construction				Type of Well	35.4
,	Decommission ORIGINAL INSTALLATIO	SALAN SAL			Resource Pr	
	of Intent Number	IN Notice	Property Owne	r Chevror		Soil Boring
5	9 113211 1131125		Site Address	19918 68th A		
2	Consulting Firm ARCADIS - Seattle		City Kent	13010 00017	-	17-King
5	Unique Ecology Well ID Tag No. BID -615	-	Location	1/4 SW	1/4 <u>NW</u> Sec 1	Two 22N R 4E or WW
_	WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept a		Lat/Long (s,t,r	Lat Deg		Lat Min/Sec
	communication of their well, and its compliance with all Washington well constr	niction standards	still Required)	Long Deg		Long Min/Sec
i	Minerials used and the information reported above are true to my best know	ledge and belief	400000	1,111,111,111	10.00	
5	X Driller Traine Name (Print) James Goble	a	Tax Parcel No.	012204-9089)	
1	Driller/Trainee Signature		Cased or Uncase	d Diameter	84	Static Level 7
2	Driller/Trainee License No. 3131				7/30/2014	
3	If trainee, licensed driller's		Work/Decommissi	on Start Date	1130/2014	
	Signature and License No.		Work/Decommissi	ion End Date	7/31/2014	
210	Construction/Design	Well Data 1	103-14-1348		Form	ation Description
o wananty t	MA Ba Ty Se	unk Casing (dia x dep aterial ackfill pe al aterial aveel Pack	Pvc 2' Lent: ehip x	FT	Fine grey to 1	16 FT to Med Sand
the Department of Ecology does not waitainly the Data	Mi Sci Sil Ma	aterial reen (dia x dep) at Size aterial ell Depth	16' 3/12 dend 2'' x 15' 010 20' x		Janey 0 16.	Silt 20' FT L brown Ludy Silt TY SMALL GRAVEL ECENTIN
spartition of Ecology does in	Mi Sc Slo Ma Wo	aterial reen (dia x dep) ot Size aterial	712 Send 2": X 15" 010 PVC		Judy Jight Fine of	20' FT brown

Page

of

(SUBMIT ONE WELL, REPORT PER WELL, INSTALLED) Construction/Decommission	Notice of Intent No.	1
Construction		
Decommission ORIGINAL INSTALLATION Notice	Resource Protection	
of Intent Number S & 5213	Geotechnical Soil Borng Property Owner Chevron	
	Site Address 19918 68th Ave S	_
Consulting Firm ARCADIS - Seattle	City Kent County 17-King	1
Unique Ecology Well ID	Location 1/4 SW 1/4 NW Sec 1 Town 22N R4E at	WM)
Tag No.	W 121 142 W	/WM
FELL CONSTRUCTION CERTIFICATION: I communical and or accept responsibility	lly for Lat/Long (s,t,r Lat Deg x Lat Min/Sec x	44.242
ondruction of this wall, and its compliance wills all Weshington well construction simple	dente still Required) Long Deg z Long Min/Sec z	
Intericle used and the information reported above are true to my test knowledge and be	Tax Parcel No. <u>012204-9089</u>	
Driller Trainee Name (Prior) James Goble Onlice/Trainee Signature		0.
Drilles/Trainee License No. 7131	Cased or Uneased Diameter 8 Static Level	0
trainee, licesned drillers'	World/Decommission Start Date 7/30/2014	
greature and Liceuse No.	Western	
	Work/Decomunistion Completed Date 7/31/2014	_
Construction/Design	Well Data 103-14-1348 Formation Description	
CONCRETI	E SURFACE SEAL O FT (TIN) dande gravel Jense Silt, Debris	
CONCRETI	2' FT (FIN) Sandry revel Selt , Debris	
	2' FT (FII) dande gravel Sense Silt, Debris II' FT 0 4' 18' FT Fine to Mich	
The state of the s	2' FT (FII) Sands grave! Source Silty Debris II' FT 04' 18' FT Fine to Med gray ditty Sand	D
BACKFILL	2' FT Chipd (FII) Sandr grave! Some Silty Debris II' FT 0 4'- 18' FT Fine to Med Grey silty Sand	

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report

BCY 050-12 (Rec=v 2/01)

C t t D					RE10235
Construction/Decommission				Type of Well	
Construction				Resource Pr	
Decommission ORIGINAL INSTA	LLATION Notice		v Serie		al Soil Boring
of Intent Number		Property Owne	271410		
Consulting Firm Appendix			19918 68th		
Consulting Firm ARCADIS - Sea	tue .	City Kent		County	17-King
Unique Ecology Well ID Tag No.	. 616	Location	1/4 SW	1/4 NW Sec 1	Twn. 22N R 4E or W
WELL CONSTRUCTION CERTIFICATION: I constructed	and/or accept responsibility for	Lat/Long (s,t,r	Lat Deg		Lat Min/Sec
construction of this well, and its compliance with all Washing	ton well construction standards				Long Min/Sec
Materials used and the information reported above are true to	my best knowledge and felief				40.6-10.00
J	4.14	Tax Parcel No.	012204-908	39	
X Driller Trainee Name (Print)	nes Goble		(m)	ou.	200000000000000000000000000000000000000
Driller/Trainee Signature Driller/Trainee License No. 3131		Cased or Uncase	d Diameter	6	Static Level
STITUTE LIBERTY TO. 3101		Work/Decommissi	on Start Date	7/30/2014	
If trainee, licensed driller's				- 17-27-1	
Signature and License No.		Work/Decommissi	on End Date	7/31/2014	
Construction/Design	Well Data 1	03 44 4340			and the second
Construction/Design	weii Data 1	VJ-14-1340		Forn	nation Description
	Blank Casing (dia x dep Material Backfill Type Seal Material Gravel Pack Material	2' x 5' 2' Sent. ehip x 114' 7/12 Sand	FT	6.4	Jet + Debris 16' FT to Med 15/4; Sand Silt brown
	Screen (dia x dep) Slot Size Material Well Depth Backfill	2" x 15" 010 Pve 20' X		.uj Ve	20' FT + brown July Silt Y Chiall-grave AUG 21 2014 TOF ECOLOGY NWRO-WR

(SUBMIT ONE WELL!				5552127
Construction/Decomm	ission		Type of Wel	
_	actic reports reporter.		Resource	
	INAL INSTALLATION Notice tent Number	Property Own		cal Soil Boring
		Site Address	19918 68th Ave S	
Consulting Firm A	RCADIS - Seattle	City Kent		County 17-King (EW
Unique Ecology Well Tag No.	ID	Location	1/4 SW 1/4 NW Sec 1	
	FICATION: I communical und/or accept responsibility for	Lat/Long (s,t,r		Lat Min/Sec x
	mpli more with all Weshington well construction standards reported above are true to my best knowledge and belief		Long Deg x	Long Min/Sec 1
Driller Trainec Name			012204-9089	
Driller/Trainee Signature	(/-	Cased or Uncas	ed Diameter 8'	Static Level 8
Dtiller/Trainee License No	4131	Work/Decomm	dision Start Date 7/3	0/2014
If trainee, licesned drillers'				
Signature and License No.			ision Completed Date 7/3	1/2014
Construction	n/Design	Well Data 103-14-	1348 F	ormation Description
	BACKFILL	11' Bent ch	_FTFT	1) dand + gravel dilt, Debris 18° FT c to Med dand
	BACKFILL	11° Bent ch	_FTFT	18° FT et de
	BACKFILL	11' Bent ch	_FTFT	18° FT c to Mid dand orthy dand RECENEE
	BACKFILL	11' Bent ch	_FTFT	RECEIVED AUG 21 2014
	BACKFILL DEPTH OF BORD		_FTFT	18° FT c to Mid dand orthy dand RECENEE

S.	43352	7		
RESOURCE PRO	TECTION WELL	REPORT	CURRENT Notice of Intent No.	RE06329
Construction/Decommission Construction Decommission ORIGINAL I of Intent Numb		Property Owner C	Type of Well X Resource Prote Geotechnical S	
Consulting Firm ARCADIS		Site Address 19918 City Kent	68th Ave. S. County 1	
Unique Ecology Well ID Tag No.	HK-191	Location 14 S	W 1/4 NW Sec 1	The 22N R 4E or WWM
WELL CONSTRUCTION CERTIFICATION: 1 and contrastice of this e.g. and its complement with the Macrotynical and the influenced repaired above a	structed to block or per no bety for Walting plus well constitution is standards when in mill best line in bodge and belief	still Required) Long. Tax Parcel No. 01220	Deg	Lat Min/Sec Long Min/Sec
X Dislet Traince Same (Print) Driller/Traince Signature Driller/Traince License No.	761			Static Level 16
If traince, ficensed driller's Signature and License No.		Work/Decommission End	Date	
Construction/Design	Well Data	W11-599	Formati	ion Description
	Concrete Surface S Depth Blank Casing (dia xx Material Backfill Type Scat Material Gravet Pack Material	3 F 3 Jap 2 1 Sch 80 prc	7 (23 / 3)	14 sand 14,5 FT clay
	Screen (dia x dep) Stot Size Malerial Well Depth Backfill Material	1.5'	T &	DEC 07 2011 ON PRESOURCES
V//////	Total Hole Depth	24.5 F	T	· ·

RESOURCE PROTE			RENT of Intent No. RE06329
Construction/Decommission			Type of Well
X Construction			X Resource Protection
Decommission ORIGINAL INST.	LLATION Notice		Geotechnical Soil Boring
of Intent Number		Property Owner Chewron	
And the second second		Site Address 19918 68th A	
Consulting Firm ARCADIS		City Kent	County 17-King
Unique Ecology Well (D) Tag No. BHA	-192	Location _{Va} <u>SW</u>	/4 NW Sec 1 Twn 22N R 4E o
WELL CONSTRUCTION CERTIFICATION, Lemislaced	and/a ruccept responsibility for	Lat/Long (s,t,r Lat Deg	Lat Mitt/Sec
construction of this will and as exemplance with all Williams	ton is elf-complication standards		Long Min/Sec
Marino and any benderman a special state are many	me bysikness below and below	0400040000	
N Driller Traince Name (Print) An	dy Flacan	Tax l'arcel No. 0122049089	
Driller/Trainee Signature	10 Fm	Cased or Ungased Diameter	8" Static Level
Driller/Fraince License No. 2761	- 1	Work/Decommission Start Date	11-16-11
If trainee, licensed driller's		Work/Lecommission Start Date	11 18 11
Signature and License No.		Work/Decommission End Date	11-16-11
	Well Data		Formation Description
Construction/Desert	I HER Data	0.17 0.00	7 Grination Description
	Concrete Surface 5	Seal /	0 - 20 FT
	Depth	3FT	grey silty sand
N N	Blant Caring Olia v	dep) 2'x 18'	grey silly sand
	Material	sch. 80 prc	
	7222	The state of the s	
1 13	Backfill	36 FT	
	Type	neat cement	1 32 -1
	Scal	8'	
	Material	bent chips	clay
	Matchai	ocy i chips	
	Ciravel Pack	3 FT	
	Material	2-12	
		211 -1	0 - FT
	Screen (din v dep)	2"x 2'	
	Slot Size	.010	
	Material	S.S.	3.0
	T-(disciple)		GIVA
minn	Well Depth	FT	Conco
(/////	Bockfili	2.5	DEC 07 2011 OF
(/////	Material	sand	o the
(/////	Total Hole Depth	72.5 FT	DEC 07 Car. \$1
(//////			

RESOURCE PROTECTIO (SUBMIT ONE WELL REPORT PER WELL)		CURRENT Notice of Intent No.	RE06329
Construction/Decommission Construction Decommission ORIGINAL INSTALLATION of Intent Number	N Notice Property Over	Type of Well X Resource Pri Geotechnica	otection
Consulting Firm ARCADIS	Site Address City_Kent	19918 68th Ave. S. County	
Inique Ecology Well ID Fig No. BHK - 19 LINEAR TO THE CONTRACT OF LINEAR STATE OF THE CONTRACT OF THE CONTR	Lat/Long (s,t still Required	## 14 NW 500 1 F Lat Deg	Twn 22N R 4E or WWM Lat Min/Sec Long Min/Sec
Driller Travue Name (Print) Andy Flagan priller/Traince Signature priller/Traince License No. 2761 Priliner, licensed driller's ignature and License No.	Tax Parcel No. Cased or Unea Work/Decommon	0122049089 sed Diumeter 8" sision Stari Date //-/6- sision End Date //-/6-	10
De	Well Data W11-599 werete Surface Seal pth 3 ink Casing (diu x dep) 2"× 16	Forn O grey s	20 FT
Ma Bau Tyr Sen	ckfill Sch 80 Reat ce	pre ment	₽ / FT
Ma	een (dia x dep)	Ff	n
Ma We	(Size .010 Herial <u>BB 5</u> , H Depth 30'	FT	DEC OF 2011 PAR
Ma	al Hole Depth 31	FT £	DEC 07 2011

RESOURCE PROTECT		REPORT CURI	RENT	DE0C120
(SUBMIT ONE WELL REPORT PER WE	LL INSTALLED		of Intent No.	RE06329
Construction/Decommission			Type of Well	
X Construction			X Resource Prote	
Decommission ORIGINAL INSTALLA		ATTENDED TO A TOTAL OF THE PARTY OF THE PART	Geotechnical:	Soil Boring
of Intent Number		Property Owner Chevron Site Address 19918 68th A		
Consulting Firm ARCADIS		Site Address 19918 68th Av City Kent	County	17 King
		Same and	County	17-2-4014
Unique Ecology Well ID Tag No. BHK-	1041	Location 1/1 SW	1/4 NW See 1	Twn 22N R 4E
Tag No. BITK -		Lat/Lange (e.l.): Lat Dev		Lat Min/Sec
WELL COSS INTO THEM EMIL AND HAVE A CONTRACT OF THE STATE	Con district to the	Lat/Long (s,t,r Lat Deg still Required) Long Deg		Long Min/Sec
Mi across veral or drive relayers into reported short we true to me for		and the same of th		4 1003 101
		Tax Parcel No. 0122049089		_
X Driler Trance Name (Print) Andy Fli Driller/Traince Signature	agan	Cased or Uncased Diameter	8"	Quite a
Driller/Traince License No. 2761	/			
		Work/Decontmission Start Date:	_11-17-	11
If trainee, ficensed driller's Signature and License No.		Work/Decommission Find Date	17-17	-/1
Signate and Energy 196.				
Construction/Design	Well Data V	V11-599	Forma	tion Description
	Secretary and the			
	Concrete Surface Sea Depth	3 'FT	-0	/8 FT
	Blank Casing (dia x der		grey sil	ry sand
	Material.	Sch. 80 pre		
	Backfill	FT		
	Type	neat cement	10	19 PT
	Seal	6'	0 / 5 =	FT FT
	Material	bent chips	cray	
	IVANIETIAL.			
 	Ciravel Pack	3′FT		
	Material	7-17		
			0/9	2, 5
	E IN THE	2"x 2'	Sand	,
	Screen (dia x dep)		7 ano	
	1	n/n		
	Slot Size	,010		
	Slot Size Material	5.5,	1	AVI
	Material	5.5,	(O)	EIVEO
	Material Well Depth	5.5, 18' FT	SiC	EIVEO
	Material Well Depth Backfill		QQC)	EIVEO
	Material Well Depth	5.5, 18' FT	QUE!	EIVEO

HCY 050-12 (Ket: v 2/01).

Scale 1"=

22.4E.1E

Type of Well f'x" in circle)

O Geotech Soil Boring

Resource Protection

SAND GEAVEL

RECEIVED

OCT 1 6 2003

DEPT OF ECOLOGY

ECY 050-12 (Rev 2/01)

Page 1 of 4

Scale 1"=

RESOURCE PROTECTIO (SUBMIT ONE WELL REPORT PER WELL IN Construction/Decommission ("x" in circle) (Submit Construction (Submit Construction Notice) (Submit Constr	Site Address 19 Site Address 19 City Kount Location 6W 1/4-1/4 Lat/Long (s, t, r still REQUIRED) Tax Parcel No. 12/10 Cased or Uncased D Work/Decommission	Type of Well ("x" in circle) & Resource Protection O Geofech Soil Boring 6600 684 AVE County: King County: King Lat Min/Sec Lat Min/Sec Long Deg Long Min/Sec	Construction/Decommission ("x" in a Construction Of Decommission Original Construction of Intent Number Property Owner Chevy on Unique Ecology Well ID Tag No. A Consulting Firm Delta Englished Driller or Trainee Name Same	on Notice Site Address City Kont Location & LavLong (s. t. still REQUIRE Work/Decomm Work/Decomm Work/Decomm	Type of Well ("x" m circle) Resource Protection Geotech Soil Boring 19860 68th AVE County: King County: King Twn 20N R4E Corr or one Lat Deg Lat Min/Sec Long Deg Long Min/Sec
Construction/Design	Well Data 3561-3	Formation Description	Construction/Design	Well Data 3561-3	Formation Description
To the state of th	Vell Cover Concrete Surfage Seal Lepth = 2 Vell Casing 2 "20 faterial P.O.C. ackfill II' fi type: Surf Chip's real MA aterial MA aterial MA aterial MA aterial S.S. All Depth 23 2 "9 28. Ackfill NIA terial NIA all Hole Depth 23"	SAND GENELL COUDLE FULL MAT. 4.20A Fine to Very Fine Brown SILTY SAND RECEIVED OCT 1 6 2003	Friguration property of the pr	Well Cover Concrete Surfage Seal Depth = 2. Blank Casing 2 "20 " Material P.OC. Backfill III' ft Type: Bent Chips Seal Material III Gravel Pack 4' ft Material III Screen 2 "x 3 " Slot Size 010 " Material 5.5 Well Depth 23 2 "9 0.0" Backfill NIA Material III Total Hole Depth 23"	DEPT OF ECOLOGY

struction/Decommission ("x" in circle)	TALLED) 14 (4)	72-4E-1E Type of Well ("x" in circle)	(SUBMIT ONE WELL REPORT PE	irele) 1110 515	22-4E-1E Type of Well ("x" in circle)
Decommission Original Construction Notice	1 850	Resource Protection O Geolech Soil Boting 9860 68th AVE 5 County: King	Construction O Decommission Original Construction	on Notice	Resource Protection O Geotech Soil Boring
of Intent Numbererty Owner_Chevron	Site Address 10	9860 68th AVE 5	of Intent Number Property Owner Chevron		s 19660 68th AVE 5
ue Ecology Well ID Tag No. 1949 43	it city Kont	County: King	Unique Ecology Well ID Tag No. A	HO 439 City Kor	t County: King
ulting Firm Dolta Environmen	12	14 NW 14 Sec 1 Twn 2010 R4E WW or dre www.			1/4-1/4 NW1/4 Sec Twn 200 R4E ED
er or Trainee Name Sames Gob	fin Tatiff one (e.t.r.	Lat Deg Lat Min/Sec Long Deg Long Min/Sec		es Coble LavLong (s, still REQUI	t, r Lat Deg Lat Min/Sec
er or Trainee Signature	suii regoires)	Long Deg Long Min/Sec	Driller or Trainee Signature	Ch V	Long Min/Sec
er or Trainee License No 2440	Tax Parcel No. Cased or Uncased I		Driller or Trainee License No.	Z44 O Tax Parcel N	
nee, licensed driller's	Work/Decommissio	on Start Date 9/22/03	If trainee, licensed driller's		nmission Start Date 9/22/03
ture and License no.	Work/Decommissio	on Completed Date 9/23/03	Signature and License no.	Work/Decom	mission Completed Date 9/23/03
Construction/Design	Well Data 3561-3	Formation Description	Construction/Design	Well Data 3561-3	Formation Description
1		-	5		-
	101 2 1201	SAND GANDEL		t au	
Ma Bac Typ Sea Mat	erial <u>ryn</u> ,	Cobble Fill MAT. I		Blank Casing 2 " 4 " Material P.V.C. Backfill Pin fi Type: Pin fi Material Best Thips	Hill SAND, GARDEL
Ma Bac Typ Scal Mat	terial P.OC. kfill 19 ft te (Bent Chips MA	Cobble Fill MAT. I		Backfill PIA ft Type: VIA	Cabbles
Ma Bac Typ Seal Mat Grav Mate	tenal P.O.C. kfill 17' fi tel Brus Chips fret Pack 4' fi trial 42 Storio en 2 "x 3	Cobble Fill MAT.		Backfill PIA ft Type: PIA Scal J Material Best I hip 5 Gravel Pack 7 ft Material: Z/IZ Son 0 Screen J "x Le "	Cabbles 10
Ma Bac Typ Seal Mat Grav Mate Screen Slot Slot Slot Slot Slot Slot Slot Slot	tenal P.O.C. kfill 17' fi tel Brus Chips frial 1999 tel Pack 4' fi trial: 1/2 Sano	Cobble Fill MAT.		Backfill PIA ft Type: PIA Scal J Material Best [hip5] Gravel Pack 7 ft Material: 2/12 5000	Labbles 4 10 to the start fine brown Sitty Sund
Ma Bac Typ Seal Mat Grav Mate Screen Slot Slot Slot Slot Slot Slot Slot Slot	tenal P.OC. kfill 17 ft tet Beur Chips and tenal MA tet Pack 4 ft trial M2 Santo ten 2 "x 3" Size 010	Cobble Fill MAT.		Backfill PIA ft Type: PIA Scal J Material Best I hip 5 Gravel Pack 7 ft Material: Z/IZ Son 0 Screen J "x Le "	Li 10g Fine brown Silty Sand
Ma Bac Typ Seal Mat Grav Mate	tenal P.OC. kfill 17 ft ft ft fel Pack 4 ft ft ft ft fill 18 ft	Cobble Fill MAT.		Backfill PIA ft Type: PIA Scal J Material Best Lhips Gravel Pack 7 ft Material: 2/12 5000 Screen J "x Le Slot Size OLO Material PLOCE	RECEIVED OCT 1 6 2003
Ma Bac Typ Seal Mat Grav Mate	tenal P.OC. kfill 17 ft tet Beur Chips and tenal MA tet Pack 4 ft trial M2 Santo ten 2 "x 3" Size 010	Cobble Fill MAT.		Backfill PIA ft Type: PIA Scal J Material Best I hip 5 Gravel Pack 7 ft Material: Z/IZ Son 0 Screen J "x Le "	Li 10g Fine brown Sitty Sand
Ma Bac Typ Grav Mate Well Backf	tenal P.OC. Akfill 17 ft tel Beur Chips I MA erial MM ft ft ft ft ft ft ft ft ft	RECEIVED OCT 1 6 2003 DEPT OF ECOLOGY		Backfill PIR ft Type: PIR Scal J Material Bent thips Gravel Pack 7 ft Material: 2/12 30 0 Screen J x 6 Slot Size OLO Material PLO: C Well Depth 10 9 " Backfill N/A	RECEIVED OCT 1 6 2003
Back Mate	tenal P.OC. Akfill 17 ft tel Beur Chips I MA erial MM ft ft ft ft ft ft ft ft ft	Cobble Fill MAT.		Backfill PIA ft Type: PIA Scal J Material Best Lhips Gravel Pack 7 ft Material: 2/12 5000 Screen J "x Le Slot Size OLO Material PLD: C Well Depth 10 9 "	RECEIVED OCT 1 6 2003

Driller of Trainee License No.	Tax Parcel No. Cased or Uncased	Diameter 9 Static Level	Driller or Trainee License No	LavLong (s, t, still REQUIRE Tax Parcel No Cased or Unca	1/4-1/4 W 1/4 Sec Twn Sec WWM
If trainee, licensed driller's Signature and License no.		on Start Date 9/22/03	If trainee, licensed driller's Signature and License no.		nission Start Date 9/22/03
Construction/Design	Well Data 3561-3	on Completed Date 4/23/03 Formation Description	Construction/Design	Well Data 3561-3	nission Completed Date
	Well Cover Concrete Surface Seal Depth = 1	Formation Description O LI fi First Sano Gaace) Cabbles U 10ft Fracto Very Frac Brown Silty Sand OCT 1 6 2003 DEPT OF ECOLOGY		Well Cover Concrete Surface Seal Depth = 1 Blank Casing 2 " 4 " Material P.V.C Backfill P.A. ft Type: P.A. Seal 2 Material Beach (h.P.) Gravel Pack 7 ft Material 2/12 Son 2 Screen 2 "x Le " Slot Size OLO Material P.O.C Well Depth 10 9 " Backfill N.A. Material P.O.C	RECEIVED OCT 1 6 2003 DEPT OF ECOLOGY

Struction/Decommission ("x" in circle) 1400/8 Construction Decommission Original Construction Notice of Intent Number	Type of Well ("x" in circle) Resource Protection Geotech Soil Boring	Construction/Decommission (""" in circle Construction Con	n Notice (2)	Type of Well ("x" in circle) Resource Protection Geotech Soil Boring
erry Owner Chevron	Site Address 19660 68th AVE 5	Property Owner Chevron	Site Address	19860 68th AVE 5
ue Ecology Well ID Tag No. AHQ 442	City Kernt County: thing	Unique Ecology Well ID Tag No. A	to 443 city Kont	County: King
ulting Firm Delta Environmental	LocationSW 1/4. 1/4 NW 1/4 Sec 1 Two DON R4E W circle	Consulting Firm Delta Env	ironmental Locations wil	4-1/4 NW1/4 Sec_L Twn 200 R4E OF
er or Trainee Name Sames Goble er or Trainee Signature er or Trainee License No. 2440	Lat/Long (s, t, r Lat Deg Lat Min/Sec still REQUIRED) Long Deg Long Min/Sec Tax Parcel No. \(\frac{1}{2} / \text{f} \)	5 Driller or Trainee Name Same	Lat/Long (s, t, r still REQUIRE) Tax Parcel No.	Min/Sec
er of Trainee License No.	Cased or Uncased Diameter Static Level	Driller or Trainee License No. 2. If trainee, licensed driller's Signature and License no.	Cased or Uncas	ed Diameter 9 Static Level
nee, licensed driller's hure and License no.	Work/Decommission Start Date 9/22/03	If trainee, licensed driller's Signature and License no.	Work/Decommi	ission Start Date 9/22/03
	Work/Decommission Completed Date		Work/Decommi	ssion Completed Date 9/23/03
Construction/Design We	Data 3561-3 Formation Description	Construction/Design	Well Data 3561-3	Formation Description
Depth = Blank Ca Material Backfill Type: Seal Material Gravel Pa Material: Screen	Beaun sitty send NIA NIA T T T T T T T T T T T T T	Department of Ecology does NOT Warranty the Data and/or	Concrete Surface Seal Depth 3 Blank Casing 1 "20" Material P.D.C Backfill 17 ft Type: Deut chips Seal Jia Material Nia Gravel Pack 4 ft Material: %ia Somo Screen 1 "x 3 " Slot Size 010 Material P.D.C.	Pill SAND GRADEL, Cobbles 4 23 Frine to Dery Fine Brown silty soud RECEIVED OCT 1 6 2003 DEPT OF ECOLOGY
Backfill	DEPT OF ECOLOGY NIA Opth 10	The Depa	Well Depth 23, 4, " Backfill UIA Material NIA Total Hole Depth 23'	

Construction/Decommission ("x" in circle) Construction O Decommission Original Construction Nof Intent Number Property Owner Chevy on Unique Ecology Well ID Tag No. AHG Consulting Firm Data Environment of Trainee Name Saves Driller or Trainee Signature Driller or Trainee License No. If trainee, licensed driller's Signature and License no. Construction/Design	othce Site Address A44 City Kan Converental Locations LauLong (s still REQUI Cased or Un Work/Decor	M 1/4 1/4 M 1/4 Sec Twn DON R4E EW circle of	RESOURCE PROTECTION (SUBMIT ONE WELL REPORT PER Construction/Decommission ("x" in both Construction Constructi	etent Number. Proceedings of the information belief. Take of the information belief. Type of Well Resource PGeotech County Owner Christ te Address 7038 Sity County Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM at Address County Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM at Address County Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM at Address County Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM at Address County Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM at Address County Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM at Address County Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM at Address County Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM at Address County Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM at Address County Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM at Address County Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM at Address County Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM Ocation SE 1/4-1/4 NV 1/4 Se WM Or WWM Ocation SE 1/4-1/4 NV 1/4 Se WM Ocation SE 1/	ent No. AE15199 ("x in bax) Protection Soil Boring Hendley 196th Ghreet 1/4 ing-17 Soil Twn 22/VR HE Min Sec Min Sec 5000325 Static Level 12 10-18-20/1	
	Well Cover Concrete Surface Seal Depth = 2. Blank Casing 2 20. Material P.O.C. Backfill 17 ft Type: Depth Chips Seal J.A. Material N.A. Gravel Pack 4 ft Material: 91. 20. Screen 2 x 3 Slot Size 0.0 Material P.O.C. Well Depth 23 4 " Backfill 21.A. Material NIA Total Hole Depth 23 **	RECEIVED OCT 1 6 2003 DEPT OF ECOLOGY	Construction Design Construction Design Z 3/8 Z 3/8 Z 3/8	Back Fill with 3/	ex patch	RECEIVED OCT 2.7 2011 WA State Department of Ecology (SWRO)

WELL CONSTRUCTION CERTIFICATION: I nonumental salary company and the construction of this will, also required with the construction of this will, also required with the construction of this will, also required with the construction makes it is required better to a required with the construction of the construction of the will, also required with the construction of the will also required with the construction of the will, also required with the construction of the will also required with the will be a second or thoused the will be a second or the will be a second	RESOURCE PROTECTION WELL REPORT SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction Decommission ("x" in bax) Construction Subscription RIGINAL INSTALLATION Notice of Intent Number: EE03685 Consulting Firm Kane Environments	Type of Well ("x in bax) Resource Protection PGeotoch Soil Boring Property Owner Chris Hendley Site Address 7038 5 196 th Gareet City Krnd County King-17	Please print RESOURCE PROTECTION V (SUBMIT ONE WELL REPORT PER WE Construction/Decommission (""" in bax) Construction Proceeding Firm Report Per WE Construction Construction Construction Construction Construction Construction Construction Consulting Firm Report Consulting Firm Rep	t, sign and return to the Depart VELL REPORT CURRE LL INSTALLED fumber. Property Owner Site Address	Type of Well ("x in bax) Resource Protection PGeotech Soil Boring thris Hendley 7038 \$ 196th Greet County King 17	
Size Cilled with 3/8 Heleplug RECEIVED OCT 27 2011 WA State Department Was been partial to the plug and the plug and the plug are the	VELL CONSTRUCTION CERTIFICATION: I constructed and/or copy responsibility for construction of this well, and its compliance with all such independent of the construction standards. Materials used and the information pointed above are true to my best knowledge and being. Driller Engineer 10 Trainee Could Gife Trainee of the construction of the	EWM 20 or WWM Lat/Long (3, 1, r Lat Deg Min Sec still REQUIRED) Long Deg Min Sec Tax Parcel No. 3 1 060003 2-5 Cased or Uncased Diameter 2 1/2 Static Level 2 Work/Decommission Start Date 10-18-2011	WELL CONSTRUCTION CERTIFICATION accept responsibility for construction of this well, and its Washington well construction standards. Matterints used, reported above are true to my best knowledge and belief. Driller Engineer for Trainee Driller/Engineer/Trainee Signature Driller or Trainee License No. 3119 If trainee, Eigensed driller's Signature and It	I constructed and/or compliance with all ind the inflarmation Lat/Long (s, t, still RPQUIRE Tax Parcel No Cased or Unca Work/Decomm	Location SE 1/4-1/4 VV 1/4 Sec Twn 22 V R Y E	
RECEIVED OCT 27 2011 WA State Department RECEIVE OCT 27 2010 WA State Department	9' [23/8' 6" cold	the patch	Ecology does NOT Warranty the	6" cold mix pate	ch,	
of Ecology (5)		OCT 27 2011	Department		RECEIVED OCT 27 2011 WA State Department of Ecology (SWRO)	

Please print, sign and return to Please print, sign and return to RESOURCE PROTECTION WELL REPORT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction Constr	to the Department of Ecology CURRENT Notice of Intent No. AE15199 Type of Well ("x in bax) Resource Protection PGeotoch Soil Boring Property Owner Chris Hendley Site Address 7038 5 196th Chreet City Yeard County King 17 Location SE 1/4-1/4 IVV 1/4 Sec Twn 22NR 4/E EWM or WWM Lang Deg Min Sec Tax Parcel No. 3 1000003 25 Cased or Uncased Diameter 21/4 Static Level 12 Work/Decommission Start Date 10-18-204 Work/Decommission Completed Date 10-18-204	RESOURCE PROTECTION WELL REPORT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) (SUBMIT ONE WELL INSTALLATION Notice of Intent Number: (ED 3685 Consulting Firm Man En vice and a latent Number: (ED 3685 Consulting Firm Man En vice and a latent Number: (WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the inflammation reported above are true to my best knowledge and belief. Driller Degineer (I) Trainnee Signature Driller Tengineer / Trainnee Signature Driller or Trainnee Liccarse No. 3119	Type of Well ("x in bax) Resource Protection Property Owner Chris Hendley Site Address 7038 5 196" Girect City Kend County King-17 Location 3E 1/4-1/4 [NV/1/4 Sec Twn 22NR 4E EWM For WWM Lat/Long (s, t, r Lat Deg Min Sec Still REQUIRED) Lang Deg Min Sec Tax Parcel No. 3 1100003 2.5 Cased or Uncased Diameter 2% Static Level 12 Work/Decommission Start Date 10-18-2014 Work/Decommission Completed Date 10-18-2014
23/8"	Permation Description How patch Cilled 3/8 Heleplug RECEIVED OCT 27 2011 WA State Department of Ecology (SWRO)	NOT Warranty the	Pormation Description Filled 3/8 Hole plug RECEIVED OCT 27 2011 WA State Department of Ecology (SWRO)
SCALE: 1'=P.	AGEOF	SCALE: 1'=	PAGEOF

RESOURCE PROTECTION (SUBMIT ONE WELL REPORT PER WI Construction/Decommission ("x" in box) Construction ("Decommission ORIGINAL INSTALLATION Notice of Intent	ELL INSTALLED) Number:	CURRENT Notice Type	of Intent No. AE15199 of Well ("x in bax) Resource Protection Geotech Soil Boring her: 5 Hendley 3 5 196th Gareet	SUBM Constr or Con icit Sorigin	OURCE PROTECTION IT ONE WELL REPORT PER Vaction/Decommission ("x" in box) struction commission VAL INSTALLATION Notice of Inte	print, sign and return to WELL REPORT WELL INSTALLED)	CURRENT Notic Typ Typ Property Owner C Site Address 703:	e of Intent No. AE18199 e of Well ("x in bax) Resource Protection Geotech Soil Boring hris Hendley 8 5 196th Ghreet
Unique Ecology Well IDTsg No. WELL CONSTRUCTION CERTIFICATION ecopy responsibility for construction of this well, and in Weshington well construction standards. Maturiats used reported showe are true to my best knowledge and belief	N: I constructed and/or s compliance with all and the information	Cased or Uncased Diameter Wark/Decommission Start Work/Decommission Comp	Deg Min Sec S 1 0 0 0 0 3 2 5 5 5 5 5 5 5 5 5 5 6 5 6 6 6 6 6 6 6	Officer (Notice of the Control of th	Ecology Well IDTag No. CONSTRUCTION CERTIFICATI possibility for construction of this well, assume the construction standards. Metarints on the construction standards. Metarints of the construction of	iON: 1 constructed end/or of its compliance with all used and the inflamation liter.	still REQUIRED) Long Tax Parcel No	Deg Min Sec g Deg Min Sec 5 1 0 0 0 0 3 2 5 er 2 1/8 Static Level 1 2 1 t Date 10 18 - 20 11
23/8/15	Back fi	lled b/B Helicplug	RECEIVED OCT 2.7 2011 WA State Department of Ecology (SWRO)	The Department of Ecology does NOT Warranty the	23/81/5	Back with	mix patch	PECEIVED OCT 27 2011 WA State Department of Ecology (SWRO)
	SCALE: 1'=PAG	3EOF				SCALE: 1'=P	AGEOF	

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

SOURCE PROTECTION WELL REPORT SMIT ONE WELL REPORT PER WELL INSTALLED) struction Decommission ("x" in bax) construction Decommission GINAL INSTALLATION Notice of Intent Number. EE03685	Type of Well ("x in bax) Resource Protection Property Owner Chris Hendley Site Address 7038 \$ 196** Garest	RESOURCE PROTECTION WELL REPORT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction Decommission ("x" in bar) Construction Constructi	Type of Well ("x in bax) Resource Protection Property Owner Chris Handley Site Address 7038 5 196th 4freet
ulting Firm Kane Environmental	City Krnt County King-17	5 Consulting Firm Kane Environmental	cin Krut comm King-17
ue Ecology Well IDTeg No.	Location SE 1/4-1/4 NV 1/4 Sec Twn 22NR 4E	Unique Ecology Well IDTag No.	Location SE 1/4-1/4 NV 1/4 Sec 1 Twn 22/VR 4/E
L CONSTRUCTION CERTIFICATION: I construsted und/or responsibility for construction of this well, and its compliance with all ignor well construction standards. Materials used and the information of above are true to my best knowledge and belief.	EWM ☑ or WWM ☐ Lat/Long (s, t, r	WELL CONSTRUCTION CERTIFICATION: 1 constructed und/or accept responsibility for construction of this well, end in completence with all whichington well construction starbanks. Mutarials used and the information reported above are true to my best knowledge and belief.	EWM 🖾 or WWM 🗌 Lat/Long (s, t, r Lat Deg Min Sec Still REQUIRED) Long Deg Min Sec
iller Engineer (1) Trainme Roday Gulsetha Print Leek, First Name) Roday Gulsetha Roday Gulsetha	Cased or Uneased Diameter 2 1/8" Static Level 12 Work/Decommission Start Date 10-18-2011	Driller Engineer (1) Trainee Name (Print Lest, First Name) Driller/Engineer /Trainee Signature Driller or Trainee License No. 319	Tax Parcel No. 33 11000003 2-5 Cased or Uncased Diameter 21/2" Static Level 12 Work/Decommission Start Date 10-18-20/1
lace, licensed drifter's Signature and Lifenser Number:	Work/Decommission Completed Date 10-18-204	If trainee, licensed defler's Signature and Lifenser Number:	Work/Decommission Completed Date / 0-18-204
Construction Design Well	Data Formation Description	Construction Design Well	Data Formation Description
23/8 15	5/17/11	23/4" s	
1 5005	RECEIVED OCT 27 2011 WA State Department of Ecology (SWRO)	TON	RECEIVED OCT 27 2011 WA State Department of Ecology (SWRO)

Soil Corings MONITORING WELL REPORT 22-4E-1F 430358 Please print, sign and return to the Department of Ecology 21) OWNER/PROJECT CURRENT Notice of Intent No. AE 15199 RESOURCE PROTECTION WELL REPORT 165 LOCATION OF WELL By legal description Niv Sun (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Type of Well ("x in box) Construction/Decommission ("x" in box) Resource Protection Construction Geotech Soil Boring S 2) TYPE OF WORK Decommission Hendley 58th Pha 5 chris ORIGINAL INSTALLATION Notice of Intent Number. 196Th HO EE 03685 Street 7038 Alteration (Reconstrates Consulting Firm Kane Environmental 14ing-17 Kirns Location SE 1/4-1/4 NV 1/4 Sec | Twn 22/VR 4E Unique Ecology Well IDTag No. T STATIC WATER LEVEL Rossey Mad Ft below land surface EWM Or WWM WELL CONSTRUCTION CERTIFICATION: I constructed end/or Armst iso Pressure ____ accept responsibility for construction of this well, and its compliance with all Washington well construction sundards. Materials used and the information Lut/Long (s, t, r Lat Deg . (8) WATER BEARING ZONES reported above are true to my best knowledge and belief. still REQUIRED) Driller | Engineer (1) Trainee | Roddy (5.155)

Driller/Engineer /Trainee Signature | 74 mary 331106000325 Depth of Complesed Well 41.5 Depth at which wants was first found Tax Parcel No. Cased or Uncased Diameter 21/g" Est. Plow Rate SWL and/or Vault 10-18-204 Driller or Trainee License No. Work/Decommission Start Date 10-18-204 Work/Decommission Completed Date TO Surface Bush real If trainer, licensed defler's Signature and Litense Data Data Well Data Formation Description 191 WELL LOG Construction Design the NOT Warranty the Ground Elevation Wolded Threaded Greec Well See Material NOT Sand Who Oreus weight does does N Seck Ecology Beatouse play at least ! A day! ≤ MAY 04 2011 Department of 5 ESOURCE Dete rance 2/14/11 WELL CONSTRUCTION CERTIFICATION. RECEIVED The prostructed entiror accept responsibility for construction of this web, and its WELL TESTS: profesce with all Washington well construction standards. Materials used Pump OCT 27 2011 Knipschied wom to 300 WA State Department of Ecology (SWRO) OF/C De By whom? Dopth of stress to be pastyred. From PAGE 2000 TOWN HOLOCDIONKH WOM MARCH 29201

MONITORING WELL REPORT 1) OWNER/PROJECT WELL NO.	Well SDF Growton In Connection (6) LOGATION OF WELL By legal description: Control Connection Losgoade Tomobbin Connection Tomobbin Connection Street eddress of well location Street eddress of well location Another Pressure Level St below land surface Another Pressure Love Connection (8) WATER BEARING ZONES: Depth at watch session was Gras found Fram To Ear Flore Ram SWL	Please print, sign and return RESOURCE PROTECTION WELL REPORT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission ("x" in box) Construction For Decommission ORIGINAL INSTALLATION Notice of Intent Number. Consulting Firm Unique Ecology Well IDTag No. WELL CONSTRUCTION CERTIFICATION: Lonstructed and/or accept responsibility for construction of this well, and its compliance with all washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief. Driller Engineer Traince Name (Print Last, First Name) Fadich, Nick Driller (Print Last, First Name) Fadich, Nick Driller (Print Last, First Name) Fadich, Nick Driller or Traince License No. 2862	Type of Well ("x in hax) Resource Protection
Locking of seasons consequences of the seasons of t	Ground Elevation Material From To SWL Bankford Dropp Bankford Chips Bankford Resources	Construction Design Well Off toli	
Size Demp Bader Air Flowing Artistee Purposebility Visid OPM	Decentation A 14 11 Coordinated A 14 11 WELL CONSTRUCTION CERTIFICATION: Todativated analyse acopy responsibility for construction of the wal, and to conclude with all Washington well construction standards. Materials used with the information reported above are time to my beat quantitative and before. Type of Princ Name and Arrivathick Upanese No. Type of Pri	The Department D H SCALE 1°= NTS ECY 050-12 (Rev. 7/06)	RECEIVED JUL 12 201: DEPT OF ECOL 3GV NWRO - WF PAGE OF

454616 Please print, sign and return to the Department of Ecology this Well Report CURRENT Notice of Intent No. 5544840 RESOURCE PROTECTION WELL REPORT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Type of Well ("x in box) Construction/Decommission ("x" in box) Resource Protection
Geotech Soil Boring □ Construction Decommission Property Owner City & f Kout ORIGINAL INSTALLATION Notice of Intent Number. Site Address beam behind 5858 5, 1944 st. Consulting Firm City Kent County King Unique Ecology Well IDTag No. Location NE 1/4-1/4 HW 1/4 Sec 2 Twn 22 R 4 EWM For WWM WELL CONSTRUCTION CERTIFICATION: 1 constructed and/or accept responsibility for construction of this well, and its compliance with all Lat/Long (s, t, r still REQUIRED) Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief. Long Deg Min Tax Parcel No. ☑ Driller ☐ Engineer ☐ Trainer The Department of Ecology does NOT Warranty the Data and/or the Name (Print Last, First Name) Fadich, Nick Cased or Uncased Diameter 6" Static Level Driller/Engineer /Traince Signature ___ Driller or Trainee License No. 2862 Work/Decommission Start Date 3/13/12 Work/Decommission Completed Date 310112 If trainee, licensed driller's Signature and License Number: Construction Design Well Data Formation Description 0 ft to 10 ft tan brown gray Sand & gravel fill ft to ft to _ 10 ft to_ I CIVEL RECEIVED MAY 3 1 2012 JUL 12 2012 PLOF ECOLOGY NWRO - WK DEPT OF ECOLOGY SCALE: 1'= NTS PAGE | OF |

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ECY 050-12 (Rev. 7/06)

MONITORING WELL REPORT	Well IDX SOLL BORLING STEPT CONT.
1) OWNER/PROJECT WELL NO	(6) LOCATION OF WELL By legal description: COURS KING Letitude Longitude TOWNING AND CO OF STRENGE HE (Ear W) Section I SW (I of NI) 1/4 of above protion Sweet address of well location FANG ONE S 4S 1964 S Kent WA 98030
Alteration (Repair/Recondition) Alteration (Repair/Recondition) Capversion Deepening Abademinent	Tax Int number of well location ROLU
(3) DRILLING METHOD Rosery Air Rosery Mind Cable (3) DRILLING METHOD Rosery Air Cable (4) Hollow Stein Auger Other	(7) STATIC WATER LEVEL; Ft. below land surface Date Anesiar Present Ibra; in Date
/	(8) WATER BEARING ZONES:
(4) BORE HOLE CONSTRUCTION:	
Special Standards Depth of Completed Well 35	R. Depth or which water was tirst found
	From To Est. Flow Rate 59
Vault Special Standards Water-tight on	
Surface flush	
10 Discharge Car	
— ft. B Casing diemi	
Material Material	(9) WELL LOG:
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Seal F. C. F.A.C.	Black Sand 10 135
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Material Material	
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THE PARTY OF THE P	n. 0
. 1868	
Filter pack	Dave to good / 1/4/1/3 Completed (1/07/1)
oraco Daniel Material _	
Size	WELL CONSTRUCTION CERTIFICATION:
	and the information reported above are size to my best trowledge and belief
(5) WEDL TESTS: Baller DAG D Flow	and the information reported above at a sub-to-my deat statement of the sub-to-my deat stateme
Permosability Yield	
Conductivity PH Conductivity OPS Dopth arresian flow for	7/s/nee Name Ucerse No
Temperature of water OP Dopth artesian flow it. Was waser analysts done?	Drilling Company Troll Des Le processor, It
Dy whord?	
Depth of strate so be analyzed. From ft. to	Accress 11412 62nd are E. Puyallug Wa. 983
Remodal	Registretion No HOLOCO I O44kH Date 01/24/1

EMONITORING WELL REPORT 4 75954	Well IDH SOLL BOLLING STATE CARD! SE 47047	tonitoring well report	Wellins SW BELING
1) OWNER/PROJECT WELL NO Name CHUNN JOHN JOHN JOHN Zip 98037 207 TYPE OF WORK New construction Alternation (Reput/Recondition) Conversion Absolution Absolution Conversion Conversion Absolution Conversion C	(6) LOCATION OF WELL By legal description: County Airg Lettrude Longrade Tountillo JAN Nors Strauge 4E (E or W) Section I Street Address of well footnoted TAN Aire S 4S 1964 St. Kent Wa 98030 Tax lot number of well location ROLU	OWNER/PROJECT WELL NO Date City No Line South Madries 235 HAR ONE South State DH 2:p 98033 \$2) TYPE OF WORK O New construction Alteration (Repair/Recondition) Conversion Deepening X (Abaddonment)	(6) LOCATION OF WELL By legal description: Covery King Lemmes Longitude Texando JAN Nos S Range HE (E of W) Section I SWELL SCORED TO A STRANGE STRA
(3) DRILLING METHOD Rosery Afr Rosery Mind Cable Stollow Stein Auger	(7) STATIC WATER LEVEL. F1 below land surface Date Victian Pressure (5/49 in Dete	103) DRILLING METHOD Rosery Atr	(7) STATIC WATER LEVEL. Pt before lead surface Date Utes up Pressure
4) BORE HOLE CONSTRUCTION: Special Standards Depth of Completed Well TO Surface flust vector Locking cap	(8) WATER BEARING ZONES: Degin sy wluch water was first found	Depth of Completed Well 35 n. Vault pool Standards Waster-tight cover Surface flush wault:	(8) WATER BEARING ZONES: Depth at which water was first found From To Est. Flow Rate SWL
Seal Seal Seal Seal Seal Seal Seal Seal	(F) WEL: LOG: Ground Elevation Material From To ISWL: Black Sand 10 35	Camp diameter Camp diameter Welded Threaded Clied	(9) WELL LOG) Cround Elevation Maicrial From To KWL WACKLILLIA KEOM D 39
TO See Amount Anount Grout weight	Siact sage	Amount Grout weight	bottom to top with pentoniti chips
Borebole diameter in from fi to in from fi to in from fi to		So of the Borebole disampter:	
Filter pack: Screen A Subsection of the subsecti	The state of the s	Titler pack: A sign of the pa	
Slor size	Date stated OI /OB/13 Completed OI /OB/13 WELL CONSTRUCTION CERTIFICATION: **Constructed ending account reason within for construction of links wall, and fix	TO T	Date shared 01/07/13 Completed 01/07/13 WELL CONSTRUCTION CERTIFICATION: secutively and or scoop inseponability for goodington of line well, and the
(5) WELL TESTS: Parrow Baller Air. Flowing Affection	Sompliance with all Washington well construction standards. Materials used and the information reported about are true to true best troveledge and beined. True on Princip Roddly GillSeth License No. Traines Name Roddly GillSeth License No. Disting Company Hold Cone Sailling. 1M. (Stand) M. J.	Cal Webs Tests: Ballet Au Flowing Afronco	Traines Name Tr

MONITORING WELL REPORT 475 959	Well 10% SUL BULLING STATE CONTS AF 20154	MONITORING WELL REPORT 4/78973	Well ID# BHU 083
(1) OWNER/PROJECT WELL NO Name CHURCH LINE SOUTH Zip 98033 (2) TYPE OF WORK New construction	(6) LOCATION OF WELL By legal description: Crump King Lamrude Longmude Terraship Jan No es S. Range 4E (B. or Neemon L. S.W. 1/4 of NILL 1/4 of Roberts Section L. Street address of well location Fand Ave. S. 4S 1964 St. Kent WA 98030 Terrash number of well location ROW.	(1) OWNER/PROJECT WELL NO Address 2012 14th O.M. South State U.H. Zip 980.33 (2) TYPE OF WORK ONew construction Alteration (Repeat/Recondition) Conversion Despenies Absorbancement	(6) LOCATION OF WELL By legal description: County King Lettrude Longitude Termathip 20 N Or S Rampy #E (E or W) Sornon L Sitten address of well location Fond Ove S. & S. Pig. M. St. Kent Wa 98030 Tas let number of well location ROW
(3) DRILLING METHOD Rosery Atr	(7) STATIC WATER LEVEL Ft. before land purities Oneside Pressure	(3) DRILLING METHOD Rosery At: Rosery Mod Cable Bibliow Stein Auger: Other	(7) STATIC WATER LEVEL F1, below land surface. Date Junes in Pressure 1616, in Date
(4) BORE HOLE CONSTRUCTION: Yes No. Special Standards Depth of Completed Well # #	(8) WATER BEARING ZONES: Depth at which water 449 Grat found	(4) BORE HOLE CONSTRUCTION: Yes No Special Standards TX Depth of Completed Well Depth of Completed Well	(8) WATER BEARING ZONES: Depth as which water was first found
Vault Standards Wester-right obver TO Surface flush venit . Locking cap Leasing surfaces	From To Ext. Flow Rate SW1.	Vault profit Standards Water-tight cover Surface flush vauln Locking cep	From To Est Flow Rate SW L
Casing diameter	(9) WELL LOG) Ground Elevanob Material From To SWL	Meterial PVC Welded Threeded Glued	(9) WELL LOG: Ground Elevation Meterial From To SW
Seal A State of the seal of t	Backfilled from 10 35 bottom to 700 with pentionite chiefs	Mell Seal To Great Material Amount Bentun Grout weight Live	
Barebole diameter in. from ft. to in. from ft. in. ft. in	n 123 00 123	Borehole diameter Description Descripti	La Sue June
pack: 100 S Marterial Marterial From fl. to	Mick NW IT WE	o pack see 1 1 000 Material 3" PVC	NAME OF THE PARTY NAME OF THE
o a co Material	Dais stated 01/08/13 Completed 01/08/13	A Second Filter pack	Date arango 01/87/13 Completed 01/89/13
(5) WEDL_TESTS: Pump Bailer Au Flowing where in Proceedings Proceeding with the performance of water Proceeding wa	WELL CONSTRUCTION CERTIFICATION: Sommitted and for access responsibility for construction of this wall, and his sommitted with all Mastington well construction standards Metahasa used cans the information reported above are true to my best strowledge and belief. Type at Plant I warme RODUL GISCH: Ucense No. Dilling Conventy Hold Deline Selling. Mr. 15/3-peg 20/10/10/10/10/10/10/10/10/10/10/10/10/10	(5) WEDI TESTS: Pump Baller Arr Flowing-Autrelian	WELL CONSTRUCTION CERTIFICATION: - constructed analor accept responses they for postatruction of this well, and its - constructed analors accept responses they for postatruction of this well, and its - construction of the second analors of the second analors. Analors is used and the information reported above, are fore to my seat transferage and bodief. Type of Print Name Roddy Gilloth - Ucense No. - Drilling Company Holding Mailung Im. - Company Holding Im. - Company Hol
Was water analysis done? Yes No	3/19	Was where analysis doce? Yes No	16-11/19/19 311

ONITORING WELL REPORT 478974	Well ID#_ Start Cord	BHU P	BH .		
OWNER/PROJECT WELL NO C CHILD LINE SOUTH ZIE 98033 TYPE OF WORK Alter construction Altersion (Repout/Recondition) Conversion Deservation Abaddonment	SW 1/4 of 1 Street address of well loca	Nors Range	LONG TO AN SAN OF ALDOTH MODIFIED QUES 45	1	
DRILLING METHOD Rosery At: Rosery Mud Cable 32 Bollow Stein Auger Other	(7) STATIC WATE:	R LEVEL	Date		
BORE HOLE CONSTRUCTION: You No Polisi Standards Depth of Completed Well 17 It	(8) WATER BEAR!				
LIM) paraceraphic and 7.	from	To	Err. Flow Rate	SWL	
Vault pour Standards Water-rigat cover					
TO Surface flush vauli.		-			
Casing diameter 4					
Material PVC Welded Threaded Gives	(9) WELL LOG: Oround	Elevation			
	Mai	erial	From	To SWL	
al 500	Black Sono	<u></u>	0	17	
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Slot size 10 in			1 - 100	7.0	
Sas Bas Mareria Cul Pudu Si	IND Date started DI/OB	//3 co	adiated 01 100	112	
1993 U' 1985 Size 10/20	WELL CONSTRUCT	ON CERTIFIC	CATION:	eri, and its	
WED- TESTS:	Storange with all West	hington well const	ruction standards Mat	PRINTS USED	
Printing Bailer Air Flowing Office in	Type or Pent Name Rod	A		3/19	
Conductivity FH Temperature of water OSAS Depth arroylen flow found	Tishee Name		Comment No.		
Was wester emplysis document No	16-11	cene se	illing. Inc.	3/19	
By whom? Death of streng of be analyzed. From the	(5) pred) / 4 / 06/	and Aust		1 00212	
Remarks	Accress 11412 6		11	ilaila	
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22N-4E-12D GEOBORING & DEVELOPMENT, INC. 9415 S.R. 162 PUYALLUP, WA. 98372 (206) 845-6990

Resource Protection Well Report Sewer Line Date 10-19-94 County IC Ag . NW 1/ Section IZ T. 22N Start Card K 17147 Consulting Firm Geo Engl Neer'S T. 22N R. 4E Method \ / " # SA John Ronis e# 1505 24.142 Depth of Stick up Flush on Monument Casing Components Soil Log In Feet Type of Surface Seal Prem Amount 1.5 1.5 ID of Riser Pipe Type of Riser Pipe PVC Amount Type of Connection Bell ENA Clue Type of Backfill around Riser Bout Chips Amount 135 Diameter of Borehole Screen Size or Type Type of Filter Material 10/20 CHES NOV 3 0 1994

199821	100	at a	Well IE Start Co	APA ROYO	694		
(1) OWNER/PROJECT Name David Taylo	WELI	NO. AWBB	(6) LOCATION C	F WELL By leg	al description		
Address / B Country		ne	Township 201	(N or &) Rappe 4	E (For W)	Section /	12
City long view	State Wa	Zip 98632	NW 1/400	NW 14	of above section.		
(2) TYPE OF WORK			Street address of well be		3-76	ave	5
	Alteration (Repr	iir/Recondition)	Tax lot number of well				
(3) DRILLING METHOD			(7) STATIC WAT	ER LEVEL:		_	
Rosery Air B-Hollow Stein Auger	Cther	Cable	3. 5 Ft. b		Date		
(4) BORE HOLE CONST	RUCTION:		(8) WATER BEA	RING ZONES:	40 (4)	_	_
Special Standards Yes No	Depth of Complet	ed Well 10 ft	Depth at which water w	vas first found _ ?	5-		
			From	To	Est. Flow Ra	te	SWL
Vault (i) Standards		Water-tight cover					
- Charles		— Surface flush vault					
TO S	< I	Locking cap				-	
∠ n.		Casing diameter 9					-
8000	1100	Material PUC	(9) WELL LOG:				
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Seal South	0.85		Congrete	Fill	0	5	
_ / n 0000	0.00	Well Scale	Gray silt	y Sand	5	10	1
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Filter D. SD	BD, 90	Bentonite plug at least 3 ft. thic			-	-	-
pack: 08 0	< 00°0	Screen:	WELL DR	T OF ECOLOGY			
3 n 8000 1	0000	Material PUC		SEMIC CIVIT			
TO CONT	DATE	From 5 ft. to 10	-		-	-	+
10' A 800 E	90.0	Slot size . 0/0 in			1		-
2000	2000	Filter pack	Date started 5 - &	2/ - 2/ Com	inleted 5 =	24-	11
000	900	Material Sond	Date started 3 - 2	6 06	3 2		20
0009	60.0	Size 10-26	WELL CONSTRUC				
(5) WELL TESTS:			compliance with all V	compl responsibility for reshington well constru	iction standards. N	fisterials us	bed
Pump Baile	ri Air	Flowing Artesian		eported above are true			
Permeability	Yield	GPM	Type or Frint Name Zo		License No.	268	4
Conductivity	OF/C Dent	h artesian flow found ft.	Trainee Name	de Cecats	License No.		
Was water analysis done'?		R	Drilling Company	viron ment	el Dri	lins	
By Whom'7			(Signed) Thomas	J alm	License No.	260	94
Depth of strate to be analyzed Remarks:	, From	fl. tofl.	Address /09/R	154 PS No 5	E Sno	Wa	
			100			6-2	

503680



GEOTECH SOIL BORING REPORT

Construction & Decommission

Decommission # Notice of Intent#

the Data and/or the Information on this Well Report.

The Department of Ecology does NOT Warranty

AE 24558 SE 49886

Property Owner: Site Address:

FDC International 5869 S. 194th Street, Kent, WA

NE, NW, SEC 2, T22N, R4E King County 11/19/2013 Location: County: Work/Decom Date:

11/19/2013

Date Completed: Consulting Firm

Geo Group NW

Drilling Company Driller & License #. Geologic Drill Exploration, Inc. Wade Betlaf 2922

Signature

Construction: Procedure

Hollow Stem Auger

Auger Size Boring Depth Water Level

See below 25'

Formation Description: Borings # B-1 and B-2 Sift

Sand

Sand

B-1 0' to 25' 25' to 30'

0' to 25' Silt 25' to 30'

<u>Decommission</u> Backfilled with Bentonite



GEOTECH SOIL BORING REPORT

Construction & Decommission

Decommission # Notice of Intent#

AE 24558 SE 49886

Property Owner Site Address

FDC International

Location: County:

5869 S. 194th Street, Kent, WA NE. NW, SEC 2, T22N, R4E King County

Work/Decom Date: Date Completed:

11/19/2013 11/19/2013

Consulting Firm Drilling Company Driller & License #

Geo Group NW Geologic Drill Exploration, Inc. Wade Betlaf 2922

Signature

Hollow Stem Auger

Construction:

Procedure

Auger Size Boring Depth

Water Level

See below 25

Formation Description: Borings # B-1 and B-2

0' to 25' 25' to 30' Silt Sand

B-2 0' to 25' 25' to 30'

Silt Sand

Decommission Backfilled with Bentonite

RECEIVED

DEC 13 2013

NEPT OF ECOLOGY

503682



GEOTECH SOIL BORING REPORT

Construction & Decommission

Notice of Intent# Decommission #

the Information on this Well Report.

The Department of Ecology does NOT Warranty the Data and/or

SE 49886 AE 24558

Property Owner Site Address: Location:

FDC International

5869 S. 1941 Street, Kent, WA NE, NW, SEC 2, T22N, R4E King County

County: Work/Decom Date: Date Completed:

11/19/2013 11/19/2013

Consulting Firm Drilling Company Driller & License #. Geo Group NW Geologic Drill Exploration, Inc.

Wade Betlaf 2922

Signature

Construction: Procedure

Hollow Stem Auger 8"

Auger Size Boring Depth Water Level

See below

25

Formation Description: Borings # B-1 and B-2

0' to 25' B-1 25' to 30' Silt Sand Silt

B-2 0' to 25'

Decommission

25' to 30'

Backfilled with Bentonite

Sand

RECEIVED

DEC 13 2013 NWRO WR 503683



GEOTECH SOIL BORING REPORT Construction & Decommission

Notice of Intent# Decommission # SE 49886 AE 24558

Property Owner:

FDC International

Site Address County

5869 S. 194th Street, Kent, WA NE, NW, SEC 2, T22N, R4E

Work/Decom Date: Date Completed:

King County 11/19/2013 11/19/2013

Consulting Firm Drilling Company Driller & License #: Geo Group NW Geologic Drill Exploration, Inc Wade Betlaf 2922

Signature

Construction: Procedure

Hollow Stem Auger

Auger Size Boring Depth

See below

Water Level 25

Formation Description: Borings # B-1 and B-2

0' to 25'

Silt 25' to 30' Sand

0' to 25' 25' to 30'

Sift Sand

Decommission Backfilled with Bentonite

RECHIVED

DEC 13 2013 NWRO WR Geoboring & Development, Inc.

Resource Protection Well Report

22/40/1

Job # 193	Depth of Components In Feet	[1]	Stick up Flusk on Monument Casing
B-1 Sand & grane	0 concrete 1.5		Type of Surface Seal borton the chip
1-3 silty gray 3-9 silty sond	samel Chips		Type of Riser Pipe
Project Name 20 Well Identification # Drilling Method 4 Driller Date License # 12 Job # 19 Soil Log B - 1 Sand & gray 3 - 9 Silty gray 3 - 9 Silty Sand Remarks: [1]	Sand 8		Screen Size or Type
Remarks:	ite at 4'		

Geoboring & Development, Inc. Resource Protection Well Report The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. Project Name 20730 S. 72 nd AUE Date 7-23-90 Well Identification # MILL) - 2
Drilling Method Will HSA

Driller Date 2. Smith
License # 1229

Job # 193 NW 1/4 SW 1/4 Consulting Firm Dames Y Monro Depth of Components Soll Log Type of Surface Seal Donton to ID of Riser Pipe 2 Type of Riser Pipe PUC Amount Type of Connection Thread Type of Backfill around Riser Church Diameter of Borehole Screen Size or Type 2010 Type of Filter Material Colorado 10/20 Amount Remarks: Water at 4 Signature Dale of Smith

	source Protection Well Report
Project Name 20230 S. 72 Nd Well Identification # Mu - 3 Drilling Method 44 H.A Driller Dale L. Smith License # 2227 Job # 123	Section / T. 22N R. 4E Start Card O40711 Consulting Firm Dames + Monro
Depth of Soil Log Components In Feet	Stick up Flusk on Monument Casing
and + granel concrete	Type of Surface Seal bandon its chip
1-3 silty gray savel 3-9 silty sand chips	Type of Riser Pipe 2" Type of Riser Pipe PUC Amount Type of Connection 7/4/24C Type of Backfill around Riser chapt Amount Diameter of Borehole 9"
Sand 8	Screen Size or Type
Remarks: Water at 4'	

Signature Dole of Smith

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RECEIVED AUG 2 7 2001 DEPARTMENT OF ECOLOGY PROJECT NAME: KENT		DN WELL REPORT S 07554 START DARD NO DUNTY: KING	WATER WELL REPORT [Virial Original & 1st copy - Ecology, 2nd copy - owner, 3rd copy - driller Construction/Decommission ("x" in circle). 138749	SSIONING REPORT CURRENT Notice of Intent No. XAX63C Unque Ecology Well ID Tag No. Water Right Permit No. GPA-AHF, LLC Property Owner Name 1288 1514 Well Street Address 19830 681		
WELL IDENTIFICATION NO.	- 10		DeWater Imgabon Test Well Other	Well Street Address 19830 68t		
DRILLING METHOD MUCL DRILLER: Top uis Stephe	Rotary	TREET ADDRESS OF WELL AVAILY LEST AUC So. ICENT ATER LEVEL ELEVATION BOUND SUBFACE FLEVATION	TYPE OF WORK: Owner's number of well (if more than one) New Well Reconditioned Method Dug Bored Driven Deepened Cable Rotary Letted	City Kent County: Location W 1/4-1/4NW 1/4 Sec 1 Lat/Long: Lat/Dec	Two 22N r4	WWM
SIGNATURE Train Strong CONSULTING FIRM AMERICAN	IN	STALLED 7 25 0	Depth of completed well 30 ft	Lat Deg		
REPRESENTATIVE. Show Six	WELL DATA	FORMATION DESCRIPTION	Casing Welded Duam from ft to Installed: Malaner installed Installed: Date installed Installed: Duam from Installe		naterial and structured, with at- water encounter	cture, and the
一トスをできただけですがかだけが			Type of perforator used	MATERIAL	FROM	то
1 STATES TO THE	Concrete Surface Seal					100
	FM 0 ft. To 1 ft.	0 ft. to 40 ft		Pulled well casing & filled with Bottonite	30	0
				chips		
1 74	Borehole Diameter: 40	in.	Materials placed from 5 ft to 30 ft			
	(40.)	- -	Materials used in seal Native Clay			100
T (3)				SEP 1 8 2003		+
	Bentinito	S ft.	Method of sealing strata off	TOTAL TO ECHIDAY		
1	Seal:		PUMP: Manufacturer's Name	TANK TO ECOLOGY	0.0	
1	Material: 9 bugs	5	Туре Н Р	, i	- 8	
+ 83	Amount:				8	
	A BOUNC.	ft. to ft.	Artesian pressurelbs per square inch:	200	7	I I
				So	O,	
, 12		9	(cap.valve, etc) WELL TESTS: Drawdown is amount water level is lowered below static level	900	P	1
		1	Was a pump test made? Yes No If yes, by whom?	**	3	1
+		ft. to ft	Yield gal/min with ft drawdown after hrs Yield: gal/min with ft drawdown after hrs			
1		3	Yield gal/min with ft drawdown after hrs			U = U
	1	3.5	Recovery data (time taken as zero when pump turned off)(water level measured from well top to water level)			
, 83						
T []		~ 8	Date of test			
		1	Bailer test gal /min with ft drawdown after hrs Airlest gal /min with stem set at ft for hrs			
i M	1.	3	Artesian flow g p m. Date	Start Date 2-7-03 Completed I	7-2	-03
1	Depth of Well	2 ft ₋	Temperature of water Was a chemical analysis made? ☐ Yes ☑ No			
+ 7		Number of -	WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept res Washington well construction standards. Materials used and the information	consibility for construction of this well, and its reported above are true to my best knowledge	compliance wand belief.	ith all
	117	Boreholes/Abandonment Completed The Same:	Driller/Engineer/Traince Signature Williamy D. Wil	Address 9021 Waller Rd	E	m, inc
1			Driller or Trainee License No. 1946	- City, Stare, Zin, Tacoma, WA S	8446-25	531
			If trainee, licensed driller's	Contractor's SLEADC*325KO Registration No.	8/7	103

7 7/1/	1	W
244	1	K

Second Copy — Owner's Copy	ELL REPORT Application :		J. 16
(1) OWNER: Name AMTECH FINNISHES. Co.	Addres 8202 Sector 200% St. KEUT, WA	48031	-
(2) LOCATION OF WELL: County Press KING	T. A	2.Z.N., R.	YE.V
(3) PROPOSED USE: Domestic Industrial Municipal	(10) WELL LOG:		
Irrigation [] Test Well [2] Other	Formation: Describe by color, character, size of material show thickness of aguifers and the kind and nature of stratum penetrated, with at least one entry for such c	l and stru the materi	ial in
(4) TYPE OF WORK: Owner's number of well MY- 2	MATERIAL	FROM	
New weil 9 Method: Dur	SILT SOME FINE SIND, GREY (ML)	3.5	5.0
(5) DIMENSIONS: Diameter of wall 2 inches	SILT, SOME THIN STRINGERS OF	5.5	10.
(5) DIMENSIONS: Diameter of wall 7 inches. Drilled 6 tt. Depth of completed well 14 ft	(ML) BLUE WEY SATURATED		
(6) CONSTRUCTION DETAILS: Casing installed: 2 Diam. from 0 to 9 to 10 t	SILT W/ FIRE SAND LARY (ML)	/3.5	14.0
Threaded ☐ '' Diam. from fit to fit. Welded ☐ '' Diam. from fit. to fit.	SAND FINE GRAINED, GREY TO BLACK	14.0	150
Perforations: Yes No 19			
Type of perforator used in by in.	SONO, FINE BROWNED SOME SILT,	16.5	20
perforations from the to the fit.	(6014 (30-3H)		
perforations from ft. to ft.		-	-
perforations from ft. to ft.	RECEIVED		
Screens: Yes E No HYDROPHYLIC	- KEPEIATA		
Type PVC Model No. Dlam 7 Slot size 0.0'D from 4 ft to 14 ft.	JUN 28 1982		
Diam Slot size from H. It to F. T. T.			
The second secon	DEPARTMENT OF ECOLOGY		-
Gravel packed: yes S No D Size of gravel: 3/6	SOUTHWEST REGIONAL OFFICE		
Gravel placed from 5 nt to ft.	300		-
Surface seal: yes & No D To what depth? 5 R.		-	-
Surface seal: Yes 2 No D To what depth? 5 R. Material used in seal 80000000000		×	-
Did any strata contain unusable water? Yes No Type of water?	(AC)		-
	1111	11-11	
(7) PUMP: Manufacturer's Name	100	16	
1,700.	i i i i i i i i i i i i i i i i i i i	10	2
(8) WATER LEVELS: Land-surface elevation 9.5 ft.	1	- 5	15
Static level 5.20 ft below top of well Date 6.13	The state of	1/2	10
Artesian pressure ibs. per square inch Date.			12 6
(Cap. valve, etc.)		5	1
(9) WELL TESTS: Drawdown is amount water level is lowered below static level	Work started 6/7 1982 Completed	1/12	- 18
Was a pump test made? Yes □ No 📆 if yes, by whom? Yield: gal/min, with it, drawdown after hrs.	WELL DRILLER'S STATEMENT	E	3
W H W	This well was drilled under my jurisdiction	and this	repo
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level) Time Water Level Time Water Level	NAME Sweet Cowards and Assessaria	77	print)
	20 Bar 320 Kerns ula 50		-0.000

ft. drawdown after

Was a chemical analysis made? Yes 🖸 No 🗍

(USE ADDITIONAL SHEETS IF NECESSARY)

g.p.m. Date ...

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UE WM	this Well Report.
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cture, and ial in each formation.	₹ .
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File Original and First Copy with Department of Ecology Second Copy — Owner's Copy Third Copy — Driller's Copy

WATER WELL REPORT STATE OF WASHINGTON

Permit No.

PROPOSED USE: Domestic [Industrial [Municipal [(10) WELL LOG:		
Irrigation [] Test Well [2] Other [Formation: Describe by color, character, size of materia show thickness of aquifers and the kind and nature of stratum penetrated, with at least one entry for each	it and stru the mater hange of	icture, and
TYPE OF WORK: Owner's number of well HY-4	MATERIAL.	FROM	TO
New well [2] Method: Dug [2] Bored [3] Deependd [2] Cable [2] Driven [3] Reconditioned [3] Rotary [3] Jetted [3]	SILT, GREY, MOTTLE O (ML)	3.5	4.5
) DIMENSIONS: Diameter of well 2 pence.	SAND, GRAY, FINE (SP)	4.8	5.0
Drilled ZO A Depth of completed well /4/1 R	SILT, GRAY, W/ FINE SAND	8.5	10
) CONSTRUCTION DETAILS:	LEWSES (ML + SP)		-5
Casing installed: L Diam from O n to 9.5 n. Threaded Diam from n to A. f.	SAND, Fire-mediam, wasy (SP)	12.5	15.0
Welded "Diam from ft. to ft.	SAND Fine median (LEXY (SP)	18.5	20.0
Perforations: Yes No	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		500
SIZE of perforations in. by in.			
perforations from ft to ft.			
perforations from ft. toft.			
Screens: Yes Z No []			
Manufacturer's Name HYNDPNYLICS	RECEIVED	1	
Tune /UC Model No	MEDEL		1
Diam 2 Slot size 0.0/0 from 9.5 ft. to 24.5 ft. Diam Slot size from ft. to tt.	JUN 2 × 1982		
201		_	-
Gravel placed from S Size of gravel 417 n.	DEPARTMENT OF SCOTOGY		
	DEPARTMENT OF THEFICE SOUTHWEST REGIONAL THEFICE		-
Surface seel: yes gt. No To what depth? It.	SOUTHWEST	-	777
Did any strata contain unusable water? Yes No			1. 2
Type of water? Depth of strets		120	
Method of sealing strata off	50	- 0	-
7) PUMP: Manufacturer's Name	190-	-	-
туре:	10 00 000	1	+
B) WATER LEVELS: Land-surface elevation 100 m	in S a comment		
atic level -5 ft. below top of well Date P/14/82		4	
rtesian pressure			1
Artesian water is controlled by (Cap, valve, etc.)	7		
	1 2 800	J	
WELL TESTS: Drawdown is amount water level is lowered below static level	water parted 6/15 10 \$2 completed by	18/8:	2, 19.
as a pump test made? Yes No (8. If yes, by whom?	WELL DBILLER'S STATEMENT:		
reig: gar/min with 11 orange and miles	This well was drilled under my jurisdiction	and this	report
n (n) n	true to the best of my knowledge and belief.	-114 12110	- uport
ecovery data (time taken as zero when pump turned off) (water level			
measured from well top to water level) Time Water Level Time Water Level Time Water Level	NAME SWART TO WARDS, AND ASSOCIATE	Type or	nelat)
ecovery data (time taken as zero when pump turned off) (water level measured from well top to wain- level)	NAME SWEET TO WARDS AND ASSOCIATE	Type or	prli

. 19.82

Artesian flow.

Baller test gal/min with ti drawdown after ...

g.p.m. Date....

Was a chemical analysis made? Yes □ No □

File Original and First Copy with Department of Ecology Second Copy — Owner's Copy Third Copy — Driller's Copy

WATER WELL REPORT

22/4-1/2 Application No.

Service Milater Landson and Service and Se	STATE OF WASHINGTON	Permit No.
(1) OWNER: Name HYTECH FINISHES	Co. Address P202 Sc	oun zech Sr. Kenr, wa 98031
(2) LOCATION OF WELL: County. PERCE. Bearing and distance from section or subdivision corner	KING - N	WILL NULL Sec. SE T ZZN. R. 4E W.M.
pearing and distance from section of subdivision corner		
(3) PROPOSED USE: Domestic [Industrial [Munteipal [(10) WELL LOG:	
Irrigation [] Test Well 5	show thickness of courte	color, character, size of material and structure, and re and the kind and nature of the material in each
(4) TYPE OF WORK: Owner's number of well	VY-3	at least one entry for each change of formation.
(If more than one)	M.	TERIAL FROM TO
New well Method: Dug Deepened Cable	Driven O SILTY FINE AGNIO	· SANDY SILT MOUN 35 5.0
		Kn ou I

New well S Method: Dug C Bored S	MATERIAL	FROM	T
Deepened Cable Driven Cable Reconditioned Reconditioned Driven Driven Cable Driven	SULTY FINE SAND - SANDY SILT, BLOWN (SM-ML)	3.5	37.
(5) DIMENSIONS: Diameter of well 7 inches. Drilled 70 ft. Depth of completed well 15 ft.	FINE SAMOY SILF TO SILTY SWO, LERY	5.5	Ý.
(6) CONSTRUCTION DETAILS:	SAND, BLACK, FING GRANGO (SP)	9.0	10
Casing installed: ∠ Diam trom O ft. to ∫D ft. Threaded □	SILT TRACE FINE SAND, DRAWIE	/35	15.
Perforations: Yes	Sano, moun, bon, here (SP)	185	20
Screens: Yes & No C Manufacturer's Name HYDROPHYLLC	RECEIVED		
Type PVC Model No. Diam 2 Sint size 0.010 from 10 it to 12 it. Diam Slot size from it to it.	JUN 28 1352		
Gravel placed from 8 ft. to 13 ft.	DEPARTMENT DI FCOLOGY SOUTHWEST REGIONAL OFFICE		
Surface seal: Yes B No D To what depth? Material used in seal Gravion inc. Did any strats contain unuable water? Yes D No D			
Type of water?	to.	- 1	-
(7) PUMP: Manufacturer's Name.	34		1
(8) WATER LEVELS: Land-surface elevation above mean sea level		,	
(9) WELL TESTS: Drawdown is amount water level to lowered below static level. Was a pump test made? Yes □ No Ø if yes, by whom?	Work started 6/17 19 12 Company 6/2	8.F.	. 19

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME SWIET, EDWARDS, AND ASSOCIATES (Type or print) Address P.O Box 328 57650, W4 48686

Maril (Well Driller)

Date 6/21

19.82

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. Be. (3) (4 (5 (6

File Original and First Copy with Department of Ecology Second Copy — Owner's Copy Third Copy — Driller's Copy

WATER WELL REPORT STATE OF WASHINGTON

	THE ZOUTH ST. KANT WA 18031
(2) LOCATION OF WELL: County PIERCE KING - NJ	NW I Sec SO TZZN R 4EWM
Bearing and distance from section or subdivision corner	NW I

	ON OF WELL: County PIERCE KING
	ED USE: Domestic Industrial Municipal (10)
(4) TYPE O	WORK: Owner's number of well HY-/ (if more than one) HY-/ New well E Method: Dug Bared E
	Deepened Cable Driven Reconditioned Reconditioned Second
(5) DIMENS	ONS: Diameter of well 2 inches. 2.5 R. Depth of completed well 19 R. Su
and the second s	UCTION DETAILS:
Thread	stalled: 7 "Diam from O n to 14 n So. ed D Diam from n to n to n d
	to U manufacture Admit A
Tyme	Ohs: Yes No Sa
SIZE	of perforations from the to the the transfer of the transfer o
	perforations from the to the fit.
Canamar	
Manu	Yes 2 No 11 HYGROPHYLIC
	2 Blot stre 2.20 from 14 ft. to 19 ft.
Diam	Slot size from fi. to ft.
Gravel 7	acked: Yes @ No Size of gravel: 3/8" 1 placed from
Mate Did Type	Seal: Yes S No To what depth? 10 ft. tal used in seal Coverers O-4 Restorme 4-10' my strata contain unusable water? Yes No of water? Depth of strata.
77 A 77 T 77 T 12 T	
	Manufacturer's Name
Static level	LEVELS: Land-surface elevation 100 ft. 3.7 ft. below top of well Date 6/7/82 lbs. per square inch Date.
	(Cap, valve, etc.)
(9) WELL	PESTS: Drawdown is amount water level is lowered below static level Work
Yield:	made? Yes [] No [] If yes, by whom? gal/min with it drawdown after hrs. WEI
и	true
Recovery data measured fr Time Water	time taken as zero when pump turned off) (water lavel m well top to water level) **Level Time Water Level Time Water Level NAM
	Addi
	to and the same of
Date of test	

MATERIAL	FROM	TO
SLTY FINE SAND FINESMOY-SILT	3.5	5.0
Stry Fine sono Fine sonoy sur brownish grey metting (me-son)		
SILT W/ SOME FINE SAND	8.5	10.0
GREY, SATURATED (ML)		
SANO, MEDIUM, PODALY GRADEO,	13.5	15.0
grey to 6 121k, loose, Saturaked LSP		
CANY, brownish-grey	16	18
Dave, meoun, rossy woose,	19	20.5
RECEIVED		
JUN 28 1012		
DEPARTMENT OF ECOLOGY SOUTHWEST REGISSION OFFICE		100
The state of the s	FE	n
		1
MAY 1 91	933	

DRILLER'S STATEMENT:

well was drilled under my jurisdiction and this report is the best of my knowledge and belief.

NAME SWE	(Person, firm, or	corporation)	(Type or	print)
Address Po	Bar 328,	KELSO, W.	4. 98620	
[Signed]	fames J	Manf (Well Drille	r)	mary maked extended
	1268	5.4.	6/21	10 92

(USE ADDITIONAL SHEETS IF NECESSARY)

Artesian flow...

Yteld:

The

Recovery data (time taken as zero when pump turned off) (water level measured from well top to we: -- level)

Temperature of water....... Was a chemical analysis made? Yes [] No []

... ft. drawdown after.

__gpm. Date.

gal/min. with...

(208) 927-3173 TELEX: 486762 FAX: (206) 927-3478

FEDERAL ID.#: 91-0762274 WA CONT. #SOIL SS'344LO

Geotechnical, Engineering & Mineral Exploration Drilling • Instrumentation • Horizontal Drains Ground Water Monitoring . Hazardous Waste Identification . Well Abandonments

RESOURCE PROTECTION WELL REPORT

PROJECT NAME: Hydeaulic Repair & Design	JOB 1: 41-2/69/ START CARD NO : 034943
WELL IDENTIFICATION NO: MW-1 DRILLING METHOD: 6" HS AUGER	OCATION: KING 1/4 NW 1/4 NW 1/4
DRILLER: TERRY ASBERRY	SEC.: / TOWN: 22 N RANGE: 43
SIGNATURE: Leavy Suberry	WATER LEVEL ELEVATION: INSTALLED: 7-13-89
CONSULTING FIRM KANDAL ASSOC. REPRESENTATIVE: KEN CHAPUT	DEVELOPED:

AS BUILT	FORMATION DESCRIPTION
4" Risca PIPE	FINE TO UERY FINE SAND
10'44" Indiana	dark gray fine sand
	AUG 22 1989 DEPARTMENT OF TO LOGY NORTHWEST REGION
	4" Risca PiPE

HOD: HSA	STREE	TADDRESS OF WELL:
BRENT /		2 S. 19672 ST KENT, WI
Au	GROUN	NO SURFACE ELEVATION: N/A
FAM: LANDA	2 4550C - INSTAL	LED: 1-30-95
TIVE:		OPED: NIA
	5041	
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	WELL COVER	0 - 23 ft.
	7	SILTY SAND
7	CONCRETE SURFACE SEAL	
4 14	DEPTH = 1/ft	
3 83		- ft.
3 43-	PVC BLANK 4 "x 8 1	
3 8		
3 8	BACKFILL / ft	
3 3	TYPE: DENTONITE	
	CHIPS	ft.
	PVC SCREEN 4 "x /0"	
	SLOT SIZE: . O/O	
		KECEIVED
	GRAVEL PACK 10 ft.	FEB 1 0 1995
	MATERIAL: 10/20	DEPT. OF ECOLOGY
	CSSE	
	WELL DEPTH 23 .	6
-		71

PAGE

OF_

ECY 050-12 (Rov. 11/89)

SCALE: I" ._

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

ENTIFICATION NO ~	Repair of Design COUNTY: LOCATION: Water Sample STREET AS	NWA NOW SOCI TWA ZZNA 4E
E. F. Lynn Go Cascade Drilling, I	ble 6942	1. S. 1965 St - Kent
INE: digin D	anound a	VEL ELEVATION: N/A UNIFACE ELEVATION: N/A
TINGFIRM Landa	ASSDC INSTALLED	3-25-98
ENTATIVE: CNAISE	Beu 8123	D:
AS-DUILT	WELL DATA	FORMATION DESCRIPTION
		T T
	CONCRETE SURFACE SEAL	0 - 2 st. F:11
		· 4 T
	BACKTILL BENTONITE	
N	CH:2	MED BROWN/GRAY SILTY SAWO 1
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		Department of Ecology
S ,	DEPTH OF BORING 15 'O"	i i
(DEATH OF BUILDING 15 10	Ť
	19 74	
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WELL IDENTIFICATION NO.	Repair of Design	LOCATION: NWA NIEW SOC / TWN ZZNA 4
DRILLING METHOD: Proke/	Water Sample	STREET ADDRESS OF WELL:
FIRM: Cascade Drilling, 1	inc.	6942 - S. 1962 St - Kent- WATER LEVEL ELEVATION: N/A
SIGNATURE: Lynn Do	M	GROUND SURFACE ELEVATION: N/A
REPRESENTATIVE: Chrish	ASSOC Bull	INSTALLED: 3-25-98
ne nesemanta	8123	DEVELOPED: N/A
AS-DUILT .	WELL DATA	FORMATION DESCRIPTION
	The state of the s	PORMATION DESCRIPTION
TOREGREEN		
- KENTEN	CONCRETE SURFACE	SEAL O-2 FE.
1 60 130		7.01
The state of the s		200
		53
!	BACICILL BENTON	
; N	CH:P	2 -/7 ft.
T	eed.	MED BROWN/GRAY SILTY SAM.
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: [3]		Department of Ecology
	DEPENDENCE NORMA	410.4
	DEPTH OF DORING /	7.0"
	.5	

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

START CARD NO. R28673 LOCATION: NULL NULLY SOC 1 TWN ZZAN 4E 6942 · S. 196th St - Kent N/A GROUND SURFACE GLEVATION: 3-25-98 FORMATION DESCRIPTION RECEIVED APR 3 0 1998 Department of Ecology

PROJECT NAME: Hydraulie M JELL IDENTIFICATION NO. — PRILLED PROJE/ PRILLED THE LINE GO INC. CASCAGE DESILLING, I GNATURE: J	Water Sample STREET ADD 6942 One. WATER LEVE GROUND SUIT	King Wh Nilly Soc I Twn ZZNR 4E RESS OF WELL: S. 1965 St - Kent LELEVATION: N/A IFACE CLEVATION: N/A 3-25-98	PROJECT NAME: Heightautic ! WELL IDENTIFICATION NO	Water Sample STREET 1991 When ASSEC INSTALL	STANT CARD NO. R28/ Y: King ON: NWA NWA SOE I TWO 72NR 4E TADORESS OF WELL: 12 - S. 1962 St - Kent- LEVEL ELEVATION: N/A D SURFACE ELEVATION: N/A LED: 3-25-98
AS-DUILT	WELL DATA	FORMATION DESCRIPTION	S AS-BUILT .	WELL DATA	FORMATION DESCRIPTION
	CONCRETE SURFACE SEAL	0 - 2 ft.	or the Informatio	CONCRETE SURFACE SEAL	0 - 2 ft. Fill
	BACKTIL <u>BENTONITE</u> CHIP	2 -15 Et. 120 BROWN/GLAY SILTY SAWO	y the Data and/or	BACKTILL BENTONITE CH:2	2 -15 Et. MED BRO-4/GRAY 5:274 5AWS
			4		£t
		RECEIVE T	nt of Ecology dc		RECEIVED
	DEPTH OF DORUNG 15 10 "	Department of Ecology	Department	DEPTH OF BORING 15 'O	Department of Ecology
			E SCALE: 1".	**	

ECY 050 12 (Rev 11/89)

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114	87	9
110	0-	,

DIEZO

RESOURCE PROTECTION WELL REPORT

ell#	Location Sw /4 Street Address of 6942 5 /9 nc Water Level Elev	Nul/4 Sec / Twn 221/ R 4 Well 673 St, Kent, W4 ation
e Zym S	Ground Surface Date Installed	
tative George	Date Developed	5-16-02
	2251	0 70 0
AS BUILT	WELL DATA	FORMATION DESCRIPTION
	Well Cover Concrete Surface Seal Depth = 1/ft	0 # - 1 ft F. 11
	Blank Casing 34 "15" Material Puc Backfill 4/ ft Type Sentante chy	MED BROWN SAND
	Seal BESTEW. 75 8' Material City	f
	Gravel Pack 11 5 ft Material 8/12 Sanut Native Screen 34 "X 595" Slot Size .010 Material Puc	RECEIVED JUN 1 8 2007 DEPT OF ECOLOGY
	Well Depth 15 '0" Backfill NATIVE + SAND Material 8/12	

114830

DIE 70

rate Identification # rilling Method Probe riller F. Lynn Gob rm Cascade Drilling, I gnature Zynn G	CC 111	5W1/4 NW1/4 Sec / TwnZ2A R
rm Cascade Drilling I	nc Water Lev	S 196+3 St Kent WA
gnature Z	Ground Su	rface Elevation N/A
onsulting Firm (A)	Date Instal	led 5/16/02
epresentative Georg		oped 5/16/02
V. D.J.	2251	
AS BUILT	WELL DATA	FORMATION DESCRIPTION
1		i
1 1831 1 1837	Well Cover	
		41 - 9 3 3 3 3
1 43 33	Concrete Surface Seal	0 % - / ft
	Depth = 1/ft	Fin
	The same and the	41
1 1	Blank Casing 3/4 "10"	
1 8 8	Blank Casing 1/2 "10" 'Material Luc	1 -15 A
- 88		MED BROWN SAND
1 3 34	Backfill 4 ft	0 X000 0 4 NO
! PA PA	Type BENTON-TECH P	
	Seal BENTOWIE 8'	
	Material CH, p	<u>ft</u>
	2114	
		- IT
	Gravel Pack //º ft	1 10
! 181	Material 8/12 5420	1
	- Screen 3/4 "x	1
	Slot Size	
	Material Puc	
		R
	- 173 to 2 a . O.	
1///	Well Depth 15 '0"	1
1///		1
////	Backfill N/A	415
1////	Material Total Hole Depth	- //

oject Name Hydraul	ic Repair 4045197	Location SW1/4Nw1/4 Sec / T 22N R 46
aller F Wnn Goble		Street Address of Borng.
rm Cascade Drilling, I		6942 5, 196th St. Kent W.
gnature Jum Hos		Water Level Elevation N/A
onsulting Firm: Lands		Ground Surface Elevation N/A
	Ifther	Date of Drilling 5/16/02
	Invoice # 2	251
AS BUILT	WELL DATA	FORMATION DESCRIPTION
T RESERVED TO THE	Concrete Surface	Seal 0- / ft
	Concrete Davisor	
WELL WILL		FILL
i Ma		÷
	1000000	
!	Backfill Bent	- 1 11
1 1	Chips	_/ - 15' ft
+		MED BROWN SAND T
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		1.
! [7]	V	- 4
1 1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
+ 1		RECEIVED +
		JUN 1 8 2002
! 13		John Z SCOLOGY
	Depth of Boring	15" " DEPT OF ECOLOGY
<u> </u>	Depart of Borning _	T
Y-		4
T		3
1		1
I .		

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

RESOURCE PROTECTIO (SUBMIT ONE WELL REPORT PER Construction/Decommission ("x" in bo Construction Decommission OKIGINAL INSTALLATION Notice of In-	t WELL INSTALLED)	Property Owner_	ent of Ecology IT Notice of Intent No. SE 50 07 Type of Well ("x in bax) Resource Protection Geotech Soil Boring IDS Real Estate Currup	
Consulting Firm		Site Address 2000XX 50th PI South City Kent County King		
Unique Ecology Well IDTag No. No Wel			4-1/4 NE1/4 Sec 11 Twn ZZMR OL	
WELL CONSTRUCTION CERTIFICAT acoust responsibility for construction of this well, an Washington well construction standards Materials above are true to my best knowledge and belief. ☐ Driller ☐ Engineer ☑ Traince Name (Print Last, First Name) Gerdes, Charles	Litte commelia non with all	EWM or www Lat/Long (s, t, r still REQUIRED) Tax Parcel No. N/	M Lat Deg Min Sec Long Deg Min Sec	
Driller/Engineer /Trainee Signature (Y)	al Ola	Cased or Uncased	Diameter 1 5inch Static Level Unknown	
Driller or Trainee License No. 3137		Work/Decommissi		
2735 genon pour	nd License Number:	Work/Decommissi	ion Completed Date 12/10/13	
Construction Design	Well I	Data	Formation Description	
CPT# \0\			Unconsolidatee Sediment	
	70H 50	o'	DEC 19 2013	

Please por RESOURCE PROTECTION (SUBMIT ONE WELL REPORT PER W Construction/Decommission ("x" in box) Construction Decommission ("x" in box) Construction Decommission ORIGINAL INSTALLATION Notice of International Consulting Firm Unique Ecology Well IDTag No. No Well WELL CONSTRUCTION CERTIFICATION Scorpt responsibility for construction of this well, and its Washington well construction standards. Materials used above are true to my best knowledge and belief. Driller Driller Engineer & Traince Name (Print Last, First Name) Gerdes, Charles Driller/Engineer / Traince Signature Driller or Traince License No. 3137	Number: N. 1 commuted and/or- compliance with all and the information reported	Property Owner_ Site Address 2(City V2Nt Location NE 1/4 EWM or WWN Lat/Long (s, t, r still REQUIRED) Tax Parcel No.N// Cased or Uncased Work/Decommissi	1/4 NE1/4 Sec 1 Twn 22
Construction Design CPT O.D. 1.5 inch Backfilled w/ Number 8 minus benonite chip CPT # \QQ	Well No Well	Data	Unconsulidateel Sediments
	POH 5	∞'	RECEIVED DEC 19 2013 DEC 19 2013

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ECY 050-12 (Rev. 7/06)

RESOURCE PROTECTION (SUBMIT ONE WELL REPORT PER Construction/Decommission ("x" in box Construction Decommission ORIGINAL INSTALLATION Notice of Inst Unique Ecology Well IDTag No. No Well Unique Ecology Well IDTag No. No Well Well CONSTRUCTION CERTIFICAT scept responsibility for orastruction of this well, and Weshington well construction standards. Materials to doore are true to my beat knowledge and belief Diller Lengineer Tramec Name (Print Last, First Name) Gerdes, Charles Driller/Engineer / Trainee Signature Driller/Engineer / Trainee Signature Driller or Trainee License No. 3137	well installed) ent Number: ION: 1 constructed and/or, its compliance with all	Property Owner	Lat Deg Min Sec Long Deg Min Sec Diameter 1_Sinch Static Level Unknown
If trainee, licensed driller's Signature and 2735 Construction Design	d License Number:		n Completed Date 12/10/13
O.D. 1.5 inch Backfilled w/ Number 8 minus benonite chip CPT# 103	No Well	0	Unionsolidated Sediment

Pleas RESOURCE PROTECTIC (SUBMIT ONE WELL REPORT PE Construction/Decommission ("x" in b Construction Decommission ORIGINAL INSTALLATION Nonce of i	R WELL INSTALLED)	Type of Well ("x m hox) Resource Protection Geotech Soil Boring Property Owner 1D5 Peal Estate Group
Consulting Firm		Site Address 200XX 59th PI South
Unique Ecology Well IDTag No. No We	:11	City Kent County King Location NE 1/4-1/4 NE1/4 Sec 11 Twn 222 R O46
WELL CONSTRUCTION CERTIFICA sceep respensibility for construction of this well, or Washington well construction standards. Material shows are true to my best knowledge and belief. □ Driller □ Engineer ☑ Transec Name (Print Last, First Name) Gerdes, Clearles, Driller/Engineer / Trainee Signature ☑ Driller/Engineer / Trainee Signature ☑ Driller or Trainee License No. 3137 If trainee, licensed drifted's Signature 2735	nd its compliance with all sused and the information reported.	EWM or WWM Lat/Long (s, t, r Lat Deg Min Sec still REQUIRED) Long Deg Min Sec Tax Parcel No.N/A Cased or Uncased Diameter 1.Sinch Static Level Unknown Work/Decommission Start Date 12 10 13 Work/Decommission Completed Date 12 10 13
Construction Design	Well	Data Formation Description
O.D. 1.5 inch Backfilled w/ Number 8 minus benonite chip CPT # IOU		Unconsolidateel Sediments
	70H 5	DEC 19 2013 DEPT TO THE OFF

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Construction/Decommission Construction	414577		[X Resource Protection	
Decommission ORIGINAL of Intent N	INSTALLATION Notice umber	Property Owne	er	Geotechnical Soil Bo INDUSTRIAL I	7
		Site Address		7031 S 196TH S	
Consulting Firm	URS	City	KENT	County	KING
Unique Ecology Well ID Tag No.				1/4 NW Sec 1 Twr 2	2N R 4E or
	IN: I constructed and/or accept responsibility for	Lat/Long (s,t,r	Lat Deg	Lat Mir	/Sec s
	with all Washington well construction standards			x Long N	fin/Sec s
	alsove are true to my best knowledge and belief	Tax Parcel No.		N/A	
X Driller Trainee Name (Print) Driller/Trainee Signature	A JAYMEN LAWER	Cased or Uncase	d Diameter		Static Level
Driller/Trainee License No.	13 2745				
		Work/Decommi	ision Start Da	10/31/06	
If trainee, licesned drillers'		Work/Decommi	sion Complet	ed Date 10/31/06	
Signature and License No.		- Hank/Loccommu	a.o. complet		
Construction/Des	ign Well I	Data W06-743	-	Formation D	escription
+	BACKFILL		FT	ALPHAUI SAND, SHT, C	H' FT
	DEPTH OF BORIS	14		RECEIV NOV 2 2 20 DEPT. OF EC	800

Construction/Decommission 212345	Notice of Intent No. E002594 Type of Well 20-44E-18 X Resource Protection	RESOURCE PROTECTION WELL R (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission 212346 X Construction	Notice of Intent No. E002594 Type of Well A L C - C X] Resource Protection
Decommission ORIGINAL INSTALLATION Notice of Intent Number	Property Owner INDUSTRIAL PARK	Decommission ORIGINAL INSTALLATION Notice of Intent Number	Property Owner INDUSTRIAL PARK
Consulting Firm URS	Site Address 7031 S 196TH ST City KENT County KING	Consulting Firm URS	Site Address 7031 S 196TH ST City KENT County KING
Unique Ecology Well ID Tag No.	Location 1/4 SW 1/4 NW Sec 1 Twr 22N R 4E or WWM	Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards	Location 1/4 SW 1/4 NW Sec 1 Twr 22N R 4E or
TAG NO. VELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg x Lat Min/Sec x	WELL CONSTRUCTION CERTIFICATION: 1 constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg x Lat Min/Sec x
onstruction of this well, and its compliance with all Washington well construction standards	still Required) Long Deg. x Long Min/Sec x	construction of this well, and its compliance with all Washington well construction standards	still Required) Long Degx Long Min/Secx
Materials used and the information reported above are true to my best knowledge and belief Driller Trainer Name (Print) JAVORN LAUGE	Tax Parcel No. N/A	Materials used and the information reported above are true to my best knowledge and belief X Driller Trainee Name (Print) Javanes Acceptant Acceptant	Tax Parcel No. N/A
Driller/Trainee Signature.	Cased or Uncased Diameter Static Level	Driller/Trainee Signature	Cased or Uncased Diameter Static Level
Driller/Fraince License No. 2745	Work/Decommision Start Date 10/31/06	Driller/Trainee Signature Driller/Trainee License No.	Work/Decommission Start Date 10/31/0 4
If trainee, licesned drillers'		If traince, licesned drillers' Signature and License No.	
Signature and License No.	Work/Decommission Completed Date 10/31/06	Signature and License No.	Work/Decommission Completed Date 10/31/06
Construction/Design Well D	Data W06-743 Formation Description	Construction/Design Well	Data W06-743 Formation Description
BACKFILL		Department of Ecology does NOT Warranty BACKFILL BACKFILL	ALPHAUIT ALPHAUIT ALPHAUIT SAUA, SHT, CHAY O - FT
	RECEIVED	The De	RECEIVED NOV 22 2006

Construction/Decommission 212347		ype of Well 22-46-18	RESOURCE PROTE (SUBMIT ONE WELL REPORT PE Construction/Decommission	212348		Type of Well X Resource Protection
Construction	_	Resource Protection	Construction/Decommission X Construction			
Decommission ORIGINAL INSTALLATION Notice	Property Owner	Geotechnical Soil Boring INDUSTRIAL PARK	Decommission ORIGINAL INST. of Intent Numbe		Property Owner	Geotechnical Soil Boring INDUSTRIAL PARK
of Intent Number	Site Address	7031 S 196TH ST	of Intent Numbe	r	Site Address	7031 S 196TH ST
Consulting Firm URS	City KENT	County KING		URS		KENT County KING
nique Ecology Well ID ag No.	Location I/4 SW I	/4 NW Sec 1 Twr 22N R 4E or WWM	Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION: 1 co		Location 1/4	4 <u>SW 1/-NW Sec 1 Twr 22N R 4E c</u>
LL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for		x Lat Min/Sec x	WELL CONSTRUCTION CERTIFICATION: 1 can	CONTRACTOR OF THE PROPERTY OF		it Deg x Lat Min/Sec x
struction of this well, and its compliance with all Washington well construction standards		x Long Min/Sec x	41			ong Deg x Long Min/Sec x
nerials used and the information reported above are true to my heat knowledge and belief Driller Trainee Name (Print) JAMES 14450	Tax Parcel No.	N/A	Maserials used and the information reported above a X Driller Trainee Name (Print)	_ JAYOFN LAUFA	Tax Parcel No.	N/A
riller/Trainee Signature	Cased or Uncased Diameter	Static Level	Driller/Trainee Signature Driller/Trainee License No.	to She	Cased or Uncased D	siameter Static Level
iller/Trainee License No. 2745	Work/Decommision Start Date	10/21/16	Driller/Trainee License No.	2745	Wash/Danamarian	Start Date 10/3//04
trainee, licesned drillers!	Work/Decommission start Date				Work/L/ccommission	
gnature and License No.	Work/Decommission Completed	Date 10/31/06	If trainee, licesned drillers' Signature and License No.		Work/Decommision	Completed Date 10 31 06
Construction/Design Wel	1 Data W06-743	Formation Description	Construction/Design	Well F	Data W06-743	Formation Description
Allillilli	FT	AspHAUI +	Š		1	FT AspHaust
BACKFILL	/3_FI	311 - 14 FT SAND, SIH, CLAY	Department of Ecology does NOT Warranty	BACKFILL		FT 3" 14" FT

Construction/Decommission 212350	Type of Well	RESOURCE PROTECTION WELL RI (SUBMIT ONE WELL REPORT PER WELL (INSTALLED) Construction/Decommission 212353	Ty	ppe of Well AE-IE
X Construction		S Construction	X	Resource Protection
Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring Property Owner INDUSTRIAL PARK	Decommission ORIGINAL INSTALLATION Notice		Geotechnical Soil Boring INDUSTRIAL PARK
of Intent Number	Site Address 7031 S 196TH ST	5 of Intent Number E 00 2594	Site Address	7031 S 196TH ST
Consulting Firm URS	City KENT County KING		City KENT	County KING
Unique Ecology Well ID Tag No.	Location 1/4 SW 1/4 NW Sec 1 Twr 22N R 4E or WWM	Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION 1 constructed and/or accept responsibility for construction of this well, and its combinate with all Walthington well construction standards	Location 1/4 SW 1/4	NW Sec 1 Twr 22N R 4E or W
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg x Lat Min/Sec x	WELL CONSTRUCTION CERTIFICATION 1 constructed and/or accept responsibility for	The second secon	x Lat Min/Sec x
construction of this well, and its compliance with all Washington well construction standards Vasterials used and the information reported above are true to my best knowledge and belief	still Required) Long Deg x Long Min/Sec x	construction of this well, and its compliance with all Washington well construction standards Wasenals used and the information reported above are true to my best knowledge and belief	still Required) Long Deg	
X Driller Trainec Name (Print) JAVANES JAUST	Tax Parcel NoN/A		Tax Parcel No.	N/A
Driller/Trainee Signature 2	Cased or Uncased Diameter Static Level	X Driller Trainee Name (Print) Strained (Aug C) Driller/Trainee Signature Trainee Driller/Trainee License No. 2745	Cased or Uncased Diameter	Static Level
Driller/Trainee License No. 2745	Work/Decommission Start Date 10/3//0 4		Work/Decommission Start Date	10/31/04
If trainee, licesned drillers' Signature and License No.	Work/Decommission Completed Date 10/31 66	If trainee, licesned drillers' Signature and License No.	Work/Decommission Completed	10/ 1
Construction/Design Well D	ata W06-743 Formation Description	Construction/Design Well De	ata W06-743	Formation Description
	AspHault	CONCRETE SUR	FT	AspHaus +
BACKFILL	13 FT 3" . 14" FT BESH CHIPS SAND, SHT, CLAY	BACKFILL BACKFILL	BEN UMPS	3" - 14" FT SAND, SHT, CLAY
BACKFILL	13 FT 3" - 14" FT SAND, SAT, CLAY	S BACKFILL	BEN ULPS	3" . 19" FT SAND, SHT, CLAY

Construction/Decommission	212354		Туре	of Well	16-18
Construction			X Res	ource Protection	TE II
Decommission ORIGINAL INSTA of Intent Number		Property Owne	Geo	technical Soil Bor	ing
	Carried States	Site Address		7031 S 196TH ST County	C
Consulting Firm	URS	City	KENT	County	
Unique Ecology Well ID Tag No.		Location	1/4_SW_1/4_NW	Sec 1 Twr 22	N R 4E or
WELL CONSTRUCTION CERTIFICATION: 1 con				Lat Min/s	
construction of this well, and its compliance with all V Materials used and the information reported above an				Long Min	vSec x
	JAYMEN LAURA	Tax Parcel No.		N/A	
Driller/Trainee Signature	5 8~	Cased or Uncased	Diameter		Static Level
Driller/Trainee License No.	2745	Work/Decommision	on Start Date	10/31/06	
If trainee, licesned drillers'					
Signature and License No.		Work/Decommision	n Completed Date	10/31/06	
Construction/Design	Well Da	sta W06-743		Pormation Desc	ription
	BACKFILL		п _3	2 ALPHANI + 11 - 14 15, Sitt, cla	,
	DEPTH OF BORING			CEIVED	FT

Construction/Decommission	212355		Ty	pe of Well	16 16
Construction			X	Resource Protection	10-16
Decommission ORIGINAL INSTA	LLATION Notice			Geotechnical Soil Bor	
of Intent Number	6002594	Property Owne	r	INDUSTRIAL P	
Consulting Firm	rme	Site Address	LIBAR	7031 S 196TH S	
Consuming Firm	URS	City	KENT	County	KING
Unique Ecology Weil ID Tag No.				NW Sec 1 Twr 22	N R 4E or
WELL CONSTRUCTION CERTIFICATION: 1 con		Lat/Long (s,t,r	Lat Deg	Lat Min/	Sec x
construction of thes well, and its compliance with all V					n/Sec x
Materials used and the information reported above are		Tax Parcel No.		N/A	
X Driller Trainee Name (Print) Driller/Trainee Signature Driller/Trainee License No.	LA SA	Cased or Uncased	Diameter		Static Level
Driller/Trainee License No.	2745		Technic	10/31/04	
If trainee, licesned drillers'		Work/Decommisi	on Start Date	131/04	
Signature and License No.		Work/Decommisi	on Completed D	ate 10/31/06	
Construction/Design	W.U.S.	ta W06-743		Formation Des	
		13 Best (11.7)	5 2	3" - 14 AND, SHT, CA	ty-
	DEPTH OF BORING	14	FT	NOV	EIVED 222006 ECOLOG

(SUBMIT ONE WELL REPORT PE Construction/Decommission		.N	otice of Intent No	<u> </u>	(SUBMIT ONE WELL REPO Construction/Decommission	
Construction	212354		Type of Well A	46-18	Construction	
	ALLATION Notice - E 00 2 5 9 4	Property Owner			Decommission ORIGINAL of Intent N	LINSTALLATIO Number _ E
Consulting Firm	URS	City KE	NT County	KING	Consulting Firm	UI
Unique Ecology Well ID Tag No.		Location 1/4_S	W 1/4 NW Sec 1 Twr 2	2N R 4E or www	Unique Ecology Weil ID Tag No.	
WELL CONSTRUCTION CERTIFICATION: 1 cor- construction of this well, and its compliance with all 1	Vashingtin well construction standards	Lat/Long (s,t,r Lat De still Required) Long I	g x Lat Mir Deg x Long M	n/Sec x Sin/Sec x	WELL CONSTRUCTION CERTIFICATION CONSTRUCTION of this well, and its compliance	e with all Washington w
Materials used and the information reported above an X Driller Traince Name (Print) Driller/Traince Signature Driller/Traince License No.	TAYOFA LAWER	Cased or <u>Uncased</u> Diame	N/A.			J. 3
If trainee, licesned drillers' Signature and License No.			t Date 10/31/04		If trainee, licesned drillers' Signature and License No.	
Construction/Design	Well De	nta W06-743	Formation De	ecription	Construction/Des	ion
	CONCRETE SUR	FACE SEALFT	AspHAUIF	TON		
	BACKFILL	<u>/3</u> FT <i>BESH CHIPS</i>	7-7-7	thy loop b		
				Le Department		
	DEPTH OF BORING	14 rt	RECEI NOV 22 DEPT. OF E	2066		D

SUBMIT ONE WELL REPOR	IT PER WELL INSTALLED)			o. A/2/4/7
Construction/Decommission Construction	212359		Type of We	180-46-18 Protection
Decommission ORIGINAL of Intent No	INSTALLATION Notice unber _ E & 2594	Property Owner	INDI	ical Soil Boring USTRIAL PARK
Consulting Firm		Site Address	7031	S 196TH ST County KING
Unique Ecology Weil ID Tag No.		Location 1/4	SW 1/4NW Sec	1 Twr 22N R 4E or
WELL CONSTRUCTION CERTIFICATION	N: I constructed and/or accept responsibility for with all Washington well construction standards			Lat Min/Sec x Long Min/Sec x
	bove are true to my best knowledge and belief	Tax Parcel No.		N/A
Driller/Trainee Signature	JAYMEN LAWER			Static Level
Driller/Trainee License No.	1 2745	Work/Decommission 5	start Date	1/04
If trainee, licesned drillers' Signature and License No.				13106
Construction/Desig	20.00	ita W06-743		rmation Description
	BACKFILL	13 I	т <u>з</u> ″	othan t 14' FT sitt, clay
			0	RECEIVED

Construction/Decommission	212360		Type of Well
Construction	212360		X Resource Protection
Decommission ORIGINAL INSTA			Geotechnical Soil Boring
of Intent Number	E002594	Property Owner Site Address	INDUSTRIAL PARK 7031 S 196TH ST
Consulting Firm	URS	City KE	NT County KING
Unique Ecology Well ID Tag No.			W 1/4NW Sec 1 Twr 22N R 4E
WELL CONSTRUCTION CERTIFICATION: 1 000	structed and/or accept responsibility for	Lat/Long (s,t,r Lat De	g r Lat Min/Sec r
construction of this well, and its compliance with all V			Deg x Long Min/Sec x
Materials used and the information reported above are		Tax Parcel No.	N/A
X Driller Traince Name (Print) Driller/Traince Signature	TAYMEN LAURA	Cased or Uncased Diame	ster Static Level
Driller/Trainee License No.	2745		t Date
If trainee, licesned drillers'			5.4
Signature and License No.		Work/Decommission Con	opleted Date 10/31/06
Construction/Design	Well Da	na W06-743	Formation Description
Notice the property of the property of the control			1
	CONCRETE SUR	FACE SEAL	0 - 2 =
	OU. CHELL SOIL	1	AspHaul +
		/FT	ASPHAUL F
		4	-11 111
*	BACKFILL		3 . /7 FT
		/-	SAND, Sit, clay
		Brut HIOS	3,000/
		and the same of	
	1.4		
			0 - FT
	116.1		
			III LADITA
All IIIIIII	1.		RECEIVED
	4		
			NOV 2 2 2006 DEPT, OF ECOLOGY

Project Name Leut (Well Identification # mu) Drilling Method grout Driller bhe Ronish	Resource Prot org. PK 72 -3 back	Date 4-9-9/ 3 Wals County Ling . NW1/4 WW Section /2/ T. 22N/ R. 4E Start Card 638937 Consulting Firm Daures Functore
Soll Log Comp	oth of conents	Stick up Carlishe Apon Monument Casing
a ment		Type of Surface Seal Amount
Abardon ment Bentinite Cement		ID of Riser Pipe Type of Riser Pipe Amount Type of Connection Type of Backfill around Riser Amount Dlamater of Borehole
3 W J		Screen Size or Type Type of Filter Material Amount
Remarks: nw	1-3	

X

RESOURCE PROTECTION WELL REPORT CURRENT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report EE06444 Notice of Intent No. Construction/Decommission Type of Well X Construction X Resource Protection Decommission ORIGINAL INSTALLATION Notice Geotechnical Soil Boring of Intent Number Property Owner Kent Space Center Site Address 20403 68th Ave South Consulting Firm Boeing / DOF Kent King Unique Ecology Well ID Location 1/4 SE 1/4 NE Sec 2 TWN 22N R 4E Tag No. WELL CONSTRUCTION CERTIFICATION: I construered and/or accept responsibility for Lat/Long (s.t.r Lat Deg Lat Min/Sec construction of this well, and its constitutes with all Washington well construction standards Long Deg x Long Min/Sec X Dritter Trainer Name (Print) Jeremiah Jenkins Driller/Trainer Signature Cased or Uncased Diameter Driller/Trainee License No. If trainer, licesned drillers! Signature and License No. Work/Decommission Completed Date 1-74-17 Construction/Design Well Data 103-17-1026 Formation Description CONCRETE SURFACE SEAL grey to brown sitty sands BACKFILL bent chips RECEIVED DEPTH OF BORING FEB 16 2017 Scale I" = DEPT OF ECOLOGY NWRO - WR

(SUBMIT ONE WELL REPORT PER WELL INS	TALLED)		Notice of Intent No.	EE06444
Construction/Decommission			Type of Well	
X Construction			X Resource Pro	otection
Decommission ORIGINAL INSTALLATION N of Intent Number	atice	w/ 100 m	Geotechnica	
		Property Owner Site Address		Space Center th Ave South
Consulting Firm Boeing / I	OOF	City	##1 h/	County King
Unique Ecology Well ID Tag No.		Location 1/	4 SE 1/4 NE Sec 2	
WELL CONSTRUCTION CERTIFICATION: I constructed teddos ac		Lat/Long (s,t,r L	nt Deg x	Lat Min/Sec #
construction of this well, and its compliance with all Washington well. Materials used and the information reported above are true in my best.		L	ong Deg x	Long Min/Sec x
	emiah Jenkins	Tax Parcel No.		0
Driller/Trainee Signature		Cased or Uncased D	iameter 2'14"	Static Level &
Driller/Trainee License No. 311	4 //		Start Date 1-25	
If trainee, licesned drillers'				
Signature and License No.		Work/Decommision	Completed Dale	お -17
Construction/Design	We	II Data 103-17-1		mation Description
	ONCRETE SUR	4-71		to brown sands
	EPTH OF BORING	(5)	,FT	RECEIVED

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report

Charles of the Control of the Contro	ELL INSTALLED)		Notice o	Intent No.	EE064	44,
Construction/Decommission				ype of Well		
Construction			-	Resource Pro	ologion	
Decommission ORIGINAL INSTALLA	TION Nonce		-	Geotechnica		
of Intent Number		Property Owner			Space Cente	r
Consulting Firm B	AND DESCRIPTION OF THE PARTY OF	Site Address		20403 68	8th Ave Sout	h
Consulting Firm B	oeing / DOF	City	Kent		County	King
Unique Ecology Well ID Fig No	1A	Location	1/4 SE 1/4	NE Sec 2	TWN _221	R 4E
ELL CONSTRUCTION CERTIFICATION: LOSSIBLES		at/Long (s,t,t	Lai Deg		Lat Min/Sec	
estruction of this well, and its compliance with all Wash	Ington well construction standards		Long Deg		Long Min/Se	c x
ateristic used and the information reported above are true		Tax Parcel No.			0	
Driller Trainee Name (Print)	Jeremiah Jenkins	Cased or <u>Uncased</u>	Disease	21/11	4)	ام
Priller/Trainee License No.	3114					Static Level S
- U		Work/Decommiss	no Start Date	1-29	5-17	
traince, licesned drillers		Work/Decommision				
		WOWN DECOMMISS	on Completed	Date	2-	
Construction/Design	Well I	Data 103-17	-1026	For	mation Descr	iption
-	CONCRETE SURFA	O-J	FT	grey	151 to b	_ FT
	BACKFILL _	J-15	_FT	grey silty	to b	FT
	BACKFILL _	j-15'	_FT	grey solty	to b sand	FT FT

(SUBMIT ONE WELL REPORT Construction/Decommission			Notice of Intent No. EE064	44
X Construction			Type of Well	
			X Resource Protection	
Decommission ORIGINAL II of Intent No	STALLATION Notice	December 19	Geotechnical Soil Boring	
		Property Owner Site Address	Kent Space Cente 20403 68th Ave Sout	
Consulting Firm	Boeing / DOF	the state of the s	ent County	King
Unique Ecology Well ID	A	1000		
Tag No.	NIA	Location 1/4	SE U4 NE Sec 2 TWN 22N	R 4E
	I constructed and/or accept responsibility for	Lat/Long (s,t.t Lat D	eg x Lat Min/Sec	
	ith all Washington well construction standards		Deg x Long Min/Si	
Materials used and the information reported at	love are true to my best knowledge and belief	Tax Parcel No.	0	
X Driller Trainer Name (Print) Driller/Trainee Signature	Jeremiah Jenkins	-	Deter 2'/4'	J.Z.E.
Driller/Traince License No.	3114			Static Level
	<i>y</i>	Work/Decommision St	art Date 1 - 2-5 - 17	
If traince, licesned drillers Signature and License No.				
Signature and License No.		Work/Decommision Co	impleted Date 1-25-17	
Construction/Desig	n W	/ell Data 103-17-1026	Formation Descr	lotion
-	BACKFILL	j-15' p	silty sand	_ гг
	DEPTH OF BORING	5_15 ¹ F	REC	EIVEC
	332,50732,50304,0		FEB 1	0.2017

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report

Control of the contro	L INSTALLED)		votice of Intent No.	EE06444	
Construction/Decommission			Type of Well		
X Construction			X Resource P	rotection	
Decommission ORIGINAL INSTALLATI	ION Notice	No.	Geotechnic	al Soil Boring	
of Intent Number		Property Owner Site Address		t Space Center	
Consulting Firm Boe	sing / DOF	The state of the s		68th Ave South County Kin	nv
Unique Ecology Well ID	J/A	Location 1/4_	17	2 TWN 22N R 4	EWM
TELL CONSTRUCTION CERTIFICATION (constructed)	and/or accept responsibility for	Lat/Long (s,t,r Lat D	eg x	Lat Min/Sec	WWM
estruction of this well, and its compliance with all Wathing	por well construction standards	Long		Long Min/Sec	1
aterials used and the information reprinted above are true to	my best knowledge and heljet	Tax Parcel No.		0	
Oriller Traince Name (Print)	Jereminh Jenkins		211	6	1.0
Priller/Trainee Signature	3114	Cased or Uncased Diam	7 14	Static Le	vel 8
	3114	Work/Decommission Sta	in Date	26-17	
trainee, licesned drillers'				1 Q /	_
ignature and License No.		Work/Decommission Con	mpleted Date	-26-17	
Construction/Design	u	/ell Data 103-17-1026		ermation Description	
	CONCRETE SU	RFACE SEAL.	arey +	. 15' PT	
	— CONCRETE SU	0-2	grey + Gilty	o brown sands	
	BACKFILL	0-2' F		. 15' M o brown sands	
		0-2' m			
		0-2' F			
		0-2' F	r <u>e</u> -	FT	
		0-2' F	r <u>e</u> -		
		2-15' F	r <u>e</u> -	FT	IVEC

(SUBMIT ONE WELL REPO	OTECTION WELL R	EFURI	CURRENT Notice of Intent No.	EE06444
Construction/Decommission	n		Type of Well	
X Construction			X Resource Pr	intection
Decommission ORIGINA	L INSTALLATION Notice			Il Soil Boring
of Intent	Number	Property Owner	Ken	t Space Center
Consulting Firm	Boeing / DOF	Site Address City	No.	8th Ave South
		_ ~	Keut	County Kin
Unique Ecology Well ID Tag No.	NIA	Location	1/4 SE 1/4 NE Sec 2	2 TWN _22N_R 4E
WILL CONSTRUCTION CERTIFICAT	TON: I comprised and/or accept responsibility for nec with all Washington well construction standards	Lat/Long (s,t,r		Lat Min/Sec
Materials used and the information repur	sed above are true to my best knowledge and belief		Long Deg x	Long Min/Sec
X Driller Trainer Name (Prin	Jeremiah Jenkins	Tax Parcel No.		0
Driller/Trainee Signature	proper	Cased or Uncased	Diameter 21/4	Static Leve
Driller/Trainee License No.	/ 3114	Washire	1-5	17-17
If trained, licesned drillers'		Work/Decommissi	on Start Date 1 0	Accept to
Signature and License No.		Work/Decommission	on Completed Date 1 -	27-17
Construction/D	esion			
	,	/ell Data 103-17-	-1026 For	rmation Description
•	BACKFILL.	2-15' bent.chip	er o	to brawn sands
	DEPTH OF BORING	;_ 15 '	_ u .	RECEIVEL

		No	tice of Intent No. AE4118
Construction/Decommission			Type of Well
Construction			X Resource Protection
Decommission ORIGINAL IN of Intent Nu	NSTALLATION Notice Umber EEDG444	Property Owner	Geotechnical Soil Boring Kent Space Center
Consulting Firm	Boeing / DOF	Site Address City Ker	20403 68th Ave South
Unique Ecology Well ID	N/A	Location 1/4 Si	E 1/4 NE Sec 2 TWN 22N R 4E
	: I constructed and/or ecopy responsibility for	Lai/Long (s,t,r Lai Deg	s Lai Min/Sec s
	out all Washington well construction standards	Long De	g x Long Min/Sec x
	hove are true to my liest knowledge and better	Tax Parcel No.	0
Driller Traince Name (Print) Driller/Traince Signature	Jeremiah Jenkins	Cased or Uncased Diamer	er 7'14" Static Level
Priller/Trainee License No.	3114	Cased or Uncased Diamer	Static Level
	-	Wark/Decommission Sun	Date 1-26-17
traince, licesned drillers'		,	
gnature and License No.		Work/Decommision Comp	Neled Date 1 - 76-17
Construction/Desig	n W	ell Data 103-17-1026	Formation Description
Allillilli		0-2'	grey to hown
	BACKFILL	2-15' FT bent chips	silty sands
	BACKFILL	2'- 15' FT	

RESOURCE PROTECT	LION WELL RI	EPORT	CURR	ENT	4.00
Construction/Decommission				ype of Well	AE
Construction			100	The second second	
Decommission ORIGINAL INSTALLA	TION Notice		-	Resource Protection Geotechnical Soil Borin	
of Inlent Number	EE06444	Property Owner		Kent Space Cer	iter
Consulting Firm Bo	eing / DOF	Site Address City	Kent	20403 68th Ave So County	
Unique Ecology Well ID					King
Tag No. N/	A	Location	1/4 SE 1/4	NE Sec 2 TWN 2	2N R 4E
WELL CONSTRUCTION CERTIFICATION: Learning to	d and/or scoops responsibility for	Lat/Long (5,t,r	Lat Deg	x Lat Min/S	ec
construction of this well, and its compliance with all Washin Minerals used and the information separated above are one of			Long Deg	x Long Min	/Sec
X Driller Traince Name (Print)	Jeremiah Jenkins	Tax Parcel No.		0	
Driller/Trainee Signature Driller/Trainee License No.	for	Cased or Uncased	Diameter	214"	Static Leve
- /	3114	Work/Decommisi	on Start Date	1-27-1	1
If trainee, licesned drillers' Signature and License No.				I and	7
	_	Work/Decommisi	nn Completed D	hate 1-37 - 1	
Construction/Design	W	ell Data 103-17	1026	Formation Des	cription
-	— BACKFILL	2-15' bent chij	_FT	sity same	fr FT
				0 -	FT
	DEPTH OF BORING	_15'	_FT		EIVEI

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this	Consulting F
9	Unique Ecolo Tag No.
5	WELL CONSTRUCT
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E	X Dritter Tr
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e	Driller/Trainee L
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SUBMIT ONE WELL REPORT PER	WELL INSTALLED)		Notice of Intent No	e EE06444
Construction/Decommission			Type of We	0
X Construction			X Resource	Protection
Decommission ORIGINAL INSTAL			Geotechn	ical Soil Boring
of Intent Number		Property Owner	K	ent Space Center
Consulting Firm	Boeing / DOF	Site Address	20403 Kent	County King
		Oil)	Keat	County King
Unique Ecology Well ID Tag No.	J/A	Location 1	/4 SE 1/4 NE Sec	2 TWN 22N R 4E
WELL CONSTRUCTION CERTIFICATION: Learner		Lat/Long (s.t.r 1		Lat Min/Sec ±
contraction of this well, and its compliance with all W Materials used and the adormation reported above are		- 1	ong Deg	Long Min/Sec x
N Dritter Traince Name (Print)	Jeremiah Jenkins	Tax Patcel No.		0
Driller/Traince Signature	n h	Cased or Uncased I	Diameter 2'14	Static Level &
Driller/Trainee License No.	3(14		70.70	
If trainer, licesned drillers'		Work/Decommisio	on Start Date	24-17
Signature and License No.		Wash/Denomination	n Completed Date	-24-17
		WOLKIDGOOMMING	n Completed Date	0-1-11
Construction/Design	Wel	1 Data 103-17-	1026	Formation Description
*	CONCRETE SURI	FACE SEAL	9000	. 15 PT
	CONCRETE SURI	D-15' bent di	FT grey .	. 15 pr to brown sitty
		2-15'	FT grey .	

RESOURCE PROTECTION (SUBMIT ONE WELL REPORT PER WELL INST.	WELL REP	PORT	CURRENT Notice of Inter		
Construction/Decommission			Type of		
X Construction			25.7 (0.5)	urce Protection	
Decommission ORIGINAL INSTALLATION No	fice				
of Intent Number	ice	Property Owner		echnical Soil Boring Kent Space Center	
Consulting Pr		Site Address	2	0403 68th Ave South	
Consulting Firm Boeing / D	OF .	City	Kent	County	King
Unique Ecology Well ID Tag No		Location	1/4 SE 1/4 NE	Sec 2 rwn 22N R	4E ww
WELL CONSTRUCTION CERTIFICATION. L'ouistincied and/or autre			Lat Deg x	Lat Min/Sec	
construction of this well, and to compliance with all Washington well as			Long Deg x	Long Min/Sec	
Materials used and the information reported above are troe to my best to X Driller Trainee Name (Print) Jeres	miah Jenkins	Tax Parcel No.		0	
Driller/Trainee Signature	In	Cased or Uncased	Diameter 2	1/4" Static	Level &
Driller/Trainee License No. 3114					
If trainge, Reserved drillers'			on Start Date		_
Signature and License No.		Work/Decommission	on Completed Date	1-25-17	
20 mars 20 mar					
Construction/Design	Well	Data 103-17	1026	Formation Description	a.
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				f Intent No.	EE0644	7
Construction/Decommission			7	ype of Well		
Construction			17	Resource Pro	otection	
Decommission ORIGINAL INSTALLA	TION Notice		Ē	Geotechnica		
of Intent Number		Property Owne	-	Kent	Space Center	
Consulting Firm B	oeine / DOF	Site Address	· ····		8th Ave South	
, , , , , , , , , , , , , , , , , , ,	oeng/ DOF	City	Kent		County	King
nique Ecology Well ID	14	Location	1/4 SE 1/	NE Sec 2	TWN 22N	R 4E
ag No	(1)					WWM
expenses of this well, and as compliance was all Wash		Lat/Long (s,t,r	Lat Deg Long Deg	_ X	Lat Min/Sec	_ *
surrais used and the information separted above are true		min waste of	Long Deg	-	Long Min/Sec	
Driller Tramee Name (Print)	Jeremiah Jenkins	Tax Parcel No.	-	30.00	0	
rillet/Trainee Signature	prifer	Cased or Uncased	Diameter	214	Sc	atic Level 5
riller/Trainee License No.	3114	Work/Decommis				
trainee, licesned drillers'					A AUG TO	
gnature and License No.		Work/Decommes	on Completed	Date 1-	75-17	
Construction/Design			7-1026		mation Descrip	-
•	CONCRETE SUR	FACE SEAL	FT	grey silty	to br	FT
	CONCRETE SUR BACKFILL	2-15'	_FT	grey silty	to br sands	FT PT
		2-15	_FT	grey silty	to br sands	FT PT FT

Construction/Decommission			Notice of Intent No. Type of Well	
X Construction			X Resource Pro	martin
Decommission ORIGINAL INS	TALLATION Natice		Geotechnical	
of Intent Num		Property Owner		Space Center
Consultion Pierr	200 1222	Site Address	TALL THE COLUMN TO THE COLUMN	th Ave South
Consulting Firm	Boeing / DOF	City	Kent C	ounty King
Unique Ecology Well ID Tag No.	N/A	Location 18	SE 1/4 NE Sec 2	
WELL CONSTRUCTION CERTIFICATION: 14		Lat/Long (s,l,t L	at Deg x	
construction of this well, and its compliance with		L	ong Deg	Long Min/Sec
Mourisis used and the information reported abov	are true to my best knowledge and helief. Jeremiah Jenkins	Tax Parcel No.		0
Driller/Trainee Signature	high	Cased or Uneased D	Diameter 2'14"	Static Level
Driller/Traince License No.	3114		n Start Date	
If trainer, licesned drillers'		Work/Demarmission	Start Date	0011
Signature and License No.		Work/Decommission	Completed Date	76-17
Construction/Design		eli Data 103-17-1	net of	
Constitution/Pesign	,	/ell Data 103-17-1	U20 For	nation Description
	BACKFILL.	2'- 15' bent. chip	FT 0 -	brown Sands FT
	DEPTH OF BORING	IS	_rr	RECEIVE

Construction/Decommission	L INSTALLED)		Notice of Intent N	o. EE06444,
The state of the s			Type of We	eti .
Construction			X Resource	Protection
Decommission ORIGINAL INSTALLATI				nical Soil Boring
of Intent Number		Property Owner		ent Space Center
Consulting Firm Boei	ing / DOF	Site Address	Kent 2040.	3 68th Ave South
	mg / box	City	Kent	County King
Jinique Ecology Well ID Tag No. N/A		Location 1	/4 SE 1/4 NE Sec	2 TWN 22N R 4E
VELL CONSTRUCTION CERTIFICATION Communities as		Lat/Long (s.t.r L	at Deg x	
continuation of this well, and its inexphines with all Washingt		L	ong Deg a	Long Min/Sec a
faterals used and the information reported above are true to a	ny bent knowledge and belief	Tax Parcel No.		0
Doller Trainee Name (Print)	Jeremiah Jenkins	(21	
Oriller/Trainee Signature	pr	Cased or Uncased I	Diumeter 71	4 Static Level
Oriller/Trainee License No.	3114	Work/Darrage	on Start Date 1 -	27-17
f trainee, licesned drillers		*VOI KALPOCOMMISSIO	or start Date	0 1 11
ngnature and License No.		Work/Decommission	a Completed Date	-27 -17
		- Secretary militalist	a Sandreico Care	V
Construction/Design	We	II Data 103-17-1	1026	Formation Description
	- CONCRETE SUR	FACE SEAL	grey	· 15 pr
		FACE SEAL O-7	grey sit	to brown y sands
	— CONCRETE SUR — BACKFILL	2-15	FT _0	to brown y sands
		2-15' bent chip	FT _0	to brown y sands
		2-15	FT _0	- 15' FT I to brown Y sands FT
		2-15	FT _0	- 15 FT He brown Y sands FT
		2-15	FT _0	to brown y sands FT RECEIVED

SUBMIT ONE WELL REPORT	TECTION WELL RI	EPORT	CURRENT Notice of Intent No.	AE41184
Construction/Decommission			Type of Well	
Construction			X Resource Protect	ion
Decommission ORIGINAL II	NSTALLATION Notice		Geotechnical Soi	
of Intent No	imber EEOO444	Property Owner		ce Center
Consulting Firm	Boeing / DOF	Site Address	20403 68th /	
Consularing Caria	bocing / DOF	City	Kent Cour	King Ewm
Unique Ecology Well ID Tag No.	NIA	Location (SE 1/4 NE Sec 2 TV	
	I constructed and/or accept responsibility for	Lat/Long (s,i,i L	at Deg x La	1 Min/Sec s
	with all Washington well construction standards	L	ong Deg x Lo	ng Min/Sec x
	have are true in my best knowledge and helica	Tax Parcel No.	0	
X Driller Trainee Name (Print) Driller/Trainee Signature	Jeremiah Jenkins	Cased or Uncased I	Diameter 2'/4'	
Driller/Traince License No.	3514			Static Level S
	0 7	Work/Decommissio	on Start Date 1 - 2-5 -	17
If trainer, licesned drillers'			n Coropleted Date 1-25	-177
Signature and License No.		Work/Decommissio	n Completed Date	
Construction/Desig	gn y	Vell Data 103-17-1	1026 Formati	on Description
-	BACKFILL	j-15' bend chip	_ FT _ 0	FT FT
	DEPTH OF BORING	o_(5	_FT	RECEIVER

SUBMIT ONE WELL REPORT	PER WELL INSTALLED)		Notice of Intent	No.	AE41184
Construction/Decommission			Type of W	ieli.	
Construction			XResour	ce Protection	
Decommission ORIGINAL IN	STALLATION Notice		and the same of	mical Sail Boring	
of Intent Nu	mber EEO6444	Property Owner		Kent Space Center	
Consulting Firm	Boeing / DOF	Site Address		03 68th Ave South	
	boeing / DOF	City	Kent	County	King
Unique Ecology Well ID Tag No.	N/A	Location 16	4 SE 1/4 NE Se	c 2 TWN 22N	R 4E WWM
WELL CONSTRUCTION CERTIFICATION:	I constructed and/or accept responsibility for	Lat/Long (s,t,r La	il Deg x	Lat Min/Sec	T T
	om all Washington well construction standards		ong Deg x		x .
Materials used and the information exposed als		Tax Parcel No		0	
X Driller Traince Name (Print) Driller/Traince Signature	Jeremiah Jenkins	Part No.	Nameter 71	W. W.	44.00
Driller/Trainee License No.	3114	Cased or Uncased D	iameter	4 Sta	tic Level 8
	- VALT	Work/Decommission	Start Date	1-26-17	
f trainee, licesned drillers				and the same of	
Signature and License No.		Work/Decommision	Completed Date	1-76-17	
Construction/Design	T. T.	/eli Data 103-17-1	na.	#	
		100-17-1	020	Formation Descripti	00
	CONCRETE SUI	0-7	FT Grey	to brown y sands	PT
-	BACKFILL	2-15'	FT 0		PT
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Construction/Decommission			Type of Wel	AE411
Construction			X Resource	
Decommission ORIGINAL INSTALLATI	ON Notice		The second secon	cal Soil Boring
of Intent Number	EE06444	Property Owner		ent Space Center
Consulting Firm Beei	ing / DOF	Site Address	20403 Kent	68th Ave South County King
Unique Ecology Well ID				E
Tag No. N/A		Location 1/4	SE 1/4 NE Sec	2 TWN 22N R 4E
WELL CONSTRUCTION CERTIFICATION: I monstructed a	od/or accept responsibility for	Lat/Long (s.i.r La	t Deg x	Lat Min/Sec ±
construction of this well, and its compliance with all Washings	zin well curstraction standards		ng Deg a	Long Min/Sec z
Materials used and the information reported above are true to e		Tax Parcel No.		0
Driller/Trainee Signature	Jeremiah Jenkins	Cased or Uncased Di	iameter 21	0
Dritter/Trainee License No.	3114	Cased of Cheaven Di		Simile rever
If traineo, licesped drillers'		Work/Decommission	Start Date 1	27-17
Signature and License No.		Work/Decomercian	Campleted Date 1	27 -17
				y it with
Construction/Design	W	ell Data 103-17-10)26 J	formation Description
•	— BACKFILL	2-15' bent. chips	FT 0	, sand 5
				· FT
	DEPTH OF BORING	15	FT	RECEIVE
minimus 4				FEB 16 2017

	INSTALLED)		Notic	of Intent No			AE41184
Construction/Decommission				Type of Wel	1		
Construction				X Resource			
Decommission ORIGINAL INSTALLATIO	ON Natice		19	Geotechni			
of Intent Number E	E06444	Property Owne	ri .		nt Space (
Consulting Firm Boein	- (non-	Site Address		20403	68th Ave		
Consulting Firm Boein	g/DOF	City	Kent		County		King
Unique Ecology Well ID Fag No. N/A		Location	1/4 SE	1/4 NE Sec	2 TWN	22N R	
VELL CONSTRUCTION CERTIFICATION: I constructed inc	In accept responsibility for	Lat/Long (s,t,r	Lat Deg	x	Lu Mi	n/Sec	WWM
construction of this well, and its compliance with all Washington	well construction standards		Long Deg	x		Min/Sec	
thereis used and the information reported above are true to my	beta knowledge and belief	Tax Parcel No.			ó		
X Driller Traince Name (Print)	Jeremiah Jenkins		7	211	-13.		- 20
Oriller/Trainee Signature Oriller/Trainee License No.	3114	Cased or Uncased	1 Diameter	27	4	Static	Level 8
	3114	Work/Decommis	sion Start Du	. 1 -	27-	17	
f trainee, licesped drillers'					1		
Signature and License No:		Work/Decommis	ion Complet	ed Date 1 -	77 -	(7	
Construction/Design	Wat	II Data 103-17	7-1026	Year	formation I	2.7 Y Z	
	CONCRETE SUR	FACE SEAL	FT	gney	- 15 to	brewn	FT 1
	CONCRETE SUR!	2-15' bent.chi	_FT	grey Sity	to to	braw,	FT 1

(SUBMIT ONE WELL REPORT	TECTION WELL RI	EPORT	CURRENT Notice of Intent No.
Construction/Decommission			Type of Well
Construction			X Resource Protection
Decommission ORIGINAL II	NSTALLATION Notice		Geotechnical Soil Boring
	imber EE06444	Property Owner	Kent Space Center
Consolitor Plans	2-0-12-0	Site Address	20403 68th Ave South
Consulting Firm	Boeing / DOF	City	Kent County
Unique Ecology Well ID	Asset .	Location 1/4	SE 1/4 NE Sec 2 TWN 22N R
Tag No.	N/A		
	I construed end/or accept responsibility for	1 1 1 K 1 K 1 K 1 K 1 K 1 K 1 K 1 K 1 K	Deg x Lat Min/Sec
	with all Washington well construction standards from are true in my best knowledge and belief	Lon	g Deg x Long Min/Sec
X Driller Trainer Name (Print)	Jeremiah Jenkins	Tax Parcel No.	0
Driller/Traince Signature	mon	Cased or Uncased Dia	meter 21/4" Stati
Driller/Trainee License No.	/ 3114		1 22 12
If trainee, licesned drillers'	<u>y</u>	Work/Decommision 5	Start Date I I I I
Signature and License No.		Work/Decommission C	Completed Dale 1-77 -17
was a second of the		Water Street	
Construction/Desig	yn W	/eli Data 103-17-10	26 Formation Description
-	BACKFILL	2-15' bent chips	sity sands
			a -
			RECEIVE

PER WELL INSTALLED)	1	Notice of Intent No.	AE41184
		Type of Well	
		X Resource Protection	
STALLATION Notice	- Contract	Geotechnical Soil Boris	ng
EE00444			
Boeing / DOF	and the same of th		King
N/A	Location 1/4		EWM
I constructed and/or accept responsibility for	Lat/Long (S.L. Lat D	MD T Las NATions	WWM
th all Washington well construction mandanes			
we are true to my best knowledge and belief	Tax Parcel No.		
Jeremiah Jenkins		217.11	1.0
The you	Cased or Uncased Diam	J 14	Static Level 8
7 3114	Work/Decommission Sta	nt Date 1-26-1	7
		TO AN A	
	Work/Decommision Co.	mpletted Date 7-6-	7
W	ell Data 103-17-1026	Formation Dec	and a second
	0-2' F	grey to bro- silty sand	5 5
BACKFILL	2-15" F	r _ o .	PT
	bent. chips		
		_ 0 ~	_ FI
DEPTH OF BORING	15 n	REC	EIVED
	I crosstructed and/or accept responsibility for that II Washington we'll construction can clude we the time to may be a knowledge and belief ferentials. Jenkins 3114 CONCRETE SUI	STALLATION Notice Inher EEDO444 Property Owner Site Address City K Location 1/4 Lat/Long (s.i.r Lat D Long Tax Parcet No. Service Site Address City K Location 1/4 Lat/Long (s.i.r Lat D Long Tax Parcet No. Service Site Address Cong Tax Parcet No. Work/Decommission Su Work/Decommission Su Work/Decommission Co Well Data 103-17-1026 BACKFILL 2-15 F	Type of Well

(SUBMIT ONE WELL REPORT PER WEL	ION WELL R		Notice of Inte		AE4
Construction/Decommission			Type o	ř Well	
Construction			XReso	ource Protection	
Decommission ORIGINAL INSTALLAT			Geo	echnical Soil Borin	e.
of Intent Number	EE06444	Property Owner Site Address		Kent Space Cen	
Consulting Firm Boe	ing / DOF	City	Kent	County	oth King
Unique Ecology Well ID Tag No.	J/A	Location 1	4 SE 1/4 NE	Sec 2 TWN 2	
WELL CONSTRUCTION CERTIFICATION: LOSSINGER		Lat/Long (s,t,r)	at Deg x	Lat Min/S	ec
construction of this well, and its compliance with all Washing			ong Deg t		-
Minimize used and the information reported above are true to		Tax Parcel No.		0	
X Driller Trainee Name (Print) Driller/Trainee Signature	deremiah Jenkins	Cased or Uncased I	1 mm	14"	
Driller/Traince License No.	3114				Static Level
If trainee, licesned drillers'		Work/Decommission	n Start Date	1-26-1	1
Signature and License No.		Wath Therapport is	Completed Des	1-26-1	7
2.00.4.07.5			Completed Date	1 20	-
Construction/Design	1	Vell Data 103-17-	026	Formation Des	cription
	BACKFILL	0-2'	_FT0	ly to brown ly sainds	FT FT
			0		_ FT
				REC	CEIVE

Construction/Decommission	RT PER WELL INSTALLED)				06444,
X Construction			1.2	ype of Well	
	autoriotzakonen		13	Resource Protection	
Decommission ORIGINAL of Intent N		41.00	E	Geotechnical Soil Bo	
	Tuniber	Property Owne Site Address	r	Kent Space C	
Consulting Firm	Boeing / DOF	City	Kent	20403 68th Ave ! County	King
fallow Parking HI H re-					EWM
Jnique Ecology Well ID Tag No.	A114	Location	1/4 SE 1	NE Sec 2 TWN	22N R 4E
	N: I constructed and/or accept responsibility for	Last was less			WWM
pastroction of the well, and its compliance	with all Wathington well construction standards	Lat/Long (s,t,t	Long Deg		
	above are from to my best knowledge and belief		Long Deg _	I Long M	in/Sec x
Orilles Trainge Name (Print)	Jeremiah Jenkins	Tax Parcel No.	_	0	
ritler/Trainee Signature	mon	Cased or Uncased	d Diameter	214"	Static Level &
Priller/Traince License No.	/ 3114		Accessed to the second		
Destroy Provide State and Co.		Work/Decommis	sion Start Date	1-27-	7
trainee, licesned drillers'		-			.7
ignature and License No.		Work/Decommis	sion Completed	Date 1-77 -	1.1
Construction/Des	ien	Well Data 103-17	7-1026	Formation D	
		URFACE SEAL	FT	grey to	briwn ds
-	BACKFILL	1	FT	grey to sity sar	brown ads
		2-15	FT	grey to sity sai	promised s

(SUBMIT ONE WELL REPORT PER WELL INSTALL	ED)		Notice of 1	ntent No.	AE	4118
Construction/Decommission			Typ	e of Well		
Construction			X	Resource Protection	n	
Decommission ORIGINAL INSTALLATION Notice of Intent NumberEEOC	444	Property Owner		Geotechnical Soil I Kent Space		
Consulting time		Site Address		20403 68th Av	e South	
Consulting Firm Boeing / DOF		City	Kent	County	Kin	-
Unique Ecology Well ID Tag No. N/A		Location	/4 SE 1/4	NE Sec 2 TWN	22N R 4E	EW
WELL CONSTRUCTION CERTIFICATION. I constructed aution accept to		Lat/Long (s,t,r	Lat Deg	t Lai h	Min/Sec	*
construction of this well, and its compliance with all Washington well constru		3	Long Deg	x Long	Min/Sec	2
Materials used and the information reponted above are true to my heat knowle X Driller		Tax Parcel No		0		
Driller/Traince Signature	h Jenkins	Cased or Uncased	Diameter	2'14"	Static Leve	
Driller/Trainee License No. 3114		A STATE OF				B1 (
If trainee, licesned drillers'		Work/Decommiss	on Start Date.	1-24-	(A)	
Signature and License No.	_	West Description	- Parator I -	ice 1-74-	17	
	_		on Completed Di	10	7-1	_
Construction/Design	Well	Data 103-17-	1026	Formation	Description	
← BAC	KFILL	2-15' bent, ch	_FT _	0	FT	
		bent, ch	ips	0	FT	
DEPTH	H OF BORING	bent, ch	ips _m	0 -	RECE FEB 16	

	LED)	Notice of Intent No. AE4118
Construction/Decommission		Type of Well
Construction		X Resource Protection
Decommission ORIGINAL INSTALLATION Nation		Geotechnical Soil Boring
of Intent Number 500	NO444 Property Ow Site Address	
Consulting Firm Boeing / DOI	City	
n to a constant		EW
Unique Ecology Well ID Tag No.	Location	1/4 SE 1/4 NE Sec 2 TWN 22N R 4E
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept of	esponsibility for Lat/Long (v.)	t,r Lat Deg x Lat Min/Sec x
mestruction of this well, and its compliance with all Washington well come		Long Deg x Long Min/Sec x
distribute used and the information reported shows are true to my best knowle	ledge and belief Tax Parcel No	
		- U.D. W.
Driller/Trainee Signature Driller/Trainee License No.	Cased or Uncar	ased Diameter 2'14" Static Level 8
All4	Werk/Decomi	emision Start Date 1 - 241-17
If trained, licesned drillers'		
Signature and License No.	Work/Decome	unision Completed Date 1-74-17
Construction/Design		The American Control of the Control
	TOTAL DATES TOO	3-17-1026 Formation Description
BAC	bent.	sands er _0 Fr chips
		FT
DEPT	H OF BORING	FT RECEIVE

(SUBMIT ONE WELL REPOR	T PER WELL INSTALLED)		Notice of Intent No.	EE06444
Construction/Decommission			Type of Well	
X Construction			X Resource Pro	lection
Decommission ORIGINAL I	NSTALLATION Notice		Geotechnical	Sail Boring
of Intent N	umber	Property Owner		Space Center
Consulting Firm	Boeing / DOF	Site Address	44	th Ave South
	23106/202	Ully	Kent	ounty King
Unique Ecology Well ID Tag No.	NIA	Location 1/4	SE 1/4 NE Sec 2	TWN 22N R 4E
	I constructed and/or accept responsibility for	Lat/Long (s.t.r Lat	Deg x	Lai Min/Sec
	with all Weshington well construction standards	Lor	ng Degx	Long Min/Sec
X Duller Traince Name (Ptim)	bove are true to my best knowledge and belief	Tax Parcel No.		0
Driller/Traince Signature	July Jenkins	Cased or Uncased Dis	ameter 2'14"	
Driller/Trainee License No.	3114	San St San ased Di		Static Level
II trainee, licesned drillers'		Work/Decommission	Start Date 1 -	26-17
Signature and License No.		A. Contract	4-	7/ 17
portate and Lacense (10)		Work/Decommission (Completed Date	76-17
Construction/Design	gri V	Vetl Data 103-17-10	26 For	nation Description
-	BACKFILL	2 10	Ff _ 0 -	brown Sands FT
	DEPTH OF BORING	s15 ¹	FT	RECEIVE

			Shorter as	Intent No.	AE41184
Construction/Decommission			Typ	ne of Well	
Construction			[x]	Resource Protection	
Decommission ORIGINAL IN	STALLATION Notice			Geotechnical Soil Bo	rino
of Intent Nur	nber _ EE06444	Property Owner		Kent Space C	
Consulting Firm	Barto (Box	Site Address		20403 68th Ave	
Sousdaining Fittin	Boeing / DOF	City	Kent	County	King
Inique Ecology Well ID	NIA	Location	1/4 SE 1/4	NE Sec 2 TWN	22N R 4E
	communical and low accord responsibility for	Lat/Long (s,t,r	Lat Deg	x Lan Mil	
	th all Washington well construction stradends		Long Deg	± Long N	fin/Sec x
Merian used and the fehirmation reported abo	we are true to my best knowledge and helief	Tax Parcel No.		ø	_ Y = = =
Driller Trainee Name (Print)	Jeremiah Jenkins	- Constant	5 7 7	011.33	
hiller/Trainee License No.	July 114	Cased or Uneased	Diameter	2 14	Static Level 3
Author Figure Picture Mo.	- (J - 3114 //	Work/Decommisi		1-25-17	
trainee, licesand drillers'			-		
ignature and License No.		Work/Decommision	on Completed Da	it 1-75-	17
Construction/Design		☐ /ell Data 103-17-			
	CONCRETE SU	RFACE SEAL		0 - 15	1 FT
	CONCRETE SU	J-15'	_FT	o - 15 grey to silty sar	brown d5

RESOURCE PROTECTION ISUBMIT ONE WELL REPORT PER WELL INS	TALLED)	IONI	Notice of Inte		06444.
Construction/Decommission			Type		
X Construction				ource Protection	
Decommission ORIGINAL INSTALLATION N.	otice		1	nechnical Soil Bor	
of Intent Number		Property Owner		Kent Space Co	
Consulting Firm Boeing / I	OF	Site Address		20403 68th Ave S	
mong/1	ior .	City	Kent	County	Ki
Unique Ecology Well ID Tag No \rightarrow \righ		Location	1/4 SE 1/4 NE	Sec 2 TWN	22N R 4
WELL CONSTRUCTION CERTIFICATION: I constructed and/or acc		Lat/Long (s,t,r)	Lat Deg x	Lat Min	/Sec
construction of this well, and its compliance with all Weshington well.			ong Deg x		n/Sec
Materials used and the information reponted above the frue to my best to X Driller Traince Name (Print)		Tax Parcel No.		0	
Driller/Trainee Signature	miah Jenkins	Cased or Uncased	Diameter 2	-14"	Starte 1
Driller/Traince License No. 311					
If trainee, licesned drillers'		Work/Decommiss	on Start Date	1-26-	P.Q.
Signature and License No.		Work/Decumpisie	on Completed Date	1-76-	17
Construction/Design	- 6				
Construction Design	We	II Data 103-17-	1026	Formation De	scription
+ B	ACKFILL	2-15'	- [19	ey to broadly sand	wn 5
		bent. chi	25		_ FI
DE	PTH OF BÖRING	15	_FT	RECE	

	PER WELL INSTALLED)		Notice of	Intent No.	AE41184
Construction/Decommission				pe of Well	
Construction			-	Resource Protection	
Decommission ORIGINAL IN	STALLATION Notice		-		
of Intent Nu	mber _EEOL0444	Property Ow	ner	Geotechnical Soil Boring Kent Space Cent	
Consulting Firm	w	Site Address		20403 68th Ave Sou	
Sousannig i iiiii	Boeing / DOF	City	Kent	County	King
Unique Ecology Well ID Tag No.	N/A	Location	1/4 SE 1/4	NE Sec 2 rwn 22	N R 4E
VELL CONSTRUCTION CERTIFICATION	I constructed and/or accept responsibility for	Lat/Long (s,t,	Lat Deg	x Lat Min/Se	5: (1)414
	(th all Washington well construction standards		Long Deg	x Long Min/S	
	ove are true to my best knowledge, and facility	Tax Parcel No		Ó	
Oriller Trainee Name (Print) Oriller/Trainee Signature	Jeremiah Jenkins	Constant Pro-	of by	7'14"	-
Priller/Traince License No.	3114		sed Diameter		Static Level 8
		Work/Decome	nision Start Date	1-26-1	7
trainee, licesned drillers' ignature and License No.				01	-
ignature and License No.		Work/Decomin	nising Completed Da	te 1-76-1	1
Construction/Design	0	Well Data 103-	17-1026	Formation Desc	rinting
		0-2	FT C	o - 15' grey to brown ity sands	
	BACKFILI.	2-15 bent. (FT _	0 -	_ FT
	BACKFILL	2-15 bent. a	FT _	0 -	

RESOURCE PROTECTION WI	ELL REPORT	CURRENT Notice of Intent No.	EE06444
Construction/Decommission		Type of Well	
X Construction		X Resource Pro	Martina
Decommission ORIGINAL INSTALLATION Notice		Geotechnical	
of Intent Number	Property Own		Space Center
Consulting Firm Boeing / DOF	Site Address	***	th Ave South
Boeing / BOF	City	Kent C	county King
Unique Ecology Well ID Tag No	Location	1/4 <u>SE</u> 1/4 <u>NE</u> Sec <u>2</u>	TWN 22N R 4E
WELL CONSTRUCTION CERTIFICATION: I constructed end/or accept respir		Lat Degx	Lat Min/Sec x
consumption of this well, and its compliance with all Washington well constructed		Long Deg x	Long Min/Sec x
Mystrials used and the infirmation reported above are true to my best knowledge X Drillet Trainee Name (Print) Jeregnish J	14x Falcel MO.		0
Driller Trainee Name (Print) Driller/Trainee Signature Jeremiah J	Cased or Uncasi	ed Diameter 21/4"	Static Level &
Driller/Trainee License No. / 3/14			
If trainee, licesned drillers'	Work/Decomm	usion Start Date 1-2	7-17
Signature and License No.	Walk Drawn	ission Completed Date 1-7	14-17
		asion completed Date	1 11
Construction/Design	Well Data 103-	17-1026 For	mation Description
ВАСКІ	9-15' bent c	FT grey to sands	brown sitty
DEPTH (OF BORING 15	п	RECEIVED

er	RT PER WELL INSTALLED)		Notice of Intent !	vo.	AE41184
Construction/Decommission			Type of W	ell	
Construction			X Resource	e Protection	
Decommission ORIGINAL I of Intent N	INSTALLATION Notice Tumber EE06444	Property Owner	Geotech	nical Soil Boring	
		Site Address		Cent Space Center 3 68th Ave South	_
Consulting Firm	Boeing / DOF	City	Kent	County	King
Unique Ecology Well ID Tag No.	N/A	Location 1/4	SE 1/4 NE Sec	2 TWN 22N F	
WELL CONSTRUCTION CERTIFICATIO	N: I constructed and/in accept responsibility for	Lat/Long (s,t,r Lat	Deg x	Lat Min/Sec	WWM
	with all Washington well construction standards		ng Deg x		
	shove are true to my hest knowledge and better	Tax Parcel No.		0	
X Driller Teninoe Name (Print) Driller/Trainee Signature	Jeremiah Jenkins		ameter 21/L	II.	cl
Driller/Trainee License No.	Jn 3014	Cased or Uncased Di		3141	ic Level 8
	V	Wark/Decommission	Start Date 1 -	24-17	
If trainee, licesned drillers'					
Signature and License No.		Work/Decommission	Completed Date	-74-17	
Construction/Desi	ign v	/ell Data 103-17-10	126	Formation Description	
	CONCRETESO	RFACE SEAL	0		FT
	BACKFILL	6 1	FT grey sand	to brown .	er itty er

RESOURCE PROTECTION (SUBMIT ONE WELL REPORT PER WELL INST.	WELL RE	PORT	CURR	ENT Intent No.	AE4118
Construction/Decommission				ype of Well	
Construction					di .
Decommission ORIGINAL INSTALLATION No	dia.			Resource Protec	
of Intent Number EEC		Property Owner		Geotechnical So Kent Sp	il Boring ace Center
		Site Address		20403 68th	
Consulting Firm Boeing / D	OF	City	Kent	Cou	
Unique Ecology Well ID Tag No N / A		Location	1/4 SE 1/4	NE Sec 2 T	WN 22N R 4E
WELL CONSTRUCTION CERTIFICATION: I constructed unitive exp.		Lat/Long (s,t,t)	at Deg	s 1.	at Min/Sec x
consequency of this well, and its compliance with all Washington well of			Long Deg	x 1.	ong Min/Sec x
Minerals used and the information reported above are true to my best to		Tax Parcel No.		0	
X Driller Trainee Name (Print) Jere Driller/Trainee Signature	miah Jenkins	Cased or Uncased	Diameter	2'14"	4
Driller/Traince License No. 3114			-		Static Level Z
		Work/Decommiss	on Start Date	1-24	-17
If trainee, licesned drillers'					17
Signature and License No.	_	Work/Decommissi	on Completed	Date 1-74	1-11
Construction/Design	We	li Data 103-17-	1026	Forma	tion Description
	ONCRETE SUR	J-15'		grey to be sands	IS FT prown sitty FT
DI	EPTH OF BORING	_15	_FT		RECEIVE

A Property of the Control of the Con	ER WELL INSTALLED)		Notice of Intent 1	No. EE0644	4
Construction/Decommission			Type of W	ell	
X Construction			X Resource	e Protection	
Decommission ORIGINAL INST	TALLATION Notice			nical Soil Boring	
of Intent Numb	ber	_ Property Owner		Kent Space Center	
Consulting Firm	Book Wall	Site Address		3 68th Ave South	
Consulting Firm	Boeing / DOF	City	Kent	County	King
Unique Ecology Well ID	22.34	Location	or or we are o	a land law	EWM
Tag No.	NIA	zacanon.	M SE 1/4 NE Sec		R 4E WWM
VELL CONSTRUCTION CERTIFICATION: 10	constructed and/or accept responsibility for	Lai/Long (s,t,r	at Deg 3	Lat Min/Sec	*
ansarportion of this well, and its compliance with			ong Deg x		
therials used and the information reported above	are true to my best knowledge and belief	Tax Parcel No.	200		
X Driller Trainee Name (Print)	Jeremiah Jenkins			0	
Oriller/Trainee Signature	more	Cased or Uncased	Diameter 2	/4 s	atic Level &
Oriller/Traince License No.	3114	- Louissan	- T	7.0	
f trainee, licested drillers'		Work/Decommisis	on Start Date	#1-11	
signature and License No.			0	-22 -17	
garante and precise (40)		Work/Decommision	on Completed Date	#1-11	
Construction/Design	W	ell Data 103-17-	1026	Formation Descrip	tion
	BACKFILL	2-15' bent.chip	_FT	y sands	FT

(SUBMIT ONE WELL REPOR		110	lice of Intent NoA
Construction			Type of Well
Decommission ORIGINAL	INSTALL ATION Motion		X Resource Protection
of Intent N	lumber EE00444	Property Owner	Geotechnical Soil Boring Kent Space Center
		Site Address	20403 68th Ave South
Consulting Firm	Boeing / DOF	City Ker	t County Ki
Unique Ecology Well ID Tag No.	NIA	Location 1/4 SI	E 1/4 NE Sec 2 TWN 22N R
	N I constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg	k Lat Min/Sec
	e with all Washington well gonstruction standards.	Long De	Eg x Long Min/Sec
X Driller Traince Name (Print)	Jeremiah Jenkins	Tax Parcel No.	0
Driller/Traince Signature	Mr M	Cased or <u>Uneased</u> Diameter	r 2'/4" Static Li
Driller/Trainee License No.	3114	1 2 2 2	1.25-12
If trainee, licesned drillers'			Date 1 - 2-5 - 17
Signature and License No.		Work/Decommission Come	oleted Date 1-75-17
A		-	THE COME
Construction/Des	ign W	/ell Data 103-17-1026	Formation Description
	BACKFILL	j-15' FT	silty sands
			F
		, (5) pr	RECEIVE

(SUBMIT ONE WELL REPORT PER W				t No.	, AE41184
Construction/Decommission			Type of	Well	
Construction			X Resor	arce Protection	
Decommission ORIGINAL INSTALL			1	chnical Soil Boring	
of Intent Number	EE06444	Property Owner		Kent Space Cente	er
Consulting Firm	Deales / Doir	Site Address		3403 68th Ave Sout	
Solisuiting Faur	Boeing / DOF	City	Kent	County	King
Jnique Ecology Well ID Fag No	/A	Location	/4 SE 1/4 NE S	Sec 2 TWN 22!	N R 4E
VALL CONSTRUCTION CERTIFICATION: 1 constru	cted and/or accept responsibility for	Lat/Long (s.t.r t	at Deg #	Lat Min/Sec	
instruction of this well, and its compliance with all Wa			ong Deg #		
faserials used and the information reported above are to	se to my best knowledge and belief	Tax Parcel No.			
Driller Trainee Name (Print)	Jeremiah Jenkins		1 1 1 1 1 1 1	U. 10	
Oriller/Trainee Signature	my fre	Cased or Uncased	Diameter 7	141	Static Level 8
Oriller/Trainee License No.	3114		on Start Date		I - V -
f trainee, licesned drillers'		The second second			
Signature and License No.		Work/Decommissio	n Completed Date	1-25-17	
Construction/Design	W	ell Data 103-17-	1026	Formation Descr	(ALC)
	CONCRETE SUR		0	- 151 ey to b	FT round
	CONCRETE SUR		_FT _0	ey to b	ET PT

X Construction					
THE STATE OF THE S			X	Resource Protection	
Decommission ORIGINAL INSTALLAT	ION Notice			Geotechnical Soil Be	
of Intent Number		Property Owner		Kent Space	Center
Consulting Firm Boo	ning / DOF	Site Address City	Kent	20403 68th Ave County	South King
		City	Kent	County	Kinj
Unique Ecology Well ID Tag No.	ŧ	Location	1/4 SE 1/4	NE Sec 2 TWN	22N R 4E
WELL CONSTRUCTION CERTIFICATION: I sommuced	and/or accept entennibility for	Lat/Long (s,t,r	Lar Dea	x Lat M	in 10 am
construction of this well, and its compliance with all Washing			Long Deg		Min/Sec
Materials used and the information reported above are true to	ary hear knowledge and belief	Tax Parcel No.		0	
X Driller Trainee Name (Print) Driller/Trainee Signature	Jeremiah Jenkins			214"	-505
Driller/Trainee License No.	3114	Cased or Uncased	Diameter		Static Leve
- /		Work/Decommisi	on Start Date	1-27-	17
If trained, licested drillers' Signature and License No.				ute 1-27 -	-17
Parents and Oceans (40)	_	Work/Decummiss	on Completed D	ate (7	3.9
Construction/Design	We	III Data 103-17-	-1026	Formation	Description
	— BACKFILL	2-15' bent.chip	_FT _	0 .	PT
	DEPTH OF BORING	15'	_FT	RE	CEIVE
	The state of the state of the			-	16 2017

Construction/Decommission	ELL INSTALLED)		Notice of Intent N	-	AE41184
			Type of We	n-	
Construction			X Resource	Protection	
Decommission ORIGINAL INSTALL				ical Soil Boring	
of Intent Number _	EEDL 444	Property Owner		ent Space Center	
Consulting Firm	loeing / DOF	Site Address	Kent 2040	County	King
COLUMN ASSESSMENT			ALCOY.	County	EWM
Unique Ecology Well ID Fag No.	14	Location (4 SE 1/4 NE Sec	2 TWN 22N	
VELL CONSTRUCTION CERTIFICATION: I DOBRING	and and/or come account of the	Last works a		200000000000000000000000000000000000000	WWM
construction of this well, and its compliance with all Was		Lat/Long (5,1,1 L	ong Deg x	Lat Min/Sec Long Min/Sec	- x
Assertals used and the information reported above are true			ong one	Long win/sec	- 3
X Driller Traince Name (Print)	Jeremiah Jenkins	Tax Parcel No.		0	
Orillor/Trainee Signature	mile	Cased or Uncased I	Diameter 21	4 50	nic Level 8
Driller/Trainee License No.	3114	+ MANAGER ST		75-17	ACTIVITY OF
ftrainee, licesped drillers'		Work/Decommisio	a Start Date	73 17	
ignature and License No.		Work/Decommisio	n Completed Date	-75-17	
Construction/Design		☐ Vell Data 103-17-:	n sympletic Circle		
	— BACKFILL	j-15' beit-chip		y to bri	FT FT

Construction/Decommission			Type of Well	
Construction			X Resource Protection	on
Decommission ORIGINAL INST. of Intens Numb	ALLATION Notice er EED6444	Property Owner	Geotechnical Soil Kent Spac	Boring.
Consulting Firm	Boeing / DOF	Site Address	20403 68th A Cent Count	ve South
Unique Ecology Well ID Tag No.	N/A	Location 1/4	SE 1/4 NE Sec 2 TW	EWN
WELL CONSTRUCTION CERTIFICATION: 1 in construction of this well, and its compliance with a		Lat/Long (s,t,r Lat 1	The second secon	Min/Sec x
Materials used and the information reported above		Tax Parcel No.		g with sec
X Driller Trainee Name (Print) Driller/Trainee Signature	Jeremiah Jenkins		211.10	×
Driller/Trainee License No.	3114	Cased or Uncased Diar		Static Level D
If trainee, licesned drillers		Work/Decommission Si	lart Date 1 - 27 -	- (7
Signature and License No.		Work/Decommission Co	ompleted Date 1-37	-17
Construction/Design				
Construction/Design	w	ell Data 103-17-102	6 Formatio	n Description
	BACKFILL	2-15' s	grey to sity s	brown and 5
			_ 0	PT
	DEPTH OF BORING	15	T	RECEIVED

Construction/Decommission		otice of Intent No.	AE41184
Construction		Type of Well	
		X Resource Protection	
Decommission ORIGINAL INSTALLATION Notice of Intent Number EED6444	Property Owner	Geotechnical Soil Be	
Symenthaniae	Site Address	Kent Space 20403 68th Ave	
Consulting Firm Boeing / DOF		ent County	King
Unique Ecology Well ID			EWM
Tag No. N/A	Location 1/4	SE M NE Sec 2 TWN	
WELL CONSTRUCTION CERTIFICATION. constructed analyte scrept empossibility for	Lat/Long (s.i.t Lat D	te x lat M	WWM
construction of this well, and jus compliance with all Washington well construction standards	The state of the S		Min/Sec s
Assertals used and the information reported above are true to my best knowledge and ticked	Tax Parcel No.	0	
X Driller Trainee Name (Print) Jeremiah Jenkins Driller/Trainee Signature	-	eter 2'14"	10
Driller/Trainee License No. 3014	Cased or <u>Uncased</u> Diam		Static Level D
7	Work/Decommission Sta	ri Date 1-24-1	7
If trainee, licesned drillers' Signature and License No.			2
arguature and License No.	Work/Decommission Co.	npleted Date 1-74-	1
Construction/Design	Well Data 103-17-1026	Formation	Description
BACKFILL	3-15 F bent, chips	0 -	FT FT
DEPTH OF BORIN	'G \S PI		RECEIVED

Construction/Decommission			Type of Well	
X Construction			X Resource Prote	ection
Decommission ORIGINAL INSTALLA of Intent Number	TION Notice	Property Owner	Geotechnical S Kent S	oil Boring pace Center
Consulting Firm Be	peing / DOF	Site Address City Ken		Ave South
	reing (DO)	Chy Ker	Co	unty King
Unique Ecology Well ID Tag No.	A	Location 1/4 SI	1/4 NE Sec 2	TWN 22N R 4E
WELL CONSTRUCTION CERTIFICATION: FORSIFICE	d and/or accept responsibility for	Lat/Long (s,t,t Lat Deg		Lat Min/Sec #
construction of this well, and its compliance with all Wash.	ngton well construction standards	Long De		Long Min/Sec x
Materials used and the information reported above are true		Tax Parcel No.		0
X Driller Trainee Name (Print) Driller/Trainee Signature	Jeremiah Jeukins	Cased or Uncased Diamete	214"	S
Driller/Traince License No.	3/14			Static Level 8
If trainer, licesned drillers'		Work/Decommision Start	Date 1-24	1-17
Signature and License No.		Work/Decommission Comp	Jared Date 1-24	1-17
Code			The same 1	1 1
Construction/Design	v	vell Data 103-17-1026	Form	ation Description
•	BACKFÜLL	2-15' pr bent chips	_ 0	FT FT
	DEPTH OF BORING	5_\S'F		RECE FEB 16

RESOURCE PROTECTION WELL REPORT CURRENT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report EE06444. Notice of Intent No. Construction/Decommission Type of Well X Construction X Resource Protection Decommission ORIGINAL INSTALLATION Natice Geotechnical Soil Boring of Intent Number Property Owner Kent Space Center Site Address 20403 68th Ave South Consulting Firm Boeing / DOF Kent King Unique Ecology Well ID Location 1/4 SE 1/4 NE Sec 2 TWN 22N R 4E Tag No. WELL CONSTRUCTION CERTIFICATION: I constructed angles accept responsibility for Lat/Long (s,t,r Lat Deg Lat Min/Sec construction of this well, and its compliance with all Washington well ensured in standards Long Deg x Long Min/Sec X Driller Trainer Name (Print) Jeremiah Jenkins Driller/Traince Signature Cased or Uncased Diameter Drifler/Trainee License No. If trainee, licesned drillers Signature and License No. Work/Decommission Completed Date 1-74-17 Construction/Design Well Data 103-17-1026 Formation Description CONCRETE SURFACE SEAL sands BACKFILL bent chips RECEIVED DEPTH OF BORING FEB 16 2017 DEPT OF ECOLOGY Scale I"=

Construction/Decommission			Type of Wetl
X Construction			X Resource Protection
Decommission ORIGINAL L	NSTALLATION Notice		
of Intent N	umber	Property Owner	Geotechnical Soil Boring Kent Space Center
Consulting Firm	Boeing / DOF	Site Address	20403 68th Ave South
	Doctory / DOY	_ City K	ent County King
Unique Ecology Well ID Tag No.	N/A	Location 1/4	SE 1/4 NE Sec 2 TWN 22N R 4E
	I communicate and/or accept responsibility for	Lat/Long (s.t.r Lat D	
	with all Washington well emistraction standards done are true in my best knowledge and belief	Long	Deg x Long Min/Sec
X Driller Traince Name (Print)	Jeremiah Jenkins	Tax Parcel No.	0
Drillet/Trainee Signature	high	Cased or Uncased Diam	eter 2'14" Static Level
Driller/Trainee License No.	/ / 3114	Work/Decommission Sta	n Date 1 - 2-6-17
If trainee, licesned dritters'		7	
Signature and License No.		Work/Decommission Co.	upleted Date 1-76-17
Construction/Design	gń W	/ell Data 103-17-1026	Formation Description
-	BACKFILL	2-15' m	grey to brown Gilty sands FF O - FF
	DEPTH OF BORING	; <u>[5</u> n	FEB 16 20

RESOURCE PROTECT (SUBMIT ONE WELL REPORT PER WEL	market to an arrest to	REPORT	CURRI Notice of	ENT Intent No.	RE14185
Construction/Decommission				ype of Well	
X Construction			11.2	Resource Protection	in
Decommission ORIGINAL INSTALLAT	YON Natice			Geotechnical Soil	
of Intent Number		Property Owner		Boei	
-		Site Address	15-	20403 681	
Consulting Firm Boeing		City	Kent	County	King
			77.7		EWM
Unique Ecology Well ID Fag No. Bka -	087	Location	SE 1/4	NE See 2 TWO	22N R 4E or WWM
ELL CONSTRUCTION CERTIFICATION: I constructed and	or accept responsibility for	Lat/Long (s,t,r	Lat Deg v	Lat	Min/Sec s
sestruction of this well, and on compliance with all Washington	well construction standards	still Required)	Long Deg 3	Lor	g Min/Sec x
merisk used and the information reported above are true to my	best knowledge and belief				
	0.11	Tax Parcel No.		0	
	Goble				in'
riller/Trainee Signature ferse	1.000	Cased or Uncase	Diameter 8	Stu	ic Level
Oriller/Trainee License No.	3131		No. Proce Brown	4.13.	IZ
trainee, licensed driller's		Work/Decommis	non Start Date		
		-	00 m 2 m 2	4-13-1	7
ignature and License No.		Work/Decommi	sion End Date		
Construction/Design	W	'ell Data 103-17	11148	Formatio	n Description
	Material Backfill Type Seal Material Gravel Pack Material	Eent. Chips 7' 2940 Jand	FT	Brown to E Silty Sand Med. Sa Stringers	Jack
		0°. ='		0 -	FT
	Screen (dia x dep)	2×5	-9		
	Slot/Size	010	-3		
		010	110		
	Slot.Size Material	DVG Joh	,110	RECEIVE	D
		DVC, Ach	, <u>4</u> 0	RECEIVE	D
	Material				
	Material		_FT	MAY 1 1 201	7
	Material Well Depth Backfill		_FT	MAY 1 1 201	7
	Material Well Depth		_FT		7

(SUBMIT ONE WELL REPORT PER)	기계에 가고 있어요? 요즘 하다 하다 하다.	EPORT	CURRI Notice of	Intent No.	RE14	1185
Construction/Decommission	- Control of the Cont			pe of Well		100
X Construction					and an	
Decommission ORIGINAL INSTALL	ATTOM Marine			Resource Prote		
of Intent Number	AILON Nouce	Property Owner		Geotechnical S	oil Boring being	
by Intent Humber		Site Address			8th Ave S	
Consulting Firm Boeing		City	Kent	County	Kir	107
2000			ALC: N	County	T. C.	EWM
Unique Ecology Well ID Tag No. 3 ka - 08	8	Location	1/4 <u>SE</u> 1/4	NE Sec 2	TWN 22N R	
WELL CONSTRUCTION CERTIFICATION: I constructed	f and/er accept responsibility for	Lat/Long (s,t,r	Lat Deg s		Lat Min/Sec	4
construction of this well, and its compliance with all Washin	ogion well construction standards	still Required)	Long Deg s		Long Min/Sec	*
Maternals used and the information reported above are true	o my best knowledge and belief	Tax Parcel No.		0		
X Driller Traince Name (Print) Jan	mes Goble			. 22		
Driller/Trainee Signature Litt	~	Cased or Uncase	d Diameter	811	Static Level	8
Driller/Traince License No.	3131			1	1.7	·
		Work/Decommi	sion Start Date	_ 4-13	-17	
If trainee, licensed driller's						
Signature and License No.		Work/Decommi	ision End Date	11-13-	17	
Construction/Design	W	Data 103-17	7-1148	F	tion Description	
Consudencia Design	Wei	103-1	1-1140	Fonia	non Description	-
	Blank Casing (dia x dep) Material Backfill Type Seal Material Gravel Pack Material	2"X 10" PUC 5CM 4" Med hent Chips 7' 20/40 se	FT	Brown + Silty	o Black Sand to Sand a tringers	FT med
	Screen (dia x dep) Slot Size Material Well Depth Backfill Material Total Hole Depth	2X5 010 PUL SCM 14' X	FT	MAY 1	1 2017	

(SUBMIT ONE WELL REPORT P	ECTION WELL I ER WELL INSTALLED)	KEPORT	CURR Notice of	ENT of Intent No.	RE14185
Construction/Decommission				Type of Well	
X Construction			100	X Resource Protection	
Decommission ORIGINAL INST	PALLATION Names		_		
of Intent Number	ALLATION Name	Property Owner	L	_Geotechnical Soil	
2 4000		Site Address	1	Boeir	
Consulting Firm Boeing		City	Kent	20403 68th County	King
		City	Kent	County	
Unique Ecology Well ID Tag NoBA	Ka-091	Location	SE I	4 NE Sec 2 TWO	EWM EWM WWM
VELL CONSTRUCTION CERTIFICATION: Tenns	tructed and or accept responsibility for	Lat/Long (s,t,r 1	at Deg	Lat	Min/Sec x
outstruction of this well, and its compliance with all V	Washington well construction standards	still Required) L			g Min/Sec x
faserials used and the information reported above are	this to my best knowledge and belief		Service C		-
		Tax Parcel No.		0	
M Driller Traince Name (Print)	James Goble	7-DC-4		A wa	T 18 18 18 18 18 18 18 18 18 18 18 18 18
Priller/Traince Signature	4/	Cased or Uncased	Diameter	E" Stat	ic Level &
riller Traince License No.	3131				
		Work/Decommiss	on Start Date	4-14-17	
f trainee, licensed driller's					
signature and License No.		Work/Decommis	on End Date	4-14-17	
		1			
Construction/Design	W	ell Data 103-17-	1148	Formation	Description
	Concrete Surface Sea Depth Blank Casing (dia x dep	3' 128'	_FT	Bill, Same	f gravel
	Material Backfill Type Seal Material Gravel Pack Material	TVC dik, 4 Med. Bent. Chips The Sand		o 6.	/4′ FT
	Backfill Type Seal Material Gravel Pack Material Sereen (dia x dep)	Med. Fent. Chips 7: Whichard 2"x 5"	_FT	0 li-	14' FT to light to Red . The sand bringers
	Backfill Type Seal Material Gravel Pack Material	1.00	_FT	0 li-	14' FT to light to Mad . The sand bringers
	Backfill Type Seal Material Gravel Pack Material Sereen (dia x dep)	Med. Fent. Chips 7: Whichard 2"x 5"	_FT	0 li-	14 FT The hight to kind. Hy Sand tringers
	Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size	Med. Fent. Chips 7: Whichard 2"x 5"	_FT	o Li - Dark brown black Añe Sand to Si to Silt Si	14 FT The light to Read. Hy Sand tringers
	Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth	Med. Fent. Chips 7: Whichard 2"x 5"	_FTFT	o Li - Dark brown black Añe Sand to Si to Silt Si	14' FT The light to Med. The Sand tringers FT
	Backfill Type Seal Material Gravel Pack Material Sereen (dia x dep) Slot Size Material	Med. Fent. Chips 7: Whichard 2"x 5"	_FTFT	Dark brown black fine Sand fo Si to Silt Si	14' FT The light to Med. The Sand Tringers FT VED 2017
	Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth	Med. Fent. Chips 7: Whichard 2"x 5"	_FTFT	Dark brown black fine Sand fo Si to Silt Si	14' FT The light to Med. The Sand singers FT VED 2017
	Backfill Type Seal Material Gravel Pack Material Sereen (dia x dep) Slot Size Material Well Depth Backfill	Med. Fent. Chyps The Sand 2'x 5' Ola Fue, Jek- 12'	_FTFT	o Li - Dark brown black Añe Sand to Si to Silt Si	14' FT The light to Med. The Sand Tringers FT VED 2017

TION WELL	REPORT	CURRE		RE14185
			The state of the s	11472-7100
		2.59	and the second second	
ATTON Nation				
Tribit monce	Property Owner	-		
	Site Address	-		
	City	Kent	County	King
086	Location	1/4 <u>SE</u> 1/4	NE See 2 TWA	22N R 4E or www
	Lat/Long (s.t.r	Lat Deg x	Lat	Min/Sec ±
non we'll construction standards				g Min/Sec x
my best knowledge and belief	Land	Arton a		
or Cable	Tax Parcel No.		0	
les Goble	Cared or Union	of Dissesser &		0'
1111	Cased of Official	d Danieler 1	Stat	C Devel O
3/31	Work/Decomm	ision Start Date	4-13-17	
	The same of the same			
	Work/Decomm	ision End Date	11-13-17	
·V	Vell Data 103-1	7-1148	Formation	Description
				2 21 - 0 - 2 - 2
Depth Blank Casing (dia x de Material Backfill Type Seal Material Gravel Pack Material	ep) 2'× 10'	FTFTFT	o b' - Brown to Blo	111' FT
Screen (dia x dep)	2'x5'	- 0		
		7.0	-	. ace
Material	EVC ACK	10	KECE	VED
Well Depth	14.	FT	252.15.4	****
			MAY 1 1	2017
Backfill	*		DEPT OF F	COLOGY
Material	×		NWRO	WR
	ATION Notice OSG and/or accept responsibility for the third of the t	ATION Notice Property Owner Site Address City D86 Location Location Lat/Long (s.t.r still Required) iny best knowledge and belief Tax Parcel No. Cased or Uncase 3131 Work/Decomm Work	ATION Notice Property Owner Site Address City Kent Location 14 SE 14 Location 15 SE 14 Location 16 SE 14	Notice of Intent No. Type of Well X Resource Protectio Geotechnical Soil I

ECV 050-12 (Rec-v 2 01)

RESOURCE PROTECT (SUBMIT ONE WELL REPORT PER WE		EPORT		RENT of Intent No.	RE	14185
Construction/Decommission X Construction Decommission ORIGINAL INSTALLA of Intent Number		Property Owner			cal Soil Boring Boeing	
Consulting Firm Boeing		Site Address City	Kent	Cou	nty I	Cing
WELL CONSTRUCTION CERTIFICATION: I constructed at construction of this well, and its compiliance with all Wathingti Materials used and the information reported above are true to to X Driller: Trainee Name (Print) James Driller/Trainee Signature Coriller/Trainee License No. If trainee, licensed driller's	er well construction standards	Lat/Long (s,t,r still Required) Tax Parcel No. Cased or Uncase Work/Decommi	Lat Deg Long Deg d Diameter	\$ 4. J4.	Arr.	
Signature and License No. Construction/Design	Wal		rision End Date	4-14-	ornation Descrip	lian
	Concrete Surface Seal Depth Blank Casing (dia x dep) Material Backfill Type Seal Material Gravel Pack Material	12' 8' TWO Joh, 18 Med. Fruit. Chips 7' 10/10 Jand	FT FT	14	Le's Sand grand gr	
	Screen (dia x dep) Slot Size Material Well Depth Backfill Material Total Hole Depth	2" × 5" 010 Ric, Jek. 13' 1' 2940 Jan. 14'		MAY	EIVED 1 1 2017 ECOLOGY FECOLOGY	

(SUBMIT ONE WELL REPORT PER WELL	ON WELL R	EPORT		RENT of Intent No.	RE	14185
Construction/Decommission				Type of Well	-	
X Construction				X Resource	Protection	
Decommission ORIGINAL INSTALLATION	ON Natice				ical Soil Boring	
of Intent Number	Ser Honce	Property Owner		Geolecan	Boeing	
		Site Address		20	403 68th Ave S	
Consulting Firm Boeing		City	Kent	Cou	inty I	Cing
Unique Ecology Well ID Tag No BKA - O	89	Location	1/4 <u>SE</u>	1/4 NE Sec	2 TWN 22N H	4E
WELL CONSTRUCTION CERTIFICATION: Logostructed and/or		Lat/Long (s.t.r		1	Lat Min/Sec	13
assuruction of this well, and its complitance with all Washington w		still Required)	Long Deg	*	Long Min/Sec	- 1
Marerials used and the information reported above are true to my be	est knowledge and belief	Tax Parcel No.			0	
X Driller Trainee Name (Print) James	Goble		X 3 = 1	44		30
Driller/Trainer Signature		Cased or Uncas	ed Diameter	8"	Static Level	7
Driller/Trainee Disense No.	3131			11 1		
If traince, licensed driller's		Work/Decomm	ision Start Date			
Signature and License No.		Work/Decomm	usion End Date	4-14-	17	
	- 4				Name of the last o	
Construction/Design	We	ell Data 103-1	7-1148	- 1	ormation Descript	ion
	Depth	04.71	FT	(Fai) Filt, Jand	l na apri
	Blank Casing (dia x dep) Material Backfill Type Scal Material Gravel Pack Material	Acc, sen, son		Die Billy	- Ce) Sill, Sand wed to love \$ Small to 14" un to Klack Sand to was fine Sand wy Lestringers	FT d
	Blank Casing (dia x dep) Material Backfill Type Scal Material Gravel Pack	Port. Pont. Chips Lé Topue Jano	40_ FT	Die Billy	on to Klack Sand to we fine End w	FT L
	Blank Casing (dia x dep) Material Backfill Type Scal Material Gravel Pack	Med. Pent Chips	40_ FT	Die Billy	on to Klack Sand to we fine End w	FT d
	Blank Casing (dia x dep) Material Backfill Type Scal Material Gravel Pack Material	Port. Pont. Chips Lé Topue Jano	40_ FT	o Li Brown Silly to	on to Klack Sand to we fine End w	FT d
	Blank Casing (dia x dep) Material Backfill Type Scal Material Gravel Pack Material Screen (dia x dep) Slot Size	Prof. sen.	FT /_	o Li Brown Silly to	on to Klack Sand to we fine End w	FT d
	Blank Casing (dia x dep) Material Backfill Type Scal Material Gravel Pack Material Screen (dia x dep) Slot Size Material	Ruc, sen, 12 Med. Bont chips Lé Phile Jano L'x5 Olo Duc, Jeh.,	FT /	o Le Francis Silly to Silly	on to Klack Sand to we fine End w	FT d
	Blank Casing (dia x dep) Material Backfill Type Scal Material Gravel Pack Material Screen (dia x dep) Slot Size	Pre, sen, 12 Med. Bond. Chips Lé Melle Jano L'x5 CIO Eve, Jeh, 12	10_FT // Г	o Le Front Silly to Sills	IN to Hack Sand to we fine fine and wy Larringers	FT d
	Blank Casing (dia x dep) Material Backfill Type Scal Material Gravel Pack Material Screen (dia x dep) Slot Size Material	Prof. sen. 12 12 26 12 2	FT //	o Le Front Silly to Sills	n to Klack Sand to we fine Land wy Litringers	FT d
	Blank Casing (dia x dep) Material Backfill Type Scal Material Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth	Pre, sen, 12 Med. Bond. Chips Lé Melle Jano L'x5 CIO Eve, Jeh, 12	FT //	o Le Front Silly to Silly	IN to Hack Sand to we fine fine and wy Larringers	FT d

SUBMIT ONE WELL REPORT PER WEL	ION WELL		Notice o		14185
Construction/Decommission				Type of Well	
Construction				X Resource Protection	
Decommission ORIGINAL INSTALLAT	ION Notice		ř	Geotechnical Soil Boring	
of Intent Number		Property Owner		Boeing	
		Site Address		20403 68th Ave S	
Consulting Firm Boeing		City	Kent	County	King
Inique Ecology Well ID ag No	12	Location	1/4 SE 1	ME Sec 2 TWN 22N R	4E or
ELL CONSTRUCTION CERTIFICATION Louisinscited 202		Lat/Long (s,t,r		Lat Min/Sec	- 1
extractions of this well, and its compliance with all Washington terials used and the information reported above are true to my		still Required)	Long Deg	x Long Min/Sec	-
	7	Tax Parcel No.		0	
	Goble		0.	5.4	91
riller/Trainee Signature	404	Cased or Uncase	d Diameter 1	the same of the sa	1
iller/Traince License No	3131	Work/Decommi	sion Start Date	4-14-17	
traince, licensed driller's				4-14-17	
gnature and License No.		Work/Decomm	ision End Date	4-14-17	
Construction/Design	1	Well Data 103-1	7-1148	Formation Descrip	tion
	Concrete Surface So Depth Blank Casing (dia x de Material	3	FT	(fill) Filt Sand	l gravel Large Keer
	Depth Blank Casing (dia x de	3° 2° × 10°		o li . 15 Dort Brown - Black med to sith wy silt string	FI to hight stand
	Depth Blank Casing (dia x di Material Backfill Type Seal Material Gravel Pack Material	Per John Sand	40 fī	-	0
	Depth Blank Casing (dia x de Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep)	Per John Sand	40 fī	-	FT to hight extine I sand
	Depth Blank Casing (dia x di Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size	12' 10' ALC JCK, ' 5' Med. Rent. Chips 7' 20/10 Jand 9'x 5' C10	<u>40</u> _ п	-	FT to hight extine I sand
	Depth Blank Casing (dia x di Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size Material	Per John Sand	<u>40</u> _ п	Dut Brawn - Black med to Silt Wy Silt String	FT to hight extine I sand
	Depth Blank Casing (dia x di Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth	12' 10' ALC JCK, ' 5' Med. Rent. Chips 7' 20/10 Jand 9'x 5' C10	#0 FT FT /	Dark Brown - Black ned, to sail string O RECEIVED NAV 1 1 2017	FT to hight extine I sand
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IONITORING WELL REPORT	Well ID4 Soil Borings Start Card & SE49812
OWNER/PROJECT TO: KY WOLLING Idness JOHOS Light Rue. S State WA TYPE OF WORK A New construction Alteration (Repair/Recondition) Convertion Despening Abandonment	(S) LOCATION OF WELL By legal description: County Latinute Lengitude Travitativy dan (N or 5) Range 4E (E or W) Semina 9 NE (4 or SE 1/4 of above section. Species address of well sociation 40403 With Aug. Tay in pumper of well location
) DRILLING METHOD ☐ Rosary Air	(7) STATIC WATER LEVEL: F: below land surface. Ameliar Pressure
BORE HOLE CONSTRUCTION: Yes No Depth of Completed Well 15 1.5	(S) WATER BEARING ZONES: Depth as which water was first found From To Est Flow Rate SWE
Vault apreal Standards Water-tight cover Surface flush vault Looking cap Losing diameter Casing diameter Casing diameter Material Welded Threaded Glued	(9) WELL LOG: Ground Elevation
Geal TO T	Material From To SWI
Filter pack: A 20 20 30 30 30 30 30 30 30 30 30 30 30 30 30	RECEIVED
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WELL TESTS:	The first Name Rodcy Gilseth Loanse No. 3119 Address 11412 Gand Auc E Fugillup WA 8873 Pagistration No. HOLOCOTOTH KH. Date 1/20/2014

IONITORING WELL REPORT	Well ID# Soil Borings
OWNER/PROJECT INTER KY INVESTIGAT LIC WELL NO. States ACHOS WITH ALL S State WA Zip 98032 OTYPE OF WORK **New sonstruction Alteration (Reper Recondition)* Convention Despending Abadenment	Tallocation of WELL By legal description: Latitude Latitude Latitude Longitude Tallocation No of ST Range 4E (E or W) Section 3 14 of stove rection: Start address of well location Seattle Will 1983 Tallocatumber of well location
DRILLING METHOD ☐ Rotary Air ☐ Hollow Stein Auger ☐ Other	(T) STATIC WATER LEVEL: Fr below land surface Date Arrestor Pressure 15/49 to Date
BORE HOLE CONSTRUCTION: Yes No Depth of Completed Well 81.5 it	(8+WATER BEARING ZONES: Detrihat which water was first found From To Ere Flow Rate SWL
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Filter 190 10 Streen Streen Streen	the state of the s
A POOR DO NATIONAL DE LA PROPERTIE DE LA PROPE	28 2664
WELL TESTS:	WELL CONSTRUCTION CERTIFICATION: specialized aid for accept reasonability for construction of this well, and it a constructed aid for accept reasonability for construction standards. Materialis used and the information reported above are true to my best knowledge and belief
Pump Bailer Air Floring Artesian Permeability Tried GPM Conductrity P8 Temperature of water OF OF Open Artesian flow found P8 Was water analysis done? Yes No. 2 By whom? Open of trivia to be shallyzed. From R. 50 Ramerics Name Of Supervising Geologis/Engione	Trace Patri Name Roddy Gilseth Woman No. 3119 This net Name This net Name Holocene Drilling Trc Sonati Many Many Many Liberse No. 3119 Address 11413 Ward Auc E Ruya Ruy WA 98373 Personation No. Holocooport KH Deiel /20/2014

MONITORING WELL REPORT	serviced AEZYYZZ
Towner/PROJECT WELL NO	Language Longitude Language Longitude Language Longitude Language Longitude Language Longitude Language Longitude Language Langua
3) DRILLING METHOD Rosery Air Rosery Stein Auger Other	(T. STATIC WATER LEVEL) Fit below lood surface. Date Actorise Pressure
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WELL TESTS Permeability Permeability Temperature of water Opposite artesian flow found Was ware analysis done? Depth of stream in brandysed from Remerks Remerks	compliance with all Washington well construction standards. Materials used and the information recorded above are true to my best knowledge and belief. The of anti-Name Roddy Gilseth License No. 3119 The has Name License No. 119 The has Name License No. 119 Soften License No. 3119 Anti-new 11412 Gand Auc E. Ruya Ilup W4 98373 Pag stration No. HOLOCOTOHIKH Date 1 720/2014

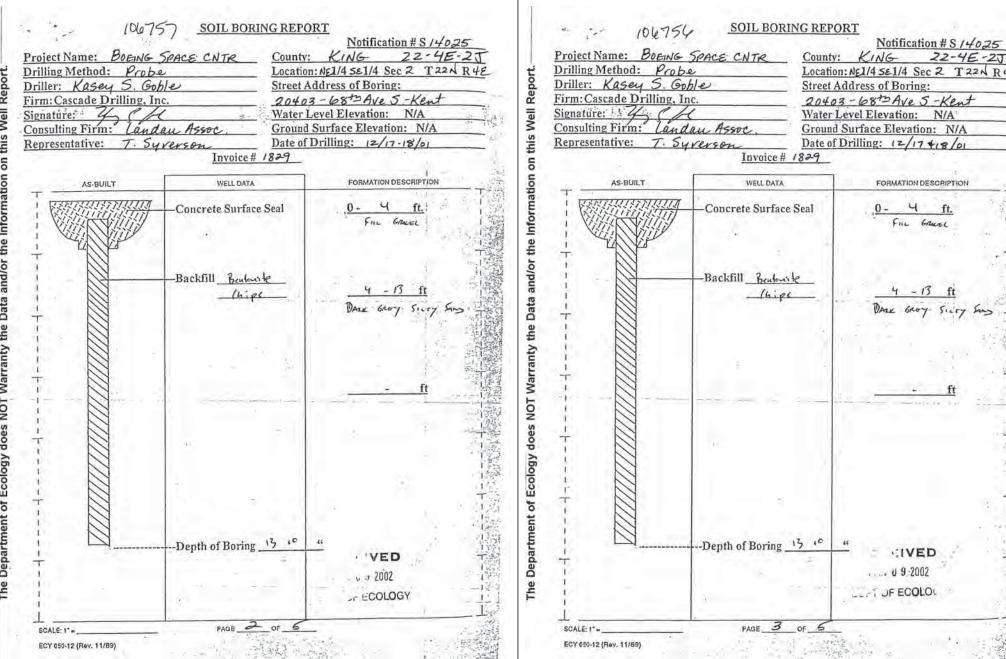
IONITORING WELL REPORT	WELLIDE SOIL BORINGS
OWNERPROJECT M: KV MUSTIAL LLC WELL NO. Miroso 200103 USHN ALC S SECURITY SECURIT	S LOCATION OF WELL By legal description: Laminute Longitude Laminute Longitude NE 1: 0 SE La of above section. Steel address of well location d0403 Well FLCS
New construction	Seattle WH 98033
DRILLING METHOD Rotary Air Restay Mind Cable Fidliow Stein Auger Cother	(** STATIC WATER LEVEL: Fit before land surface Atteilish Pressure 15 sq. in Date
) BORE HOLE CONSTRUCTION: Yes No Depth of Completed Well 61.5 ft.	(8) WATER BEARING ZONES: Dooth at which water was first found
Vault appeal Standards Water-tight cover Surface flush vault Locking cap a Caping unaumen	
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WELL TESTS: Pump	constructed and/or society responsibility for construction of this well, and its sometimes with all Vashington well construction standards. Materials used and the information record above are true to my best knowledge and select type of Poht Name Roddy GISeth Doese No. 3119 Trainer Name License No.
Was water analysis done?	Access 11412 Ward Aue E Rupillup WA 98373

IONITORING WELL REPORT	2 = 10 = Soil Coring		
1 OWNER PROJECT a: KV MINSTrial LIC WELL NO beau dolog Leth A.C. S South San WA In 98032 Type of work	Lambude Lambude Lambude Longitude Longitude NE 1 S E 14 of stores section.		
TYPE OF WORK Altertation (Repute Recondition) Conversion Depending X Abandedment	Street statumes ad well location do 403 Loth FLES Seattle WA 18033 The proportion of well location		
DRILLING METHOD Restary Air	C STATIC WATER LEVEL: Ft. Selow land surface Date Units on Presoure 19 sq. in: Date		
BORE HOLE CONSTRUCTION: Const Standards Yes No. Depth of Completed Well 81.5 P.	(8 W.ATER BEARING ZONES: Doors as which water was first found From To Ere Flow Rate SWL		
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WELL TESTS Bailer DAir DRy for Arresian	ASUL CONSTRUCTION CERTIFICATION: porsity and and/or account responsibility for construction of this well, and its construction with all Washington well construction standards. Materials used and the information apported above are true to my beginderedge and belief.		
Permeability Yield 22M Conductivity 78 Temperature of water OFO Depth accessor flow found 5 Was water analysis done? 5 No. 34 whom? Depth of stress to be sailyzed From 6, to 5	Type TI Proposition Roddy Gilseth Works No 3119 The real Name The real N		
Name Of Supervising Geologist/Engages KluinFelder	3 27 8 7 87 90 No HOLOCOTOH KH Date 1 /20/2014		

MONITORING WELL REPORT	Well 10# SOIL BORINGS
1) OWNER/PROJECT James KV WAUSTRIAL LLC WELL NO JUSTINA LICENS State WA Zip 98032 2) TYPE OF WORK X New JOHN THE Alternation Assendation Conversion Depenies Assendation	Legislation of WELL By legal description: Lengislate The Legislate Lengislate Lengislate The Legislate Lengislate The Lengislate The Lengislate The Lengislate The Lengislate The Lengislate Lengislat
DRILLING METHOD Receip Air Receip Mid Cable	(7. STATIC WATER LEVEL: Ft. below land surface. Outsi in Pressure
BORE HOLE CONSTRUCTION: Yes No DESCRIPTION: Yes NO Yes NO DESCRIPTION: Yes NO YES NO DESCRIPTION: YES NO YES NO YES NO YES NO YES NO YES NO	(8) WATER BEARING ZONES: Details at which water was first found
Depth of Completed Wall 10 E	
Vault (1 19	From To Est. Flow Rate SWL
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Pagas	
	WELL CONSTRUCTION CERTIFICATION: constructed and/or society responsibility for constitution of this well, and has templance with all Washington well construction standards. Materials used
WELL TESTS: ☐ Pamp ☐ Baller ☐ Air ☐ Flowing Arrest	
Permeability Yield J GPM	Transmine Roddy Gilseth women No 3119
Conductivity 9H	Tris pas Name Liberse No
Temperature of water OF/O Depth arresian flow found	
Was water analysis done? Tri No	- Sampley Holocene Drilling Inc
By whose ** Dopth of strate to be fastlyzed From ft to	3 chard 74047 AUTO License No. 3119
Depth of strates to be malyzed Fromft to	======================================

Project Name: BOEING	758 SUIL BUR SPACE: CNTR	County:	Notification # S 140; KING 22-4E		
Orilling Method: Prot	ne .	Location	Location: NE1/4 Se1/4 Sec 2 T 22 N		
Driller: Kasey S. G		Street Ac	ldress of Boring:		
Firm: Cascade Drilling, I	nc.	20403	-68 Ave 5 -Kent evel Elevation: N/A		
1 4 7 6	day Assoc.		Surface Elevation: N/A		
	yverson	Date of I	rilling: 12/17-18/01		
	Invoice #	1829			
AS-BUILT	WELL DATA		FORMATION DESCRIPTION		
SEETE PROPERTY AND A SEED OF THE PERSON OF T	Concrete Surfac	e Seal	0- 4 ft.		
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Location: NE1/4 SE1/4 Sec 2 T 22 N R 4E Street Address of Boring: 20403-68+2 Ave 5-Kent Water Level Elevation: N/A Ground Surface Elevation: N/A Date of Drilling: 12/17 +18/01 FORMATION DESCRIPTION U 9:2002

Notification # S 14025

JET UF ECOLOL

SOIL BORING REPORT Notification # S 14025 Project Name: BOEING SPACE CNTR County: KING 22-4E-2J Drilling Method: Probe Driller: Kasey S. Goble Location: NE1/4 SE1/4 Sec 2 T22N R4E The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. Street Address of Boring: Firm: Cascade Drilling, Inc.
Signature: 20403-68+3 Ave 5-Kent Water Level Elevation: N/A Consulting Firm: Landau Assoc Ground Surface Elevation: N/A Representative: T. Syverson Date of Drilling: 12/17-18/01 Invoice # 1829 WELL DATA AS-BUILT FORMATION DESCRIPTION Concrete Surface Seal -Backfill Bentouste ECEIVE -Depth of Boring JAN 0 9 200 DEPT OF ECOL SCALE: 1" = ECY 053-12 (Rev. 11/89)

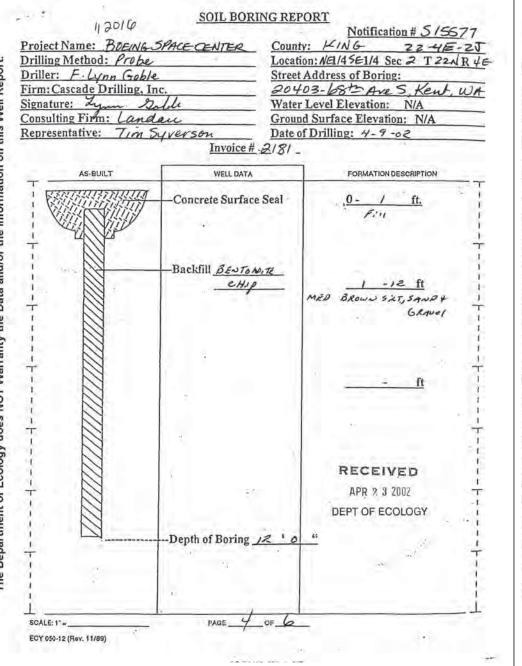
oject Name: BOEING	SPACE CNTR	Notification # S 14025 County: KING 22-4E-20		
illing Method: Prob	61		E1/4 SE1/4 Sec 2 T22 N R	
iller: Kasey S. Go, rm: Cascade Drilling, In	nie		ress of Boring:	
matura:	Z W	Water Level Elevation: N/A Ground Surface Elevation: N/A		
enature: 4 Cand	Acres			
presentative: T. Sy	W MAYOU.		lling: 12/17-18/01	
presentative. 7. 04	Invoice# /	829_	mag. 1-117-18/01	
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112012	SOIL BORI	NG REPORT		
Duning Names Rocus -0		County: KING 22-4E-2T		
Project Name: BOEING-SPACE CENTER Drilling Method: Probe		Location: NEI/45E1/4 Sec 2 T 22N RUF		
Oriller: F. Lynn Gobl		Street Address of Boring:		
Firm: Cascade Drilling, In		20403-684 Ave 5 Kent, WA		
Signature: Zym Rol	7.7.	Water Level Elevation: N/A		
Consulting Firm: Land	ne	Ground Surface Elevation: N/A		
Representative: Timo		Date of Drilling: 4-10-02		
Kepresentative. (IM)	Invoice #			
	Invoice # 2	2101		
AS-BUILT	WELL DATA	FORMATION DESCRIPTION		
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ECY 050-12 (Rev. 11/89)	LV/2E			

Project Name: BOEING-SP	PACE CENTER	County:	Notification # S / 557 KING 22-4E-	
Drilling Method: Probe		Location: NEI/45E1/4 Sec 2 T 22 N I Street Address of Boring:		
Driller: F. Lynn Gobi				
Firm: Cascade Drilling, In	ic.		3-6845 Ave 5 Kent, W	
Signature: Lynn Pol			evel Elevation: N/A	
Consulting Firm: Land			Surface Elevation: N/A	
Representative: Tim S	yverson		Orilling: 4-10-02	
	Invoice #	2181_		
AS-BUILT	WELL DATA		FORMATION DESCRIPTION	
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SOIL BORING REPORT 112014 Notification # 5/5577 Project Name: BOEING-SPACE CENTER County: KING 27-4E2T Drilling Method: Probe Location: NE1/45E1/4 Sec 2 T 22NR 4E The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. Driller: F. Lynn Goble Street Address of Boring: Firm: Cascade Drilling, Inc.
Signature: Lynn Solle 20403-68th Ave S. Kent, WA Water Level Elevation: N/A Consulting Firm: Landau Ground Surface Elevation: N/A Representative: Tim Syverson Date of Drilling: 4-9-02 Invoice # 2181 _ FORMATION DESCRIPTION AS-BUILT WELL DATA -Concrete Surface Seal -Backfill BENTONOITE GRAVEL RECEIVED APR 2 3 2002 DEPT OF ECOLOGY -Depth of Boring 12 ' SCALE: 1" .. ECY 050-12 (Rev. 11/89)

Project Name: BOENG SPACE CENTER Drilling Method: Probe		Location: NE/45E1/4 Sec 2 T 22
riller: F. Lynn Goble irm: Cascade Drilling, Ir		Street Address of Boring: 20403-1885 Ave S. Kent
ignature: Zym &	14	Water Level Elevation: N/A
onsulting Firm: Land	au	Ground Surface Elevation: N/A
epresentative: 7im S	yverson	Date of Drilling: 4-9-02
	Invoice # .	2181 -
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	Concrete Surface	Seal O- / ft.
	Backfill BENTONO	_1 -12 ft
		MED BROWN SIT, SAND + GRAVET
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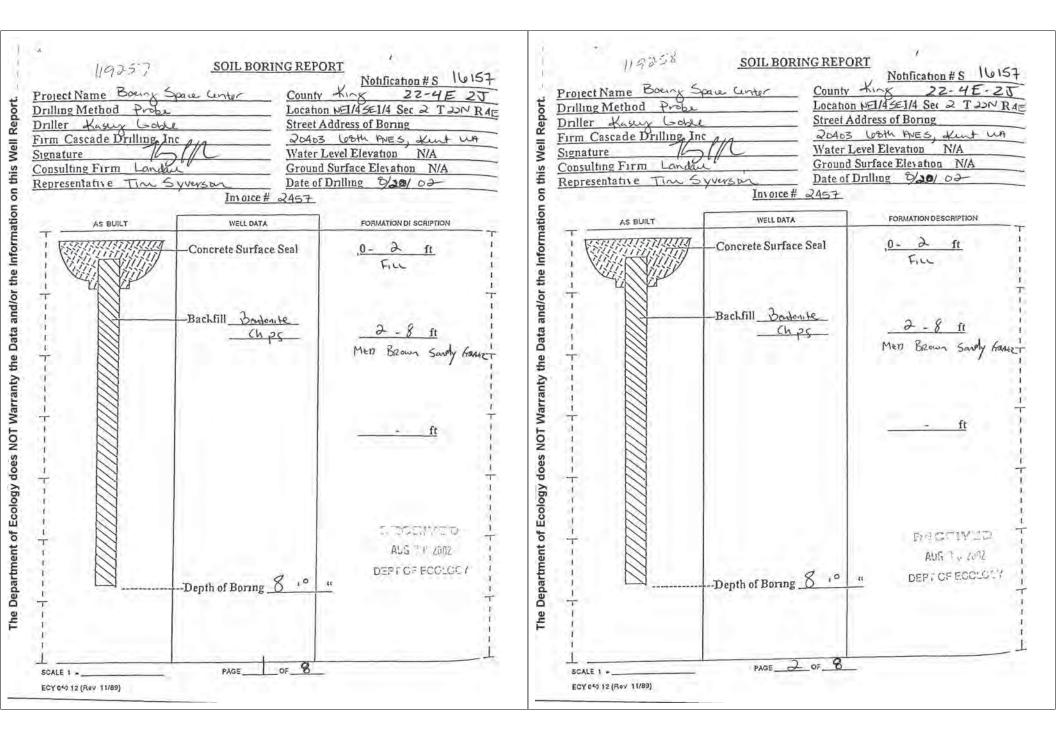


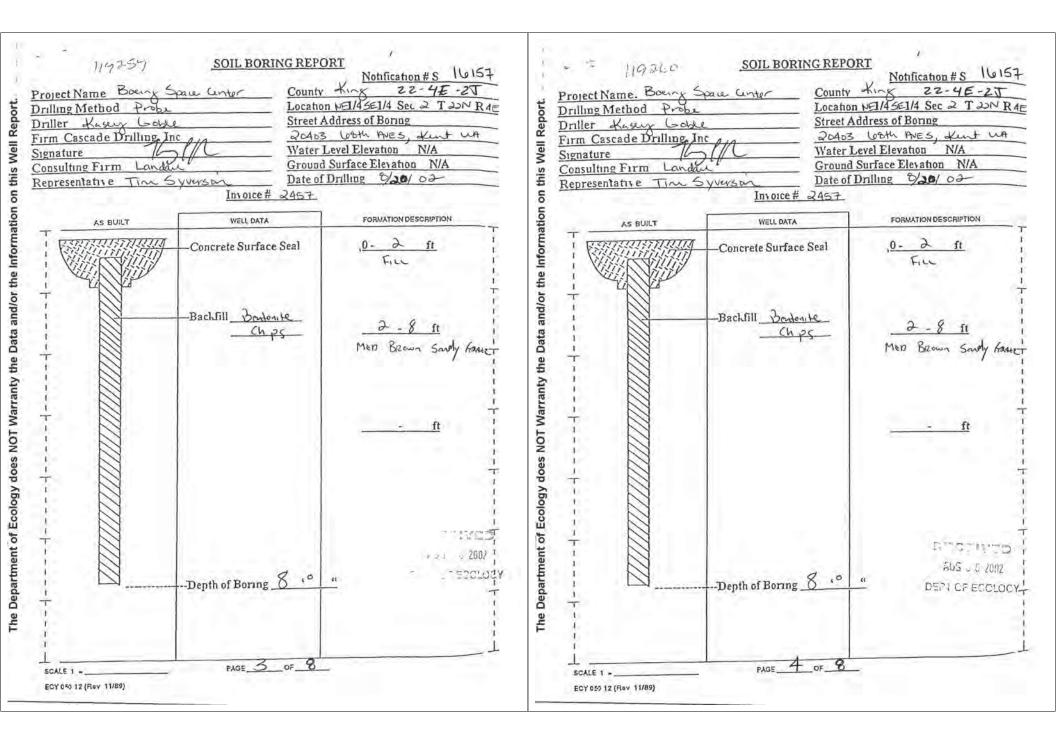
Project Name: BOEING SPACE CENTER Drilling Method: Probe			Notification # \$ 1557 ty: KING 22-4E-	
		Location: NEI/4 SE1/4 Sec 2 T 22NR		
Driller: F	Lynn Goble de Drilling, In			t Address of Boring:
Signature:	Zu 2	Lle		+03-68th Ave S. Kent, u r Level Elevation: N/A
Consulting I	irm: Land			nd Surface Elevation: N/A
	ive: 7im S		Date	of Drilling: 4-9-02
		Invoice #	2181.	
	AS-BUILT	WELL DATA		FORMATION DESCRIPTION
		Concrete Surface	Seal ·	10- 1 ft.
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ECY 050-12 (Rev. 11/89)

SOIL BORING REPORT 112018 Notification # 5/5677 Project Name: BOEING-SPACE CENTER County: KING 22-4E-2T Drilling Method: Probe Location: NEI/4 SE1/4 Sec 2 T 22NR 4E The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. Driller: F. Lynn Goble Street Address of Boring: Firm: Cascade Drilling, Inc.
Signature: Lyn Robbe 20403-68th Ave S. Kent, WA Water Level Elevation: N/A Consulting Firm: Landau Ground Surface Elevation: N/A Representative: Tim Syverson Date of Drilling: 4-9-02 Invoice # .2181 _ AS-BUILT WELL DATA FORMATION DESCRIPTION Concrete Surface Seal -Backfill BENTONOTE GRAVEL RECEIVED APR 2. 3.2002 **DEPT OF ECOLOGY** Depth of Boring 12 ' 0 SCALE: 1" =_ ECY 050-12 (Rev. 11/89)

119019	SOIL BOR		Notification # 5/55	
Project Name: BOEING 5	PACE CENTER	County: KING 22-4E-2		
Drilling Method: Probe			51/45E1/4 Sec 2 T 22N	
Driller: F. Lynn Goble			ress of Boring:	
Firm: Cascade Drilling, Inc	Lle		68th Ave S. Kent,	
Signature: Lynn Da Consulting Firm: Lands	Marie Contract of the Contract		el Elevation: N/A face Elevation: N/A	
Representative: 7im Sc			lling: 4-9-02	
Representative. 7777	Invoice #		ining, 7-7 0C	
AS-BUILT	WELL DATA		FORMATION DESCRIPTION	
	-Concrete Surface	e Seal	0- 1 ft. Fin	
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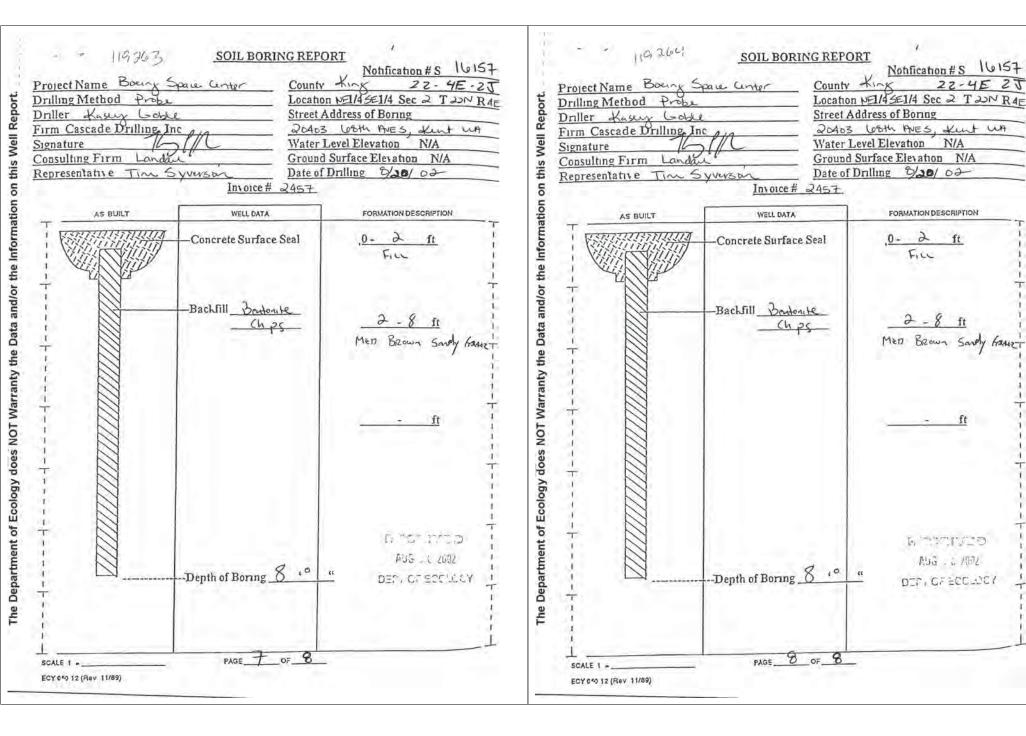


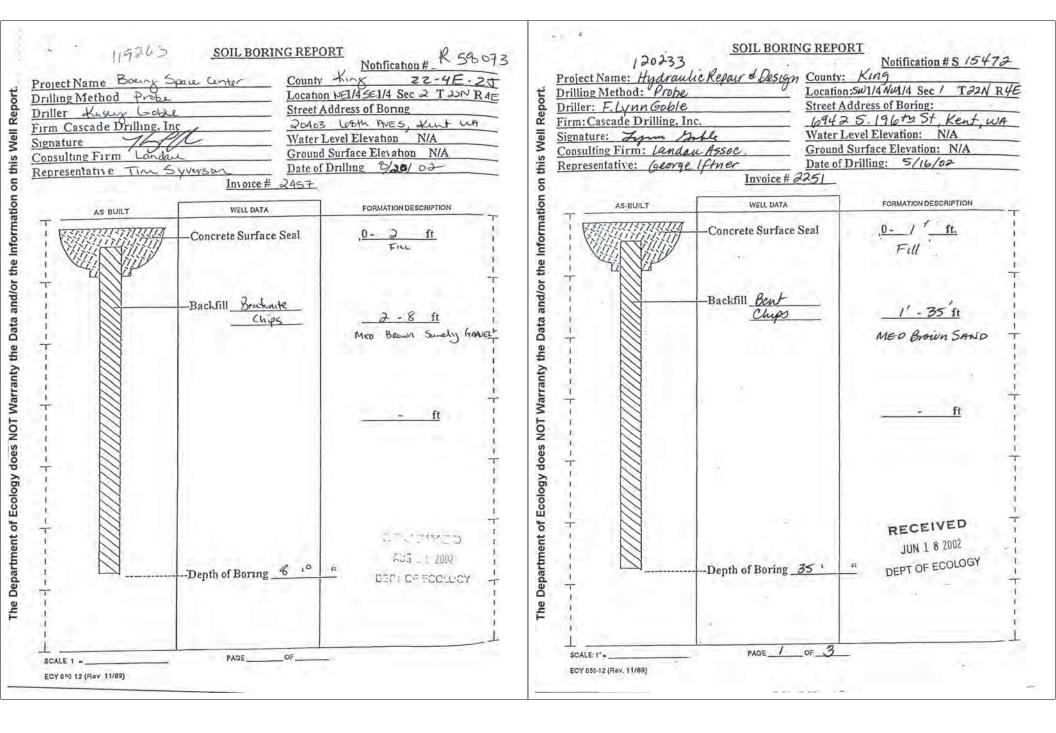
1107260 16/241 SOIL BORING REPORT SOIL BORING REPORT Notification#S 16157 Notification#S 16157 County King County XIX 22-4E-25 22-4E-2J Project Name Boung Space Center Project Name Boeing Space Center Location NEI/4 SE1/4 Sec 2 T 201 RAF Location NEI/45E1/4 Sec 2 Tan RAF Drilling Method Probe Drilling Method Probe Street Address of Boring Driller Lasers Goble Driller Kusey Goble Street Address of Boring 20403 LOSTH AVES, Kent WA Firm Cascade Drilling, Inc 20403 With AVES, Kint WA Firm Cascade Drilling Inc Water Level Elevation N/A Water Level Elevation N/A Signature Consulting Firm Landau Consulting Firm Landau Ground Surface Elevation N/A Ground Surface Elevation N/A Date of Drilling 8/20/ 02 Representative Tim Syverson Representative Tim Syverson Date of Drilling 8/20/ 02 Invoice # 2457 Invoice# 2457 The Department of Ecology does NOT Warranty the Data and/or the Information FORMATION DESCRIPTION FORMATION DESCRIPTION WELL DATA AS BUILT WELL DATA O- 2 ft Fice Concrete Surface Seal Concrete Surface Seal -Backfill Boutonite -Bachfill Bortonite Abs . 2002 DEPT OF BOOLS' I -Depth of Borng 8 .0 -- Depth of Bornng 8 " " PAGE 5 OF 8 PAGE O OF 8 ECY 050 12 (Rev 11/89) ECY 050 12 (Rev 11/89)

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SOIL BORING REPORT 120234 Notification #S 15472 Project Name: Hydraulic Repair & Design County: King Location:SW1/4 NW1/4 Sec / T22N R4E Drilling Method: Prope Street Address of Boring: Driller: F. Lynn Goble 69425.196+25t Kent WA Firm: Cascade Drilling, Inc. Water Level Elevation: N/A Signature: Jym Boble Consulting Firm: Vandau Assoc Ground Surface Elevation: N/A Date of Drilling: 5/16/02 Representative: George Iftner Invoice # 2251 WELL DATA FORMATION DESCRIPTION Concrete Surface Seal -Backfill Bent MEO Brown SAND RECEIVED JUN 1 8 2002 DEPT OF ECOLOGY -Depth of Boring 35 ' SCALE 1" .. ECY 059-12 (Rev. 11/89)

The Department of Ecology does NOT Warranty the Data and/or the Information

SOIL BORING REPORT 120235 Notification #S 15472 Project Name: Hydraulic Repair & Design County: King Drilling Method: Prope Location: SW1/4 NW1/4 Sec / T22N R46 Street Address of Boring: Driller: F. Lynn Goble 6942 5.196+2 St. Kent. WA Firm: Cascade Drilling, Inc. Water Level Elevation: N/A Signature: Jym Bable Consulting Firm: Landau Assoc Ground Surface Elevation: N/A Date of Drilling: 5/16/02 Representative: George Iftner Invoice # 2251 The Department of Ecology does NOT Warranty the Data and/or the Information FORMATION DESCRIPTION WELL DATA AS-BUILT Concrete Surface Seal -Backfill Bent MED Brown SAND RECEIVED JUN 1 8 2002 DEPT OF ECOLOGY -Depth of Boring 35 ' PAGE 3 OF 3 SCALE: 1" -

ECY 050-12 (Rev. 11/89)

106759 SOIL BORING REPORT Notification # 258287 Project Name: BOEING SPACE CNTR County: KING 22-4E-2J Drilling Method: Probe Location: NE1/45E1/4 Sec 2 T 22N R 4E Driller: Kasey S. Goble Street Address of Boring: Firm: Cascade Drilling, Inc. 20403-68th Ave S. - Kent Signature: Landau Assoc. Water Level Elevation: N/A Ground Surface Elevation: N/A Representative: T. Syverson Date of Drilling: 12-17 218-01 Invoice # 1829 WELL DATA FORMATION DESCRIPTION AS-BUILT Concrete Surface Seal FILL GRAVER -Backfill Berranie The Department of Ecology does NOT Warranty Depth of Boring 15 10 CEIVE 0 9 200 PS. COF ECOL PAGE. ECY 050-12 (Rev. 11/89)

SOIL BORING REPORT

Project Name: BOEING SPACE CENTER County:

Drilling Method: Probe Location

Driller: F. Lynn Gable Street A

Firm: Cascade Drilling, Inc.
Signature: Lynn Robb

112021

Consulting Firm: Landau
Representative: 7im Syverson

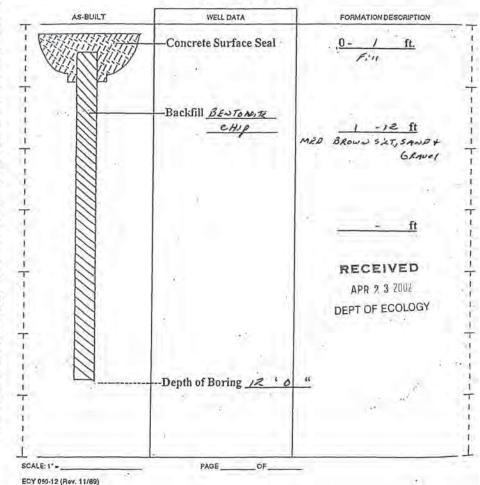
Department of Ecology does NOT Warranty the Data and/or the Information

County: KING- 22-4E-2J
Location: NA/45E1/4 Sec 2 T 22NR 4E
Street Address of Boring:
20403-685 Ave 5 Kent, WA
Water Level Elevation: N/A
Ground Surface Elevation: N/A

Notification # R 6/589

Date of Drilling: 4-9-02

Invoice # .2181 _



MONITORING WELL REPORT 10f1	Well 101_ Start Card & 5/E 5/5/8/2
(1) OWNER/PROJECT Name Macrina Bakery NAME 1943 1 ADE 5 CITS CONTROL STATE STATE WELL NO. 1B-1 AND STATE OF WORK A New construction Alternation (Repair/Recondition) Conversion Deepening Abandonment	(6) LOCATION OF WELL By legal description: County Ling Latitude Township 22 GPor S) Range 4 Eby Wy Section 2 NE 1/4 of NE 1/4 of above section. Street address of well location 19215 66 M ave 5 Next
(3) DRILLING METHOD Rotary Air Rotary Mud Cable Hollow Stein Auger Other	(7) STATIC WATER LEVEL: Ft. below fand surfice. Date Antesian Pressure
(4) BORE HOLE CONSTRUCTION: Special Standards Yes No Depth of Completed Well To R Surface flush vault Locking cap Locking cap Locking cap Locking dep	(8) WATER BEARING ZONES: Depth as which water was first found
Seal TO Company Compa	(9) WELL LOG: Ground Elevation Material From To SWI. Drill O 57! Interbedded Sends Silt 4 57!
Bornhole diameter: In. from	n
Filter pack Filter pack Filter pack Material Size Size Size Size Size Size Size Size Size Size Size Size Size Size Size Size Siz	Date stanted \$\frac{F-B-15}{\text{Completed}}\$ Completed \$\frac{F-B-15}{\text{Construction of Inia well, and its possibility for construction of Inia well, and its possibility for construction attendance. Materials used and the information reported above are true to my best knowledge and belief. Type or Print Name \$\frac{\text{HOMIS}}{\text{LOMIS}}\$ Lowers No. \$\frac{\text{LOMIS}}{\text{URONMENTAL}}\$ Described in the information of the informati

(6) LOCATION County King Township 28 114 Street address of well Reset Tex lot number of we (7) STATIC WA Ariasian Pressure (8) WATER BE,	Destructe OP S) Range . OF NE location (Po2) Il location	egal description Longi Gov W) 1/4 of above section 1/5 - 66 - 8 - 6	Section 2
Township 22 NE 114 (Street address of well Accept Tax lot number of we (7) STATIC WA P. Artesian Pressure (8) WATER BE,	Bor S) Range . of NE location [92] Il location	4 Eor W) 1/4 of above section. 15 66 6 6	Section 2
Street address of well Keart Tax lot number of we (7) STATIC WA P. Artesian Pressure (8) WATER BE,	I location 192 II location 192 TER LEVEL: below land surface, 15/42	1/4 of above section. 1/5 - GE T d	
Tax for number of we (7) STATIC WA Artesian Pressure (8) WATER BE,	TER LEVEL: below land surface, lb/sq.	Date	ve S
(7) STATIC WA TEL Actosian Pressure (8) WATER BE.	TER LEVEL: below land surface, _ib/sq.		
(7) STATIC WA	TER LEVEL: below land surface, _ib/sq.		
Arresian Pressure (8) WATER BE	below land surface, b/sq.		
Arresian Pressure . (8) WATER BE			
(8) WATER BEA		MI. Daile	
	ARING ZONES		
Depth at which water	was first found	4.6	- (1)
Frem	To	Est. Flow Re	416 SW
		-	
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	Material	From	To 15
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Cem	ent	0	57'
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Unick		SET 18 7	015
4			1000
-	- 2	WARD I	A/R
-			-
	a	Completed of o	14-
			-73
I constructed and/o	r accept responsibility	v for construction of th	es well, and he
compliance with all	Washington well con	struction elendants.	Malerials Used
Type or Print Name	HOMAS J. A.	DAMS License No.	2684
Trainee Name		Lionnee No.	
Drilling Company E	NVIRONME	NTAL DE	MINY J
(Signed) Thom	5 Otlam	License No.	2684
Address 10918	159 FAUE	SE SNO.	Up.
	(9) WELL LOG On AD 4: AD 4: AD 4: AD 5: AD 5: AD 6: AD 6: AD 6: AD 6: AD 7: AD 7: AD 7: AD 7: AD 7: AD 7: Address 10/18 Address 10/18	(9) WELL LOG: Oround Elevation Material Albandor Cerrent Growt The started 9-8-15 WELL CONSTRUCTION CERTIL Logistic and for accept responsibility completes with all Westington well on and the information report above are Type or Print Name HUMAS J. Al Trainee Name DAIling Company ENVIRONME (Signed) Thomas J. Claim Address 10918 159° Aug.	(9) WELL LOG: Oround Elevation Material From Handor Cement C Growt Date stance 9-8-15 Completed 9-6 WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of in complete and in the information response above are use on my best showing the promoted and/or accept responsibility for construction of incomplete and the information response above are use to my best showing the promoted and/or accept responsibility for construction standards and the information response above are use to my best showing the promoted and/or accept response by the construction standards. The promoted and/or accept response by the construction of the complete and the complete

HOLT	DRIL	LING.	INC.
LIVE			

22/4/20

Resource Protection Well Report

Depth of Soil Log Components in Feet	Consulting Firm_ESEon Monument Casing
cobbles concrete	Type of Surface Seal Concrete Amount 1 Type of Riser Pipe OVC Amount Y' Type of Connection Threaded Type of Backfill around Riser Bentonite Chip Amount 2 Diameter of Borehole 8''
10-20 Saud	Screen Size or Type 2" 020 11" Type of Filter Material 10:30 Savd Amount 12"
emarks:	

WELL IDENTIFICATION NO h/	rd Business Aurk COUNTY: LOCATION:N	NVI NW VI SOC / TWIN ZZN II
ORILLING METHOD: Aband	Soble 19204	19406-68+ Ave S-Ke
MINM: Cascade Drilling, I	nc. WATER LEVE	ELEVATION: N/A
CONSULTING FIRM ATC E	nvironmental INSTALLEO.	PACE CLEVATION; N/A
NEPHESENTATIVE Neil G		
	0085	T.
AS-OUILT .	WELC DATA	FORMATION DESCRIPTION
		10.32
TESSESSET.	CONCRETE SURFACE SEAL	0 -20rt.
Control of the second		Abaudoned with
+ 1000	2	BENT CHIPS by Clipi
		PLACE
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	3	Uliver
\square	DEPTH OF DORING 201 "	
7		
I.		

RESOURCE PROTECTION WEEL THE PER PROTECTION OF A41560 RESOURCE PROTECTION WELLET REPORT DE LA 4156

1 Ward Business Park COUNTY: King 22-4E-1D

1/2 LOCATION: NW 1/2 Sec / TVIII 22N 1/4E PROJECT NAME: Northward Business Ark COUNTY: King 22-4E-ID
WELLIDENTIFICATION NO. 1/2 LOCATION N.W. N. Sec / TWILZEN IN 4E PROJECT NAME: Northward Business Park COUNTY: on this Well Report WELL IDENTIFICATION NO. _ h/a DRILLING METHOD: Ahandon
DRILLIN: Vames M. Goble
FIRM: Cascade Drilling, Inc. STREET ADDRESS OF WELL: 19204-19406-6872 Ave S-Kent STREET ADDRESS OF WELL: 19204-19406-687 Ave S-Kent. OPILLING METHOD: Abandon DRILLER: Vames M. Goble rink Cascade Drilling, Inc. WATER LEVEL ELEVATION: WATER LEVEL ELEVATION: GROUND SURFACE CLEVATION: N/A SIGNATURE: GROUND SURFACE ELEVATION: N/A SIGNATURE: CONSULTINGFIRM ATC Environmental CONSULTING FIGHT ATC Environmental REPRESENTATIVE: Neil Gilham INSTALLED. 24 15/00 INSTALLED, 24 15/00 REPRESENTATIVE: Neil Gilham DOVCLOPED:_ DEVELOPED: 0085 0085 The Department of Ecology does NOT Warranty the Data and/or the Information The Department of Ecology does NOT Warranty the Data and/or the Information WELL DATA AS-DUILT FORMATION DESCRIPTION AS-DUILT WELL DATA FORMATION DESCRIPTION 0 -20rt. 0 -20st. CONCRETE SURFACE SEAL CONCRETE SURFACE SEAL AbrillowED WITH ABANDONED WITH BENT CHIPS BY CHIPIN BENT CHIPS BY CHIDIN PLACE PLACE BACIGILL 18 BENT BACICTILL 18 BENT It. RECEIVED VERT UT EVULUAT MAR 8 - 2000 NWRO-WR DEPTH OF DORING 201 Uth Who an DEPTH OF DORING 20 ' PAGE_ OF_ SCALE: I" . PAGE OF

329925 8-0	41 22-4E-11C
WATER WELL REPORT Driginal & 1" copy - Ecology, 2" copy - nwner, 3" copy - driller	CURRENT
BEAMENT OF	Notice of Intent No. DE 00851
ECOLOGY Construction/Decommission ("x" in circle)	
Construction Decommission ORIGINAL INSTALLATION	Unique Ecology Well ID Tag No. BAK230
Notice of Intent Number	Water Right Permit No.
PROPOSED USE: Demestic Dadestrial Manacipal	Property Owner Name Polygon NW
DeWater Imagation Test Well Other	Well Street Address S.212" St. & Riverview Blvd.
TYPE OF WORK: Owner's number of well (if more than one). New well Recondinged Method Day of Bored Driven	City Kent County King
Reconditioned Deput Bored Driven Deput Bored Driven Deput Research Deput Deput Deput Deput Deput Deput Deput Deput Deput Deput of completed well Deput of comple	Location NE1/4-1/4 NW1/4 Sec 11 Twn 22 R 4E KWM (s, t, r Still REQUIRED)
CONSTRUCTION DETAILS	
Casing Welder Durn from II to II. Installed: Diam from O N to 30 ft.	Lat/Long Lat Deg Lat Min/Sec
Threaded Diam. From ft. to ft.	Long Deg Long Min/Sec
Perforations: Yes Z No	Tax Parcel No. (Required)
Type of perforation used	CONSTRUCTION OR DECOMMISSION PROCEDURY. Formation: Describe by color, character, size of material and structure, and the
SIZE of pegfs	nature of the material in each stratum penetrated, with at least one eatry for to of information. (USE ADDITIONAL SHEETS IF NECESSARY.)
Atami fattimas's Alamin	MATERIAL FROM
Diam Z Slos sizet 30 from 30 ft. to 10 n.	Black wed to time O
Diam Slot size from 0, to 0.	Samas & woody
CravelPilter packets 12 Yes No Size of gravel/sand \$7000000000000000000000000000000000000	raud Debris .
Materials placed from 30 ft. to 3 ft.	grey 5ilt organics 271
Surface Scale Ves No To what depth 3 ii.	1 1 3 1
Material used in Sel Bent Chips Did any strata contain unusuble water? Yes No No	
Did any straia contain unusable water? Yes No Type of water? Depth of strata	
Method of sealing strata off	
PUMP: Manufacturer's Name	
Type: H.P.	
WATER LEVELS: Land-surface elevation above mean sea level fi	
Saatic leve: 10 ft below top of well Date 12-3-0-8	
Artesian pressure lbs. per square inch Date Artesian water is controlled by (cap, valve, etc.)	
WELL TESTS: Drawdown is amount water level is lowered below static level	ECEIVE.
Was a pump test made? Yes No If yes, by whom?	
Vield: yal /cun with D_ drawdown after brs.	JAN 2 2009
Yieldhtshtshts	
Yield gal/min. with ft. drawdown after hrs. Recovery data time taken as zero when pump turned offt beater level measured from well.	TRANTINETY: OF SOULDGY WELL DRILLING UNIT
top to water level)	THE PARELING OWN
Time Water Level Time Water Level Time Water Level	
프(프) (프) (프) (프)	
Dire of lest	
Bailer iestgal/min, withfl. drawdown afterhis	
Airrest ent /min. with stem set at ft. for brs.	
Anesian flowg.p.m. Date	Start Date 12-3-08 Completed Date 12-
Temperature of water Was a elsentical analysis made? Yes No	Start Date 12 3 Completed Date 12
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responstruction standards. Materials used and the information reported above are to the construction of t	true to my best knowledge and belief.
☑ Driller ☐ Engineer ☐ Trainee Name (pint) John Ronish Driller/Engineer/Trainee Signature	Drilling Company Stead Construction, Inc.
Driller or trainee License No. 1805	Address 9021 Waller Rd. E.
F TRAINEE: Driller's License No:	City, State, Zip Tacoma , WA, 98446
Priller's Signature: A during the smith	Registration No. SLEADC*325KQ Date 123

ECY 050-1-20 (Rev Dotts: If you need this document in an alternate format, please call the Water Resources Program to 360-407-6600.

Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

AND SANIA

22-4E-11C

WATER WELL REPORT Original & 1st cupy - Ecology, 2st cupy - uwner, 3st cupy - driller	CURRENT	
ECOLOGY Construction/Decommission ("x" in circle)	Notice of Intent No. DE 00851	
Construction	Unique Ecology Well ID Tag No. BAK230	
Decommission ORIGINAL INSTALLATION	Water Right Permit No.	
Notice of Intent Number	Property Owner Name Polygon NW	
PROPOSED USE: Oomestic Industrial Municipal DeWater Irrigation Test Well Other	Weil Street Address S.212" St. & Riverview Blvd.	
TYPE OF WORK: Owner's mamber of well (if more place one)	The state of the s	_
New well Reconditioned Method: Due Bored Driven Deepened Bullet Aug ev Cable Rotary Jened DIMENSIONS: Diameter of well toches, drilled n.	City Kent County King Location NE1/4-1/4 NW1/4 Sec 11 Twn 22 R 4E EW (s, t, r Still REQUIRED)	Or.
Depth of completed well ft. CONSTRUCTION DETAILS		AWM
Casing Welded Diam. from ft. le ft.	Lat/Long Lat Deg Lat Min/Sec Long Deg Long Min/Sec Tax Parcel No. (Required)	
Type of perforator used	CONSTRUCTION OR DECOMMISSION PROCEDURE	
Size of peets in. by in. and no. of perfs from ft. 10 ft. Screem: Yes No K-Pac Location	Formation: Describe by color, character, size of malerial and structure, and nature of the material in each stratum penetrated, with at least one entry for of information. (USE ADDITIONAL SIMETS IF NECESSARY.)	the ki
Model No.	MATERIAL FROM	T
Type Diam. Type 10 Model No. 30 from 30 ft in 10 ft. Diam. Stot size from ft to ft.	Black med to time O	+
Diare. Slot size from ft. to ft.	my Debcis i	1
Minerials placed from 30 H. to 3 A.	Siver & Havanies 07/	1
Surface Seal: Yes No To what pepth 2 1t.	grey 5ilt organics 271	13
Material userth seal Bent Chips		
Did any strata contain unusable water?		-
Type of water? Depth of suata Method of sealing strata off		+
PUMP: Manufacturer's Name		
Type: H.P.		-
WATER LEVELS: Land-surface elevation above mean sea level fi.		+
Static level 10 ft. fielow top of well Date 12-3-08		
Artesian pressure lbs. per square inch. Date		-
Artesian water is controlled by		+
WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump rest made? ☐ Yes		T
Yield:gal/min withft drawdown aftertus.	1	-
Yield gal/min with fr. drawdown after hrs.	CEIVE.	1
Yield: gal/min, with n. drawthown after brs. Recovery data (time taken as zero when pump turned off) (water level measured from well.)	2001	
sup to water level)	JAN 2 * 2009	-
Time Water Level Time Water Level Time Water Level		1
은 빛, '목 '무 푸 ! 큐 ! 큐 !	SPARTMORE, LE ECOLOGY	
Thate of test	MELL DRILLING UNIT	+
Bailer ins gal /min_ with fr: drawdown after hrs		
Airtest gal/min. with item set at ft. for brs.		
Artestan flow up m. Date	Start Date 12-3-08 Completed Date 12	_2

Driller Engineer Traince Name (Print) John Ronish	Drilling Company Slead Construction,	nc.
Driller/Engineer/Trainee Signature	Address 9021 Waller Rd. E.	
Driller or trainee License No. 1805	City, State, Zip Tacoma	. WA. 98446
IF TRAINEE: Driller's License No: Driller's Signature:	Contractor's Registration No. SLEADC*325KO	Date 1/23/001

Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

ENTERED HOLT DRILLING, INC. 22/40/2 R The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

Signature of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

Signature of Ecology does not be signatured by the Proportion of Signature Resource Protection Well Report Project Name Proposes Scale Date_ 10-18-96 KING SE WSE W Well Identification #___ B -1 Z T ZZN R 4E Drilling Method 4" USA Start Card R 27 831 Myce Cyeles Consulting Firm Soils & ENU. Ens. 2081 Depth of on Monument Casing Components in Feet Type of Surface Seal Coneres ID of Riser Pipe_ I " Type of Riser Pipe SCA 40 PUC Amount 6-Type of Connection But coupling Type of Backfill around Riser holeplus C.S.S. Diameter of Borehole - Screen Size or Type_ Type of Filter Material 10-20 C.S.S. Amount 21-RECEIVED NOV 13 1996 DEPT OF ECULOGY

RESOURCE PROTE		KETOKI	CURR Notice o	f Intent No.	RE03322
Construction/Decommission		386	1	ype of Well	
Construction	40.500			Resource Pro	otection
Decommission ORIGINAL INSTA	LATION Notice			Geotechnica	I Soil Boring
of Intent Number		Property Owner	PSE Subs	tation	
-		Site Address	S. 204th St. & E	Boeing Access R	d.
Consulting Firm GeoEngineers-R	bnombe	City_Kent			17-King
		1 10 00 00	P2230		EW
Unique Ecology Well ID		Location	1/4 NW 1/	+ SE Sec 2	Tier 22N R 4E or WW
Tag No. BBL - 85 857		-			
WELL CONSTRUCTION CERTS IN ATION TO A CONSTRUCTION OF THE PROPERTY OF THE PROP		Lat/Long (s.t.r			Lar Min/Sec
assumption of the well and assumptione will all Waster Co.	will to ret we note stand wide.	still Required)	Long Deg		Long Min/See
Marian and and an office days of the tar same the	ry best kee whiles and belief	2 2 20			
	TE Choste/	Tax Parcel No.		_	
	TE CHOSE	Cased or Uncases	Diameter	8	Static Level
Driller/Trainee Signature Driller/Trainee License No. 2682		_ cases or prioring	arsanna.		50000000
Entities France Literise 140.		Work/Decommissi	on Start Date	4/24/2009	
If traince, licensed driller's		1		William Pro	
Signature and License No		Work/Decommissi	on End Date	4-24-09	
	12000	W/00 003		P.	autino Denneintino
Construction/Design	Well Data	M03-503	T	rorn	nation Description
that it is the transfer that					
	Concrete Surface Se		ren.		TO FT
84342 Wadin	Depth	1.5	FT	3:14 5	240
	Blank Casing (dia x d	(ep) 2 "x" 5	- 53		
	Material	Puc			
			-		
	Backfill	-1.5	FT		
	Type	Bent			
[]				0	- FT
	Seal		_		
	Material.				
57					
	Gravel Pack	17	FF		
	Material	Sano			
		A AM TON		102	227
				0	· FT
	Screen (dia x dep.)	2 15			
	100000000000000000000000000000000000000				
10000000000000000000000000000000000000	Slot Size	010			
	Material	Ric			
	Well Depth	20	FT		
	Backfill				RECEIVED
	Material	-			MAY 05 2009
V/////////////////////	Total Hole Depth		FT		and the state of
MALLO ALCONOMICA COM					Dept a Ecology -

RESOURCE PROTECTION WELL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission 7 > 9 7	Notice of Intent No. REO 332 2 Type of Well		Notice of Intent No. RE03322 Type of Well
Construction/Occommission 3393	8 7 Resource Protection	Construction/Decommission 33938	Resource Protection
Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring	Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring
of Intent Number	Property Owner PSE Substation	of Intent Number	Property Owner PSE Substation
Alexander Marchael Company	Site Address S. 204th St. & Boeing Access Rd.	Convelling Firm Confessioner Redward	Site Address S. 204th St. & Boeing Access Rd.
Consulting Firm GeoEngineers-Redmond	City Kent County 17-King		City Kent County 17-King
Unique Ecology Well ID Tag No. BBL -874	Location 1/4 NW 1/4 SE Sec 2 Twn 22N H 4E	WWM ETAB. No. 884 - 853	Location 1/4 NW 1/4 SE 500 2 Twn 22N R 4E or WWM
WELL CONSTRUCTION CURTS ICATION I combined analysis accept to possibility for	Lat/Long (s.t.r Lai Deg Lat Min/Sec still Required) Long Deg Long Min/Sec	WELL CONSTRUCTION CERTIFICATION: 1 unmarated study accept insportability for	Lat/Long (s,t,r Lat Deg Lat Min/Sec still Required) Long Deg Long Min/Sec
consideration of this well and the pringhance with all Washington well to intrincible transfers. It washing used and the information expensed above all projects may be if his original and belief	still Required) Long Leg Long Ville Sec	construction of the medi, and an enemptime with all Wathington well anticontrol mend with. 3 State labelone and the information in pureful along we true to may best too whole and belief	suit required) Long Leg
	Tax Parcel No.		Tax Parcel No.
X Driller Trainee Sume (Print) Steven house Driller/Trainee Signature Driller/Trainee License No. 2882	Cased or Uncased Diameter & Static Love	X Torder Traines Nime (frm)	Cased of Uncased Diameter 8 Static Level 7
Driller/Traince License No. 2682		Driller/Fraince Signature Driller/Fraince License No. 2682	La contraction of the contractio
	Work/Decommission Start Date 4/24/2009	If trainee, licensed driller's	Work/Decemmission Start Date 4/24/2009
If trainee, licensed driller's Signature and License No.	Work/Decommission End Date 4-24-09	Signature and License No.	Work/Decommission End Date 4-24-69
Construction/Design Well Data	W09-203 Formation Description	Construction/Design Well Data	W09-203 Formation Description
Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dcp) Slot Size	1.5 FT 0 - 20 FT	Material Backfill Type Scal Material Gravel Pack Material Screen (dia x dep) Slot Size	Seal 3 FT 5:(1) Sead FT
Well Depth Backfill Material Total Hole Depth	RECEIVED MAY 05 2009	Well Depth Backfill Material Total Hole Depth	RECEIVED MAY 05 2009
			Dept of Ecologic

SUBMIT ONE WELL REPORT PER	WELL INSTALLED)		votice of Intent No.	RE03322
Construction/Decommission	339388		Type of Well Resource Pr	
Decommission ORIGINAL INSTAI	LATION Notice	District Outros D		I Soil Boring
of Intent Number			SE Substation th St. & Boeing Access R	d
Consulting Firm GeoEngineers-Re	edmond	City Kent		17-King
Unique Ecology Well ID Tag No. 88L - 853		Location v4 N	IW 1/4 SE Sec 2	Two 22N R 4E or WWN
FELL CONSTRUCTION CERTIFICATION: I communicated as		Lat/Long (s,t,r Lat D		Lat Min/Sec Long Min/Sec
enctrusion of the hell, and as encultance with all Wathings to a lide contact the information reprinted allows we true to a		still Required) Long	Leg	Long way sec
	2-1	Tax Parcel No.		
X Driller Trainee Name (Irms) Driller/Frainee Signature	echosle /	Cased of Uncased Diam	eter 8'	Static Level 7
Onller/Trainee License No. 2682				
f trainee, licensed driller's		Work/Decummission Star	1 Date 4/24/2009	_
Signature and License No.		Work/Decommission End	Date 4-24-6	9
Construction/Design	Well Data	W09-203	Ford	nation Description
THE PROPERTY OF THE PARTY.				
	Concrete Surface Sea Depth		7T = 0 S:(#Y	Sand FT
	Blank Casing (dia x de			
	Material	Pul		
	Backfill	4	er e	
	Туре	Rent		Per.
	Seal		0	FT FT
	Material			
克	1	12	-r-	
	Gravet Pack Material		FT	
	Vialerial	Janu	11 15 11	
	TT LOUIS NO.	******	0	FT FT
	Screen (dia x-dep)	2"110		
	Slot Size	010		
	Material	Puc		
	Well Depth	20	FT	
	Backfill			RECEIVED
	Material			MAY 05 2009
		-	FI	IMI 03 2003
V/////////////////////////////////////	Total Hole Depth		11	epi o -coloca-

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

SCALE: 1" = ______ ECY 050-12 (Rev. 11/89)

METHOD: HSA Brian G (905 Cascade Drilling	STREET AD	PRESS OF WELL:
RE: BANIC	GROUNDS	JRFACE ELEVATION: N/A
NTATIVE: ATLEN	Vandelline DEVELOPE	No.
	8579 WELL DATA	FORMATION DESCRIPTION
AS-BUILT	WELLUAIA	
द्धा । दिल	WELL COVER	black /brown silt +
		black / brown silt +
	CONCRETE SURFACE SEAL DEPTH = 7/ft	send +
8 8		- ft.
88	PVC BLANK Z"x 5"	
8 8		1
3 8	BACKFILL Z ft. TYPE: bent. Chaps	
2	Tire: pont. Cuys	ft.
	PVC SCREEN Z 11/51	7
	SLOT SIZE: 020	
	MATERIAL: 2/12 Sound	
	MATERIAL 9/2 SALEY	RECEIVED
		RECEI
		DEC 2 9 1998
		DEPT OF ECULUGY
1206		DEDT OF EUGLO

WELL IDENTIFICATION NO. AEV	(Equipment Co.E.) COUNTY:	NEW NEW SOC 2 TWO 22N A 46 ADDRESS OF WELL: 140-8455 5t, Kent WA
nouses frianto lonse	_194	140-8455 5t, Kent wi
FIRM: Cascade Drilling		EVEL ELEVATION:
SIGNATURE BUNCH	SI ASSOC. INSTALL	SURFACE ELBYATION: N/A
REPRESENTATIVE: Arlene	Vandellige DEVELOR	PED:NO
	8579	
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
च्छा । दिस	WELL COVER	0 - 20ft.
		black / brown soll is
	CONCRETE SURFACE SEAL	semol
- 関関	DEPTH = 7/ft	
	2. /	- ft.
1 8 8	PVC BLANK Z "x 5"	
1 8 8		
+ 88	PACKETLI, Z ft.	
1 1 1	BACKFILL & ft. TYPE: bent. Chips	-
		- ft.
	min empress 2 11/5.	
T	PVC SCREEN 2 "x 15. SLOT SIZE: 020	5.
		5/4/3
	V	
<u> </u>	MATERIAL: 2/12 SANCE	7
THE	MATERIAL: 412 SIM C	
T		
		110.
	WELL DEPTH ZO:	<u>"</u>
T		111
T.		
4		

Sella (Equipment Cost) COUNTY: King

AEM 222 VOCATIONNEW NEW SOE 2 TWO 224 R. 4E START CARD NO. RO39878 PROJECT NAME: Sear Sella (Equipment Cat. WELL IDENTIFICATION NO. AEM 222 The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. 19440 - 8415 St Kent WA DRILLING METHOD: 458 DAILLER: Brian G Goses WATER LEVEL ELEVATION: 6 Cascade Drilling, Inc. GROUND SURFACE ELEVATION: N/A
INSTALLED: /// 9/56 CONSULTING FIRM: Nowick & ASSOC. DEVELOPED: NO REPRESENTATIVE: Arlene Vande Wiege FORMATION DESCRIPTION WELL DATA AS-BUILT - 20 ft. WELL COVER CONCRETE SURFACE SEAL DEPTH = 7/ft PVC BLANK Z "x 5 BACKFILL PVC SCREEN Z "x 15, SLOT SIZE: 020 GRAVEL PACK 16 Ft. MATERIAL: 2/12 SVM d WELL DEPTH 20. SCALE: 1" ._

ECY 050-12 (Rev. 11/09)

PROJECT NAME: Star Sell	n 223	
DRILLING METHOD: HSA		STREET ADDRESS OF WELL: 19440 - 845 St Kent W
nouses Brian 6 6050		19440 - 8415 St , Aent _ w
Cascade Drilling	Inc.	WATER LEVEL ELEVATION: 6
DIGULATURE P		GROUND SURFACE ELEVATION: N/A
CONCLUTING CIGH. Along LICK	1 4 ASSOC.	INSTALLED: 1777
REPRESENTATIVE: Arlene	Vandellege	DEVELOPED:NO
(O) 1915 (A) (A)	7579	The state of the s
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
AS-BUILT		
of the second second		0 - 20ft.
ाहरू । । क्रिय	WELL COVER	1 1 1 11
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		black / brown silt
	CONCRETE SURFAC	E SEAL Seme
- 33 13	DEPTH = 7/ft	
1 2 2	1.5	- ft.
1 8 8	PVC BLANK Z	× 5'
1 1 44	PVC BLANK	
. 88		
- 88	BACKFILL Z TYPE: bend.	£1.
1 8	HACKETILL .	Chiefe
1 9 9.	Tire ponti	
+ MH	PVC SCREEN 2	nu151
	SLOT SIZE:	120
	5552 5254	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
		10. 40
	GRAVEL PACK	16 st.
	MATERIAL: 2/12	STATE
	The second	
		Size and the second
	WELL DEPTH 2	20. "
1 100	11000 000 000	
1		
V		
× 1.		4 of 4

Original & 1" copy - Ecology, 2" copy - owner, 3" copy - driller	Notice of Intent No.	200	
ECOLOGY Construction/Decommission ("x" in circle)			_
Construction	Unique Ecology Well ID Tag No. 676 /	-	
Decommission ORIGINAL INSTALLATION Notice of Intent Number	Water Right Permit No. N/A		
PROPOSED USE: Domestic Industrial Municipal	Property Owner Name SEAGALE PROPERTIES		
☑ DeWater ☐ Irrigation ☐ Test Well ☐ Other	Well Street Address S 200TH ST		
TYPE OF WORK: Owner's number of woll (if more than one)	City TUKWILA WA County KING		
New well ☐ Reconditioned	Location SE1/4-1/4 NW1/4 Sec 2 Twn 22N R	4E	
DIMENSIONS: Diameter of well 12 inches, drilled 40 ft.	(s, t, r Still REQUIRED)	45	Or Or
Depth of completed well 40 ft. CONSTRUCTION DETAILS	The second secon		WWM 🛭
Casing # Welded T " Diam from C ft to 40 ft	Lat/Long Lat Deg Lat Min/S	ec	
Casing ■ Welded 1 = "Diam from C ft. to 40 ft. Installed: □ Liner installed "Diam from ft. to ft. □ Threaded "Diam From ft. to ft.	Long Deg Long Min		
Perforations: Yes No	Tax Parcel No. (Required)	-	-
Type of perforator used	CONSTRUCTION OR DECOMMISSION	BBOCEBUI	25
SIZE of perfsin, by in and no, of perfsfromft, toft	Formation: Describe by color, character, size of material and	structure, an	d the kind as
Screens: Ves No K-Pac Location ZO-40	nature of the material in each stratum penetrated, with at least of information. (USE ADDITIONAL SHEETS IF NECESS	ARY.)	or each chan
Manufacturer's Name	MATERIAL	FROM	TO
Type PUC Model No. Diam 12 Slot size 20 from 20 ft. to 40 ft.	Brown	-	
Dinan Slot size from fl. to fl.	Fill Bown	6	1
Gravel/Filter packed: Yes No Size of gravel/sand	Sondy loam	1	1
Materials placed from _Sfi to _40fi.	Brown		17
Surface Seal: X Yes No To what depth? 5 ft.	Sand D Silt	7	1
Material used in seal Berton: 12	0.	-0	38
Did any strata contain enusable water?	Clay Gray	38	140
Method of sealing strata off			10
PUMP: Manufacturer's Name		-	
Type: H.P			
WATER LEVELS: Land-surface elevation above mean sea levelft.			1
Static level 7 ft below top of well Date 5-1-21/3		-	
Artesian pressure lbs. per square inch Date	Tim	w	
Artesian water is controlled by (cap, valve, etc.)	0-	70	1
WELL TESTS: Drawdown is amount water level is lowered below static level	<u> </u>	2	+-
Was a pump lest made? Yes No If yes, by whom?	4	N	
field:gal/inin, withft drawdown afterhrs field:gal/min, withft drawdown afterhrs	m:		
reld: gal/min with ft drawdown after brs	15	78	11
ecovery data (time taken as zero when pump turned aff) finater level measured from well	S)		1
op to water level) ime Water Level Time Water Level Time Water Level	-t	Čį.	-
When Level			1
		-	1
rate of test	1000	56.2	-
ailer test gal (mm with ft. drawdown after brs.	Law on		
irtestgal/min. with stem set atft_forfus.	11 07 X	11.1	-
The state of the s	Start Date 5-1-2613 Completed Da		

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

construction standards. Materials used and the information reported above are true to	my best knowledge and belief.	
Driller Engineer Trainee Name (Print) Dantel Congester	Drilling Company Slead Construction, in	c.
Driller/Engineer/Trainee Signature Down Concer	Address 9021 Waller Rd. E.	
Driller or trainee License No. 2477	City Place Tile Transport	and white
IF TRAINEE: Driller's License No:	City, State, Zip Tacoma	, WA, 98446
Driller's Signature:	Contractor's Registration No. SLEADC*325KO	Date

ECY 050-1-20 (Rev 06/08) If you need this document in an alternate format, please call the Water Resources Program at 360-407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Il Report	
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doe/	
artment of Ecology does NOT Warranty the Data and/or the Information or	Wilder State of the Control of the C
nent	Wi
epartn	Dri Dri
The Depa	1F Dri
F	E

WATER WELL REPORT Original & 1" copy - Ecologs, 2" copy - owner, 3" copy - driller - ECOLOGY Construction/Decommission ("x" in circle) Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number PROPOSED USE: Demestic Industrial Manicipal DeWater Irrigation Test Well Oriber TYPE OF WORK: Owner's number of well (if more than one) New well Reconditioned Dug Bored Driven Depend Reconditioned Method Dug Bored Driven Depend Cable Rotary Jetted DIMENSIONS: Diameter of well 12" inches, drilled B. Depth of completed well 14" Diam. from fi. 10 fi. 10 Installed: Liner installed Dum From fi. 10 fi. 10 Perforations: Yes No Type of perforator used SiZE of perfs in by in and no of perfs from fi. to fi. 10 BENERAL OF RESERVATION Fi. 10 Fi. 10 Perforations: Yes No Type of perforator used SiZE of perfs in by in and no of perfs from fi. to fi. 10 BENERAL OF RESERVATION Fi. 10 Fi. 10 Perforations: Yes No Type of perforator used SiZE of perfs in by in and no of perfs from fi. to fi. 10 BENERAL OF RESERVATION fi. 10 Description Type of perforator used fi. 10 Description fi. 10 fi. 10 Descript	CURRENT Notice of Intent No. GETS DEC 17 Unique Ecology Well ID Tag No. GETS 18 Water Right Permit No. N/A Property Owner Name SEAGALE PROPERTIES Well Street Address S 200 TH ST City TUKWILA WA County KING Location SE I/4-1/4 NWI/4 Sec 2 Twn 22N R 4I (s, t, r Still REQUIRED) Lat/Long Lat Deg Lat Min/Sec Long Deg Long Min/S Tax Parcel No. (Required) CONSTRUCTION OR DECOMMISSION PR Formation Describe by color, character, size of material and st	E E	E.
Screens: K Yes No K-Pac Location PR ZO - 43	nature of the material in each stratum penetrated, with at least of information. (USE ADDITIONAL SHEETS IF NECESSAF	one entry for	r each change
Manufacturer's Name Type FVC Model No		FROM	TO
Type	F;U	0	
Gravel/Filter packed: X Yes No Size of gravel/sind 3/6 -	Sandy loan	(1
Surface Seat: S Yes No To what depth? 5 ft.	- 11	,	6
Material used in seal Bestorite	Sand a silt	6	139
Did any strata contain unusable water? Yes No.	Clan	39	. 37
Type of water? Depth of strata		-	140
Method of sealing strats off			
PUMP: Manufacturer's Name			
Турс			
WATER LEVELS: Land-surface elevation above mean sea level 1 ft. Static level 1 ft. below top of well Date 5-3-2013 Artesian possure libs: per square inch Date			
Artesian water is controlled by	_0 -		
WELL TESTS: Drawdown is amount water level is lowered below static level	Top 3		-
Was a pump test made? Yes No If yes, by whom?	(1 =		
Yield:gal./min. withfl, drawdown afterhrs Yield:gal./min. withfl, drawdown afterhrsi	À 3		
Vield: gal/min with n drawdown after hrs.	L 1/2		
Recovery data (time taken as zern when primp turned off) (water level measured from well top to water level)	1 22		
Time Water Level Time Water Level Time Water Level			
	7. (6)		
	7.100		
Date of fest		20	
Baller testgal./min. withfi drawdown afterhrs	2717 Am		
Airtestgal/min. with stem set atft. forhts.	27 07 07	ė:	
Artesian flow g.p.m. Date			200
Temperature of water Was a chemical analysis made? Vet No.	Start Date 5-3-2013 Completed Date	3-3-	2013

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☑ Driller ☐ Engineer ☐ Trainee Name (Peier) ☐ Daniel Casparker Driller/Engineer/Trainee Signature ☐ David Casparker	Drilling Company Slead Construction, I	nc
	Address 9021 Waller Rd. E.	
Driller or trainee License No. 2677	City State 2in Toronto	man demand
IF TRAINEE: Driller's License No:	City, State, Zip Tacoma	. WA, 98446
Driller's Signature:	Contractor's Registration No. SLEADC*325KO	Date

ECY 050-1-20 (Rev 06/08) If you need this document in an alternate format, please call the Water Resources Program at 360-407-6600.

Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 871-833-6341.

Original & I" copy - Ecology, 2nd copy - owner, 3nd copy - driller	Notice of Intent No. Dec	125	3
Construction Construction	Unique Ecology Well ID Tag No. BIN /		
Decommission ORIGINAL INSTALLATION			
Notice of Intent Number	Water Right Permit No. N/A		_
PROPOSED USE: Domestic Industrial Municipal DeWater Inrigation Test Well Other	Property Owner Name SEAGALE PROPERTIE	S	
DeWater Infigation Test Well Other TYPE OF WORK: Owner's number of well (if more than one)	Well Street Address S 200TH ST		
New well Reconditioned Method: Dut Bored Driven	City TUKWILA WA County KING		
Deepened Cable Rotary Setted DIMENSIONS: Diameter of well 12 inches, drilled 40 ft. Depth of completed well 40 ft.	Location <u>SE</u> 1/4-1/4 <u>NW</u> 1/4 Sec 2 Twn 22N (s, t, r Still REQUIRED)	R 4E	EWM []
CONSTRUCTION DETAILS	English and English and Control		1
casing Welded 12 Diam from 6 to 18 n. nstalled: Union installed Diam from 0. to 18.	Lat/Long Lat Deg Lat Min Long Deg Long M		-
Threaded "Diam From ft. to ff.	Tax Parcel No. (Required)	-	57-
ype of perforator used 12E of perfs	CONSTRUCTION OR DECOMMISSIO Formation: Describe by color, character, size of material nature of the material in cach stratum penetrated, with at of information. (USE ADDITIONAL SHEETS IF NECE	and structure, a	and the kind
Anufacturer's Name	F:II Brevo	FROM	TO
mm 12 Slot size 20 from 20 ft to 40 ft	E:II Rum	0	12
iam Slot size from ft. to ft.	Sondy loan Brown	2	, -
ravel/Filter packed; S Yes No Size of gravel/sand			6
reface Seal: 6 Yes No To what depth? 5 ft.	Sand & Sill Brown	6	140
sterial used in seal Benton: te			70
d any strata contain unusable water?		115	4
pc of water? Depth of strata		-	-
ethod of sealing stratu off			
IMP: Manufacturer's Name			
ATER LEVELS: Land-surface elevation above mean sea levelft	1		
tic level 7 ft. below top of well Date 4-30-20/3		-	
estan pressure lbs. per square-inch Date	7	9 -	
esian water is controlled by (cap, valve, etc.)	S	+ 4	
ELL TESTS: Drawdown is amount water level is lowered helow static level	2		-
is a pump test made? Yes No If yes, by whom?	E		
idgal/min_withft_drawdown_afterhrs. idgal/min_withft_drawdown_afterhrs.		2	
idgal/min. witift. drawdown afterhrs.	8.	-	
covery data filme taken as zero when pump turned off) (water level measured from well to water level)	er.	- CO	1
re Water Level Time Water Level Time Water Level	74	59	
	197		
	20-33-3	- 2.0	
e of lest			
er testfis. drawdown afterfis.		Siex	
		18 11 11	
testgal/min. with stem set atR forhrs. estan flowg p in Date	Start Date 4-30-20/3 Completed I	5.4	

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well

☑ Driller ☐ Engineer ☐ Traince Name (Print) Dancel Corport	Drilling Company Slead Construction, In	ne:
Driller/Engineer/Trainee Signature Down! Caputs	Address 9021 Waller Rd. E.	
Driller or trainee License No. 2677	City, State, Zip Tacoma	III enisi
IF TRAINEE: Driller's License No:		, WA, 98446
Driller's Signature:	Contractor's Registration No. SLEADC*325KO	Date

ECY 050:1-20 (Rev 06/08) If you need this document in an alternate format, please call the Water Resources Program at 360:407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Construction Decommission ORIGINAL INSTALLATION		er, 3 rd copy – driller
Decommission ORIGINAL INSTALLATION Notice of Internt Number Notice of Internt Number PROPOSED USE: Donestic Industrial Municipal December Irrigation Test Well Other Other December Irrigation Test Well Other		" in circle)
PROPOSED USE: Domestic Industrial Municipal Dewater Irrigation Test Well Other		V
DeWater Irrigation Test Well Other	Notice of Intent Number	
New well	PROPOSED USE: ☐ Domestic ☐ Industrial ☐ M ☑ DeWater ☐ Irrigation ☐ Test Well ☐ Od	unicipal ser
Depth of completed well \$40. ft. CONSTRUCTION DETAILS Caning	TYPE OF WORK: Chyner's number of well (if more than one)	
Depth of completed well \$40. ft. CONSTRUCTION DETAILS Caning	New well Reconditioned Method: Dug Cable	Bored Driver Rotary Jetted
Caning	Depth of completed well 46 ft.	l.
Perforance:	CONSTRUCTION DETAILS	ce
Perforance:	Installed: Liner installed Diam. From R. i	nn
SIZE of perfs in. by in and no of perfs from ft to ft Screens: If Yes No K-Pac Location In. to ft Manufacturer's Name Type Property Model No In. Diam Slot size From 20 ft to ft Diam Slot size From 10 ft Diam Slot size In. Gravel/Filter packed: Yes No Size of gravel/sand Materials placed from In to fo In. Gravel/Filter packed: Yes No Size of gravel/sand Material used in seal Record Material used in seal Record No To what depth? Material used in seal Record Material used in seal Record Material used so sealing strata off Depth of strata Method of sealing strata off PUMP: Manufacturer's Name Type: H.P. WATER LEYELS: Land-surface elevation above mean sea level ft. Satic level ft. below top of well Date W-2Q-2013 Artesian pressure Its, per square inch Date Artesian water is controlled by (cap, valve, etc.) WELL TESTS: Drawdown of well Date Well Date Material used ft. ft. Well Test ft. ft. Well Test ft. ft. Well gal /min with ft. drawdown after hrs. Riscovery data ft. ft. ft. Riscovery data ft. ft. ft. Riscovery data ft. ft. ft. Water Level Time Water Level Time Water Level Ballet rest gal /min with ft. drawdown after hrs. Riscovery data ft. ft. ft. Water Level Time Water Level Time Water Level Water Level ft. ft. ft. ft. ft. Water Level Time Water Level ft. Water Level ft. ft. ft. ft. ft. ft. Water Level ft. Water Level ft. ft.	Perforations: Yes No	
Screens: A Yes No K-Pac Location 20-40 Manufacturer's Name Type Dec Model No Manufacturer's Name Type Dec Time Model No Manufacturer's Name Type Time Model No Materials placed from Time Material spaced from Time Material spaced in seal Record No To what depth? Fi. Material spaced in seal Record No To what depth? Fi. Material spaced in seal Record No To what depth? Fi. No Type of water? Depth of strata No Depth of strata No No No No No No No N		
Screens: A Yes No K-Pac Location 20-40 Manufacturer's Name Type Dec Model No Manufacturer's Name Type Dec Time Model No Manufacturer's Name Type Time Model No Materials placed from Time Material spaced from Time Material spaced in seal Record No To what depth? Fi. Material spaced in seal Record No To what depth? Fi. Material spaced in seal Record No To what depth? Fi. No Type of water? Depth of strata No Depth of strata No No No No No No No N	SIZE of perfsin_by in and no_of perfsfrom	ft toff
Type PLE from fit to Get H. Statist level fit from fit to Get H. Statist level fit from fit to Get H. Statist level fit from fit fit for fit for fit from fit fit for fit for fit fit for fit	Screens: Yes No K-Pac Location 20	-40
Dam IL Not size of from Le ft to It is No ft. Diam Slot size from ft. he ft. CravelFitter packed: Ves No Suce of gravel/sand Americal used in seal Section ft. he ft. Surface Seal: Seal: Yes No To what depth? It Material used in seal Section ft. he ft. Did any strata contrain musable water? Ves No Toward of strata Method of sealing strata off PUMP: Manufacturer's Name Type: H. P. WATER LEVELS: Land-surface elevation above mean sea level ft. Static level ft. he below top of well: Date ft. Static level ft. he below top of well: Date ft. Static level ft. Static level ft. he per square inch Date ft. Static level ft. Static level ft. he forward ft. he ft. Static level ft. he ft. Static level ft. he ft. Static level ft. Static f		
Diam Slot size from ft. to ft. CaraviliFilter packed: Yes No Size of gravel/mand Materials placed from ft. to ft. No Size of gravel/mand Materials placed from ft. to ft. No Size of gravel/mand Materials used in seal Section 1. Surface Seal: Material used in seal Section 1. No To what depth? ft. No Toped of strata Material used in seal Section 1. No Toped of Strata Method of sealing strata off PUMP: Manufacturer's Name Type of water? Depth of strata Method of sealing strata off PUMP: Manufacturer's Name Type: H.P. WATER LEVELS: Land-surface elevation above mean sea level ft. Static level ft. B. per square inch Date ft. Static level ft. Static l	Type PUC Model No	
Surface Seals Yes No To what depth? S. ft. Material used in seal Section No To what depth? S. ft. Material used in seal Section No To what depth? S. ft. Material used in seal Section No To what depth? S. ft. Type of water? Depth of strata Method of sealing strata off PUMP: Manufacturer's Name Type: H.P. WATER LEVELS: Land-surface elevation above mean sea level ft. Static level ft. ft. below top of well. Date	Diam Slot size from the m	
Surface Seal: Method years No. To what depth? S. ft. Material used in seal: Secretary Material used in seal: Secretary Depth of strata Method of sealing strata off PUMP: Manufacturer's Name Type: H.P. WATER LEVELS: Land-surface elevation above mean sea level: ft. Static level: T. ft. below top of well: Date: Y-2,9-20/3 Artesiam water is controlled by: (cap, valve, etc.) WELL TESTS: Drawdown is amount water level is lowered below static level: Was a pump test made? Yes No. If yes, by whom? Yeld: gal/inm with ft. drawdown after firs. Yeld: gal/inm with ft. drawdown after firs. Yeld: gal/inm with ft. drawdown after firs. Yeld: gal/inm seals of year when pump turned off; (water level or exampled from well into the water level) Time: Water Level: Time: Water Level: Time: Water Level Bailer test: gal/inm with ft. drawdown after firs. Artesian flow: g.p.m. Date	Gravel/Filter packed: Yes No Size of gravel/sand	¥-
Material used in seal Bectorial Did any strata contain munable water?		
Did any strata contain munable water? Depth of strata Depth of strata		
Type of water? Depth of strata Method of sealing strata off PUMP: Manufacturer's Name Type: H.P. WATER LEVELS: Land-surface elevation above mean sea level ft. Static level ft. ft. below top of well. Date ft. Artesian pressure liss, per square inch. Date Artesian pressure is controlled by (cap, valve, etd.) WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No If yes, by whoon? Yeld gal/min with ft. drawdown after firs. Water Level Time Water Level Time Water Level Date of test gal/min with ft. drawdown after firs. Bailes test gal/min with ft. drawdown after firs. Bailes test gal/min with ft. drawdown after firs. Bailes test gal/min with ft. drawdown after firs. Artesian flow g.p.m. Date		
Method of scaling strata off PUMP! Manufacturer's Name Type: H.P. WATER LEVELS: Land-surface elevation above mean sea level fl. Static level fl. below top of well Date 4-29-20/3 Artesian pressure liss, per square inch Date Artesian writer is controlled by (cap, valve, etc.) WELL TESTS: Drawdown is amoent water level is lowered below static level Was a pump test made? Yes No Hyes, by whom? Yeld gal/min with fl. drawdown after free gal/min with fl. drawdown after firs. Witeld gal/min with fl. drawdown after firs. Witeld gal/min with fl. drawdown after firs. Water Level Time Water Level Time Water Level Date of test gal/min with fl. drawdown after firs. Water Level Time Water Level Time Water Level Water Level Time Water Level Time Water Level Water Level Time Water Level Time Water Level Afters gal/min with fl. drawdown after firs. Witers gal/min with stem set at fl. for firs. Artesian flow g.p.m. Date		
PUMP: Manufacturer's Name Type: H.P. WATER LEVELS: Land-surface elevation above mean sea level fl. Static level 7 ft. below top of well Date	Type of unter? Dead - Facet	10
Type: H.P WATER LEVELS: Land-surface elevation above mean sea level		10
WATER LEYELS: Land-surface elevation above mean sea level	Method of sealing strata off	10
Static level	Method of sealing strata off PUMP: Manufacturer's Name	10
Artesian water is controlled by	Method of scaling strata off PUMP: Manufacturer's Name Type: H.P.	
WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No If yes, by whoon? Yeld gal/min with fi. drawdown after his. Yield gal/min with fi. drawdown after his. Recurry data (time taken or zero when pump turned off) (water level one-assured from well ground to the water level ground to the water level ground to t	Method of scaling strata off PUMP: Manufacturer's Name Type: H.P WATER LEVELS: Land-surface elevation above mean sea level Static level 7. B. below top of well. Date 4-29-2	ft.
Was a pump test mide? Yes No If yes, by whom? Yield gal/min with fi, drawdown after firs. Yield gal/min with fi, drawdown after his. Recovery data (time taken as zero when pump turned off) (water level assauced from well op to water level. Time Water Level Time Water Level Time Water Level Date of test gal/min with fi, drawdown after his. Witest gal/min with fi, drawdown after his. Witest gal/min with stem set at fi for his.	Method of sealing strata off PUMP: Manufacturer's Name Type: H.P. WATER LEVELS: Land-surface elevation above mean sea level Static level 7. ft. below top of well Date 4-29-2 Artesian pressurelins per square inch. Date	ft.
Yield gal/min with ft, drawdown after hts. Yield gal/min with ft, drawdown after hts. Yield gal/min with ft, drawdown after hts. History data films laken as zero when pump turned off) (water level measured from well op is water level.) Time Water Level Time Water Level Time Water Level Date of test gal/min with ft, drawdown after hrs. Airtest gal/min with sem set at ft for hrs. Airtestan flow g.p.m. Date	Method of scaling strata off PUMP; Manufacturer's Name Type: H.F WATER LEVELS: Land-surface elevation above mean sea level Static level 7. B. befow top of well. Date 4-29-2 Artestan pressure liss, per square inch. Date	o/3_
Yield gall/min with ft drawdown after hts. Vield gall/min with ft drawdown after hts. Riczwery data (time taken as zero when pump turned off) (water level as eastered from well up to water level) Time Water Level Time Water Level Time Water Level Date of test: Balles test	Method of sealing strata off PUMPF, Manufacturer's Name Type: H.P. WATER LEVELS: Land-surface elevation above mean sea level Static level	o/3(cap, valve, etc.)
Vield	Method of sealing strata off PUMP: Manufacturer's Name Type: H.P. WATER LEVELS: Land-surface elevation above mean sea level Static level The below top of well. Date Y-Z-Q-Z Artesian pressure Jins per square inch. Date Artesian water is controlled by. WELL TESTS: Drawdown is amount water level is lowered below:	o/3(cap, valve, etc.)
fliczwory data (time taken as zero when pump (urned off) (water level oreasured from well up in water level) Time Water Level Time Water Level Time Water Level Date of test:	Method of scaling strata off PUMP: Manufacturer's Name Type: H.F. WATER LEVELS: Land-surface elevation above mean sea level Static level T. fi. below top of well. Date Y-29-2 Artesian pressure. Jins per square inch. Date Artesian water is controlled by WELL TESTS: Drawdown is amount water level is lowered below: Wes a pump test made? Yes No. If yes, by whom? Yieldgal/min_with _ fi. drawdown afterins.	o/3(cap, valve, etc.)
Time Water Level Time Water Level Date of test Satist test	Method of scaling strata off PUMP: Manufacturer's Name Type: H.P: WATER LEVELS: Land-surface elevation above mean sea level Static level T. B. below top of well Date Y-Z-Z-Z Artesian pressure liks per square inch Date Artesian pressure liks per square inch Date Artesian water is controlled by WELL TESTS: Drawdown is amount water level is lowered below Was a pump test made? Yes Na If yes, by whom? Yield gal /min with fi drawdown after hrs. Yield gal /min with fi drawdown after hrs.	o/3(cap, valve, etc.)
Batter testgal./min. withft. drawdown afterbrs Africstgal./min. with stem set atft. forbrs. Artesian flowg, p.m. Date	Method of scaling strata off PUMP: Manufacturer's Name Type: H.F. WATER LEVELS: Land-surface elevation above mean sea level Static level T. B. befow top of well. Date Y-29-2 Artesian pressure Ilss, per square inch. Date Artesian water is controlled by WELL TESTS: Drawdown is amount water level is lowered below: WELL gal /mm with fi. drawdown after ins. Yield gal /mm with fi. drawdown after his. Yield gal /mm with fi. drawdown after his. Yield gal /mm with fi. drawdown after his. Well gate with fi. drawdown after his. Well gate with fi. drawdown after his. Well gate with fi. drawdown after his.	ft. O/3 (cap, valve, etc.)
Batter testgal./min. withft. drawdown afterbrs Africstgal./min. with stem set atft. forbrs. Artesian flowg, p.m. Date	Method of scaling strata off PUMP: Manufacturer's Name Type: H.P: WATER LEVELS: Land-surface elevation above mean sea level Static level	ft. (cap, valve, etc.) (cap, valve, etc.) measured from well
Salier test	Method of scaling strata off PUMP: Manufacturer's Name Type: H.P: WATER LEVELS: Land-surface elevation above mean sea level Static level	ft. (cap, valve, etc.) (cap, valve, etc.) measured from well
Africstgal/min_with stem set atft. forbrs. Africstan flowg.p.m. Date	Method of scaling strata off PUMP: Manufacturer's Name Type: H.P: WATER LEVELS: Land-surface elevation above mean sea level Static level	ft. (cap, valve, etc.) (cap, valve, etc.) measured from well
artesian flow	Method of sealing strata off PUMF: Manufacturer's Name Type: H.P WATER LEVELS: Land-surface elevation above mean sea level Static level	ft. (cap, valve, etc.) (cap, valve, etc.) measured from well
Artesian flow	Method of scaling strata off PUMP: Manufacturer's Name Type: H.P. WATER LEVELS: Land-surface elevation above menn sea level Static level	ft. (cap, valve, etc.) (cap, valve, etc.) measured from well
Comparature of Water Was a shareful and the in the Charles	Method of scaling strata off PUMP: Manufacturer's Name Type: H.P: WATER LEVELS: Land-surface elevation above mean sea level Static level T ft below top of well Date Y-2Q-2 Artessan pressure like per square inch Date Artessan water is controlled by WELL TESTS: Drawdown is amount water level is lowered below: Was a pump test made? Yes No. If yes, by whom? Yield gal.inin with ft drawdown after ins. Yield gal.inin with ft drawdown after bris. Fincurary data films laken as zero when pump turned off (water level par to water level. Time Water Level Time Water Level Time. Date of test gal.inin with ft, drawdown after ins.	ft. (cap, valve, etc.) (cap, valve, etc.) measured from well
	Method of scaling strata off PUMPT Manufacturer's Name Type: H.P. WATER LEVELS: Land-surface elevation above mean sea level Static level	ft. (cap, valve, etc.) (cap, valve, etc.) measured from well

Notice of Intent Nor PERSON	LEG1253
Unique Ecology Well ID Tag No.	BID 120
Water Right Permit No. N/A	
Property Owner Name SEAGALE	PROPERTIES

CURRENT

Well Street Ad	idress S 200TH ST		
City TUKWILA	WA Cour	nty KING	
Location SE1 (s, t, r Still R	/4-1/4 <u>NW</u> 1/4 Sec EQUIRED)	2 Twn 22N R 4E	EWM []
Lat/Long	Lat Deg	Lat Min/Sec _ Long Min/Sec	_

Decommission ORIGINAL INSTALLATION	Water Right Permit No. N/A
PROPOSED USE: Domestic Industrial Municipal	Property Owner Name SEAGALE PROPERTIES
☑ DeWater ☐ Irrigation ☐ Test Well ☐ Odies	Well Street Address S 200 TH ST
TYPE OF WORK: Gwner's number of well (if more than one)	
New well Reconditioned Method: Dug & Bored Driven	City TUKWILA WA County KING
DIMENSIONS: Diameter of well 12" inches, drilled 40 ft.	Location SE1/4-1/4 NW1/4 Sec 2 Twn 22N R 4E EWM I
Depth of completed well 46 ft.	(s, t, r Still REQUIRED)
CONSTRUCTION DETAILS	- · · · · · · · · · · · · · · · · · · ·
Casing Welded 12 Diam from C ft to 40 ft	Lat/Long Lat Deg Lat Min/Sec
Installed: Liner installed Diam. from ft. to ft. Threaded Diam. From ft. to ft.	Long Deg Long Min/Sec
Perforations: Yes No	Tax Parcel No. (Required)
Type of perforator used	CONSTRUCTION OR DECOMMISSION PROCEDURE
SIZE of perfsin_byin_and no. of perfsfromft. toft	Formation: Describe by color, character, size of material and structure, and the le-
Screens: Yes No K-Pac Location 20-40	nature of the material in each stratum penetrated, with at least one entry for each of information. (USE ADDITIONAL SHEETS IF NECESSARY.)
Manufacturer's Name	
Type Puc Model No	FIN Brown T
Diam 12 Slot size 20 from 20 ft to 40 ft.	1,
Diam Slot size from ft. le ft.	Soraly loam Brown 2
Gravel/Filter packed: Z Yes No Size of gravel/sand 24-	
Materials placed from 5 it to 40 it	Sand & sitt Brown 6
Surface Seal: A Yes No To what depth? 5 ft. Material used in seal Benjanise	
Did any strata contain musable water?	
Type of water? Depth of strata	
Method of scaling strata off	
PUMP: Manufacturer's Name	
Type: H.P.	
WATER LEVELS: Land-surface elevation above mean sea level ff	
Static level 7 ft below top of well Date 4-29-2013	
Artesian pressure liss per square inch Date	
Artesian water is controlled by	201000
	2m 3
WELL TESTS: Drawdown is amount water level is lowered below static level Nas a pump test made? ☐ Yes ☐ No If yes, by whom?	800
Priet and man with a desirable of the state	A. 191
rield gal/mm with ft. drawdown after hrs.	C N
field gal/mm with ft, drawdown after fus. field gal/mm with ft, drawdown after fus. field gal/mm with ft drawdown after fus.	6 2
lucavary data (time taken as zero when pump (urned off) (water level measured from well up to water level)	4.
ime Water Level Time Water Level Time Water Level	8 8
Anna Henri Territ Time Matel Territ	7. 55
bate of test	10 to
	100000
isiter testgal./min_withft. drawdown afterbrs.	25.55 Oles
irresttri. with stem set atft. forbrs.	ant oly and
rtésian flow	Start Date 4-29-2013 Completed Date 4-29-2
emperature of water Was a chemical analysis made? ☐ Yes ☐ No	MAC 115
ELL CONSTRUCTION CERTIFICATION: Leonstructed and/or accept responstruction standards. Materials used and the information reported above are true.	ensibility for construction of this well, and its compliance with all Washington
Driller Engineer Traince Name (aim)	Drilling Company Slead Construction, Inc.
Driller Engineer Trainee Name (Prim) Dansel Corport	
ner/Engineer/Trainee Signature	Address 9021 Waller Rd. E.
Driller Engineer Traince Name (Nim) Corport	Address 9021 Waller Rd. E. City, State, Zip Tacoma , WA, 98446 Contractor's

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Original & 1" copy - Ecology, 2" copy - owner, 3th copy - driller	Notice of Intent No. December Deol	753	
ECOLOGY Construction/Decommission ("x" in circle)			
Construction	Unique Ecology Well ID Tag No. 676	CBB / Z	6
Decommission ORIGINAL INSTALLATION Notice of Intent Number	Water Right Permit No. N/A		
PROPOSED USE: Domestic Industrial Municipal	Property Owner Name SEAGALE PROPERTIES		
☑ DeWater ☐ Irrigation ☐ Test Well ☐ Other	■ Well Street Address S 200 TH ST		
TYPE OF WORK: Owner's mumber of well (if more than one)	City TUKWILA WA County KING		
New well Reconditioned Afethnd Dug Borod Driven Deepened Cable Rotary Detted	Location SE1/4-1/4 NW1/4 Sec 2 Twn 22N R	Arr .	1000
DIMENSIONS: Diameter of well 12 inches, drilled 40 ft.	(s, t, r Still REQUIRED)	3E F	Or Or
Depth of completed well 46 ft. CONSTRUCTION DETAILS			WWM @
Casing	Lat/Long Lat Deg Lat Min/S Long Deg Long Min		
erforations: Yes S No	Tax Parcel No. (Required)		
Type of perforator used	CONSTRUCTION OR DECOMMISSION Formation: Describe by color, character, size of material and nature of the material in each stratum penetrated, with at lea- of information. (USE ADDITIONAL SHEETS IF NECESS)	structure, and	the kind and
Aarrufacturer's Name	MATERIAL	FROM	To
ype PUC Model No.	E: (1) Brawn	O	,
ham J2 Slot size 2.9 from 2.0 ft to 40 ft.			2
ravel/Filter packed: KYes No Size of gravel/sand -	Sandy lose Bren	2	17
laterials placed from 5 ft in 40 ft	Sand & Silt Brown	7	
urface Seal: Y Yes No To what depth? 5 ft.			40
faterial used in seal Rentonite		-	12.5
d any strata contain unusable water?			+
pe of water? Depth of strataethod of sealing strata off			-
JMP: Manufacturer's Name			1
ATER LEVELS: Land-surface elevation above mean sea level R	7 m	-	1
atic level 7 A below top of well Date 5-Z-Z013	(A.2)	w	
tesian pressure lts. per square inch Date	C-1		-
tesian water is controlled by (cap, valve, etc.)		AVI.	-
top minter	5	10	
BLL TESTS: Drawdown is amount water level is lowered below stable level - as a pump test made? Yes No If yes, by whom?	Δ	1	1
eld:gal/mit. withfl. drawdown afterhrs.	D.	7	
eld gal/min with ft drawdown after hrs.	2 ST 2	Čń.	-
eld:hrin. withft drawdown afterhrs.		VC.	-
covery data (time taken as zero when pump turned off) (water level measured from well to water level)			1
ne Water-Level Time Water-Level Time Water-Level			-
5,140,140,140,140,140,1	500.00 v		-
	A. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.	11.37	-
e of test		LH	1
ler testgal /mm withft drawdown aftertus	WAT OF		1
testgal/min. with stem set atft. forhrs.		lije	
esian flowgp.m. Date	Start Date 5-2-26/3 Completed Da		.71.6

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☑ Driller ☐ Engineer ☐ Trainee Name (Price) Daniel Conjector	Drilling Company Slead Construction, In	nc.
Driller/Engineer/Trainee Signature Soul Custus	Address 9021 Waller Rd. E.	
Driller or trainee License No. 2677	City, State, Zip Tacoma	, WA, 98446
IF TRAINEE: Driller's License No:	The bank of the same of the sa	1 112, 30110
Driller's Signature:	Contractor's Registration No. SLEADC*325KO	Date

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the Data and/or the Information on this Well Report	Warranty the Data	Varranty the Data		
the Data and/or the Information on this Well	Warranty the Data	Warranty the Data	Report	
the Data and/or the Information on this	Warranty the Data	Warranty the Data	Well	
the Data and/or the Information on	Warranty the Data	Warranty the Data	this	
the Data and/or the Inform	Warranty the Data	Warranty the Data	nation on	
the Data and/or	Warranty the Data	Warranty the Data	theInfor	
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		-	the Dat	
does NOT	does		f Ecology	
does NOT	Ecology does	Ecology	nt of	
does NOT	nt of Ecology does	nt of Ecology	me	

circle)	Notice of Intent No		
	Unique Ecology Well ID Tag No.	570	119
	Water Right Permit No. N/A		-

Notice of Intent Number	Water Right Fernite No. 1875
PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other	Property Owner Name SEAGALE PROPERTIES Well Street Address S 200 TH ST
TYPE OF WORK: Cover's number of well (if more than one) Mew well Reconditioned Method: Dug Bared Driven	City TUKWILA WA County KING
Depend Cable Rotary Interest of well 12 inches, drilled 40 ft. Depth of completed well 40 ft.	Location SEI/4-1/4 NW1/4 Sec 2 Twn 22N R 4E EWM D (s, t, r Still REQUIRED) Or WWM 88
Construction Details Casing Welded 72" Diam. from G ft. to 40 ft.	Lat/Long Lat Deg Lat Min/Sec Long Deg Long Min/Sec
Perforations: Yes M No	Tax Parcel No. (Required)

CURRENT

WATER WELL REPORT

ECOLOGY Construction/Decommission ("x" in

SIZE of perfs in by in and no, of perfs from ft, to ft.

Screens: X Yes No K-Pac Location 70-40'

| NearIntargent | Near
Gravel/Filter packed: Kyes No Size of gravel/sand Lambda Haterials placed from 5 ft to 40 ft Surface Seal: X Yes No To what depth? 5 ft Material used in seal Rentonite Did any strata contain unusable water? Type of water? _____ Depth of strata _____

WATER LEVELS: Land-surface elevation above mean sea level # Static level 7 ft. below top of well Date 4-29-2013 Artesian pressure _____ lbs. per square inch Date

Artesian water is controlled by _______ (cap, valve, etc.) WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made?
Yes No If yes, by whom?
 Yield:
 gal/min with
 Ø drawdown after
 hrs.

 Yield:
 sal/min with
 fl drawdown after
 hrs.

 Yield:
 gal/min with
 fl drawdown after
 hrs.

Recovery data (time taken as zern when pump turned off) (water level measured from well

Time Water Level Time Water Level Time

Bailer test gal/min. with ft. drawdown after hrs

Temperature of water _____ Was a chemical analysis made? ☐ Yes ☐ No

□ Decommission ORIGINAL INSTALLATION

○ Construction

Manufacturer's Name

Method of sealing strata off PUMP: Manufacturer's Name Type _____ H.P.

top to water level)

Artesian flow g.p.m. Date

Original & 1st copy - Ecology, 2ed copy - owner, 3rd copy - driller

(s, t, r Still R	EQUIRED)			Or WWM
Lat/Long	Lat Deg	Lat Min/S	ec	
	Long Deg	_ Long Min	/Sec	
Tax Parcel N	lo. (Required)		-	
Formation: Desc nature of the ma	ONSTRUCTION OR I critic by color, character terial in each stratum pe (USE ADDITIONAL S	, size of material and netrated, with at lear	structure, and	the kin
	MATERIAL		FROM	TO
GII		Drawn	0	+
FILL		-	0	12
Sandy	losse	Brander	2	-
The second second of			-	15
Sand 8	silt.	Brown	5	
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		1423	07 20	

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Driller/Engineer/Trainee Signature Demel Corpus	- Address 9021 Waller Rd. E.			
Driller or trainee License No. 2677	City, State, Zip Tacoma . WA, 984			
IF TRAINEE Driller's License No.	Contractor's	1 1114 10440		
Driller's Signature:	Registration No. SLEADC*325KO	Date		

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Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Water Level

213955	Resource Protec		
Project Name Scale - Ti	ukwila	Date 12-20	
Well Identification # 8-6		County King	NE VA SE
Drilling Method 4"HSA		Section 2	T. 22N R. 4E
Driller Michael Reynolds		Street Address No	Address - On Bricycle Path
License # 2636		Start Card	A118247
		Consulting Firm G	eo-Engineers
AS-BUILT	WELL DATA	0	FORMATION DESCRIPTION
	MONUMENT TYPE: CONGRETE SURFACE ft. PVC BLANK "X BACKFILL TYPE: PVC SCREEN X SLOT SIZE: TYPE GRAVEL PACK MATERIAL: WELL DEPTH 40	ft	HECEIVED JAN 0 5 2007 DEPT. OF ECOLOGY II. II. ARKS Backfilled 7 & " May & hydrate)
1		Signature Min	A Shumoldo.

HOLT	DRILL	ING.	INC.
------	-------	------	------

213954 Project Name Scale - Tukwila

Well Identification # B-5

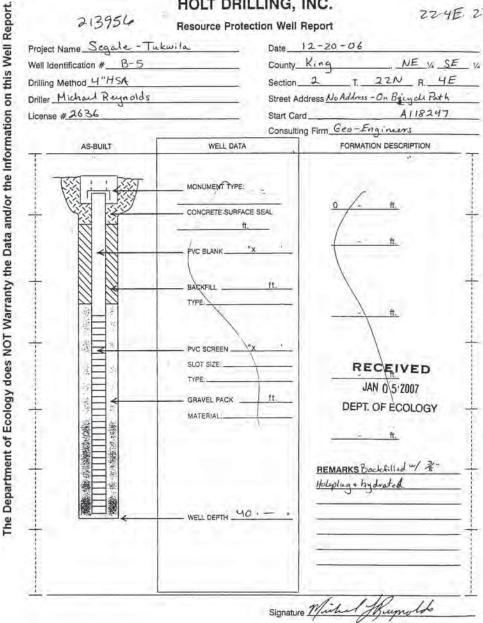
Driller Michael Reynolds

Drilling Method 4"HSA

Resource Protection Well Report

Date 12-20-06 County King NE VA SE VA Section 2 T 22N R 4E Street Address No Address - On Briggel Path A118247 Start Card____

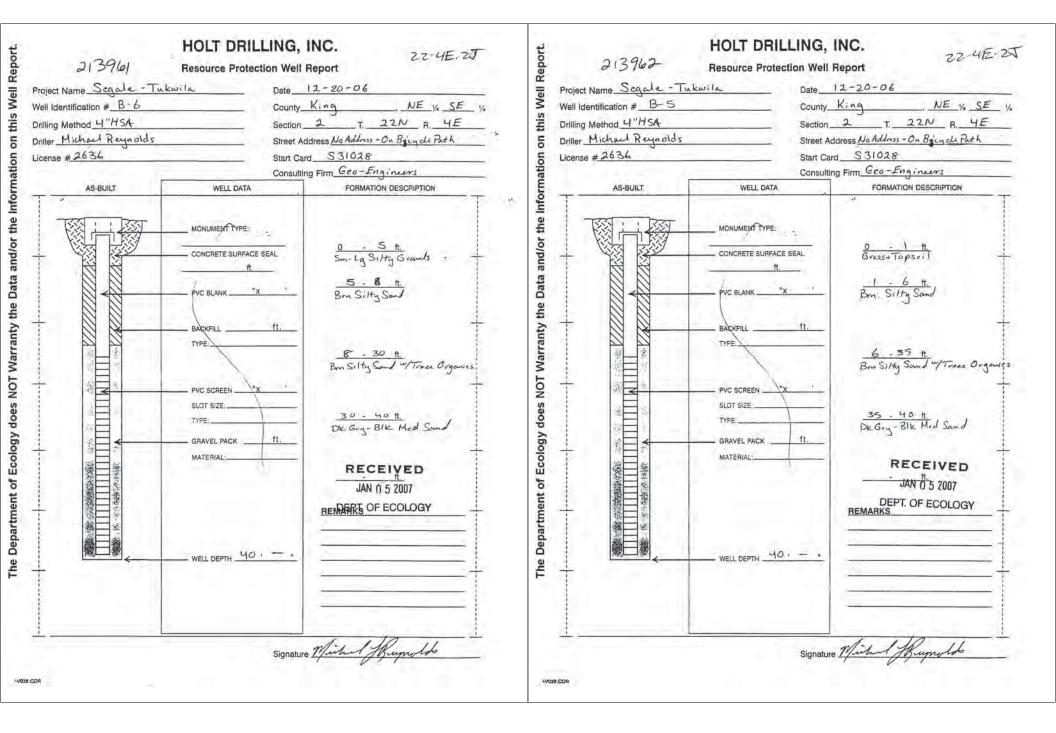
22-4E, 25



AV039,CDR

HOLT DRILLING, INC. HOLT DRILLING, INC. The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. 213958 22-48.25 22-4E-25 213957 Resource Protection Well Report Resource Protection Well Report Date 12-20-06 Project Name Segale - Tukwila Project Name Scaale - Tukwila Date_ 12-20-06 Well Identification # B-4 County King Well Identification # B-3 County King NE 1/4 SE 1/4 NE VA SE VA Drilling Method 4"HSA Section 2 T. 22N R. 4E Section 2 T 22N R 4E Drilling Method 4"HSA Driller Michael Reynolds Driller Michael Reynolds Street Address No Address - On Bricy de Path Street Address No Address - On Briggel Path License # 2636 License # 2636 Start Card S 31028 A 118247 Start Card_____ A118247 Consulting Firm Geo-Engineers Consulting Firm Geo- Engineers FORMATION DESCRIPTION AS-BUILT WELL DATA AS-BUILT WELL DATA FORMATION DESCRIPTION MONUMENT TYPE: MONUMENT TYPE: CONCRETE SURFACE SEAL CONCRETE SURFACE SEAL BACKFILL BACKFILL RECEIVED PVC SCREEN PVC SCREEN JAN 0 5 2007 SLOT SIZE: SLOT SIZE: DEPT OF ECOLOGY RECEIVED JAN 0 5-2007 GRAVEL PACK GRAVEL PACK DEPT. OF ECOLOGY MATERIAL REMARKS Backfilled 4/3-REMARKS Back Alled =/ 3" Holeplug + hydrated Holeplug + hydrated. WELL DEPTH 40, - . WELL DEPTH 40 . -Signature Mithel Mumplets Signature Mithel Mumuldo LV039.CDR 4V039.COR

nty King , NE 1/2 SE tion 2 T 22N R 4E et Address No Address - On Bigget Path t Card A118247 sulting Firm Geo-Engineers	Section	Project Name Scade - Tu Well Identification # B-1 Drilling Method 4"HSA	County King NE 1/4 SE 1/4		Well Identification # 8~2
et Address No Address - On Briggel Porth t Card A118247 sulting Firm Geo-Engineers			Section 2 T 22N R 4E		rilling Method 4"HSA
t Card A118247 sulting Firm Geo-Engineers	Just 4	Driller Michael Reynolds	Street Address No Address - On Briggel Path		riller Michael Reynolds
sulting Firm Geo-Engineers			Start Card A118247		cense # 2636
	Consult	License W. P. C.	Consulting Firm Geo-Engineers		sense #
FORMATION DESCRIPTION	WELL DATA	AS-BUILT	FORMATION DESCRIPTION	WELL DATA	AS-BUILT
RECEIVEL JAN 0 5-2007 DEPT. OF ECOLOG tt. REMARKS Back filled by 3 " Holping a hydrated.	MONUMENT TYPE: CONCRETE SURFACE SEAL ft. PVC BLANK "X BACKFILL ft. TYPE: PVC SCREEN "X SLOT SIZE: TYPE: GRAVEL PACK ft. MATERIAL: WELL DEPTH 45, "	AS-BUILT	Th. RECEIVED JAN 0 5-2007 DEPT. OF ECOLOGY H. REMARKS Backstiled "/ 3" Holeplug thy directed	PVC SCREEN X SLOT SIZE: TYPE.	
	WELL DEPTH 45.		Holeplug thydrated		



HOLT DRILLING, INC. The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. 22-4E-25 213963 Resource Protection Well Report Project Name Scale - Tukwila Date 12-20-06 County King Well Identification # B-4 NE VA SE VA Drilling Method 4"HSA Section 2 T. 22N R. 4E Driller Michael Reynolds Street Address No Address - On Bricy de Path License # 2636 Start Card S 31028 Consulting Firm Geo-Engineers FORMATION DESCRIPTION AS-BUILT WELL DATA MONUMENT TYPE: CONCRETE SURFACE SEAL Brasilty Sand Brn. Silty Sand W/Trace Organics PVC SCREEN DK Gry - BIK Med Sand GRAVEL PACK RECEIVED - JAN 0 5 2007 DEPT. OF ECOLOGY REMARKS WELL DEPTH 40. - . Signature Mithal Mumolds 4V039, COR 1V039.COR

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

HOLT DRILLING, INC. 224E 25 213944 Resource Protection Well Report Project Name Scaale - Tukwila Date 12-20-06 Well Identification # B-3 County King NE 1/4 SE 1/4 Drilling Method 4"HSA Section 2 T. 22N R. 4E Driller Michael Reynolds Street Address No Address - On Brigge Le Path License # 2636 Start Card S 31028 Consulting Firm Geo-Engineers FORMATION DESCRIPTION AS-BUILT WELL DATA MONUMENT TYPE: O - 1 ft. Grass+Topsoil CONCRETE SURFACE SEAL Brn Silty Sand Br. Silty Sand 10 rgames PVC SCREEN Dk. Gry .- Blk Med Sand RECEIVED GRAVEL PACK JAN 0 5.2007 DEPT. OF ECOLOGY

WELL DEPTH 40 -

REMARKS

Signature Mithal Mumolds

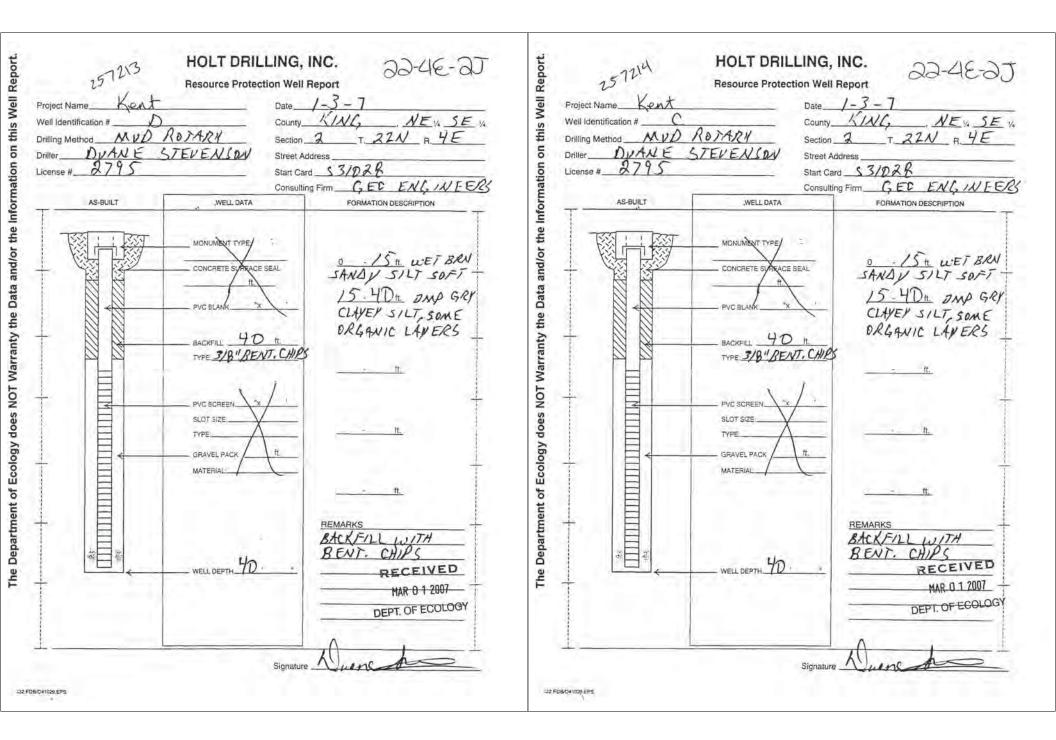
HOLT DRILLING, INC. HOLT DRILLING, INC. The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. 22-4E-25 213965 Resource Protection Well Report Project Name Scaale - Tukwila Date 12-19-06 Project Name Scaale - Tukwila County King NE 1/4 SE 1/4 Well Identification # B-2 Well Identification # B-1 County King Drilling Method 4"HSA Section 2 T. 22N R. 4E Drilling Method 4"HSA Driller Michael Reynolds Street Address No Address - On Brigge de Path Driller Michael Reynolds License # 2636 Start Card S31028 License # 2636 Consulting Firm Geo-Engineers FORMATION DESCRIPTION AS-BUILT WELL DATA AS-BUILT WELL DATA MONUMENT TYPE: MONUMENT TYPE: CONCRETE SURFACE SEAL CONCRETE SURFACE SEAL BACKFILL Bra Silt W/Organics
RECEIVED JAN 0 5 2007 SLOT SIZE. Br. Silty Sand GRAVEL PACK GRAVEL PACK MATERIAL MATERIAL DK Gry. - Blk Cled Sand WELL DEPTH 40 - " WELL DEPTH 45 . -Signature Mithel Mumolds AV039 CDB 4V009,CDR

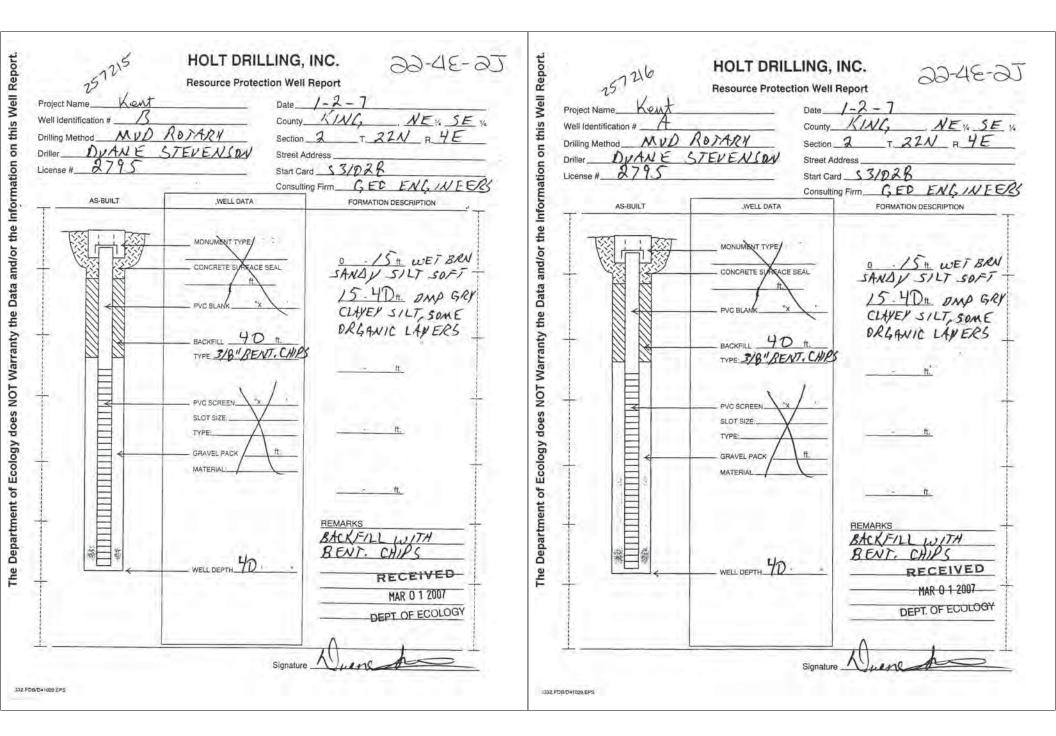
22-4E-2V

Date 12-19-06 NE 1/4 SE 1/4 Section 2 T. 22N R. 4E Street Address No Address - On Briggel Path Start Card __ \$31028

Consulting Firm Gea- Engineers FORMATION DESCRIPTION RECEIVED JAN 0 5 2007 O - 1 HDEPT. OF ECOLOGY Brn Si Hy Sand 3 - 18 ft Brn Silt w/Organies 18 - 35 H. Brn Silty Sand 35 - 45 A. DKGry-BIK Med Sand

Signature Mithal Mumuldo





Ĕ	Third Copy - Dr
Spo	(1) OWNER
ď	(2) LOCATI
=	Bearing and dist
Š	(3) PROPOS
Fis	
on t	(4) TYPE O
ono	
mati	(5) DIMENS
ō	(6) CONSTR
Ξ	Casing is
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and/	Type
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Jai	-
e	Screens:
윤	Manu
₹	Diam
핆	Diam
ar	Gravel 1
3	Grav
=	Surface
9	Did
S	Type
ŏ	(7) PUMP:
>	Туре
g	(8) WATER
ö	Static level
E C	Artesian pressur
o	
H	(9) WELL ?
ne	Was a pump test
5	*
a	

ANDERSON DEWATERING

STARTCARD 07603

n	ALER	**	Bilds	REPUR	۱
	STATE	0#	WASE	INGTON	

6300 5212TH KENT WA

	Address
LOCATION OF WELL: County KING	NE Sec 11 -22NN R4E
aring and distance from section or subdivision corner	7.

LOCATION OF WELL: County KING	NE Sec 11 22NN RHE WM
aring and distance from section or subdivision corner	an is two
) PROPOSED USE: Domestic □ Industrial □ Municipal □ Irrigation □ Test Well □ Other □	(10) WELL LOG: ABANCH NEW Formation: Describe by color, character, size of material and structure, and show thickness of aguifers and the kind and nature of the material in each ctrains penetrated, taked at least one entry for each change of formation
) TYPE OF WORK: Owner's number of well New wall	MATERIAL FROM TO
Dimensions: Diameter of well inches Drilled ft. Depth of completed well ft.	1-30ft Temp
) CONSTRUCTION DETAILS: Casing installed: "Diam from ft. to ft. Threaded "Diam from ft. to ft. Welded "Diam from ft. to ft.	DENATORING WELL USING LOW MIX CONCRETE
Perforations: Yes No Type of perforator used SIZE of perforations from ft. to ft. perforations from ft. to ft. perforations from ft. to ft. Screens: Yes No Manufacture's Name Model No	
Diam. Slot size from ft. to ft. Diam. Slot size from ft to ft. Gravel packed: Yes No Size of gravel: Gravel placed from ft. to ft.	RECEIVED
Surface seal: yes \(\) No \(\) To what depth? Material used in seal Did any strata contain unusable water? Yes \(\) No \(\) Type of water? Method of sealing strata off.	JUL 2.5 1990 DEPT. OF COLOGY
7) PUMP: Manufacturer's Name.	
(Cap, valve, etc.)	
b) WELL TESTS: Drawdown is amount water level is lowered below static level as a pump test made? Yes No If yes, by whom? wid: gal/min with ft. drawdown atter hre covery data (time taken as zero when pump turned off) (water level measured from well top to water level Time Water Level Tim	Work started 19 Completed 19 WELL DRILLER'S STATEMENT: This well was drilled under my jurisdiction and this report true to the best of my knowledge and belief. NAME ANDERS OF DEATH OF CORPORATION (Type or print)
The state of the s	Address Way E Condens

NAME AUD	SOCAL	1 3.20	u.cn			
NAME HOL	(Person, firm	n or corpor	ation)	(Type or	r print!	
Address A.	SW 3147	# FEDE	DAL.	WAY	WA	98063
1.1	T	() 1				

(USE ADDITIONAL SHEETS IF NECESSARY)

22/4-11

ANDERSON DEWATERING

File Original and First Copy with Department of Ecology

WATER WELL REPORT

	- Driller's Copy	1 7		TATE OF T	ASSESSION
		THEN CON	89		Address 65
	ATION OF W		KIL	6	animana a mari i surani
-	2 5 3 7 7 8 3 5 5 7 T	rtion or subdivision		205 F (7)	(10) WELL
(3) PRO	POSED USE:	Domestic Inc			Formation: Des
(4) TYP	New We	Owner's number (if more than one ell	of well c) Cable Rotary	Bored D Driven O Jetted D	ABAN
(5) DIM Drille	ENSIONS:	Diameter of to Depth of comple			Dew
(6) CON	STRUCTION	DETAILS:			- 1
	Threaded []	" Diam. from	ft. to	n. ft.	LEH
		" Diam. from	n. to		
Perf	orations; Yes	No []		in the second se	-
	SIZE of perforatio	na	in. by	in	
	perfor	stions fromstions from	ft. to	n n	
	perfor	ations from	It. to	n	
Sere	ens: Yes 🗆 No				
	Manufacturer's Na	me	Model No		
	Diam Slo	t aire from	ft. te	ft.	
	Diam Slo	t size from	n. te		
Gra	vel packed: Ye	□ No □ Size	of gravel:	and the same of th	-
		n	27.7		-9-
Sur	Material used in s	No To wh	at depth?		
	Did any strate co	entein unusable wa	ter? Yes [No [
		strata of Dept			
/7) Pri					
(1) FUI	Type:	r'e Name	н.		
(8) WA	TER LEVELS:	Land-surface e	levation		
Static leve	1	ft below top of	well Date		
Artesian p	and store	ibs. per square	inch Date		
	LL TESTS:	Drawdown is am lowered below s	iount water le tatic level	vel is	Work started
	gal/min wit	No I If yes, b	y whom?	hra	WELL DE
rield:	gai/min wit				This well
4			H.		true to the l
Recovery measur Time	Water Level To	ne zero when pump to water level) me Water Level	Time V	Vater Level	NAME AL
	Aller Constitution (1997)	ment manner	- Adattas ***		Address P

g.p.m. Date

(10) WELL	LOG:			
Formation: Desc show thickness of	ribe by color, char of aquifers and the	ncter, size of mater kind and nature o one entry for each	rial and struct	ture,
The second secon	MATERIAL		FROM	T
ABAN	DONED	YEA TU	MPOR	12
		WELLS		
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		PANC + -	1039	7
	-		142000	
		1.114.6	REGION	
			100	

ER'S STATEMENT:

a drilled under my jurisdiction and this report is of my knowledge and belief.

ERSON DEWATERING

(Person, firm, or corporation) (Type or print)

30X 3093 FED, WAY, WA

License No. 1522 Was a chemical analysis made? Yes - No -

Date NOV 14

(USE ADDITIONAL SHEETS IF NECESSARY)

£6.4 (86) 1-20

Date of test

Temperature of water

Baller test ...

Artesian flow

FGY 050-1 20

Artesion flow

Temperature of water

g.p.m Date

Was a chemical analysis made? Yes □ No □

ENTEREMESOURCE PROTECTION WELL REPORT START CARD NO. ROLL 290 KING 22/4E/1E PROJECT NAME: SMITH TRACTOR LOCATION SW 14 NW SOC / TWN ZZN R 4E WELL IDENTIFICATION NO. ACN 100 The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. STREET ADDRESS OF WELL DRILLING METHOD: HSA 19800 W. VALLEY HWY - KENT WA DRILLER: BRENT C. MALOY Cascade Drilling, Inc WATER LEVEL ELEVATION: SIGNATURE:_ GROUND SURFACE ELEVATION: CONSULTING FIRM ALA INSTALLED: 8-7-96 REPRESENTATIVE: JIM FOUN DEVELOPED: YES 6367 FORMATION DESCRIPTION AS-BUILT WELL DATA WELL COVER CONCRETE SURFACE SEAL DEPTH = 2/ft PVC BLANK 4"x 10" 5.LTY CLAY (GINEY) BACKFILL BENT CHIPS 8 - 20 ft. SANDY (SOME SILT) PVC SCREEN 4"x 10. SLOT SIZE: - 2/0 RECEIVED 9 ft GRAVEL PACK SEP 13 1996 MATERIAL: 2/12 WHE STAT DEPT. OF EUULUGY WELL DEPTH 20 SCALE: 1" .. ECY 050-12 (Rev. 11/09)

Second Copy — Owner's Copy Third Copy — Driller's Copy STATE OF W	ASHINGTON Water Right Permit No 20-4	-11	-
(1) OWNER: Name So. 20240 ASSOCIATES, INC NO			nº
(2) LOCATION OF WELL: COUNTY JANGE	5W IN NWINSON 1 3	12_	ILE
(2a) STREET ADDRESS OF WELL (or remote at tree)		N.R_	7
(a) officer represent the property and the property of the pro			
☐ Irrigation	(10) WELL LOG or ABANDONMENT PROCEDURE D Formation: Describe by color, character, size, of material and structure, and	De SHITT O	
≥ DB44EIN	and the kind and nature of the meterial in sech stratum penetrated, with change of information.	ef leasest come a	antry for
(4) TYPE OF WORK: Owner's number of well (if more than one)	MATERIAL	FROM	To
Abandoned New well Method: Dug Borsd Borsd Cable Driven	Brown Fill	0	3
Reconditioned ☐ Rotary ☐ Jettad ☐		-	1
(5) DIMENSIONS: Diameter of well	Dark Blue Sity Clay	3	19
Drilled 25 feet. Depth of completed well 25 N.	Black Course soud (wot)	10	25
(6) CONSTRUCTION DETAILS:	DIECH COUNTY SANG (MOT)	/7	63
Casing installed: 10- Diam from 7 / t. to 24 t.			
Welded	RECE		
		INE	D
Type of perforation used Mr. A. Jana 5/6 f	100.0	100	
SIZE of perforations 030 in by 2 in	APR 0	1007	
perforations from the to the transfer of the t	DEPARTMENT OF SHORELAN, SHORELAN, SHORELAN, SHORELAN, SHORELAN, SHORELAN, SHORE SHOR	FECOLO	v
perforations from this of the fit.	RECEIVE WHER RESOURCE	S AND	1
perforations from ft. to ft.		-S FHUG	AM
Scheens: Yes No 🗗 :21	MAR 0 7 1997		4
Type Model No	DEPARTMENT OF ECOLOGY		
Diam Skill size from ft. to ft.	WATER RESOURCES PRISERANT		
Diam: Stot size from It to It: Gravel pecked: Yas 8 No Size of gravel 3/9/-	101000000000000000000000000000000000000		
Gravel pisced from 9 No Size of gravel 3/9 ft. 16			
	District Control of the Artist Control		
Surface seel: Yes \(\) No \(\rightarrow \) To what depth? \(\) A. Metorial used in seel	Pamp Dewiter well		
Did any strate contain unusable water? Yes No			
Type of water? Depth of strata		-	-
Method of sealing strate off			1
(7) PUMP: Manufacture's Name			
Type:			
(8) WATER LEVELS: Land-surface sleyed above mean ass level	Work Started 2/15 19 Completed 2/	(8)	19
Static level 5 1 below top of well Date	WELL CONSTRUCTOR CERTIFICATION:		
Artealan pressure & Ex. per square inch Date Artealan water is controlled by	I constructed and/or accept responsibility for construction	of this wo	one ,lle
(Cap, vs.hrs, etc.)	compliance with all Washington well construction standard the information reported above are true to my bast knowled	 Materiale 	used a
(9) WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes	NAME SLEAD'S CONSTRUCTION, INC		
Yeald:	NAME SLEANS COLVE POLICE (CAS, TIME OF CORPORATION) (TYPE OF	PRINT	
	Address 2703 46TH ST FE TAC. U	A 9	844
- 1 1 - 1	.0'	se No. Z	- 5
Flecovery data (time taken as zero when pump turned oil) (water level measured from well top to water level)	(Signed) Licen	e No.	278
Time Water Level Time Water Level Time Water Level	Contractor's		
	No. SLY AVXXX325KU Date 2/28		199
	(USE ADDITIONAL SHEETS IF NECESS	ARY)	
Date of test	A TOTAL OF THE PARTY OF THE PAR	-1	

		Onginal with	
	720	artment of Ecology	
		ond Copy - Owner's 1 Copy - Driller's Co	
ij	(1)	OWNER: Name	Th
	2)	LOCATION OF W	ELL:
13	28)	STREET ADDRES	SS O
		TAX PARCEL NO	4_
i	3)	PROPOSED USE	

WATER WELL REPORT STATE OF WASHINGTON

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

Notice of Intent	-	 	۱
TRACTOR OF STREET			
UNIQUE WELL I D. #		_	

(1) OWNER: Name	The Amend Group Add	bress 8150 N Central Expre	essway, Stell00
2) LOCATION OF W 2a) STREET ADDRE TAX PARCEL NO	ess of WELL: (or nearest address) NEC of S 204th	W (/4 SW 1/4 Sec I +22N	NR 4E WM
3) PROPOSED USE	Irrigation Test Well OO JIN -7	(10) WELL LOG or DECOMMISSIONING P Formation: Describe by color, character, size of the land and nature of the material in each stra	if material and structure, and atum penetrated, with at least
4) TYPE OF WORK	New Well Method: Deepenso Dog DRIPMER F	bridgery for each change of information, Indic MATERIAL DROAD Pack	FAOM TO
	Decommission Retary Bother ING SE	CIU	3 15
5) DIMENSIONS: Drilled 3	Diameter of well 36 Inches 30 n.		
6) CONSTRUCTION Casing installed	N DETAILS	Black Sands	15 24
	Diam. fromft, toft.	Blue Clayi	24 30
Perforations: Type of perforato	⊒ Yes 14 No		
SIZE of perforate			
Screens: Manufacturers N. Type PVC Diam. LO	#Yes □ No □ K-Pac Location #Yes □ No □ K-Pac Location Model No. Stot Size + 3 ○ from / 0 / 1. to 3 ○ fr. Not Size from / 1. to	RECEIVED	
	chied: A Yes 3 No 5 Size of grave/sand 3/8	JUN 0 9 2000	
Material placed li		DEPARTMENT OF ECOLUG WELL DRILLING UNIT	
Surface seet; Material used in : Did any strata co Type of water? _ Method of sealing	ntain unusable water?		
(7) PUMP: Manufac Type:	turer's Name		+ + =
(8) WATER LEVELS Static level Artesian pressure		Work Started 5-15 00 Comple	sted 5 -22 OQ
Artesian water is	(Cap. valve, etc.)	WELL CONSTRUCTION CERTIFICATION:	
Was a pump test Vield:g Vield:g Vield:g Recovery data (to well top to water	Drawdown is amount water level is lovered below static level I made? □ Nes JR No. If yes, by whom? al./min. with al./min. with f. drawdown after hrs. al./min. with ft. drawdown after hrs. al./min. with ft. drawdown after hrs. into taken as zero when pump turned off) (water level measured from level) tor-level Time Water Level Time Water Level	I constructed and/or accept responsibility for compliance with all Washington well control to the compliance with all Washington well control and the information reported above are true. Type or Print Name Dead CLASACEM [Licensed Driffer/En] Traineé Name Driffing Company ST.EAD CONS	ction standards: Malenals used to my best knowledge and belief
Date of test Bailer test	.ga(/min.with	(Signed) Or Chicago Oriller/Eng Address 9021 Waller Ro	pineer) ad E, Tacoma, W 8446-2531,
Artest Artesian flow	g.p.m. Dete	(USE ADDITIONAL SHEETS	F NECESSARY)
Temperature of y ECY 050-1-20 (11/98)	water Was a chemical analysis made? ☐ Yee ☐ No	Ecology is an Equal Opportunity and Affirmat accommodation needs, contact the Water Re 8800. The TDD number is (380) 407-5006.	we Action employer. For special sources Program at (360) 407-

10	10	34	H
112	£.67	04	-

RESOURCE PROTECTION WELL REPORT

Method: HSM Cascalle Drilling, Inc. re: Head Charles ing Kirin: Landou entative: Rivan Christia	Water Level E Ground Surfa Date Installed	Sthaves, Kent who devation: Coe Elevation: N/A 12/19/01
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	Well Cover Concrete Surface Seal Depth = 1/it Blank Casing 2 " 5" Material P.V.C. Backfill 1 ft Type: Back Lbips Seal HIM Material AIA	1 - Lo & Will Fine Source # Source GRAGES Lo 17' A GREY SIII +0 Saway GREY SIII 17' 20' A Pinc to Med. GREY SIIIY Sand
	iravel Pack 18' ft Material: =940 Saaro Screen 2 'x 15' Slot Size 010 Material P.D.C. Vell Depth 20' 2 " Material NIII faterial NIII faterial NIII otal Hole Depth 20'	RECEIVED JAN 0 9 2002 DEPT OF ECOLOGY

The Department of Ecology does NOT Warranty the Data and/or the Information

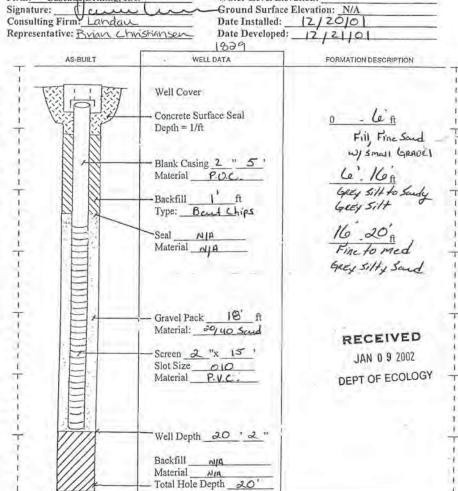
ECY 050-12 (Rev. 11/80)

County: 17 - Kinx Location: NE1/4 SE1/4 Sec 2 Twn 23 NR 4 E Street Address of Well: 20403 LOSAL AVES Kent WAT Ground Surface Elevation: N/A Date Installed: 12/19/01 Date Developed: 17/20/01 1909

FORMATION DESCRIPTION WELL DATA Well Cover Fill Fine Save Concrete Surface Seal Depth = 1/ft Blank Casing 2 " 5" 6 17 s Grey silt to saviny heey silt Material P.v.C. Backfill I ft Type: Bent Chips 17 20 A Fine to med. Geory Silty Sand Material culfi Gravel Pack 18 ft Material: 25/40 Sano RECEIVED Screen 2 "x 15" Slot Size CIO JAN 0 9 2002 Material P.O.L. DEPT OF ECOLOGY Well Depth 20 '2" Backfill HA Material N/A
Total Hole Depth 20 SCALE: 1

106846 RESOURCE PROTECTION WELL REPORT

Start Card #R 58291 County: 17 - King Location: NE1/4 SE1/4 Sec 2 Twn 23NR 4E Project Name: Boeing Space Cantol
State Identification # ABR 679.
Drilling Method: HSVA Street Address of Well: 26463 6544 AVE S Kent WA Water Level Elevation: Ground Surface Elevation: N/A Date Installed: [2/20/0]



ECY 050-12 (Rev. 11/89)

SCALE: 1"=

The Department of Ecology

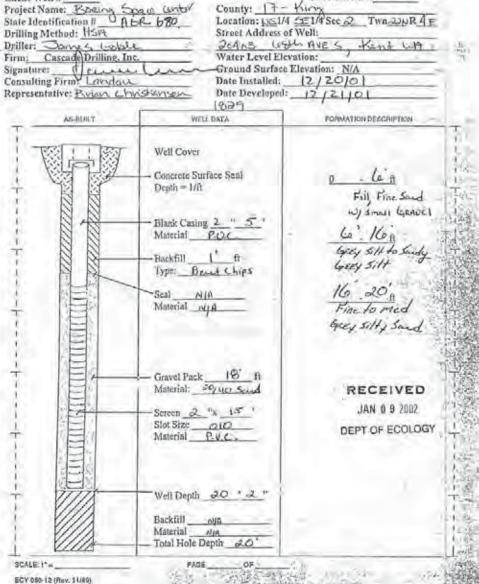
Client Well #

Driller: James Gobble Firm: Cascade Drilling, Inc.

106847 RESOURCE PROTECTION WELL REPORT Start Card || R 5829| Client Well# Project Name: Poetry Soan With State Identification # ADR 680, Drilling Method: HSM. Driller: Some & Cololt Firm: Cascade Drilling. Inc. County: 17 - King Street Address of Well:

The Department of Ecology does NOT Warranty the Data and/or the Information

22-4E-25



106848 RESOURCE PROTECTION WELL REPORT

22-4E-25

59 291

Drilling Method: HS/A Driller: Down & Colols Firm: Cascade Drilling, Inc ignature: Consulting Firm: Lovdou Cepresentative: Byon Chr	. Water Devel Eli Ground Surface Date Installed:	the AVES Kent Litt
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	Well Cover Concrete Surface Seal Depth = I/ft Blank Casing 2. " 5" Material P.O.C. Backfill 1 ft Type: Board Chips Seal NIP Material NIP	Fill, Fine Sand wy smest GRADIS Le - 16th GREY SIH to Souly GREY SIH 16 20'A Fine to med GREY SIHY Swed
	Gravel Pack 18' ft Material: 39'40 School Screen 2 "x 15" Slot Size 010 Material P.V.C. Well Depth 20 2 " Backfill 04a Material 44a Total Hole Depth 20"	RECEIVED JAN 0 9 2002 DEPT OF ECOLOGY

156849 RESOURCE PROTECTION WELL REPORT

PORT 22-4E-25 Start Card #R 58291

ect Name: Roeins 5	care centy County: 17-	Start Card # R
ect Name: Boeing S	SR 682 Location: NE1/4	SE1/4 Sec 2 Twn 22NR 4E
ing Method: HSM	Street Address of	Well:
er: Jame's Gold	e 26463 694	MAVES, Kent WA
: Cascade Drilling, In	C. Water Level Eleva	
sulting Firm. Landau	Date Installed:	
resentative: Brian Lh	nistiansen Date Developed:	12 12 1101
Listinative The Park Con	1829	12/21/01
AS-BUILT	- WELL DATA	FORMATION DESCRIPTION
W		
चररा । । देख	Well Cover	
核學級	wen cover	44.00
	Concrete Surface Seal	0 - 6 ft
S3 13	Depth = 1/ft	<u>0 - C R</u>
2 2		Fill, Fine Sand _
8 8	Indicated the Carlo	Filly Fine Soud -
0 4	Blank Casing 2 " 5	
8 8	Material P.O.C.	-6' 16 ft
88	Backfill I ft	Gety Silt to Sandy
8 8	Type: Bout Chips	GLEY Silt
	Type: Deut Chips	
	Seal NIA	16 20 A
	Seal NIA Material NIA	Fine to med
		GREY Silty Sand
	— Gravel Pack 18'ft	- 12
	Material: 30/40 Scal	The second second
	Material 740 State	RECEIVED
	Screen 2 "x 15"	
	Slot Size 010	JAN 0 9 2002
	Material P.V.C.	DEPT OF ECOLOGY
1 1 10		DEPT OF 2
7777	Well Depth 20 ' 2 "	- 1
1///	wen Depui	341
1///	Backfill NIA	
1///	Material Alia	1-
1///	Total Hole Depth 20'	
ALE: 1"=	PAGE OF	Supplied to the second
Y 050-12 (Rev. 11/89)	THE RESERVE THE PROPERTY OF THE PROPERTY OF	There are not the second of th

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

106850

RESOURCE PROTECTION WELL REPORT

22-4E-20

Project Name: Boeing State Identification # 0	ABC 683 Location: N	7-King E1/4 SE1/4 Sec 2 TWO 22NR 4
Drilling Method: HSVA	Street Addr	ess of Well:
Driller: Dance of Gold	le 20403	LOSTH AVES Kent WA
Firm: Cascade prilling,	nc. Water Leve	l Elevation:
Signature: Consulting Firm Landau		face Elevation: N/A
Representative: Brian L		ed: 12/21/01
representative. 170 kiv (C	1829	ped: 12/21/01
AS-BUILT	- WELL DATA	FORMATION DESCRIPTION
1 180	Well Cover	
	and the state of the state of	1.
1 63 53	Concrete Surface Seal	0 . Co ft
丁 杨 段	Depth = 1/ft	Mill, Fine SAND
	i	SMAII GRAVET
1 11	Blank Casing 2 " 5"	1 110
1 88	Material P.O.C.	6 16
+ 88	4	GREY SITH TO SHUDY
	Backfill ft	grey - 11 10 Janey
! A A	Type: But Chips	Gleysin
	S1 (18	11. 20
	Seal N/A Material N/A	16 20 ft
TH	Material MIH	Pine to med
		GREY Siffy San
+ 13	19'	
1 114	Gravel Pack 18 ft	
	Material: 2940 SANO	
	Screen 2 "x 15"	
	Slot Size 010	RECEIVED
TE	Material P.V.C.	JAN 0 9 2002
	1 X 2000	
		DEPT OF ECOLO
		3
+ 7777	Well Depth 20' , 2 "	j.
1///	well Depth 20 2	
1 1///	Backfill NIA	
1 ////	Material NIA	
1///	Total Hole Depth 20'	

106851 RESOURCE PROTECTION WELL REPORT Start Card #R 58291 Client Well# Project Name: Boeing Space Control
State Identification # ABR 184
Drilling Method: HSVA County: 17 - King Location: NE1/4 SE1/4 Sec 2 Twn 22 NR 4 E Street Address of Well: 20403 WHA AVE S. Kent WA Water Level Elevation: Driller: Dame of Goble Firm: Cascade brilling, Inc. Ground Surface Elevation: N/A
Date Installed: 12/21/0 Signature: / cum Consulting Firm Landau Date Developed: 12/2/10 Representative: Brian Christiansen 1829 The Department of Ecology does NOT Warranty the Data and/or the Information AS-BUILT WELL DATA FORMATION DESCRIPTION Well Cover Concrete Surface Seal Depth = 1/ft Blank Casing 2 " 5" Material P.O.C. Type: but Chips Material MA Gravel Pack 18 Material: 1940 SAND Screen 2 "x 15", Slot Size 010 RECEIVED Material P.V.C. JAN 0 9 2002 **DEPT OF ECOLOGY** Well Depth 20' 1 2 3

Backfill Material

SCALE: 1"= ECY 050-12 (Rev. 11/89)

NIA Total Hole Depth 20' 106843

RESOURCE PROTECTION WELL REPORT

Project Name: Boeing State Identification # A Drilling Method: HSIA Driller: Dayne 5 Gold	Street Address	4 SE1/4 Sec 2 Twn 22NR 4E
Firm: Cascade Drilling, In	ic. Water Level Ele	evation:
Signature:	Ground Surface	Elevation: N/A
Consulting Kirm: Landau	Date Installed:	12/19/01
Representative: Brian Ch	nistiansen Date Developed	17/20/01
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
10		
Test I have	W. W. Common	
图画图	Well Cover	
	Concrete Surface Seal	0 . 6 ft
+ 13 13	Depth = 1/ft	Fill Fine Sano
1 2 2		of SMAIL GRAVET
1 1 1 1	1 70 10 1 7 7 7 1	
1 8 8	Blank Casing 2 " 5"	6' 17'ft
, 88	Material P.v.c.	
T 8 8	Backfill fi	GREY Silt to
	Type: Bout Chips	SANOY GREY Silt
		21 221
	Seal N/n	17' 20'ft
+ 181	Material MA	Pine to med
		GREY Silty Sand
1 =		
+ 131	1.00	
1 1 1 1 1	Gravel Pack 18 ft	
	Material: 2940 Sexio	
1 7	- Screen 2 "x 15"	
	Slot Size OLD	
T	Material P.O.C.	
		- CENTED
		RECEIVED
	The Australia Market Street	JAN 0 9 2002
+ 7777	Well Depth 20 '2"	DEPT OF ECOLOG
1 1///		DEPT OF EGGES
1///	Backfill INIA	
(///)	Material NIA	
1////	Total Hole Depth 20'	

ECY 050-12 (Rev. 11/89)

RESOURCE PROTECTION WELL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission ("x" in circle) Construction Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number Consulting Firm KANE Enviro. Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief. Driller Geogineer Trainee Name (Print) Driller Geogineer Trainee Signature Driller or Trainee License No. 2642	Type of Well ("x' in circle) Resource Protection O Geotech Soil Boring Property Owner The Boin Co. Site Address 20403 GSR April S. City Kent County: King Wildercle Location JE/4 Sec/2 Two 22 N 4 Wildercle WWM LavLong (s, t, r Lat Deg Lat Min/Sec still REQUIRED) Long Deg Long Min/Sec	RESOURCE PROTECTION WELL (SUBSHIT ONE WELL REPORT PER WELL INSTALLED) Construction Decommission of "a" in circle) Construction Decommission ORIGINAL INSTALLATION house of Inlant Number Containing Firm KANE Enviro. Unique Englogy Well ID Tag No: WELL CONSTRUCTION CERTIFIC ATTON. I seasonated and we storpe interesting to an accommission of the storpe and all weather pro- interesting to an accommission of the storpe and all weather pro- interesting to the construction of the storpe and all weather pro- interesting to the construction of the storpe and all weather pro- interesting to the construction of the storpe and all weather pro- interesting to the construction of the storpe and all weather pro- interesting to the construction of the storpe and all weather pro- interesting from KANE Enviro. WELL CONSTRUCTION CERTIFIC ATTON. I seasonated and all weather pro- interesting from KANE Enviro. WELL CONSTRUCTION CERTIFIC ATTON. I seasonated and all weather pro- interesting from KANE Enviro. WELL CONSTRUCTION CERTIFIC ATTON. I seasonated and all weather pro- interesting from KANE Enviro. WELL CONSTRUCTION CERTIFIC ATTON. I seasonated and all weather pro- interesting from KANE Enviro. WELL CONSTRUCTION CERTIFIC ATTON. I seasonated and all weather pro- interesting from KANE Enviro. WELL CONSTRUCTION CERTIFIC ATTON. I seasonated and all weather pro- interesting from KANE Enviro. WELL CONSTRUCTION CERTIFIC ATTON. I seasonated and all weather pro- interesting from KANE Enviro. WELL CONSTRUCTION CERTIFIC ATTON. I seasonated and all the storpe and all weather pro- interesting from KANE Environ. WELL CONSTRUCTION CERTIFIC ATTON. I seasonated and all the storpe and all weather pro- interesting from KANE Environ. WELL CONSTRUCTION CERTIFIC ATTON. I seasonated and all the storpe and all weather pro- interesting from KANE Environ. WELL CONSTRUCTION CERTIFICATION INSTRUCTION INSTRUCTI	Type of Well (** in circle) Resource Projection Georgeth Soil Boring Property Owner Tha Briting Co. Site Address 20463 683 Aug. S. City Kent Councy King (www.circle) Location Sking Sking Soc 2 7 x 22 N 4 (www.circle) Levilling (s. 1.1 Lat Deg Levil Min/Sec Long Deg Long Min/Sec
Construction/Design Well Data	Formation Description	Construction/D45cm Well Date	Formation Description
Drove a retractable slainly screen down to depth and water sample Boring depth 20 Screened: 18-3 Removed all rods from be backfilled with bentonite	1 20' 51/4 + Sand	The Department of Ecology does not warrantly the Data and Warrantly	scollected a Silf + Sand

RESOURCE PROTECTION WELL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction Decommission ("x" in circle) Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number Consulting Firm KANE Enviro. Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well constructed and well and the information reported above are true to my best knowledge and belief. Moritar Stances Trained Signature Driller Stances Trained Signature Unique Register ("Trained Signature Language Value") If trainee, licensed driller's Signature and License no.	Type of Well ('x' in circle) Resource Protection Geotech Soil Boring Property Owner The Boin Co. Site Address 20403 68 have S. City Kent County: Kinny Location Ski4 Ski4 Sec. 2 Two 22 R 4 EWN circle of the	Consulting Firm KAVE ENUTO. Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards Materials used and the information reported above are true to my best knowledge and belief Moniter Beginner Trainee Name (Print) Well Construction standards Materials used and the information reported above are true to my best knowledge and belief Moniter Beginner Trainee Signature Driller/Engineer/Trainee Signature Driller or Trainee License No. 16 trainee, licensed driller's Signature and License no.	Type of Well (* in circle) Resource Protection Geotech Soil Boring Property Owner The Boin Co. Site Address 20403 688 Aug. S. City Lent County: King. Lacthong (s. t. r Lat Deg Lat Min/Sec Still REQUIRED) Long Deg Long Min/Sec Tax Parcel No. Cased or Uncased Diameter 2" Static Level 10 Work/Decommission Start Date 12/22/04 Work/Decommission Completed Date 12/22/04
Constructor/Design Well Data	Formation Description	Canstruction/Design Well Data	Formation Description
Drove a retractable stainles screen down to depth and of water sample Boring depth 20 Screened: 18-8 Removed all rods from bord backfilled with bentonite	5 1 10 10 10 10 10 10 10 10 10 10 10 10 1	The Department of Ecology does NOT Warranty the Data and or water sample Screened Marranty the Data and co water sample Screened Marranty the Data and co water sample Screened Marranty the Data and co water sample Beautiful and screened Marranty the Data and or water sample Removed all rods from bonn backfilled with bentonite	Silf & Sand

RESOURCE PROTECTION WELL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction Decommission ("x" in circle) Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number Consulting Firm KANE Enviro. Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Naturals used and the information reported above are true to my best knowledge and solie! Dealer Designeer Designeer Trainee Name (Print) Driller/Engineer/Trainee Signature Driller of Trainee License No. 2642 If trainee, licensed driller's Signature and License no.	Type of Well ("x" in circle) Resource Protection Geotech Soil Boring Property Owner The Boing Co. Site Address 20403 688 Aug. S. City Kent County King. Location SE/4 SE/14 Set 2 Two 22 R y Way once LavLong (s. t. r Lat Deg Lat Min/Sec still REQUIRED) Long Deg Long Min/Sec	RESOURCE PROTECTION WELL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission ("x" in circle) Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number Consulting Firm KANE Enviro. Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: leassmused and/or accept responsibility for conscuedon of this well, and its compliance with all Washington well consumed sundards Materials used and the information reported above are true to my best knowledge and belief Doublet Beginner Trainer Name (Print) Kay Chardleby Driller/Engineer/Trainer Signature Doublet or Trainer License No. 2642 If trainee, licensed driller's Signature and License no.	Type of Well (x in circle) Resource Protection Geotech Soil Boring Property Owner The Boing Co. Site Address 20403 681 Aug. S. City Kent County: Kinny Location State Sec 2 Ton 22 R 4 Will Circle of ane Lat/Long (s, t, r still REQUIRED) Long Deg Long Mit/Sec
Constructor/Design Well Data	Formation Description	Construction/Design Well Data	Formation Description
Drove a retractable stainly discreen down to depth and water sample Boning depth: 20 Screenad: 18 Removed all rods from be backfilled with bentonite	collected a / 20 Silft Sand	The Department of Ecology does NOT Warranty the Data and/or screen down to debly and water sample Bound debty Bound debt	silt t Sand

RESOURCE PROTECTION WELL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission ("x" in circle) Construction Construction Construction Construction Construction Construction Consulting Firm KAVE Enviro. Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards Materials used and the information reported above are must as my best knowledge and boile? Doublet Designer Trainee Name (Print) Construction Constructi	Type of Well ("x" in circle) Resource Protection O Geotech Soil Boring Property Owner The Boing Co. Site Address 20403 68th Aux S. City Kent County: King Wildere William Co. Location SE/4 SE/4 Sec 2 Tan 22N R 4 Wildere William Co. LavLong (s, t, r Lat Deg Lat Min/Sec Soil REQUIRED) Long Deg Lone Min/Sec	RESOURCE PROTECTION WE. - (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission ("x" in eirele) Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number Consulting Firm LANE Consulting Firm Consulting Firm Consulting Firm Mall Consulting Firm Consulting Firm Mall Construction CERTIFICATION: 1 constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards Materials, used and the information reported above are true to my best knowledge and belief Dorller Engineer Trainee Signature Driller/Engineer/Trainee Signature Driller or Trainee License No. 2642 If trainee, licensed driller's Signature and License no.	Type of Well ("x" in circle) Resource Protection Geotech Soil Boring Property Owner The Buing Co. Site Address 20463 (8812 Aug. 5. City Kent County: King. Location SE/14 Sectus Sec 2 Two 222 R 4 (WW) circle LavLong (s. t, r Lat Deg Lat Min/Sec still REQUIRED) Long Des Long Min/Sec
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Drove a retractable stainted screen down to depth and water sample Boring depth 20 Screened 18-3 Removed all rods from be backfilled with bentonite	collected a / 20' Silft Sund	Drove a retractable st screen down to depth a water sample Boring depth Screened: Removed all rods from backfilled with bentonite	ond collected a

Consulting Firm KAVE Enviro. Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and jut compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief. Driller Engineer Trainee Name (Print) Keyin Chandlehay Driller/Engineer/Trainee Signature University Chandlehay Driller or Trainee License No. 2642	Type of Well ("x" in circle) Resource Protection Geotech Soil Boring Property Owner Tha Boing Co. Site Address 20403 6888 Aug. 5. City Kent County: King Williams Location JE 14 18614 Sec 2 Two 22 N R WWW. Lat VLong (s. t. r Lat Deg Lat Min/Sec Still REQUIRED) Long Deg Long Min/Sec Tax Parcel No. Cased or Uncased Diameter 2" Static Level 10' Work/Decommission Start Date	RESOURCE PROTECTION WELL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission ("x" in circle) O Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number E 205/164 Consulting Firm KANE Enviro. Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: Lonstructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards, Materials used and the information reported above are true to my best knowledge and belief. Driller Engineer Trainee Name (Print) Kentin Chardeley Driller/Engineer/Trainee Signature Driller or Trainee License No. 2642 If trainee, licensed driller's Signature and License no. Construction/Design Well Data	Type of Well ("x" in circle) Resource Protection Geotech Soil Boring Property Owner The Boing Co: Site Address 20403 LSS Aug. S. City Kent County: King. Location 5E/A Sel/A Sec 2 Twn 22 R 4 WWM LavLong (s, t, r still REQUIRED) Long Deg Long Min/Sec
If trainee, licensed driller's Signature and License no.	Work/Decommission Completed Date 12/22/02	Signature and License no. Construction/Design Well Data	Work/Decommission Completed Date 1995
Construction/Design 9 Drove a retractable stainles screen down to depth and converted water sample Boring depth: 20 Removed all rods from borbackfilled with bentonite	silf + Sund	Construction/Design Well Data Construction/Design Well Data Drove a retractable stain water sample Boring depth: 20 Removed all rods from backfilled with bentonite	20' Silt t Sand
Scale 1"= Page of	ECY 050-12 (Rev 2/01)		

(SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission ("z" in circle) 170258 O Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number E 005164 Consulting Firm KANE E WITO. Unique Ecology Well ID 17ag No: Well Construction Certification: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief. Moriller Engineer Trainee Name (Print) Kell Candaday Driller/Engineer/Trainee Signature Candaday Driller/Engineer/Trainee Signature Candaday Uniter or Trainee License No. 2642	Type of Well ("x" in circle) Resource Protection O Geotech Soil Boring Property Owner The Boin Co. Site Address 20403 (882 Aux 5. City Kent County: King William Strick of ane William Strick of Aux 5.	(SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission ("x" in circle) O Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number E OOS 184 Consulting Firm KANE E NUTO. Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief. Driller Engineer Trainee Name (Printy Kaylor Charles) Driller/Engineer/Trainee Signature Driller or Trainee License No. 2642 If trainee, licensed driller's Signature and License no.	Type of Well ("x" in circle) Resource Protection Geotech Soil Boring Property Owner The Boring Co. Site Address 20403 65th Auc. 5. City Kent County: Kinny Location SE1/2 SE1/4 Sec. 2. Twn 22 R 4 (WW) circle Tax Parcel No. Cased or Uncased Diameter 2" Static Level 10' Work/Decommission Start Date 2 22 04
Signature and License no.	Formation Description	Signature and License no. Genstructon/Design Well Data	Work/Decommission Completed Date 12122 10U
Drove a retractable stainle screen down to depth and water sample Boring depth: 20 Screened: 18-3 Removed all rods from bo backfilled with bentonite	1 20' Silf & Sand	The Department of Ecology does NOT Warranty the Data and/or screen down to debth an water sample Bound debth: Screened: Removed all rods from packfilled with bentonite	20' Silft Sand
Scale 1"= of	ECY 050-12 (Rev 2/01)	Scale 1"= of of	ECY 050-12 (Rev 201

RESOURCE PROTECTION WELL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission ("x" in circle) O Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number E OS 164 Consulting Firm KANE Enviro. Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION. I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standard. Materials used and the information reported above are true to my best knowledge and belief. Doubler Beginneer Traince Signature Driller/Engineer/Traince Signature Driller/Engineer/Traince Signature Driller or Traince License No. 2642	Type of Well ("x" in circle) Resource Protection O Geotech Soil Boring Property Owner The Boing Co. Site Address 20 40 3 68 4 Aug. S. City Kent County: Kinn William S. Location JE/4 Sec 2 Two 22 R 4 William S. LavLong (s, t, r still REQUIRED) Long Deg Long Min/Sec	RESOURCE PROTECTION WELL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission ("x" in circle) O Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number E.O.S.164 Consulting Firm KAVE Enviro. Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: I constructed and/or acceptive presponsibility for construction of this well, and its compliance with all Washington well construction standards Materials used and the information reponded above are true to my best knowledge and belief. Driller Engineer Trainee Name (Print) Kellin Chandlekey Driller/Engineer/Trainee Signature Chandlekey Driller or Trainee License No: 2642	Type of Well ("x" in circle) Resource Protection Geotech Soil Boring Property Owner The Roin Co. Site Address 20403 682 Aug. S. City Kent County: King Washing Location JE/4 Jan/4 Sec 2 Twg 22 R 4 Washing LavLong (s, t, r Lat Deg Lat Min/Sec still REQUIRED) Long Deg Long Min/Sec
Signature and License no.	Work/Decommission Completed Date	Signature and License no.	Work/Decontinussion Completed Date 1909
Drove a retractable stainte value of depth and water sample		Tonstruction/Design Construction/Design Well Data Or O	
Boring depth: 20 Screened: 18-3 -Removed all rods from bo backfilled with bentonite	ning and Silft Sand	Boring depth: 20 Screened: 18-2 Removed all rods from be backfilled with bentonite	silf t Sand
Scale 1 = Page of	RECEIVED APR 0 7 2005 DEPT OF ECOLOGY ECY 050-12 (Rev 2/01)	The Department of Continue of	RECEIVED AHR 0 7 2005 DEPT OF ECOLOGY ECY 050-12 (Rev 201

RESOURCE PROTECTION WEL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction Construction Construction Construction Construction Construction Consulting Firm Consulting Type of Well ('x' in circle) Resource Protection Geotech Soil Boring Property Owner Tha Boing Property Owner Tha Boing Site Address 20403 68th Aux S. City Lent County: King Windcircle of Ore Wind Ore Location JE/14 SE/14 Sec 2 Two 22 R 4 Windcircle of Ore Wind Ore Lat/Long (s, t, r Lat Deg Lat Min/Sec Still REQUIRED) Long Deg Long Min/Sec	RESOURCE PROTECTION WELL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction Decommission ("x" in circle) O Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number POSSIB Consulting Firm KANE Enviro. Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION. I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief Driller Gengineer Trainee Signature Driller or Trainee License No. 2642 If trainee, licensed driller's Signature and License no.	Type of Well ("x" in circle) Resource Protection Geotech Soil Boring Property Owner The Boring Co. Site Address 20403 GSB Auc S. City Kent County: King Www.circle Of County: Lat Min/Sec. Lat Min/Sec. Lat Min/Sec.	
lignature and License no.	Formation Description	Signature and License no. Construction/Design Well Data	Formation Description
Drove a retractable stain discreen down to depth an water sample Boring depth: 20 Screened: 18 Removed all rods from to backfilled with bentonite	d collected a	The Department of Ecology does NOT Warranty the Data and screen down to depth and water sample Bound debth: 30 Screened: 8 Removed all rods from packfilled with bentonite	silt & Sand

9265

File Original and First Copy with Department of Ecology Second Copy — Owner's Copy

WATER WELL REPORT

Start Card No. D 19752

UNIQUE WELL LD. I

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

OWNER: Name The Boeing Co.	20403 68th Ave So., Kent	, WA 98	1032
LOCATION OF WELL: County King	See attached SE MS 14 T 2	2M M P A E	. ws
	Ave So., Kent, WA 98032	211 41	
PROPOSED USE: Domestic Industrial Municipal D	(10) WELL LOG or ABANDONMENT PROCEDURE O	ESCRIPTION	-
Impation Tast Well C Other C	Formation: Describe by color, character, size of material and structure, and and the kind and returns of the material in each stratum perienteed, with change of information.		
TYPE OF WORK: Owner's number of well (if more than one)	WATERIAL	FROM	TO
Abandoned New well S. Method: Dug Bored Despensed Cable Oriven	SILTY SOUND A GRAVEL		-
Reconditioned Rotary SQ Jetted	withtrace Brown clay		
DIMENSIONS: Discreter of well 3.6 Inches		5 - 1-4	
Drilled	mei Dium Black sano	5 1	8
CONSTRUCTION DETAILS:	meilium Black sang with H20		90
Casing Installed: Diam. from It. to It.		10-10	
Welded D 10 Diam from O n to 2.5 n.	Dry Blue clay	18 3	4.4
Wedded Ingritted In			
Perforations: Yes No No		1. 1-19	
Type of perforator used			
SiZE of perforations in. by in. by the fit is		1	
perforations from ft. to ft. to ft.		-	_
		-	_
Screens: Ves No No	AA.		_
Manufacturers Name bucs Ter well Screen	AL MAY 3		
Typis Model No	MAY 3 TONG DENTURE COLUER	7 . 1	===
Diam & Stot size 20 from 25 ft to 5 ft	MAY		
Diam. Slot size from /L to	10000		
Gravel packed: Yes S No Size of gravel 3/8-P-44	OFFI POR CORD		_
21. Jan. 11. 22.	Ut File I	1	_
Surface seek: Yes 1 No 1 To what depth? 1	OULLOR		
Modernal used in seal NOTI'V- CLC-I Did any strata contain unusable weier? Yee No			
Type of water? Depth of strata			
Method of seeding strate off		-	_
NIMA		-	-
PUMP: Merufacturer's Name Type: H.R.		12.0	-
) WATER LEVELS: Land-surface elevation	Work Sterned 8/4/97 ,19. Completed 10	/2/97	19
Static level 2 shows mean sea level 1 below top of wall Date 1.	The content of the co		
Artestary pressure cut per educar mon come	WELL CONSTRUCTOR CERTIFICATION:	The second of	
Actorism vision is controlled by (Cep., valve, etc.)	compliance with all Weshington well construction standard	s. Materials use	end its
) WELL TESTS: Drawdown is amount water level is lowered below static level	the information reported above are true to my best knowled	ge and belief.	
Was a pump test made? Yes No It yes, by whom?	NAME SLEAD CONSTRUCTION, IN	ic.	-
Yield:psi./min. with ft. drawdown after hrs.			cre
	Address 9021 Waller Road E., T	acoma,	WA
Recovery deta (time taken as zero when pump turned oil) (water level measured from sell	(Signed) Ucen	6-2531 No. 776	1
top to water level) Time Water Level Time Water Level Time Water Level	Confirmation's		
	No SLEADC*325KO Date 4/36	1	00
	(USE ADDITIONAL SHEETS IF NECESS		-
Date of test		e in	
Bauler test gal./min. with ft. chriwdown affar hrs.	Ecology is an Equal Opportunity and Affirmative Action	employer, For	r spe-
Artesian flow gal./min. with stem set at ft. for fvs. Artesian flow g.p.m. Date	cial accommodation needs, contact the Water Resource	s Program at	(205)
Temperature of water Was a chemical analysis made? Yes No	407-8600. The TDD number is (206) 407-6006.		

OJECTNAME: BORING Spe	ace this.	COUNTY:	nor 22-4-	B
CLL IDENTIFICATION NO 1/4			IEVI SOC // TYINZ	LNn 4E
HLLING METHOD: Abandon		STREET ADDRESS OF	WELL:	
nucen: F. Lynn Goble			1255 S. Kent	WA
CHATURE: Lisin Bol	1	GROUND SURFACE O	11011.	
ONSULTING FIRM BORENS	0	INSTALLED.		
PRESENTATIVE: Dan Mc	Cornack	DEVELOPED:	NIA	
	0165		/	
AS-DUILT .	WELL DATA		FORMATION DESCRIPT	ION.
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	DEPTH OF DORING	200"	DEPT OF ECULOGY	
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HOJECTNAME: BORING SPA ELLIDENTIFICATIONNO. N/A. HILLING METHOD: Abandon HILLEN: F. Lynn Goble HM. Cascade Drilling, Inc. CONTUNC: Bry Sol CONSULTING FIRM BORENS C EPPRESENTATIVE: Lan McC	LOCATION STREET A S800 WINTERLU GROUND INSTALLE	NWA NEW SOE IT TWIZZNA 4E DODIESS OF WELL: D. S. ZIZZS S. KENT WA EVEL CLEVATION: N/A D: W/A	PROJECT NAME: Boeing Signature of the consulting method: Aband of the consulting from	nc. WATGILE Co. INSTALLE	
AS-OUILT '	WELL DATA	FORMATION OESCRIPTION	NS-BUILT .	WELL DATA	FORMATION DESCRIPTION
	_ CONCRETE SURFACE SEAL	0 - (t.)	the Information	CONCRETE SURFACE SEAL	0 - rt.
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		APR 7 2000	Department of	4	NURO-WR DEPT UF ECOLOGY
. ₩	DEPTH OF DOTLING 20' 0	NURO-UR	# + ∞	DEPTH OF DORUNG 20'0	·
		DEPT UF ECULUGY			

WHERPROJECTING COMPARY THE BOX 3707 See WH 25 98134	Well 1D9 Glotech Soil Garing Scare Card & JE04388 (6) LOCATION OF WELL By legal description: County Inch Laminde Township and N N or SI Russian HE (E or W) Section 2 NEW 1/4 of SI Russian HE (E or W) Section 2 Sover sodram of well location. Solution HCCUSS Road Kent WA 98039	OWNERPROJECT OF CONTROLL OF THE BOLLING CONTROLL NOT THE BOLLING CONTROLL SERVICE OF THE PROJECT OF THE PROJ	Well IDH GLOPE A SOIL BATTING Seart Card & SEO4388 (6) LOCATION OF WELL By legal description: Coulty All Control Coult
YPE OF WORK Alternation (Repetit/Recondition) Convention Despending (A Abundantment	Tex for mumber of well location	TYPE OF WORK O New construction Alternation (Repair/Recondition) Conversion Despening Alternation	Tex lot number of well location
RILLING METHOD Rosery Med Cable	(7) STATIC WATER LEVEL: Ft. below land surface. Artesian Presigne	DRILLING METHOD Rosery Air	(7) STATIC WATER LEVEL: Fo below land surface. Agresian Prosture INvs. in Date
ORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES: Double of which weater was farm formed	BORE HOLE CONSTRUCTION:	(8) WATER BEARING ZONES: Depth at which water was first found
Standards Yes No Depts of Completed Well 41,5 ft. Depts of Completed Well 41,5 ft. Wester-tight corre-	From To Ept. Flow Reco. SWL	Depth of Completed Well 51.5 ft.	From To Egs. Player Rate SW L
Sorface (fusic van): Locking cap Lessing unspecies		Surface Bush wait Locking cap Locking cap Locking dismeter Caring dismeter Caring dismeter	
Carring dismoster Musterual According to the control of the cont	(9) WELL LOG: Ground Elevation	the Material	(9) WELL LOG: Ground Elevation
Welded Threshold Greet	Material From To SWL	Weldod Threated Green To State Control Co	Material From To SWL
Eal Carlo		The seal of the se	
To read Marini Buntonite		TO See Material Control	
Amount	र्ता। ० पाउ	O fin Grout weight	1:II 0 51.5
Borebole diameter		Borobole diameter: in from 1 to	n .
in from f. to f.	DECEMBE	U Titter Best 1 f	DECEIVED
ock See Screen:	MAY 19 2009	Screen	MAY 19 2008
TO DO BUT TO TO THE TOTAL	Dept of Ecology WRINWRO	TO 2014 Screen Material Screen Material To 2014 Screen ft to 2014 Set size in Place pack	Dept of Equipy WR-NWRO
Filter pack	Date started 4/17/09 Completed 4/17/09	Hiter pack	Designated 4/17/09 Completed 4/17/09
WELL TESTS:	WELL CONSTRUCTION CERTIFICATION: constructed anclion scheep reaponability for construction of this well, and its construction with all Nashington well construction standards. Materials used	Stra Stra	WELL CONSTRUCTION CERTIFICATION: constructed and/or except responsibility for construction of this well, and its completence with all Visighington well construction standards. Materials used and the information reported accept are true to my best transverse and before
Permonability Yield GPM	and the information reported above are true to my best knowledge and balled. Type or Print Name DOWN PUCK ptt License No. 2/2/69	Permon Batter Air Flowing Armenian Permonability Yield 07M	Type or Print Name David Puckett License No. 2769
Conductivity PS Temperature of water OF/C Dopth arresian flow found 1.	Trainee Marine Doiling Company Halo Cene Drilling Inc	Coodecrivity PH Temperature of water OFio Depth artesian flow found	A. Drilling Company HAIO cene Drilling Inc
Was weeter analysis done?	(Somes) and Fracker women No. 2769	Was womer analysis does? Yes No By whost? Depth of strans to be analyzed. From the	1 Aggress Ob 21 Took Road E Edgward WA 983
Depth of stress to be enalyzed. From ft. on ft.	AGGRESS LOVE TOOD ROAD E ENGRAVED WA 98372	Calour or strain to permission Lugar Transfer or m	Address [Ob 2] 1000 KOOD E ENDLOOD WH 480

RESOURCE PROTECTION N SUBMIT ONE WELL REPORT PER WELL INSTAL Construction/Decommission	Notice of I	The second secon
Construction Decommission ORIGINAL INSTALLATION Nation of Intent Number	<u>A</u> ,	eotechnical Soil Boring g Company
Consulting Firm GeoEngineers-Redmond	City Kent	County 17-King
Unique Ecology Well ID Tag No	Location 1/4 NE 1/4 S	E Sec 2 Town 22N R4E WWN
WELL CONSTRUCTION CERTIFICATION: I combuded and/or accept communication of this well, and its runtil succe with all Washington well conf	namen standards still Required) Long Deg	
Assimus's used nich the information (epoched above are time to any best know Driller Trainee Name (Prink) Frank Sgott Driller/Trainee Signature Driller/Trainee Ekcense No. 2549		8/9/2010 Status Level 1/1/4
If trainee, Jicested drillers'	Wort/Deconunision Completed D	1.0
Signature and License No. Construction/Design	Well Data W10-274	Formation Description
	CKFILL T FT BULL CN:PS	0 8 FT Brown 51;11 5 Sandy 5; 14 FT
DE	TH OF BORING 8 FT	U FF

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Dept of Ecology WR-NWRO

Construction/Decommission	TALLED)		Notice of Intent No. Type of Well						
Construction 38	12054		X Resource F						
Descrimination ORIGINAL INSTALLATION Natice of Intent Number Consulting Firm GeoEngineers-Redmond		Property Owner The Boeing Company Site Address 20403 68th Ave. S. City Kent County 17-King							
					Unique Ecology Well ID Tag No.		Location 1	14 NE 1/4 SE Sec 2	Town 22N R4E
					WELL CONSTRUCTION CENTURCATION: I constructed sold or ec	Service Control		at Degt	Lat Min/Sec
construction of the well, and the completence with all Westington well to Malaright used and the information reported above one true to my best k		Tax Parcel No.	ong Deg 1	Long Min/Sec					
Driller Traince Name (Print) Frank Scott	70		Diameter Zil	Static L					
Driller/Trainee License No. 2549									
If traince, ticesned drillers'		Wart/Decommunic							
Signature and License No.			to Completed Date	-9-10					
Construction/Design	W	ell Data W10-274	F	ormation Description					
	ONCRETE SUR	A T	FT 0	11,12 ~ 51,112 ~ 51,12 ~ 51,11					
		Butos	žęΣ						
				F					
	PTH OF BORING	8	FT						

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JUL 2 0 2010 Dept of Ecology WR-NWRO Report.

Information on this Well

the

The Department of Ecology does NOT Warranty the Data and/or

Dept of Ecology WR-NWRO

RESOURCE PROTEC	the second in a second second	CIONI	Notice o		SED 7364	E E
Construction/Decommission	38205	6	7	ype of Well		
Construction	200		2	Resource Pr	otection	
Decommission ORIGINAL INSTALL	ATION Natice				1 Soil Boring	
of Intent Number		Property Owner	The Bo	eing Company		
Consulting Firm GeoEngineers-R	edmond	Site Address City Kent	20403 6811		County 17-King	
			4			EWM
Unique Ecology Well ID Tag No.		Location	1/4 <u>NE</u>	SE Sec Z	Town 22N R4E	WWM
WELL CONSTRUCTION CERTIFICATION: 1 commun	and and or accept responsibility for	Lat/Long (s,Lr	Lat Deg	x	Lat Min/Sec	I I I
construction of the well, and its compliance with all West					Long Min/Sec	
Materials exist and the information reported above are true		Tax Parcel No.				
Driller Traince Name (Priva) Frank S	con 2	Cased on Marrian	4 Chameter	711	Static	and to 1
Driller/Trainee License No. 2549				6.24		Arti VVI
If trainer, licemed drillers'		Work/Decommi	sion Start Date	6/9/2	2010	-
Signature and License No.		Work/Decommi	tion Completed	Date 6	-9-10	
		□ — Vell Data W10-274				
Construction/Design		Vell Data VVID-214		For	mation Description	
	COMPRETE OF	DELOCATAT		0	0 .	
The Arth Mark	CONCRETE SU	RFACE SEAL	241			T
		1	FT	Brew	~ 51,13	Sind
100 Sept 1937 to	7.1		16	1	5.11	
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			2011			
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	- 1					
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1				
	DEPTH OF BORING	8	FT			
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JUL 2 0 2010 Dept of Ecology WR-NWRO

			AE09
2058			
7.364 Property Or	vner The Boeing	Company	2
City Kent		County 17-Kir	Q ZEWM
Location	I/ANE MASE	Sea 2 Town 22N	- 1
manata madera still Require	d) Long Deg	x Lat Min/Sec x Long Min/Sec	x .
Chased or Unc	ased Diameter	Sil Si	atic Level M
		1.0.10	
		6-4-10	_
Well Data W10-	2/4	Formation Descrip	tion
ONCRETE SURFACE SEA			,7 2 mgA
ACKFILL	FT	σ -	FT
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	Site Address City Kent Location Location Lat/Long (s. still Require and letter and letter and letter and letter and letter and letter work/Decor Work/Decor Work/Decor Work/Decor Work/Decor Address Williams W	Type Type of Well Microsurce Protection Gentechnical Soil Buring.	

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22-48-23

Construction/Decommission 382059	Type of Well MResource Protection
Decommission ORIGINAL INSTALLATION Notice of Intens Number SE07364	Property Owner The Boeing Company Site Address 20403 68th Ave. S.
Consulting Firm GeoEngineers-Redmond	City Kenl County 17-King
Juique Ecology Well ID Tag No.	Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E WWM
VELL CONSTRUCTION CENTURCATION: I constructed and/or second responsibility for construction of this well, and its structioner with all Washington well construction standards	Lat/Long (s,Lt Lat Deg x Long Min/Sec x still Required) Long Deg x Long Min/Sec x
isterials used and the information reported above are true to my best knowledge and belief	Tax Parcel No.
Driller Trainee Name (Price) Frank Stott Onlier/Trainee Signature	Cased or Unexced Diameter Z' State Level WA
Onlier/Trainee License No. 2549	
f trainer, ficemed drillers']
Signature and License No.	Work/Decommission Completed Date 6 - 9 - 10
Construction/Design	Well Data W10-274 Formation Description
CONCRETE SU	0 8 FT Brown 51,11/1 Sundy 5;1/1
BACKFILL	
	Bint Chips
	_ 0 · FT
DEPTH OF BORIN	G 5FT

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JUL 2 0 2010 Dept of Ecology WR-NWRO

Construction/Decommission	382060)	of Intent No. AECC Type of Well XResource Protection
Deconunission ORIGINAL INSTALLA of Intent Number			Geotechnical Soil Boving
Consulting Firm GeoEngineers-Re	dmond	City Kent	County 17-King
Unique Ecology Well ID Tag No.		Location 1/4 NE	14 SE Sec 2 Town 22N R4E WWM
WELL CONSTRUCTION CERTIFICATION: Longitude construction of the well, inclus compliance with all Warble	C. S.	Lat/Long (s,t,r Lat Dog still Required) Long Deg	x Lot Min/Sec x Long Min/Sec x
Materials used and the information reported shows are from t		Tax Parcel No.	. Sang mirror
Driller Trainee Name (Print) Frank S	ott 2 de	Cased or Uncased Diemeter	Zil Static Level W
Driller/Trained License No. 2549		Work/Decommission San On	Calant
If trained, licesned drillers'			100
Signature and License No.		Wede/Decommission Complete	ed Dale 6-9-10
Construction/Design	V	Vell Data W10-274	Formation Description
	CONCRETE SU	RFACE SEAL THE SEAL FT	Brewn 51/14 5/10/4
4	BACKFILL	TT FT	FT
		Bint Crips	
			0 FT

	DEPTH OF BORING	3 8 FI	

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RESOURCE PROTECTION WELL RI (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission 38 206	Notice of Intent No. AEO 9569
Construction	MResource Protection
Decommission ORIGINAL INSTALLATION Notice of Intent Number 5E \$ 7364	Property Owner The Boeing Company
2007561	Site Address 20403 68th Ave. S
Consulting Firm GeoEngineers-Redmond	City Kent County 17-King
Unique Ecology Well ID Tag No.	Location 1/4NE 1/4SE Sec 2 Town 22N R4E
WELL CONSTRUCTION CERTIFICATION: I mentioned unifor surepl responsibility for	Lat/Long (s,t,r Lat Deg a Lat Min/Sec e
co-struction of the well, and its compliance with 63 Westerques with construction standards	still Required) Long Deg x Long Min/Sec 1
Materials used and the information reported above are true to my how knowledge and belief	Tax Parcel No.
Driller Traince Nene (Print) Frank Scott	Cased or Uncased Districtor 20 Static Level WIA
Driller/Trainer Signature Driller/Trainer Literase No. 2549	Cased of Obertand Pursueted C. 2000 Parket Policy
	World/Decommission Start Date 6/9/2010
If frames, licesned drillers'	Wort/Decommision Completed Date 6 - 9 - 10
Signature and License No.	
Construction/Design W	Vell Data W18-274 Formation Description
BACKFILL	Brown SI, lly Sindy T FT 0 FT Brown SI, lly Sindy T FT FT FT
DEPTN OF BORING	Fage of Ections (Provided)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

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JUL 2 0 2010 Dept of Ecology WR-NWRO

(SUBMIT ONE WELL REPORT PER W Construction/Decommission			Total No.	AEOG
Construction	38206	2	Type of Well Resource Protection	
Decommission ORIGINAL INSTALL			Geotechnical Soil B	
	SE07364	Property Owner T	he Boeing Company	31,146.
	O WILLIAM	The state of the s	03 68th Ave. S.	4710-4
Consulting Firm GeoEngineers-R	edmond	City Kent	County	17-King
Unique Ecology Well ID Tag No.			E 1/4 SE Sec 2 Toyer	22N R4E INWM
WELL CONSTRUCTION CERTUICATION: Elements	The second secon	Lat/Long (s,tr Lat D		Min/Sec r
monatraction of the well, and the compiler to with all. Well At atomate used used the information reported above are the		still Required) Long Tax Parcel No.		minasc
Doubles Trainee Name (Print) Frank S			1.4	
Driller/Trainee Signature Driller/Trainee License No 2549	and the	Cased or Uncased Diam	Selfet Self	Static Level MA
2. 2. 4. 7 2. 4. 2. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.		Work/Decommission Str	art Date 6/9/2010	
If trainee, licesned drillers'		World/Decommission Co	ompleted Date 6-9-1	C
Signature and License No.				
Construction/Design	V V	Vell Data W10-274	Formation	Description
	CONTORUCC STA	DEAGEREAL		100
BOOK BOOK BOOK	CONCRETE SU	RFACE SEAL	0 - 0	- X XX
		F	I Brown:	51,11g Sundy
			5;1	+
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	BACKFILL	7 .	7	67
11 Mil 142 M	BACKILL			
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10 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1				
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RESOURCE PROTECTION WELL	REPORT CURRENT 22-4E-2J	RESOURCE PROTECTION WEL	LAREPORT CURRENT 22-4E-2
(SUBMIT ONE WELL REPORT PER WELL INSTALLED)	OECEIVED Notice of Intent No. AE(113)	RESOURCE PROTECTION WEL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) CONSTRUCTION/Decomplistion	OEC 13 200 Resource Protection
Construction/Decommission	Type of Well	Construction/Decommission	Type of Well
Construction 396621 (PCC 1.2 2015	Construction 396622	Resource Protection
M X Decommission ORIGINAL INSTALLATION Notice	DEC 1 3 2010 B Geotechnical Soil Boring	M Decomposition OBIGINAL INSTALLATION Nation	Geotechnical Soil Boring
of Intent Number	Property Owner The Boeing Company	Decommission ORIGINAL INSTALLATION Notice of Intent Number	Property Owner The Boeing Company
	Site Address 20403 68th Ave. S.	ш	Site Address 20403 68th Ave. S.
Consulting Firm GeoEngineers-Redmond	Gity Kent County 17-King		City Kent County 17-King
Unique Ecology Well ID Tag No.	Location 14 NE 14 SE 500 2 Twn 22N R 4E 00 WWM	Consulting Firm GeoEngineers-Redmond Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION: 1 constructed and bit a steps responsibility for	Location 14 NE 14 SE Sec 2 Two 22N 8 4E or WW1
WELL CONSTRUCTION CERTIFICATION From send and/or respect repositivity for	Lat/Long (s.t,r Lat Deg Lat Min/Sec	WELL CONSTRUCTION CERTIFICATION: I constructed and list act type responsibility for	Lat/Long (s.t.r Lat Deg Lat Min/Sec
construction of thirs well, and its wing lapt 6 with all Washington well of instruction standards	still Required) Long Deg Long Min/Sec		still Required) Long Deg Long Min/Sec
Material: a sed and the information separate above are wasto my hast knowledge and halled	Tax Parcel No.	Confliction of 6 is well and to compliance with all Washington will assistance quied a dis Macrosa Lived and the information reported above are true to my best knowledge and the last	Tax Parcel No.
Driller Trainec Name (Print) Kerry Lamphear		Driller Trainee Name (Prost) Kerry Lamphear Driller/Trainee Signature x Driller/Trainee License No. 3075 T	
Driller/Trainee Signature x 12 2	Cased or Uncased Diameter Z Static Level	Driller/Traince Signature x 25 2	Cased or Uncased Diameter 2 Stalic Level 7
Driller/Trainee License No. 30157	Work/Decommission Start Date 10/22/2010		Work/Decommission Start Date: 10/22/2010
If trainee, licensed driller's		If traince, licensed driller's	- X -
Signature and License No. 2330	Work/Decommission Completed Date 10/23/10		30 Work/Desormission Completed Dare 10-22-10
	Data W10-586 Formation Description	Signature and License No. Construction/Design	Well Data W10-586 Formation Description
BACKFILL DEPT OF ECC CLIENT WEI	SURFACE SEAL 2' FT 23' FT 0 M/A FT	CONCRETE BACKFILL	
3	Bent-Chips	8	Bent-Chips
	REQUIRED INFORMATION	of E	REQUIRED INFORMATION
	(Must get one or both if available)		(Must get one or both if available)
DEPT OF ECC	DLOGY WELL TAG #:	t t	VELL ID #:
	181	The C	
DEPTH OF BOR	RING Z5 FT	DEPTH OF	BORING <u>25</u> FT
Scale (" =	Page of ECY 050 17 (Rec~v 2/01)	Scale !" =	Page of ECY 050-32 (Rec=v 3/0))

WELL CONSTRUCTION CERTIFICATION: I concurred analysis accepted to a function of the seed, and it complience with all Warting time oct times Marring to me to be information reported above are trurns my best from Different Trunine Name (Prusi) Kerry Lamphe Driller/Trainine Signature & 4/1/2	medica still Required) Long Deg	Lat Min/Sec Long Min/Sec Z '' Static Level #9	Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION I remuse we disable as a manufacture with all Washing some sell and the configuration of this well, and his compliance with all Washing some sell and the configuration of the well and the information reported above and trust to my beautiful to the configuration of the configurati	i movamenta still Required) Lo or knowledge and held Tax Parcel No.	at Deg Lat Min/Sec Long Deg Long Min/Sec Long Min/Sec Long Min/Sec Static Level /1
Driller/Trainee Signature & SOSST Driller/Trainee License No. SOSST If trainee, licensed driller's Signature and License No.	Work/Decommission Start D		Driller/Trainee License No. 3075/T	Work/Decommission	in Start Date 10/22/2010 in Completed Date 10/22/2010
Construction/Design	Well Data W10-586 CONCRETE SURFACE SEAL. 2' FT	Formation Description 0 -N/A FT	NOT Warranty	Well Data W10-586 CONCRETE SURFACE SEAL Z	Formation Description 0 N/A FT FT
A COUNTY OF THE PROPERTY OF TH	BACKFILL 23' FT Bent-Chips REQUIRED INFO (Must get one or both	RMATION	of Ecology does		
	DEPT OF ECOLOGY WELL TAG # : CLIENT WELL ID #:	13BC-853	Department	DEPT OF ECOLOGY WELL TAG CLIENT WELL ID #:	i#: <u>na</u>
L			L Deb		

RESOURCE PROTECTION WELL REPORT (SUBMITT ONE WELL REPORT PER WELL INSTALLED) (SUBMITT ONE WELL REPORT PER WELL INSTALLED) (SUBMITT ONE WELL REPORT PER WELL INSTALLED)	RESOURCE PROTECTION WELL REPORT (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission Construction/Decommission
Construction/Decommission 396625 Type of Well Mesource Protection	X Construction SSS 269 X Resource Protection
Occommission ORIGINAL INSTALLATION Notice of Intent Number	Froperty Owner The Boeing Company
Considing Firm Geo agreets City KENT County KING	Consulting Firm Landau Associates City Kent County King
Unique Ecology Well ID Location W NE 14 SESTO THE 22 A 4E OF Tag No. N I A	Unique Ecology Well ID Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or www.
OFFIL DO INSTRUCTION CERTIFICATION: I constructed another accept responsibility for Latt/Long (s.t.r. Lat Deg Latt/Index construction in of this well, and its compliance with all Washington well existraction readards still Required) Long Deg Long Min/Sec.	WELL CONSTRUCTION CERTIFICATION: I immerated und/or accept responsibility for Lat/Long (s,t,r Lat Deg. x Lat Min/Sec. x tonstruction of this well, and in compliance with all Webbargton well construction standards still Required). Long Deg. x Long Min/Sec. x Materials used and the information reported whose are one to my best knowledge and belief. Tax Parcel No.
Materials unted and the information reported progress mergore to prophendanty-fedge and belief Tax Parcel No. Driller/T traince Name (9rint) Steve Shives Cased or Uncessed Diameter 11 Static Level 11.4	Driller/Traince Name (Print) Driller/Traince Signature Driller/Traince Signature Driller/Traince License No. 2992 Cased or <u>Uneased Diameter</u> Static Level B'
Differ/Trainee License No. 2965 T Work/Decommission Start Date 11-2-10	Work/Decommission Start Date 7-23_10
If Grainest, licesned drillers' 17 11 22 230	If trainine, licesand drillers' Signature and License No. Work/Decommission Completed Date 7-30-10
Signature and License No. Work/Decommission Compressed Date: Vocation/Design Well Data W10-586 Formation Description	Construction/Design Well Data W10-368 Formation Description
CONCRETE SURFACE SEAL O - 4 FT BACKFILL BACKFILL G' - 25 FT REQUIRED INFORMATION (Must get one or both if available) DEPT OF ECOLOGY WELL TAG #: NA	CONCRETE SURFACE SEAL FT FT SENTENTIFE D. 2 FT BACKFILL 4' FT D. 2 5 FT BENTANTIFE MED BROWN SILTY SAND SAND THE SURFACE SEAL D 2 FT SENTENTIFE MED BROWN SILTY SAND SAND SAND THE SURFACE SEAL D 2 FT SENTENTIFE D.
CLIENT WELL ID #: 4 DEPTH OF BORDING 25 FT	DEPTH OF BORING S' FT RECEIVED RECEIVED DEPARTMENT OF ECOLOGY Scale 1" = Page of 150 7 2060 social (Recond 201)
Scale 1" = Page of EEV000-(2'(Reser 201)	WATER RESOURCES PROGRAM

Construction/Decommission 3851/	Type of Well	RESOURCE PROTECTION WELL R (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission	Type of Well
Construction 385265	X Resource Protection	Construction 385266	X Resource Protection
Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Borine		Geotechnical Soil Borine
of Intent Number	Property Owner The Boeing Company	of Intent Number.	Property Owner The Boeing Company
A 1974 C 154 17	Site Address 20403 68th Ave S	C	Site Address 20403 68th Ave S
Consulting Firm Landau Associates	City Kent County King		City Kent County King
Inique Ecology Well ID ag No	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or WWW.	Unique Ecology Well ID	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4F or
ELL CONSTRUCTION CERTIFICATION. I constructed audior accept responsibility for	Lat/Long (s,t,r Lat Deg x Lat Mitt/Sec x		Lat/Long (s,t,r Lat Deg x Lat Min/Sec x
ssence/so of this well, and its compliance with all Washington well construction standards	still Required) Long Degx Long Min/Secx	constructor of litts well, and its compliance with all Washington well construction standards Materials sond and the information reported above are true to my leaf knowledge and belief	still Required) Long Deg 1 Long Mir/Sec 1
Doubt Trance Name (Print) Lunn Goble	Tax Parcel No.	Materials sord and the information reported above are true to my best knowledge and belief X Driller Trainee Name (Print) Lunn Goble	Tax Parcel No.
iller/Traince Signature 2 7014	Cased or Uneased Diameter 2 Static Level 8	Driller/Trainee Signature	Cased or Uncased Diameter 2 Static Level 9
riller/Trainec License No. 2992		Driller/Trainee Signature Driller/Trainee License No. 2992	
traince, licesned drillers'	Work/Decommission Start Date 7-21_10		Work/Decommision Start Date 7-27-10
gnature and License No.	Work/Decommission Completed Date 7-30-10	If trained, licesned drillers' Signature and License No.	Work/Decommision Completed Date 7-30-10
Construction/Design Well Date	a W10-368 Formation Description	The second secon	oata W10-368 Formation Description
◆ BACKFILL	_4' FT 02.5 FT	BACKFILL	4' FT02- 5 FT
All IIIIII	SKNTENITE MKD BROWN SILTY SAND 0 - FT	of Ecology	BENTENITE MED BROWN SILTY SAND
All IIIIIII	SKNTENITE MKD BROWN SILTY SAND	Ecology	

Construction/Decommission 385267	X Resource Protection	RESOURCE PROTECTION WELL IS (SUBMIT ONE WELL, REPORT PER WELL INSTALLED) Construction/Decommission Construction Decommission ORIGINAL INSTALLATION Notice	Type of Well X Resource Protection
Decommission ORIGINAL INSTALLATION Notice of Intent Number	Property Owner The Boeing Company Site Address 20403 68th Ave S	of Intent Number	Property Owner The Boeing Company Site Address 20403 68th Ave S
Consulting Firm Landau Associates	City Kent County King	Consulting Firm Landau Associates	City Kent County King
Unique Ecology Well ID Tag No.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or	Unique Ecology Well ID Tag No.	Location 1/4 NE 1/4 SE Sec 2 Two 22N R 4E or
WELL CONSTRUCTION CERTIFICATION: constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg Lat Min/Sec s	WELL CONSTRUCTION CERTIFICATION. I constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg a Lat Min/Sec r
construction of this well, and its sumpliance with all Washington well construction standards. Miliorials succiliand the information reported above are thus to my heat knowledge and belief	still Required) Long Deg x Long Min/Sec x Tax Parcel No.	construction of this well, and its compliance with all Washington well construction standards Mercrials used and the information reported above are true to my best knowledge and belief	still Required) Long Deg z Long Min/Sec L Tax Parcel No.
X Driller Trainee Name (Print) Lynn Goble Driller/Trainee Signature Zame Delle	Cased or Uneased Diameter 2" Static Level B	Driller Traince Name (Print) Driller/Traince Signature	Cased or <u>Uneased Diameter</u> 2' Static Level B
Driller/Fraince License No. 2982	Work/Decommission Start Date 7-23-10	D Driller/Trainee License No. 2992	Work/Decommission Start Date 7-27-10
If trainee, licesned drillers' Signature and License No.	Wurk/Decommission Completed Date 7-30-10	If fraince, licetated drillers' Signature and License No.	Work/Decommission Completed Date 7-30-10
Construction/Design Well Da	ata W10-368 Formation Description	PER CONTRACTOR CONTRAC	Data W10-368 Formation Description
BACKFILL		Department of Ecology does NOT Warranty BACKFILL	
DEPTH OF BORING	DEPARTMENT OF ECOLOGY ///////////////////////////////////	DEPTH OF BORING	FT RECEIVED DEPARTMENT OF ECOLOGY

Construction/Decommission 385269	Type of Well	Construction/Decommission 385270	Type of Well
Construction 383267	X Resource Protection	NConstruction 3852/0	X Resource Protection
Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring	Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring
of Intent Number	Property Owner The Boeing Company	af Intent Number	Property Owner The Boeing Company
Consulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King	Consulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King
	County King	5	EWM COUNTY KING
Jnique Ecology Well ID Fag No.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E ar	Unique Ecology Well ID Tag No	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E W
FELL CONSTRUCTION CERTIFICATION 1. constructed and/or assept responsibility for	Lat/Long (s,t,r Lat Deg x Lat Min/Sec x	WELL CONSTRUCTION CERTIFICATION: I constructed and/or assept responsibility for	Lat/Long (s.t,r Lat Deg t Lat Min/Sec t
ntanaction of this well, and its compliance with all Washington well construction standards	still Required) Long Deg x Long Min/Sec x	construction of this well, and its complitate with all Washington well construction standards	still Required) Long Deg 1 Long Min/Sec 1
Initivity used and the information reported above are true to my ben knowledge and belief Driller Trainee Name (Print) Lunn Goble	Tax Parcel No.	Materials used and the information reported above are mue in my best knowledge and belief X Driller Trainee Name (Print) Lunn Goble	Tax Parcel No:
riller/Trainee Signature	Cased or <u>Uneased</u> Diameter 2 Static Level B	Driller/Trainee Signature	Cased or Uneased Diameter 2" Static Level B
Priller/Trainee License No. 2992		Driller/Trainee License No. 2992	
trainee, licesned drillers'	World/Decommission Start Date 7-27_10	If trainec, licesned drillers'	Work/Decommission Start Date 7-27-18
ignature and License No.	Work/Decommision Completed Date 7-30-10	Trainec, licesped drillers' Signature and License No.	Work/Decommission Completed Date
Construction/Design Well Da	sta W10-368 Formation Description		ta W10-368 Formation Description
BACKFILL 2	4' FT 02-5 FT BENTENITE MED BROWN 5:LTY 5AND 0 - FT	CONCRETE SUR CONCRETE SUR BACKFILL	4' FT 02-5 FT BENTENITE MED BROWN 5:2TY SAND 0 - FT
		ne Depa	RECEIVED

Construction/Decommission 385271 Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number	Type of Well X Resource Protection Geotechnical Soil Boring Property Owner The Boeing Company	RESOURCE PROTECTION WELL R (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction SConstruction Decommission ORIGINAL INSTALLATION Notice of Intern Number	Type of Well X Resource Protection Geotechnical Soil Boring Property Owner The Boeing Company
Consulting Firm Landau Associates	Site Address 29493 68th Ave S City Kent County Kine	Consulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King
Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION: Leantineted and/or scenp responsibility for construction of this well, and its compilance with all Washington well construction standards wherean used and the information reported above are true to my heat transledge and belief. X Deriller Trainnee Name (Print) Driller/Trainnee Signature Driller/Trainnee License No. Z992 If trainnee, dicestined drillers' Signature and License No.	Location 1/4 NE 1/4 SE Sec 2 Twp 22N R 4E or WVM	Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION: I consumered anxiet accept responsibility for amortivation of this well, and its compliance with all Washington well communion ishendards whatenals used and the information reported above we me is my best knowledge and belief To Driller/Trainee Signature Driller/Trainee Signature Driller/Trainee License No. 1992 If framee, licensed drillers' Signature and License No.	Location
Construction/Design Well Da	ata W10-368 Formation Description	The second secon	ata W10-368 Formation Description
BACKFILL	# FT	Department of Ecology does NOT Warranty BACKLIIT	AFACE SEAL FT 0 - 2 FT FT 0 2 - 5 FT SENTENTIF MED BROWN 5:2TY CHIP SAND
DEPTH OF BORING	DEPARTMENT OF ECOLOGY	DEPTH OF BORING	

UBMIT ONE WELL REPORT PER WELL INSTALLED)	Notice of Intent No. SE07641	RESOURCE PROTECTION WELL REPO	Notice of Intent No. SE07641
Construction 38527	Type of Well	Construction/Decommission 385274	Type of Well
Decomnission ORIGINAL INSTALLATION Notice	X Resource Protection	> Classification	X Resource Protection
of Intent Number	Property Owner The Boeing Company	□ Decommission ORIGINAL INSTALLATION Nonce of Intent Number Pro	Centechnical Soil Boring The Boeing Company
***************************************	Site Address 20403 68th Ave S		perty Owner The Boeing Company Address 20403 68th Ave S
onsulting Firm Landau Associates	City Kent County King	Consulting Firm Landau Associates City	Kent County King
nique Ecology Well ID ig No	Location 1/4 NE 1/4 SE Sec. 2 Twn 22N R 4E or www.	Unique Ecology Well ID Loc	ation 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or
L CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg Lat Min/Sec x		Long (5,t,r Lat Deg x Lat Mit/Sec x
rection of this well, and its compliance with all Washington well construction standards risks used and the information reported above are true to my less knowledge and belief	still Required) Long Deg a Long Min/Sec x		Required) Long Deg x Long Min/Sec x
Driller Traince Name (Print) Lunn Goble	Tax Parcel No.	Materials used and the information reposted above are two to my best knowledge and belief X Driller Trained Name (Print) Lunn Gable	x Parcel No.
Her/Trainee Signature 2 200 Molle	Cased or Uncased Diameter 2" Static Level 8"	O Driller/Trainee Signature	nd or Uneased Diameter 2" Static Level
Her/Trainee License No. 2982		Driller/Trainee License No. 2-982	
rainee, licesned drillers'	Work/Decommission Start Date 7-27-10	10	orl/Decommission Start Date 7-27-18
insture and License No.	Work/Decommission Completed Date 7-30-10		ork/Decommission Completed Date 7-30-10
Construction/Design Well	Data W10-368 Formation Description	Construction/Design Well Data V	
BACKFILL	# FT 02-5 FT BENTENITE MED BROWN 5:2T y SAND 0 - FT	Department of Ecology does NOT Warranty BACKFILL BACKFILL	4' FT 02.5 FT TENTS MED BROWN 5:2TY SAND 0 - FT
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Construction Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number	Type of Well X Resource Protection Geotechnical Soil Boring Property Owner The Boeing Company	RESOURCE PROTECTION WELL F (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction 385276 Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number	Type of Well XResource Protection Geotechnical Soil Boring Property Owner The Boeing Company
	Site Address 20403 68th Ave S	Consulting Firm Landau Associates	Site Address 20403 68th Ave S
	City Kent County King	Consulting Pilm Landau Associates	City Kent County King
que Ecology Well ID No	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or www.	Unique Ecology Well ID Tag No.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or WW
CONSTRUCTION CERTIFICATION: Leansmeted and/or accept responsibility for cour of this well, and its compiliance with all Washington well construction standards	Lat/Long (s,t,r Lat Deg x Lat Min/Sec x still Required) Long Deg x Long Min/Sec x	WELL CONSTRUCTION CERTIFICATION: I constructed end/or accept responsibility for canaraction of this well, test its compliance with all Washington well construction standards	Lat/Long (s,t,r Lat Deg x Lat Min/Sec still Required) Long Deg x Long Min/Sec x
als used and the information reported above size true to my best knowledge and belief	Tax Parcel No.	Maserials usual and the information reported above are true to my best knowledge and belief	Tax Parcel No.
iller Trainee Name (Print) Lynn Goble	Cased or Uncased Diameter 2" Static Level 8"	Driller/Traince Signature Driller/Traince License No. 2982	Cased or Uncased Diameter 2" Static Level 2
nee, licesned drillers'	Work/Decommission Start Date 7-21-10	If traines, licesned drillers'	Work/Decommission Start Date 17-27-16
ture and License No.	Work/Decommission Completed Date 7-30-10	If traines, licesned drillers' Signature and License No.	Work/Decommission Completed Date 7-30-10
Construction/Design Well	Data W10-368 Formation Description		Data W10-368 Formation Description
	1 FT	CONCRETE SU	FT FT FT
BACKFILL	# FT	Department of Ecology does NOT	BENTENITE NED BROWN SILTY SAND

(SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission	Notice of Intent No. SE07641	RESOURCE PROTECTION WELL R	Notice of Intent No. SE07641
Construction/Decommission 38527	7 Type of Well	= Construction/Deconnaission 383 278	Type of Well
Decommission ORIGINAL INSTALLATION Notice	X Resource Protection	X Construction	X Resource Protection
of Intent Number	Property Owner The Boeing Company	Decommission ORIGINAL INSTALLATION Notice of Intent Number	Property Owner The Boeing Company
	Site Address 20403 68th Ave S		Site Address 20403 68th Ave S
Consulting Firm Landau Associates	City Kent County King	Consuming turn Landau Associates	City Kent County King
Unique Ecology Well ID Tag No.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or	Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERT.FICATION 1 constructed and/or accept responsibility for construction of disk well, and its complisance with all Washington well construction candards	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or WWW.
WELL CONSTRUCTION CERTIFICATION: 1 constructed and/or socept responsibility for	Lat/Long (s,t,r Lat Deg s Lat Min/Sec s	WELL CONSTRUCTION CERTIFICATION. I constructed and/or accept responsibility for	Lat/Long (s.t.r Lat Deg x Lat Min/Sec x
construction of this well, and its compliance with all Washington well construction standards	still Required) Long Deg s Long Min/Sec s		still Required) Long Deg x Long Min/Sec x
Misserists used and the information reported above use true in my best knowledge and belief X Driller Trainee Name (Print) Lann Goble	Tax Parcel No.	Affairmals used and the information reported above are true to my best knowledge and belief	Tax Parcel No.
Driller/Trainee Signature	Casad or Uneased Diameter 2" Static Level B"		Cased or Uneased Diameter 2 Static Level 8
Driller/Trainee License No. 2992		Driller/Trainee Signature Driller/Trainee License No. 29182	
If trainer, licesned drillers'	Work/Decommission Start Date 7-27-10	If trainee, licesned drillers'	Work/Decommission Start Date 7-21-18
Signature and License No.	Work/Decommission Completed Date 7-30-10	If trainee, licesned drillers' Signature and License No.	Work/Decommision Completed Date 7-30-10
Construction/Design Well !	Data W10-368 Formation Description		Data W10-368 Formation Description
E Constitution of the little o	Tomation Description	=	Jaia W10-305 Folimaton Description
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Scale I*=	Page of WATER PERCENT (Res 201)	Scale I" =	Page of WATER RESQUICES, PROGR
	Page Of WATER RESOURCES PROGRAM	***************************************	NWRO

Construction/Decommission XConstruction Decommission ORIGINAL INSTALLATION Notice of Intent Number	Type of Well X Resource Protection Geotechnical Soil Boring Property Owner The Boeing Company	Construction/Decommission Construction Construction Construction	SSS 280 INSTALLATION Nance		Type of Well X Resource Protection Geotechnical Soil Boring The Boeing Company
Consulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County	King Consulting Firm	Landau Associates	Site Address City Kent	20403 68th Ave S County King
Unique Ecology Well ID Tag No.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N F	EWM .	Parada Assikiates	77.4	EWM EWM
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and Hs-compliance with all Washington well construction stondards Materials used used the information reported above are use to my best knowledge and belief	Lat 7Long (s,t,r Lat Deg x Lat MiruSee still Required) Long Deg x Long MiruSee Tax Parcel No.	construction of this well, and its compliance Materials used and the information reported	NY: I constructed and/or accept responsibility for with all Washington well construction standards above are true to my best knowledge and belief	Lat/Long (5,t,r Lat Deg still Required) Long Deg Tax Parcel No.	x Lat Min/Sec x Long Min/Sec x
X Driller Trainee Name (Frint) Lynn Goble Driller/Trainee Signature Driller/Trainee License No. 2982	Cosed or <u>Uneased Diameter</u> State	tic Level 8 X Driller Trance Name (Print) O Driller/Traince Signature Driller/Traince License No. 29	Zon Belle		2" Static Level B
If traince, licesned drillers' Signature and License No.	Work/Decommission Start Date 7-27-18 Work/Decommission Completed Date 7-30-10	If trainee, licesned drillers' Signature and License No.		Work/Decommision Start Date Work/Decommision Complete	
Construction/Design Well Da	ta W10-368 Formation Descript		ign Well t	Data W10-368	Formation Description
CONCRETE SUR BACKFILL	FT FT 02-5 BENTENITE MED BROWN 5.	Department of Ecology does NOT Warranty	BACKFILL	FT LAY SENTENITE CHIP	0 2. 5 FT MED BROWN 5:2TY SAND 0 - FT
DEPTH OF BORING	PECEIVED DEPARTMENT OF EC	coroea =	DEPTH OF BORING		RECEIVED DEFARTMENT OF ECOLOGY

Construction 385281	Type of Well X Resource Protection	RESOURCE PROTECTION WELL R (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission 385282 Construction	Type of Well X Resource Protection
Decommission ORIGINAL INSTALLATION Natice of Intent Number	Property Owner The Boeing Company Site Address 20403 68th Ave S	Decommission ORIGINAL INSTALLATION Nonce of Intent Number	Property Owner The Boeing Company Site Address 20403 68th Ave S
onsulting Firm Laudau Associates	City Kent County King	Consulting Firm Landau Associates	City Kent County King
nique Ecology Well ID ag No	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or WWM	Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION: Loostructed under succept responsibility for memoritative of this neal, and its compliance with all Waddington well construction standards	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or WW
LL CONSTRUCTION CERTIFICATION. (constructed antiver accept responsibility for groups on of this well, and its sampliance with All Washington well construction standards used used and the information reponded above are true to my heat knowledge and belief	Lat/Long (s,t,r Lat Deg 1 Lat Min/Sec 1 still Required) Long Deg 1 Long Min/Sec 1	WELL CONSTRUCTION CERTIFICATION: Lookingtain andre recept responsibility for enumerations of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief	Lat/Long (s,t,r Lat Deg x Lat Min/Sec x still Required) Long Deg x Long Min/Sec x
Driller Trainee Signature Driller Trainee Signature Driller Driller	Tax Parcel No. Cased or <u>Uncased Diameter</u> 2 Static Level 8	S Driller Trainee Name (Point) Driller/Trainee Signature Driller/Trainee License No. 2992	Tax Parcel No. Cased or <u>Uneased Diameter</u> 2" Static Level 2
raince, licesned drillers'	Work/Decommission Start Date 7-21-18	m	Work/Decommission Start Date 7-21-10
nature and License No.	Work/Decommission Completed Date 7-30-10	If trainee, licesned drillers' Signature and License No.	Work/Decommission Completed Date 7-30-10
Construction/Design Well E	Data W10-368 Formation Description	Construction/Design Well D	ata W10-368 Formation Description
BACKFILL		Department of Ecology does NOT Warr	
		The D	RECEIVED DEPARTMENT OF ECOLOG

RESOURCE PROTECTION WELL RI (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission SConstruction Decommission ORIGINAL INSTALLATION Notice of Intern Number	Notice of Intent No. SE07641 Type of Well XResource Protection Geotechnical Soil Boring Property Owner The Boeing Company	RESOURCE PROTECTION WELL REPORT [SUBMIT ONE WELL REPORT PER WELL INSTALLED] Construction/Decommission Construction Construction A S 5 28 4 Property Owns Property Owns	CURRENT Notice of Intent No. Type of Well X Resource Protection Geotechnical Soil Boring The Boeing Company
Consulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King	Consulting Firm Landau Associates City	Z0403 68th Ave S Kent: County King
Unique Ecology Well ID Tag No WELL CONSTRUCTION CERTIFICATION: Feesinguisted and/or accept responsibility for	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or www. Lat/Long (s,t,r Lat Deg 1 Lat Min/Sec 1 Lat Min/S	E Tag No.	1/4 NE 1/4 SE Sec 2 Twn 22N R 4E er www. Lat Deg x 1.ut Mit/Sec y
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Oriller/Trainee Signature Driller/Trainee License No. 2992	Cased or Unexsed Diameter 2" Static Level 8"	O Driller/Trainee Signature Lune Dolle Cased or Unease	Diameter 2 Static Level 8
If trainee, licesned drillers'	Work/Decommision Start Date 7-21-10	Work/Decommit	ion Start Date 7-27-10
Signature and License No.	Work/Decommission Completed Date 7-30-10	Significate and License No. Work/Decommis	ion Completed Date 7-30-10
Construction/Design Well Da	ta W10-368 Formation Description	Construction/Design Well Data W10-368	Formation Description
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DEPTH OF BORING	RECEIVED DEPARTMENT OF ECOLOGY 1.03 2 7 2010	DEPTH OF BORING	RECEIVED DEPARTMENT OF ECOLOGY LCG 2 7 2019

Construction/Decommission	38528	5	Type of Well	
Construction			X Resource Protection	
Decommission ORIGINAL INSTALL	ITION Notice	STATISTICS.	Geotechnical Soil Boring	
of Intent Number		Property Owner Site Address	The Boeing Comp. 20403 68th Ave S	any
Consulting Firm Land	lau Associates	City	Kent County	King
Unique Ecology Well ID ag No.		Location 1	/4_NE_I/4_SE_Sec_2_Twn 22	N R 4E or
ELL CONSTRUCTION CERTIFICATION I construct	ed and/or accept responsibility for	Lat/Long (s,t,r L	at Deg Lat Min/Ser	
estruction of this well, and its compliance with all Washi		still Required) L	ong Deg x Long Min/S	ec x
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Oriller Trainee Name (Print) Tiller/Trainee Signature	ynn Goble	Cased or Uneased I	Diameter 2"	Statio Lauri
riller/Trainee License No. 2982	7451-61			
trainee, licesned drillers'		Work/Decommision	n Start Date 7-27_10	
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Construction/Design	Well 1	Data W10-368	Formation Descri	ription
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Construction/Decommission 385286		Type of Well
Decommission ORIGINAL INSTALLATION Notice of Intent Number	Property Owner	X Resource Protection Geotechnical Soil Boring The Boeing Company
Consulting Firm Landau Associates	Site Address City Ken	20403 68th Ave S
Unique Ecology Well ID Tag No.	Location 1/4_NE	EW SE Sec 2 Twn 22N R 4E or
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Firaince, licesned drillers'	Wark/Decommission Start [Date 17-21-10
Signature and License No.	Work/Decommission Compl	leted Date 7-30-10
Construction/Design Well D	ata W10-368	Formation Description
CONCRETE SUI		#:11 FT
◆——BACKFILL		_02-5 FI
	BENTENITE CHIP	MED BROWN SILTY
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struction/Decommission 38528	7 Type of Weil	Construction/Decommission XI Construction 385288	Type of Well
onstruction	X Resource Protection	SELECTION	X Resource Protection
decommission ORIGINAL INSTALLATION Natice of Intent Number	Geotechnical Soil Boring Property Owner The Boeing Company	Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring Property Owner The Boeing Company
of table transfer	Property Owner The Boeing Company Site Address 20403 68th Ave S	# 1 2 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Property Owner The Boeing Company Site Address 20403 68th Ave S
nsulting Firm Landau Associates	City Kent County King	Consulting Firm Landau Associates	City Kent County King
que Ecology Well ID No	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or www.	Unique Ecology Well ID Tag No	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or
CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg x Lat Min/Sec s	WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg _ x Lat Min/Sec _ x
oction of this well, and its compliance with all Washington well construction standards	still Required) Long Deg s Long Min/Sec s	construction of this well, and its compliance with all Washington well construction standards	still Required) Long Deg s Long Min/Sec s
als used and the information reported above the true to my best knowledge and belief	Tax Parcel No.	Meterials used and the information reported above are true to my best knowledge and belief	Tax Parcel No.
riller Traines Name (Print) Lynn Goble er/Traines Signature	Cased or Uneased Diameter 2' Static Level B	Traince Signature	Cased or Uneased Diameter 2 Static Level
er/Trainee License No. 2992		Driller/Trainee License No. 2982	7 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
ince, licesned drillers'	Work/Decommission Start Date 7-27-10	If trainee, licesned drillers'	Work/Decommision Start Date 7-27-10
iture and License Nn.	Work/Decommission Completed Date 7-30-10	If trainec, licesned drillers' Signature and License No.	Work/Decommission Completed Date 7-30-10
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struction/Decommission	38528	9	Type of Well			n/Decommission	38529	1	Type of	Well
construction		L	X Resource Protect	ion	X Constructi)	X Ruson	rce Protection
ecommission ORIGINAL IN			Geotechnical Soi	Boring	Un Li Decommis		STALLATION Notice			chnical Soil Bormg
of Intent Nun	ber	Property Owner	The Boeing		至	of Intent Num	ber	Property Owner		The Boeing Company
nsulting Firm	Landau Associates	Site Address City Kent	20403 68th Coun		5 Consulting	z Pirm	Landau Associates	Site Address City	Kent	20403 68th Ave S County King
-	Communa Associates	City Kem	Coun	EWM	_		Canada Associates	City	Kent	County King
que Ecology Well ID		Location 1/4 NE	1/4 SE Sec 2 Tv			ology Well ID		Location	1/4 NE 1/4 SE S	ec 2 Twn 22N R 4E
No.		- Cherry College		WWM	E Tag No. —	S. V. C. S. V.		- Charles		
	I constructed and/or accept responsibility for all Washington well-construction standards	Lat/Long (s,t,r Lut Deg			.0		I constructed and/or accept responsibility for hall Washington well construction standards			Lat Min/Sec
	re are true to my best knowledge and belief	still Required) Long Deg	_ a Lo	ng Min/Sec x			we see muc to my best knowledge and belief		Long Deg1	Long Min/Sec
illes Trainee Name (Print)	Lunn Goble	Tax Parcel No.					Lynn Goble	Tax Parcel No.		
er/Trainee Signature 2	Dalle	Cased or Uncased Diameter	2"	Static Level B	Driller/Trainee	e Signature 2	Dolle	Cased or Uncased	Diameter 2	Static Leve
cr/Trainee License No. 299	2		73.00			e License No. 298	2			
ince, licesned drillers'		Work/Decommission Start D	ate 7-27-10		If trainee, lices	- A 4200 - 22		Work/Decommissi	on Start Date 7-	27-10
utire and License No.		Work/Decommission Comple	7 75	10	Signature and I			Work/Danamasisis	on Completed Date	7-30-10
T. T. C.			1-30-	0		E. G. Control		H WORK DECOMMENT	on Completed Date	1-30-11)
Construction/Design	Well t	Data W10-368	Formatic	n Description	the contract of	Construction/Design	Well	Data W10-368		Formation Description
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struction/Decommission	Notice of Intent No. SE07641 Type of Well	RESOURCE PROTECTION WELL R (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission 385292	Notice of Intent No. SE07641 Type of Well
385291	X Resource Protection	XConstruction) 83 292	X Resource Protection
ecommission ORIGINAL INSTALLATION Notice	Georechnical Soil Boring	Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Horing
of Intent Number	Property Owner The Roeing Company Site Address 20403 68th Ave S	of Intent Number	Property Owner The Boeing Company Site Address 20403 68th Ave S
sulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King	Consulting Firm Landau Associates	City Kent County King
que Ecology Weil ID	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or WWM	Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION: I constructed and/or size opt responsibility for construction of this well, and its compliance with all Wathington well committees as another.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or
CONSTRUCTION CERTIFICATION 1 constructed and reconstruction construction and reconstruction construction and reconstruction and reconstruction and reconstruction and reconstruction and reconstruction are reconstructed and reconstruction and reconstruction are reconstructed and reconstruction and reconstruction are reconstructed and re	Lat/Long (s,t,r Lat Deg s Lat Min/Sec s	WELL CONSTRUCTION CERTIFICATION: I constructed and/or sucept responsibility for	Lat/Long (s,t,r Lat Deg 2 Lat Min/Sec 1
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is used and the information reported above are true to my best knowledge and teller little Trainee Name (Print) Lunn Goble	Tax Parcet No.	Minerials used and the information reported above are true to my best knowledge and belief X Driller	Tax Parcel No.
r/Trainee Signature 2 200 Bolls	Cased or Uncased Diameter 2 Static Level 8		Cased or Uncused Diameter 2" Static Level B
r/Traince License No. 2982	Work/Decomptision Start Date 7-27-10	Driller/Trainee Signature Driller/Trainee License No. 2992	Work/Decammision Start Date 7-27-10
nee, licesned drifters'			
ture and License No.	Work/Decommission Completed Date 7-30-10	Signature and License No.	Work/Decommission Completed Date 7-30-10
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BACKFILL	BENTONITE MED BROWN 5:4TY CHIP SAND	Department of Ecology does NOT Warranty BACKLIFF	# FT 02. 5 FT BENTENITE MED BROWN 5:4T y SAND
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	385293		Type of Well		Construction/Decommission	385290	1	Type of W	ell
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of Intent Number	5 807641	Property Owner Site Address	The Boeing Compa 20403 68th Ave S	any	5 oj Intent №	umher 5 807641	Property Owner		Boeing Company
onsulting Firm La	indau Associates	City Kent	County.	King	6 Consulting Firm	Landau Associates	Site Address City	Kent 20-	403 68th Ave S County King
nique Ecology Well ID			1/4 SE Sec 2 Twn 22N	N R 4E or	Unique Ecology Well ID Tag No.	7			2 Twn 22N R 4E
L CONSTRUCTION CERTIFICATION: I constr	ructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg	x Lat Min/Sec	WWM	WELL CONSTRUCTION CERTIFICATED	N: I constructed and/or accept responsibility for	- Lat/Long/err 1	at Deg x	Tarable and
rection of this well, and its compliance with all Wi		still Required) Long Deg	x Long Min/Se		construction of this well, and its compliance	with all Wathington well construction mandards	still Required) L	ong Deg x	Lai Min/Sec
ials used and the information reported above are t		Tax Parcel No.				above are true to my best knowledge and belief	Tax Parcel No.		
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ature and License No.		Work/Danagementsion Complete	ed Date		Signature and License No.		Mark (Decree 1 to 1		ab a 65
	1,072.5		Ed 17ale		ă		_	Completed Date	30-10
Construction/Design	Well D	ata W10-368	Formation Descri	iption	Construction/Desi	gn Well I	Data W10-368	· ·	formation Description
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Decommission ORIGINAL INSTALLATION Notice of Intent Number 5 807641	Property Owner The Boeting Company Site Address 20403 68th Ave S	is of Intent Number SE07641	Property Owner The Boeing Company Site Address 20403 68th Ave S
onsulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King	Consulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King
nique Ecology Well ID g No	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or	Unique Ecology Well ID E Tag No.	Location 1/4 NE 1/4 SE Scc 2 Twn 22N R 4E or
AL CONSTRUCTION CERTIFICATION. I constructed and/or accept responsibility for resented of this well, and its compliance with his Washington well construction standards.	Lat/Long (s,t,r Lat Deg s Lat Min/Sec s	WELL CONSTRUCTION CERTIFICATION 1 construred and/or accept responsibility for concruction of falls well, and in compliance with all Washington well construction standards	Lat/Long (s,t,r Lat Deg x Lat Min/Sec x
rials used and the information reported above are true to my best knowledge and belief	still Required) Long Deg x Long Min/Sec x Tax Parcel No.	Materials used and the information reported above are true to my best knowledge and belief	still Required) Long Deg x Long Min/Sec x Tax Parcef No.
Deiter Trainee Name (Print) Lynn Goble		Ex Driller Traince Name (Print) Lynn Goble	
ler/Trainee Signature ler/Trainee License No. 2982	Cased or Uneased Diameter 2 Static Level 8	Driller/Trainee Signature Driller/Trainee License No. 2982	Cased or Uncased Diameter 2" Static Level 8
since, licesned drillers'	Work/Decommission Start Date 7-27-10	5	Work/Decommission Start Date 7-27-10
nature and License No.	Work/Decommission Completed Date 7-30-10	If trainec, liceaned drillers' Signature and License No.	Work/Decommission Completed Date 7-30-10
Construction/Design Well D	ata W10-368 Formation Description	Construction/Design Well D	ata W10-368 Formation Description
BACKFILL	BENTENITE MED BROWN SILTY CHIP SAND	COORCRETE SUI	4' FT 02.5 FT 8 ENTENITE MED BROWN 5:2T Y - CHIP 5AND
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DEPTH OF BORING	RECEIVED DEPARTMENT OF ECOLOGY	DEPTH OF BORING	DEPARTMENT OF ECOLOGY ### ### ############################

		tice of Intent No. AE10045 Type of Well	RESOURCE PRO (SUBMIT ONE WELL REPORT Construction/Decommission
Construction 585	297	X Resource Protection	Construction
Decommission ORIGINAL INSTALLATION Notice			Decommission ORIGINAL I
of Intent Number 5 8076	4/ Property Owner	Geotechnical Soil Boring The Boeing Company	of Intent Nu
	Site Address	20403 68th Ave S	- C
onsulting Firm Landau Associates	City Ker		Consulting Firm
nique Ecology Well (D ag No.	Location 1/4 N	E 1/4 SE Sec 2 Twn 22N R 4E or	Unique Ecology Well ID Tag No.
ELL CONSTRUCTION CERTIFICATION: A constructed anillus accept respon	shilling for Lat/Long (etr Lat Dag	Lat Min/Sec x	WELL CONSTRUCTION CERTIFICATION
struction of this well, and its complemee with all Washington well construction		41.00	Construction of this well, and its compliance w
terials used and the information reported above are true to my best knowledge a	ALL DOUB	Long Min/Sec x	Materials used and the information reported at
Driller Trainee Name (Print) Lunn Canbl	a rate rated No.		FX Driller Trainer Name (Print)
itler/Traince Signature 2 Holle	Cased or Uncased Diamet	er 2" Static Level B'	Oriller/Traince Signature
iller/Traince License No. 2992			Driller/Fraince License No. 294
des Remodelation	Work/Decommission Start	Date 7-27-10	<u> </u>
rainee, licesned drillers'		- 100 A a 3 A 5	of trainee, licesned drillers'
mature and License No.	Work/Decommission Comp	lered Date7-30-10	Signature and License No.
Construction/Design	Well Data W10-368	Formation Description	Construction/Desig
BACKFO	LL. 4' FT BENTENITE -CHIP	MED BEOWN SILTY SAND	The Department of Ecology does NOT
			The De

Construction/Decommission 385298	Type of Well
Decommission ORIGINAL INSTALLATION Notice	X Resource Protection Georechnical Soil Boring
of Intent Number SE07641	
Consulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King
Unique Ecology Well ID Tag No.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E
WELL CONSTRUCTION CERTIFICATION: I comprised and/or accept responsibility for	Last/Long Collection Collection
construction of this well, and its compliance with all Washington well construction standards	Lat/Long (s,t,r Lat Deg s Lat Min/Sec still Required) Long Deg s Long Min/Sec s
Materials word and the information reported above are true to my best knowledge and helief Driller Trainee Name (Print) Lunn Goble	Tax Parcel No.
Driller/Traince Signature	Cased or Uncased Diameter 2" Static Level
Driller/Traince License No. 2982	
f traince, licesned drillers'	Work/Decommission Start Date 7-27-10
signature and License No.	Work/Decommission Completed Date7-30-10
Construction/Design Well	
	Data W10-368 Formation Description
◆ ——BACKFILL	BENTENITE FT 02-5 FT BENTENITE MED BROWN 5:ATY SAND
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Construction/Decommission Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number 5 80 76	299	Type of Well X Resource Protection Geotechnical Soil Boring The Boeing Company	
Consulting Firm Landau Associates	Site Address City Ker	20403 68th Ave S at County King	
Unique Ecology Well ID Fig No. YELL CONSTRUCTION CERTIFICATION: I committed saddin secret responsive to the first well, and its compileace, with all Washington well construction of this well, and its compileace, with all Washington well construction forestalls used and the information reported above are true to usy best knowledge.	Lat/Long (s.t,r Lat Dog os standards still Required) Long Do	E 1/4 SE Sec 2 Twn 22N R 4E or WWM	
Coriller Trainee Name (Print) Lynn Gob	0	cr 2" Static Level B'	See See
Priller/Traince License No. 2992		Date 7-27-10	
f trainee, licesned drillers'		eleted Date 7-30-10	
Construction/Design	Well Data W10-368	Formation Description	
BACKFI	LL 4' FT BENTENITE -CHIP	#:11 _0 2 - 5 FT MED BROWN 5:2TY SAND _0 - FT	

Construction/Decommission Construction 385300	Notice of Intent No. AE 1004 Type of Well X Resource Protection
Decommission URIGINAL INSTALLATION Notice of Intent Number 5 607641	Geotechnical Soil Boring
Consulting Firm Landau Associates	City Kent County King
Inique Ecology Well ID Tag No	Location 1/4 NE 1/4 SE Sec. 2 Twn 22N R 4E or
FELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for promotestims of this well, and its compilance with all Wachington well construction standards statistic used and the information reported above are true to my best knowledge and belief	Lat/Long (s.t.r Lat Deg s Lat Min/Sec still Required) Long Deg s Long Min/Sec s Long Parcel No.
oriller Traince Name (Print) Lynn Goble riller/Traince Signature riller/Traince License No. 2992	Cased or Uncased Diameter 2" Static Level 2
trainee, licesned drillers'	Work/Decommission Start Date 7-27-18
gusture and License No.	Work/Decommision Completed Date 7-30-10
Construction/Design Well D	Data W10-368 Formation Description
BACKFILL	BENTONITE MED BROWN SILTY SAND
	-CHIP SAND

Construction/Decommission Construction Decommission ORIGINAL INSTALLATION of Intent Number	385301 N Nonice 107641	Property Owner	Geotec	Well ree Protection chnical Soil Borir The Boeing Comp	pany	Construction/Decomntission Construction Construction Decommission ORIGINA of Intent.	585 30	2 Property Owner	Type of Well X Resource Protection Geotechnical Soil Boring The Boeing Company
Consulting Firm Landau A	ssociates	Site Address	Kent	20403 68th Ave 5		6 Consulting Firm	Landau Associates	Site Address City Ke	20403 68th Ave S
inique Ecology Well ID ag No.	- Annual Control		4 NE 1/4 SE Se	County		Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICAT			County King EWM SE 1/4 SE Sec 2 Twn 22N R 4E or
	ell construction standards	LavLong (s,t,r La still Required) Lo Tax Parcel No	ng Deg 1	Long Min/	Static Level 8	construction of this well, and its complian	ed above are true to my best knowledge and belief Lynn Goble	LavLong (s.t.r. Lat De still Required) Long to Tax Parcet No. Cased or <u>Uneased</u> Diameter	
trainee, licesned drillers'		Work/Decommission	Start Date _ 7-2	27-10		If trainec, licesned drillers!		Work/Decommission Star	Date _7-27-10
gnature and License No.		World/Decommission	Completed Date	7-30-10		Signature and License No.		Work/Decommision Con	opleted Date 7-30-10
Construction/Design	Well Da	ta W10-368		Formation Desc		Construction/De	sign Well	Data W10-368	Formation Description
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Construction 385303	Type of Welt	Construction	385304	Type of Well
Decommission ORIGINAL INSTALLATION Notice	X Resource Protection	Construction Construction Construction Construction Construction Construction Construction Construction	AL PERON W. III	X Resource Protection
of Intent Number 5 807641	Property Owner The Reging Company	I COCCOUNTIASION ON ON THE TWO I'M	SE07641 Property Owner	Geotechnical Soil Boring
3 3 7 9 7 1	Property Owner The Boeing Company Site Address 20403 68th Ave S	-		The Boeing Company 20403 68th Ave S
Consulting Firm Landau Associates	at a second second second	ing Consulting Firm L	andau Associates City	Kent County King
Inique Ecology Well ID ag No.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R	EWM O TECHNOLOGY WALLES		/4 NE //4 SE Sec 2 Twn 22N R 4E or
ELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg x Lat Min/Sec	WELL CONSTRUCTION CERTIFICATION: I cons	arusted and/or accept responsibility for Lat/Long (s.t.r. I.	at Degx Lat Min/Sec
correction of this well, and its compliance with all Washington well construction standards	still Required) Long Deg x Long Min/Sec	annestruction of this well, and its compliance with all W	Vashingron well construction standards Still Required) L	nog Dég x Long Min/Sec #
sterials used and the information reported above are true to my best knowledge and belief	Tax Parcel No.	Materials used and the information reported above are	true to my hest knowledge and belief	
Driller Trainee Name (Prim) Lynn Goble		■ X Driller Trainec Name (Print)	Lunn Carble	- Discourse
riller/Trainee Signature Solds Solds Solds	Cased or Uncased Diameter 2" Static L	evel 8' Driller/Trainee Signature 2982	Cased or Uncased I	Static Level 8
iller/Trainee Libertse No. 2182	Work/Decommission Start Date 7-27_10	5	Work/Decommisjo	Start Date 7-27_10
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nature and License No.	Work/Decommission Completed Date 7-30-10	Signature and License No.	Work/Decommisjon	Completed Date 7-30-10
Construction/Design Well Dat	a W10-368 Formation Description	© Construction/Design	Well Data W10-368	Formation Description
		s NOT Warranty		FT Z. Z.
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DEPTH OF BORING	183 27 28			
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RESOURCE PROTECTION WELL RI (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction Construction SSSSOS Decommission ORIGINAL INSTALLATION Notice		of Intent No. AE 10045 Type of Well Resource Protection Geotechnical Soil Boring	Construction/Decommission	385306	Not	Type of Well X Resource Protection Geotechnical Soil Boring
of Intent Number S E@ 7641	Property Owner Site Address	The Boeing Company 20403 68th Ave S	-	umber 5 807641	Property Owner Site Address	The Boeing Company 20403 68th Ave S
Consulting Firm Landau Associates	City Kent	County King	Consulting Firm	Landau Associates	City Ken	
Unique Ecology Well ID Tag No.	Location 1/4 NE 1	4 SE Sec 2 Twn 22N R 4E or	Unique Ecology Well ID		Location 1/4 NI	I 1/4 SE Sec 2 Twn 22N R 4E or
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measuretimn of this well, and its compliance with all Washington well construction standards Materials used and the information reported above are true to my best knowledge and belief	still Required) Long Deg	1 Long Min/Sec s		with all Washington well construction standards above are true to my best knowledge and belief	still Required) Long De	g x Long Min/Sec z
X Driller Traince Name (Print) LANN Caphla	Tax Parcel No.		Trainee Name (Print)	Lynn Calla	Tax Parcel No.	
Driller/Trainee Signature	Cased or Uncased Diameter	2" Static Level &	Driller/Trainee Signature Driller/Trainee License No. 29	Zum Belle	Cased or Uneased Diamete	r 2" Static Level 8
Driller/Fraince License No. 2992	Work/Decommission Start Date	7-27-10	Driller/1 rainee License No. 2	82	Work/Decommission Start I	Date 7-27-10
If trainee, licesned drillers' Signature and License No.			If trained, licesned drillers'			
i————	Work/Decommission Completed	Date 7-30-10	Ď-		Work/Decommision Compl	leted Date7-30-10
Construction/Design Well Dat	a W10-368	Formation Description	Construction/Desi	gn Well	Data W10-368	Formation Description
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estruction/Decommission 385307	Notice of Intent No. AE10045 Type of Well X Resource Protection	RESOURCE PROTECTION WELL INSTALLED) Construction/Decommission SSSSO	Notice of Intent No. AE10045 Type of Well X Resource Protection
of Intent Number 5 807641	Property Owner The Boeing Company Site Address 20403 68th Ave S	of Intent Number S & 7641	Property Owner The Boeing Company Site Address 20403 68th Ave S
sulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King	Consulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King
ue Ecology Well ID No.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or	Unique Ecology Well ID Tag No.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or
CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg x Lat Min/Sec .	WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for	Lat/Long (s,t,r Lar Deg x Lat Min/Sec x
tion of this well, and its compliance with all Washington well construction standards a used and the information reported above wa true to my but knowledge and belief	still Required) Long Deg x Long Min/Sec x	Construction of this well, and its compliance with all Washington well construction standards. (a) Mucrials used and the information reported above are true to my best knowledge and belief	still Required) Long Deg x Long Min/Sec x
Her Trainee Name (Print) Lunn Capble	Tax Parcel No.	EX Driller Trainee Name (Print) Lann Capble	Tax Parcel Nu.
Trainee Signature Trainee License No. 299/2	Cased or Uneased Diameter 2" Static Level B	O Driller/Trainee Signature Driller/Trainee License No. 2992	Cased or Uneased Diameter 2" Static Level B
France License No. 2182	Work/Decommission Start Date 17-27-10		Work/Decommission Start Date 7-27-10
ce, licesned drillers'		f trainee, licesned drillers'	
ure and License No.	Work/Decammision Completed Date 7-30-10	ő-	Work/Decommission Completed Date 7-30-10
Construction/Design Well Dat	a W10-368 Formation Description	Construction/Design Well I	Data W10-368 Formation Description
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DEPTH OF BORING	DEPARTMENT OF ECOLOGY S' FT £3 27 2010	DEPTH OF BORING	RECEIVED DEPARTMENT OF ECOLOGY S' FT AUS 2.7.2010 WATER RESOURCES PROGRAM

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Construction/Decommission	Туре о	f Well	Construction/Decommission	385310		Type of Well
L Construction 38530	XReso	ource Protection	Construction			X Resource Protection
XIDecommission ORIGINAL INSTALLATION Notice		technical Soil Boring	X Decommission ORIGINAL I	NSTALLATION Notice		Geotechnical Soil Boring
of Intent Number 5 807641	Property Owner	The Boeing Company		mber 5 807641	Property Owner	The Boeing Company
Consulting Firm Landau Associates	Site Address City Kent	20403 68th Ave S	Consulting Firm	Landau Associates	Site Address City Ke	20403 68th Ave S
	_ City Kent	County King		Community (Colonials)	City Ke	nt County King
Unique Ecology Well ID Tag No	Location 1/4 NE 1/4 SE	Sec 2 Twn 22N R 4E or	Unique Ecology Well ID Tag No		Location 1/4 N	E 1/4 SE Sec 2 Twn 22N R 4E or
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept suspensibility for	Lat/Long (s.t,r Lat Deg 1	Lat Min/Sec 1	WELL CONSTRUCTION CERTIFICATION	I constructed and/or accept responsibility for	Lat/Long (s.t,r Lat De	Las Min/Sec
coustraction of this well, and its compliance with all Washington well construction standards.	still Required) Long Degx	Long Min/Sec *		ith all Washington well construction standards	still Required) Long D	eg x Long Min/Sec 1
Material's used and the information reported above are true to my best knowledge and belief X Driller Trainee Name (Print) I MYN Ganble	Tax Parcel No.		Malerials used and the information reported a	ove are true to my best knowledge and bell of	Tax Parcel No.	
Driller/Traince Signature Lynn Goble	Cared to Discound Discount	Static Level 8	Driller/Trainee Signature	Lynn Goble	Cared on Discound Pile	ier 2" Static Level 8
Driller/Traince License No. 2982	Cased or Uncased Diameter 2	Static Level 3	Driller/Trainee License No. 290	Y2.	Cased or Uncased Diame	Static Level 8
	Work/Decommission Start Date 7	27-10	ž –		Work/Decommision Start	Date 7-27-10
If trainee, licesned drillers' Signature and License No.			If trainer, licesned drillers' Signature and License No.			
	Work/Decommission Completed Date	7-30-10	Õ-		Work/Decommission Com	pleted Date 7-30-10
Construction/Design Well D	ata W10-368	Formation Description	Construction/Desig	Well D	sta W10-368	Formation Description
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Construction 385311 Construction 385311 Decommission ORIGINAL INSTALLATION Notice of Intent Number 5 807641	XR	e of Well esource Protection eotechnical Soil Boring The Boeing Company	AE10045	RESOURCE (SUBMIT ONE WE Construction Simple Cons
Consulting Firm	Site Address City Kent	20403 68th Ave S	King	6 Consulting Firm
Tag No. WELL CONSTRUCTION CERTIFICATION: Leonstructed and/or accept responsibility for construction of this well, and as ecompliance with all Washington well construction staintands. Materials used and the information reponded above are true to my tert knowledge and britist. K Driller Traince Name (Print)	at/Long (s,t,r Lat Deg till Required) Long Deg Tax Parcel No. Cased or <u>Uncased</u> Diameter Work/Decommission Start Date	E Sec 2 Twn 22N R Lat Min/Sec Long Min/Sec Static	4E or WWM	Unique Ecology \ Tag No. WELL CONSTRUCTION: MELL CONSTRUCTION: Manufalls used, and the unform Manufalls used, and the unform Driller/Trainee Signath Driller/Trainee Licens If trainee, licensed dril
Signature and License No.	Work/Decommission Completed Date	7-30-10		Signature and License
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Construction/Decommission	3853		Type of	Well	
Construction >05 >12		2	X Resource Protection		
Decommission ORIGINAL IN	STALLATION Notice			chnical Soil Boring	
of Intent Nur	nber 5 807641	The state of the s			
Consulting Firm	Landau Accostatos	Site Address		20403 68th Ave S	
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Inique Ecology Well ID ag No.		Location	1/4 NE 1/4 SE S	ec 2 Twn 22N	R 4E or
ELL CONSTRUCTION CERTIFICATION:	I constructed init/or accept responsibility for the II Washington well construction standards	Lat/Long (s,t,r	Lat Deg x	Lat Min/Sec	1
	th all Washington well construction standards over use true to my best knowledge and belief		Long Deg x	Long Min/Sec	
Driller Tramee Name (Print)	Lunn Goble	Tax Parcel No.			
riller/Trainee Signature 2	m Balle	Cased or Uncased	Diameter2	, Ste	stic Level 8
riller/Trainee License No. 298	2	Work/Passan	on Star Day 12		
trainee, licesned drillers'		Work Decommissi	ion Start Date 7-	21-10	-
gnature and License No.		Work/Decommission	on Completed Date	7-30-10	
Construction/Design	Well	Data W10-368		Formation Descript	
	BACKFILL	BENTENITE CHIP		2. 5 BROWN 5.	FT 4Ty 4~0 FT
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onstruction/Decommission	VELL INSTALLED)		Notice of Inter		AE1004:
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			X Reso	urce Protection	
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of them thanner	2001641	Property Owne Site Address		The Boeing Company	
onsulting Firm Lan	dau Associates	City	Kent	20403 68th Ave S County	King
nique Ecology Well ID	- E- V	Location	1/4 NE 1/4 SE S	Sec 2 Twn 22N R	4E or
LL CONSTRUCTION CERTIFICATION: I construe	ted and/or scorpt responsibility for	Lat/Long (s.t.r	Lat Deg 1	Lat Min/Sec	www
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erials and and the information reported above use true	to my best knowledge and belief	Tax Parcel No.		and the second	
	ynn Goble				
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Her/Trainee License No. 2992		Work/Decommin	on Stare Date '7-	21-10	
rainee, licesned drillers'		Total Decommiss	on anatione /-	-1-10	
nature and License No.		Work/Decommisi	on Completed Date	7-30-10	
Construction/Design	0.100		_		
Construction/Design	Well D	ata W10-368		Formation Descriptio	п
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	— BACKFILL	4' BENTENITE CHIP		2- 5 1 BROWN 5:12 SA	FT Ty
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	BACKFILL	4' BENTENITE CHIP		2- 5 D BROWN 5:1 SA.	FT Ty UU
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Construction/Decommission	385 314			Type of We	11		-
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Decommission ORIGINAL INSTALLA	TION Notice			Geotechn	ical Soil Bor	ing	
of Intent Number	5 80 1641	Property Own	er		Boeing Con		
Consulting Firm Land	nu Associates	Site Address City	Kent	204	03 68th Ave County	S King	_
Unique Ecology Well (D Tag No.		1 1	1/4 NE	1/4 SE Sec	-	22N R 4E	EW
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construction of this well, and its compilance with all Washin		still Required)			Long Mi	n/Sec	
daterials used and the information reported above are true to		Tax Parcel No.					
Oriller Trainee Name (Frint) Oriller/Trainee Signature	unn Goble		_				-
Oriller/Trainee License No. 2992	Melle	Cased or Uncased	d Diameter	2		Static Level	_3
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ftrainee, licesned drillers'		S. 100.0					
•		Work/Decommis	ion Complete	ed Date _ 7-	30-10		
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	CONCRETE SUR	FACE SEAL	_FT				
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	— BACKFILL	4' Statewij t	FT	_02	. 5	_ FT 5.4Ty	
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	— BACKFILL	4' Statewij t	FT	_0 2 M&D	. 5	_ FT 5.4Ty	
	— BACKFILL	4' Statewij t	FT	_0 2 M&D	. 5	_ FT 5.4Ty	
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Construction Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number 5 80 7641	X Resource Protection Geotechnical Soil Boring	Construction/Decommission Solution Construction Construction Solution Construction Solution Solutio	X Resource Protection Geotechnical Soil Boring
onsulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King	Consulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King
oique Ecology Well ID g No.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or	Unique Ecology Well ID E Tag No.	Location I/4 NE I/4 SE Sec 2 Twn 22N R 4E or
LI. CONSTRUCTION CERTIFICATION: I constructed smill/or scorpi responsibility for runchion of thus well, and its sumpliance with all Wethington well construction standards creats used used seed the information reported above are two for my best knowledge and belief Driller Trainnee Name (Print) Lynn C70ble Ler/Traince Signature	Lat/Long (s,t,r Lat Deg 1 Lat Min/Sec 1 till Required) Long Deg 2 Long Min/Sec 1 Tax Parcel No. Cased or Uncased Diameter 2" Static Level 8	WELL CONSTRUCTION CERTIFICATION: I constructed adder succept respectability for construction of this well, and as compliance with all Washington well construction arandards and secretarials used and the information reported above are true to my less knowledge and being being priller Trainee Name (Print) William Trainee Name (Print) Will Gobble	Lat/Long (s,t,r Lat Deg s Lat Min/Sec still Required) Long Deg x Long Min/Sec s Tax Parsel No. Cased or Unessed Diameter 2' Static Level B'
ainee, licesned drillers'	Work/Decommission Start Date 7-27-10	ra If traince, licesned drillers'	Work/Decommision Start Date 7-27-10
rature and License No. Construction/Design Wall D	Work/Decommission Completed Date 7-30-10	Signature and License No. Construction/Design Well D	Work/Decommision Completed Date 7-30-10
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ruction/Decammissian 3853/	Notice of Intent No. AE10045 Type of Well	RESOURCE PROTECTION WELL F (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission Construction SSS318	
	X Resource Protection	> -	X Resource Protection
of Intent Number 5 to 7641	Property Owner The Boeing Company	MDecommission ORIGINAL INSTALLATION Notice of Intent Number 5 507641	Property Owner The Boeing Company
	Property Owner The Boeing Company Site Address 20403 68th Ave S		Property Owner The Boeing Company Site Address 20403 68th Ave S
ulting Firm Landau Associates	City Kent County King	Consulting Firm Landau Associates	City Kent County King
ic Ecology Well (D)	Location I/4 NE 1/4 SE Sec 2 Twn 22N R 4E or	Unique Ecology Well ID Tag No.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E
DISTRUCTION CERTIFICATION I constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg x Lat Min/Sec x	WELL CONSTRUCTION CERTIFICATION. I constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg t Lat Min/Sec
us of this well, and its compliance with all Washington well construction standards	still Required) Long Deg s Long Min/Sec z	construction of this well, and its compliance with all Washington well construction etandards	still Required) Long Deg x Long Min/Sec
is Traince Name (Print) Lynn Goble	Tax Parcel No.	Mentrials used and the information reported above are true to my best knowledge and helief	Tax Parcel No.
Trainee Signature	Cased or Uneased Diameter 2" Static Level B	Driller Trainee Name (Print) Lynn Goble	Cased or Uncased Diameter 2 Static Level
Trainee License No. 2982		Driller/Traince License No. 2982	
e, licesned drillers'	Work/Decommission Start Date 7-27-10	of trainee, licesned drillers'	Work/Decommission Start Date 7-27-18
re and Linense No.	Work/Decommision Completed Date 7-30-10	Signature and License No.	Work/Decommision Completed Date 7-30-10
Construction/Design Well F		Construction/Design Well F	
Constitution Design Well D	Data W10-368 Formation Description	S Constitution Design Well D	data W10-368 Formation Description
	rr	CONCRETE SUI	FT FIN
BACKFILL.	_4' FT _02.5 FT	BACKFILL	_4' FT 02.5 FT
	BENTENITE MED BROWN SILTY	> (1)	BENTONITE MED BROWN 5:4TY
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DEPTH OF BORING	PECEIVED DEPARTMENT OF ECOLOGY //JG 2 7 2010	DEPTH OF BORING	DEPARTMENT OF FCOLOGY

(SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission Construction Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number SED 7641	Type of Well X Resource Protection Geotechnical Soil Boring	Construction/Decommission SSS32 Construction MDecommission ORIGINAL INSTALLATION Notice of Intent Number SE0764/	X Resource Protection Geotechnical Soil Boring
Consulting Firm Landau Associates	Property Owner The Boeing Company Site Address 20403 68th Ave S City Kent County King	6 Consulting Firm Landau Associates	Property Owner
CONCRETE SURI	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E ar WWM Lat/Long (s,t,r Lat Deg	CONCRETE SUI	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or WWM Lat/Long (s,t,r Lat Deg
DEPTH OF BORING	DEPARTMENT OF ECOLOGY S'_FT #23 2 7 2010	DEPTH OF BORING	PECEIVED DEPARTMENT OF ECOLOG 1.03 2 7 2010

UBMIT ONE WELL REPORT PER WELL INSTALLED) onstruction/Decommission	EPORT CURRENT OF ACTION AE10045	RESOURCE PROTECTION WELL IS (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decompission	REPORT CURRENT OF AE10045
Construction 385 321	Type of Well	Construction SS 5 3 2	_
Decommission ORIGINAL INSTALLATION Notice	X Resource Protection Geotechnical Soil Boring	Decommission ORIGINAL INSTALLATION Notice	X Resource Protection
of Intent Number S En 7641	Property Owner The Boeing Company	of Intent Number 5 807641	Geotechnical Soil Boring Property Owner The Boeing Company
	Site Address 20403 68th Ave S		Site Address 20403 68th Ave S
onsulting Firm Landau Associates	City Kent County King	6 Consulting Firm Landau Associates	City Kent County King
nique Ecology Well (D og No	Location I/4 NE I/4 SE Sec 2 Twn 22N R 4E at	Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION: I constructed and/as accept responsibility for construction of this well, and its compliance with all Washington well construction standards	Location
I.L. CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for	Lat/Long (s.t.r Lat Deg t Lat Min/Sec t	WELL CONSTRUCTION CERTIFICATION: 1 constructed and/es accept responsibility for	Lat/Long (s,t,r Lat Deg 1 Lat Min/Sec 1
truction of this well, and its compliance with all Washington well construction standards	still Required) Long Deg x Long Min/Sec x	construction of this well, and its compliance with all Washington well construction standards	still Required) Long Deg x Long Min/Sec x
grief brief and the information reported above are true to my best knowledge and better	Tax Parcel No.	Materials used and the information reported shove are true to my best knowledge and helief	Tax Parcel No.
Driller Trainee Name (Print) Lynn Goble	Cased or Uneased Diameter 2" Static Level B	Driller Traince Name (Print) Driller/Traince Signature Driller/Traince Signature	Cased or Uncased Diameter 2" Static Level B
Her/Traince License No. 2992		Driller/Trainee License No. 2992	
nainee, licesned drillers	Work/Decommission Start Date 7-27-10	If trainee, licesned drillers'	Work/Decommision Start Date 7-27-10
nature and License No.	Work/Decommission Completed Date 7-30-10	Signature and License No.	Work/Decommision Completed Date 7-30-10
19		0-	
Construction/Design Well Da	ta W10-368 Formation Description	Construction/Design Well I	Data W10-368 Formation Description
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DEPTH OF BORING	BECEIVED	The	DEPARTMENT OF ECO!O
DEPTH OF BORING			DEPARTMENT OF FOOL

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)	Notice of Ir		1-45-00	RESOUR	WELL REPORT P.	ER WELL INSTALLED)			ENT EE	mar ly als
Construction/Decommission 385675	The second second	of Well		Construction/D	Decommission	3856	71	L real	ype of Well	
A Construction	XIO	esource Protection		X Construction		2016	16		Resource Protection	
Decommission ORIGINAL INSTALLATION Notice		cotechnical Soil Borir The Boeing Comp		Decommission Decommission		TALLATION Notice			Geotechnical Soil B	
of Intent Number	Property Owner Site Address	20403 68th Ave 5			of Intent Numb	ber	Property Ov Site Addres		The Boeing C 20403 68th A	
Consulting Firm Landau Associates	City Kent	County	King	Consulting F	lrm	Landau Associates	City	Kent	County	
Unique Ecology Well ID Tag No.		E Sec 2 Twn 2	22N R 4E or WWM	Unique Ecolog Tag No.	gy Well ID		Location		SE Sec 2 Twn	
PELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for instruction of this well, and its compliance with all Wathington well construction standards	Lat/Long (s,t,r Lat Deg still Required) Long Deg					социльства акаУнг эссері георина інй		t,r Lat Deg		fin/Sec 1
uerals used and the information reported above are true to my best knowledge and britis?	Tax Parcel No.	2008		A CONTRACTOR SCHOOL ST	and a character of	all Washington well construction size c are one to my best snowledge and I				
Driller Traince Name (Print) Lynn Goble Driller/Traince Signature	Cased or Uneased Diameter	2"	Static Level 8	X Driller 71a	ines Name (Print)	Lynn Goble	Tax Tax S		z"	Static Level 8
Driller/Trainee License No. 2982	Work/Decommission Start Date	7-27-10		Driller/Traince Li	icense No. 298	2	Work/Decon	imision Start Date	1-27-10	3
l'trainee, licesned drillers'		7 10 10		If trainee, licesner Signature and Lic		4				(6)
Signature and License No.	Work/Decommision Completed Dat	1-30-10		Signature and Lic	tense No.		Work/Decon	unision Completed	Date 7-36-)	0
Construction/Design Well D	ata W10-368	Formation Des	escription	t Co	nstruction/Design		Well Data W10-368		Formation	Description
CONCRETE SUF	RFACE SEAL	6 - 2 Fill	_ Ff	Warranty		CONCRE	re surface sea	L FT	\$111	FT FT
CONCRETE SUF	1 FT 19 FT BENTONILE M		FT	Ecology does NOT Warranty		CONCRE BACKFIL	<u> </u>	FT FT	0 Z - B	FT 5:11y \$4ND
	1 FT 14 FT BENTONITE CH:9	62.16 RD BROWN S. Some Clay 0 - 20 EO BRAY SX	FT Ty Clay	of Ecology does NOT			1 11 benson	FT FT	0 2 - 8 M&D BROWN SOME CLA 0 8 - 12 M&D GRAY C	FT 5:11y \$ AND 1 Y
	1 FT 14 FT BENTONITE CH:9	62.16 RD BROWN S. Some Clay	FT Ty Clay	Ecology does NOT			1 11 benson	FT FT	0 2 - B M&D BROWN SOME CLA	FT 5:11y \$ AND 1 Y
BACKFILL	1 FT 19 FT BENTONITE CH:p M.	62.16 RD BROWN S. Some Clay 0 - 20 EO BRAY SX	FT TY Clay	Department of Ecology does NOT		BACKFIL.	1 11 benson	FT FT	0 2 - B M&D BROWN SOME CLA 0 8 - 12 M&D GRAY (W/ SAND	FT SILTY SAND FT CLAY SILT EIVED OF ECOLOGY

RESOURCE PROTECTION WELL RI SUBMIT ONE WELL REPORT PER WELL INSTALLED)	NO. 36 1 1 7 7 1	URRENT EE01534	
Construction/Decommission 385677	n e	Type of Well X Resource Protection	
Decominission ORIGINAL INSTALLATION Notice of Intent Number	Property Owner Site Address	Geotechnical Soil Boring The Boeing Company 20403 68th Ave S	_
Consulting Firm Landau Associates	City Ke	ent County Kin	g EWM
Inique Ecology Well ID Tag No.		NE 1/4 SE Sec 2 Twn 22N R 48	WWM
ELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for ostroction of this well, and its compliance with all Washington well construction standards	Lat/Long (s,t,r Lat De still Required) Long I	eg x Lat Min/Sec Deg x Lung Min/Sec	<u> </u>
aterials used and the information reported above are true to my best knowledge and belief	Tax Parcel No.		
Driller Traince Signature Driller/Traince Signature Driller/Traince License No. 2982	Cased or Uneased Diam	eter 2" Static Lev	
	Work/Decommission Sta	ri Dale 7-27-10	
Framee, licesned drillers'	Work/Decommission Con	mpleted Date 7-30-10	
	ata W10-368	Formation Description	
BACKFILL.	15 F BENTONITE _CH:P	T 0 2 - 10 FT MED BROWN 5: LTy 5,	920
		10-16 FT MED GRAY 5:2TY CIA N/SAND	ענ

Construction/Decommission	L INSTALLED)	000	Type of We	an .	
	3856	78	X Resource		
Construction	and the second				
Decommission ORIGINAL INSTALLAT of Intent Number		Property Owner		nical Soil Buring Boeing Compan	v
ny mana manana		Site Address	20	103 68th Ave S	
Consulting Firm Landa	u Associates	City	Kent	County	King
Inique Ecology Well ID ag No.		Location	1/4 NE 1/4 SE Sec	2 Twn 22N	
ELL CONSTRUCTION CERTIFICATION: 1 constructed		Lat/Long (s,t,r	Lat Deg x	Lat Min/Sec	
are mais used and the information reported above are true in			come tree		
Driller Trainee Name (Print)	nn Goble	and the second		,,	
hiller/Traince Signature	Trolle	Cased or Uncased	Diameter 2	St	atic Level _ &
onller/Traince License No. 2982		Work/Decommis	on Start Date 7-	27-10	
trainee, beesned drillers'					
ignature and License No.		Werk/Decommist	on Completed Date	7-30-10	_
Construction/Design	Well	Data W10-368		Formation Descrip	otion
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-	— BACKFILL	BENTONITH	_FT	2 - 1D Brown 5'17	FT Y SAND
-	— BACKFILL		_FT	2 - 1D Brown 5:11	FT Y SAND
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		BENTONITE CH:P		0-16 ORAY 525Y GAND	FT
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RESOURCE PROTECTION WELL REPO	ORT CURRENT EE01534	RESOURCE PROTECTION WELL RE	PORT CURRENT EE01534 4E-0
Construction 3856 79 XConstruction Decommission ORIGINAL INSTALLATION Notice	Type of Well X Resource Protection Geotechnical Soil Boring The Boeing Company	Construction/Decommission X Construction Decommission ORIGINAL INSTALLATION Natice of Intent Number	Type of Well X Resource Protection Geotechnical Soil Boring Property Owner
Consulting Firm Landau Associates City	EWM	Consulting Firm Landau Associates	Site Address 20403 68th Ave S City Kent County King Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or
Tag No. WELL CONSTRUCTION CERTIFICATION I constructed undler accept responsibility for construction of this well, and its compliance with all Washington well construction at another still. Materials used and the information reported above are true to my best knowledge and helief Driller Trainer Name (Print) Lunn Gable	Long (s.t.r Lat Deg x Lat Min/Sec x Required) Long Deg x Long Min/Sec x Long Min/Sec x Long Min/Sec x CParcel No. d or Uncased Dismeter 2'' Static Level 8'	Tag No. WELL CONSTRUCTION CERTIFICATION. I tenserward shifter accept responsibility for runscrucine in dies welt, and its compliance with all Wallington well construction standards. Majoralls swed and die information reported above are true to my best knowledge and belief Driller Traince Name (Print) Lynn Goble	Lat VLong (s,t,r Lat Deg
If traince, licesaed drilfers' Signature and License No. World Data W	rk/Decommision Completed Date 7-30-10 Formation Description	if trainee, licesned drillers' Signature and License No. Construction/Design Well Dat	Work/Decommission Completed Date 7-50-10 a W10-368 Formation Description
	ESEAL O - 2 FT FI FI S FT O 2 - 10 FT TOWITE MED BROWN 5:114 SAND	CONCRETE SURI	FACE SEAL 1 FT FILE 19 FT BENTONITE CHIP TO 2 - 10 FT MED BROWN 5:27Y SAND SOME CIAN
The Department of	MED GRAY SLTY CIAN N/SAND	The Department of	MED GRAY SLITY CLAY
DEPTH OF BORING	16 PT DEPARTMENT OF ECOLOGY	DEPTH OF BORING	FT DEPARTMENT OF ECOLOGY
Scale J* = Page	ofWATER RESOURCES PROGRAM	Scale 1 ^(*) =	PageofWATER RESOURCES PROGRAM

nstruction/Decommission	Notice of Intent No. <u>EEO/S34</u> Type of Well	(SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission 385682	Type of Well
Construction 385681	X Resource Protection	SConstruction	X Resource Protection
Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring		Geotechnical Soil Boring
of Intent Number	Property Owner The Boeing Company	of Intent Number Pr	operty Owner The Boeing Company
of mach minor	Site Address 20403 68th Ave S	-	e Address 20403 68th Ave S
nsulting Firm Landau Associates	City Kent County King	Consulting Firm Landau Associates Ci	EWM
ique Ecology Well ID 2 No.	Location I/4 NE I/4 SE Sec 2 Twn 22N R 4E or	Tag No.	cation 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or
L CONSTRUCTION CERTIFICATION: 1 constructed and/or accept responsibility for	Lat/Long (s.t.r Lat Deg 1 Lat Min/Sec 1	WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for La	ULong (s,t,r Lat Deg x Lat Min/Sec 1
action of this well, and its compliance with all Washington well construction standards	still Required) Long Deg x Long Min/Sec 1	mismochin of this well, and its compliance with all Washington well construction standards Sti	Required) Long Deg x Long Min/Sec x
halfs used and the information reported above are true to my best knowledge and belief		Materials used and the information reported above are true to my best knowledge and belief	ax Parcel No.
oriller Traince Name (Print) Lunn Goble	Tax Parcel No.	X Driller Trainee Name (Print) Lynn Goble	**
ler/Trainee Signature	Cased or Uncased Diameter 2" Static Level B	o Driller/Trainee Signature	sed or Uncased Diameter 2" Static Level 8
er/Trainee License No. 2982	3	Driller/Trainee License No. 2992	York/Decommission Start Date 7-27-10
	Work/Decommission Start Date 7-27-10	Treatmen licesond drillers	ON Decommission 21911 Date 1-51710
ninee, ficesned drillers'		77	fork/Decommission Completed Date 7-30 - 10
ature and License No.	Work/Decommission Completed Date 7-30-10		or observation completed bate 1-30 - 11
Construction/Design Well Da	ata W10-368 Formation Description	Construction/Design Well Data	W10-368 Formation Description
	FACE SEAL 0 2 FT FT FT	CONCRETE SURFA	1 FT £:11
BACKFILL	EII	BACKFILL BACKFILL	1 FT F:11 14 FT 02-15 FT MED BROWN 5:2TY SAND 0 - FT
Allillilli	T FT 02.8 FT DENTONITE MED BROWN SILTY SAND SOME CLAY O FT RECEIVED	The Department of Ecology does NOT	14 FT 02- 15 FT MED BROWN 5:2TY SAND

SUBMIT ONE WELL REPORT PER WELL INSTA	WELL REPORT	Notice of Intent No.		
onstruction/Decommission	- 10.7	Type of Well		
Construction 5.0 3	5683	X Resource Prote	ection	
Decommission ORIGINAL INSTALLATION Note	ice	Geotechnical S	ioil Boring	
of Intent Number	Property Owner		ng Company	1
	Site Address	20403 6		
onsulting Firm Landau Associ	ates City	Kent Co	unty King	
nique Ecology Well ID	Location 1/	4 NE 1/4 SE Sec 2	The second secon	X
ELL CONSTRUCTION CERTIFICATION: I constructed and/or society	responsibility for Lat/Long (s.t.r L	n Deg	Lat Min/Sec s	
structure of this well, and its compliance with all Washington well com-	erusion standards still Required) La	ong Deg x	Long Min/Sec a	
accoult used and the information reported above are true to my best known				
Driller Trance Name (Print)	aoble	24	Static Level 8	
iller/Triunee Signature Lyn Zall	Cased or Uneased t			
iller/Traince License No. 2982	Work/Decommision	Start Date 7-27	10	
trainee, licesned drillers'			2.62	
gnature and License No.	Work/Decorantision	Completed Date7-3	0-10	
Construction/Design	Well Data W10-368	Form	ation Description	
BA	CKFILL 23' BENTONITE CHIP	50me	N SILTY SAND Clay FI Y 5:41y Clay	
DEI	PTH OF BORING		RECEIVED ENT OF ECOLOGY	

(SUBMIT ONE WELL REPORT PER WE	TION WELL R		CURRENT	
Construction/Decommission	38568	41	Type of Well X Resource Prote	
Decommission ORIGINAL INSTALLA of Intent Number	TION Notice EEO1534	Property Owner		ng Company
Consulting Firm Land	au Associates	Site Address City K	20403 68 ent Cor	
Unique Ecology Well ID Tag No.		Location 1/4	NE 1/4 SE Sec 2	Wn 22N R 4E or
WELL CONSTRUCTION CERTIFICATION: I constructed	A CONTRACTOR OF THE PROPERTY O	Lat/Long (s,t,r Lat D		at Min/Sec x
equateration of this well, and its compliance with all Washin Materials used and the information reported above are true to	my best knowledge and helief	still Required) Long Tax Parcel No.	Degs	ong Min/Sec
X Driller Traince Name (Print) Driller/Traince Signature	unn Goble	Cased or <u>Uncased</u> Dian	neter 2"	Static Level 8
Driller/Trainee License No. 2992		Work/Decommission St	art Date 7-27-	10
If trainee, licesned drillers'		Work/Decommision Co	impleted Date 7-56	0-10
Construction/Design	Well D	Jula W10-368		tion Description
•	CONCRETE SU	REACE SEAL		- "
	CONCRETESO		FIL	
	BACKFILL	, <u>1</u> F	T	(6 FT
		,	T	O FT VN 5:27Y 5AND AY
		, <u>1</u> F	T 02 - 1 MRD 840 - 50mE C.	lay 20 FT
		, <u>1</u> F	T 02 - 1 MED BROW MED BROY	
		, <u>1</u> F	T 02 - 1 MED BROW MED BROY	RD FT SATY CLAY
		, <u>1</u> F	T 02 - 1 MED BROWN MED BROWN MED BROWN MY	RD FT SATY CLAY

	OTECTION WELL R RT PER WELL INSTALLED)	EPORT CUI	RRENT AE10046		E PROTEC	TION WELL RI	EPORT	CURRENT Notice of Intent	
onstruction/Decommission	38568	5	Type of Well	Construction/Decor	mmission	385686		Type of W	
Construction	20200	-	X Resource Protection			20000		X Resource	ce Protection
Decommission ORIGINAL	INSTALLATION Notice		Geotechnical Soil Boring	Decommission Of	RIGINAL INSTALLA	ITION Notice			hnical Soil Boring
of Intent N	umber EE01534	Property Owner	The Boeing Company	± of	Intent Number	EE01534	Property Owner		ne Boeing Company
to the Bloom		Site Address	20403 68th Ave S County King	Consulting Firm	Toront	Iau Associates	Site Address		0403 68th Ave S County King
onsulting Firm	Landau Associates	City Kent	County King	7 5 Consuming Print	Land	au Associates	City	Kent	County King
nique Ecology Well ID		Location 1/4 NE	1/4 SE Sec 2 Twn 22N R 4E or	Unique Ecology W	Vell ID		Location	1/4 NE 1/4 SE Se	c 2 Twn 22N R 4E or
ag No.			WWX	Tag No.	77				W
ELL CONSTRUCTION CERTIFICATION	ON: I constructed and/or accept responsibility for	LavLong (s,t,r Lat Deg		_ WELL CONSTRUCTION CO	ERTIFICATION: I constructe	ed and/or accept responsibility for		Las Deg x	
estruction of this well, and its compliance	e with all Washington well construction standards	still Required) Long Deg	Long Min/Sec x	construction of this well, and	its compliance with all Washin	ington well construction standards	still Required)	Long Deg r	Long Min/Sec
	above are true to my best knowledge and belief	Tax Parcel No.				to my hest knowledge and belief	Tax Parcel No.		
Driller Trainee Name (Print)	Lynn Goble		Z" Static Level 8	X Driller Trainee N	Name (Print)	ynn Goble	w		Static Level
riller/Trainee Signature	m Doble	Lased or <u>Uncased</u> Diameter	Static Level 8	Driller/Traince Signatu Driller/Traince License	ure des	Molle	Cased or Uncased	Diameter	Static flevel
riller/Trainee License No. 2º	102	Work/Decommission Start D	tate 7-27-10		: 10. 21 02		Work/Decommisi	ion Start Date 7	27-10
traince, licesned drillers'				If trainee, licesned drill Signature and License	lers!		Page 198		
gnature and License No		Work/Decommision Compl	eted Date 7 .36 - 10	Signature and License	No.		Work/Decommiss	on Completed Date	7-30-10
Construction/Des	Wall C	Data W10-368	Formation Description	Constru	action/Design	Well D	ata W10-368		Formation Description
Construction	ngh went	M10-305	T. Clander of the Control of the Con	27.1	enon Dangi	The state of the s	77 (0-200		Common accordance
			Sul	ss NOT Warranty				_FT	(21)
-	BACKFILL	bensonisk CHip	MED BROWN SILTY SAND SOME CLAY	Ecology does	•	BACKFILL	BENTONITE CHIP	FT	2 - 10 FT Shown 5 LTY 5AND
			MED GRAY CLAY SILT W/ SAND	Department of E				MED (10-16 FT GRAY 5:254 Clay SAND
		. 12 17	RECEIVED DEPARTMENT OF ECOLOGY	The Dep		DEPTH OF BORING	16		RECEIVED PARTMENT OF ECOLO
	DEFTH OF BORING	3FT	AUG 2 7 2010	Millian	777773	DELTH OF BORRE		<0 V	AUG 2 7 2010

RESOURCE PROTECTIO		CURRENT Notice of Intent No.	TE OF SUBMI	OURCE PROTEC			JRRENT AE10046
Construction/Decommission	85687	Type of Well	Constru	retion/Decommission	385688		Type of Well X Resource Protection
Lonstruction		X Resource Protection Geotechnical Soil Boring		mmission ORIGINAL INSTALL	ATION Notice		Geotechnical Soil Boring
Decommission ORIGINAL INSTALLATION of Intent Number EE				of Intent Number	EE 01534	Property Owner	The Boeing Company
	Site Address	20403 68th Ave S		A william		Site Address	20403 68th Ave S
Consulting Firm Landau A	ssociates City	Kent County	Eway 0	ting Firm Lan	idau Associates	City Ker	County King
Unique Ecology Well ID Tag No.	Location	1/4 NE 1/4 SE Sec 2 Twn 22N		Ecology Well ID		Location 1/4 N	E 1/4 SE Sec 2 Twn 22N R 4E or WWM
WELL CONSTRUCTION CERTIFICATION: I constructed and/o		Lat Deg 1 Lat Min/Sec		STRUCTION CERTIFICATION: 1 construc			Lat Min/Sec x
construction of this well, and its transplience with all Washington w		Long Deg x Long Min/Se	- 0	of this well, and its compliance with all Wash			eg x Long Min/Sec x
Materials used and the information reported above are true to my in	Tax Farcel 140					Tax Purcel No.	
Driller Traince Name (Print)	Cased or Uncar	ed Diameter 2" S	Intic Level 8 Priller/Tr	Trainee Name (Print)	Golle	Cased or Uncased Diamet	er 2" Static Level 8
Driller/Traince License No. 2982	Waston	ision Start Date 7-27-10	Driller/Tr	ainee License No. 2982	Sa - Water I	Work/Decommission Start	Date 7-21-10
If traince, licesned drillers'	Work/Decordin	ision Start Date 7.23-10	at a lf trainee, Signature	licesned drillers'		With Decimal and State	7-57-70
Signature and License No.	Work/Decorns	ision Completed Date 7-30-10		and License No.		Work/Decommission Com	pleted Date 7~30~10
Construction/Design	Well Data W10-368	Formation Descri	ption	Construction/Design	Well Da	ta W10-368	Formation Description
	BACKFILL 15 BENTONI, CH:P		of Ecology does NOT Warranty	-	BACKFILL	15 FT BENTONITE CH:P	MED BROWN 5:LTY SAND
		010-16 MED GRAY 5 X54 W/SAND	ET E				FT FT
	DEPTH OF BORING	DEPARTMENT O	/ED F ECOLOGY	4	DEPTH OF BORING	FT	DEPARTMENT OF ECOLOGY
		WATER RESOURCE			_1		WATER RESOURCES PROGRAM

onstruction/Decommission	385689		Type of Well		RESOURCE PRO (SUBMIT ONE WELL REPORT Construction/Decommission Construction	3856	91	Type of Well	
Construction			X Resource Protection					X Resource Protection	o .
Decommission ORIGINAL INSTALLATION of Intent Number EE		Property Owner	Geotechnical Soil Boring The Boeing Company		Decommission ORIGINAL I.	NSTALLATION Nonce imber EE01534	Property Owner	Geotechnical Soil The Boeing	
onsulting Firm Landau As	secriptes	Site Address City Kent	20403 68th Ave S County		5		Site Address	20403 68th	
	asociates .			EWM 1	Consulting Firm	Landau Associates	City K	ent County	King
ique Ecology Well ID g No.		Location 1/4 NE	1/4 SE Sec 2 Twn 22.N I	R 4E or	Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION		Location 1/4_1	NE 1/4 SE Sec 2 Twr	22N R 4E or
L CONSTRUCTION CERTIFICATION: I constructed and/or			x Lat Min/Sec		WELL CONSTRUCTION CERTIFICATION	: I constructed end/or eccept responsibility fur		eg x Lat	
action of this well, and its compliance with all Washington we als used and the information reported above are true to my be			Long Min/Sec		construction of this well, and its compliance of	with all Washington well construction standards		Deg x Long	Min/Sec x
점점에 가지 무슨데 없어. 아이는 어린 보고 아이는 아이를 하고 있다면 하지 않다면 이 그렇다.	Charles and and the second	Tax Parcel No.			Maieriels used and the information reported a X Driller Trainee Name (Print)	bove are true to my best knowledge and belief LUNN Cabble	Tax Parcel No.		
oriller Trainee Name (Print)	oble	Cased or <u>Uneased</u> Diameter	State	atic Level 8	Materiels said and the information reported a X Driller Trainee Name (Print) Driller/Trainee Signature Or Driller/Trainee License No. 29	you holls	Cased or Uncased Diam	neter 2"	Static Level
iller/Trainee License No. 2982		Work/Decommission Start Da	7-27-10		Driller/Trainee License No. 29	92	Work/Decommission Sta	an Date 7-27-10	
nature and License No.		Water Care	red Date 7-50-10		If trainee, licesned drillers' Signature and License No.		-		
	Aniel				υ		Work/Decommission Co.	empleted Date 7-30-1	0
Construction/Design	Well Dat	a W10-368	Formation Descript		Construction/Design	gn We	Il Data W10-368	Formation	Description
	CONCRETE SUR	FACE SEAL	-0 · 2	FT	Warran	CONCRETE	SURFACE SEAL.	T Fill	FT
	CONCRETE SUR	7 65 5 50 65	02 - 70	FT	does NOT Warranty	CONCRETE:			
		1FT		FT Y SAND	Ecology does NOT		F	T 02-8	FT
		1 FT 19 FT BENTONITE	02:10 MED BROWN 5:274	FT Y 5AND	of Ecology does NOT		7 F	T 02-8	FT FT FT FT
		1 FT 19 FT BENTONITE	02:10 MED BROWN 5:279 SOME GLAY 0 - RD MED GRAY SIXTY	FT Y SAND FT Clay	Department of Ecology does NOT		7 F	T 02-8	FT 1 3,25 y 5 AN ME Clay
		1 FT 19 FT BENTONITE	02:10 MED BROWN 5:279 SOME GLAY 0 - RD MED GRAY SIXTY	FT Y SAND FT Clay	of Ecology does NOT		7 F	T 02-8	FT 1 3,2 1 y 5 And Me Clay FT GIVEO
		1 FT 19 FT BENTONITE CHIP	02:10 MED BROWN 5:274 SOME GLAY 0 - RD MED GRAY SIXTY W/SAND RECEIVED	FT Y SAND FT CLAY D ECOLOGY	Department of Ecology does NOT		7 F DENTONITE CH:P	0 2 - 8 MED BROWN 30	FT SIVEO OF ECOLOGY

onstruction/Decommission 385	071	ype of Well	RESOURCE (SUBMIT ONE W.	commission 7 C	-197	Type of V	Vell
Construction	X	Resource Protection	Construction/Dec	383	5692	X Resour	rce Protection
Decommission ORIGINAL INSTALLATION Notice of Intent Number _EE01536	Property Owner	Geotechnical Soil Boring	Decommission	ORIGINAL INSTALLATION Notice	ce	Geotec	chnical Soil Boring
of mann number _CEO/33	Site Address	The Hoeing Company 20403 68th Ave S		of Intent Number EEO	1534 Property		he Boeing Company
onsulting Firm Landau Associates	City Kent	County King	_ · · · · · · · · · · · · · · · · · · ·		Site Addr		0403 68th Ave S
		EWN	Consulting Fin Unique Ecology Tag No. WELL CONSTRUCTION	11 Landau Associa	ites City	Kent	County King
que Ecology Well ID	Location I/4 NE 1/4	SE Sec 2 Twn 22N R 4E or	Unique Ecology	Well ID	Location	1/4 NE 1/4 SE Se	ec 2 Twn 22N R 4E or
No. CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility	Datificana (a.t. a. 1 a. D	ww	M Tag No.	7.33.11			ww
action of this well, and its compliance with all Washington well construction stands		I Lat Min/Sec I	WELL CONSTRUCTION	CERTIFICATION I constructed and/or accept	The second secon	(s,t,r Lat Deg x	
a's used and the information reported shows are true to my best knowledge and beli-		Long Wayset 1	construction of this well, a	and its compliance with all Washington well constr		ired) Long Deg x	Long Min/Sec. x
riller Traince Name (Print) Lunn Goble				amazion reponed above are true to my best know		No.	
er/Traince Signature 2001	Cased or Uncased Diameter	2 Static Level &	Driller/Traines Sign	e Name (Print) Lynn G	Cased or U	Incused Diameter 2	4 Static Level 8
ter/Trainee License No. 2982	Work/Decembring Start Date	7-27-10	The second secon	nse No. 2982			
nince, licesned drillers'	Transcretaring Surf Date	1-21-10			Work/Dec	commission Start Date	-21-10
ature and License No.	Work/Decommission Completed	Date 7-30-10	If trainee, licesned d		Wast /Day	commission Completed Date	7-31-11
Amountaine volume -		Charles Theorem		se No.	Work/Dec	Commission Completed Date	
Construction/Design	Vell Data WID-769		0				
	SURFACE SEAL	Formation Description 0 - 2 FT £:11		truction/Design	Well Data W10-3		Formation Description - Z FT F:11
	SURFACE SEAL / FT	0 - 2 FT	does NOT Warranty	CON	NCRETE SURFACE SE	FT OF MED A	. 2 г
CONCRETE	SURFACE SEAL / FT 14 FT BLATEAUTE	0 - 2 FT F:11 0 2 - 15 FT MED BROWN SILTY SAND 0 - FT	Department of Ecology does NOT Warranty	CON	NCRETE SURFACE SE	FT OF SON	- 2 FT F:11 2-10 FT Skewn SILTY SAND AC CLAY 10-24 FT GLAY 5:174 CLAY
CONCRETE	SURFACE SEAL IFT IH FT BENTENITE CHIP	0 - 2 FT F:// 0 2 15 FT MED BROWN SILTY SAND 0 - FT DEPARTMENT OF ECOLOGY 150 2 7 2210	The Department of Ecology does NOT Warranty	CON	NCRETE SURFACE SE	SAL 0 FT S' FT 02 MED 10 N/S	FIII 2-10 FT Shown SILTY SAND TO CLAY 10-24 FT 6hry 5:17 Clay AND
CONCRETE	SURFACE SEAL IFT IH FT BENTENITE CHIP	O - 2 FT F:// O 2 - 15 FT MRO BROWN SILTY SAWD O - FT DEPARTMENT OF ECOLOGY //// 1210 WATER RESOURCES PROCESS	The Department of Ecology does NOT Warranty	CON BAC	NCRETE SURFACE SE L CKFILL BENTONIT CH	FT OF SON	- 2 FT F:11 2-10 FT Skewn SILTY SAND AC CLAY 10-24 FT GLAY 5:174 CLAY
CONCRETE	SURFACE SEAL IFT IH FT BENTENITE CHIP	0 - 2 FT F:11 0 2 - 15 FT MED BROWN SILTY SAND 0 - FT DEPARTMENT OF ECOLOGY	The Department of Ecology does NOT Warranty	CON BAC	NCRETE SURFACE SE	FT OF MED N/S	- 2 FT F:11 2 - 10 FT Skewn SILTY SAND AC CLAY 10-24 FT GLAY 5:114 CLAY AND RECEIVED

Construction/Decommission 3 8-5 78 X Construction Decommission ORIGINAL INSTALLATION Notice of Intern Number	X Resource Protection Geotechnical Soil Bori Property Owner The Boeing Com	ipany 5 of I	IGINAL INSTALLATION Notice Intent Number	X R X R Property Owner	e of Well tesource Protection feotechnical Soil Boring The Boeing Company
Consulting Firm Landau Associates	Site Address 20403 68th Ave : City Kent County	King E Consulting Firm	Landau Associates	Site Address City Kent	20403 68th Ave S County King
Unique Ecology Well ID	Location 1/4 NE 1/4 SE Sec 2 Twn 2		CI II:	Location I/4 NE 1/4 S	SE Sec 2 Twn 22N R 4E or
Fag No. WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for outstruction of data well, and its compilance with all Washington well construction standard faternals used and the information reported above all true to my best knowledge and belief Driller Trainec Name (Print) Driller/Trainec Signature	still Required) Long Deg x Long Min	VSec 3 Construction of this well, and in: Materials used and the informatic X Driller Trainee Nan Static Level 8 O Driller/Trainee Signature		Lat/Long (s.t.r. La Deg still Required) Long Deg Tax Parcel No. Cased or <u>Uneased</u> Diameter	
Driller/Trainer License No. 2992	Work/Decommision Start Date	Driller/Trainee License N	1-01	Work/Decommission Start Date	7-27-10
f traince, licesned drillers'	Work/Decommission Completed Date 7-30-10	If trainee, licesned drillers Signature and License No		Work/Decommission Completed Dat	te 7-30-10
Construction/Design W	ell Data W10-368 Formation Des	0	tion/Design Well I	Data W10-368	Formation Description
CONCRETE	SURFACE SEAL 1 FT FT 5 - 2 FIII 7' FT 8 ENTENITE CHIP	Department of Ecology does NOT Warranty	BACKFILL		6 2 8 FT 1 KD BROWN 5,4TY 5AND 0 - FT
DEPTH OF BOR	ING 8 FT RECEIVED	P P	DEPTH OF BORING	3 <u>8 ′</u> FT	RECEIVED DEPARTMENT OF ECOLOG

onstruction/Decommission 385788	Type of Well	(SUBMIT ONE WELL REPORT PER WELL INSTALLED)	Type of Well
Construction 303 700	X Resource Protection	Construction/Decommission	X Resource Protection
Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring	Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring
of Intent Number	Property Owner The Boeing Company Site Address 20403 68th Ave S	of Intent Number	Property Owner The Boeing Company Site Address 20403 68th Ave S
onsulting Firm Landau Associates	City Kent County King	Consulting Firm Landau Associates	City Kent County King
nique Ecology Well ID	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or www.	Unique Ecology Well ID Tag No. WELL CONSTRUCTION CERTIFICATION: 1 constructed end/or scrept responsibility for	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or
LL CONSTRUCTION CERTIFICATION:) constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg s Lat Min/Sec x	WELL CONSTRUCTION CERTIFICATION: 1 constructed and/or accept responsibility for	Lat/Long (s,t,t Lat Deg 1 Lat Min/Sec 1
nuction of this well, and in compliance with all Washington well construction standards.	still Required) Long Deg s Long Min/Sec s	construction of this well, and its compliance with all Washington well construction standards	still Required) Long Deg 1 Long Min/Sec 1
enals used and the information reprinted above are true to my best knowledge and belief	Tax Parcel No.	Materials used and the information reported above are true to my best knowledge and belief	Tax Parcel No.
Driller Trainee Name (Print) Lynn Goble	Cased or Uneased Diameter 2" Static Level 8	Driller Traines Name (Print) Lynn Goble	Cased or Uncased Diameter 2" Static Level 6
Iler/Trainee License No. 2982		Materials used and the infiltration reported above use true to my best knowledge and belief X Driller Trainee Name (Print) Driller/Trainee Signature Driller/Trainee License No. 2982	
trainee, licesned drillers'	Work/Decommission Start Date 7-27-10	If trainee, licesned drillers'	Wark/Decommission Start Date 7-27-10
nature and License No	Work/Decommission Completed Date 7-30-10	☐ Signature and License No.	Work/Decommission Completed Date 7-30-10
Construction/Design Well Da	ats W10-368 Formation Description	Construction/Design Well Da	ata W10-368 Formation Description
BACKFILL	T FT 02-8 FT DÉNTOJITÉ MÉD BROWN SATY SAND SOME CLAY	Department of Ecology does NOT	7 FT 02-8 FT DENTONITE MED BROWN SILTY SAND CHIP SOME CLAY
	RECEIVED DEPARTMENT OF ECOLOGY	The De	DEPARTMENT OF ECOLOG

RESOURCE PROT (SUBMIT ONE WELL REPORT PL Construction/Decommission				Type of Well		
X Construction	385789	}		X Resource P	rotection	
Decommission ORIGINAL INST of Intent Numb		Property Owner	- 1		al Soil Boring oeing Company	
of thient ivamo		Site Address	_		68th Ave S	_
Consulting Firm	Landau Associates	City	Kent			King
						EWM
Unique Ecology Well ID Tag No.		Location	1/4 NE	1/4 SE Sec	2 Twn 22N R	4E or
WELL CONSTRUCTION CERTIFICATION: 10	onstructed and/or accept responsibility for	Lat/Long (s,t,t				
construction of this well, and its compliance with a	Il Washington well construction standards	still Required)	Long Deg	1	Long Min/Sec	
Materials used and the information reported above		Tax Parcel No.				
X Driller Trainee Name (Print) Driller/Trainee Signature	Lynn Goble	- Cased or Uncased	Diameter	2"	Stati	c Level_B
Driller/Traince License No. 2982						
		Wark/Decommis	ion Start Dat	c7-27-	10	_
If trainee, licesned drillers'		0-45	- Pa-17	d Date of 9	0-10	
Signature and License No.		Work/Decommis	on Complete	to Date 7 - 3	0-10	-
Construction/Design	Well E	Data W10-368		Fo	mation Descripti	on
and the state of t						
	BACKFILL	2	FT	0.2	6	FT
	2007 20 403 20 40	BENTONITE			_	
		CHIP		MED DX	some cl	ay ay
	1					
				0		FT
	1 o t			0		FT
	3.6				BECCIVE	
	DEPTH OF BORING	8	FI			D ECOLOG

nstruction/Decommission	NSTALLED)		Type of Well	NC/0845	RESOURCE PROTE			Type of Well
Construction	385790		X Resource Protection		Construction/Decommission	385791		X Resource Protection
Decommission ORIGINAL INSTALLATION	V Notice		Geotechnical Soil Boring	g.	Decommission ORIGINAL INSTAL	LATION Notice		Geotechnical Soil Boring
of Intent Number _ S &	07641	Property Owner	The Boeing Comp	any		5807641	Property Owner	The Boeing Company
nsulting Firm Landau A	tenelular	Site Address City Ker	t County		Consulting Firm La	ndau Associates	Site Address	20403 68th Ave S
Lancau A	asociates	City Ker	County	King	in East and	nuau Associates	City Ken	t County King
ique Ecology Well ID No			E 1/4 SE Sec 2 Twn 22	N R 4E or	Tag No. VELL CONSTRUCTION CERTIFICATION: Leanur			E 1/4 SE Sec 2 Twn 22N R 4E or www
L CONSTRUCTION CERTIFICATION constructed and/o			x Lai Min/Se		E NELL CONSTRUCTION CERTIFICATION: 1 constr	octed end/or emeps responsibility for	Lat/Long (s,t,r Lat Deg	Let Min/Sec
rection of this well, and its compliance with all Westington w rais used and the information reported above are true to my b			g x Long Min/S	jec x	d)	and an area supported topostize	still Required) Long De	g s Long Min/Sec s
riller Traince Name (Print)	n Goble	Tax Parcel No			C Driller Trainee Name (Print)	Lunn Carble	Tax Parcel No.	
ter/Traince Signature	de	Cased or Uncased Diamet	3 2"	Static Level B	Australa used and the information reported above are to C Driller Trainee Name (Print) Oriller/Trainee Signature Driller/Trainee License No. 2992	holes	Cased or Uncased Diameter	Static Level &
ler/Trainee License No. 2982		Work/Decommission Start	Date 7-27-10		7 Iriller/Trainee License No. 2982		World/Decommission Come	Date 7-27-10
tinee, licesned drillers'		Work Decommission Start	1-E 1-10		f trainee, licesned drillers'		work Deconunision start I	Date 1-2 1-10
ature and License No.		Work/Decommission Comp	leted Date 7 - 30 - 10		ignature and License No.		Wark/Decommision Comp	leted Date 7 - 3.0 - 1.0
Construction/Design	Well Da	ta W10-368	Formation Desc	riotion	Construction/Design	Well Da	ta W10-368	Formation Description
	BACKFILL	7 гг	02.8	PT.	does NOT	BACKFILL	7 FT	0.2 4
		ENTONITE	MED BROWN 512			Mr. 9.20 (250 cm)	ENTONITE FT	02-6 FT
		CH:P	Some Some	Clay	Ecology		CH:P	MED BLOWN SILTY SAND Some clay
			0	ET	ent of			A
			0 -	200	Department	18		FT
					d e	0.73		1
	100							
	100				The			
			1661	0.00				RECEIVED
		0'	DEPARTMENT	OF ECOLOGY			01	DEPARTMENT OF ECOLOGY
villininin 4	DEPTH OF BORING	D FT	193 27			DEPTH OF BORING	FT	1.33 2 7 2213
			1 2/12	A 5 P 15 T				4.004 - I LQ10

nstruction/Decommission 385792 Construction Decommission ORIGINAL INSTALLATION Notice	X Resource Protection	Construction/Decommission 385 793	Type of Well X Resource Protection
of Intent Number 5807641	Property Owner The Boeing Company	Decommission ORIGINAL INSTALLATION Notice of Intent Number SED 7641	Geotechnical Soil Boring Property Owner The Boeing Company
nsulting Firm Landau Associates	Site Address 20403 68th Ave S	Consulting Firm Landau Associates	Site Address 20403 68th Ave S
Landau Associates	City Kent County King	9	City Kent County King
ique Ecology Well ID	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or	Unique Ecology Well ID E Pag No.	Location 1/4 NE 1/4 SE Sec 2 Twn 22N R 4E or
No. L CONSTRUCTION CERTIFICATION: I constructed studios scripps responsibility for	Lat/Long (s,t,r Lat Deg 1 Lat Min/Sec 1	VELL CONSTRUCTION CERTIFICATION: I constructed und/or accept responsibility far	Lat/Long (s,t,r Lat Deg a Lat Min/Sec a
niction of this well, and its compliance with all Washington well construction standards	still Required) Long Deg 1 Long Min/Sec 1	onstruction of this well, and its compliance with all Washington well construction standards	still Required) Long Deg 1 Long Min/Sec 1
ials used and the information reported above are true to my best knowledge and belief	Tax Parcel No.	datarials used and the information reported above are mee to my best knowledge and belief	Tax Parcel No.
er/Traince Signature Jun Goble	Cased or Uncased Diameter 2" Static Level B	O Coriller Trainee Name (Print) Lynn Goble	Cased or Uneased Diameter 2" Static Level R
er/Trainee License No. 2982		Priller/Traince Signature 2982	
ince, licesned drillers'	Work/Decommission Start Date 7-27-10	f trainee, licesned drillers'	Work/Decommission Start Date 7-27-10
ature and License No.	Work/Decommission Completed Date 7-30-10	ignature and License No.	Work/Decommission Completed Date 7-30-10
W. F. K.W. of Mr. W	ta W10-368 Formation Description	Construction/Design Well Date	a WID-368 Formation Description
BACKFILL B.	7 FT 02-B FT ENTONITE MED BROWN 525Y 5AND SOME CLAY	of Ecol	7 FT 02.8 FT ENTONITE MED BROWN SILTY SAND SOME CLAY
	RECEIVED DEPARTMENT OF ECOLOGY	The Department	RECEIVED DEPARTMENT OF ECOLOGY

23-4B-2J

SUBART ONE WELL REPORT FER WELL Construction/Decommission Construction	406601	,,,,,	Type of Well Resource Protection
Decommission ORIGINAL INSTALLATI of Intent Number		Property Owner The	Geolechnical Soil Bering Boekeg Company
Consulting Firm Landau Associates	-Edmonds	Site Address 20403 6 City Kent	8th Ave. S. County 17-King
Unique Ecology Well 1D Tag No.		Togation 1/4 NE	14 SE Sec 2 Yown 22N R4E
WELL CONSTRUCTION CONTPICATION: Longituded construction of this will, and its compliance with all Washington States; as used and the seformation reported above, are than to be to the	ton well (construction standards	Lat/Long (s,t,r Lat Dag still Required) Long Deg Tax Parcel No.	
Driller Traines Name (Print) Kasey Got Driller/Traines Signature Driller/Traines Liotras No. 2501	19 1.pc	Cased or Uncased Diameter	
If traines, licesusd drillers'		World Decommission Start E	1-26-11
Signable and Livense No. Construction/Design	W	Works Decommassion Completell Data W11-039	Formation Description
	CONCRETE SUI	RFACE SEAL	O I FILL
	BACKFILL	FT	0_1 - 8 Pr
		CHIPS	Blown + likey Sirry Sano -
			FT
	The state of the s	8 1	

Construction/Deconsmission 40660	non	Type of Well Resource Profestion
Decemmission ORIGINAL INSTALLATION Notice of Intent Number		Georechnical Soil Boring Boeing Company
Consulting Firm Landau Associates-Edmonds	Site Address 20403 6 City Kent	County 17-King
Unique Ecology Well (D) Tag No.	Location 1/4 NE	IMSE Sec 2 Town 22N R4E WWW
WELL CONSTRUCTION CERTIFICATION. Communicated Jewise Accept responsibility for communities of CEPT with a compliance with all Washingtonivell construction shoulded Visionally used and the offermation reported slaves are true to my break towefreter and belief	Lat/Long (5,t,t Lat Deg still Required) Long Deg	x Lat Min/Sec. x
Alberture Trainee Nume (Print) Kasey Goble Driller/Trainee Signature:	Cased or Unessed Diameter	3" Stane Level 3"
Drillen Trainee License No 2501	World Decommission Stort D	7.72
If framee, treesned daillets'	Work/Decommission Compl	med Date 1:27-11
	d /eli Data W11-039	Formation Description
BACKFILL	Gentante (HIP)	0 2 . 10 PT BROWN & GREY SILTY SANO
DEPTH OF BORING	710FT	FEB 16 2011 OF RESERVED TO THE PROPERTY OF THE

Construction/Decommission	406605		Type of Well	
Construction	7		Resource Protection	
Decommission OPIGINAL INSTALLATIO of Intent Number		Property Owner The B	Geotechnical Soil Boring being Company	
		Site Address 20403 68	th Ave. S.	
Consulting Firm Landau Associates-	dmonds	City Kent	County 17-K	ang eval
Inique Ecology Well ID Fag No.		Location 1/4 NE	14 SE Sed 2 Town 22N	
VELL CONSTRUCTION CERTIFICATION: I consorded to	Color of Col	Lat/Long (s.t.* Lat Fleg still Required) Long Deg	a Long Min/Sec	
reasuration of his ewell, and its samplisance with all Washington Evicently most contact the information reported above are brue to re		Tax Parcel No.	LANGE WITHOUT	
Diville Traines Name (Print) Kasey Gob		- 1000000	J" :	in a constant
Driller/Traines Signature Driller/Traines License No. 2501				static Level 3
f trainer, licesned drillers'		Work/Decommunion Start De	1 - 25 - 11	
Signature and License No		Werk/Decommission Comple	ed Date 1-27-11	
Construction/Design	u	d /eli Data W11-039	Formation Descr	-
	Ľν	Fr	File	
	- BACKFILL	9 FT	0.2-10	_
		GENTONITE CHIP'S	Brown a Gre Silvy Sano-	4
			100	
	1//		1000	con
			0	- FT
	1			
TO AGE BUILDING				
	DEFIH OF BORING	16 FT		

Scale I* ~

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RESOURCE PROTECTION WELL RE	
(SUBMIT ONE WELL REPORT PER WELL INSTALLED)	Notice of Intent No EED1815
Construction/Decommission 406606	Type of Well
Acousticana	Veromine i dolectich
Decommission ORIGINAL INSTALLATION Notice of Intent Number	Property Owner The Boeing Company
St. Hand St. Hand	Site Address 20403 68th Ave. S.
Consulting Firm Landau Associates-Edmonds	City Kent County 17-King
Unique Ecology Well (17) Tag No.	Location 1/4 NE IMSE Sec 2 Town 22N R4E WAY
WELL CONSTRUCTION CERTOTICATION Looperaded saddor accept responsibility for	Lat/Long (s.f.r Lat Deg x Lat Min/Sec x
concretions of 64 swell, and in computate with all Washington well constructed or stimulate	still Required) Long Deg x Long Min/Sec x
Materials used and the information reported above are true to my best Annual edge and belief Training Name (Print) Kasey Goble	Tax Parcel No.
Driller/Trainee Signature	Cased or Uncased Diameter 2" State Level 3"
Onliter/Trumes License No. 2501	West/Decommission State Date 1 - 25' - 1
If waince lirested dillers'	Actendecominated are, that
Signatuse and Luceuse No	Work/Decommission Completed Disc [-27-]]
Construcțion/Design We	ell Data W11-039 Formation Description
BACKFULL	9 PT 02-10 PT BENTONIA CHIPS SILTY SANO
DEPTH OF BORING	Page of sound-re-managers

Trough dedon	106607		Type of Well	Protection	
Decommission ORIGINAL INSTALLATION N of Intent Number	olice	Property Owner Site Address 2	The Boeing Compa 0403 68th Ave. S.	ny	
Consulting Firm Landau Associates-Edate	onds	City Kent		County 17-King	-
Unique Ecology Well [D Tag No.			ANE IMSE Sec 2	Town 22N R4E	- ELANA
WELL CONSTRUCTION CERTIFICATION: I constructed united as		Lat/Long (s.r. L	of Deg x	Lat Min/Sec	1_
construction of this will, and its conspinace with all Washington well. Materials casel and she information appoint allows are from our pay bett i		Tue Parcel No.	org Deg s	Long Min/Sec	-
Driller Traince Name (Print) Kasey Goble		_			0.35
Onlles/Trainee Signature Onlles/Trainee License No. 2501			Diameter 2"		evel 3
		Worl/Decommunio	ti Start Date	1 - 25 - 11	
f trainer, licesned dullers' Stemature and License No.		Work/Decommission	n Completed Date	1-27-11	
Construction/Design		ell Data W11-039		ormation Description	_
	BACKFILL	4 BENTENNIE CHIPS	F1" _ 0 2 Blow Siv	- 10 F m a Grey ry Sama -	
	epth of boring	16	PT .		

Construction/Decommission 4066	09	Type of Well Resource Protection
Decommission ORIGINAL INSTALLATION Notice of Intent Number		Geotechnical Soil Boring
Consulting Firm Landau Associates-Edmonds	Site Address 20403	68th Ave. S. County 17-King
Juique Ecology Well ID Fag No.	Location 1/4 NE	IMSE Sec 2 TOWN 22N RAE (SAN)
TELL CONSTRUCTION CENTRACION: I constructed entries accept to		
taleritle card and tile infransakun repensal älnive san baz targy besi konwi-		
Spriller Transp Names (Prest) Kasey Goble Oralles/Traines Signature	Cased or Uncased Diamet	n 2" Static Level 3'
Infler/Trainee Lucense No. 2501		Date 1 - 25' - 11
Cramee, licesned drillers'	7.00	Aerod Linge 1-27-11
ferintiale and License No.	Well Data W11-039	
Construction/Design	Well Data	Formation Description
CON	CRETE SURFACE SEAL.	0 - 2 FT
	KFILL 9 FT	0 2 - 10 PT
BAC	BENTONITE	0.0000 20.0000
BAC	BENTONINE	Brown a KREY
BAC		Blown a Keey Sirry Sawa
BAC		
BAC		Blown a Gley Sirry Sawa—
BAC		

Construction/Decommission	dater		Notice of Intent No. Type of Well	-
Construction	406611		Resoluce I	rotection
Decommission ORIGINAL INSTALL			Geoteclasic	
of Intent Number		Property Owner Site Address	The Boeing Compar 20403 68th Ave. S.	ny.
Consulting Firm Landau Associa	ales-Edmonds	City Kent		County 17-King
Unique Ecology Well ID Tag No.		Location	1/4 NE 1/4 SE Sec 2	Town 22N R4E
WELL CONSTRUCTION CURRENCATION: 160-45	ered and/or accept responsibility for	Lat/Long (s.t.r.)	at Deg x	Las Min/Sec
concrust an of this well, and its compliance with all Wa			long Deg 1	Long Min/Sec
Marie will select and the information reported shows his to Allowiller Trainer Name (Print) Kasey		Tax Parcel No.		
Driller/Trainec Signature	1/	Cased or Unessed	Diameter 2"	Static L
Driller/Traines License No. 2501	1	World Deconomisi	on Start Date	1 - 25 - 11
it trainee, livestied drillers		1 1000		1 55 1
Signature and Lacense No.			on Completed Date	1-27-11
Construction/Design	, v	Well Data W11-039	F	ormation Description
		- X	FT	FILL
\$15,000,000 per 0,000				
	BACKFILL	9	FT 0.3	- 10 F
	BACKFILL	- Genterin		- 10 Y
	BACKFILL			
	BACKFILL	BENTENIN		n & GREY y Sawo
	BACKFILL	BENTENIN		
	BACKFILL	BENTENIN		n a heavy ry Sano—
	BACKFILL	BENTENIN	8200 Sixt	
	BACKFILL	BENTENIN	8200 Sixt	n a heavy ry Sano—
	BACKFILL	BENTENIN	8200 Sixt	n a heavy ry Sano—
	BACKFILL	BENTENIN	8200 Sixt	n a heavy ry Sano—
	BACKFILL	BENTENIN	8200 Sixt	n a heavy ry Sano—
	BACKFILL DEPTH OF BORING	BENTCHING (HIP)	8200 Sixt	n a heavy ry Sano—

OBMIT ONE WELL REPORT PER IVELL INSTAL onstruction/Decommission		Notice of Intent No Type of We	Carried Commence	
Communication 40	6613	Resource		
Decommission ORIGINAL INSTALLATION Nation	ev.		ical Soil Boring	
of Intent Number	Property Ow	nor The Bosing Comp	and the second s	
onsulting Time Landau Associates-Edmond	Site Address City Kent	20403 68th Ave. S.	County 17-King	_
inique Ecology Well III	Location	1/4 NE 1/4 SE Ses		(WM)
HIL CONSTRUCTION CENTERCATION. I commented sould scope	responsibility for Las/Long-(s.t	r Lat Deg x	Lat Min/Sec	3
expection of this i-e0, and the compliance with all Washington well comb) Long Deg a	Leng Min/Sec	X.
Apriles Trainee Nurse (Print) Kasey Goble	tedge and telled This Parcel N			_
aller/Trainee Signature 1/1/2	Clased or <u>Unc</u>	sed Diameter 2	Static Leys	1 3'
filter/Trainez License No. 2501	Wink/Decem	mission Start Date	1 - 25 -11	
triance, licesned driffers'		mission Completed Date		
grants and License No.			1-27-11	_
Catatruction/Design	Well Data W11-0	38	Formation Description	_
CO	NCRETE SURFACE SEAL	_ 0	. 2 гт	ΧÍ
	1	er	Fice	
		- 11		- 1
BA	CKFILL 9	FT 0.2	- 10 FT	
	BENTO			
		PS BKE	ny Savo	
		50	TY SANO	
		0	FT	5 H
		1		
The late of the la				
		- 1		
	TH OF BORING 16	FT		

Construction/Decommission 406615	Type of Well Agresource Protection:
Decommission ONGINAL INSTALLATION Natice of Intent Number	Property Owner The Boeing Company
Consulting Firm Landau Associates-Edmonds	Site Address 20403 68th Ave. S. City Kent County 17-King
Unique Ecology Well (I) Tag No.	Location 1/4 NE 1/4 SE Sec 2 Town 22N 84E
WELL CONSTRUCTION CONTRICATION: Leasurement and an array responsibility for	Lat/Long (s.t.): Lat Dog Lat Min/Sec
construction of the cwell, and server planer with all Wellangton well construction standards. Marrials used and the information reported above are now to my beginner knowledge and to lief	etill Required) Long Deg s Long Min/Sec
Miniber Trainer Name (Print) Kasey Gobie	Tax Parcel No
Driller Trainee Signuture 75.01	Cused or <u>Uneased Diameter</u> 2" Shitis Level
Driller/Trieved Lucrose No. 2501	Work/Decomission Start Date 1 - 25-11
If trainer, horsied drillers' Sterniture and License No.	Words/Decommission Completed Date 1-25-11
Care Diction of the	
Construction/Design V	Well Dala W11-039 Formation Description
BACKFILI	14 FT 0 Z 15 FT BENTALINE CHIPS SILTY SANO FT
DEPTH OF BORING	FEB 1 6 2011

1

Oriller/Traince License No. 2501 If trainer, licesned drillers' Signature and License No.

Construction/Design	Well D	_{sta} W11-039	Formation Description
	CONCRETE SURFAC	CE SEAL.	FICE PT
	—BACKFILL	7 FT BOUTSWIFE CHISS	61-8 FT BROWN & GROY STORY SAND
	DEPTH OF BORING	8 _{FT}	

Work/Decommission Completed Date

1-26-11

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	1
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Scale [" =

		22-45-3
RESOURCE PROTECTION WELL REPORT PER WELL INSTALLED)	PORT	CURRENT Notice of Intent No. AE 11930
Construction/Decommission 466618		Type of Well **Resource Protection**
Decoministics OPIGINAL INSTALLATION Notice of Intent Number EE6/8/5	Property Owne	Gentechnical Soil Borns The Boeing Company
Consulting Firm Landau Associates-Edmonds	Site Address City Keni	20403 68th Ave. S. County 17-King
Unique Ecology Well 1D Tag No.	Location	1/4 NE 1/4 SE Sec 2 Town 22N R4E (NSI)
NOTE: CONSTRUCTION CENTRICATION: I construint unition or capt responsibility for construction of the well, end to supprise which are National year of the ministruction at the substruction reported above are to see formy freed houseless and belief. Specially under Driving Portion (Porte). Kasely Gobble Driller/Trainnee Signature. Driller/Trainnee Signature. Driller/Trainnee Licerise No. 2501	still Required) Tax Parcel No. Cased or <u>Uncases</u>	Lat Deg t Lat Min/Sec t Long Deg t Long Min/Sec x Diameter 3" States Level 9"
If trainer, Ecesard dallers'	Work/Decommis	
Signature and License No. Construction/Design Wel	Work/Decommis I Data W11-039	Formation Description
CONCRETE SURF		FT 01.8 FT

Scale 1" -

DEPTH OF BORING

Decommission ORIGINAL INSTALLATIO	N Natice		Resource P	rotection al Soil Boring	
	E01815	Property Owner The	Boeing Compar		
Consulting Firm Landau Associates-E	dmonds	Site Address 20403		County 17-King	
Junque Ecology Well ID Fag No.		Location 1/4 NE)/4 SE Sec 2	Town 22N P4E	(MAN)
VELL, CONSTRUCTION CENTRICATION: I constructed and construction of this well, and its countil are with all Weshington		LavLong (s.t.) Lat Deg sull Required) Long De		Lot Min/Sec Long Min/Sec	
talerida usad and the information reported above are four to my		Tax Parcel No.		Long minose	-
Oriller Trance Name (Print) Kasey Gob!		Cased or Unersed Diameter	· 2"	Static Le	vd_3
Oniller/Traines Liverse No. 2501		World Decomming on Start			
f triunee, licesned drillers'				7.4	
Signature and License No.		Work/Decommission Comp			
Construction/Design	- 4	fell Data W11-039	F)	ermation Description	
	BACKFILL	GENTENING CHIPS	1000	N & GREY Y SANO	
	DEPTH OF BORING	16 <u>16</u> FT			

RESOURCE PROTECTION WELL R SUBMIT ONE WELL REPORT PER WELL INSTALLED)		RENT of Intent No. /	22-41 AE11930
Construction/Decommission 406621		Type of Well	
1 Tenstruction 9066 21		Resource Protection	
Decommission ORIGINAL INSTALLATION Notice		Geotechnical Soil Boring	
of Intent Number EE01815		peing Company	
Consulting Firm Landau Associates-Edmonds	Site Address 20403 68	County 17-King	_
Juique Ecology Well ID			(WM)
Tag No.	Location 1/4 NE	MSE Sec 2 Town 22N R4E	INWA!
TELL CONSTRUCTION CHARTESTATION. I continuous and to accept responsibility for	Lat/Long (a,t,) Lat Deg	x Lat Min/Sec	1
entruction of Cas will, and six complitance with all Washington west countraction spendants	still Required) Long Deg	Long Min/Sec	1
naterials used and the information reported above are true to my tree knowledge wat butlef. Traince Name (Print) Kasey Goble	Tux Parcel No		
Diller/Trainee Signature	Cased or Uneased Drameter	2" Static 1	evel_a'
miller/Trainee License No. 2501	- Utrafit Daving will be Start Date	1 - 25 - 11	
f trainee, Itcesned drillers'	T WARD DESCRIPTION OF THE PART		
ignature and License No.	Work/Decommision Complete	d 1-27-11	
Construction/Design	Vell Data W11-039	Formation Description	
BACKFIIJ.	4 FT BENTENNE CHIPS	0 2 - 10 P Blown & Keey Sicry Sawo	r
DEPTH OF BORING) <u>16</u> FT		



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Construction/Decommission 406623		Type of Well	22-1 AE11930
Construction	>	Resource Protection	
Decommission ORIGINAL INSTALL ATTON Notice		Georgehmical Soil Bering	
of Iment Number EE61815		Boeing Company	
Consulting Firm Landau Associates-Edmonds	Site Address 20403 E	S8th Ave S. County 17-Kin	0
Unique Ecology Well ID Tag No.		1/4 SE Sec 2 Town 22N	(MAIN)
WELL CONSTRUCTION CERTIFICATION: 1 constructed and/or accept temporalising for	Lat/Long (s.t.r Lat Deg	I.st Mir/Sec	, x
commercian of the well, and its completence with all Workington well construction et andareis	still Required) Lorg Dep	Long MinySec	
Maleral count and the information reported above are training to be knowledge and beiler. **Dottler Trainee Name (Print) Kasey Goble	Tax Parcel No.		
Driller/Traines Signature The	Cased or Uncased Diameter		tic Level a
Driller/Trainee Lioense No 2501	Work/Decommission Start D	Date 1 - 25' - 11	
If trainee, Hoosned dullers'	WAS DECUMENT STATED	1 -52 11	_
Signature and License No.	Work/Decommission Compl	sed Date 1-27-11	
Construction/Design W.	eli Data W11-039	Formation Descript	ion
BACKFILL	4 FT BENTENITE CHIPS	0 2 - 10 Brown a Grey Siery Sawa—	FT
DEPTH OF BORING			

Page ______ of ____



(SUBAITT ONE WELL REPORT PER WEL	L INSTALLED)		Notice of Intent	No. PE
Construction/Decommission	406625		Type of V	
Construction	and the second second		X Resonn	ree Protection
Decommussion OHIGINAL INSTALLAT of Intent Number	ON Natice	41.5		tutical Soil Boring
of Intone Number	0/3/3	Property Owner Site Address	The Boeing Cor 20403 68th Ave. S.	npany
Consulting Firm Landau Associates	-Edmonds	City Kent	CO-YOU COUNTY OF D.	County 17-King
Unique Ecology Well ID		Location	ANE MISE S	10 2 Town 22N R45
Tag No.		-		
WELL CONSTRUCTION CERTIFICATION: Longituded			al Dog x	
construction of the well, and its compliants with all Washings Material consetund the information reported above are true to			.ong Deg s	Long Min/Sec
Diller Traines Name (Print) Kasey Go	Control of the contro	Tax Parcel No.		
Dailed Trained Signature 7	-	Cased or Uncased	Diameter	2" Static Levi
Daller/Trainee License No. 2501			on Start Date	
If trained licested thillers!				-0-15-5
Signature and License No.			on Completed Date	1-27-11
Construction/Design	11	(el) Data W11-039		Formation Description
	CONCRETE SUI		0	Fix.
	BACKFILL	Gentening CHIPS		2-10 FT burn a GREY
				32.3
	N.		0	- Fr
	A.			
			47	



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WAT	FEB 16 2011 2
10	RESOURCES:

Construction/Decommission 40662	7 Type of Well AResource Protection
Decommusion ORIGINAL INSTALLATION Notice of Intent Number EEG 1815	Property Owner The Boeing Company
Consulting Firm Landau Associates-Edmonds	Site Address 20403 68th Ave. S. Clay Kent County 17-King
hique Ecology Well II) ag No.	Location 1/4 NE 1/4 SE Sec 2 Yourn 22N 1/4 E
TELL CONSTRUCTION CERTIFICATION: I constructed analog screen responsibility for extending for the well, and its consistence with all Washington will construct on the dealers.	Lat/Long (s.l.r. Lat Deg s lat/Min/Sec x still Required) Long Deg 2 Long Min/Sec x
sterials used and the information reported abuse are fine to may best knowledge and belief Driller Trainee Name (Print) Kasey Goble	Tax Parcel No
nller/Trainee Signature	Cased or Lineased Diameter 2" Static Level 2"
trainer, housed drillers	World Decommission Seet Date 1 - 25 - 11
guitare and License No.	World/Deconstruction Completed Date 1.27-11
Construction/Design	Weil Data W11-039 Formation Description
BACKFILL	9 FT 0 2 - 10 FT BENTENIFE CHIPS CHIPS 0 - FT
DEPTH OF BORING	g <u>16</u> гт

FEB 16 2011 OF RESOURCES

SUBMIT ONE WELL REPORT PER W	BLL INSTALLED)		Notice of Intent	No.	AE11930
onstruction/Decommission	406629		Type of V	Vell	
Construction	1.00-1		X Resour	ed Protention	
Decommission ORIGINAL INSTALL of Inlant Number	ITION Notice		George	buigal Soil Boring	
of Intent Number	EE018/5	Property Owner	The Boeing Con	npany	
Consulting Firm Landau Associat	as Colomonida		0403 68th Ave. S.	C	
constituting notes Lancau Associat	es-Eamonas	City Kent		County 17-Kit	ETVM)
Inique Ecology Well ID		Location I	ANE WASE SE	c 2 Town 22N	R4E
ag No.		1			MASS
ELC CONSTRUCTION CERTIFICATION: I constitute	The state of the s	Lat/Long (s.t.r L	al Dog	Lat Min/Sec	
neutration of the swell, and the compliance with all Which laterials used and the information reported above are time			ong Deg x	Long Min/Sec	
Driller Traince Name (Print) Kasey (Tax Parcel No.			
miles/Trainee Signature	16/	Cased or Unexand I	Nameter	o" St	and Level 3
miller/Thursee License No. 2501	/		n Start Date		
trastee, liceased drillers'		Wurld Decommunio	n Start Date	1 23-11	
ignature and License No.		Work/Decommeno	a Completed Date	1-27-11	Taranta de
Construction/Design		Il Data W11-039			
posterior and company		111,510,0		Formation Descrip	1003
	BACKFILL	Gentonire CHIPS		2 - 10 own a kree outy Sawo—	
	DEPTH OF BORING				CEIL
alc 1" *		IÓ Page of		4EY 0394	ECEIVE)

Information on this Well Report.

The Department of Ecology does NOT Warranty the Data and/or the

SUBMIT ONE WELL REPORT PER WEL	ION WELL RE)	ONI	CURREN'I		AEII
Construction/Decommission	406631	1	Type o	f Well	
			≥ Res	ource Protection	
Decommission ORIGINAL INSTALLAT of Intent Number E	ION Natice	T		technical Soil Bornig	
of mana stamour		Property Own Site Address	er The Boeing C 20403 68th Ave		
Consulting Firm Landau Associates	-Edmonds -	City Kent	20 100 30111 100	County 17-Ki	
Unique Ecology Well ID. Tag No.		Location	1/4 NE 1/4 SE	Sec 2 Town 22N	R4E S
WE'L CONSTRUCTION CERTIFICATION, Lonstructed	The state of the s	Lat/Long (s.f.r		- Las House	
construction of this well, and its compliance with all Washing		still Required)	Long Deg	Long Min/Ser	- 4
National a used and the information reported above we true to **Driller** Trainee Name (Frint)** Kasey Go	CACA DESCRIPTION OF THE PROPERTY OF THE PROPER	Tax Parcel No.			
Driller/Trainee Signature	1	Cased or Ducas	ed Diameter	2" 5	tatic Level
Driller/Trainez Lizense No. 2501	,		nativa Start Date	75 20 17	12 -
If trainee, licesned drillers				7.5	
Signature and License No.				1-27-11	
Construction/Design	Wel	1 Data W11-03	3	Formation Descrip	tion.
	— BACKFILL	g Benton chis	re g	2-10 blown a River Stury Samo	FT 1 FT
Scale (* =	DEPTH OF BORING	16 age	PT	QF(CE)	1 Liferen 2011

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Construction/Decommission	406633		Type of Well XResource (Potention	AE11930
Decommussion ORIGINAL INSTALLAT of Intent Number <u>E</u>	EOISIS	Property Owner The Site Address 20403	Geotechnical Soil Bornig	
Consulting Firm Landau Associales	-Edmonds	City Kent	County 17-King	9
Unique Ecology Well ID Fag No.		Location 1/4 <u>NE</u>	1/4 SE Sec 2 Town 22N 1	PAE (WA)
TELL CONSTRUCTION CERTIFICATION: Leasing and		Lat/Long (s.t.r Lat Deg		
materation of this well, and its compliance with 40 Westing latered used and the information reported above on these to		still Required) Long De	g t Long Min/Sec	
Delicer Traines Name (Fries) Kasey Go	ble			
hiller/Trainee Signature	19:1	Cased or <u>Uncased</u> Diamete	s Star	in Level 2'
		Work/Decommission Start	Date 1 - 25-11	
tramer, licested drillens'		Work/Decommon Com-	lened Date 1 - 25-11	
Construction/Design		II Data W11-039		
Constitution Design	w.e	III CIADA	Formation Descript	1011
	— CONCRETE SUR	FACE SEAD.	0 - 2 File	FT
	— BACKFILL	14 FT	o Z. 15	FT
		BENTEUNE	0 Z. 15 Become + Gra Sirry Samo	
		CHIPS	SUTU SAVO	
	Al .		7,517	
				-
			0 -	FT
	1			- 1
	1			
			F	
		. 45.14.4		
	DEPTH OF BORING	15 FT		

RESOURCE PROTECTI		PORT	CURRENT Notice of Inte		AEI
Construction/Decommission (Construction	417070		Type o	Well	
Decommissing ORIGINAL INSTALLATI of Intent Number	DN Notice E 0 9 844		The Boeing C 20403 88th Ave.	S.	
Consulting Firm Landau Associates	-Eamonds	City Kent		County 1	7-King
Unique Ecology Well ID Tag No.		Location	1/4 NE 1/4 SE	Seq 2 Fown 2	wx
WELL CONSTRUCTION CERTIFICATION Legislanded		LavLong (s.l.r still Required)	Lat Deg X	The second	
At alertady exect acrit the infranceitres reported above one true to		Tax Parcel No			-
Driller/Trainee Signature (Frint) Lynn Gob	nolly	Cased or Uncase	d Diameter	2 4	Smic Lavel J
Omitten Traince License No. 2982			epon San Date	5/20/2011	
IT names, Hoesned drillers'				5/2411	
Signature and License No.			mon Completed Dice	3	
Construction/Design	·V	Veli Data W11-29	1	Formation De	escription
		,	FT	F:11	
27 17 22 2					
	— BACKFILL	14 BENTON	FT MÉ	0 2 - 11 0 BAOWN/C	3.4.72
	BACKFILL	14 Bénten CH; p	FT MÉ	0 2-11 0 BAO-UN/C 2AVE15 #10	3.4.72
	— BACKFILL	- Contract	IT ME	0 BAOWN/ (ANE 15 # 10	estav Poteste
	— BACKFILL	- Contract	IT ME	O BROWN/C	et et
	— BACKFILL	- Contract	IT ME	0 BAOWN/ (ANE 15 # 10	estav Poteste
	DEPTR OF BORE	снір	IT ME	O BAOWN/C RAVELS # TO O 11-15 RK GRAY	et et

				23-4E-
RESOURCE PROTECTION WELL RESUBBLIC ONE WELL RESUBBLIC ONE WELL RESOURCE WELL INSTALLED.	PORT	CURRENT Notice of Intent No.	EE02010	
anstruction/Decommission (117471		Type of Well		
Observation 417071		Resource Pu	dectron	
Decommission ONIGINAL INSTALLATION Notice		Geolechnica	Solf Boring	
of Intent Number		The Boeing Company		
ousulting Firm Landau Associates-Edmonds	Site Address 204 City Kent		ounty 17-King	(EWA)
nique Ecology Well ID	Location 174	NE 1/4 SE Sec 2	Town 22N 14E	
ag No.		ner :	Las MiniSan	les re tel
ELL CONSTRUCTION CENTRICATION: I constructed under a regit responsibility for	Lat/Long (s.t.s Lat	Deg Hig Deg 1 51	Lone Min/Sec	
itrustion of the well, was its complement outs at Westerspeed well construction absolute	smirrofrese) co	el men	THE SHALL	
terials used and the information reported where are true in may be all browledge and belief	Tax Parcel No.	-	Self-	
Doller Trainer Name (Print) Lynn Goble Iller/Traines Signature Toller	Cased or Unessed Di	emeter 2"	Static	Level 10
iller/Trainge Licerise No. 2982		9.00	/2011	
	Work/Decommission	Shirt Date 3/20	72011	
nance, Gesned drillers'	C	Completed Date 5/	20/11	
mature and Liconse No.		Completed Lake	20/11	
Construction/Design W	ell Data W11-297	Fo	rmation Description	1
BACKFILL	15 BÉNTONITE CHIP	FT 02.	10 RONN 5:2 GRAVE (rt VT y
DEPTH OF BORING	s_14'	п	14 5,27,	
Cule I' -	Page of	WAR	JUN 14 20	11 0

(SUBART ONE WELL RESORT PER WELL Construction/Decommission		7	Type of Well	
X Construction	41707	2	Resource Profes	tion
Decommission ORIGINAL INSTALL-1710	IN Notice		Geotechnical Sc	il Bering
of Intent Number		Property Owner Site Address 20	The Boeing Company	
Consulting Firm Landau Associates-E	Edmands	City Kent		nty 17-King
Unique Ecology Well ID Tag No.		Location 1/4 NE 1/4 SE Sec 2 Town 22N R4E or WWW.		
WELL CONSTRUCTION CERTIFICATION: I combusted as		Lat/Long (s.t.r. Lut Deg x Lat MirvSec x still Required) Long Deg x Long MirvSec x Tay Percel No.		
construction of the well, under compliance with all Westingto Materials made and the information reports 1 Down we have to so				
Montler Trainee Name (Print) Lynn Goble		The state of the s		made an An
Onlier/Trainee Signature Lynn Driller/Trainee Lacense No. 2582	Dolle	Cased or Uncased Dia	unicter 2"	Static Level 10
		Work/Decoministion	Start Date 5/20/20	И
If trainee, liceased drillers Signature and Licease No.		Work/Decommission	Completed Date 5/20	111
Construction/Design		1 ell Data W11-297		tion Description
	BACKFILL	13 BÉNTANITÉ	FT 02-/	0 FT
		CHIP	5AND .4 6	
			97 Fi) GRA	Y SILTYCIAX
	DEPTH OF BORING	1.14	FI	ECEIVED IUN 14 2011

SUBJET ONE WELL REPORT PER WELL: IN:	TALLEDJ	Notice of Intent No.	AE13'27
Construction/Decommission 4	17074	Type of Well	
Construction	1019	Resource Pro	tection
Decommission ONGINAL INSTALLATION : of Intent Number	Vonce	Geolecimical	Soil Boring
of Intent NumberE	E02010 Property Of	wner The Boeing Company	
Consulting Firm Landau Associates-Edn	Site Arldres conds Cay Kent		ounty 17-King
Imque Ecology Well ID	Location	1/4 NE 1/4 SE Sec 2	(EMM)
Гад No. тен, соменицитом статительного технований инфе	Laciforni de	ta Lat Deg s	Let Min/Sec A
methaction of this well, moids council our with all Weshington we		ed) Long Deg x	Long Min/Sec 1
steerals used and the information experied above are true to may be			
Deiller Triance Name (Frint) Lynn Goble millen/Traince Signature	TT a good sales	ensed Diameter 2"	Statid Level 10
miller/Trainee Signature Zyun 22 miller/Trainee License No. 2982	Lased or Uni		
	Wet!/Deco	enmision Start Date 5/20/	2011
raines, (cessed dullers' ignature and License No.	Workfless	minusion Completed Date 5/	20/11
agriduce and blocke into			1
Construction/Design	Well Dela Wit-	For	nation Description
		FT Fill	
	BACKFILL 95		10 FT
	BENTON		ROWN 5:2TX
	CHIP		GRAJE!
			Carre
			7 A T A T W
		010 -	14 FT
		#1 EN G	eny Silty Clax
		111	Zeray
			100 mm
7.00 (1.00 (2.00)			ACEIVA
			141
		/	1
			WM + 4 2001
	DEPTH OF BORING 14'	FT (JUN 14 2011

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Scale I"+

The Department of Ecology does NOT Warranty the Data

SPITI OF BORING 14

File Original with Department of Ecology Second Copy - Owner's Copy Third Copy - Driller's Copy	WATER WELL REPOR	Notice of Intent D. 1 UNIQUE WELL ID. 1 22-4E-	2+11P
(1) OWNER: Name The Boei:	ng Realty Corp Add	CA 908	
	King No. 10 No.	f So 212th ST, City of	
(3) PROPOSED USE: Domestic Irrigation	☐ Industrial ☐ Municipal ☐ Test Well ☐ Other	(10) WELL LOG or DECOMMISSIONING PROC Formation; Describe by color, character, size of ma the kind and nature of the material in each stratum	sterial and structure, and penetrated, with at least
New Well Deepened Recorditions		One entrangement was grant the Therente MATERIAL BROWN SOLL	FROM TO
(5) DIMENSIONS: Diameter of well Drilled 90 test. Depth of c	36 inches	DATKON SUSTANO SELLIP	4 6
(8) CONSTRUCTION DETAILS Casing Installed:	ompiered well	Silty DARK Brown sond	6 32
☐ Welded #0 Uner installed ☐ Threaded	Diam. from ft. to K. Diam. from ft. to ft. Diam. from ft. to ft.	DARK Brown Clay	32 40
Perforations: ☐ Yes 📣 No. Type of perforator used			
SIZE of perforationsper	in. by in. forstions from R. Its R.	DECEMBE	
Screens: At Yes No I Manufacturer's Name Type Buc	Model No	RECEIVED JUN 8 9 2000	
Diam. 10 Slot Size 12	fromft. ioft.	DEPARTMENT OF FOOLOGY WELL DRILLING UNIT	
	ft. to 40 ft.		
Surface seat: **Yes ** No. Material used in seat ** Did any strate contain unusable water? Type of water? Method of seating strate off			
(7) PUMP: Manufacturer's Name Type:	H.P.		
(8) WATER LEVELS: Land-surface signal Static level Arrissian pressure	for above mean sea level ft. below top of well top, per square inch Oefe 5/52	Work Started 5/22 00 Completed	6/5 00
Artesian water is controlled by	(Cap, valve, etc.)	WELL CONSTRUCTION CERTIFICATION:	and the second state of
(9) WELL TESTS: Drawdown is amount w Was a pump test made? □ Yee □ Ne Yield: □ gal/min. with Yield: □ gal/min with	ft, drawdown after hrs. ft, drawdown after hrs. ft, drawdown after hrs. ft, drawdown after hrs.	compliance with all Washington well constructor and the information reported above are true to make the information reported above are true to make the information reported above are true to make the information of the inf	n standards. Materials using best knowledge and belie idense No. 2058
Recovery data (time taken as zero whe well top to water level) Time Water Level Time	n pump turned off) (water level measured from Water Level Time Water Level	Trainee Name Drilling Company SLEAD CONSTRI (Signed) (Licensed Driller/Enginese	License No. 2058
Date of lest Baller fast gal/min. with Airtest gal/min. with	It. drawdown afterhrshrshrshrs	Address 9021 Waller Rd E Contractor's WA 9 Registration No. SLEADC*325K0	., Tacoma, 8446-2531 Date 6/26/00
Artesian flow Temperature of water Was a ECY 050-1-20 (11/98)	g.p.m. Date chemical analysis made?	(USE ADDITIONAL SMEETS IF NE Ecology is an Equal Opportunity and Affirmative / accommodation media, contact the Water Resout 6500. The TDD number is (360) 407-6006.	Action employer For speci

HOLT DRILLING, INC. The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. 22-4E-12D 184324 Resource Protection Well Report 1-19-0 Date NW 1/4 NW 1/4 County Kina 22 N Drilling Method 4" HSA Driller Post Ternes Street Address R049266 Start Card _ 1793 License # Shannoh Consulting Firm_ FORMATION DESCRIPTION WELL DATA AS-BUILT MONUMENT TYPE Flush CONCRETE SURFACE SEAL PIC MATERIAL 10/20 Cdo. S RECEIVED OCT 2 6 2005 DEPT OF ECOLOGY WELL DEPTH 59

15332.FDB/D41029.EPS

LIDENTIFICATION NO. AG LUNG METHOD HSA LUER. Brian G (C M. Cascade Dpt11in NATURE: Jan USULTING FIRM Tri Sta	g, Inc. WATER LI GROUND tte Construction INSTALLE	King 22-4E-12D NWA NWA Soc 12 TWO ZN R 4E DDDRESS OF WELL ARE \$ 21215 St, Kent EVEL ELEVATION 10 SURFACE SLEVATION: N/A D. 6/2/07 ED NO	WELL IDENTIFICATION NO. AG DRILLING METHOD HSA DRILLER Brian G G FIRM Cascade Dittling SIGNATURE SIGNATURE CONSULTING FIRM TriStax REPRESENTATIVE Paul	STREET 72 7, Itic. WATERI GROUND To Construction INSTALL	NAWA NWA SOCIZ TWAZN FYE ADDRESS OF WELL A ALL & 212th St, Kent EVEL ELEVATION 10 SURFACE GLEVATION N/A ED. 9/2/07
AS-BUILT	WELL DATA	FORMATION DESCRIPTION	AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	DEPTH = 1/2 SU 0 - GOEL. Black smal + self layers - Et.	NOT Warranty the Data and/or the Information	WELL COVER CONCRETE SURFACE SEAL DEPTH = Vet PVC BLANK	0 - Goft. Black sand + self layers - ft.	
	GRAVEL PACK 13; MATERIAL: 1/12 500-d WELL DEPTH 60 '"	RECEIVED JUL 1.8 7001 DEPT OF ECOLOGY	Department of Ecology does NC	GRAVEL PACK 13 Ft. MATERIAL: 1/12 SAND	RECEIVED JUL OF VOID DEPT OF ECOLOGY
		THE PARTY OF	F		7
ALE. 17.	PAGE OF	1.3	SCALE 1"-	PAGE OF	

NAME: Construct	ion Site COUN	
TIFICATION NO AGE	1 422 LOCAT	TION NWW SOC 12 TWO ZZN R 4E
Brian G. G	72	of Ale & 2/2th St Kent
Cascade Drilling	, Inc. WATE	R LEVEL ELEVATION
Cascade Drilling	GROU	ND SURFACE ELEVATION N/A
NG FIRM TriStat	e Construction INSTA	LLED. 5/25/07
ITATIVE Paul C		LOPED No
1	1347	
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
		Black smal + silt some
2 : 1 SET	WELL COVER	0 ~ 60 ft.
江口口约		Rock and + selt come
33 8	CONCRETE SURFACE SEAL	proce small
8 8	DEPTH = 1/ft	January T
1 1 1	1	- ft.
N 4N	PVC BLANK 2 "x 50"	
B B		
8 8	BACKFILL 45 ft.	T
8 8	TYPE: hent Orov	7
	Marie Clark	- ft.
	V	
	A 1A	Ĭ.
	PVC SCREEN 7"x 0 .	-1 7
	SLOT SIZE: .MA	
		- X
	GRAVEL PACK 13 ft.	111
	MATERIAL: 7/2 56m d	7
	11/12 June d	-11
		The state of the s
		4
(4日後)		RECEIVED
		"" - LIVED
	WELL DEPTH 60 .	JUL 0 5 2001
		DEPT OF ECOLOGY
		1
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		I D
4	PAGE_ OF	

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

	ORT PER WELL INSTALLED)	2		Intent No.	RE05268
Construction/Decommiss	40642	9	2.2	ype of Well	
X Construction			- N	Resource Protecti	
and the second of the second o	AL INSTALIATION Notice		_	Geotechnical Soil	
of Intent N	unher	Property Owner	-	Univa	
Consulting Cine	bee e	Site Address	Kent	8201 S. 212t	
Consuming Firm	PES Environmental	City	Keni	County	King
Unique Ecology Well III Tag No. PCM - 8		Location	101 NW 101	NW 5ec 12 TW	
	ION Tometimental and/or attorps responsibility for	Lat/Long (s,t,t	Lat Deg	x da	Min/Suc
construction of this well, and its complian	see with all Weijkingson and yourseaming steam of a	still Required)	Long Deg	x Lo	ng Min/Sec s
Materials cased and the information repor	ed shove are true to my best knowledge and belief				
		Tax Parcel No.			
X Driller Trainee Name (P	,		2	1/4"	
Driller/Traince Signature		Cased or Uneased	Dinmeter3	14	Static Level
Driller/Trainee License No.	2965		The Project		1/02/11
If trainer, licensed driller's		Work/Decomonissis	n Star Date	0	1/03/11
Signature and License No		Worth David Charles	or Pivel Phylin	1-3-11	
argunative that Excelled (vo.		= Work/Dreamingsan	III EMI OME	1 3-11	-
Construction/De	ier	W10-673C		Formation	Description
	Material Backfill Type Seal Material Gravet Pack Material Screen (dia s dep) Stot Size Material Web Depth	20'-2 Bort Chi 20'-2 Bort Chi 20'-2 10/20 col:	2'FT sandis	Stands Sands Sands blacke	2' M sands gravels
	Material Total Hole Depth	42'	FT (FEB 1 6 201	WRO

and the state of t	TPER WELL INSTALLED)		Notice of	Intent No.	RE05268
onstruction/Decommission	406430	0	Υ	ype of Well	
Construction	106431	J	13	Resource Protec	stim
Decommission ORIGINAL II	VSTALLATION Notice		Ī	Georgelinical Se	oil Boring
of Intent Number	er	Property Owner		Uni	var
	No. 500 Control	Site Address		8201 S. 21	th St.
onsulting Firm	PES Environmental	City	Kent	County	
nique Ecology Well ID	14	Location	1/4 NW 1/4	NW Sec. 12	ws 22N H 04E of W
LL CONSTRUCTION CERTIFICATION I	entertracted and/in a copyrespondition for	Lat/Long (s.t.r	Lat Deg	× 1	at Min/Seq x
ornation of this well, and its compliment with	half Warrington well construction standerds	still Required)	Long Deg	x I	.ong Min/Sec s
erally used and the information reported ano	ive are true to any best knowledge and helief				
	Pa Par	Tax Parcel No.			
Doller Traince Same (Print)		Cased or Uncased	2	1/2"	Static Level /
iller/Trainee Signature		Lased of Uncased	Diameter S	19	
Her/Tminee License No.	2965	Work/Decommissio	n Start Date		01/63/11
raince. licensed driller's				VI. 6 3 -	
nature and License No.		Work/Decommissio	m End Date /	-4-11	
					To The second
Constitution/Design		w10-673C	-	Formati	on Description
	Material	PV C 20'-21		brun- s	<i>somets</i>
	Backfill	Bart Chip		10'	12' 1
				11 (0
	Senl			hilarla	10
		-		Diace	rice
	Seal Material	=	_	blacke Sand	2
	Material	211-42	· FT	sand	5
	Material Grayel Pack	21'-42	L' FT	Sand	2
	Material	21'-42	fr fradi	sand	
	Material Grayel Pack	21'-42	ff FT	Sand	H
	Material Grayet Pack Material			Sand	
	Material Orayel Pack Material Scieen (dia x dep)	20' ★ 1.5	, "	sand	
	Material Grayet Pack Material	20' X 1.5	<u>, "</u>	Sand	
	Material Orayel Pack Material Scieen (dia x dep)	20' ★ 1.5	<u>, "</u>	Sand	
	Material Gravel Pack Material Screen (dia x dep) Slot Size	20' X 1.5	5." <	Sand	
	Material Oravel Pack Material Sereen (dia x dep) Slot Size Material Well Depth	20' × 1.5 Pre- Pach PVC	5." <	Q.E.C.	EIVED
	Material Gravel Pack Material Sereen (dia x dep) Slot Size Material Well Depth Backfill	20' × 1.5 Pre- Pach PVC	5." <	Q.E.C.	EIVED
	Material Oravel Pack Material Sereen (dia x dep) Slot Size Material Well Depth	20' × 1.5 Pre-Pach PVC 42'	5." <	Q.E.C.	

RESOURCE PROTECTION WELL I (SUBMIT ONE WELL REPORT PER WELL INSTALLED)		URRENT tice of Intent No.	RE10416
Construction/Decommission		Type of Well	
X Construction		X Resource Prot	ection
Decommission ORIGINAL INSTALLATION Notice		Geotechnical:	
of Intent Number	Property Owner		nivar
Consulting Firm URS Corporation	Site Address City Kent		S 212th St
DATE OF ANY PROPERTY.	City Kent	County	King
Unique Ecology Well ID BID 692	Location 1/4 N	W 1/4 NW Sec 12	
WELL CONSTRUCTION CERTIFICATION Sunstructed and/or accept responsibility for	Lat/Long (s.t.r Lat Deg	1	Lat Min/Sec x
construction of this well, and its compliance with all Washington well construction standards	still Required) Long De	8 <u>x</u>	Long Min/Sec x
Miserials used and the information reported above are true to my heat knowledge and belief	Tax Parcel No.	12220	iones
X Driller Traince Name (Print) Ageon Ocheltree	1000		
Driller/Traince Signature	Cased or Uncased Diame	ter 81/4	Static Level 15
Driller/Trainee License No 3141		9-11	-141
If tramee, licensed driller's	Work/Decommission Start	Line	
Signature and License No.	Work/Decommission End	Pale 9-11-	14
	II Data 103-14-1411		ON TOWNS IN
Constitution Design We	103-14-1411	Potin	ation Description
		100	(142)
Concrete Surface Seal	7	0 -	98 FT
Бери		Medin	un to fixe
Blank Casing (dia x dep)	100 ×35		
Material	PUC	Sands	(Black)
Backfill	29 FT		
Турс			
A STATE OF THE STA		0 -	FT
Seal	- 077		
Material	Beat Chio	- 11 2	
		-	
Gravel Pack	16 FT		
Material	2/12 5000		
		0 -	FT
Screen (dia x dep)	2×10		
Slot Size	0.010		
Materia).	PUC		
Well Depth	45 FT	lar-o	Fatt them
		NEC.	EIVED
Backfill			
Materint	2/12 Sand	SEP :	26 2014
◆ Total Hole Depth	#8 FT	DEPT OF NWR	ECULUGY 0 - WR

SUBMIT ONE WELL REPORT PER I	CTION WELL R	EPORT	CURI	RENT of Intent No.	RE	10416
Construction/Decommission				Type of Well		
Construction				X Resource P	rotection	
Decommission ORIGINAL INSTAL	LATION Notice		i		al Soil Boring	
of Intent Number	Later Cont Triance	Property Owner		Georgiane	Univar	
		Site Address		820	01 S 212th St	
Consulting Firm URS Corporati	ion	City	Kent	Cour	ity King	
Unique Ecology Well ID DID	-693	Location	/4 _NW	NW Sec	12 TWN 22N R	4E or
FELL CONSTRUCTION CERTIFICATION DOSSURATE	od anti/of accept responsibility for	Lat/Long (s,t,r	Lat Deg	3	Lat Min/Sec	X
entruction of this well, and its possphinese with all Washi	ington well construction savidade	still Required)	Long Deg	ž.	Long Min/Sec	x
Saterials used and the reformation reported above are true	to my best knowledge and belof	Tax Parcel No.		120	22049053	
X Driller Trainee Name (Print)	ropOcheltree	Tax Parcel No.				1.33
Oriller/Trainee Signature	11	Cased or Uncase	d Diameter	8/4	Static Level	10
Oriller/Trainee License No	3141	Work/Decomme	sion Start Date	9-	12-14	
f trainee, licensed driller's					2-14	
Signature and License No.		Work/Decommi	sion End Date	1-10	2-19	
Construction/Design	Well	Data 103-14	4-1411	Fo	rmation Descript	ion
	Concrete Surface Seal	-	1.00	0	- 5	FT
	Concrete Surface Seal Depth Blank Casing (dia x dep) Material Backfill Type Seal Material Gravel Pack Material	3 2"X25" PUC 30 30 12 12		o S Five to d Blace	Grows Fin Grows Fin who Sand: bbles 44 o medium k Sands if	se with
	Depth Blank Casing (dia x dep) Material Backfill Type Seal Material Gravel Pack	30 30 13est Ch 12 23/1250	pad m	Five to Blace	- 44 o nediun k Swods o Swody Silt	or with
	Depth Blank Casing (dia x dep) Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep)	13est Ch 12-2/12-50	pad m	Five to Blace	- 44 o rediun k Swods o Swody 5:14	or sill
	Depth Blank Casing (dia x dep) Material Backfill Type Seal Material Gravel Pack Material	30 30 13est Ch 12 23/1250	pad m	Five to Blace	- 44 o nediun k Swods o Swody Silt	or sill
	Depth Blank Casing (dia x dep) Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep)	13est Ch 12-2/12-50	pad m	6 S Five to Blace	- 44 o nediun k Swods o Swody Silt	or soill
	Depth Blank Casing (dia x dep) Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size	13est Ch 12-2/10-50	pad m	Five to Blace	- 44 be medium be souds of souds silf - 45 Silfy Cb	or with
	Depth Blank Casing (dia x dep) Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size Material	13cst Ch 12 21/250 21/250 PUC		Five to Blace	- 44 b medium k Souds of soudy silf - 45 5ilfy Cb	or with
	Depth Blank Casing (dia x dep) Material Backfill Type Scal Material Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth	13cst Ch 12 21/250 21/250 PUC		o S Five to & Blace OULU Gray	- 44 be medium be souds of souds silf - 45 Silfy Cb	FT Grey Some

	WELL INSTALLED)	EPORT		RENT of Intent N	io. AE	35954
Construction/Decommission				Type of W		
Construction					e Protection	
Decommission ORIGINAL INSTA	LLATION Notice				nical Soil Boring	
of Intent Number		Property Owner			Univar	
n	Villada	Site Address		82	01 S 212th St	in the
Consulting Firm	AECOM	City	Kent		County	King
Jnique Ecology Well ID		Location	1/4 NW	1/4 NW Sec	12 TWN 22N R	
Tag No.		-				V
ELL CONSTRUCTION CERTIFICATION: 1 cons		Lat/Long (s,t,r			Lat Min/Sec	n/s
outroction of this well, and its compliance with all	THE RESERVE AND ADDRESS OF THE PARTY OF THE	still Required)				cn/:
Interials used and the information reported above are Driller Trainee Name (Print)	Frank Scott	Tax Parcel No	-		0	-
Priller/Traince Signature	Il est	Cased or Uncased	Diameter	211	Sta	tic Level
Priller/Trainee License No.	17 2549	Work/Decommis		-	11.16	
trainee, licensed drillers'		Work/Decommis	ion Start Da	2	-16-16	
ignature and License No.		Work/Decommiss	ion Complet	ed Date	2-16-16	
A STATE OF THE STA						
Construction/Design		/ell Data 103-16	-1034		Formation Descrip	tion
		_ Z	FT			
	BACKFILL	ાજ	FT			FT
	BACKFILL		_FT	MATION		FT
	BACKFILL DEPT OF ECOL CLIENT WELL	Sent Cui REQUIRED (Must get one	FT INFOR	MATION available)	¥	FT

onstruction/Decommission				Type of W	ell	
Construction				X Resource		
Decommission ORIGINAL INSTALLATI		12.77.42		Geotech	nical Soil Boring	
of Intent Number		Property Owner Site Address		91	Univar 01 S 212th St	
Consulting Firm A	FCOM	City		0.2	County	King
Villating t IIII	LCOM		Rent	_	County	EW
nique Ecology Well ID		Location	M NW	1/4 NW Sec	12 TWN 22N R	
ag No.		_				ww
ELL CONSTRUCTION CERTIFICATION: I constructed at	nd/or accept responsibility for				Lat Min/Sec	n/a
estruction of this well, and its compliance with all Washingto	on well construction standards	still Required)	Long Deg	n/a	Long Min/Sec	n/a
merials used and the information reported above are true to n	ny best knowledge and belief	Tax Parcel No.		0.00	0	
71	nk Scott	-		5 NO.	"	
	2 ret	Cased or Uncased	Diameter	1/12	N Stati	c Level
riller/Trainee License No.	2549	- Work/Decommis	ion Start De	de .	2-16-16	
trainee, licensed drillers'		20.20				
gnature and License No.		Work/Decommis	ion Comple	ed Date	2-16-16	
Construction/Design	W	/ell Data 103-16	-1034		Formation Descript	ion
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Construction/Decommission				Type of Wel	i.	
Construction				X Resource		
	and the second second					
Decommission ORIGINAL	INSTALLATION Notice lumber	Property Owne		Geotechn	ical Soil Boring Univar	
oj miem N	umber	Site Address	_	820	1 S 212th St	_
Consulting Firm	AECOM	City	Kent		County	King
						EW
Inique Ecology Well ID		Location	14 NW	1/4 NW Sec	12 TWN 22N R	4E or
ag No.						ww
Company of the Company of the Company	N: I constructed and/or accept responsibility for	Lat/Long (s,t,r	0.00	n/a	Lat Min/Sec	n/a
	with all Washington well construction standards	still Required)	Long Deg	n/a	Lung Min/Sec	n/a
7 —	above are true to my best knowledge and helici	Tax Parcel No.			0	
Driller Trainee Name (Print)		Count to Mineral	Diseases	211	pin.	ic Level
briller/Trainee Signature	2549	Cased or Uncased	Diameter	- 2.,	Stat	ic Level
Priller/Trainee License No.	4349	Work/Decommis	ion Start D	ité Z	-16-16	
Ttrainee, licensed drillers'				C - 19	N. F. C.	
ignature and License No.		Work/Decommis	ion Comple	ted Date 2	1-16-16	
Construction/Des	ign W	Vell Data 103-16	5-1034	T F	ormation Descrip	ion
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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ER WELL INSTALLED)			of Intent No.	AE35954
nstruction/Decommission			-	Type of Well	
Construction			L	X Resource Protection	
Decommission ORIGINAL INST		4	E	Geotechnical Soil B	oring
of Intent Numb	er	Property Owner Site Address		Univar 8201 S 212th	01
onsulting Firm	AECOM	City	Kent	County	King
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ique Ecology Well ID		Location	1/4 NW	A NW Sec 12 TWN	
g No.		-		100	W
L CONSTRUCTION CERTIFICATION: 1 co		Lat/Long (s,t,r			in/Sec n/a Min/Sec n/a
truction of this well, and its compliance with a		still Required)	-		Min/Sec n/a
rials used and the information reported above Oriller Trainer Name (Print)	Frank Scott	Tax Parcel No.			
ler/Trainee Signature	1 2nd	Cased or Uncased	1 Diameter	211	Static Level
ller/Trainee License No.	2549			72.72.72	
		Work/Decommi	sion Start Date	2-16-16	
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nature and License No.		Work/Decomine	sion Complete	Date 2-16-1	ů.
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onstruction/Decommission				Type of W	Ila	
Construction					e Protection	
	TOTAL VICTOR OF THE PARTY OF TH					
S Decommission ORIGINAL INSTALLATION Notice of Intent Number		Property Owner	ļ	Geotech	nical Soil Boring Univar	
		Site Address		82	01 S 212th St	
Consulting Firm A	ECOM	City	Kent		County	King
nique Ecology Well ID		Location 1/	NW	1/4 NW Sec	12 TWN 22N B	4E o
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ELL CONSTRUCTION CERTIFICATION 1 constructed in	and/or accept responsibility for	Lat/Long (s,t,r L				
nstruction of this well, and sta compliance with all Washing		still Required) L				n/:
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Driller Trainee Name (Print) Fra	nk Scott				Stat	ic Level
riller/Trainee Signature	2549		-			N. Level
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trainee, licensed drillers'			-00		a 11 17	
gnature and License No		Work/Decommisio	n Complete	d Date	2-16-16	
Construction/Design	V	Vell Data 103-16-	1034	- 4	Formation Descrip	tion
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	DEPT OF ECOL	OGT WELL TAG	#: .		38 04 434	
	CLIENT WELL	ID#: <u>ILJ</u>	E12019	Kezontce		
	CLIENT WELL	w	916 Progra		W	

SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission	Notice of Intent No. AE35954	Construction/Decommission	Notice of Intent No. AEOGS29 Type of Well
	Type of Well		
Construction	X Resource Protection	Construction S& ZS 1 1	Resource Protection
Decommission ORIGINAL INSTALLATION Notice of Intent Number	Geotechnical Soil Boring Property Owner Univar	Decommission ORIGINAL INSTALLATION Notice of Intent Number	Geotechnical Soil Boring
of men tyamber	Site Address 8201 S 212th St	s of ment Number	Property Owner Univer Site Address 8201 S. 212th St.
Consulting Firm AECOM	City Kent County King	Consulting Firm PES Environmental-Seattle	City Kent County 17-King
to make we ware	EWM	0	KV
inique Ecology Well ID ag No.	Location 1/4 NW 1/4 NW Sec 12 TWN 22N R 4E or WWM	Unique Ecology Well ID	Location 1/4 NW 1/4 NW Sec 12 Twn 22N R 4E or
ELL CONSTRUCTION CERTIFICATION: 1 constructed and/or accept responsibility for	Lat/Long (s.t.r Lat Deg n/a Lat Min/Sec n/a	Tag No. NELL CONSTRUCTION CERTIFICATION: I constructed and in recorp componsibility for	w
struction of this well, and its compliance with all Washington well construction standards	still Required) Long Deg n/a Long Min/Sec n/a	E VELL CONSTRUCTION CERTIFICATION: I constructed and an except corporability for measurement of the well and an anomalous with all Working pay well constructed and the well and an anomalous with all Working pay well constructed and the construction of the constructi	Lat/Long (s,t,r Lat Deg Lat Min/Sec still Required) Long Deg Long Min/Sec
terials used and the information reported above are true to my best knowledge and belief	Tax Parcel No0	materials used and the information reported player as the row test two whether and head the reals used and the information reported player as the row test two whether and head	
Driller Trainee Name (Print) Frank Scott	Cased or Uncased Diameter 1 12 th Static Level	Driller Transe Name (Print) Steve Stivers	Tax Parcel No. 1222049053
riller/Trainee Signature		Driller/Trainee Signuture x	Cased or Uncased Diameter Static Level
	Work/Decommision Start Date 2-16-16	Driller/Trainee License No. 2965T	THE PARTY OF THE P
trainee, licensed drillers'	Work/Decommision Completed Date 2-16-16	E Continue Remark billion	Work/Deconenission Start Date. 7/6/2010
gnature and License No.	Werk/Decommission Completed Date 2-16 10	Giftrainee, licensed driller's USignature and License No.	Work/Decommission Completed Date 7 - 6-10
Construction/Design	Well Data 103-16-1034 Formation Description	9	ata W10-321 Formation Description
◆ ——BACKFILL	Sent cones REQUIRED INFORMATION (Must get one or both if available)	BACKFILL	3 - 20 FT 0 FT Bott CL. P REQUIRED INFORMATION (Must get one or both if available)
	LOGY WELL TAG#: BCT 620	E AMININA	DGY WELL TAG#: <u>BCP-386</u> D#:
	Department of Ecology MAR 17 2016 Water Resources Program	The	20' FT RECEIVED
DEPTH OF BORD	Page of ECY 050-12 (Recey 201).	Scale I*=	Page of JUL 2 0 2000 No. 12 (Receivable) Dept of Ecology WR-NWRO

Construction/Decommission	382514		ype of Well Resource Protection
Decommission ORIGINAL INSTALL	ATTON Notice	_	Geotechnical Soil Boring
of Intent Number		Property Owner Univer Site Address 8201 S. 2120	191
Consulting Firm PES Environmenta	-Seattle	City Kent	County 17-King
Unique Ecology Well ID Tag No		Location NW IA	S NW Sec 12 Two 22N R 4E OF WWA
WELL CONSTRUCTION CERTIFICATION: I minutement redict	accept componsibility for	Lat/Long (s.t.r Lat Deg	Lat Min/Sec
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el merculs used and the information reported above we true to my to		Tax Parcel No. 1222049053	
Driller/Trainee Signature x Driller/Trainee Signature x Driller/Trainee License No. 2965T	vers	Cased or Uncased Diameter	Static Level
Driller/Trainec License No. 2965T	1	Work/Decommission Start Date	7/6/2010
If trainee, licensed driller's	2330		Date 7-6-10
Signature and License No.			
Construction/Design	Well	Date W10-321	Formation Description
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Construction/Decommission 40031 Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number	REPORT CURRENT Notice of Intent No. REC 5268 Type of Well Resource Protection Geotechnical Soil Boring Property Owner Univar Site Address 8201 S. 212th St.	RESOURCE PROTECTION WELL (SUBMIT ONE WELL REPORT PER WELL INSTALLED) Construction/Decommission Construction Construction Then Number	Notice of Intent No. SEC T'ype of Well Resource Protection Geotechnical Soil Borin Property Owner Univar Site Address 8201 S. 212th St.	5268
Consulting Firm PES Environmental-Seattle	City Kent County 17-King	Consulting Firm PES Environmental-Seattle	City Kent County 17-King	Invite
Unique Écology Well ID Tag No. BCT — 542 WELL CONSTRUCTION CERTIFICATION:	Location	WELL CO-STRUCTION EERTWICATEN - I monneared another overprise paradillary for the conformal and the destruction of the conformal and the c	Location 1/4 NW See 12 Two 22N	ec
furaince, licensed driller's	Work/Decommission End Date 12-6-10	If trainee, liceused driller's		
ignature and License No. Construction/Design Well Data		Construction/Design Well Data	Work/Decommission End Date 12 6 - W10-673 Formation Desc	
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CONSTRUCTION WELL REPORT PER WELL INSTALLED) Construction 400313 Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number		ell ce Protection	Construction/Decommission Construction Const	400 314 ATTON NOTICE	D	of Intent No. REO 5268 Spe of Well Resource Protection Geotechnical Soil Boring
onsulting Firm PES Environmental-Seattle	Site Address 8201 S. 212th St. City Kent Co		Consulting Firm PES Environmental	-Seattle	Site Address 8201 S. 212th S City Kent	County 17-King
nique Ecology Well ID		12 The 22N # 4F A	Unique Ecology Well ID	695		NW Sex 12 Twn 22N R 4E in WWW.
CLICONS SECTION CERTIFICATION: Languaged ancies compute poneability for	LavLong (s,t.r Lat Deg	Lat Min/Sec	O WELL CONSTRUCTION CENTRICITION TEMPORERS AND	Last also carbon equities for	Lat/Long (s.t.r Lat Deg	Lat Min/Sec
u u u general in la vezil, and an exempliment units all Washing too wall current orders and and version anni d annial, a secil and it a influentium reported a pone une u use to may best kilm whether and but fair.	still Required) Long Deg	Long Min/Sec	om processory disk with and examples count in November with a little and on the contract of th		still Required) Long Deg	Long Min/Sec
Dräler Trance Name (Print) Kasey Goble	Tax Parcel No. 1222049053 Cased or Uncased Diameter 37	0	X Driller Traine: Name (Print) Käsev	Goble	Tax Parcel No. 1222049053	3'/2' Static Level 8'
riller/Trainee Signature 74/17 riller/Trainee License No. 2501			Oriller/Trainee Signature Driller/Trainee License No. 2501	Type	Cased or Uncased Diameter	31/2 Static Level 8
trainee, licensed driller's			If trainee, licensed driller's		Work/Decommission Start Date	12-7-10
enature and License No. Construction/Desen Well Data	World/Decommission End Date	Formation Description	Signature and License No. Construction/Design	Well Data Wi	Work/Decommission End Date	Formation Description
Concrete Surface Sea Depth Blank Casing (dia x de Material Backfill Type Seal Material Gravel Pack	POSTUND BRI	3.20_ п	Ecology does not warrainly	Concrete Surface Seal Depth Blank Casing (dia x dep) Material Backfill Type Seal Material Gravel Pack	2 FT 1/2" ¥ 5." PVC 2 FT POSTUNO CEMENT	0 3 FT FILL 0 3-20 FT BROWN - GREY SILTY SAWD
Material Screen (dia x dep) Slot Size Material Well Depth	10/10 SAND	FT		Material Screen (dia x dep) Slot Size Material Well Depth	10 5000 10 5000 10 900 9000 20 FT	FT
Backfill Material Texat Hole Depth		JAN 06 2011		Backfill Material Total Hole Depth	20 FT	JAN 06 2011 62 Y 650-12 (5.2) (01)

RESOURCE PROTECTION WELL IS SUBMIT ONE WELL REPORT PER WELL INSTALLED)	REPORT CURRENT PS-4E-17 O	RESOURCE PROTECTION WELL SUBMIT ONE WELL REPORT PER WELL INSTALLED)	REPORT CURRENT Notice of Intent No. REO 5268
Construction/Decommission Construction Con	Type of Well Resource Protection Geotechnical Soil Boring Property Owner Univar	Construction/Decommission Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number	Type of Well Resource Protection Geotechnical Soil Boring Property Owner Univar
Consulting Firm PES Environmental-Seattle	Site Address 8201 S. 212th St. City Kent County 17-King	Consulting Firm PES Environmental-Seattle	Sire Address 8201 S. 212th St. City Kent County 17-King
Unique Ecology Well ID E Tag No. BC T — 596 WELL CONSTRUCT ON CENTRICATION. Lianstructed analysis conglished for	Location 1/4 NW 1/4 NW Sex 12 TWH 22N R 4E 01 WWM	Unique Ecology Well ID BC 7— 597 EVALL CONSTRUCTION CESTIFICATION 1 incidence of another extra responsibility for an incidence of another extra responsibility for an incidence of another or an incidence of an inci	Location
WELL CONSTRUCT ON CHITTERS A to members and rescript impossibility for annuacion of this will had no complience with all Walking and the communication and design of the communication and the communi	Lat Min/Sec Lat Min/Sec still Required) Long Deg Long Min/Sec	Well LOWSTRUCTION CENTURICATION I maximized and necessive responsibility for many various of fairs well, and the same large with all Wastine given well assessments translated to at the risk used and the information argument above the rivers my been knowledge and belief	Lat/Long (s.t.r Let Deg Lat Min/Sec still Required) Long Deg Long Min/Sec
S Driller Trainee Name (Print) Kasey Goble Opriller/Trainee Signature Driller/Trainee License No. 2501	Tax Parcel No. 1222049053	Driller/Trainee Signature Driller/Trainee Signature Driller/Trainee License No 2501	Tax Parcel No. 1222049053 Cased or Uncased Diameter 3 1/2 1 Static Level 8 12-7-16
## If trainee, licensed driller's	Work/Decommission End Date 12-7-10	で If trained, licensed driller's Signature and License No.	Work/Decommission End Date 12-7-10
Cerestruction/Design Well Data W	/10-673 Formation Description	Construction/Design Well Data	W10-673 Formation Description
Concrete Surface Seal Depth Blank Casing (dia x depth Material Backfill Type Seal Material Screen (dia x depth Material Screen (dia x depth Material Well Depth Blackfill Material	<u> 2 FT</u>	Concrete Surface Ser Depth Blank Casing (dra x de Material Backfill Type Seal Material Screen (dia x dep) Slot Size Material Welf Depth Backfill Material	· 2 F
Total Hole Depth	20 FT	→ Total Hole Depth	20 FT
Scale I" =	Pageof	Scale (***	Page of EEY 050-12 (Receive)

Construction/Decommission Construction Decommission ORIGINAL INSTA. of Intent Number	400317 LEATION Nouse	Property Owner Univar	Fintent No. ype of Well Resource Prote Geotechnical	
onsulting Firm PES Environmen	lal-Sealtle	Site Address 8201 S. 212th S City Kent	County	
nique Ecology Well ID	598	Location 1/4 NW 1/	NW_Sec 12	Two 22N R 4E or IVWM
LE CONSTRUCT RUST A TRANSPORTE A CREATE	of the control to the control of the co	Lat/Long (s,t,r Lat Deg still Required) Long Deg		Lat Min/Sec Long Min/Sec
Driller Trainee Name (Print) Kas	ey Goble	Tax Parcel No. 1222049053	21/.	21
riller/Traince Signature riller/Traince License No. 2501	79.71	Cased or Uncased Diameter World/Decommission Start Date	31/4	Static Level 6'
trainee, licensed driller'signature and License No.		Work/Decommission End Date		9-10
Construction/Design	Well Data W	V10-673	Forma	tion Description
	Concrete Surface Seal Depth Blank Casing (dia x dep Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth Backfill Material Total Hole Depth	FT	F	3 FT - GREY - GREY - GREY - GREY - JAN 06 2011 9
cale)"=		Page of		ESOURCES

	CCTION WELL R WELL INSTALLED)			E05268
onstruction/Decommission	400318		ype of Well	
Construction		12	Resource Protection	
Decommission ORIGINAL INSTA of Intent Number	ILLA I (ON NONCE	Property Owner Univar	Geotechnical Soil	Boring
9 (1127) (137)		Site Address 8201 S. 212th S	St	
Consulting Firm PES Environme	ntal-Seattle	City Kent	County 17-1	ting
nique Ecology Well ID	-599	Location //4 NW //	NW Sec 12 Twe	
LL CONSTRUCTION CERTIFICATION. Learning of	and a race oper empor utility for	Lat/Long (s,t,r Lat Dcg		Min/Sec
remotes of this well and its compliance with all Washing		still Required) Long Deg	Lor	ig Min/Sec
mores questional the information reporting above are question	sty best line wedge and belief	Tax Parcel No. 1222049053		
	sey Goble		31/211	Static Level
riller/Trainee Signature riller/Trainee License No. 2501	91/1	Cased or Uncased Diameter		
		Work/Decommission Start Date	12-10	1-10
trainee, licensed driller's gnature and License No.		Work/Decommission End Date	12-10	-10
Construction/Design	Well Data	W10-673	Formation	Description
				TO THE PARTY OF TH
	Concrete Surface Se	eal	0 - 3	FI
	Depth	FT	Fine	
	Blank Casing (dia x d	ep) 1"z" x 5.1	FILE	
	Material	PVC		
	10 200	5 FT		
	Backfill	2		
	Backfill Type		7 2	
	Type		0 3.20	- A / /
	Type Seal	Parruno		- A / /
	Type		0 3.20 Brown -	GREY
	Type Seal	Parruno	Brown -	GREY
	Type Seal Material	Parruno	Brown -	GREY
	Type Seal Material Gravel Pack	PORTUNO CEMENT 16 FT	Brown -	GREY
	Type Seal Material Gravel Pack	PORTUNO CEMONT 16 FT 10/10 SAND	BROWN - SICTY SA	GREY
	Type Seal Material Gravel Pack Material Screen (dia x dep)	POSTUNO (JEMISNT 16 FT 16 SAND 1/2" X 15"	BROWN - SICTY SA	GREY
	Type Seal Material Gravel Pack Material Screen (dia x dep.) Slot Size	PORTUNO CEMONT 16 FT 10/10 SAND 1/2" X 15"	BROWN - SICTY SA	GREY
	Type Seal Material Gravel Pack Material Screen (dia x dep)	PORTUNO (JEMGENT 16 FT 10/10 SAND 1/2" X 15" 10 PYL PLE PACK	BROWN - SICTY SA	GREY
	Type Seal Material Gravel Pack Material Screen (dia x dep.) Slot Size	PORTUNO CEMONT 16 FT 10/10 SAND 1/2" X 15"	BROWN - SICTY SA	GREY
	Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size Material	PORTUNO (JEMGENT 16 FT 10/10 SAND 1/2" X 15" 10 PYL PLE PACK	BROWN - SICTY SA	GREY
	Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth	PORTUNO (JEMGENT 16 FT 10/10 SAND 1/2" X 15" 10 PYL PLE PACK	BROWN - SICTY SA	GREY

perty Owner Univar Address 8201 S. 212th St. Kent	County 17-King W Sec 12 Twn 22N s 4E or WWM Lat Min/Sec Long Min/Sec 12-10-10
### Address ### Univar	County 17-King W See 12 Twn 22N 8 4E or WWM Lat Min/Sec Long Min/Sec Static Level 8'
Kent ation ya NW 1/4 N Long (s.t.r Lat Deg Required) Long Deg Parcel No. 1222049053 d or Uncased Diameter	W Sec 12 Twn 22N R 4E or WWM Lat Min/Sec Long Min/Sec Static Level 8'
ation 24 NW 1/4 N Long (s.t.r Lat Deg Required) Long Deg Parcel No. 1222049053 d or Uncased Diameter	W Sec 12 Twn 22N R 4E or WWM Lat Min/Sec Long Min/Sec Static Level 8'
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Required) Long Deg Parcel No. 1222049053 d or Uncased Diameter	Long Min/Sec 31/z 11 Static Level 8 1
Parcel No. 1222049053 d or Uncased Diameter	31/z 11 Static Level 8'
d or Uncased Diameter	
/Decommission Start Date	12-10-10
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20 FT	AFT W
_	SECEL VO
_	12
20 FT	(≤ JAN 06 2011 a)
	PORTLAND CEMBERT 16 FT CILC SAND 17" X 15" 10 YU PLE PACK 20 FT

onstruction/Decommission	400320	T	Intent No. REO 5268 ype of Well
Construction	700320	The state of the s	Resource Protection
Decommission ORIGINAL INS	TATI ATTON Notice	12	Geotechnical Soil Boring
of Intent Number		Property Owner Univar	Jocottaninearson burning
		Site Address 8201 S. 212th S	
Consulting Firm PES Environm	nental-Seattle	City Kent	County 17-King
nique Ecology Well ID	r- 601	Location 1/4 NW 1/4	NW S∞ 12 Twn 22N ≈ 4E GF
ag No. BC I		Lat/Long (s,t,r Lat Deg	Lat Min/Sec
number of this with and nationaphines with all Wash	myon well consinuous sound with	still Required) Long Deg	
version used and the information reported above are true	nto my best knowledge and belief	Augustin	
Driller Traince Name (Print)	Kasey Goble	Tax Parcel No. 1222049053	
riller/Trainee Signature	There	Cased or Uncased Diameter	31/2 Static Level
riller/Tramee License No. 250	1 17		
traince, licensed driller's		Work/Decommission Shrt Date	17-10-10
gnature and License No.		Work/Decommission End Date	12-10-10
	- ministra	444 han	
Construction/Design	Well Data	W10-6/3	Formation Description
	C		0 - 3 FT
	Concrete Surface S Depth	cai	
		lep) 1/2" × 5.1	Fire
	Material	PYC	
	Backfill	FT	
	Type		0 3 20 FT
	Seal	Poarismo	
	Material	CEMENT	Brown - Geory
	0.000		SILTY SAWO
•	Gravel Pack	16 FT	
	Material	10/10 SAND	
			0 - FT
	Screen (dia x dep)	1/2" × 15"	
		-	
(Call)	Slot Size		
	Material	PNL PRE PACK	
		20 FT	
	Well Denth		
	Well Depth		CEIVA
	Backfill		SECEIVES
		20 FT	RECEIVED

Construction Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number	Type of Well Resource Protection Geotechnical Soil Boring Property Owner Univar Site Address 8201 St 212th St	this Wall
insulting Firm PES Environmental-Seattle sique Ecology Well ID BC T - (cO) Le CONSTRUCTION CESTIFICATION Le morque d'audit : diregé les pous sintés les recolons d'élait audit and an annuel leurs auth at l'élaite ground d'audit : de propriée pous sintés des	City Kent County 17-King EWM	_ \$
rids and and the information against along we printed my best broading and before Driller Traines Name (Print). Kasey Goble Iller/Traines Signature	Tax Percel No. 1222049053 Cased or Uncased Diameter 3 1/2 1 Static Level 8 Work/Deconumission Start Date 12 - 10 - 10	and/or the in
nature and License No.	Work/Decommission End Date 12-10-10	- 2
Concrete Surface Depth Blank Casing (dia Materia) Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth	Promoter Story Sano	
Backfill Material Total Hole Depth	= 30 FT	

RESOURCE PROTECT	TION WELL SLE INSTALLED)	REPORT CUR	RRENT 22-4E-12(e of Intent No. REO 5268
the relative to the second profession to the second	100322	Property Owner Univar	Type of Well Resource Protection Geotechnical Soil Boring
		Site Address 8201 S. 212	th St
Consulting Firm PES Environmental-S	Seattle	City Kent	County 17-King
Unique Ecology Well ID BC T—	603	Location v4 NW	1/4 NW Sec 12 Twn 22N R 4E or WW
VELL CONSTRUCTION CHATUICATION: I so surviced and in a description of fafe will, and to expedience with all Washington well.	ocepa nei pranado (ny fiza-	Lat/Long (s.t.r Lat Deg still Required) Long Deg	Lat Min/Sec
Decimbe used seid the information appeared above are true to the beat		Tax Parcel No. 1222049053	
Driller/Trainee Signature Driller/Trainee License No. 2501	Hyr	Cased or Uncased Diameter	
f trainee, licensed driller's		Work/Decommission Start Date	12-13-10
Signature and License No.		Work/Decommission End Date	17-13-10
Construction/Design	Well Data	Wan 673	Formation Description
	Blank Casing (dia x di Material Backfill	PYCFT	File
	Турс		0 3 -20 FF
	Seal Material	PORTUNO CIEMONT	BROWN - GREY SILTY SAND
	Gravel Pack Material	16 FT	Saly Sale
	Screen (dia x dep)	1/2" × 15"	FT
	Slot Size	10	
	Material	PUL PRE PACIC	1 1 1 m
	Well Depth	FT	ECEIVE
	Backfill		14 0/
	MAGNET	_	I will be a second of the
	Material	20 FT	JAN 06 2011 g

Construction/Decommission 400322	EPORT CURRENT Notice of Intent No. REO 5268 Type of Well	TRESOURCE PROTECTION WELL OF CONSTRUCTION PER WELL INSTALLED CONSTRUCTION/Decommission	Notice of Intent No. REO 5268 Type of Well
Construction/Decommission 400323	Resource Protection	Construction/Decommission 400324	Resource Protection
Construction Construction Const	Geotechnical Soil Boring	Construction Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring
Joeconomission ordering monnecularity money	Property Owner Univar	un — Decembration of the first	Property Owner Univar
	Site Address 8201 S. 212th St	#	Site Address 8201 S. 212th St
Consulting Firm PES Environmental-Seattle	City Kent County 17-King	Consulting Firm PES Environmental-Seattle	City Kent County 17-King
ag No. BCT - 604	Location 1/4 NW 1/4 NW Sec 12 Twn 22N R 4E or WWM	Unique Ecology Well ID BC T 605	Location 1/4 NW 1/4 NW Sec 12 Two 22N R 4E or WWM
RCC CONSTRUCTION CERTIFICATION constructed as dos accept responsibility for	Lat/Long (s,t,r Lat Deg Lat Min/Sec	WZEL CONSTRUCTION CERTS/CATON Learninger d'antière accès empresident de	Lat/Long (s,t,r Lat Deg Lat Min/Sec
	still Required) Long Deg Long Min/Sec	complexes on of the nover) and its completed with all Washington well construction standards	still Required) Long Deg Long Min/Sec
orning used and the information reported above are currently best knowledge and belief	1222040052	Alarc Al-used and the information reported alone in cross to my first into whitige and telest	The Devel Mr. (2000ADDE2)
Driller Traine: Name (Print) Kasey Goble	Tax Parcel No. 1222049053	X Driller Trance Name (Prins) Kasey Goble	Tax Parcel No. 1222049053
	Cased or Uncased Diameter 31/2 Static Level 8	O Driller/Trainee Signature 74	Cased or Uncased Diameter 31/2 Static Level 8
riller/Trainee License No. 2501	Work/Decommission Start Date 12-13-10	Driller/Fraince License No. 2501	- 0.00
trainee, licensed driller's	Work/Decommission Start Date 12-1/3-70	IQ If trainee, licensed driller's	Work/Decommission Start Date 12-13-10
	Work/Decommission End Date 12-13-10	Signature and License No.	Work/Decommission End Date 12-13-10
Construction/Design Well Data Wil	0-673 Formation Description	Construction/Design Well Data	W10-673 Formation Description
Depth Blank Casing (dia x dep)		Concrete Surface Se Depth Blank Casing (dia x d	(p) 11/2" x 5:1
Stat Size	PORTUNO PORTUNO GEMENT 16 FT 10/20 SAND 0 FT Va" x 15' 10 PNU PRE PACK 20 FT RECEIVES	Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slct Size Material Well Depth Backfill Material	PORTUNO PORTUNO GEMENT 16 FT 10 SAND 18" X 15" 10 SNL PRE PACK 20 FT RECEIVED

RESOURCE PROTECTION WELL I SUBMIT ONE WELL REPORT PER WELL INSTALLED)	Notice of	Intent No. REO 5268	RESOURCE PROTEC	CTION WELL REPORT	CURRENT POLICE OF Intent No. REO 5268
Construction/Decommission 400 3 25 [Construction Construction Construction	Property Owner Univar	pe of Well Resource Protection Geotechnical Soil Boring	Construction Construction Decommission ORIGINAL INSTALL of Intert Number	Property Owner L	Type of Well Resource Protection Geotechnical Soil Bering Invar
Consulting Firm PES Environmental-Seattle	Site Address 8201 S. 212th S City Kent	County 17-King	Consulting Firm PES Environmenta	Site Address 8201 Seattle City Kent	S. 212th St. County 17-King
inique Ecology Well ID ag No. BC 7— 606 rel Construction Certification 1 in natural design appendicular for		NW Sec 12 Two 22N R 4E co WWM Lat Min/Sec	Unique Ecology Well ID Tag No. BC T- WELL CONSTRUCTION CURROWS TO A HOUSE A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD A HAND WELL CONSTRUCTION CURROWS TO A HAND WORLD	Location 64	
etisci inmofuny sel', and instrumphents with all Washen goes well construction arend a de	still Required) Long Deg		Construction of the well and its complanes with all Washington	well mensuscine standards still Required) Long	Deg Long Min/Sec
Dräfer Transc Name (Print) Kasey Goble	Tax Parcel No. 1222049053		X Deiller Trainer Name (Print) Kase	Tou Devent Mr. 1222	
riller/Traince Signature riller/Traince License No. 2501	Cased or Uncased Diameter Work/Decommission Start Date	3 ¹ / ₂ 11 Static Level 8 1	Driller/Trainee Signature Driller/Trainee License No. 2501	Cased or Unicased Diar Work/Decommission Sta	
trainee, licensed drillers gruture and License No.	Work/Decommission End Date	12-13-10	If trainee, licensed driller's Signature and License No.	Work/Decommission Fac	17-14-10
Construction/Design Well Data W	/10-673	Formation Description	Construction/Oessen	Well Data W10-673	Formation Description
Concrete Surface Seal Depth Blank Casing (dia x depth Material	· 2 FT	Fire	NOT Warranty	Concrete Surface Seal Depth Blank Casing (dia x dep) Waterial PYC	FILE
Beckfill Type Seal Material	PORTUNO (SEMENT	Brown - Gery	Ecology does NG	Backfill Type Seal Material Pourtuno CEMENT	
Gravel Pack Material	16 FT 16/10 SAND	0 - FT	6	Gravel Pack 16 Naterial 16 SAND	
Screen (dia x dep) Stot Size	1/2" × 15"		Department	Screen (dia x dep)	
Material	AND PRE PACIC		e De	Material PVC PIE PACK Well Douth 20	
Well Depth Backfill		RECEIVES.		Backfill	RECEIVE
Material				Material	0

Construction/Decommission 400327	Type of Well Resource Protection Geotechnical Soil Boring Property Owner Univar Site Address 8201 S, 212th SL	Construction/Decommission 400328 Construction Decommission ORIGINAL INSTALLATION Natice of Intent Number	Type of Well Resource Protection Geotechnical Soil Boring Property Owner Univar Site Address 8201 S. 212th St.
Consulting Firm PES Environmental-Seattle	City Kent County 17-King	Consulting Firm PES Environmental-Seattle	City Kent County 17-King
BUnique Ecology Well ID BTag No. BCT- 608	Location 1/4 NW 1/4 NW Soc 12 Ton 22N R 4E or WWM	Unique Ecology Well ID	Location 44 NW Sec 12 Two 22N R 4E 05 WWM
WELL CONSTRUCTOR EXCITICATION: I annexited associatorpy responsibility file with a constitution of the distribution of the construction of the co	Lat/Long (s,t,r Lat Deg still Required) Lat Min/Sec Long Min/Sec Still Required) Long Deg Long Min/Sec Tax Parcel No. 1222049053 Static Level 8 Cased or Uncased Diameter Work/Decommission Start Date 12-14-10 Work/Decommission End Date 12-14-10	Unique Ecology Well ID BC 7— 604 Wild CONS MINCHEN CENTREASON: I considere and are scent responsibility for construction with it wall, sea the interpolation with all walling gens noted construction with a wall sea the interpolation in posted above we focus to my few kind with a deal and the interpolation in posted above we focus to my few kind with a deal and the interpolation in posted above we focus to my few kind with a deal and the interpolation in posted above we focus to my few kind with a deal and the interpolation in t	Lat / Long (s,t,r Lat Deg Lat Min/Sec still Required Long Deg Long Min/Sec Tax Parcel No. 1222049053 Cased or Uncased Diameter 3 1/2 World/Decommission Start Date (7-14-16) World/Decommission End Date 42-14-16
- Managhal		Construction/Design Well Data Concrete Surface S Depth Blank Casing (dia x o Material Backfill	
Backfill Type Stal Material Gravel Pack	PORTUNO PORTUNO CEMBERT 16 FT 16 SAND	DON São DE Backfill Type Seal Material Gravel Pack Material	PORTUNO PORTUNO CLEMENT SILTY SAMO 16 FT 1910 SAMO
Screen (dia x dep) Slot Size Material Well Depth		Screen (dia x dep) Slot Size Material Well Depth	1/2" × 15" 10 PYC PRE PACIC 20 FT
Hackfill Material Total Hole Depth	=	Backfill Material Total Hole Depth	= 20 FT

Instruction/Decommission Construction Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number	Type of Well Resource Protection Geotechnical Soil Boring Property Owner Univar	SOURCE PROTECTION WELL BMIT ONE WELL REPORT PER WELL INSTALLED) Onstruction/Decommission Construction Decommission ORIGINAL INSTALLATION Notice of Intent Number	Type of Well Resource Protection Geotechnical Soil Boring Property Owner
Consulting Firm PES Environmental-Seattle	Site Address 8201 S. 212th St. City Kent County 17-King	Consulting Firm PES Environmental-Seattle	Site Address 8201 S. 212in St. City Kent County 17-King
Unique Ecology Well ID Tag No. BCT - 610 WELL CONSTRUCTION CERTIFICATION 1 - Consumpress and bisotropy improved a for-	Location	Unique Ecology Well ID Tag No. WAS A CHARLES THE CATTER A TRANS I SECTION OF A STATE OF THE CONTROL OF THE CATTER A TRANS I SECTION OF THE CATTER A TRANS I S	Location
nen maxima o fektor e-di, sed da completaca esta all Washington well mandetida stand e da Standish u ved gad son of inmasses responsible lave we were op my heat beo releder and bell el	still Required) Long Deg Long Min/Sec	Company of the west and an exceptioner with all Washington well denote because standards	still Required) Long Deg Long Min/Sec
X Dedler Trume Name (Pent) Andy Flagan	Tax Parcel No. 1222049053	S Driller Trainer Name (Print) Andy Flagan	Tax Pareel No. 1222049053
Driller/Traince Signature Driller/Traince License No. 2761	Cased or Uneased Diameter 7 Static Level 10	Driller/Trainee Signature Driller/Trainee Lacense No. 2761	Cased or Uncased Diameter Z Static Level 10
If trainee, liconsed driller's	World/Decommission Start Date 12-20-10	If traince, ficensed driller's Signature and License No.	Work/Decommission Start Date 10-20-10
Signature and License No.	Work/Decommission End Date 12-20-10	Signature and License No.	Work/Decommission End Date 12-20-10
Blank Casing (dia x Material Backfill Type Scal Material Gravel Pack Material Screen (dia x dep)	Seal 3' FT grey silty sand grey silty sand grey sandy silt promote TT 19' neat cement 21' FT 10-20 11'r' prepack x 20'	Concrete Surface Depth Blank Casing (dia) Material Backfill Type Seal Material Gravet Pack Material Screen (dia x dep) Slor Size	PVC FT
Slor Size Material Well Depth Backfill Material Total Hole Depth	PVC ### FT EEB 02 2011 20	Slor Size Material Well Depth Backfill Material Total Hole Depth	Page of 2 FEB 02 2011 2

SOURCE PROTECTION WELL BMIT ONE WELL REPORT PER WELL INSTALLED) Onstruction/Decommission 403978	Notice of Intent No. RED 5268 Type of Well	SOURCE PROTECTION WELL BMIT ONE WELL REPORT PER WELL INSTALLED) onstruction Construction 46397	Notice of Intent No. <u>RE05268</u> Type of Well
AConstruction Decommission ORIGINAL INSTALLATION Notice of Intent Number	Resource Protection Geotechnical Soil Boring Property Owner Univar	Construction Decommission ORIGINAL INSTALLATION Notice of Intern Number	Resource Protection Geotechnical Soil Boring Property Owner Univar
Consulting Firm PES Environmental-Seattle	Site Address 8201 S. 212th St County 17-King EWM	Consulting Firm PES Environmental-Seattle	Site Address 8201 S. 212th St. County 17-King EWM
Unique Ecology Well ID Tag No. BCT - 612	Location 1/4 NW 1/4 NW Sec 12 two 22N R 4E or WWAS	Unique Ecology WellID BCT - 613 WELL CONSTRUCT AN CENTERCATION Interested and violation of the page (Section Section	Location U4 NW 1/4 NW Sec 12 Two 22N R 4E or WWM
WELL COSSINUCTION CERTIFICATION: I command and/or scient repends to for creat action of Louvet, and up completes with all Washington was accordanced action.	Lat/Long (s.t.r Lat Deg Lat Min/Sec still Required) Long Deg Long Min/Sec	constitution of the early and we compliance with all Washington, well summitteen standards	Lat/Long (s,t,r Lat Deg Lat Min/Sec still Required) Long Deg Long Min/Sec
Macroscused and his information resured above as two to me hero conselega and belief X. Draller Trainice Name (Print). Andy Flagan	Tax Parcel No. 1222049053	Manufactural action of containing in particular agreed their agreed to the best between and belief X Crafter	Tax Parcel No. 1222049053
Driller/Trainee Signature Driller/Trainee License No. 2761	Cased or Unicased Diameter 7 Static Level 10 Work/Decommission Start Date 12-21-10	Driller/Traince Signature Driller/Traince License No. 2761	Cased or Uncased Diameter
If trainee, ficensed driller's Signature and License No.	Work/Decommission End Date 12-21-10	If trainee, licensed driller's Signature and License No.	Work/Decommission Start Date 12-21-10 Work/Decommission End Date 12-21-10
Construction/Design Well Data		Construction/Design Well Data	W10-673B Formation Description
Concrete Surface Screen (dia x dep) Screen (dia x dep) Six Sixe	3 FT gray silty sand	Concrete Surface Se Depth Blank Casing (dia x d Material Backrill Type Seal Material Gravet Pack Material Screen (dia x dep) Slot Size	3 pry silty sand
Material Well Depth Backfill Material Total Hole Depth	Page of FEB.02.2011 2	Material Well Depth Backfill Material Total Hole Depth	Page of FT FEB 02 2011 0

SOURCE PROTECTION WELL BMIT ONE WELL REPORT PER WELL INSTALLED) onstruction/Decommission 403 98 Aconstruction Decommission ORIGINAL INSTALLATION Notice	Resource Protection Geotechnical Soil Boring	SOURCE PROTECTION WELL BMIT ONE WELL REPORT PER WELL INSTALLED Onstruction/Decommission Construction Decommission ORIGINAL INSTALLATION Nance	Notice of Intent No. RE05268 Type of Well Resource Protection Geotechnical Soil Boring
of Intent Number	Property Owner Univar Site Address 8201 S. 212th St.	of Intent Number	Property Owner Univar Site Address 8201 S. 212th St.
Consulting Firm PES Environmental-Seattle	City Kent County 17-King	L onsulting Firm PES Flytonmental-Seattle	City Kent County 17-King Leven
Unique Ecology Well ID Tag No. BCT - 614	Location 1/4 NW 1/4 NW 5x 12 Twn 22N R 4E or	Unique Ecology Well ID BCT - 615 WELLEONSTRUCTION CERTIFICATION: Languaged and for succept impossibility for	Location 1/4 NW 1/4 NW Sec 12 Total 22N R 4E or WWN
VEEL CONSTRUCTION CERTIFICATION. To restrained and to except on purchasing for	Lat/Long (s,t,r Lat Deg Lat Min/Sec		Lat/Long (s,t,r Lat Deg Lat Min/Sec
en gradier is form wer, and my appeal and with a few talking pape well as normalism in word and. Bernett week and she in fall was provided above, are true to my best in no whole; and belief	still Required) Long Deg Long Min/Sec	Construction of this wall, and he complians a will all Walnes god, will protection is used and	still Required) Long Deg Long Mnt/Sec
	Tax Parcel No. 1222049053	States an used and for estimation append show are married to the winder and bellet	Tax Parcel No. 1222049053
Driller/Trainee Signature	Cased or Uncased Diameter 7" Static Level 10"	Driller Trainee Same (Print) Andy Flagen Driller/Trainee Signature Driller/Trainee License No. 2751	Cased or Uncased Diameter
Priller/Trainee License No. 2761	Work/Decommission Start Date 13-21-15		Work/Decommission Start Date 12-22-10
f trainee, licensed driller's	Work/Decommission End Date 12-21-10	If trainee, licensed drillers Signature and License No.	Work/Decommission End Date 12-22:10
	W10-673B Formation Description	O -	W10-673B Formation Description
Depth Blank Casing (dia x (Material) Backfill Type Scal Material Gravel Pack Material Screen (dia x dep) Stat Size Material	The prepare x 20' Concrete Surface Depth Blank Casing (dia x Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size Material	3 FT gray silty sand gray silty sand gray sandy silt gray sandy	
Well Depth Backfill Material Total Hole Depth	Page of FEB 02 2011 2	Well Depth Backfill Material Total Hole Depth	Page of FEB 02 2011 2 FEB 02 2

nstruction/Decommission 4639 Construction	Resource Protection	Onstruction/Decommissi	905782	Type of Well ☐Resource Prof	
Decommission ORIGINAL INSTALLATION Notice of Intent Number	Property Owner Univar	ing Decommission ORIGIN.	AL INSTALLATION Notice umher Property	Geotechnical Owner Univar	Soil Boring
. L. C. C. L. L. C. L. L	Site Address 8201 S. 212th SL	E	Site Add	ress 8201 S. 212th St.	
onsulting Firm PES Environmental-Seattle	City Kent County 17-King				17-King EWN
nique Ecology Well ID BCT - 616	Location vs NW 1/4 NW Sec 12 Twn 22N	N R 4E or WWW Ecology Well ID	BCT ~ 617	1 1/4 <u>NW</u> 1/1 <u>NW</u> Sec 12	Two 22N R 4E or WW
LL CONSTRUCTION CERTIFICATION 1 constructed and an accept major february for	Lat/Long (s,t,r Lat Deg Lat Min-	WELL CONSTRUCTION CERTIFICATION	Let/Long	(s,t,r Lat Deg	State of the Principle
servoises of this will, and an exempliance with all Whom gain even to instruction standards	still Required) Long Deg Long Mi	-		uired) Long Deg	Long Min/Sec
eriods upod and the information of pointed above and months to have been known deer and behind	Tax Parcel No. 1222049053	5		No. 1222049053	
Driller Trainee Name (Print) Andy Flagan	Cased or Uncased Diameter	Static Level 10 Driller/Trainee Signature Driller/Trainee Signature Driller/Trainee License No.	Andy Flagari Cased or	Uncased Diameter	Static Level / C
iller/Trainee License No. 2751	Work/Decommission Start Date 12-22-10		2761 Work/Deca	ommussion Start Date 12-27-	10
trainee, licensed driller's gnature and License No.	Work/Decommission End Date 12-22-10	If trainee. licensed driller's Signature and License No.		ommission End Date 12-27-	10
nova.	We stop	9	ien Well Data W10-673B	Form	ation Description
Concrete Surfaction/Design Well Day Concrete Surfact Depth Blank Casing (die	a W10-6738 Formation Des Scal : 3 FT 9 7 9 51 1/2 x 22 7 7 2 4 5 2 4 7 2 4 5 2 4 7 2 4 5 2 4 6 4 6 4 6 4 6 4 6 6 6 6 6 6 6 6 6 6	FI Anarranty	Concrete Surface Seal Depth 3	FT grey 51 2 22 grey 51	1/3 FT Thy sand andy silt
Concrete Surfac	Scal . 3 FT 900 5114 5	does NOT Warranty	Concrete Surface Seal Depth Blank Casing (dia x dep) Material Backfill Type Seal	FT 0	1/3' FT Thy sand andy silt
Concrete Surface Depth Blank Casing (dis Material Backfill Type Scal	seal . 3 FT 9 9 57 1/2 x 22 7 9 7 8 2 5 2 1 1 4 5 5 2 1 1 9 7 8 2 5 2 1 1 9 5 2 5 2 1 1 9 5 2 5 2 5 2 5 2 5 2 5 2 5 2 5 2 5 2 5	oes NOT Warranty	Concrete Surface Seal Depth Blank Casing (dia x dep) Material Seal Material Concrete Surface Seal PV Seal Acade Acade	rr censent	
Concrete Surface Depth Blank Casing (dis Material Backfill Type Seal Material Gravel Pack	scal 3 FT grey silly s xdepi 1/2 x 22 grey silly s pvc FT 19 neat cement 21 FT 10 - 1/2 1 9 rey silly s 7 rey sandy	rtment of Ecology does NOT Warranty	Concrete Surface Seal	rr censent	
Concrete Surfac Depth Blank Casing (di Material Backfill Type Seal Material Gravel Pack Material	scal 3 FT grey silly s sdep) 1/2 x 22 grey sandy PVC FT 19' neat cement 11' FT 15-25	epartment of Ecology does NOT Warranty	Concrete Surface Seal	cement cement repack × 20	
Concrete Surface Depth Blank Casing (dis Material Backfill Type Scal Material Gravel Pack Material Screen (dis x dep	seal 3 FT grey silly s ydepi 1/2 x 22 grey sandy PVC FT 19' neat cement 21' FT 19-20 1/2 prepact x 20'	partment of Ecology does NOT Warranty	Concrete Surface Seal Depth 3 Blank Casing (dia x dep) 1/2 Material Pv Seal 15 Material Acat Gravel Pack 2 Material /0- Screen (dia x dep) //3-	censent censent reprepark x 20"	
Concrete Surfac Depth Blank Casing (di Material Backfill Type Scal Material Gravel Pack Material Screen (dia x dep	seal 3 FT gray silly s xdepi 1/2 x 22 gray silly s pvc FT 19' neat cement 21 FT 10-20 1/2 prepark x 20'	Department of Ecology does NOT Warranty	Concrete Surface Seal Depth Blank Casing (dia x dep) Material PV Backfill Type Seal Material Gravel Pack Material JC- Screen (dia x dep) Slot Size	cement cement frepack x 20	
Concrete Surfac Depth Blank Casing (di Material Backfill Type Scal Material Gravel Pack Material Screen (dia x dep	scal 3 FT grey silly s reat cement 21 FT 19' neat cement 21 FT 10-20 11's prepark x 20'	Department of Ecology does NOT Warranty	Concrete Surface Seal Depth 3 1/2 Material PV Seal Type Seal Acade Acade	cement cement frepack x 20	
Concrete Surfac Depth Blank Casing (di: Material Backfill Type Scal Material Gravel Pack Material Screen (din x dep Slox Sizz Material Well Depth	scal 3 FT grey silly s reat cement 21 FT 19' neat cement 21 FT 10-20 11's prepark x 20'	The Department of Ecology does NOT Warranty	Concrete Surface Seal Depth 3	cement cement frepack x 20	

SOURCE PROTECTION WE BMIT ONE WELL REPORT PER WELL INSTALLED, OBSTRUCTION PRODUCTION Construction Decompnission ORIGINAL INSTALLATION Nance	Notice of Intent No. RED 5268 Type of Well Resource Protection Geotechnical Soil Boring	SOURCE PROTECTION WELL BMIT ONE WELL REPORT PER WELL INSTALLED) onstruction/Decommission 403985 Construction Decommission ORIGINAL INSTALLATION Nonce	Type of Well Resource Protection Geotechnical Soil Boxing
of Intent Number	Property Owner Univar Site Address 8201 S. 212th St.	of Intern Number	Property Owner Univar Site Address 8201 S 212th St
Consulting Firm PES Environmental-Seattle	City Kenl County 17-King	Consulting Firm PES Environmental-Seattle	City Kent County 17-King Few March 17-King
Unique Ecology Well ID Tag No. BCT-618	Location 14 NW 1/4 NW Sec 12 Two 22N 8 4E as	Unique Ecology Well ID E Tag No. BCT - 619	Location 1/4 NW 1/4 NW Set 12 Twn 22N R 4E or
WELL CONSTRUCTION CENTERCATION CONTRACTED AND CONTRACT COMPANION OF	Lat/Long (s,t,r Lat Deg Lat Min/Sec	■ WELL CONSTRUCT DIVICENTATION Constructed antimi assign in premining the	Lat/Long (s,t,r Lat Deg Lat Min/Sec
construction of a should and a compliance with a Westington well as ne for both standards. Attachide used and the information reported above are true to my best knowledge and behind	still Required) Long Deg Long Mnv/Scc	Continued (in the first and in the preplace and a Washington with immension time in the Management of the monotone time in the Management of the information are true from the Management of	still Required) Long Deg Long Min/Sec
X Dreier Trans: Name (Print) Andy Flagan	Tax Parcel No. 1222049053	Trange Stone (Puer) Andy Flagan	Tax Parcel No. 1222049053
Driller/Trainee Signature Driller/Trainee License No. 2761	Cased or Uncased Diameter Z Static Level 1C	Driller/Trainee Signature Driller/Trainee License No. 2761	Cased or Uncased Diameter 7" Scattic Level 16"
If trainee, licensed driller's	Work/Decommission Start Date 13-27-10		Work/Decommission Start Date 12-27-10
Signature and License No.	Work/Decommission End Date 12-27-10	Signature and License No.	Work/Decommission End Date 27-10
	ata W10-673B Formation Description	Construction/Design Well Data	W10-673B Formation Description
Concrete Surfi Depth Blank Casing (d Material Backfill Type	is x dep) 1/2 x : 22 grey saidy silt Pro Fr	Concrete Surface S Depth Blank Casing (dia x o Material Backfill Type	PV C FT FT
			10
Seal Material Gravel Pack Material	neat coment 21' FT 10-20 FT	Seal Material Gravel Pack Material	neat cement 2) FT 10-20 FT
Gravel Pack	7/ PT // PT	Gravej Pack	neat cement
Material Screen (dia x de Slot Size	70-20 PT 1/2-20 PT 1/2-20 PT	Material Screen (dia x dep) Slot Size	neat cement 21' FT 10-20 11/2 prepark x 20' -010

Jostruction/Decommission 403 986 BConstruction Decommission ORIGINAL INSTALLATION Notice of Intern Number	REPORT CURRENT Notice of Intent No. RE05268 Type of Well Resource Protection Geotechnical Soil Boring Property Owner Univar	SOURCE PROTECTION WELL BMIT ONE WELL REPORT PER WELL INSTALLED) onstruction/Decommission Construction Construction Internation ORIGINAL INSTALLATION Notice of Intern Number	Notice of Intent No. REO 5268 Type of Well Resource Protection Geotechnical Soil Boring Property Owner Univar
Consulting Firm PES Environmental-Seattle	Site Address 8201 S. 212th St City, Kent County 17-King	Consulting Firm PES Environmental-Seattle	Site Address 8201 S 212th St. City Kent County 17-King
100 A	EWM	Unique Ecology Well ID Tag No. WELL-CONSTRUCTION CENTERCATURE Lawrences and traction and making for	EWM
Tag No. BCT -620	wwm	Tag No. BCT - 6 21	WWM
WELL CONSTRUCTION CERTIFICATION: Learning certifiers and or appeal will prompt on the construction of the	Lat/Long (s,t,r Lat Deg Lat Min/Sec still Required) Long Deg Long Min/Sec	WELL CONSTRICTION OF EAST (CATION): Longituded and broassing responsibility for construction of that wall lind we to study large man all Warlangian acid annumerical grant lady	Lat/Long (s,t,r Lat Deg Lat Min/Sec still Required) Long Deg Long Min/Sec
Maintain is without the wild making reported above set mus to my best too will due as a field	Tax Parcel No. 1222049053	More in a part and the influencies, regarded above are time to my heat how whole on a belief	Tax Parcel No. 1222049053
N Driller Traine Name (Print) Andy Flagen	"		
Driller/Trainee Signature Driller/Trainee License No. 2761		Driller/Trainee Signature Driller/Trainee Signature Driller/Trainee License No 2761	
If trainee, licensed driller's	Work/Decommission Start Date 12-28-10	If trainee, ficensed driller's Signature and License No.	Work/Decommission Start Date 12-28-76
Signature and License No.	Work/Decommission End Date 12-38-10	Signature and License No. Construction/Design Well Data	Work/Decommission End Date 12-28-10
Construction/Design Well Data			W10-673B Formation Description
Concrete Surface Ser Depth Blank Casing (dia x de Material Backfill Type Seal Material	1/2 x 22 gray solly sand	Concrete Surface Depth Blank Casing (dia x	dep) 1/2" 22 gray silty sand
Material Backfill	PVC FT	Material Backfill	PVC FT
		Type Scal Material Gravel Pack Material	
Backfill Type Seal Material Gravel Pack	Inext cement 21' FT	Type Scal Material Gravel Pack	FTFT

BMIT ONE WELL REPORT PER WELL INSTALLED Loustruction/Decommission 403 98 8 Should be a second of the second of t	Notice of Intent No. RED 5268 Type of Well Resource Protection Geotechnical Soil Boring Property Owner Univar	SOURCE PROTECTION WELL BMIT ONE WELL REPORT PER WELL INSTALLED) onstruction/Decommission 4039 Construction Decommission ONIGINAL INSTALLATION Notice of Intent Number	REPORT CURRENT Notice of Intent No. RE05268 Type of Well Resource Protection Geotechnical Soil Boring Univar
Consulting Firm PES Environmental-Seattle	Site Address 8201 S. 212th St County 17-King	Consulting Firm PES Environmental-Seattle	Site Address 8201 S. 212th St. City Kent County 17-King
Unique Ecology Well ID Tag No. BCT~622 well-construction certification immensum with recept impensionally for	Location 1/4 NW 1/4 NW 500 12 Twn 22N R 4E or wwm Lat/Long (s.t.r Lat Deg Lat Min/Sec	Unique Ecology Well ID BCT - 623	Location 1/2 NW 1/4 NW Sec 12 Two; 22N R 4E tr WWM
Consideration of the well and with the well and Washington well construction ment with	still Required) Long Deg Long Min/Sec	Creation (for well and a compared with all Washington well rentared on manda in	still Required) Long Deg Long Min/Sec
Marries upod and the information exponed above we that in my host knowledge and behind	Tax Parcel No. 1222049053	Name all uses and the informace, required share no fraction by high time wedge at a belief	Tax Parcel No. 1222049053
X Driller Trainee Name (Print) Andy Flagan Driller/Trainee Signature Driller/Trainee License No. 2761	Cased or Uncased Diarneter 7" Static Level 10"	Driller/Traine: Signature Driller/Traine: License No. 2781	Cased or Uncased Diameter 7" Static Level 16 /
If trainee, licensed driller's	Work/Decommission Sourt Date 12-,28-10	If trainee, licensed drillers Signature and License No.	Work/Decommission Start Date 12-29-10
Signature and License No.	Work/Decommission End Date 12-38-10	Signature and License No.	Work/Decommission End Dute 12-34-10
Concrete Surface Sea Depth Blank Casing (dia x dep Material Backfill Type Seat Material Gravel Pack Material Screen (dia x dep) Slot Size	3 FT gray silty sand	Concrete Sur face Sur Joepth Blank Casing (dia x Material Backfill Type Sen) Material Gravel Pack Material Screen (dia x dep) Slox Size	3 FT gray silty sand

.onstruction/Decommission 40 3 99 Construction Decommission ORIGINAL INSTALLATION Notice of Intern Number	Notice of Intent NoRE52 & Type of Well Resource Protection Geotechnical Soil Boring Property Owner Univer	SOURCE PROTECTION WELL #MIT ONE WELL REPORT PER WELL INSTALLED) onstruction/Decommission Grant Decommission ORIGINAL INSTALLATION Notice of Intent Number	Notice of Intent No. RE05268 Type of Well Resource Projection Geotechnical Soil Boring Property Owner Univer
Consulting Firm PES Environmental-Seattle	Site Address 8201 S. 212th St. City Kenf County 17-King	Consulting Firm PES Environmental-Seattle	Site Address 8201 S. 212th St. City Kent County 17-King
Unique Ecology Well ID	City Kenl County 17-King EWM Location 94 NW 34 NW 86 12 Twn 22N K 4E XT	Unique Ecology WellID	Location 1/4 NW 1/4 NW sec 12 Two 22N R 4E pr
Unique Ecology Well ID Tag No. B CT - L 2 4 Well CONSTRUCTOR CENTRICATOR, I unequivad addit sacret to periodicip for unanted and in sacret to periodic to the silventure of the periodic to the silventure of t	Lat/Long (s,t,r Lat Deg Lat Min/Sec still Required) Long Deg Long Min/Sec	Unique Ecology Well ID Tag No. BCT ~ 6 2-5 WELL CONSINECTION CERTIFICATION: 1 Americant designs accept to general general part of the consequence of the well and its compliance were a SW at his glob well amorticate as ward was	Lat/Long (s,t,r Lat Deg Lat Min/Sec still Required) Long Deg Long Min/Sec
und tredam it five bed is all as a tree taken men as we aller a might belt of belief. National and and the information reposed above are a unit unity than her whose as a belief.	Tax Parcel No. 1222049053	Name in a contract of the minimum reported a page sign to order my field and wedge and belief	Tax Parcel No. 1222049053
X Driller Trainee Name (Print) Andy Flagan Driller/Trainee Signature	Cased or Uncased Diameter 7 Staffic Level 10		Cased or Uncased Diameter 7 Static Level 16
Driller/Trainee Signature Driller/Trainee License No. 2751	Werk/Decommission Start Date: 18-29-10	Driller/Trainee Signature Driller/Trainee Signature Driller/Trainee License No. 2751	Work/Decommission Start Date 17-30 -10
If trainee, licensed driller's	Work/Decommission End Date 12-29-10	H If trainee, licensed driller's Signature and License No.	Work/Decommission End Date 12-30:10
Signature and License No. Construction/Design Well Data	W10-673B Formation Description	o l	a W10-6735 Formation Description
Concrete Surface Depth Blank Casing (dia s Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth Backfill	3 FT gray silty sand	Concrete Surface Depth Blank Casing (dia Material Backfill Type Scal Material Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth Backfill	3 FT 9 rey solly said 9 rey solly said 9 rey solly soll 1/2 x 22 9 rey soundy silt 19' 19' 19' 10-20 FT
Material Total Hole Depth	Page of \$\int \text{FEB 02 2011} \text{\$\int_{\text{LCV 050}} \text{\$\int_{\text{Rey ov 2.011}}}}	. Material Total Hole Depth	Page of FEB 02 2011 000-5 (Norm 5.01)

struction/Decommission 403992 onstruction		Type of Well Resource Protection	Well Re	(SUBMIT ONE WELL REPORT Construction/Decommission X Construction Decommission ORIGINAL III	406431
ecommission ORIGINAL INSTALLATION Notice of Intent Number	Property Owner Univar	Geotechnical Soil Boring	this is	of Intent Number	
	Site Address 8201 S. 212		- E	Consulting Firm	PFS Environmental
sulting Firm PES Environmental Seattle	City_Kent	County 17-King			1 DO MATTORINGHAM
no BCT-626	Location va NW	1/4 NW Sec 12 Two 22N R 4E	Mww www.	Unique Ecology Well ID Yag No. BCM - 895	9
CONSTRUCTION CENTS CATON: communical and/or accept surportioning for	Lat/Long (s,t,r Lat Deg	Lat Min/Sec	orn no	WELL CONSTRUCTION CERTIFICATION: 1	constructed and/or accept responsibility for
ation of this well, and its compliance with all Wathington well to interestion stand is the	still Required) Long Deg	Long Min/Sec		Volumetron of this well, and its compliance with Materials used and the information repursed above	
n neel and the relicement reports a shore are true to my bett knowledge and bolish	Tax Parcel No. 122204905	53	the		
alter Transec Name (Print) Andy Flagan	Cased or Uncased Diameter	7" Static Lev	1/01	X Driller Traince Name (Print) Driller/Framee Signature	Steve Stivers
tr/Trainee Signature		Total Version Control	and/or	Driller/Trainee License No	
ince, licensed dritter's	Work/Decommission Start Date	13-30-10		Il trainee, licensed driller's	
ture and License No.	Work/Decommission End Date	12-30-10	Data	Signature and License No.	
Construction/Design Well Data W	/10.673B	Formation Description	The the	Construction/Design	
Blank Casing (dia x dep Material Backfill Type Seal Material Gravel Pack	PVC PVC FT 19' Neat cement	gray silty sand gray sandy silty	Ecology does NOT		Blank Casing (dia x d Material Backfil) Type Seal Material
Material Sercen (dia x dep.) Slot Size Material	1/2 pre pack x	FT	The Department of		Gravel Pack Material Screen: (din x dep) Slot Size Material
Well Depth Backfill Material		RECEIVE	3		Well Depth Backfill Material

Type of Well Resource Protection Geotechnical Soil Boring Where Universe Unive	T CURRENT Notice of Intent No. RE05268	ESOURCE PROTECTION WELL I		RENT of Intent No. RE05268
County 17-King VI NW 1/4 NW Sec 12 Tow 22N R 4E TO WAND SALT Lat Deg Lat MinSec WAND Lat MinSec Act Long Meil Sec WAND Lat MinSec Wand La	Type of Well Resource Protection	Construction/Decommission X Construction Y		Type of Well X Resource Protection Geotechnical Soil Boring
Control Formation Description Control	s 6201 S. 212th St.	E 100 100 100 100 100 100 100 100 100 10	Site Address	8201 S. 212th St.
Mariful Superation Mariful Superated Mar			City Kent	
Mariful Superation Mariful Superated Mar	14 NW 1/4 NW Sec 12 Tota 22N R 4E ve WWM 1,1,1 Lat Deg Lat Min/Sec	Unique Ecology Well ID Tag No. BCM - 895 WELL CONSTRUCTION CERTIFICATION: Teconstructed and/or accept respirately for	Lat/Long (s,t.r Lat Deg	x Lat Min/Sec y
Tax Pacel No. Tax Pa			still Required) Long Deg	Long Min/Sec
masion End Date 12-30-10 15 masion End Date 12-30-10 15 masion End Date 12-30-10 15 masion End Date 12-30-10 15 masion End Date 12-30-10 15 masion End Date 12-30-10 15 masion End Date 15 masion End Dat	1222049053	Materials cased and the information reported above are line to my feet throw only; and belief	Tax Parcel No.	
masion End Date 12-30-10 15 masion End Date 12-30-10 15 masion End Date 12-30-10 15 masion End Date 12-30-10 15 masion End Date 12-30-10 15 masion End Date 12-30-10 15 masion End Date 15 masion End Dat	cased Diameter 7" Static Level 10	X Driller Traince Name (Print) Steve Stivers	Cased or <u>Uncased</u> Diameter	
Formation Description Formation Description Formation Description Formation Description Formation Description Concrete Surface Seal Portland Depth O - 23' FT brown Sands W10-673C Formation Description Concrete Surface Seal Portland Depth O - 23' FT brown Sands W10-673C FORMATION DESCRIPTION FOR Sands W10-673C FORMATION DESCRIPTION Concrete Surface Seal Portland Depth O - 23' FT brown Sands W10-673C FORMATION DESCRIPTION Concrete Surface Seal Portland Depth O - 23' FT brown Sands W10-673C FORMATION DESCRIPTION FOR MALERIAL FOR MALERIAL FOR MALERIAL Gravel Pack Gravel Pack Concrete Surface Seal Portland O - 15' FT Seal Material Material Gravel Pack Concrete Surface Seal O - 23' FT FOR MALERIAL O - 15' FT FOR MALER			Work/Decommission Start Date	01/66/11
Formation Description Formation Description Formation Description Formation Description Formation Description Concrete Surface Seal Portland Depth O - 23' FT brown Sands W10-673C Formation Description Concrete Surface Seal Portland Depth O - 23' FT brown Sands W10-673C FORMATION DESCRIPTION FOR Sands W10-673C FORMATION DESCRIPTION Concrete Surface Seal Portland Depth O - 23' FT brown Sands W10-673C FORMATION DESCRIPTION Concrete Surface Seal Portland Depth O - 23' FT brown Sands W10-673C FORMATION DESCRIPTION FOR MALERIAL FOR MALERIAL FOR MALERIAL Gravel Pack Gravel Pack Concrete Surface Seal Portland O - 15' FT Seal Material Material Gravel Pack Concrete Surface Seal O - 23' FT FOR MALERIAL O - 15' FT FOR MALER	mission End Date 12-30-10	Signature and License No.	Work/Decommission Find Date	1-5-11
Backfill 23'-24'FT Type Ball. Clif 15' 45' FT Seal Material Sands Wy gravels Gravel Pack 24'-45' FT		9		
FIT Well Depth 45' FT Backtill Material Well Depth 45' FT 2011 C	equel x 20	Backfill Type Seal Material Gravel Pack Material Screen: (din x dep) Slot Size Material Well Depth Backfill Material	25' x 1.5" PUC 23' - 24' FT Benl. Clif 24' - 45' FT 10/20 (2). 20' x 1.5" Pre-Pack PUC 45' FT	dark black wy sands wy gravels
of	*RESOURCES.	Scale (* =	Pageof	RESOURCESSO LIRES 2011

RESOURCE PROTECTION OF WELL REPORT PER IN		REPORT	70.00	RRENT	- 22- ЧЕ . RE0526	
Construction/Decommission X Construction Decommission ORIGINAL INSTALL of hitent Number	40643, ATION Notice	Property Owne		Type of Wel		
		Site Address		8201	S. 212th St.	
Consulting Firm PES I	Invironmental	City	Kent	Col	inty King	_
Unique Ecology Well ID Tag No. BCM - 898		Location	ia NW	M NW Sec	12 Two 22N R 041	E or
WELL CONSTRUCTION CERTIFICATION: coordinate	Land's accept responsibility to	Lat/Long (s,t,r	Lat Deg	i k	Lat Min/Sec	*
utas.W lie daw yaneilgeus zii hai Daw kult la nattsunguy		still Required)	Long Deg	- 1	Long Min/Sec	9
At are rails used and the wiferington regioned above we some	cory here browledge and helief	Tax Parcel No.				
X Driller Trangee Name (Print)	Steve Stivers			01/		- ,
Briller/Trainee Signature		Cased or Uncased	Diameter	014	Static Lev	el].
Driller/Trainee License No.	2965	Work/Decommiss	on Start Date		01/92/11	
If traince, licensed dritter's						
Signature and License No.		Work/Decommiss	ion End Date	1-6-	- 11	_
Construction/Design		W10-673C		P	ormation Description	
	Concrete Surface S Depth Blank Casing (dia x d Material Backfit) Type Seal Material Gravel Pick Material Screen (dia x dep) Slot Size Material Well Depth	27 x 1 PUC 20-21 Bent. Ch 21-4 10/20 co 20'X 1: Pro-pac PUC 42'	5" 1' FT 1' E	brau brau	42' FT LE SILLY Sands	
	Backfill Material Total Hole Depth	42'			FEB 1 6 2011	
Scale 1"=		Page	The s		ECV 050-12 / Fee-	

RESOURCE PROTE			RENT of Intent No. RE05268
Construction/Decommission	40643	7	Type of Well
X Construction	40643)	X Resource Protection
Decommission ORIGINAL INST.	ALLATION Notice		Georeghnical Soil Boring
of Intent Number	P. (1907)	Property Owner	Univar
and the same of th		Site Address	8201 S. 212th St.
Consulting Firm PI	S Environmental	City Kent	County King
Unique Ecology Well ID Fag No. 13CM - 899		Location bs NW	1/4 NW Sec 12 Two 22N R 04E
VELL CONSTRUCTION CERTIFICATION CONST		Lat/Long (5,1,r Lat Deg	x Lat Min/Sec
manustran of this well, and its compliance with all W	restruction stated and construction stated ands	still Required) Long Deg	s Long Min/Sec s
naterials used and the information reported above are	true to my heat knowledge and belief	Grand Control	
X Driller Transe Name (Prim)	Steve Stivers	Tax Parcel No.	CALLED TO THE REAL PROPERTY.
Oritler/Trainee Signature		Cased or Uncased Diameter	8/4 Static Level
Driller/Trance License No.	2965		6
		Work/Decommission Start Date	01/88/11
l'traince licensed driller's			16 11
Signature and License No.		Work/Decommeston End Date:	1-10-11
Construction/Design		W10-673C	Formation Description
Care of ottoors supplied an electric	31	. 11. 1	Lab and
	Concrete Surface S	eal Portland	0 . 5' FT
	Depth	0 - 20 FT	These seeds
	DE LOS SECTIONS	ep) 22' × 1.5"	brown sands w/gravels
	Material	PVC	2/3/2024
	I DOM:	20'-21' FT	
	Backfill		= 2
	Type	Bont. chip	black silty sands
	Scal		
	Material	-	black silty
	Matchai		sands
	Gravei Pack	211-42' 5	
	Material	21'-42' FT	
	- Transcritor	1-/60	
			0 - FT
	Screen (dia x dep)	70 415"	
	100000000000000000000000000000000000000	20 '1.5" Pre-pack	
	Slot Size		
	Materia:	PUC	The state of the s
	Well Depth	42' FT	CEIVA
	Weii Depin	1	(Branco)
	Backfill		1
	Material		₹ FEB 1 6 2011 €
VIIIIIIIIIIII	Total Hole Depth	42' IT	E LED T
VIIIIIIIIII -	Total Hole Depth		

JBMIT ONE WELL REPORT PER	WELL INSTALLED)		Notice of Intent No.	RE05268
nstruction/Decommission	466434	1	Type of Well	
Construction	100 13	1	X Resource	Protection
Decommission ORIGINAL INSTAL	LATION Natice		Cleotechn	cal Soil Boring
of Iment Number		Property Owner		Univar
onsulting Firm PES	Market College	Site Address		S. 212th St.
msuning rum PES	P.nvironmental	City	Kent Cou	King EWM
ique Ecology Well ID g No. BCM - 900		Location 14	NW M Sec	12 Ten 22N g 04E or WWM
L CONSTRUCTION CERTIFICATION Temperature	ed ani/or accept responsibility for	Lat/Long (s.t.r]	nt Degv	Lut Min/Sec x
nuction of this well and its compliance with all Wast	Carlotte and the Carlotte and C	still Required) Li	ong Dega	Long Min/Sec x
rolls used and the information reprinted above are tro-	to my liest knowledge and belief	Tax Parcel No.		
Orilles Trainee Name (Print)	Steve Stivers	A 44. 14. 14. 14. 14. 14. 14. 14. 14. 14.		r
Her/Traince Signature		Cased or Uncased D	iameter 81/4	Static Level 12
ller/Trainee License No.				7
		Work/Decommission	Start Date	01/68/11
nince, licensed driller's				o's
nature and License No.		Work/Decommission	End Date 1-7-(*
Construction/Design	1	V10-673C	Fe	rmation Description
	Depth Blank Casing (dia s dep Material Backfill Type Seal Material Gravel Pack Material Screen (dia x dep)	25' x 1.5 PU L 23' - 24' Bent. Cl 24' - 45 10/20 (0)	FT S'	~ sands of pravels 45' flack iands 5:1+5
	Shu Size Material	Pre-pack PVC		
	and the same of th	45'	m /	EIVEN
	Well Depth	73	(25)	
	Well Depth Backfill		(25)	
	112.70	451	(25)	ESOUR 2011 2011

	ROTECTION WELL		RRENT ice of Intent No. RE052
Construction/Decommissi Construction Decommission ORIGINA	un 466435 IL INSTALLATION NOTICE		Type of Well X Resource Protection Geotechnical Soil Boring
of Intent Nu	unber	Property Owner Site Address	Univar 8201 S. 212th St.
Consulting Firm	PES Environmental	City Kent	County King
Unique Ecology Well ID Tag No. BCM - 9	101	Location 1/4 NV	V 1/4 NW Sec 12 1wn 22N 8 0
	DM I serrounced and waccept responsibility for	Lat/Long (s.t.r Lat Deg	
	r with all Washington well construction standeds	still Required) Long Deg	s. Long Min/Sec
	d above are true to my hista knowledge and testics	Tax Parcel No.	
X Dritter Trainee Name (Pri Dritter/Trainee Signature		Cased or <u>Uncased</u> Diameter	8/4 State Le
Driller/Tramee License No.		Cased or <u>Uncased</u> Diameter	
		Work/Decommission Start Da	01/ 08 /11
If trainee, licensed driller's Signature and License No.		Work/Decommission Fiel Day	1-7-11
Construction/Desig	pr.	W10-673C	Formation Description
	Depth Blank Casing (dar x de) Material Backfill	0-23' FT 25'x 1.5" PVC 23'-24' FT	W/gravels
	Type	Bent. Chip	5, 35 F
	Material		black fine
		and new	Janas
\$ 4	Gravel Pack Material	24- 45' FT	
造			
	Material	19/20 (31)	35 451
	Waletini	19720 1511	35' 45'
	Screen (dia x dep)	20° × 1.5"	bown 5: Hs
		20" × 1.5"	bown sitts W/ sands
	Screen (dia x dep)	20" × 1.5"	bown sitts
	Sereen (dia x dep) Slor Size Material	20" × 1.5" Pre. Pack PVC	bown sitts
	Screen (dia x dep) Stor Size	20" × 1.5"	bown sitts
	Sereen (dia x dep) Slor Size Material	20" × 1.5" Pre. Pack PVC	brown sitts W/ sands
	Screen (dia x dep) Slor Size Material Well Depth	20" × 1.5" Pre. Pack PVC	bown sitts

	ECTION WELL ER WELL INSTALLED)		RRENT ice of Intent No.	RE05268
Construction/Decommission	466436		Type of Well	
Construction	400456		X Resource Prot	ection
Decommission ORIGINAL INS	TALLATION Notice		Geotechnical 3	
of Intent Number	- 01 A 13 April 10 A	Property Owner	Un	ivar
		Site Address	8201 S. 2	12th St.
Consulting Firm	ES Environmental	City Kent	County	- 11
Inique Ecology Well ID ag No. BCM-902		Location 14 NV	V 1/4 NW Ste 12	Two 22N R 04E
FILL CONSTRUCTION CONTINUE AT HON LOSS		Lat/Long (s.t.r Lar Deg	A	Lat Min/Sec
resusction of time well, and macompliance with all	Wathington well construction standards			Long Min/Sec
certals used and the information reported above a	or more us my best knowledge and belief	art and the second		
Driller Trainee Name (Print)	Stove Stivers	Tay Parcel No.	20.27	
riller/Traince Signature	a de	Cased or Uneased Diameter	814	Simile Level
Oriller/Traince License No.				
		Work/Decommission Start Da	ile	01/93/11
trainee, licensed driller's		distant Thomas	1 5 11	
ignature and License No.		Work/Decommission End Da	1-1-11	
Construction/Design		W10-673C	Forma	tion Description
		lep) Z3' × 1.5"	100000	
	Blank Casting (dia we Material Backfill Type Seal Material Gravel Pack Material Screen (dia w dep) Slot Size Material Well Depth	25' x 1.5" PVC 23'- 24' FT Bent. Chi.p Z4'- 45' FT 10/25 al. 20' x 1.5" Pre-pack PVC 45' FT	black Sand Sta	35' FT FT S:147

ISUBMIT ONE WELL REP	ORT PER WELL INSTALLED)	Noti	ce of Intent No.	RE05268
Construction/Decommissi	466437	7	Type of Well	
X Construction	10075/		X Resource Protec	tion
	L INSTALLATION Notice		George Imical So	7.11.11.10E
of Intent Ni	mber	Property Owner	Unix	
Consulting Firm	DEC Continues of the	Site Address	8201 S. 212	
Consulting Piliti	PES Environmental	City Kent	County	King
Unique Ecology Well ID Tag No BCM- 9		Location 14 NW	/ (A NW Set 12 T	
	ON 1 continuous and/or accept responsibility fu-	Lat/Long (s.t.r Lat Deg	x1	nt Min/Sec x
	eway at Warbargton well construction standards	still Required) Long Deg		ong Min/Spc s
Stateman used and the information report	d above we men to my best knowledge and belief			7
		Tax Parcel No		
X. Driller Trainer Name (Pri	Steve Stivers	Cased or Uncased Diameter	01/1	S 30 C
	1000	Cased of Uncased Diameter	019	Static Level
Driller/Trainec License No.	2965	Work/Decommission Start Dat		17/58/11
If trainee, licensed driller's				2146123
Signature and License No.		Work/Decommission End Date	1-10-11	
4.000		The same	· ·	B. Carlo
Construction/Desi	(III)	W10-673C	Formalic	n Description
		portland		- 1
	Concrete Surface Se	0 -23 FT	0	> FT
	Depth		houle	Sands
	Blank Casing (dia x de	p) 25' × 1.5"	100	
	Material	PUC		
	Backfill	23' - 24' FT	2-6	
		Bert. Chip	E' 1	1<1
	Type	ben. Cu.	4	FT
	Seal		11 1	- N-
			black ?	aius
5 <u> </u>	Material			
	Material	-	w/ gre	velr
	Material Gravel Pack	24'- 45'FT	black ? w/ gro	ivelr
	Gravel Pack		w/ gre	ivelr
		24'- 45'FT		ivelr
	Gravel Pack		w/ gre	webs
	Gravel Pack	10/10 101.		
	Gravel Pack Material Screen (dia x dep)	20'x 1.5"		
	Gravel Pack Minternal Screen (dia x dep) Slot Size	10/10 101.		
	Gravel Pack Material Screen (dia x dep)	20'x 1.5"		
	Gravel Pack Minternal Sereen (dia x dep) Slot Size Material	20'X 1.5" Pre-prike		
	Gravel Pack Minternal Screen (dia x dep) Slot Size	20'x 1.5"	Q.E.C.	EIVED
	Gravel Pack Minternal Sereen (dia x dep) Slot Size Material	20'X 1.5" Pre-prike	Q.E.C.	EIVED
	Gravel Pack Minternal Screen (dia x dep) Slot Size Material Well Depth	20'X 1.5" Pre-prike	Q.E.C.	EIVED

UBMIT ONE WELL REPORT P	ER WELL INSTALLED)	N	otice of Intent No.	RE05268
onstruction/Decommission	46643	P	Type of Well	
Construction			X Resource Pre	ofection
Decommission ORIGINAL INS	TALLATION Notice		Geotechnica	Soil Boring
of Intent Number		Property Owner		Inivar
onsulting Firm P	FS Fautronmental	Site Address City Ken		212th St. King
onsuming rum.	ES Environmental	City Kei	County	EWM
nique Ecology Well ID	,	Location 14	NW 1/4 NW Sec 12	2 Two 22N F 04E se
18 No. BCM - 404				WWM
LL CONSTRUCTION CERTIFICATION Loss		still Required) Long I		Lat Min/Sec x
erisk used and the information reported above a		Sim Required Lang		Lang Minrace
		Tax Parcel No.		
Oritler Trainee Name (Print)	Steye Stivers	-	011	15
dler/Trainee Signature		Cased or Uncased Diame	er 8/4	Static Level 12
itler/Trainee License No.	2965	Work/Decommission Start	Date	01/05/11
ninee, licensed driller's		The second secon		01/00/11
nature and License No.		Work/Decommission End	Date 1-10-11	
Construction/Design		W10-673C	Form	ation Description
Constituentoroesign			2000	anoti Description
	40.0000000000	Portland	100	< ·
	Concrete Surface S Depth	0 - Z3 F	0 -	Sands
			prom	sands
		(ep) 25 ' × 1.5"		
	Material	77.74		
	Backfill	23'- 24'F	Г	
	Type	Bent , chip	5'	45 '
			# -	FT
	Seal		black	fine
	Material		sand	5 W/
	Gravel Pack	74' us'	900	s w/
	Material	24'- 45'		
	TVIAILET ALI	10/10 101.		
			0 -	FT
	Sercen (dia s tiep)	20141.5"		
	1000			0
	Stot Size	Pre-pac PUC		
	Material			
Sarana	Well Depth	45' F		
			CF	IVE
	Backfill	-	1250	100
	Material	45'	1	6 2011 Q
		45'		- 2011

(SUBMIT ONE WELL REI	PORT PER WELL INSTALLED)	Notic	re of Intent No.	RE05268
Construction/Decommiss	40643	9	Type of Well	
X Construction		/	X Resource Protect	ion
	AL INSTALLATION Notice		Geotechnical Soi	
of Intent N	umber	Property Owner	Univ	
Consulting Firm	PES Environmental	Site Address City Kent	8201 S. 2121 County	h St.
Consulaing raini	r E3 Epvironmental	icaty Kent	County	King
Unique Ecology Well ID		Location IM NW	/ 1/4 NW Sec 12 Tw	
	ION: I constructed and/or accept responsibility for	Lat/Long (s,t,r Lat Deg	X Lo	
	ice was all Washington well insistraction standards	still Required) Long Deg	d.c	ing Min/Sec .
Materials uses and the Information repor	and above are time to my best knowledge and Seller	Tax Parcel No.		
X Driller Trainer Name (Pr	Steve Stivers		9.5.4	
Driller/Trance Signature	West -	Cased or <u>Uncased</u> Diameter	8/4	Static Level /2
Driller/Trainee License No.	2965	- Marketon Control	= 0	Ш
If trainee, licensed driller's		Work/Decommission Start Dat	. 0	1/08/11
Signature and License No.		Work/Decommission End Date	1-11-10	
-				
Construction/Des	ign	W10-673C	Formation	Description
	Mnterial Backfill Type Seal Material Gravel Pack Mnterial	23' × 1.5" PUC 21' - 22'FT Bont. Chip 22' - 43'FT 10/20. col	blacke sand	
	Courses retire to character			
	Screen (dia x dep) Slor Sike Material Well Depth Backfill Material	fre-pack pvc 43' m	₹£CE	IVED

RESOURCE PROTI		REPORT		RRENT		JE-12 5268
Construction/Decommission X Construction Decommission ORIGINAL INST.	466440)		Type of Well		
of Intent Number		Property Owner			Univar	
		Site Address			S. 212th St.	
Consulting Firm PI	S Environmental	City	Kent	Cou	nry Ki	ng Ewi
Unique Ecology Well ID Tag No. BCM - 906		Location	174 NW	IM NW Set	12 Two 22N R	
VELL CONSTRUCTION CERTIFICATION: Lower		Lat/Long (s,t,r	La Deg	x	Lat Min/Sec	x
contraction of the well line as ening lance well all W		still Required)	Long Deg		Long Min/Sec	_ i.
Maserials used and the information reprinted above are	true to my hers knowledge and belief	Tax Parcel No.				
X Driller Traince Name (Print)	Steve Stivers	-		01/		Ve and
Driller/Trainee Signature		Cased or Uncased	Diameter	0/4	Stotic	Level 12
Driller/Trainee License No.	4905	Work/Decommissi	on Start Date		01/53/11	
If trainee, licensed driffer's				3 101114		
Signature and License No.		Work/Decommissi	uu <u>End</u> Date	1-11-1		
Constructum/Design		W10-673C		Fo	ormation Description	on
	Depth Blank Casing (dia x d Material Backfill Type Seal Material Gravet Puck Material Screen (dia x dep) Stof Size Material	0-22 24'-1.5 PVC 22'-2 Boxt.CL 23'-4 10/20 C 20'X1: Pre. par	3'FT \$\frac{4}{5''}		cycy sand	
	Well Depth Backfill Material	44'	=,,,	Ser	(0)	

	OTECTION WELL ORT PER WELL INSTALLED)		RENT of Intent No. RE	05268
Construction/Decommissi	466441		Type of Well	
X Construction	106491		X Resource Protection	
Decommission ORIGINA	L INSTALLATION Notice	4	Geotechnical Soil Boring	
of Intent Nu	mber	Property Owner	Univar	
a to the	200.24 W T. F. C.	Site Address	8201 S. 212th St.	
Consulting Firm	PES Environmental	City Kent	County	King
Unique Ecology Well ID Tag No. BCM - Qu	07	Location 1/4 NW	M Sec 12 Two 22N	_
	ON: I constructed another accept responsibility for	Lat/Long (s,t,r Lat Deg	Las Min/Sec	*
construction of this well, and its colonicate	e with all Washington well consumerion standards	still Required) Long Deg	Long Min/S	x x
Morrish used and the inflamation inperior	d above we true to my best knowledge and belief	T 0(2)		
X Driller Trainee Name (Pri	Steve Stivers	Tax Parcel No.	0.17	
Driller/Trainee Signature	allow	Cased or Unensell Diameter	8/4 Sta	tic Level
Driller/Trainee License No.	2965			
It trainee, licensed driller's		Work/Decommission Start Date	01/65/11	
Signature and License No.		Work/Decommission End Date	1-11-11	
Construction/Desig	ji j	W10-673C	Formation Descrip	tion
	Concrete Surface Se Depth Blank Casing (din v de	0 - 20 FT	fine black sands	FT
	Material Backfill Type	20'- 21' FT Best Chip		
	Seal Material			FT
	l l			
	Gravel Puck Material	21'- 42'FT		
	Gravel Puck	10/20 61.	0	FT
	Gravel Puck	21'- 42'FT 10/20 61. 20'X 1.5"	0 -	FT
	Gravel Pack Material	10/20 61.	0 -	FT
	Gravel Puck Material Screen (dra x dep). Slot Size	20'× 1.5"		FT
	Gravel Pack Material Screen (dra x dep)	20'× 1.5"	OF CEIVE	FT
	Gravel Puck Material Screen (dra x dep) Slot Size Material Well Depth	20' X 1.5" Pre-pack	QECEIVE)	FT
	Gravel Pack Material Screen (din x dep) Slot Size Material Well Depth Backfill	20' X 1.5" Pre-pack	ECEIVED FFB 16 2011	FT
	Gravel Puck Material Screen (dra x dep) Slot Size Material Well Depth	20' X 1.5" Pre-pack	FEB 1 6 2011	FT

KESOURCE PROTE			of Intent No. RE05268
Construction/Decommission	406442	7	Type of Well
X Construction	100112		X Resource Protection
Decommission ORIGINAL INSTA	ILLATION Notice		Geotechnical Soil Boring
of Intent Number		Property Owner	Univar
Consulting Firm PE	C F i	Site Address	8201 S. 212th St.
Constituing Fittin FE.	s environmental	City Kent	County King
Unique Ecology Well ID Tag No. BCN -	730	Location 1/4 NW	/4 NW See 12 Two 22N R 04E or WWN
WELL CONSTRUCTION CERTIFICATION Leasting	arted ancilor accept responsibility for	Lat/Long (s,t,r Lat Deg	A Lat Min/Sec a
construction of stee well, and us compliance with all W.		still Required) Long Deg	x Long Min/Sec. v
Atmensis used and the information reported above are t	rule to my best knowledge and belief	Tax Parcel No.	
X Driller Trainee Name (Print)	Steve Stivers		
Driller/Trainee Signature	165	Cased or Uncased Diameter	8 1/4 Static Level D/
Driffer/Trainee License No.	2965		
If trainee, licensed driller's		Work/Decommission Start Date	01/95/11
Signature and License No.		Work/Decommission End Date	1 - 17-11
Signature and Electric 110.		Trons-scoulinssion gala bate	
Construction/Design		W10-673C	Formation Description
	Blank Casing (dia x d Material Backfill Type Seal Material Gravel Pack Material	PNL 20 - 21' FT bent. chies 42'-21' FT 10-20 cology	6 town Sands 1 5. 47 FT black fine sands and silts
	Screen (dia x dep) Slot Size Material	20' x 1.5" Pre-pack PUC 42' FT	CEIVE

indimite cond indicate	PORT PER WELL INSTALLED)		Notice	of Intent No.	RE05268
Construction/Decommiss	sion / 1 c/c M I	-		Type of Well	
X Construction	40644	5		X Resource Protec	nion
Decommission ORIGIN	IAL INSTALLATION Notice			Geotechnical Sc	il Boring
	lumber	Property Owner	0	Uni	
		Site Address		8201 S. 212	th St.
Consulting Firm	PES Environmental	City	Kent	County	King
Unique Ecology Well ID Tag No.	BCM-431	Location)/4 NW	IN NW Sec 12 T	will 22N R 04E or
	FIDN I constructed and/or accept responsibility for	LavLong (s,t,r	Lai Deg	. 1	at Min/Sec x
	wee with all Washington well construction transferds	still Required)			ong Min/Sec a
Attraction excellent the information repor	ned above are true to my best knowledge and belief				
		Tax Parcel No.			
X Driller Trainec Name (Pr				637	
Driller/Tramee Signature		Cased or Unicased	Diameter	814	Static Level 1
Driller/Trainee License No _	2965	Wardell'Incommunicati	on From Date		17
If trainee, licensed driller's		Work/Decommissi	on Start Date		01/63/11
Signature and License No.		Work/Decommissi	on End Date	1-1	7-11
Signature and concerns (sai		1	OIL LINE CORE		
Construction/Des	ifan	W10-673C		Formatio	on Description
	Blank Casing (dis x der Material Backfull Type Seal Material Gravel Pack Material	20-21 bent- (21'- 4 col. 50 10+20	FT hips	black and si	171 FT Fine Sant 11ty FT
	Stor Size Material Well Depth Backfilt Material	PUC 412'	FT	REC	EIVES

KESOURCE PROTE			RENT e of Intent No.	22-4E-12C RE05268
Construction/Decommission	466444	1	Type of Well	
X Construction	106 795	1	X Resource Protec	ction
Decommission ORIGINAL INSTA	LLATION Natice		George chaical Sc	oil Boring
of Intent Number		Property Owner	Uni	
Contract - Contract	Charles and	Site Address	8201 S. 212	th St.
Consulting Firm PES		City Kent	County	King
Unique Ecology Well ID BCM	- 932	Location 14 NW)/4 NW Ser 12 7	EWM:
WELL CONSTRUCTION CERTIFICATION: LONGING	and and/or accept responsibility for	Lat/Long (s,t,r Lat Deg	x 1	at Min/Sec x
construction of this well, and its compliance with all Wa	chiagran we'l construction standards	still Required) Long Deg		ong Min/Sec
Alternos used sod the information reported shave are in	ur is my best knowledge and helled			7
		Tux Parcel No.		
X Driller Traince Name (Print) Driller Traince Signature	Steve Stivers	Cased or Uncased Diameter	6.0	
		Cased or Uncased Diameter	814	
Driller/Trainee License No.	4905	Work/Decommission Start Date		17 01/ 03/ 11
If trainer, licensed driller's				31 - 11 7
Signature and License No.		Work/Decommission End Date	1.	-17-11
				42
Construction/Design		W10-673C	Formati	on Description
	Blank Casing (dia x de Material Backfill	25' x 1.5" 23 - 24 FT	prown	
	Type Seaf Material Gravel Pack Material	241 - 45 FT 10/20 (ol. Sand	brack and	
	Type Seaf Material Gravet Pack	bent. Chips		
	Type Seaf Material Gravel Pack Material Screen (dia x dep)	241 - 45 FT 10/20 col. Sand		
	Type Seaf Material Gravel Pack Material Screen (dia x dep) Slot Size	241 - 415 FT 10/20 col. Sand 20' x 1.5" pre - pack		
	Type Seaf Material Gravel Pack Material Screen (dia & dop) Slot Size Material	241 - 415 FT 10/20 col. Sand 20'+ 1.5" Pre-pack PUC	RI	CEIDES
	Type Seaf Material Gravel Pack Material Screen (dia x dep) Siot Size Material Well Depth	241 - 415 FT 10/20 col. Sand 20'+ 1.5" Pre-pack PUC	RI	

RESOURCE PI	ROTECTION WELL	REPORT	CURRENT	タターリモー12 N
	ORT PER WELL INSTALLED)		Notice of Intent No	RE05268
Construction/Decommiss	ion		Type of We	1
X Construction	4064	43	X Resource	Protection
	AL INSTALLATION Notice			ical Soil Boring
of Intent N		Property Owner		Univar
		Site Address		S. 212th St.
Consulting Firm	PES Environmental	City	Kent Cor	mty King
Unique Ecology Well ID	977	Location	1/4 <u>NW</u> 1/4 <u>NW</u> Sec	12 Two 22N R 04E or WW
	DN Transmissed working accepts in sports billing for	Lat/Long fair	Lat Deg x	
	or will all Wattington well continuation standards		Long Deg s	Long Min/Sec x
	ed above are mæ in my heat knowledge and boke!	and anythmetic	Tong trag	Louis Indiana
		Tax Parcel No.		
X Driller Tramee Name (Pr	Steve Stivers	-	04	
	holes	Cased or Uncased	Dinneter 814	Static Level 1
Driller/Trainee License No.	2965	Worl/Decommissi	on Short Date	01/05/11
If trainee, licensed driller's				
Signature and License No.		Work/Decommissi	on End Dale 1- 18	-11
Construction/Des	gn .	W10-673C		ormation Description
		portland	d.	-1
	Concrete Surface S	eal 0 - 23	0	~ > FT
	Depth			in sonds
	Blank Casing (dia x d	(ep) 25 × 1.	5"	
	Material	PUC		
		23'- 2	(4)	
	Backfill			
	Type	Bers. Ch	1 5	451
	Sent			FT FT
			- bla	e fine
	Material	_	-	sady
	and the second second	74. 45	-1-	
	Gravel Puck	12/20 01		
56	Material	10/20 001	<u> </u>	
			.0	- FT
		2011	5"	
	Screen (dia x dep)	50 X 1		
	Slot Size	Pre-pac	2	
	Material	PUL		
	Managini			
	Well Depth	45	FT	OFCEID.
	Dimen.		/	Kr. (S)
	Backfill		- /	- 0
	Material		- X	FEB 1 6 2011
		1000	1.75	- TO COII
/////////////////////////////////////	Total Hole Depth	45'	FT WATE	20102011

RÉSOURCE PROT (SUBMIT ONE WELL REPORT P		British Charles Consumer and Confederate	RENT e of Intent No.	RE05268
Construction/Decommission	111001		Type of Well	
X Construction	41506		X Resource Protect	on
Decommission ORIGINAL INS	TALLATION Notice		Geotechnical Soi	
of Invent Number		Property Owner	Univ	
		Site Address	8201 S. 2121	h St.
Consulting Firm P	ES Environmental	City Kent	County	King
Unique Ecology Well ID Tag No. BCM - 896		Location 1/2 NW	1/4 NW Ser 12 14	
WELL CONSTRUCTION CERTIFICATION: Lean		Lat/Long (s.t.r Lat Deg	x la	Min/Sec x
construction of this well, and its compliance with All	Worthingson we'll construction steedards	still Required) Long Deg	x Ls	ing Min/Sec x
University used and the information repeated above a	re inse to my bod knowledge and belief	Tax Parcel No.		
N Driller Traince Name (Print)	Steve Stivers		0.17	
Driller/Trainee Signature.		Cased or <u>Uncased</u> Diameter	0/4	Static Level 1
Driller/Trainee License No.	2965	Work/Decommission Start Date	0	1/68/11
If minee, licensed driller's			1.542	triker 1
Signature and License No.		Work/Decommission End Date	1-5-11	
Construction/Design		W10-673C	Formatio	n Description
	0	Portland	13	FT FT
	Concrete Surface Se Depth	0-23 FT	brown s	4
			brow_ s	ands
		:p1 25 1.5"	w/gr	auels
	Material	PVC	117	
	Backfill	23'- 24' FT		
	Type	Bart. Chio	1 -	-1
		77.	134 - 3	FT
(3) 3()	Seal		black	Sands
200				
	Material		35/3/4/2	2
	Material	True-	33332	3
	Ciravel Pack	24'-45' FT		,,,,,
•		24'-45' FT	251	
4	Ciravel Pack	24'-45' FT	35	45 ° FT
4	Gravel Pack Material		35 '	45 ° FT
	Ciravel Pack	20' × 1.5"	black 5	45° FT
	Gravel Pack Material		35 ' black 5 w/ si	45° FT ands
	Gravel Pack Material Sureen (dia x dep) Slot Size	20' × 1.5" Pre-pack	35 ' black 5 w/ si	45° FT ands As
	Gravel Pack Material Screen (dia x dep)	20' × 1.5"	35 ' black 5 w/ si	45' FT ands
	Gravel Pack Material Sureen (dia x dep) Slot Size	20' × 1.5" Pre-pack	black 5 w/ si	ands As
	Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth	20' × 1.5" Pre-pack	black 5 W/ si	ands As
	Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth Backfill	20' × 1.5" Pre-pack	black 5 W/ si	ands As
	Gravel Pack Material Screen (dia x dep) Slot Size Material Well Depth	20' × 1.5" Pre-pack	black 5 m/ si	As FT

	ROTECTION WELL PORT PER WELL INSTALLED)	ner our		RENT of lutent No.	RE05268
Construction/Decommiss X Construction Decommission ORIGIN of Intent A	415066 VAL INSTALLATION NOTICE	Property Owner		Type of Well X Resource Protection Geotechnical Section Uni	
		Site Address	-12-	8201 S. 21:	2th St.
Consulting Firm	PES Environmental	City	Kent	County	King
Unique Ecology Well II Tag NoBCM -	897				1940 22N # 04E or WV
	TION: I constructed and or accept responsibility for				
State talk keyed and the differention reput	ence with all Washington well autostruction warelesses	Still Required) Tax Parcel No.	Long Deg	-	Jing Min/Sec x
X Drille: Trainee Name (P Driller/Trainee Signature	1	Cased or Uncased	Dinmatus	21/1	Static Level /
Driller/Trainee License No		Work/Decommissio			Static Level 7.
If trainee, licensed driller's		4			
Signature and License No.		Work/Decommission	on End Date	1-5-//	
Construction/De	sign	W10-673C		Formati	on Description
	Depth Blank Casing (din s de Maierial Back/III Type: Seal Material Gravet Pack	0-23' PVC 23'-24 Bent.CL	Σ" Σπ Ξ.μ	fill/ concrete reba	35' FT
	Materia) Sereen (din x dep) Slut Size Material	20' x 1.	5"	black w/s	sands silts
	Well Depth Backfill Material Total Hole Depth	4 MM 25 2	WWG TE	₹ FEB	16 2011 2

KESOURCE PROT			RENT e of Intent No.	RE05268
Construction/Decommission	111001	7	Type of Well	
X Construction	41506	5	X Resource Protecti	on
Decommission ORIGINAL INST	ALLATION Notice		Geotechnical Soil	Boring
of Intent Number		Property Owner	Univa	Section 201
		Site Address	8201 S, 212t	h St.
Consulting Firm P	ES Environmental	City Kent	County	King
Unique Ecology Well ID Tag No. IXM - 89	2_	Location & NW	/// NW Ser 12 Two	22N R 04E or
WELL CONSTRUCTION CERTIFICATION (100)		Lat/Long (s,t,r Lat Deg	x La	Min/Sec x
construction of they well, and the compliance with all	Visitington well construction standards	still Required) Long Deg		ng Mor/Sec x
Marriels used and the officeration reported above as	; mue to my best knowledge and belief	Charles a		
X Driller Tramee Name (Print)	Star Stivers	Tax Parcel No.	7.5.27	
X Driller/Trainee Signature	Store Stivers	Cased or <u>Uncased</u> Diameter	8/2	Smile Lande 4
Driller/Traince License No.	2965	Capita of Thensed Districted	-017	static Level 1
Diffici Hamico Erceise No.	2703	Work/Decommission Start Date	0	1/13/11
Firalnee licensed driller's				
Signature and License No.		Work/Decommission End Date	1-13-11	
		ANY 0 6726		Box See
Construction/Design		W10-673C	Formation	Description
	T	Portland	4	
	Concrete Surface S		0 - 5	FT
	Depth	0 - 23 FT	brown	ca. A.
1 102	Offente Passing (Als v 8	ep) 25 x 1.5"		300
	Material	PUL		
			14 6 4	
	Backfill	23' - 24'FT		
	Туре	Bent. Chip	5' 4	51
	S 6 11		black	FT
	Seal		black	sands
	Material		WISC	aux C
		211' 1-1	-, 3	1,00
	Gravel Puck	29 - 45 FT		
	Material	10/20 col.		
		Sec. 9 (19)	0 -	FT
		2007.04.53		
	Screen (dia x dep)	20 KI.5"		
	Slot Size	Pre-pack		
		Dile		
	Material	1 00		
	Well Depth	4 SGIVENN	OF	TTE
		(ala	SECE	VEN!
V/////////////////////////////////////	Backfill	2 200	1	1
	No. of the last of	2011	1 /	2011
	Material	27		
,	Total Hole Depth	AND SO	FEB 1	6 2011 2

Construction/Decommissio	RT PER WELL INSTALLED)		None	Type of Well	184.1	05268
X Construction	415064			X Resource P	retection	
Decommission ORIGINAL	INSTALLATION Notice				al Soil Boring	
of Intent Nun		Property Owner			Univar	
e Vita ev		Site Address			, 212th St.	
Consulting Firm	PES Environmental	City	Kent	Count	у К	ing
Unique Ecology Well ID Tag No. BCM - 90	8	Location	A NW	1/4 NW Sec 1	2 Two 22N R	
VELL CONSTRUCTION CERTIFICATION	V Temperated and/or scenys responsibility for	Lat/Long (s.t.r	Lat Deg	,A:	Lac Min/Sec	_1
	with all Washington well compression standards	still Required)	Long Deg	x	Long Min/Sec	
facetrals used and the information expected	about one true to my tiest knowledge unit belief	Tax Parcel No.				
X Driller Trainee Name (Prince	Steve Stivers			111		
Oriller/Trainee Signature		Cased or Uncased	Diameter	0/4	Stati	e Level
Driller/Trainee License No.	2965	Work/Decommissio	a Cine Para		01/68/11	
f trainee, licensed driller's		TO RESTANDANTES AND THE PROPERTY OF THE PROPER	in That Isanc		11/98/11	
Signature and License No.		Work/Decommissio	n End Date	1-13-	11	
Construction/Design		W10-673C		For	nation Descripti	ion
	Blank Cusing (dia x de Muterial Backfill Type Seal Material Gravel Pack Material Screen (dia x dep) Slot Size	24' - 44 10/20 col.	£ S'FT	Signack w/	sand granus	FT
-	Material Well Depth Backfill Material Total Flole Depth	45 HAY	En out	QUE WATER AND	CEIVED B 16 2011) Aug

RESOURCE PROTECTION WELL RE ISUBMIT ONE WELL REPORT PER WELL INSTALLED)	PORT CURRENT Notice of Intent No. REOSBOZ
Construction/Decommission 417083	Type of Well
Construction (1 700)	X Resource Protection
Decommission OFIGINAL INSTALL ITION Notice	Geotechnical Soil Borgig
of Intent Number	Property Owner Univar Site Address 8201 S. 212th St.
Consulting Firm PES Environmental-Seattle	City Kent County 17-King
Jurque Ecology Well (D.	Location 1/4 NW 1/4 NW Sec 12 Town 22N R4E
Tag No. BHB 420 SEEL CONSTRUCTION CERTIFICATION: Transferend units accept responsibility for	Lat/Long (s.t.r. Lat Piop. x Lat Min/Sec. x
with the west (Co. 1915) Chart (Co. 1916). I the student which accept responsibility for a way the west of the west of the contraction standards.	still Required) Long Deg V Long Min/Sec V
different sured and the information reported above are from to any best knowledge and belief	Tax Parcel No. 1222049053
Inder Trainer Name (Print) Elliah Floyd	Cased or Unessed Diameter 11/2 Static Lavel 4'
Onlier/Trainee Signature 200 Floy of 2842	
	Work/Decommission Start Date 5/17/2011
If trainer, ficeshed drillers' Stemattar and License No.	Work/Decommunion Completed Date 5/20/2011
	NH4 200
Construction/Design W	ell Data W11-209 Formation Description
CONCRETE SUR BACKFILL	BENTONITE grout 3 FT 8"concrete, 5:1ts Sand 70", Fine, Some wood wet ey' Dark grey almost black loose. Bentonite grout
DUPTH OF BORUNG	PT FT SECENCES SUN 14 2011 S

SUBMIT ONE WELL REPORT PER THE		7.0	Notice of Intent No.	COJOUL	_
onstruction/Decuminission	41708	34	Type of Well		
Construction			X Resource Prote		
Decommunion ORIGINAL INSTALLAT Of Intant Number	ION Notice	Property Owner	Gentechnical S	od Boring	
ay onan pamaer			univar 1 S. 212th St.		_
onsulting Firm PES Environmenta	l-Seattle	City Kent		unty 17-King	7
Inique Ecology Well II)		Location 1/41	W 14NW Sec 12	EW EW	ME)
ag No. BHB 421		1.000/00/	AM 14 MM 292 15	TOWN ZZN 84E W	(2)
FLY COMPRESCRION CERTIFICATION: Louisburnel	make record committees for	Lattliong (k.t.c. Lar)	Dep. x	Lat Min/Sec s	
encontrol of this well, and the compliance with all Withline	ton well enadeursten standerla	still Required) Long		Long Min/Sec x	
ni mala med and the suferiordice reported above are least to		Tax Parcel No 122	2049053		
Miller Traince Name (Print) Elijah Floy		Cased or Unexact Disc	neter 1%	State Lavel	4.
hiller Trainee Luccuse No. 2842	7-				_
		Worse Decommunicate S	(int Date 5/17/2)	21.1	
france, licesites drillers		Worth/Duromunistan /	completed Date 5/2	0 /2011	
guine and sterile ive			Outpesse Date	76-11	
Construction Design	7	Well Data W11-289	Form	ation Description	-
	BACKFILL	39 Bestonte gree 7	Soud 70%, Some would Dark guy looke	42 FT E. S. 11ts Fine wetey' almost black	
			- 0	JUN 14 2011	300

ISOBAIT ONE WELL REPORT PER WI Construction/Decomposition			ce of Intent No. REO588	-
Construction.	417086	,	Type of Well Resource Protestion	
Decembra aga ORIGIN II. INSTALL	ITTON Notice		Geotechnical Soil Boring	
of Intent Number		Property Owner Univ. Site Address 8201 S.	ar 212th St.	
Consulting Firm PES Environmen	tal-Seattle	City Kent	County 17-King	
Unique Ecology Well ID Tag No. BHB 423		Location 1/a NW	1/4 NW Sec 12 Town 22N F	MAE MANN
CELLA COMMETTICUES MAN CERTIFICATION: A consensed		Lat/Long (2,1,1 Lat Deg. still Required) Long Deg		
I Merjal's weed smill the fed compactors a portent above use true		Tax Percel No. 1222045		
Miritier Trainee Sane (Print) Elijah Fl Driller Trainee Sigrumus Eco Fi	ovd.	Cased or Unessed Diameter	144 E	is Level 4
Onlier/Thanse: Luceuse No. 2842	*	Work Decompsion Start D	Line States	-
Figuree, Juesned drillers'				
Signature and License No.			seed thate 5/20/2011	
Construction Design	W	eli Data W11-289	Formation Descript:	on
	CONCRETE SUF	3' FT	8"concerte silts Sand 70%. Fine we Some word, almost b	tey" het
	BACKFILL	FT	0 -	EL
		parthud cencut		
	N .			
			0	TT
				-
			RECE	2011 ON 1
			1	
	DEPTH OF BORING	42' FT	JUN 14	2011

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

Construction/Decommission 417088		Type of Well X Resource Protection	
Deconunissica ORIGINAL INSTALLATION Notice rd Intert Number	Property Owner Univ. Site Address 8201 S.	Geotechnical Soil Boring	
Consulting Firm PES Environmental Seattle	City Kent	County 17-King	
Chique Ecology Well III Fag No. BHB425		/4 <u>NW</u> Sec 12 Town 22N R	4E WWM
ALL CAMPATRICATION CERTIFICATION: I constructed in the accept temponishing for materialism of the well, and its compliance with all Wesbiggton well construction standards		x Let Min Seo x Long Min/Sec	
faircials and and the information reported above me true to my bed knowledge and bedief.	Tax Parcel No. 1222045		
Vitalier Trainee Name (Print Elijah Floyd	-	1/z Stas	stant 41
Initiary Trainee Signature Initiary Trainee Lanerise No. 2842.		100 - 100 to 100	C Later 1
Funines, heasted dedless	World Decommission Start D	5/17/2011	
Agrantic and License No	Work/Decommision Compl	ered Date 5/23/2011	
Construction/Design (Vell Data W11-289	Formation Descripti	en
BACKFUJ.	3° FT 39' FT Butkudcenest	8 concrete, silts, so Fine, weterfall black in color, loos	nest
		_ 0	FT
DETH OF BORING	. 42 rr	RECE M JUN 14	2011

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

ATAMIT ONE WELL REPORT PER WELL INSTAL	(LED)	Notice	of Intent No.	AE/32
unstruction/Decommission	117090		Type of Well	
			Resource Protocures	
Decommission ORIGINAL INSTALLATION Note of Frient Number $R \in \mathbb{N} S$	882 Property	Commercial Maria	Geotechnical Son Borning	
AEAS	Site Add			
onsulting Firm PES Environmental-Seattle	City Ken		County 17-Ki	
nique Ecology Well III ag No. B.H.B. 420	Location	. 1\4 NM	14 NW Sec 12 Town 22N	R4E EWAI
THE CONSTRUCTION EXECUTED ATTION: I communical units steeps	especialist to Lat/Long	(s.t.f Lat Deg	x Lat Min/Sec	4.
otroclics of the well-end is compliance with all Washington well cand		ired) Long Deg	a Long Min/Ser	
(Driller Trainee Name (Print) Elijah Floyd	edge ind belief Tax Parce	No 12220490	153	
Her/Prince Strenge Lat Flag of	" Chied or II	nessed Diameter	11/z si	atic Level 4"
alter/Trance License No. 2842		commission Start Dat	5/17/2011	
Bruinee, licestred dellers'	1000			
guature and Greenes No.	Work/De	contrasion Complete	od Date 5/20/2011	
Construction/Design	Well Data W1	1-289	Formation Descrip	Mon
BAC	ERFILL 39	FT FE SNUT	8"coverete, 511 Soud 70%, Fin Some wood wer Dank gray almost loose.	ts tey t bhek rr
			RECE,	TO THE STATE OF TH

RESOURCE PROTECTION	ON WELL REPORT	CURRENT	22-4E-
SUBJUT ONE WELL REPORT PER WELL.		Notice of Intent No.	AF/3:
Canstruction/Decaments sun	417692	Type of Well XResource P	
Decommission ORIGINAL INSTALLATIO of Intent Number R	Notice 505882 Property (Site Addr	Geolectinic Owner Univar ess B201 S. 212th St.	ai Soil Bering
Consulting Firm PES Environmental-S			County 17-King
Unique Boology Wall ID Fig No. BH 8 421	Location	1/4 NW 1/4 NW Sec 12	
SEEL CONSTRUCTION CENTERCATION Communication and services and services and services are serviced and services and services are serviced and services are serviced as a service serviced	ven contra chon standarda still Requi	s,l,r Lúl Dèg s red) Leng Deg s	Lat Min/Sec 1 Long Min/Sec 1
Internal and the incommission operated shown in the takey. Internal presence Name (Print) Elljah Floyd Drelles Trainee Signature Ell Floy	1 ax Paroc.	No. 1222049053	Static Level 4
Onlier Travez Greense No. 2842	World/Dec	oranision Surt Date 5/17	7/2011
f trainee, licested drillers'			2.40
Signature and License No		ommission Completed Date	120/2011
Construction/Design	Well Data W11	-289 Fc	ormation Description
	BACKFILL 39	FT Sandaring San	ete sitts Enc weter of almostblack
	DEPTH OF BORING 42	FT (3	E JUN 14 2011 2

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on this Well

The Department of Ecology does NOT Warranty the Data and/or the

RESOURCE PROTECT ISCEMIT ONE WELL REPORT PER WEIL		PORT	CURRENT Notice of Int			AF/3
Сонярыейон/Decomodyston	417095		Type	of Well	m	
Decommission ORIGINAL INSTALLATI Of Intent Number	UN Nonce 8E05882	Property Owner	□ Ge	nteclinical Soil		
Consulting Firm PES Environmental		Site Address City Kent	8201 S. 212th S		17-King	
Unique Ecology Well ID Tag No. BHB 425		Location	1/4 NM 1/4 VA	Sec 12 You	11 22N R4E	(ELIST)
NETT FORSTURATION CERTHIPATION. Communication of the well and the communication of the well and the communication of the well and the communication of the second the communication of the communicati	on well construction standards ay best knowledge and besirf	still Required) Tex Parcel No	Lorg Deg a 1222049053	Long	Min/Sec	1
OniPer Trainere License No. 2842	7		ion Stan Date	V September 11		
Figures, licessed didlers' Signative and License No.		Work/Decommis	ion Completed Due	5/23	12011	
Construction Design	We	Il Data W11-289		Formation	Description	
	— CONCRETE SURI	39'	FT Sible	o - 92 concrete, si ve, we t cek in celo	ilts, sauce Gy'almes in lease	<i>†</i>
	DEFTH OF BORDING	42	FT	RE JUN	CEIVE	3

11 () 11 (15	Li, INST, LLED)	No	lice of Intent No.	1	AE/
Emistruction/Decommission	417096		Type of Well	1.16	
Condition No. (2000)	TOTAL GLASS		X Resource Pr		
Decommission ORIGINAL INSTALLED of Intert Number	RE05882	Property Owner Un	Genteclusion var	a sen poring	
		Site Address 8201 S	3. 212th St.		
Consulting Firm PES Environmenta	al-Seattle	City Kent	(County 17-King	1KWB)
Unique Ecology Well ID		Location 1/4 NV	14NW Sec 12	Town 22N R48	
Tag No. BHB 426 WELL-CONSTRUCTION CERRITICATION CERRITICATION CERRITICATION CERRITICATION CERRITICATION.		1.005 200 6 10 1 470 0		to the m	Junuary.
construction of the well, and its constructe with all Wastern		Lat/Long (s.t.r Lat Dep still Required) Long D		Lat Min/Sec Long Min/Sec	1
) (pleased a mord and the information /s ported above see from to	my bed knowinths and belief	Tax Parcel No. 12220		-	
Monitor Transc Name (Print) Elijah Flo	yd ,				· ur
On their Triance Signature EET F	Toyd	Cases or Uneased Diamet	11/2	State	Level 7
		World Decommission Start	Date 5/17	2011	
If trainee, Jacesned thilters' Signature and Literase No.		World/Decommission Com.	Variations 5	124/2011	
					_
Construction Design	1	Well Data W11-289	For	mation Description	-
A PART OF THE PART	Contraction (Contraction)	and the color	1	2,21	1
The second of th	CONCRETE SU		0 -	74 1	T
		3' гг	En llow	te silts so	Nels 70%
TOTAL MEDICAL CONTROL OF			234411	nell 15 0 74	me Wood
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			Elmost.	42' sets sets sets to 8'son	law
		8:2	Elmost. luose	black in co	iau
	— BACKFILL		elmost.		T
	BACKFILI.	FT	elmost luciz		
	BACKFILI.	39' FT	Elmost loose		
	— BACKFILI.	39' FT	Elmost loose		
	— BACKFILI.	39' FT Portlandament	elmest.		
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	— BACKFILI.	39' FT Portlandement	elmest local		T
	— BACKFILI.	39' FT Portlandement	elmest local		T
	— BACKFILI.	39' FT Portlandement	elmest locas		T
	— BACKFILI.	39' FT Portlandement	0 -	RCEID	7
	BACKFILL		0 -		7

			22-4E-12
RESOURCE PROTECTION WELL RI		RRENT	AE11681
Construction/Decommission //oc. =/ 9	7.333	Type of Well	110000
Construction 400 569		X Resource Protes	et iou
Decommission ORIGINAL INSTALLATION Nauce		Gentechnical Si	
of Intent Number 5208820	Property Owner		on Bound
	Site Address 80	01 5. 02/25	to St
Consulting Firm PES ENVIRENMENTED	City Kent	Con	nty King
Unique Ecology Well ID Tag No. W/A	Location 1/4 Nic	114 NUSec 12 T	WIN ZZNR UE IN
WELL CONSTRUCTION CHRYLECATION: I condumeted audion accept responsibility for	Lat/Long (s.t.r Lat Deg.	v 1.	
sources, the of this well, and its compliance with all Washington well as correction standards	still Required) Long Deg		nag Min/Sec
Materials used and the information reported above are true to my best supplied and belief	Tax Parcel No.		
N Doller Transec Name (Print) Elijah Floyd Dritter/Transec Signature DE Floyd	A	24.	Static Level 8
Oriller/Trainee License No. 2842	The Mark Street		The second second
	Work/Decommission Start D	ale 12/1	8/2010
f tramee, ficesned drillers'	and the second second	10.1	- /-
aignature and License No.	World/Decommission Comple	ned Date 12/	8/2010
Construction/Design W.	ell Data 1010-6 13	Format	ion Description
BACKFILL B	32' FT	Solts Saw Sury, loss then Sawal Dark black	SEND, SMAIL SC, Dank SC, Dank St 40% Dank et o 25' \$ 80%, Compact K, Dense, Very FT
DEPTH OF BORING	<i>36</i> FT	14	ESOURCES TO SERVICE SOURCES

RESOURCE PROTEC' SLBAIIT ONE WELL REPORT PER WE			RRENT ce of Intent No. 588 9857
Construction/Decommission	466446		Type of Well
Construction	706996		X Resource Protection
Decommission ONIGINAL INSTALLA	TION Notice		The state of the s
of Intent Number		Property Owner	Tanimar
Consulting Firm PES Env	lake aco	Site Address - 8	Geotechnical Soil Boring Animal SOI S. SIJEN SI. County King
	Checker	- Alend	O EWA
Inique Ecology WellID		Location 1/4 Ju	14 Na Sec 12 Twn 22 R 4E 11
VILL CHANGER CHON CERTIFIC ATION. Learnings	d antiqui access reconstitible. For	Lat/Lang(str Lat Dec	x Lat Min/Sec .
managara of the well, and its enough more with all Washi		still Required) Long Deg	
atenuls men and the information reported above are true i	may hex knowledge and belief	Tax Parcel No.	
Driller Transce Name (Print)	Here Stivers	The state of the s	2 1/ 1/
	1	Cased or <u>Uneased</u> Diamete	
iller/Trainee License No. 2965		Work/Decommission Start E	ate 1 - 3 - 1 d
traince, licesned drillers'			
gnature and License No.		Work/Decomm(sion Compt	eted Ditte 1 - 3 - 14
Construction/Design		Maria - maria si -	3 C Formation Description
7		Der O To I	
	CONCRETE CHI	TA OF CEAL	701
viiiiiiiiiiii	CONCRETE SUI		black sals
		0-4 FT	Whate, sonds
			w/ graves
	- BACKFILL	4-70'1	0 FI
	Britain iae	Bend Chip	
		Road Class	
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	1		FF
	11		
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	T.		
			CED
			Spring.
	and the last of th	231	/ 5
	DEPTH OF BORING	20' H	(\$ FEB 16 2011 g)
			10 110

(SUBMIT ONE WELL REPORT PER WEL Construction/Decommission			Type of Well	5809007	
X Construction	406447		X Resource P	rotection	
Decommission ORIGINAL INSTALLAT	70N Vauce			al Soil Boring	
of Intent Number	To produce the second		(1)		
Consulting Firm PES			201 1. 5	012 H.	_
Consuming Firm (C)		City Kent		County King	EW
Unique Ecology Well ID		Location 1/4 Nu	I'M Ned Sec 1.	Z TWO ZON R YE	79.
Tag No. NOTAT	and the second second states of	Lat/Long (s.t.r Lat Deg		Lat Min/Sec	11/11
ommunion of the earl, and its compliance with all Washing		still Required) Long De		Long Min/Sec	
hospita med acil the information reported above are true to	my heat know ledge and belief.	Tax Parcel No			
	tere Streets	Cased or Uncased Diameter	3/1	denso e ···	
Oriller/Trainee Signature 2965 Oriller/Trainee License No. 2965					-
		Work/Decommision Start	Date 1-4-	11	
Figurinee, licesned dritters' Signature and Lacense No.		Work/Decommission Comp	loted Date 1-6	2-11	
		The Design of the State of the			
Construction/Design	W	ell Data W10-6730	Z Fo	rmation Description	
	— BACKFILL	2-4 m Bud. Chip		- 4. * ft	
				RECEIVED	1
	DEPTH OF BORING	4 FT	WATE	FEB 1 6 2011 0	

RESOURCE PROTECTION WELL (SUBMIT ONE WELL REPORT PER WELL INSTALLED)	REPORT CURRENT Notice of Intent No. SEA 9007.	RESOURCE PROTECTION WELL R	EPORT CURRENT Notice of Intent No. AE 1145
Construction/Decommission / 14/ / /	Type of Well	Construction/Decommission 466444	Type of Well
Construction/Decommission 406 448	X Resource Protection	Construction 466444	X Resource Protection
Decommission ORIGINAL INSTALLATION Notice	Georgechnical Soil Boring	Decommission ORIGINAL INSTALLATION Notice	Geotechnical Soil Boring
of Intent Number	Property Owner Univers	f Intent Number SED 9007	Property Owner Theirs
ALLA BOO	Site Address 8201 d. 212th St.	Consulting Firm PES Can comental	Site Address 8301 1. 31357 28.
onsulting Firm PES	City Kent County King	5 consuming rim 103 car ramental	City Ken & County King
sique Ecology Well ID	Location 1/4 N/W Sec /2 Twn 220 R 44E M	Unique Ecglogy Well ID I'ag No. NTAL TINSTEE CHOX CERTIFICATION: Leonantical annine sector responsibility for	Location 1/4/10/14/14/Sec /2 Twn 20 R 4E or
3. CONSTRUCTION (SECTIFIC VIOLES) security and a secret responsibility to	Lat/Long (s,t,r Lat Deg x Lat Min/Sec x	MILL TIDATES THOSE CERTIFICATION I continued about a social responsibility for	Lat/Long (s,t,r Lat Deg r Lat/Min/Sec r
ructur of this well and its complement with all Witchington well construction standard	still Required) Long Deg s Long Min/Sec s	toward the of this well, and its compliance with all Washington well committee a sendards	still Required) Long Degi Long Min/Sec,
nemals used and the information reported above are tool to my best knowledge and Selief	20X FM(CCL)SO	Minerials used and the information reported above are true to my beal knowledge and belief	Tax Parcel No
Driller Timinoe Name (Print) Steve Stive	J 21/ "	Sylpriller Traince Name (Print) Opriller/Traince Signature Shows	Cased or Uneased Diameter 3 1/4" Static Level -
iller/Trainee Signature	Cased or Uncased Diameter 3 1/4 " Static Level	Oriller/Trainee License No. 25165	
Her/Trainee License No. 2865	Work/Decommission Start Date ~ 4 ~ //	TO	Work/Decommission Start Date 1 - 3 - 1
trained lidesned drillers'		g l'trainee, licesned dritters'	
mature and License No.	Work/Deconunision Completed Date 1 - 4 - 11	Tignature and License No.	Work/Decommission Completed Date / - 3 - 14
Construction/Design	Well Data W16-6-73C Formation Description	0	cell Data re) 173 - 62 73 C Formation Description
CONCRETE	O-3 FT brown sands U/gravels	CONCRETE SUR	O-4 FT While saids
BACKFILL	3 \$ -15 'FT _ a FT		4-20'FT 0 FT Bend, Clap
	FT	Department of	FT
DEPTH OF BOR	JNG <u>15'</u> FT FT FEB 1 6 2011 _	DEPTH OF BORING	20 ' FT
le I*=	Page of Resources	cate 1" = Pa	igeofECY USE TOURCES

RESOURCE PROTECTION WELL		RESOURCE PROTECTION WELL RE (SUBMIT ONE WELL REPORT PER WELL INSTITLED)	
Sandardia (Danamahda	Notice of Intent No. 2811955	Construction/Decommission	Notice of Intent No. 1 AE 11 555
0 46645	7 Type of Well	Construction/Decommission Construction Construction	Type of Well
Construction.	X Resource Protection		X Resource Protection
Decommission ORIGINAL INSTALLATION Notice of Intern Number 5 & 9007	Geotechnical Soil Boring	Decommission ORIGINAL INSTALLATION Notice of Intent Number SE09007	Geotechnical Soil Boring
	Property Owner Thrisand Site Address 8 801 1 212 4	E	Property Owner Harris Site Address 8201 S. 2124 11-
Consulting Firm PES	City Kent County King	Consulting Firm	City Kint County King
Unique Ecology Well ID	Location 1/4 N/W 1/1/ Sec 1/2 Twn -2004/ R VE " WINST	Unique Ecology Well ID Tag No. WILL CONSTRUCTION CURTIFICATION / Acoustive and an accept responsibility for construction of network and as compliance with all Washington well construction standards.	Location 1/4 Nic 14 Nic Sec 102 Twn July R 1/15 or
A FEE CHANTELCTION CERTIFICATION Leanuracted unit-o- accept responsibility t		WITH CONSTRUCTION CERTIFICATION I continued audior accept teleponibility for	Lat/Long (s.t.r Lat Deg x Lat Min/Sec a
Construction of this well shall be complined with all Washington well construction transfar		 construction of this well, and descriptioned with all Washington well appropriate. 	still Required) Long Deg . Long Mm/Sec .
Alaserials used and the inflormation reported above are true to my best knowledge and believe	Tax Parcel No.	Afairtising listed and the information reported above are type to my heat knowledge and better	Tax Parcel No.
N Driller Trainee Name (Print) Slock Strong	Cased or <u>Uneased</u> Diameter 3/4 " Static Level —	Construction of messed and its constitute with all Washington well anotification about the design of the information reported above are true in my health who being and better a Northern Traince Name (Frint) Oritler/Traince Signature Oritler/Traince License No. 23765	Cased or Uncased Diameter 3 1/4 " Static Level
Driller/Trainee License No. 2965		Driller/Trainee License No. 736	
ra .	Work/Decommission Start Date / - 4 - 1/	g	Work/Decementsion Start Date 1 - 4 -//
Il trainee, licesned drillers!	1.44	B If trainee, Recented drillers' Signature and License No.	46.20
Signature and License No.	Work/Decommision Completed Date [-4-//	Signature and License No.	Work/Decommission Completed Date 1 ~ 4 - //
Construction/Design	Well Data 10/16-673C Formation Description	Construction/Design Wel	Data 10/6-673@ Formation Description
CONCRETE BACKFILL BACKFILL	SURFACE SEAL Q - 2'FT C 11' Z'-4'FT Bool. Chip	BACKFILL 3	ACE SEAL. O - 3' FT brow - Souds W/ gravels Sout Chy
DEPTH OF BOR	Pageof	DEPTH OF BORING	FEB 16 2011 OF THE SOURCES THE

PROJECT NAME: U.S. WEST - KENT GARAGE COUNTY: KING COUNTY: KING-LOCATION SW 14 NW SOC / TWO ZZN R 4E WELL IDENTIFICATION NO. AFG 362 DRILLING METHOD. HSA
DRILLER: Steve Hughes
FIRM: Cascade Drilling, Inc. STREET ADDRESS OF WELL: 19616-68DAVES Kent WATER LEVEL ELEVATION: 15 N/A CONSULTING FIRM AGRA EXE REPRESENTATIVE Dec Gardiner DEVELOPED: 9637 WELL DATA FORMATION DESCRIPTION AS-BUILT 0 20 ft. WELL COVER CONCRETE SURFACE SEAL DEPTH = 1/ft BACKFILL TYPE: BENTCH PS PVC SCREEN 2 "x 15" t SLOT SIZE: O(O GRAVEL PACK 17 ft RECEIVED MATERIAL: DEC 2 1 1999 NWRO-WR DEPT UT EUULUGY WELL DEPTH 20.2 SCALE IT PAGE ECY 050-12 (Rev. 11/09)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

WELL IDENTIFICATION NO. AF	STRE	TION SULV. NWW. SOC / TWN ZZN R LE
DAILLER: Steve Hugh		616-68th Ave 5 Kent
SIGNATURE SIGNATURE	d GRO!	IN LEVEL ELEVATION: 15 UND SURFACE ELEVATION: N/A
CONSULTING FIRM AGRA I		ALLED: 11/17/55
HEPHESENTATIVE	9637	ECOPED.
AS-BUILT	WELL DATA	FORMATION DESCRIPTION
		1
। एस । । इस	WELL COVER	0 20 ft.
	TIBLE COVER	CORSEA LIVE GER
+ 13 13	DEPTH = 1/ft	SILLY SANA
	17.55	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	PVC BLANK 2 "x6	ft.
T	BACKFILL 3 ft.	
1 3 3.	TYPE: BENTELLIPS	
	A STATE OF THE STA	ft.
	1	13
	PVC SCREEN 2 "x/5"	
	SLOT SIZE; O10	-
	GRAVEL PACK / 7 ft.	
	MATERIAL: 2/12	
		RECEIVE
T G		DEC 2 1 1999
		NWRO-WR
		DEPT OF ECOLOGY
	WELL DEPTH 20 · 2	<u>n</u>

PROJECT NAME: U.S. WEST- WELL IDENTIFICATION NO. A FO DHILLING METHOD. HSA DRILLER. Steve Hughe RAM. Cascade Drilling BIGNATURE: CONSULTING FIRM AGRA E REPRESENTATIVE Dec GAR	KENT GARAGE COUNTY; 25 363 LOCATION STREET A 1961 , Inc. WATER LE GROUND: WE INSTALLE Todiner DEVELOP:		Construction/Decommission ("x" in circle) Construction Construction Decommission Original Construction Notice of Intent Number Property Owner Vacant Unique Ecology Well ID Tag No. AKB 923 Consulting Firm Fardlan	Type of Well ("z" in circle) Resource Protection O Geotech Soil Boring Site Address 5. 20st St & Frager Ru City Kent County: King Location 5 1/4-1/4 NW 1/4 Sec 2 Tw/23N RAE EM or
AS-BUILT	9637 WELL DATA	FORMATION DESCRIPTION 0 175 ft.	Driller or Trainee Name Driller or Trainee Signature Driller or Trainee License No. 2073	Lat/Long (s, t, r Lat Deg Lat Min/Sec Long Deg Long Min/Sec Tax Parcel No
	CONCRETE SURFACE SEAL DEPTH = 1/ft PVC BLANK & "x 5 '	COMPSS of fine Carry Silly SAND	Construction/Design We	Work/Decommission Start Date 8/12/04 Work/Decommission Completed Date 8/12/04 Il Data 4469 -1 Formation Description
	BACKFILL 3 IL. TYPE: FENICH PS PVC SCREEN 2 "x/2.65 SLOT SIZE: (2/0)	- ft.	Depth=	Surface Seal
	GRAVEL PACK 14 ft. MATERIAL: 2/12 17.5 2 " WELL DEPTH 15 "	RECEIVED DEC 21 1999 NWRO-WR DEFI OF ELULUS	Material	
CALE: 1" »	PAGEOF		Well Depth Backfill Material Total Hole I	

Seco	Original and First Copy With interest of Ecology and Copy — Owner's Copy Copy — Origer's Copy	
	OWNER: Name West	
(2)	LOCATION OF WELL:	
(2a)	STREET ADDRESS OF	١
(3)		
(4)	TYPE OF WORK: OW	
	Aberdoned New Check Dress Recor	
(5)	DIMENSIONS: Durret	

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men Cord No. A 16281

Ecology is an Egyal Opportunity and Alfirmative Action employer. For special accommodation needs, contact the Water Resources Program at (206) 407-8800. The TDO number is (206) 407-8006.

OWNER: Name Western Processing	20015 72nd Ave. S. Kent, Wa. 98032	
LOCATION OF WELL: County King	SW 14 NW 148c 1 + 22r	1 14 40 W
STREET ADDRESS OF WELL (20015 72nd Ave. S.	Kent, Wa. 98032	
PROPOSED USE: Domestic Industrial Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE DE	BCRIPTION
DeWate: Test Well (1) Other 15	Formston: Describe by color, character, item of meantel and structure, and shared the land and nature of the meantel in each stratum parastrased, with at change of information.	on thickness of inquite least one entry for ear
TYPE OF WORK: Owner's number of well EPA-28	MATERIAL	PROM. TO
Abendoned New well Method: Dug Bored Decomed Policy Origin Paconditioned Policy Jefad		
DIMENSIONS: Durneter of real 2 inches		
Drived hest Depth of completed well 12 A		
Direction of the control of the cont	Set up auger rig and pulled out 2" stel	
CONSTRUCTION DETAILS:	pipe. redrilled to 12' with 4 1/4 auger.	_
Casing installed: Deen, from 1. to 1. Welded 1. Claim, from 1. to 1.		
Walded	Withdrawii	-
Perforations: Yes No		
Type of perforations in. by in. by in.		
perforations from ft. to ft.		
perforations from ft. to ft.		
perforations from it to		1-11
Screens: Yes No 🗆	DECEMEN	
Manufacturer's Name	RECEIVED	
TypeNextel No		
Diarn, Slot scre from ft. to t		
Diam Stol eze from R to h	FEB 1 0 1997	
Gravel packed; Yes A No Size of gravel		
Gravel placed from n. to n.	Department of Ecology	
Surface seal: Yes	Doparation of Couldn't	
Material used in seed Did any screek contain unusable water? Yee No		
Del mil terre co.m. a come a come		
Type of waters Depth of stress Depth of stress		_
PUMP: Menutecturer's Nerve		
Тура.	6/12/06	96 .18
WATER LEVELS: Land-surface elevation above mean sea level	Weak Barted 6/13/96 16. Completed 6/13/	1010
State level E, bolor top of wall Date	- WELL CONSTRUCTOR CERTIFICATION:	
Artesant pressure	I constructed and/or accept responsibility for construction	of this well, and I
(Cap. valve, etc.)	I constructed and/or accept responsibility for construction controllance with all Weshington well construction sanderds the information reported above are true to my best knowledge	e and belief.
WELL TESTS: Orandown is amount water level is lowered below static level	Tacoma Pump & Drilling C	o., Inc.
Was a pump lest made? Yes No If yes, by whom?	MAME PRINCIPE OF COPPOSITION (TYPE OF	PRERTY
190	30316 Mnt. Hwy, Graham,	WA 9833
	" (Shored) Jane Lynd: Ucare	Mn. 0987
Recovery data (time taken as zero when pump surred off) (water level measured from we lop to vester level). Time West Level Time West Level Time West Level	Correscions	
	No. TACOMPD203PF De 2/4	199
	(USE ADDITIONAL SHEETS IF NECESS.	ARW

_ gom Dese

Temperature of water ECY 050-1-20 (9/80) * * (

Third Copy — Driller's Copy (1) OWNER: Norma Western Processing	Adon	20015 72nd Ave. S. Kent, Wa. 98032		
2) LOCATION OF WELL: County King		SW IN NW Wilse 1 Y	22n n. n. 4	40
(2a) STREET ADDRESS OF WELL (or recover extract) 20015 72nd	Ave. S. K			_
(3) PROPOSED USE: Domentic Industrial Municipality Industrial Deviation Dewards: Test Well (7) Officer	***	(10) WELL LOG or ABANDONMENT PROCEDURE Formation: Describe by color, character, sites of material and structure, and the little and nature of the material in each stratum preservated, with	DESCRIPTION OF STREET	DH H D A
(4) TYPE OF WORK: Owner's number of well EPA-10		charge of Information.	PROM	
Abendoned New well Mathod: Dug R	tven() tven()	MAT STORM		E
(5) DWWENSIONS: Degrees of west	2 inches.		-	-
Drawd		Set up auger rig and pulled out 2" stel pipe, redrilled to 15' with 8 1/4 auger.		
Casing lossalled: * Dism. fromfl. to		grouted up hole as augers were		
Western P. to	- 12	withdrawn	-	-
		4 x 50# of bentonite grout used		
Perforations: Yes		4 X 50W OF Delitorinte grout dated	- 0	
SIZE of perforations M. by	n			
perforestons fromft. to	A			+
perforations from				
Screens: Yes No No		RECEIVED		
Manufacturer's Name		RECEIVED		-
Type	-		+	+
Diem Siot size from 8. to Diem Siot size from 8. to 10	e	FEB 1 0 1997		
Gravel pecked: Yes No Size of gravel				-
Graver placed fromft. to	n	Department of Ecology	+-	+
Surface seel: Yes No No To what depth?		Dopai arrait or Ecology		
Material used in seek	_			
Old any stream contain unuseble water? Yes Depth of stream			-	+
Method of smaling strata off			1	+
THE PARTY CO. L. L. CONTROLL				I
(7) PUMP: Merufacturer's Nerro				1
(8) WATER LEVELS: Land-outline shareful above from the lives		Work Barried 18. Correlesed	_	=
State and		WELL CONSTRUCTOR CERTIFICATION:		
Artesian preserve be per square into Date Artesian water is controlled by (Cap. valve, etc.)		I constructed and/or accept responsibility for construct compliance with all Washington well construction stand- the information reported above are true to rity basis know	sion of this w	rei, i
	-	the information reported above are true to my best know	ledge and bei	let.
(9) WELL TESTS: Drawdown is amount water level is lowered below state Was a pump lest made? Yes	hrs.	HAME Tacoma Pump & Drilling		_
		Address 30316 Mt. Hwy. Graham, Wa. S	98338	_
* *		(Borns) / Janey Ungpel, a	cense No. 01	987
Recovery data (sme taken sa zero when pump lumed off) (water level means top to water level).		West owners		
Time Weter Level Time Water Level Time	Water Level	Contractor's Rectarretion		
		No. TACOMPD203PF Des	107 1071	4
		(USE ADDITIONAL SHEETS IF NECE	SSARY)	

24 19 97

Ecology is an Egual Opportunity and Alltimative Action employer. For special accommodation needs, contact the Water Resources Program at (206) 407-8600. The TDD number is (205) 407-8008.

ECY 260-1-20 (MS3) ***

Date of test

gel /min. with stem set at

What a chamical environis made? You 🗌

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

DRIL DRIL	JECTNAME: WESTERN LIDENTIFICATION NO. PRO LING METHOD: DIRECT F	BES # 1-6 PUSH	STREET ADDRESS	NC1 NUV4 Sec 1 TW OF WELL: Hh S+	
FIRM SIGN	E NORTHWEST CONE HATURE: Keth Br BULTING FIRM: OHM REL	EXPLORATION .	GROUND SURFACE INSTALLED: DEVELOPED:	VATION: <u>UNKNOWN</u> EELEVATION: <u>UN</u> 3-20-97 3-20-97	KNOWN
	AS-BUILT	WELL DATA		FORMATION DESCR	IPTION
0+	1.75" O.D. BAT SAMPLER PUSHED TO SAMPLE DEPTHS. FRICTION RING			soft silt	d saud
40+	GROUTING FULL DEPTH USING HAH SOLIDS BENTONITE GROUT.	— sample @ — sample @ — sample @	55'	Dense Sand	5 2
80+	6 Probes on No soil info OHM Remediation Processing sile	mation retreive	1	Development n Lub on l	western
1				DEPT. U	ECEIVEL PR 18 1897 Chuluny

MASHINGTON STATE RESOURCE PROTECTION WE	Start Card #	
(1) OWNER/PROJECT: WELLNO. RP-18 Name Western Fracessins Address 20015 77 at AVE. 50.	(6) LOCATION OF WELL By legal description Well Location: County L'As Township 22 (Nor's) Radge 4 (B)r W) Section L SW 14 of W 1/4 of above section.	
GOV MENT SING WILL - ZID 9803 K	Ava. So. Kent Wa.	, **
New construction Alternation (Repailer Recondition) Conversion Despiting Absolutions	ATTACH MAP WITH LOCATION IDEA TO THE APPROXIMATE APPRO	_
(3) DRULING METHOD Rosary Air Roury Mud Cable Hollow Stem Auger Doher	8 Pt. below land surface. Date // / / / / / / / / / / / / / / / / /	
A BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES: Dapth at which waser was first found: 20	
Special Sanadards Depth of complesed well 26.5 ft.	From 15 Ear Flow Ram SW 20 27 2 90%. 8	
Prosective casing Prosective post		
Land sortico	(9) WELL LOG: Ground elevation	SWL
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28.00 Bore H more Prom		
Saa da Good Saa da	Sago	
(5) WELLTEST: Air Plowing Areas	k	
Conductivity PH Conductivity PH PAC Depth attualist flow found	_t	
Whe water acalysis done? Wes No	12 Date spared 7/19/87 Complete 7//3	1
Depth of street to be analyzed. From the to Remarks: Nemer of supervising Geologian Engineer Tiby Bet.	- 0287	1301

WASHINGTON STATE RESOURCE PROTECTION WI	ELL REPORT	-	west person
r rentr	COLL Start Card # 00 2 1 70	WASHINGTON STATE RESOURCE PROTECTION	Start Card #_
(1) OWNER/PROJECT: WELL NO. M. 58	(6) LOCATION OF WELL By legal description Well Location: County 1/145 Township 2 2 (Nor 5) Raiden 4 (E)r W) Section 1	(1) OWNER/PROJECT: WELLING 5-16	CALOCATION OF W
20015 72 ad AVE. So.	CIVI was AVIAN 1/4 of shows sacroon.	Western Frecessing	Township 22 (Nors)
TYPE OF WORK.		2 Address 20015 72 and AVE 50 78032	a Distance Street address of Wi
	2. Either Street address of well location AVE. 50. TEAT. Was or Tax loc aussion of well location	(2) TYPE OF WORK.	AVE. 50.
New construction Alteration (Repair/Recondition) Conversion Deepening Abandonment	or Tax for maneour or water LOCATION IDENTIFIED. Map shall technical approximate scale and north arrays. OPTIONAL	New construction Attended (Authority	3. ATTACH MAP WITH LO approximate scale and oned
D DRILLING METHOD	(7) STATIC WATER LEVEL: S. P. below land surface. Desc. 2/18/9 2	P	(7) STATIC WATER I
Rosery Air Rosery Mud Cable	Arcosian Prossure Ib/eq. in. Dans	(3) DRILLING METHOD Rosery Air Rosery Mud (2) Cabbs	Armeium Pressum
A BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES:	Hollow Stem Auger Other	(8) WATER BEARIN
Yes No. 29,2	(6) WATER BEARING ZUNES S Depth at which water was first found S From 10 Ear, Flow Rais SWL	BORE HOLE CONSTRUCTION	Depth at which water was
Special Standards No Depth of completed well 28,2 to	8 9 2 gur 8	Special Standards Special Standards Depth of completed well 31.1	n From 10 37.5
Prosective Prosective			- A 3. V
passet monument		Proxective casing post	•
	(9) WELLLOG: Ground elevation 1/6	iment monument	(9) WELLLOG:
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(5) WELLTEST:	*	The part of the pa	30 ta
Pump Bailes Air		C (5) WELLTEST:	Armies
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FAC Depth errestian flow found	_ 6. /	Coedactivity PH	t .
Was water analysis done?	8. Date started 7/17/97 Completed 7/17/97	The Depth artosian now toused. Was want analysis done? ☐ Yes ☐ No	
Depth of series to be analyzed. From the to	6. Date desired TUTTE Comments of Care C		ft. Data started 7
Remarks: J. M. But	1/1-1 - 2/30/9	Depth of strata to be analyzed. From	
ORIGINAL + FRST COPY Dept of Ecology	SECOND COPY-CONSTRUCTOR THURL COPY-CUSTOMER	Name of supervising Geologis/Engineer 5: M Bet	Signal Signal Conf. CON
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Shart Card # 22178	WASHINGTON STATE RESOURCE PROTECTION WRITE REPORT 22-4-1E
(1) OWNER/PROJECT: WELL NO. 5-17 WESTERN FISCESS INS MACHINE JOURS 12 Ad AVE. 50. Cay Tight Story of WORK. (6) LOCATION OF WELL By legal description WELL No legal description While Location: Cowery It has The Wall Location: Cowery It has While Location of WELL By legal description While Location: Cowery It has While Location: Cow	(1) OWNER/PROJECT: WELLNO. P-57 O Hame Western Processing O Matterns 20015 72 and AVE. So. Cay West Start Via
Mew construction Attention (Repair/Recondition) Conversion Octooring Abandonment Attention (Repair/Recondition) Attention (New construction Alternation (construction Antacon May write Location Identification Advancement Antacon May write Location Identification Optional Sports and sead and send service optional Opt
(3) DRITLING METHOD Rosery Air Rosery August Dober Rosery August Dober Rosery August Dober (8) WATER BEARING ZONES:	O O Rouge Air Rougy Mid Cable Date Bories Bories in Date
BORE HOLE CONSTRUCTION Yes No Depth of complored well 32.9 ft. Special Standards Depth of complored well 32.9 ft. Locking cap	Special Standards Depth of completed well 45.0 ft. B Par Flow Rain SWL Locking cap
Proceeding Procedure Proceeding Procedure	Prosective casing Description Prosective Prosectiv
Monument to 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Monogramity O a. Social Social Manager of Social S
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(5) WELL TEST:	E GOOD STATE STATE OF THE STATE
Pennselvity Yield GPM Pennselvity PH Conductivity PH Theorem of water F/C Depth schelan flow found ft.	Conductivity PH FAC Depth propins flow floated ft.
What wearer analysis done? Yes No By wheren? Depth of strata to be analyzed. From the members of the place strategy #49/97 Company Company The place strategy #49/97 Company The place	Degrat of stress to de statistics
News of supervising Geologia/Engone J. In B.C. t. Signal Construction Thead COPY-CUSTOMER	News of supervising Geologis/Engineer J im Bet SECOND CONTRICTION THURD CONTRICTIONER THURD CONTRICTIONER THURD CONTRICTIONER

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2213 22.4E-1E	ENTEREN	WASHINGTON STATE RESOURCE PROTECTION WELL	1 22-4E-1E
WASHINGTON STATE RESOURCE PROTECTION WELL	Start Card # R 22/7/	(1) OWNER/PROJECT: WELL NO. P2-44 Wante We Starh Processing Address 20015 73 35 486 56	(6) LOCATION OF WELL By legal description Well Location: County 1/19 Township 22 (For W) Section 1
(1) OWNERPROJECT: WELLNO P2-55 Some We Stock P1::055/hg Address 20015 12 47 AVE 50 Cer Kent 100 WORK.	(6) LOCATION OF WELL By legal description Well Location: County N. 199 Townsum 22 (For 5) Range 4 (For 4) Section 1. SW 14-01 NW 14-01 above section 1. 2 Either Street address of well location 20015 7247- 4 V 2 Sw 14-01 NR	Cary Kent Sign Work Tip 98032 (2) TYPE OF WORK. Mew construction Alteration (Repair/Recondition) Conversion Decreasing Abandonment	Command AX 1996 Sange Command AX 1996 Sange Command AX 1996 Sange Sange
New conservation	or Tax lot number of well location 1. ATTACH MAP WITH LOCATION DENTIFIED. Map shall include approximate scale and meth arrow. OPTICNAL	(3) DRILLING METHOD Rotary Aur Rotary Mud Cable Hotlow Stem Auger Other	(7) STATIC WATER LEVEL: P. Pt. below land surface. Ariessaa Pressure 10/sq. ia. Date 6 / /4 / 9 ?
(3) DRILLING METHOD Recary Aut	(7) STATIC WATER LEVEL: Pt. below land surface. Date 6/13/97 Articlas Pessure 16/10, a. Date	BORE HOLE CONSTRUCTION	(8) WATER BEARING ZONES: Depth at which water was first found /8
Special Standards Depth of completed well 44.4 ft. Protective casing Protective Cas	(8) WATER BEARING ZONES: Depth at which water was first found From 16 Ext. Flow Nate 5 SWL	Special Standards Depth of completed well 25.0 ft. Protocuve casing Protocuve post Lind surface Monument Sp 9.2. Casing 2	From To Est, Flow Raise SWI. 18 76 2 9900 5
Monument On to 1901 On to 19	Silt fine might 14 28 8 8 Silt fine might 28 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Monument O ft. Seed Seed Seed Seed Seed Seed Seed See	Material From To SWL
Serial Solutions of the serial		Boreboie diameter	thic
Titler Once RECEIVED FFR vs	Filter Case Color of Case Color of Case Color of Case Case Case Case Case Case Case Case	FER 20	
(5) WELL TEST Pump Barler Ar Flowing Arcentan PH	DEPT OF ECULOGY	Conductivity PH Temperature of water Price pack Price pack Sale: Sale:	DEDT UP ECULOGY
By whem? Depth of sansa to be analyzed. From the Remarks.	Date stated 6/18/97 Company 6/19/97	By whom? Depth of strats to be analyzed. Fromft. toft. Remarks:	Date started 6 /18/97 Completed 6/19/97

12215 - CMTCI	REPORT 22.4E-IE. Start Card # 1/2 2/77 Ple
(1) OWNER/PROJECT: WELL NO PZ SUL SI Name We Stern Processing Address 20015 72 51 AVE - 50 Gry Rent Top 98032 (2) TYPE OF WORK	Solution Security
New construction	
(3) DRILLING METHOD Roury Aur Rolary Mod Cable Hollow Stem Auger Other	3. ATACH MAP WITH LOCATION IDENTIFIED. Map shall lockude approximate scale and north arrow. OPTIONAL (7) STATIC WATER LEVEL: Ft. below land surface. Artesuan Pressure Disq. in. Date
BORE HOLE CONSTRUCTION Yes No Special Standards Depth of completed well 800 ft.	(8) WATER BEARING ZONES: Depth at which water was first found Onlier Engineer Trainee Name (Print) and First found Print)
Protective casing Docking cap	From To Est flow Rate SWL 79 28 2 90 00 5 If trainee, licensed driller's Signature principles of the principle of the princ
Land surface	(9) WELL LOG: Ground elevation Construction Design
fonument O it O 00 O	Material From To SWL >
Seal 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	dec does
Filter 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	02/12
79.0 n.	The Department of San
WELL TEST:	

	, sign and return to the De			
RESOURCE PROTECTION W		JRRENT Notice of Intent No. AE19354		
(SUBMIT ONE WELL REPORT PER WEL Construction/Decommission ("x" in box)	L INSTALLED)	Type of Well ("x in box)		
Construction				
Decommission	2000			
ORIGINAL INSTALLATION Notice of Intent No	7,677,460			
On the Pine		ress End of 72 Ave so		
Consulting Firm \ Unique Ecology Well IDTag No. Landau Assoc	William Control	County WA KING		
	Country	sw1/4-1/4 nw1/4 Sec 1 Twn 22n R 4		
WELL CONSTRUCTION CERTIFICATION; accept responsibility for construction of this well, and its co	mpliance with all	or WWM		
Washington well construction standards. Materials used an reported above are true to my best knowledge and belief.	d the information Lat/Long still REQ	VIII COV		
		Tanig Deg Nin Sec		
□ Driller □ Engineer □ Trainee Name (Print Last, First Name) Hansen, Eric	'Tax Parce			
Driller/Engineer /Trainee Signature		Uncased Diameter Static Level		
Driller or Traince License No. 0710	Work/De	ecommission Start Date Oct 15, 2012		
If traince, licensed driller's Signature and Li	And I hambers	ecommission Completed Date Oct 15, 2012		
07	0			
Construction Design	Well Data	Formation Description		
		well ID: 5M4D		
		well depth: 145'		
		4" pvc		
		Well was drilled to state standards		
		according to well log and abandone		
		with 75 gallons of grout.		
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Ecology is an Equal Opportunity Employer

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				Associat	es. Inc.
Un	que Ec	ology	Well II	Tag No.	-
Wa Eps	pt respondington s ried above	well con we are n	for const struction ue to my	ON CERT rection of t standards best knowle	his well, a Materials
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				e Signate se No. 07	
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RESOURCE PROTECTION WELL REPORT SUBMIT ONE WELL REPORT PER WELL INSTALLED) onstruction/Decommission ("x" in bax) Construction Decommission RIGINAL INSTALLATION Notice of Intent Number: onsulting Firm Landau Associates, Inc. inique Ecology Well IDTag No. //ELL CONSTRUCTION CERTIFICATION: I consured and/or copt responsibility for einstruction of this well, and its compliance with all ashington well construction standards. Materials used and the information ported above are nue to my best knowledge and belief.		Type of Well ("x in bax) Resource Protection Geotech Soil Boring Property Owner Western Processing			
		Site Address End of 72 Ave so			
		City Kent County Wa KING			
		Location sw1/4-1/4		wn 22 <u>n</u> R <u>4</u>	
		EWM or WWM Lat/Long (s, t, r still REQUIRED)	Lat DegMinSec Long DegMinSec		
Driller Engineer Trainee		Tax Parcel No.	Long Deg	Will Sec	
ame (Print Last, First Name) Hansen, Eric		Cased or Uncased L	iameter	Static Level	
riller/Engineer /Trainee Signature riller or Trainee License No. 0710		Work/Decommissio			
trainee, licensed drüler's Signature and Lie		Work/Decommissio	a Completed D	aic (At 15 2012	
	1				
Construction Design	Well I	Data	Well ID: 5M	mation Description	
			Well ID. SIVE	40	
			CO. 1781 - N. 175 - MILES	1001	
			well depth	100'	
			4" pvc		
			4" pvc Well was dr according to	rilled to state standards o log, and abandoned wit of grout via tremie pipe.	
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RESOURCE PROTECTION	orint, sign and retur		Notice of Intent No. AE19354	
(SUBMIT ONE WELL REPORT PER V		. Gomen		
Construction/Decommission ("x" in bax)			Type of Well ("x in bax) Resource Protection	
Construction Decommission			Geotech Soil Boring	
ORIGINAL INSTALLATION Notice of Inter	nt Number:	Property Owner We	estern Processing	
	Carlo Con-	Site Address End of 72 Ave so City Kent County War KING		
Consulting Firm Landau Associates, Inc.				
Unique Ecology Well IDTag No		Location sw1/4-1/4 nw1/4 Sec 1 Twn 22n R 4		
WELL CONSTRUCTION CERTIFICATION		EWM 🖾 or WWM		
accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information		Lat/Long (s, t, r	Lat Deg Min Sec	
reported above are true to my best knowledge and beli	ef.	still REQUIRED)	Long Deg Min Sec	
Dritter Engineer Trainee		Tax Parcel No		
Name (Pfint Last, First Name) <u>Haasen Eric.</u> Driller/Engineer /Trainee Signature		Cased or Uncased I	Diameter Static Level	
Driller or Trainee License No. 0710		Work/Decommission	on Start Date Oct 15, 2012	
If traince, licensed oriller's Signature an	d License Number:		on Completed Date Oct 15, 2012	
Transec, including the same and	0710			
The state of the s			Paralla Description	
Construction Design	Wei	II Data	Formation Description well ID: 6B3C	
			well depth 75'	
			4" pvc	
			Well was drilled to state standards according to log and was abandone with 55 gallons of grout.	
	(1)		with 55 gallons of grout.	
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ESOURCE PROTECTION WELL DBMIT ONE WELL REPORT PER WELL IN INSTRUCTION ("x" In box) Construction Decommission		T Notice of Intent No. <u>AE19354</u> Type of Well ("x in box) ☐ Resource Protection ☐ Geotech Soil Boring			
IGINAL INSTALLATION Notice of Intent Number	r: Property Owner \	Property Owner Western Processing			
	Site Address End	Site Address End of 72 Ave so			
nsulting Firm Landau Associates, Inc.	City Kent	County WT KING			
ique Ecology Well IDTag No.	Location sw1/4-1	Location sw1/4-1/4 nw1/4 Sec 1 Twn 22n R 4			
LL CONSTRUCTION CERTIFICATION, 1 cons		EWM ⊠ or WWM □			
ept responsibility for construction of this well, and its complia shington well construction atmedards. Materials used and the		Lat Deg Min Sec			
rted above me true to my best knowledge and belief.	still REQUIRED	Long Deg Min Sec			
Driller D Engineer D Trainec	Tax Parcel No				
nc (Print Last, First Name) <u>Hansen</u> , Eric Her/Engineer /Trainee Signature	Cased or Uncased	d Diameter Static Level			
ller or Trainee License No. 0710		sion Start Date Oct 15, 2012			
rainee, licensed drillers Signature and License		sion Completed Date Oct 15, 2012			
	7-10	Supplement trace true 15, 54,16			
Construction Design	Well Data	Formation Description			
		well ID: 5M20B			
		well depth:62'			
10		2" pvc			
		The second secon			
1		Well was drilled to state standards according to log and was abandone with 24 gallons of grout.			
		according to log and was abandone			
		according to log and was abandone			
		according to log and was abandone			
		according to log and was abandone			
		according to log and was abandone			
		according to log and was abandone			
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		according to log and was abandone			
		according to log and was abandone			
		according to log and was abandone			
		according to log and was abandone with 24 gallons of grout.			
		according to log and was abandone with 24 gallons of grout.			

SUBMIT ONE WELL REPORT PER WI Construction/Decommission ("x" in box) Construction	UBMIT ONE WELL REPORT PER WELL INSTALLED) instruction/Decommission ("x" in bax) Construction		to the Department of Ecology CURRENT Notice of Intent No. AE19354 Type of Well ("x in bax) Resource Protection Geotech Soil Boring		
Decommission ORIGINAL INSTALLATION Notice of Intent	Numbro	Property Owner Western Processing Site Address End of 72 Ave so City Kent County Who KIA) Gr			
ORIGINAL INSTALLATION Notice by Inten	Number.				
Consulting Firm Landau Associates, Inc.					
Unique Ecology Well IDTag No. WELL CONSTRUCTION CERTIFICATION: 1 constructed und/or accept remonshibity for construction of this well, and its compliance with all		Location sw1/4-1/4 nw1/4 Sec 1 Twn 22n R 4			
		EWM ⊠ or WWM □			
					Vashington well construction standards. Materials used
eported above are true to my best knowledge and helief		still REQUIRED)	Long DegMinSec		
☑ Driller ☐ Engineer ☐ Trainee Name (Print Last, First Name) Hansen, Eric		Tax Parcel No		_	
Driller/Engineer /Trainee Signature		Cased or Uncased I	Diameter Static Level	_	
Driller or Traince License No. 0710		Work/Decommission	on Start Date Oct 15, 2012		
f traince, licensed driller's Signature and	License Number	Work/Decommission	on Completed Date Oct 15, 2012		
Transce, menses of the same	0710	33-0-04-000			
	Le 4	20.	Company Resident		
Construction Design	Well	Data	Formation Description		
			well ID: 5M20D		
			well depth: 134'		
			4" pvc		
				9	
			4" pvc Well was drilled to state stan according to well log and wa	9	
			4" pvc Well was drilled to state stan according to well log and wa	9	

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

RESOURCE PROTECTION WE (SUBMIT ONE WELL REPORT PER WELL)	LL REPORT	to the Department CURRENT	Notice of Intent No. AE19354		
Construction/Decommission ("x" in bax) Construction Decommission		Type of Well ("x in box) ☐ Resource Protection ☐ Geotech Soil Boring			
ORIGINAL INSTALLATION Notice of Intent Number	ber:	Property Owner Western Processing Site Address End of 72 Aye so			
Consulting Firm Landau Associates, Inc. Unique Ecology Well IDTag No.		City Kent County Wo KING			
			nw 1/4 Sec 1 Twn 22n R 4		
WELL CONSTRUCTION CERTIFICATION: Lee accept responsibility for construction of this well, and its comp		EWM ⊠ or WWM □			
Washington well construction standards. Materials used and il	he information	Lat/Long (s, t, r	Lat Deg Min Sec_		
reported above are true to my best knowledge and belief		still REQUIRED)	Long Deg Min Sec		
Mame (Print Last, First Name) Hausen , Frie		Tax Parcel No.			
Driller/Engineer /Trainee Signature		Cased or Uneased I	DiameterStatic Level		
Driller or Trainee License No. <u>0710</u>		Work/Decommission	on Start Date Oct 15, 2012		
If trainee, licensed driller's Signature and Licer	nse Number:	Work/Decommissio	on Completed Date Oct 15, 2012		
- 07	210				
Construction Design	Well	Data	Formation Description		
Construction Design	Well	Dillot	well ID: 5M4D		
			well depth 145'		
			The state of the s		
			4" pvc		
			Well was drilled to state standards		
			according to well log and was abandoned with 75 gallons of grou		
			acardona min re ganeria er gree		
			ಕ್ರಿಪ್ ರ⊭್ಷಾಭ್ - ಸ್ಟ್ರಾಮ್ ಸ್ಟ್ರಾಮ್		
			hulo 04 5005 Sections to		

SCALE: 1'= ___PAGE ___OF ___

ECY 050-12 (Rev. 7/06)

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	e. Western	Processing facility	22/4E/2	START	2 167 CARD NO	6.8
DRILLING ME	THOO: HSA	AUGER	DISTANCE: 100' F	T. FROM N		
SIGNATURE: _	Museum	emedial Services In	WATER LEVEL ELEVATION INSTALLED: January	4.1	BGS 195	
BORE HOLE CO		14.5' a	WELL LOG:	141		
		elana a	Mountal	Press	To	SW
	0 3	A	Topsoil	0	11'	-
Promotive cacing.			Sandy Clay (Gray)	1'	41	
			Fine Grey Sand	4.	6'	6
₽ Q		2"	Silty Grey Sand	6'	11'	
2			med Sand (Gray)	11.	14.5	
· > >		4		E	0.51	1,4
<u>a.</u>						
艺		Well will Bentonity Chip	s			
7.		A 250*	P			
		/0">				
Place -	· · · · · · · · · · · · · · · · · · ·	Benneite ping a last 2 ft. this	1			
五 图		PUC			-	-
14324		7 74. T		2	1	
		She sizeba				
と関連し		Single Sample		-	11	
100	-1-61					-
	- 01	.=0	X	100		
	RECEIV	IED			107	
	11/1/19/19/20	4005				1

1-4-95

RECEIVED DEPT. OF ECOLOGY

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. Manual Control

ENTERED RESOURCE PROTECTION	N WELL REPORT	ETART	-16.76	8
WELL INDENTIFICATION NO. SED-2 DRILLING METHOD: 115A AUGER DRILLER: Mike Brankline	DISTANCE: 100 F	T. FROM N	AS SECTION	LINE
EMM: Jacong Pumpt Deilling Co. Fine, BEGNATURE: Musual Bondon CONSULTING FIRM: Rust Remedial Services The REMESENTATIVE: John Lamanya	WATER LEVEL SLEVATION		1995 1995	
ORE HOLE CONSTRUCTION	WELL LOG: -	374		7
Lotte	Monial	Press	Ta	SWL
• • •	Topsoil	0		
	Gray Sandy Clay	1'	6	6'
	Fine Gray Sandt	6'	11'	
	5.16		1.5	
3 3 3 3 3 3	mrd Sord (Gray)	111	145	
		-		1.500
	1 4 4			-
		-		
Manufacturide Chip	2		Air M	_
			1	
20 mg = 20 mg		-	-	
. Serve		1		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1		
				5.55
المرابعة الم	1 1 1 1 1			
CELLEN FOR STATE OF S				
		107	112	15
RECEIVED				17.
W = 2 = (4 T)				95
FEB 23 1995				

(1) OWNER/PROJECT: WELLNO. 171 Name Wisher Processing Superfield Society Address 20015 72 22 40 5001- City Kent Superfield Zie 97032 (2) TYPE OF WORK:	(6) LOCATION OF WELL By legal description Well Location: County King Township 22 N (N or S) Range 46 (E or W) Section 1. Stat 1/4 of N to 1/4 of above section. 2. Either Street address of well location 20015 72 and 444
New construction	or The for number of well location 3. ATTACH MAP WITH LOCATION IDENTIFIED. Map shall include approximate scale and north arrow. OPTIONAL
(3) DRILLING METHOD Rotary Air Rotary Mud Cable Gradiow Stem Auger Other	(7) STATIC WATER LEVEL: Pt. below land surface. Artesian Pressure Ib/aq. in. Date
BORE HOLE CONSTRUCTION Special Standards Depth of completed well 32	(8) WATER BEARING ZONES: Depth at which water was first found h. From To Est. Flow Rate SWL
Protective casing Protective poor imment monument	
Land surface Casing	(9) WELLLOG: Ground elevation
material Melded Threader Melded Threader	Glad 10.25" H SA to 32" - Poll Back Avent Flights With Le Pumpin 400 L B.s. of Grave Glad Gla
(5) WELL TEST: Pump	

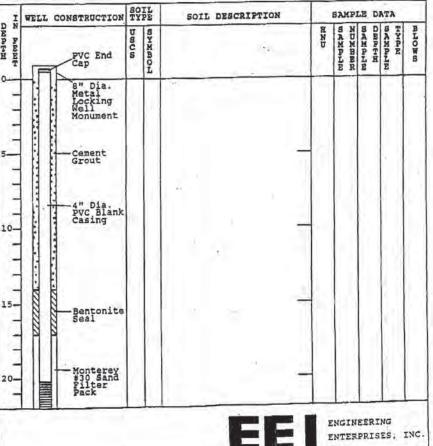
WELL CONSTRUCTION TYPE HHOMD HMM4 ZH paca HOWNER PVC End 8" Dia. Metal Locking Well Monument Cement 4" Dia. PVC Blank Casing 10-15-Bentonita Seal

FROM : WESTERN PROCESSING

5.

206 393 2554 2002.03-12 13:58 #385 P.04/22

WELL: 8-M-8-A	BORING:	
PROJECT NAME: WESTERN PR	OCESSING	PROJECT NO.512-146.01
LOCATION/COORDINATES: N/	λ	RIG TYPE: Cable Tool
SCHEDULE	WATER LEVEL	SAMPLING METHOD: 55
INITIATED: 11-04-87	DEPTH: 9.0'	DRILLING CO: Hokkaido
COMPLETED: 11-04-87 BACKFILLED: N/A	DATE: 11-04-87 TIME: N/A	DRILLED BY: Bob Carper
CASING ELEVATION: 22.02	GROUND ELEVATION: 20.8	LOGGED BY: Doug Hayes
WELL DEPTH: 31.0'	BORING DEPTH: 31.0'	SHEET 1 OF 2



The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report. WELL CONSTRUCTION SOIL SOIL DESCRIPTION SAMPLE DATA DEP-HEEF SAUMPPLE BAMPPLE BHOWS Daca HND HORMES PVC Screen .010 Slot 25-Monterey #30 Sand Filter Pack 4" Dia. PVC Blank Casing 30-PVC End 35-40-45-50-ENGINEERING ENTERPRISES, INC.

205 393 2554

BORING:

2002,03-12

Cont.

13:58 #385 P.05/22

SHEET 2 OF 2

FROM : WESTERN PROCESSING

Cont.

WELL: 8-M-8-A

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1.

1	WELL C	ONSTRUCTION	SOTY	IL PE	SOIL DESCRI	PTION	B	BAMP	LE DI	ATA	
IN PRET			Daca	BMMBOL	185		HNU	S N M B E R	BANGHE	SAMPHE	BHOME
15-		PVC Blank Casing Cement Grout	SP	-	SAND: Gray; f medium; trace fragments; tr wet	ine to — shell ace silt;		542	115 0 116	SS	и/и
20-	THE TABLE TO SERVICE STATES	— Bentonite Seal						543	120 121 15	ss	N/1
25-	mins	Monterey #16 Sand Filter Pack			Little shell ments	frag- —		544	125 126 .5	ss	N/:
-		-4" Dia. PVC Screen	SM		SILTY SAND:GI medium;trace fragments;wet	ay;fine to		545	130 131 .5	ss	N/
35-			SP	100	SAND:Gray;fir um;trace shel ments;little	e to medi- l frag- silt;wet		546	135 136 .5	ss	N/
40-		4" Dia. PVC Blank Casing PVC End Cap						547	140 .0 141	SS	N/

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

FROM IMESTERN PROCESSING 206 393 2554 2002.03-12 14:00 #395 P.09/22

DN	WELL CONSTRUCTION	BO	PE	SOIL DESCRIPTION		SAMP	LE D	ATA	
DMPHH HMM4 Z		DSCG	SMBOL		H	SAUMBER	BH-4MD	SAMPLE	BHOME
85— - -		SP		SAND: Gray; fine to — medium; trace shell fragments; trace silt; wet		536	85. 806.	SS	N/
90-	Cement					537	90. 0 91.	ss	N/
95-						538	95.	SS	N/
100	4" Dia. PVC Blank Casing					539	100 101 .5	ss	N/
.05						540	105 106 .5	ss	N/
110				Trace organics; little-		541	110 111 111	ss	N/

FROM : WESTERN PROCESSING

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

206 393 2554

2002.03-12 13:59 #385 P.

.08/22	The state of the s	v. handarani.	
I WINT DA	EDOM	THESTERN	10000

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2

D

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

FROM : WESTERN PROCESSING 206 393 2554 2002,03-12 13:59 #385 P.07/22 BORING: WELL:8-M-8-D Cont. cont. SHEET 2 OF 5 WELL CONSTRUCTION SOIL TYPE SOIL DESCRIPTION SAMPLE DATA HE SHEET S N S DEPTE Daca HZD BHOWS BYKBOL D 155 155 SILTY SAND:Gray; fine to medium; trace shell fragments; trace silt; wet 524 25. 0 26. 5 SS N/A SS N/A 525 30. Cement 30-SAND: Grav; fine to medi-um; trace shell frag-ments; wet 31 SM C W SS N/A 526 35. SILTY SAND: Gray; fine to Very fine; some organics trace peat; wet 36. 527 40. 0 41. SS N/A 4" Dia. PVC Blank Casing SP SAND: Gray; fine to medi-um; trace shell frag-ments; wet SS N/A 45. 0 46. 528 50. 051. SS N/A 529 SM B medium/trace shell fragments;wet 50-

> ENGINEERING ENTERPRISES, INC.

N G	WELL CONSTRUCTION	SO TY	PE	SOIL DESCRIPTION		SAMP	LE D	ATA	
DEPTH THE		Daca	SYMBOL		HXU	SAMBLE	SAMPLE	BANAHA	BHOWS
55—		SM	0 0	SAND:Gray; fine to med um; trace shell frag-ments; little silt; wet	ī-	530	55. 56.	\$5	N/
60-				Trace silt		531	60. 61.	SS	N/
65						532	65. 06. 5	SS	N/
70-	4" Dia. PVC Blank Casing					533	70. 0 71. 5	ss	N,
75 <u>—</u> 75—		ČĽ.		STLTY CLAY: Light gray some organics; trace peat; trace sand; wet	i	534	75. 076.	SS	N,
- 80- 4-		SP		SAND: Gray; fine to med um; little shell frag- ments; trace silt; wet	i-	535	80. 81. 5	ss	N,

PROJECT NAME: WESTERN PROCESSING

10-27-87

10-29-87

LOCATION/COORDINATES: N/A

SCHEDULE

WELL:8-M-8-D

INITIATED:

COMPLETED:

BACKFILLED: N/A

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

DEPTH: 9.0'

WATER LEVEL

10-27-87

N/A

BORING:

DATE:

TIME:

PROJECT NO.512-146.01

RIG TYPE: Cable Tool SAMPLING METHOD: S5

DRILLING CO: Hokkaido

DRILLED BY: Bob Carper

ort

WELL NUMBER 08-M-031- C

BORING NUMBER:

CASING ELEV .: 22,64 GROUND ELEV: 21.7

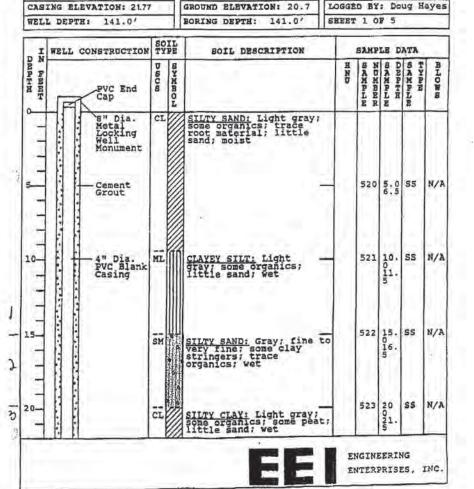
RIG TYPE CABLE TOOL DRILLING CO.: STACO WELL SERVICE START DATE: 7-22-88

SAMPL METHOD: SPLIT SPOON

Rep	μ
Well	11
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bepartment of Ecology does NOT Warranty the Data and/or the Information on this Well Rep	
The L	图*

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DEPTH	WELL CONSTRUCTIO	ON GEOL	OGICAL LOG	SAMPLE	SAMPLE DATA			
(FEET)	PVL END	CAP SYM.	USCS ID; SOIL DESCRIPTION	SAMPLE DEPTH	SAMPLE NUMBER	HEMARK		
0-	O PORTOR	4 HELL	SM SILTY SAND AREY SLIGHTLY MOIST, SOME SILT TRACE ORGANICS FINE TO VERY FINE SAND	1/				
5 —	CEMENT		ML CLAYEY SANDY SILT DARK BROWN MOIST, LITTLE CLAY! LITTLE FINE SANO	5.01-				
10	BLANK CASING	evc	ML CLAYEY SILT DARK BROWN, WET, TRACE FINE SANO, SOME CLAY	10.0'-				
15	PORE H	OLE 10.0	SM SILTY SAUD DARK GREY MOIST TO VERY MOIST, SOME SILT, FINE SAUD	15.0'-				
20	0 0	9 a	TRACE ORGANICS LITTLE SILT	20.01-				



HOR ENGINEERING

FROM TWESTERN PROCESSING 206 393 2554 2002.03-12 14:01 #385 P.12/22 PROJECT NAME: WESTERN PROCESSING PROJECT NUMBER: 00053-006-102 WELL NUMBER 08-M-03/-C BORING NUMBER: SHEET Z OF Report GEOLOGICAL LOG SAMPLE DATA WELL CONSTRUCTION DEPTH (FEET) USCS ID; SOIL SAMPLE SAMPLE REMARKS this Well NUMBER DESCRIPTION DEPTH MH CLAYEY SILT DARK GREY VERY MOIST SOME CLAY 25.01 5 SP SAND BLACK VERY MOIST TRACE ORGANICS FINE TO MEDIUM SAND Information NH CLAYEY SILT DARK 30.0'-GREY MOIST TO VERY MOIST, TRACE ORGANICS, SOME 30-BENTOUTE GROUT SH SILTY SAND BLACK VERY MOIST SOME SILT, FINE SAND the and/or MH SANDY CLAYEY
SILT DARK GREY
SLIGHTLY MOIST
TRACE ORGANICS, 35.01 35-BLANK CASING TRACE ORGANIOS,
TRACE FINE
SAUD, SOME CLAY
SULTY SAND DARK
BROWNL, WET,
TRACE DREANICS
AND COMPES SAUD,
FINE TO MEDIUM
SAND LITTLE Data the 1 **NOT Warranty** BORE HOLE 40,0-SILT does SAND DARK GREY TO BLACK, WET, TRACE ORGANICS SILT, FINE TO MEDIUM SAND 45.01-46,51 Ecology of 50-The Department MH CLAYEY SILT DARK GREY SLIGHTLY MOIST TO 55.0'-MOIST LITTLE CLAY 56.5' 55-

114

PROJECT NAME: WESTERN PROCESSING PROJECT NUMBER: 00053 -006 -10% BORING NUMBER: SHEETS OF WELL NUMBER OB -M-031-C Report GEOLOGICAL LOG SAMPLE DATA DEPTH WELL CONSTRUCTION (FEET) USCS ID; SOIL SAMPLE SAMPLE REMARKS SYM this Well DESCRIPTION NUMBER DEPTH 4" DIA PUL BLANK CASING 6 Information SP SAND DARK
GREY TO BLACK,
WET, TRACE
SILT, FINE SAND 60.01 60-61.51 BENTONITE the FRAC SAND FILTER BACK and/or TRACE ORGANICS, FINE TO MEDIUM SAND 65.0'-65-66.51 Data SLOTTED CASING (0.010" SLOT) the TRACE CLAY STRINGERS TRACE ORGANICS 70.01-8802451 **NOT Warranty** 70-WE END GAP does 75.0'-75-76.51 HOLE TERMINATED Ecology AT 76.51 of 80-Department The

206 393 2554

FROM : WESTERN PROCESSING

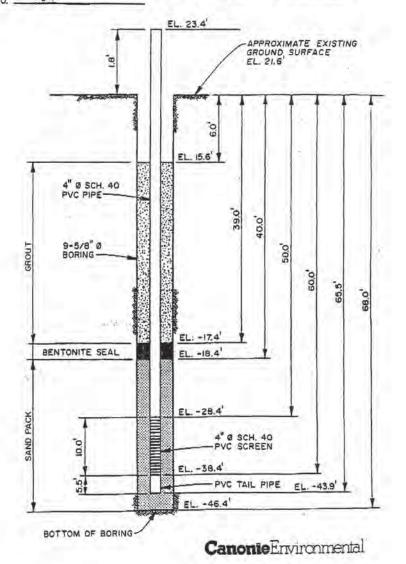


2002.03-12 14:01 #385 P.13/22

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

PROJECT NAME WESTERN PROCESSING INSTALLED BY E.B. DATE 3-28-88

— CHECKED BY M.R.H. DATE 5-18-88 PROJECT NO. __ 84-076-09 WELL NO. 8-7



MONITORING		111864	Well	ID# AGJ680 Card # R049093	22-41	E-1	E
(1) OWNER/PROJE Name Western Process Address 20015 72nd Av	CT WEL	LNO RP-10		OF WELL By leg Latitude (N or S) Range 4E	Longo	rude	
City Kent	State Wa.	Zip	SW 1/4	of NW 1/4	of above section.	ecoca_	
(2) TYPE OF WORK	C		Street address of we	Hocation 20015 /2	and Ave. S.		_
New construction Conversion	☐ Alteration (Rep ☐ Deepering	ur/Recondition) ☐ Abandonment	Tax lot number of w	rell location			
(3) DRILLING MET	Rotary Mud	⊠ Cable	(7) STATIC W	t below land surface	Date 4/2	/02	
(4) BORE HOLE CO			(8) WATER BE	EARING ZONES:	Date		=
	Depth of Comple	red Well 41.3 ft	Depth at which want				
Vault []	- k1		From 9	To	Est. Flow Ra		SWL
0 ft. S	K G	Water-tight cover	15		gpm gpm		9'
- 1	1	Surface flush vault	39		gpm		9'
1.5 n.		Locking cap			or		
		Casing diameter 2"					
500	8884	Material sch 40 pvc	(9) WELL LOC): 20'			
000	W 708	Welded Threaded Glued	G	round Elevation 20' Material		-	
Onto	2000		-	Material	From	To	SWI
Seal So	Date:			nd, & gravel: silty,	0		
1.5 n pD 80	S D ad	Well Seal.	brown	1000	8	8	9
TO CONT	1 2°5	Material bentonite grout	fine sand; orang silt; sandy, gray		12	12	9
34 A 08 0	08.0	Amount 8 x 50# bags	fine sand; silty,		15	33	9
000		Grout weight 9.5 lbs/ gal	silt; gray		33	39	
000			fine sand; brown	n	39	42	9
0 = 0	M 6 2 6 2	Borebale diameter.				-	+
500	S C	12 in from 0 ft to 33 ft			-	-	+
30 G	3 G	8 in from 33 ft. to 42 ft.					
0000	05 05	Bentonite plug at least 3 ft. thic		RE	CEIVE	D	
Filter og og	- Called				2000		
pack: 600	1 888	Screen Material Sch 40 pvc		A	BK O A SM	4	-
37 n 90 63	200 200 200 200 200 200 200 200 200 200	From 38 ft. to 40		DEP	OF ECOL	OGY	7.0
42 TO 0000	1 0000	Slot size 0.020 in.			OT LUST	-	
1 000	1000	Filter pack:					
0,0	B 200	Material silica sand	Date statest 3/27/	02 Com	pleted 4/3/02		30
(5) WELL TESTS:	O. O.	m(10/20	WELL CONSTR	UCTION CERTIFIC or accept responsibility for I Washington well constru	construction of this	well, and	I its
Pump	Batler DAI	Flowing Artesian	and the information	reported above are true t	o my best knowledg	ge and bel	ilet
Permeability	Yield	GPM .	Type or Print Name		Licansa No	0987	
Conductivity	OF/C Dept	th arresian flow found	Trainee Name	Malcolm Lester	Ligense No		
Was water analysis don	et? St Yes No		Drilling Company To	acoma Pump & Dril	ling		
By whom? Landau A	Associates		(Signed) Deck	Whend!	License No.	0987	
Depth of strate to be as Remarks	nalyzed From	ft toft.	Address 303161	Mt. Hwy., Graham V	Va. 98338		
		A-10-10-10-10-10-10-10-10-10-10-10-10-10-	Registration No	TACOMPD203PF	Date	4/5	02

Name of Supervising Geologist/Engineer Victoria England

14:02 #385 F.15/22

44.0

EL -24.0'

DATE 10-28-88 DATE _11-9-68

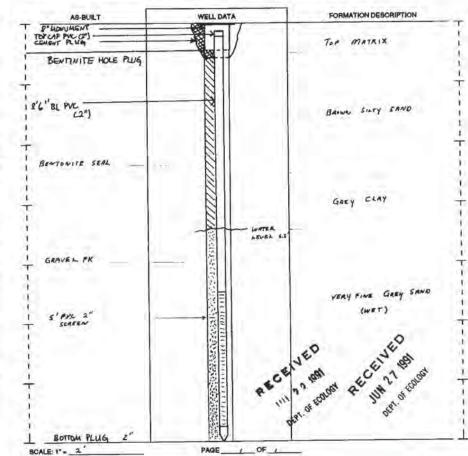
B-10

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

ECY 050-12 (Rev. 11/89)

RESOURCE PROTECTION WELL REPORT

	START CARD NO. 025 12
PROJECTNAME: WILSEY + HAM PACIFIC	COUNTY: KING 22/48/12,
WELL IDENTIFICATION NO. M-2	LOCATION: MAN NWW See 12 Twn 22N R 4E
DRILLING METHOD: HSA	STREET ADDRESS OF WELL: 212 5 4 WEST
DRILLER: JOHN W. DOLAN	VALLEY KENT WA
FIRM: JOHN, MATHER & ASSOC. Inc	WATER LEVEL ELEVATION: 6.5 FT
SIGNATURE: John W. Oolow	GROUND SURFACE ELEVATION:
CONSULTING WITH: WILSEY + HAM PROLIFIC	INSTALLED: 14 FT.
REPRESENTATIVE DAVID M. PECK	DEVELOPED: N/A



	TION Notice Proper Site / City - City - Locat Lar/L Still R Tax I Case MASS Work Work Proper Proper Site / City - C	Type of Well ('x' in circle) O Resource Protection Geotech Soil Boring erty Owner LVL' LLC Address GATH TYLC S KENT County KENT of white of the second	RESOURCE PROTEC (SUBMIT ONE WELL REPORT PER WE Construction/Decommission ("x" in circle) Construction Decommission ORIGINAL INSTALLATION Of Intent Number Consulting Firm TERR 4 455 Unique Ecology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION: I consunt responsibility for construction of this well, and its comple well construction standards. Materials used and the infor true to my best knowledge and belief Driller Engineer Trainee Name (Print) Tab Driller/Engineer/ Trainee Signature Driller or Trainee License No. Zalas If trainee, licensed driller's Signature and License no. Recommended to the construction of the series of the construction of	Property Ow Site Address City Ke Location M LavLong (s- still REQUIR Tax Parcel N Cased or On Work/Decon	County: KENK County: KENK Lit NC114 Sec Twn 22N RYC EWM WWM Lat Deg Lat Min/Sec Long Deg Long Min/Sec
Construction/Design	Well Data	Formation Description	Construction/Design	Well Data	Formation Description
LPT-01 CPT-01 CPT-01 LS" & PROBC V/ 2" & RENT HOLE BALKFILLED W/ BENTONETE	NO WELL INTERCLED RECEIVED DEC 0 4 2006	STLTST	Construction/Design CPT - 0Z CPT To 40 FT COT To 40 FT LOV STATE CONSTRUCTION/Design CPT - 0Z CPT - 0Z CPT To 40 FT CONSTRUCTION DESIGN CPT - 0Z CPT To 40 FT CONSTRUCTION DESIGN CPT - 0Z CPT -	NO WELL INSTALLED RECEIVED DEC 0 42006	SILTS T CLAY SAND
CHIPE	DEPT, OF ECOLOGY	CLAY	Department of the state of the	DEPT. OF ECOLOGY	CLAX
		BUTTOM OF HOLE = YO	F 10		BOTTOM OF HOWE = 40

Construction/Decommission ("x" in eircle) O Construction © Decommission ORIGINAL INSTALLATE of Intent Number Consulting Firm	Property Ow Site Address City Ki Likation ML ance with all Washington notion toported above are Still REQUIR Tax Parcel Cased on the Work Decom	County: KENK OR	RESOURCE PROTEC SUBMIT ONE WELL REPORT PER W Construction Decommission ("x" in circle) O Construction Decommission ORIGINAL INSTALLAT of intern Number Consulting Firm TEXE 4 (1) Unique Beology Well ID Tag No: WELL CONSTRUCTION CERTIFICATION I consulting print well, and its composed construction standards. Materials used and the information on the part knowledge and belief Driller Engineer/Trainee Signature Driller/Engineer/Trainee Signature Driller or Trainee, licensed driller's Signature and License No. Z86.	succidently of Site Address City Location A Location A Location A Lark-ong (still REQUIRE) Data Tax Parcel Cased on Case	COUNTY COUNTY CENTER OF TWO 22N RY COUNTY OF TWO 22
Construction/Design	Well Data	Formation Description	Construction/Design	Well Data	Formation Description
CPT-DI LET TO YOFT 1.5° & FRESC V/ 2" & RENL HOLE BALKFILEO W/ BENTONSTE CHIPS	NO WELL INSTALLED RECEIVED DEC 0 4 2006 DEPT. OF ECOLOGY	SILTS T CLAY	THE BALK FILE OF THE COLOGING AND THE BALK FILE OF THE COLOGING AND THE CHIEF OF	No WELL INSTALLED RECEIVED DEC 0 4 2006 DEPT. OF ECOLOGY	STETS T CLAY
1		CTAX	Depart		CLAY
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		BOTTOM OF HARTYO'	F70		BUTTOM OF HOLET YOU

Appendix C 2017 RI Analytical Data and Validation Reports



DATA VALIDATION REPORT

BOEING KENT SPACE CENTER STORM WATER SAMPLING

Prepared for:

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Prepared by:

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EcoChem Project: C8105-1

February 28, 2017

Approved for Release:

Christina Mott Frans Senior Project Manager EcoChem, Inc.

ChiDM. Frans

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of the summary validation (Stage 2A) performed on storm water samples and the associated laboratory and field quality control samples for the Boeing Kent Space Center. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Incorporated, Tukwila, Washington. The analytical method and EcoChem project chemists are listed in the following table:

Analysis	METHOD OF ANALYSIS	PRIMARY REVIEW	SECONDARY REVIEW	
Volatile Organic Compounds (VOC)	SW8260C			
Polynuclear Aromatic Hydrocarbon Compounds (PAH)	SW8270D-SIM			
PCB Aroclors	SW8082A			
Total Petroleum Hydrocarbons – Diesel & Oil Range	NWTPH-Dx	R. Frans	C. Frans	
Total Petroleum Hydrocarbons – Gasoline Range	NWTPH-Gx			
Total & Dissolved Metals and Mercury	EPA 200.8 & SW7470A			

The data were reviewed using guidance and quality control criteria documented in the analytical methods; the sampling and analysis plan (SAP) for the *Remedial Investigation Work Plan Boeing Kent Space Center Facility, Ecology Review Draft* (Landau Associates, July 29, 2016); *USEPA National Functional Guidelines for Organic Data Review* (EPA, 1999 & 2008); and *USEPA National Functional Guidelines for Inorganic Data Review* (EPA, 2004 & 2010).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reason codes, and validation criteria are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index Boeing Kent Space Center

SDG	Sample ID	Lab Sample ID	NWTPH-Gx	NWTPH-Dx	VOCs	PAHs	РСВ	Total Metals
	KSC-MH-20.237-W	17A0195-01	✓	✓	✓	✓	✓	✓
	KSC-MH-20.235-W	17A0195-02	✓	✓	✓	✓	✓	✓
	KSC-MH-16.12-W	17A0195-03	✓	✓	✓	✓	✓	✓
	KSC-MH-15.10-W	17A0195-04	✓	✓	✓	✓	✓	✓
	KSC-OF-16-W	17A0195-05	✓	✓	✓	✓	✓	✓
	KSC-OF-NDP-W	17A0195-06	✓	✓	✓	✓	✓	✓
17A0195	Trip Blank	17A0195-07	✓		✓			
	KSC-MH-20.237-W	17A0195-08						
	KSC-MH-20.235-W	17A0195-09						
	KSC-MH-16.12-W	17A0195-10						
	KSC-MH-15.10-W	17A0195-11						
	KSC-OF-16-W	17A0195-12						
	KSC-OF-NDP-W	17A0195-13						
	KSC-OF20-W	17A0243-01	✓	✓	✓	✓	✓	✓
17A0243	KSC-OF20-W	17A0243-02						
	Trip Blank		✓		✓			

DATA VALIDATION REPORT DOF – Boeing Kent Space Center

Volatile Organic Compounds - Method SW8260C Vinyl Chloride & 1,1-DCE - Method SW8260C-SIM

This report documents the review of analytical data from the analyses of storm water samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed Analytical Resources, Incorporated, Tukwila, Washington. Refer to the Sample Index for a complete list of samples.

SDG	Number of Samples	VALIDATION LEVEL
17A0195	6 storm water samples and 1 trip blank	Stage 2A
17A0243	1 storm water sample and 1 trip blank	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

SDG 17A0195: Results for the analytes, vinyl chloride and 1,1-dichloroethane were inadvertently omitted from the laboratory data package for the Trip Blank sample. The laboratory was contacted and provided the missing results.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	1	Field Duplicates
✓ Laboratory Blanks		√	Target Analyte List
1	Field Blanks	√	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results
√	Laboratory Control Samples (LCS)	✓	Target Analyte List
✓	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)		

[√] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be analyzed within 14 days for aqueous samples.

All coolers were received at the laboratory within the advisory temperature range. All samples were extracted and analyzed within the required holding time.

Field Blanks

Trip blanks were included with both SDGs; target analytes were not detected in the trip blank samples.

Field Duplicates

Field duplicates were not submitted with this data set.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

The laboratory reported a subset of the analytes twice in the EDD. Vinyl chloride and 1,1-dichloroethene were requested to be analyzed using the selected ion monitoring (SIM) technique, however, several other analytes were also reported from this analysis. The full scan analysis had vinyl chloride and 1,1-dichloroethan results included. The laboratory was contacted and indicated that this was an error in the generation of the EDD and that only one result for each analyte for each sample should have been reported. The erroneous entries have been removed from the database.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample/laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) recovery values and precision was acceptable as demonstrated by the LCS/LCSD and MS/MSD RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Polynuclear Aromatic Hydrocarbons - Method SW8270D-SIM

This report documents the review of analytical data from the analyses of storm water samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Analytical Resources, Incorporated, Tukwila, Washington. Refer to the Sample Index for a complete list of samples.

SDG	Number of Samples	VALIDATION LEVEL
17A0195	6 storm water samples	Stage 2A
17A0243	1 storm water sample	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	>	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
✓	✓ Laboratory Blanks		Field Duplicates
1	1 Field Blanks		Target Analyte List
1	1 Surrogate Compounds		Reporting Limits
√	✓ Laboratory Control Samples (LCS)		Reported Results

[✓] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be extracted within 7 days for aqueous samples and extracts must be analyzed within 40 days of extraction.

All coolers were received at the laboratory within the advisory temperature range. All samples were extracted and analyzed within the required holding times.

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Field blanks were not submitted with this data set.

Surrogate Compounds

The surrogate compounds dibenzo[a,h]anthracene-d14, 2-Methylnaphthalene-d10, and fluoranthene-d10, were added to all field and batch QC samples. When two or more surrogate %R values are below the control limits and indicate a potential low bias, associated results for the affected fraction are estimated (J/UJ-13L). When two or more surrogate %R values are greater than the control limit and indicate a potential high bias, only the positive results in a fraction for a sample are estimated (J-13H). If there is one surrogate outlier in a fraction that is less than 10% recovery, the reporting limits for that fraction are rejected (R-13L) and the detections are estimated (J-13L). With the exceptions noted below, all surrogate spike recoveries were within the laboratory control limits.

SDGs 17A0195 and 17A0243: The percent recoveries (%R) for fluoranthene-d10 in Samples KSC-OF-16-W and KSC-OF 20-W were less than the lower control limit; because there was only one outlier in the fraction; no results were qualified.

Field Duplicates

Field duplicates were not submitted with this data set.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

No anomalies were noted during validation for evaluated results.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, laboratory control sample (LCS) and matrix spike/matrix spike duplicate (MS/MSD) recovery values. Precision was also acceptable as demonstrated by the MS/MSD RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Polychlorinated Biphenyl Compounds - Method SW8082A

This report documents the review of analytical data from the analyses of storm water samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Analytical Resources, Incorporated, Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	VALIDATION LEVEL
17A0195	6 storm water samples	Stage 2A
17A0243	1 storm water sample	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

\checkmark	Sample Preservation and Holding Times	✓	Laboratory Duplicates
✓	✓ Laboratory Blanks		Field Duplicates
1	Field Blanks	✓	Target Analyte List
✓	Surrogate Compounds	✓	Reporting Limits
✓	Laboratory Control Samples (LCS)	1	Reported Results
✓	Matrix Spikes/Matrix Spike Duplicates		

[✓] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be extracted within 7 days for aqueous samples and extracts must be analyzed within 40 days of extraction.

All coolers were received at the laboratory within the advisory temperature range. All samples were extracted and analyzed within the required holding times.

Field Blanks

No field blanks were submitted with this sampling event.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

All SDGs: Results were reported from both the primary and confirmation column analyses. The results for the confirmation column were flagged as do-not-report (DNR-11) to indicate which results from multiple reported results should not be used.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable, as demonstrated by the surrogate, laboratory control sample (LCS), and matrix spike/matrix spike duplicate (MS/MSD) percent recovery values. Precision was also acceptable as demonstrated by the MS/MSD and field duplicate relative percent difference values.

Results were flagged as do-not-report (DNR) to indicate which result, from multiple analyses, should not be used; data that have been flagged as DNR should not be used for any purpose.

All other data, as reported, are acceptable for use. A useable result remains for all analytes in all sample; completeness is unaffected.

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Gasoline Range Organics - Method NWTPH-Gx

This report documents the review of analytical data from the analyses of storm water samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Incorporated, Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	VALIDATION LEVEL
17A0195 6 storm water and 1 trip blank		Stage 2A
17A0243	1 storm water and 1 trip blank	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Duplicates
✓	Laboratory Blanks	1	Field Duplicates
1	Field Blanks	✓	Target Analyte List
1	Surrogate Compounds	✓	Reporting Limits
✓	Laboratory Control Samples (LCS)	✓	Reported Results
✓	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)		

[✓] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be analyzed within 14 days for aqueous samples.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

All coolers were received at the laboratory within the advisory temperature range. All samples were extracted and analyzed within the required holding time.

Field Blanks

Trip blanks were included with both SDGs; GRO was not detected in the trip blank samples.

Surrogate Compounds

The %R for surrogate compound 4-bromofluorobenzene, was less than the lower control limit in LCS-15503; the sample was a QC sample, therefore, no results qualified.

Field Duplicates

Field duplicates were not submitted with this data set.

Target Analyte List

The target analyte as specified in the QAPP/SAP was reported.

Reporting Limits

The target analyte reporting limit specified in the QAPP/SAP was met.

Reported Results

No anomalies were noted during validation for evaluated results.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exception noted above, accuracy was acceptable as demonstrated by the surrogate, laboratory control sample/laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) recovery values. Precision was acceptable as demonstrated by the LCS/LCSD and MS/MSD RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Diesel Range Organics - Method NWTPH-Dx

This report documents the review of analytical data from the analyses of storm water samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Analytical Resources, Incorporated, Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	VALIDATION LEVEL
17A0195 6 storm water samples		Stage 2A
17A0243	1 storm water sample	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

\checkmark	Sample Preservation and Holding Times	✓	Laboratory Duplicates
✓	✓ Laboratory Blanks		Field Duplicates
1	Field Blanks	✓	Target Analyte List
✓	Surrogate Compounds	✓	Reporting Limits
✓	Laboratory Control Samples (LCS)	✓	Reported Results
✓	Matrix Spikes/Matrix Spike Duplicates		

[✓] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be extracted within 7 days for aqueous samples and extracts must be analyzed within 40 days of extraction.

All coolers were received at the laboratory within the advisory temperature range. All samples were extracted and analyzed within the required holding times.

Field Blanks

No field blanks were submitted with this sampling event.

Field Duplicates

Field duplicates were not submitted with this data set.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

No anomalies were noted during validation for evaluated results.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable, as demonstrated by the surrogate, laboratory control sample (LCS), and matrix spike/matrix spike duplicate MS/MSD) percent recovery values. Precision was also acceptable as demonstrated by the MS/MSD relative percent difference values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Total & Dissolved Metals - Method EPA 200.8 & SW7470A

This report documents the review of analytical data from the analyses of storm water samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Analytical Resources, Incorporated, Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES AND MATRIX	VALIDATION LEVEL
17A0195 6 storm water samples		Stage 2A
17A0243	1 storm water sample	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	✓ Sample Receipt, Preservation, and Holding Times		Laboratory Duplicates
✓	✓ Laboratory Blanks		Field Duplicates
✓	Laboratory Control Samples (LCS)	✓	Target Analyte List
✓	Matrix Spikes (MS)	✓	Reporting Limits
1	Field Blanks	✓	Reported Results

[✓] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be analyzed within 28 days for aqueous mercury samples and within 180 days for aqueous ICP-MS metals samples.

All coolers were received at the laboratory within the advisory temperature range. All samples were analyzed within the required holding times.

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Field blanks were not submitted with this data set.

Field Duplicates

Field duplicates were not submitted with this data set.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

No anomalies were noted during validation for evaluated results.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable, as demonstrated by the laboratory control sample (LCS) and matrix spike (MS) recovery values. Precision was acceptable as demonstrated by the laboratory duplicate RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification		
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times		
	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)		
	5A	Initial Calibration (RF, %RSD, r²)		
Instrument Performance	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L)¹ where appropriate		
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L)¹ where appropriate		
	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)		
Blank Contamination	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L)¹ for negative instrument blanks		
	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L)¹ where appropriate		
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)		
Precision and Accuracy	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L)¹ where appropriate		
	12	Reference Material Use bias flags (H,L)¹ where appropriate		
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L)¹ where appropriate		
	16	ICP/ICP-MS Serial Dilution Percent Difference		
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L)¹ where appropriate		
Interferences	19	Internal Standard Performance (i.e., area, retention time, recovery)		
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)		
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)		
	2	Chromatographic pattern in sample does not match pattern of calibration standard		
IdealCont.	3	2 nd column confirmation (RPD or %D)		
Identification and Quantitation	4	Tentatively Identified Compound (TIC) (associated with NJ only)		
	20	Calibration Range or Linear Range Exceeded		
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)		
	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, reextractions, etc. Associated with "R" and "DNR" only)		
Miscellaneous	14	Other (See DV report for details)		
	26	Method QC information not provided		

¹H = high bias indicated

L = low bias indicated

Table: NFG-VOC_GCMS Revision No.: 9 Last Rev. Date: 1/29/2015

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Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8260C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling	1				
Cooler/Storage Temperature Preservation	4° C±2°C Aqueous: HCl to pH < 2 Current SW846 criterion is ≤ 6° C ⁽³⁾	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 if pH ≤ 2, reject 2-chloroethyl vinyl ether (R-1) some projects may require methanol preserved soils/seds
Holding Time	Aqueous: 14 days preserved 7 Days: unpreserved Solid: 14 Days	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Perfo	ormance				
Tuning	BFB Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	Minimum 5 standards RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders * RRF ≥ 0.005 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	%RSD ≤ 20% except: %RSD ≤ 40% poor responders * %RSD ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit	5A	
Initial Calibration Verification	Second source analyzed immediately after ICAL %R 70% - 130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.
Continuing Calibration Sensitivity	$RRF \ge 0.05$ except: $RRF \ge 0.01$ poor responders * $RRF \ge 0.005$ 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	%D ≤ 25% except: %D ≤ 40% poor responders * %D ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	

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Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8260C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamin	ation				
Method Blank (MB)	MB: One per matrix per batch (of ≤ 20 samples) No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	7	10X action level for methylene chloride, acetone, & 2-butanone.
(IVID)	No TICs present	iviethod · ·	R (pos) TICs using 10X rule		5X for all other target analytes Hierarchy of blank review:
Trip Blank (TB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	#1 - Review MB, qualify as needed #2 - Review TB, qualify as needed
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	#3 - Review FB, qualify as needed Note: Actions as per NFG 1999
Precision and A	ccuracy				
LCS/LCSD (recovery)	One per matrix per batch (of ≤ 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits.
LCS/LCSD RPD	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Surrogates	Added to all samples Within method/laboratory control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R >UCL J (pos)/UJ (ND) if %R <lcl (nd)="" (pos)="" <10%<="" if="" j="" r="" td=""><td>13 (H,L)⁴</td><td>No action if there are 4+ surrogates and only 1 outlier Qualify all compounds if qualification is required.</td></lcl>	13 (H,L) ⁴	No action if there are 4+ surrogates and only 1 outlier Qualify all compounds if qualification is required.
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard

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Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8260C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments				
Precision and Ac	Precision and Accuracy (continued)								
MS/MSD (recovery)	One per matrix per batch (of \leq 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.				
MS/MSD (RPD)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) If RPD > control limit	9	Qualify parent sample only				
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified				
Compound Ident	ification and Quantitation								
Retention Time Relative Ion Intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25					
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ TIC R (pos) if common laboratory contaminants	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants				
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.				
Dilutions, Re- extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results				

¹ National Functional Guidelines for Organic Data Review, June, 2008

(pos): Positive Result (ND): Non-detect

² National Functional Guidelines for Organic Data Review, Oct, 1999

³ Method SW846 8260C Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

^{* &}quot;Poor responder" compounds: Acetone, 2-butanone, carbon disulfide, chloroethane, chloromethane, cyclohexane, 1,2-dibromoethane, dichlorodifluoromethane, cis-1,2-dichloroethene, 1,2-dichloropropane, 1,2-dibromo-3-chloropropane, 2-hexanone, isopropylbenzene, methyl acetate, methylene chloride, methylcyclohexane, 4-methyl-2-pentanone, methyl tert-butyl ether, trans-1,2-dichloroethene, trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane criterion is 0.010 RRF; 1,4-dioxane RRF criterion is 0.005.

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Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C sediment/tissues may require storage at -20°C	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 Current SW846 criterion is \leq 6° C (3)
Holding Time	Extraction Aqueous: 7 days from collection Extraction Solid: 14 days from collection Analysis (all matrices): 40 days from extraction Holding time may be extended to 1 year for frozen sediments/tissues	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Perfo	rmance		,		
Tuning	DFTPP Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	RRF \geq 0.05 except: RRF \geq 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	Minimum 5 standards $\%$ RSD $\leq 20.0\%$ except: $\%$ RSD $\leq 40.0\%$ poor responders * or co-efficient of determination (r^2) > 0.99	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit or r ² value <0.99	5A	
Initial Calibration Verification Check	Prepared from second source; analyze after each ICAL Percent recovery limits = 70-130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.

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Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Perfo	rmance (continued)				
Continuing Calibration Sensitivity	RRF \geq 0.05 except: RRF \geq 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	Prior to sample analysis and every 12 hours %D ≤ 25% except: %D ≤ 40.0% poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	
Blank Contamina	tion	ı	<u> </u>		
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U(pos) if result is < 5X or 10X action level	7	10X action level applies to phthalates only. 5X for all other target analytes
	No TICs present		R (pos) TICs using 10X rule	7	Hierarchy of blank review:
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	#1 - Review MB, qualify as needed #2 - Review FB , qualify as needed
					Note: Actions as per 1999 NFG
Precision and Acc	curacy				
LCS/LCSD (recovery)	One per matrix per batch (of ≤ 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%.
(.555.5.)	limits		J (pos)/R (ND)%R < 10%		QAPP may have overriding accuracy limits. Qualify all associated samples.
LCS/LCSD (RPD)	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.

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Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments			
Precision and Acc	Precision and Accuracy (continued)							
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers have different RM control limits			
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.			
MS/MSD (RPD)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) in parent sample if RPD >	9	Qualify parent sample only			
Surrogates	Minimum of 3 acid & 3 base/neutral (B/N) compounds added to all samples Within method control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	13 (H,L) ⁴	Qualify all compounds in associated fraction. Do not qualify if only 1 acid and/or 1 B/N surrogate is out, unless <10%. If 1 surrogate outlier < 10% then J (pos)/R (ND)			
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT > 30 seconds use PJ	19	Qualify compounds quantified using particular internal standard			
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified			

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Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments				
Compound Ident	ompound Identification and Quantitation and Calculation								
Retention times and relative ion intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25					
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ the TIC unless: R (pos) common laboratory contaminants	4					
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.				
Dilutions, Re- extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results				

¹ National Functional Guidelines for Organic Data Review, June, 2008

² National Functional Guidelines for Organic Data Review, October, 1999

(pos): Positive Result(s)

(ND): Non-detects

³ Method SW846 8270D Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4, February 2007.

⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

^{* &}quot;Poor responder" compounds: acetophenone, atrazine, benzaldehyde, 1,1'-biphenyl, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, caprolactam, carbazole, 4-chloroaniline, diethylphthalate, di-n-butylphthalate, 3-3'-dichlorobenzidine, dimethylphthalate, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, di-n-octylphthalate, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, N-nitrosodiphenylamine, 2,2'-oxybis-(1-chloropropane), 1,2,4,5-tetrachlorobenzene use a 0.010 RRF criterion.

PCB Aroclors by GC (Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample					
Cooler/Storage Temperature Preservation	4°C ± 2°C Tissue/sediments (may be frozen -20°C)	NFG ⁽¹⁾ Method ⁽²⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use Professional Judgment (PJ) to qualify for temperature outlier. Current SW846 criterion is \leq 6° C (3)
Holding Time	Extraction Aqueous: 7 days from collection Extraction Solid: 14 days from collection Exraction Tissue/Sediment (frozen): 1 year Analysis (all matrices): 40 days from extraction	NFG ⁽¹⁾ Method ⁽²⁾	If required by project: J (pos)/UJ (ND) if ext/analyzed > HT J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Use PJ to qualify for holding time outlier. Current SW846 does not have an extraction holding time limit. ⁽³⁾ Gross exceedance > 2x HT, as per NFG 1999
Instrument Perfor	rmance			L	
Retention Times	Surrogates: TCMX (± 0.05); DCB (± 0.10) Aroclors (± 0.07)	NFG (1)	NJ (pos)/R (ND) results for analytes with RT shifts	24	
Initial Calibration	Minimum 5 point with RSD ≤ 20% OR correlation coefficient (r-value) ≥ 0.995 OR Minimum 6-point with co-efficient of determination (r2-value) ≥ 0.99	NFG ⁽¹⁾ Method ⁽⁴⁾	J (pos) if %RSD greater than 20% OR r-value < 0.995 OR r²-value < 0.99	5A	Refer to TM-01 for additional information. Use bias flags (H,L) ⁽⁵⁾ where appropriate
Initial Calibration Verification (ICV)	No NFG criteria. Project specific.	Project	J (pos) if > UCL J (pos)/UJ (ND) if < LCL	5B	Use bias flags (H,L) where appropriate
Continuing Calibration (Prior to each 12 hr. shift)	%D ± 20%	Method ⁽²⁾	If > 20% (high bias): J (pos) If <20% (low bias: J (pos)/UJ (ND)	5B	Refer to TM-01 for additional information. Use bias flags (H,L) where appropriate
Blank Contaminat					
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > RL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is less than appropriate 5X action level.	7	Hierarchy of blank review: #1 - Review MB and IB, qualify as needed
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is less than appropriate 5X action level.	6	#2 - Review FB , qualify as needed
Instrument Blanks (IB)	Analyzed at the beginning and end of every 12 hour sequence No analyte > CRQL	NFG ⁽¹⁾	U (pos) if result is less than appropriate 5X action level.	7	Note: Actions as per NFG 1999 Note: IB not required by method

PCB Aroclors by GC (Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Acc	uracy				,
MS/MSD (recovery)	One set per matrix per batch (of ≤ 20 samples) AR1016 and AR1260: %R = 29% - 135%, or project limits	NFG ⁽¹⁾ Method ⁽²⁾	Qualify parent only unless other QC indicates systematic problems. J (pos) if both %R > upper control limit (UCL) J (pos)/UJ (ND) if both %R < lower control limit (LCL) J (pos)/R (ND) if both %R < 10%	8	No action if only one spike %R is outside criteria. No action if native analyte conc. > 5x the amount spiked. Use bias flags (H,L) where appropriate. Actions apply to all Aroclors in parent sample.
MS/MSD (RPD)	One set per matrix per batch (of ≤ 20 samples) AR1016: RPD < 15%, AR1260: RPD < 20% or project limits	NFG ⁽¹⁾ Method ⁽²⁾	Qualify parent only unless other QC indicates systematic problems. J (pos) if RPD > control limit	9	No action if parent is ND.
LCS	One per lab batch (of ≤ 20 samples) AR1016 and AR1260: %R = 50% - 150%, or project limits	NFG ⁽¹⁾	J (pos) if %R > UCL	10	Use bias flags (H,L) where appropriate. Actions apply to all Aroclors in associated samples.
LCS/LCSD (RPD)	if analyzed use MS/MSD RPD criteria	NFG (1)	J (pos) assoc. compound in all samples	9	LCSD not required by method or NFG
Precision and Acc					
Surrogates	TCMX and DCBP added to every sample %R = 30% - 150% or project limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if either %R > UCL J (pos)/UJ (ND) if either %R < LCL J (pos)/R (ND) if either %R < 10%	13	If %R < 10% (sample dilution is a factor), use PJ Use bias flags (H,L) where appropriate
Internal Standards (if used)	Acceptable Range: IS area = 50% to 200% of CCAL area RT within 30 seconds of CC RT	Method ⁽²⁾	J (pos) if area > 200% J (pos)/UJ (ND) if area < 50% J (pos)/R (ND) if area < 25% RT > 30 seconds, narrate	19	
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	use project limits if specified

PCB Aroclors by GC (Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Identi	fication/Quantification				
Quantitation/ Identification	Between two columns: RPD < 40% or %D < 25% Within Retention Time Windows on both columns.	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if RPD = 40% - 60% (25% - 60% for %D) NJ (pos) if > 60% R (pos) if RTW criterion not met	3	See TM-08 for additional info.
Calibration Range	on column concentration < high calibration standard	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if conc > high standard and sample was not diluted	20	
Dilutions, Re- extractions and/or Reanalyses	Report only one result per analyte	Standard reporting policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 for additional info.
Sample Clean-up					
GPC/Sulfur/ Florisil/Acid	No criteria - cleanups are optional	NFG ⁽¹⁾ Method ⁽²⁾	Use Professional Judgment	14	special cleanups may be required for project cleanup standards may be associated with GPC/florisil cleanups

¹ National Functional Guidelines for Organic Data Review, June, 2008

² Polychlorinated Biphenyls (PCBs) by Gas Chromatography USEPA Method SW846 8082A, Feb 2007, Rev. 1

³ SW846, Chapter 4, Organic Analytes

⁴ Determinative Chromatographic Separations , Method 8000C , March 2003, Rev.3

⁵ "H" = high bias indicated; "L" = low bias indicated

Table No.: NWTPH-Gx Revision No.: 2.1 Last Rev. Date: 5/24/16 Page: 1 of 2

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6°C	1	
Holding Time	Waters: 14 days preserved 7 days unpreserved Solids: 14 Days	J(+)/UJ(-) if hold times exceeded $J(+)/R(-)$ if exceeded > 3X	1	Professional Judgement
Instrument Performance				
	5 calibration points (All within 15% of true value)	Narrate if fewer than 5 calibration levels or if %R >15%		
Initial Calibration	Linear Regression: r ² ≥0.990 If used, RSD of response factors ≤20%	$J(+)/UJ(-)$ if $r^2 < 0.990$ J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 80% to 120%	Narrate if frequency not met. J(+)/UJ(-) if %R < 80% J(+) if %R > 120%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤10 samples)	U (at the RL) if sample result is < RL & < 5X blank result.	7	
Wedned Blank	No results >RL	U (at reported sample value) if sample result is ≥ RL and < 5X blank result	7	
Trip Blank (if required by project)	No results >RL	Action is same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned.	18	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in field blank after method and trip blank qualifiers are assigned.	6	

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EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R <10%	10	Professional Judgement
Surrogates	Bromofluorobenzene and/or 1,4-difluorobenzene added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R >UCL J(+)/R(-) if any %R <10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate outliers If required by project, qualify with J(+)/UJ(-)	9	
Compound ID and Calculation				
Two analyses for one sample (e.g., dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

Table No.: NWTPH-Dx Revision No.: 2.1 Last Rev. Date: 5/24/16 Page: 1 of 3

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx, June 1997, Wa DOE & Oregon DEQ)

QC Element Acceptance Criteria		Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling		•	•	
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6 deg. C	1	
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J(+)/UJ(-) if hold times exceeded $J(+)/R(-)$ if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: r²≥0.990	Narrate if fewer than 5 calibration levels or if $R > 15\%$ $J(+)/UJ(-) \text{ if } r^2 < 0.990$	5A	
	If used, RSD of response factors ≤20%	J(+)/UJ(-) if %RSD > 20%		
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. $J(+)/UJ(-) \text{ if } \%R < 85\%$ $J(+) \text{ if } \%R > 115\%$	5B	
Blank Contamination				
Method Blank	At least one per batch (≤20 samples)	U (at the RL) if sample result is < RL & < 5X blank result.	7	
Wethod Diank	No results >RL	U (at reported sample value) if sample result is ≥ RL and < 5X blank result	7	
Field Klanks		Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.	6	

Table No.: NWTPH-Dx Revision No.: 2.1 Last Rev. Date: 5/24/16 Page: 2 of 3

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx, June 1997, Wa DOE & Oregon DEQ)

QC Element Acceptance Criteria		Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R <10%	10	Professional Judgement
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R <10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate (Use Professional Judgement to qualify)	9	

DATA VALIDATION CRITERIA

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EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx, June 1997, Wa DOE & Oregon DEQ)

QC Element	QC Element Acceptance Criteria Action for Non-Conformance		Reason Code	Discussion and Comments
Compound ID and Calculation				
Two analyses	Report only one result per	"DNR" (or client requested qualifier) all results that	11	See EcoChem
for one sample (dilution)	analyte	should not be reported.	11	TM-04

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Metals by ICP-MS

(Based on Inorganic NFG 2010 and SW-846 6020A)

	1	(Busca on Inorgani	C NFG 2010 and SW-846 6020A)	D	
QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-	Reason	Discussion and Comments
	<u> </u>		Conformance	Code	
Sample Handlin	g			T	
Cooler / Storage Temperature Preservation	Solid: Cooler temperature 4°C±2°C Aqueous: Nitric Acid to pH < 2 Dissolved Metals: 0.45 µm filter, preserve to pH < 2 after filtration	NFG ⁽¹⁾ Method ⁽²⁾	Cooler Temps: If required by project J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use PJ to qualify for temperature outlier. Current SW846 criterion is \leq 6° C $^{(4)}$ No quals for pH if samples preserved by lab immediately upon receipt and within 1 day of collection.
Holding Time	All matrices: 180 days from date sampled Frozen soils, sediments, tissues (-20°C) - HT extended to 1 year	NFG ⁽¹⁾ Method ⁽²⁾ EcoChem standard policy	J (pos)/UJ (ND) if holding time exceeded	1	
Instrument Perf					
Tune	Analyzed prior to ICAL tunignsolution analyzed 5 times with Std. Dev. ≤ 5% Mass calibration < 0.1 amu difference from target mass Resolution < 0.9 amu @ 10% peak height	NFG ⁽¹⁾ Method ⁽²⁾	J(pos)/UJ(ND) if tune criteria not met	5A	Use PJ to evaluate tune. Alternate Resolution critteria may apply based on instrument specs (i.e < 0.75 amu at 5% peak height)
Initial Calibration (ICAL)	Based on instrument requirements, blank + 1 standard minimum requirement for calibration If more than 1 standard used, $r \ge 0.995$	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if r < 0.995	5A	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration $\% R$ within $\pm~10\%$ of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R >111%	5A (H,L) ³	Qualify all samples in run
Reporting Limit (RL) Standard Low Level ICV/CCV	concentration at RL %R = 70%-130%	Method ⁽²⁾	J (pos) < 2x RL / R (ND) if %R <50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L) ³	Qualify all samples in run

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Metals by ICP-MS

(Based on Inorganic NFG 2010 and SW-846 6020A)

			EcoChem Action for Non-	Reason	
QC Element	EcoChem Acceptance Criteria	Source of Criteria	Conformance	Code	Discussion and Comments
Instrument Per	ormance cont'd				
Continuing Calibration Verification (CCV)	Immediately following ICV/ICB, then every two hours or ten samples, and at end of run. %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R >111%	5B (H,L) ³	Qualify samples bracketed by CCV outliers
Interference Check Samples (ICSA / ICSAB)	ICSAB %R 80% - 120% for all spiked elements ICSA < MDL for all unspiked elements	NFG ⁽¹⁾ Method ⁽²⁾	For samples with Al, Ca, Fe, Mg > ICS levels: ICSAB: J(pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R = 50% - 79% J (pos) if %R > 120% ICSA: J (pos) < 2x ICSA/UJ (ND) for ICSA < Neg MDL J (pos) < 2x ICSA for ICSA > MDL	17 (H,L) ³	Use PJ and molecular interferences to evaluate ICSA to determine if bias is present. Refer to TM-14 for additional information.
Blank Contamir	ation				
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is < 5X method blank concentration	7	Refer to TM-02 for additional information. Blank Evaluation based on NFG 1994
Instrument Blanks (ICB/CCB)	After each ICV & CCV blank concentration < MDL	NFG ⁽¹⁾ Method ⁽²⁾	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blks: 7 Neg Blks: 7L ³	Use blanks bracketing samples for Qualification Refer to TM-02 for additional information. Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review IB, qualify as needed #3 - Review FB, qualify as needed
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to TM-02 for additional information.

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Metals by ICP-MS

(Based on Inorganic NFG 2010 and SW-846 6020A)

(Based on Inorganic NFG 2010 and SW-846 6020A)							
QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-	Reason	Discussion and Comments		
QC Liement	Ecochem Acceptance Citteria	Source of Cifteria	Conformance	Code	Discussion and comments		
Precision and A	ccuracy						
Internal Standards (IS)	Added to all samples. All analytes must be associated with an internal standard 60-125% of cal blank IS	NFG ⁽¹⁾ Method ⁽²⁾	J(pos)/UJ(ND) all analytes associated with IS outlier	19	6020A criteria - IS >70% of ICAL std		
LCS (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method ⁽²⁾	J (pos)/R (ND) if %R <50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L) ³	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG Limits 70% -130%		
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.		
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if %R > 125% J (pos)/UJ (ND) if %R <75% J (pos)/R (ND) if %R < 30%, unless post digestion spike analyzed, J (pos)/UJ (ND) if post digestion spike %R OK	8 (H,L) ³	No action if only one spike %R is outside criteria. NA if parent concentration >4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.		
Post Digestion Spikes	If MS is outside 75-125%, post-spike should be analyzed %R 80%-120% (method); 75%-125% (NFG)	NFG ⁽¹⁾ Method ⁽²⁾	Only used to support MS qualification decisions	NA	No qualifiers assigned based solely on this element.		
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.		
Laboratory Duplicate	One per matrix per batch (of \le 20 samples) RPD \le 20% for results \ge 5x RL Solids: difference $<$ 2X RL for results $<$ 5X RL Aqueous: difference $<$ 1X RL for results $<$ 5X RL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.		

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Metals by ICP-MS

(Based on Inorganic NFG 2010 and SW-846 6020A)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-	Reason	Discussion and Comments
,	·	Source of Criteria	Conformance	Code	Discussion and Comments
Precision and A	ccuracy cont'd				
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ³	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Serial Dilution	Analyze one sample per matrix at a 5x dilution %D <10% for original sample conc. > 50x MDL	NFG ⁽¹⁾	J(pos)/UJ(ND) if %D > 10% and native sample concentration > 50x MDL	16	Note serial dilutions for soil are reported in ug/L, but the MDL is in mg/kg. The units need to be adjusted. Qualify all samples in batch.
Field Duplicate	Solids: RPD <50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Narrate and qualify if required by project (EcoChem PJ) Qualify only field duplicate samples J(pos)/UJ(ND)	9	QAPP may have overriding precision limits.
Compound Qua	antitation				
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14	
Calibration Range	Results < instrument linear range	NFG ⁽¹⁾ Method ⁽²⁾	if result exceeds linear range and sample was not diluted J (pos)	20	
Dilutions, Re- extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

(pos): Positive Result (ND): Not detected

² Method SW846 6020A Inductively Coupled Plasma-Mass Spectrometry (ICP-MS), Revision 1, February 2007.

³ "H" = high bias indicated; "L" = low bias indicated

⁴ SW846, Chapter 3, Inorganic Analytes

Table No.: NFG-Hg Revision No.: 1 Last Rev. Date: 01/08/2015

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Mercury by CVAA (Based on Inorganic NFG 2010 and SW846 7470A & 7471B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler / Storage Temperature Preservation	Solid: Cooler temperature 4°C±2°C Aqueous: Nitric Acid to pH < 2 Dissolved Metals: 0.45 µm filter, preserve to pH < 2 after filtration	NFG ⁽¹⁾ Method ⁽²⁾	Cooler Temps: If required by project J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use PJ to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C (4) No quals for pH if samples preserved by lab immediately upon receipt and within 1 day of collection.
Holding Time	28 days from date sampled Frozen solids and tissues HT extended to 6 months	NFG ⁽¹⁾ Method ⁽²⁾ EcoChem standard policy	J (pos)/UJ (ND) if HT exceeded	1	
Instrument Performa	ance				
Initial Calibration (ICAL)	Daily Calibration Blank + 5 standards, one \leq RL Correlation coefficient (r) \geq 0.995	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if r < 0.995	5A (H,L) ³	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after ICAL $\%$ R within \pm 15% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R(pos/ND) if %R <70% J(pos)/UJ(ND) if %R = 70-84% J(pos) if %R = > 116%	5A (H,L) ³	Qualify all samples in run
Reporting Limit (RL) Standard	Conc = RL %R = 70-130%	Method ⁽²⁾	J (pos) < 2x RL / R (ND) if %R <50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L) ³	Qualify all samples in run
Continuing Calibration Verification (CCV)	At beginning of run, every ten samples, and again after last sample. %R within ± 15% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R(pos/ND) if %R <70% J(pos)/UJ(ND) if %R = 70-84% J(pos) if %R = > 116%	5B (H,L) ³	Qualify samples bracketed by CCV outliers
Blank Contamination					
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is < 5X method blank concentration	7	Refer to TM-02 for additional information. Blank Evaluation based on NFG 1994

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Mercury by CVAA (Based on Inorganic NFG 2010 and SW846 7470A & 7471B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Blanks (ICB/CCB)	After each ICV & CCV blank concentration < MDL	NFG ⁽¹⁾ Method ⁽²⁾	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blanks: 7 Neg Blanks: 7L ³	Use blanks bracketing samples for Qualification Refer to TM-02 for additional information. Hierarchy of blank review: #1 - Review MB, quaify as needed #2 - Review IB, qualify as needed #3 - Review FB, qualify as needed
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to TM-02 for additional information.
Precision and Accura	асу				
Laboratroy Control Sample (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method ⁽²⁾	J (pos)/R (ND) if %R <50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L) ³	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG does not address LCS
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.
Matris Spike/Matrix Spike Duplicate MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if %R > 125% J (pos)/UJ (ND) if %R < 75% J (pos)/R (ND) if %R < 30%	8 (H,L) ³	No action if only one spike %R is outside criteria. NA if parent concentration >4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.
Laboratory Duplicate	One per matrix per batch (of ≤ 20 samples) RPD $\le 20\%$ for results $\ge 5x$ RL Solids: difference $< 2X$ RL for results $< 5X$ RL Aqueous: difference $< 1X$ RL for results $< 5X$ RL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.

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Mercury by CVAA (Based on Inorganic NFG 2010 and SW846 7470A & 7471B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ³	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Field Duplicate	Solids: RPD <50% (for results \geq 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results \geq 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.
Compound Quantitat	tion	•		•	
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14	
Calibration Range	Results < instrument linear range	NFG ⁽¹⁾ Method ⁽²⁾	if result exceeds linear range and sample was not diluted J (pos)	20	
Dilutions, Re- extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

(pos): Positive Result (ND): Not Detected

² Method SW846 7470A Mercury in Liquid Waste (Manual Cold-Vapor Technique), Revision 1, September 1994. Method SW846 7471B Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique), Revision 2, February 2007.

³ "H" = high bias indicated; "L" = low bias indicated

⁴ SW846, Chapter 3, Inorganic Analytes



APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table Boeing Kent Space Center

								Validation	Validation
SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	Qualifier	Reason
	KSC - MH-15.10 - W	17A0195-04	SW8082A	Aroclor 1260		ug/L	U	DNR	11
	KSC - MH-15.10 - W	17A0195-04	SW8082A	Aroclor 1254		ug/L	U	DNR	11
	KSC - MH-15.10 - W	17A0195-04	SW8082A	Aroclor 1268		ug/L	U	DNR	11
	KSC - MH-15.10 - W	17A0195-04	SW8082A	Aroclor 1221		ug/L	U	DNR	11
	KSC - MH-15.10 - W	17A0195-04	SW8082A	Aroclor 1232		ug/L	U	DNR	11
	KSC - MH-15.10 - W	17A0195-04	SW8082A	Aroclor 1248		ug/L	U	DNR	11
	KSC - MH-15.10 - W	17A0195-04	SW8082A	Aroclor 1016		ug/L	U	DNR	11
	KSC - MH-15.10 - W	17A0195-04	SW8082A	Aroclor 1262		ug/L	U	DNR	11
	KSC - MH-15.10 - W	17A0195-04	SW8082A	Aroclor 1242		ug/L	U	DNR	11
	KSC - MH-16.12 - W	17A0195-03	SW8082A	Aroclor 1260		ug/L	U	DNR	11
	KSC - MH-16.12 - W	17A0195-03	SW8082A	Aroclor 1254		ug/L	U	DNR	11
	KSC - MH-16.12 - W	17A0195-03	SW8082A	Aroclor 1268		ug/L	U	DNR	11
	KSC - MH-16.12 - W	17A0195-03	SW8082A	Aroclor 1221		ug/L	U	DNR	11
	KSC - MH-16.12 - W	17A0195-03	SW8082A	Aroclor 1232		ug/L	U	DNR	11
	KSC - MH-16.12 - W	17A0195-03	SW8082A	Aroclor 1248		ug/L	U	DNR	11
	KSC - MH-16.12 - W	17A0195-03	SW8082A	Aroclor 1016		ug/L	U	DNR	11
	KSC - MH-16.12 - W	17A0195-03	SW8082A	Aroclor 1262		ug/L	U	DNR	11
17A0195	KSC - MH-16.12 - W	17A0195-03	SW8082A	Aroclor 1242		ug/L	U	DNR	11
17A0195	KSC - MH-20.235 - W	17A0195-02	SW8082A	Aroclor 1260		ug/L	U	DNR	11
	KSC - MH-20.235 - W	17A0195-02	SW8082A	Aroclor 1254	0.013	ug/L		DNR	11
	KSC - MH-20.235 - W	17A0195-02	SW8082A	Aroclor 1268		ug/L	U	DNR	11
	KSC - MH-20.235 - W	17A0195-02	SW8082A	Aroclor 1221		ug/L	U	DNR	11
	KSC - MH-20.235 - W	17A0195-02	SW8082A	Aroclor 1232		ug/L	U	DNR	11
	KSC - MH-20.235 - W	17A0195-02	SW8082A	Aroclor 1248		ug/L	U	DNR	11
	KSC - MH-20.235 - W	17A0195-02	SW8082A	Aroclor 1016		ug/L	U	DNR	11
	KSC - MH-20.235 - W	17A0195-02	SW8082A	Aroclor 1262		ug/L	U	DNR	11
	KSC - MH-20.235 - W	17A0195-02	SW8082A	Aroclor 1242		ug/L	U	DNR	11
	KSC - MH-20.237 - W	17A0195-01	SW8082A	Aroclor 1260		ug/L	U	DNR	11
	KSC - MH-20.237 - W	17A0195-01	SW8082A	Aroclor 1254		ug/L	U	DNR	11
	KSC - MH-20.237 - W	17A0195-01	SW8082A	Aroclor 1268		ug/L	U	DNR	11
	KSC - MH-20.237 - W	17A0195-01	SW8082A	Aroclor 1221		ug/L	U	DNR	11
	KSC - MH-20.237 - W	17A0195-01	SW8082A	Aroclor 1232		ug/L	U	DNR	11
	KSC - MH-20.237 - W	17A0195-01	SW8082A	Aroclor 1248		ug/L	U	DNR	11
	KSC - MH-20.237 - W	17A0195-01	SW8082A	Aroclor 1016		ug/L	U	DNR	11
	KSC - MH-20.237 - W	17A0195-01	SW8082A	Aroclor 1262		ug/L	U	DNR	11
	KSC - MH-20.237 - W	17A0195-01	SW8082A	Aroclor 1242		ug/L	U	DNR	11

Qualified Data Summary Table Boeing Kent Space Center

								Validation	Validation
SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	Qualifier	Reason
	KSC - OF-16 - W	17A0195-05	SW8082A	Aroclor 1260		ug/L	U	DNR	11
	KSC - OF-16 - W	17A0195-05	SW8082A	Aroclor 1254		ug/L	U	DNR	11
	KSC - OF-16 - W	17A0195-05	SW8082A	Aroclor 1268		ug/L	U	DNR	11
	KSC - OF-16 - W	17A0195-05	SW8082A	Aroclor 1221		ug/L	U	DNR	11
	KSC - OF-16 - W	17A0195-05	SW8082A	Aroclor 1232		ug/L	U	DNR	11
	KSC - OF-16 - W	17A0195-05	SW8082A	Aroclor 1248		ug/L	U	DNR	11
	KSC - OF-16 - W	17A0195-05	SW8082A	Aroclor 1016		ug/L	U	DNR	11
	KSC - OF-16 - W	17A0195-05	SW8082A	Aroclor 1262		ug/L	U	DNR	11
17A0195	KSC - OF-16 - W	17A0195-05	SW8082A	Aroclor 1242		ug/L	U	DNR	11
17A0195	KSC - OF-NDP - W	17A0195-06	SW8082A	Aroclor 1260		ug/L	U	DNR	11
	KSC - OF-NDP - W	17A0195-06	SW8082A	Aroclor 1254		ug/L	U	DNR	11
	KSC - OF-NDP - W	17A0195-06	SW8082A	Aroclor 1268		ug/L	U	DNR	11
	KSC - OF-NDP - W	17A0195-06	SW8082A	Aroclor 1221		ug/L	U	DNR	11
	KSC - OF-NDP - W	17A0195-06	SW8082A	Aroclor 1232		ug/L	U	DNR	11
	KSC - OF-NDP - W	17A0195-06	SW8082A	Aroclor 1248		ug/L	U	DNR	11
	KSC - OF-NDP - W	17A0195-06	SW8082A	Aroclor 1016		ug/L	U	DNR	11
	KSC - OF-NDP - W	17A0195-06	SW8082A	Aroclor 1262		ug/L	U	DNR	11
	KSC - OF-NDP - W	17A0195-06	SW8082A	Aroclor 1242		ug/L	U	DNR	11
	KSC - OF 20 - W	17A0243-01	SW8082A	Aroclor 1260		ug/L	U	DNR	11
	KSC - OF 20 - W	17A0243-01	SW8082A	Aroclor 1254		ug/L	U	DNR	11
	KSC - OF 20 - W	17A0243-01	SW8082A	Aroclor 1268		ug/L	U	DNR	11
	KSC - OF 20 - W	17A0243-01	SW8082A	Aroclor 1221		ug/L	U	DNR	11
17A0243	KSC - OF 20 - W	17A0243-01	SW8082A	Aroclor 1232		ug/L	U	DNR	11
	KSC - OF 20 - W	17A0243-01	SW8082A	Aroclor 1248		ug/L	U	DNR	11
	KSC - OF 20 - W	17A0243-01	SW8082A	Aroclor 1016		ug/L	U	DNR	11
	KSC - OF 20 - W	17A0243-01	SW8082A	Aroclor 1262		ug/L	U	DNR	11
	KSC - OF 20 - W	17A0243-01	SW8082A	Aroclor 1242		ug/L	U	DNR	11



DATA VALIDATION REPORT

BOEING KENT SPACE CENTER SOIL & GROUND WATER SAMPLING

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EcoChem Project: C8105-1

March 6, 2017

Approved for Release:

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ChiDM. Frans

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of the summary validation (Stage 2A) performed on soil and groundwater samples and the associated laboratory and field quality control samples for the Boeing Kent Space Center. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Eurofins Lancaster Laboratories Environmental, LLC, Lancaster, Pennsylvania and Analytical Resources, Incorporated, Tukwila, Washington. The analytical method and EcoChem project chemists are listed in the following table:

Analysis	METHOD OF ANALYSIS	PRIMARY REVIEW	SECONDARY REVIEW
Volatile Organic Compounds (VOC)	SW8260C		
Total Petroleum Hydrocarbons – Diesel & Residual Range	NWTPH-Dx		
Total Petroleum Hydrocarbons – Mineral Oil Range	NWTPH-Dx	R. Frans	C. Frans
Total Petroleum Hydrocarbons – Gasoline Range	NWTPH-Gx		
Total & Dissolved Metals and	EPA 200.8, SW6020A		
Mercury	& SW7470A		

The data were reviewed using guidance and quality control criteria documented in the analytical methods; the sampling and analysis plan (SAP) for the *Remedial Investigation Work Plan Boeing Kent Space Center Facility, Ecology Review Draft* (Landau Associates, July 29, 2016); *USEPA National Functional Guidelines for Organic Data Review* (EPA, 1999 & 2008); and *USEPA National Functional Guidelines for Inorganic Data Review* (EPA, 2010 & 2014).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reason codes, and validation criteria are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index Boeing Kent Space Center

	_		NWTPH-Gx	NWTPH-Dx	Mineral		Total	Dissolved	
SDG	Sample ID	Lab Sample ID			Oil	VOCs	Metals	Metals	Moisture
17A0322	KSC-SB9-GW	17A0322-01			✓				
	KSC-SB10-GW	17A0322-02			✓				
	KSC-SB11-GW	17A0322-03			✓				
	KSC-SB12-GW	17A0322-04			✓				
	KSC-SB1-GW	8807826						✓	
	KSC-SB2-GW	8807827						✓	
	KSC-SB6-GW	8807828		✓		✓			
	KSC-SB7-GW	8807829		✓		✓			
	KSC-SB8-GW	8807830		✓		✓			
	KSC-SB8-GW	8807831						✓	
	KSC-SB9-GW	8807832		✓					
1759258	KSC-SB10-GW	8807833		✓					
	KSC-SB11-GW	8807834		✓					
	KSC-SB12-GW	8807835		✓					
	KSC-SB12-GW	8807836						✓	
	KSC-SB19-GW	8807840	✓			✓			
	KSCRI-SB1-(11.5-12.5)	8807838					✓		✓
	KSCRI-SB2-(11.5-12.5)	8807839					✓		✓
	Trip Blank	8807837				✓			
	KSC-SB3-GW	8809605		✓					
	KSC-SB3-GW	8809607						✓	
	KSC-SB4-GW	8809606		✓					
	KSC-SB5-GW	8809608		✓					
	KSC-SB18-GW	8809609	✓			✓			
1759583	KSC-SB20-GW	8809610	✓			✓			
	Trip Blank	8809611	✓			✓			
	KSCRI-SB3-(8.5-9.5')	8809612		✓			✓		✓
	KSCRI-SB4-(8-9')	8809613		✓					✓
	KSCRI-SB5-(11-12')	8809614		√					✓

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Volatile Organic Compounds - Method SW8260C Vinyl Chloride - Method SW8260C-SIM

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed Eurofins Lancaster Laboratories Environmental, LLC, Lancaster, Pennsylvania. Refer to the Sample Index for a complete list of samples.

SDG	Number of Samples	VALIDATION LEVEL
1759258	3 groundwater samples and 1 trip blank	Stage 2A
1759583	2 groundwater sample and 1 trip blank	Stage 2A
1759584	3 groundwater sample and 1 trip blank	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

SDG 1759584: Sample KSC-SBD1-GW listed on the COC was logged in and reported in the laboratory report and the EDD as KSC-SBDI-GW. The client was contacted and verified the COC was correct. The EDD was updated correct sample ID.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	1	Field Duplicates
✓ Laboratory Blanks		✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
√	Surrogate Compounds	✓	Reported Results
√	Laboratory Control Samples (LCS)	✓	Target Analyte List
√	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)		

[√] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be analyzed within 14 days for aqueous samples.

All coolers were received at the laboratory within the advisory temperature range. All samples were extracted and analyzed within the required holding time.

Field Blanks

Trip blanks were included with all SDGs; target analytes were not detected in the trip blank samples.

Field Duplicates

SDG 1759584: One field duplicate set was submitted with this SDG: KSC-SB13-GW & KSC-SBD1-GW. Field precision was acceptable.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

No anomalies were noted during validation for evaluated results

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample/laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) recovery values and precision was acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Gasoline Range Organics - Method NWTPH-Gx

This report documents the review of analytical data from the analyses of and groundwater samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster Laboratories Environmental, LLC, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
1759258	1 groundwater sample	Stage 2A
1759583	2 groundwater samples and 1 trip blank	Stage 2A
1759584	3 groundwater samples and 1 trip blank	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

SDG 1759584: Sample KSC-SBD1-GW listed on the COC was logged in and reported in the laboratory report and the EDD as KSC-SBDI-GW. The client was contacted and verified the COC was correct. The EDD was updated correct sample ID.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	~	Laboratory Duplicates
✓	Laboratory Blanks	1	Field Duplicates
1	Field Blanks	✓	Target Analyte List
✓	Surrogate Compounds	✓	Reporting Limits
✓	Laboratory Control Samples (LCS)	✓	Reported Results
✓	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)		

[✓] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be analyzed within 14 days for aqueous samples.

All coolers were received at the laboratory within the advisory temperature range. All samples were analyzed within the required holding time.

Field Blanks

SDG 1759258: A trip blank was not included with this SDG.

SDG 1759583 and 1759584: Trip blanks were included with both SDGs; GRO was not detected in the trip blank samples.

Field Duplicates

SDG 1759584: One field duplicate set was submitted with this SDG: KSC-SB13-GW & KSC-SBD1-GW. Field precision was acceptable.

Target Analyte List

The target analyte as specified in the QAPP/SAP was reported.

Reporting Limits

The target analyte reporting limit specified in the QAPP/SAP was met.

Reported Results

No anomalies were noted during validation for evaluated results.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exception noted above, accuracy was acceptable as demonstrated by the surrogate, laboratory control sample/laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) recovery values. Precision was acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Diesel Range Organics - Method NWTPH-Dx

This report documents the review of analytical data from the analyses of soil and groundwater samples and the associated field and laboratory quality control (QC) samples. Samples were analyzed by Eurofins Lancaster Laboratories Environmental, LLC, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	VALIDATION LEVEL
1759258	8 groundwater samples	Stage 2A
1759583	3 groundwater samples and 3 soil samples	Stage 2A
1759584	5 groundwater samples	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

SDG 1759584: Sample KSC-SBD1-GW listed on the COC was logged in and reported in the laboratory report and the EDD as KSC-SBDI-GW. The client was contacted and verified the COC was correct. The EDD was updated correct sample ID.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Preservation and Holding Times	1	Matrix Spikes/Matrix Spike Duplicates
✓	Laboratory Blanks	1	Field Duplicates
1	Field Blanks	✓	Target Analyte List
2	Surrogate Compounds	✓	Reporting Limits
✓	Laboratory Control Samples (LCS)	2	Reported Results

[✓] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be extracted within 7 days for aqueous samples and extracts must be analyzed within 40 days of extraction.

All coolers were received at the laboratory within the advisory temperature range. All samples were extracted and analyzed within the required holding times.

SDG 1759258: All samples were re-extracted and re-analyzed due to low surrogate recoveries. The samples were re-extracted out of holding time, both sets of sample results were reported in the sample delivery group for comparability.

Field Blanks

No field blanks were submitted with this sampling event.

Surrogate Compounds

SDG 1759258: The surrogate percent recovery (%R) for chlorobenzene was less than the lower control limit in Sample KCS-SB11-GW indicating a potential low bias; the result was qualified (J-13L).

The surrogate %R for chlorobenzene was also less than the lower control limit in the method blank, laboratory control sample and the laboratory control sample duplicate; the samples were QC; therefore no results were qualified.

Field Duplicates

SDG 1759584: One field duplicate set was submitted with this SDG: KSC-SB13-GW & KSC-SBD1-GW. Field precision was acceptable.

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

SDG 1759258: Results were reported from both the original and re-extracted analysis batches. The re-extracted results were flagged as do-not-report (DNR-11) to indicate which results from multiple reported results should not be used.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable, as demonstrated by the surrogate, laboratory control sample/laboratory control sample duplicate (LCS/LCSD), and matrix spike/matrix spike duplicate (MS/MSD) percent recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD, MS/MSD, and laboratory and field duplicate relative percent difference values.

One result was estimated due to a surrogate recovery outlier.

Results were flagged as do-not-report (DNR) to indicate which result, from multiple analyses, should not be used. Data that have been flagged as DNR should not be used for any purpose.

All other data, as qualified, are acceptable for use. A useable result remains for all analytes in all samples; completeness is unaffected.

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Mineral Oil Range Organics - Method NWTPH-Dx

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Analytical Resources, Incorporated, Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	VALIDATION LEVEL
17A0322	4 groundwater samples	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

The laboratory originally submitted this data package with mineral oil and diesel range organic (DRO) results reported. Upon request by the client, the DRO results were removed from the package to avoid confusion as this analyte was being tested and reported by a different laboratory. The laboratory only spikes the laboratory control sample (LCS) with DRO and with removal of DRO as a target analyte; the LCS results were no longer included in the updated data package. The LCS results were evaluated from the original pdf laboratory package.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

\checkmark	Sample Preservation and Holding Times	✓	Laboratory Duplicates
✓	Laboratory Blanks	1	Field Duplicates
1	Field Blanks	✓	Target Analyte List
✓	Surrogate Compounds	✓	Reporting Limits
✓	Laboratory Control Samples (LCS)	✓	Reported Results
1	Matrix Spikes/Matrix Spike Duplicates		

[✓] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed

Sample Preservation and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be extracted within 7 days for aqueous samples and extracts must be analyzed within 40 days of extraction.

All coolers were received at the laboratory within the advisory temperature range. All samples were extracted and analyzed within the required holding times.

Field Blanks

No field blanks were submitted with this data set.

Matrix Spikes/Matrix Spike Duplicates

There were no matrix spike samples analyzed with this SDG.

Field Duplicate Samples

There were no field duplicates identified in this SDG.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Compound Identification

No anomalies were noted during validation for compound identification.

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Reported Results

No anomalies were noted during validation for evaluated results.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable, as demonstrated by the surrogate and laboratory control sample percent recovery values. Precision could not be evaluated with this data set.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Total & Dissolved Metals - Method EPA 200.8 & SW6020A

This report documents the review of analytical data from the analyses of soil and groundwater samples and the associated field and laboratory quality control (QC) samples. Samples were analyzed by Eurofins Lancaster Laboratories Environmental, LLC, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES AND MATRIX	VALIDATION LEVEL
1759258	4 groundwater samples and 2 soil samples	Stage 2A
1759583 1 ground water sample and 1 soil sample		Stage 2A
1759584	4 groundwater samples	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

SDG 1759584: Sample KSC-SBD1-GW listed on the COC was logged in and reported in the laboratory report and the EDD as KSC-SBDI-GW. The client was contacted and verified the COC was correct. The EDD was updated with the correct sample ID.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Duplicates
✓	Laboratory Blanks	1	Field Duplicates
✓	Laboratory Control Samples (LCS)	✓	Target Analyte List
2	Matrix Spikes (MS)	✓	Reporting Limits
1	Field Blanks	✓	Reported Results

[√] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be analyzed within 180 days for aqueous and solid ICP-MS metals samples.

All coolers were received at the laboratory within the advisory temperature range. All samples were analyzed within the required holding times.

Matrix Spikes

SDG 1759253: Sample KSCRI-SB3-(8.5-9.5) was used for the matrix spike analyses. The percent recovery for arsenic in the matrix spike sample was greater than the upper control limit. The matrix spike duplicate was within control limits; no results were qualified based on this single outlier.

The RPD value for this MS/MSD pair was greater than the control limit; associated samples in the batch (including samples from SDG 1759258) were estimated (J-9).

Field Blanks

Field blanks were not submitted with this data set.

Field Duplicates

SDG 1759584: One field duplicate set was submitted with this SDG: KSC-SB13-GW & KSC-SBD1-GW. Field precision was acceptable.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

No anomalies were noted during validation for evaluated results.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable, as demonstrated by the laboratory control sample (LCS) and matrix spike/matrix spike duplicate (MS/MSD) recovery values. Precision was acceptable as demonstrated by the MS/MSD and laboratory and field duplicate RPD values.

Results were qualified based on a matrix spike precision outlier.

All data, as qualified, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r²)
Instrument Performance	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L)¹ where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L)¹ where appropriate
	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
Blank Contamination	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L)¹ for negative instrument blanks
	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L)¹ where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
Precision and Accuracy	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L)¹ where appropriate
	12	Reference Material Use bias flags (H,L)¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L)¹ where appropriate
	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L)¹ where appropriate
Interferences	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
	2	Chromatographic pattern in sample does not match pattern of calibration standard
IdealCont.	3	2 nd column confirmation (RPD or %D)
Identification and Quantitation	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, reextractions, etc. Associated with "R" and "DNR" only)
Miscellaneous	14	Other (See DV report for details)
	26	Method QC information not provided

¹H = high bias indicated

L = low bias indicated

Table: NFG-VOC_GCMS Revision No.: 9 Last Rev. Date: 1/29/2015

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Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8260C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling	1				
Cooler/Storage Temperature Preservation	4° C±2°C Aqueous: HCl to pH < 2 Current SW846 criterion is ≤ 6° C ⁽³⁾	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 if pH ≤ 2, reject 2-chloroethyl vinyl ether (R-1) some projects may require methanol preserved soils/seds
Holding Time	Aqueous: 14 days preserved 7 Days: unpreserved Solid: 14 Days	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Perfo	ormance				
Tuning	BFB Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	Minimum 5 standards RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders * RRF ≥ 0.005 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	%RSD ≤ 20% except: %RSD ≤ 40% poor responders * %RSD ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit	5A	
Initial Calibration Verification	Second source analyzed immediately after ICAL %R 70% - 130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.
Continuing Calibration Sensitivity	$RRF \ge 0.05$ except: $RRF \ge 0.01$ poor responders * $RRF \ge 0.005$ 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	%D ≤ 25% except: %D ≤ 40% poor responders * %D ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	

Table: NFG-VOC_GCMS Revision No.: 9 Last Rev. Date: 1/29/2015

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Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8260C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamin	ation				
Method Blank (MB)	MB: One per matrix per batch (of ≤ 20 samples) No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	7	10X action level for methylene chloride, acetone, & 2-butanone.
(IVID)	No TICs present	iviethod · ·	R (pos) TICs using 10X rule		5X for all other target analytes Hierarchy of blank review:
Trip Blank (TB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	#1 - Review MB, qualify as needed #2 - Review TB, qualify as needed
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	#3 - Review FB, qualify as needed Note: Actions as per NFG 1999
Precision and A	ccuracy				
LCS/LCSD (recovery)	One per matrix per batch (of ≤ 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits.
LCS/LCSD RPD	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Surrogates	Added to all samples Within method/laboratory control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R >UCL J (pos)/UJ (ND) if %R <lcl (nd)="" (pos)="" <10%<="" if="" j="" r="" td=""><td>13 (H,L)⁴</td><td>No action if there are 4+ surrogates and only 1 outlier Qualify all compounds if qualification is required.</td></lcl>	13 (H,L) ⁴	No action if there are 4+ surrogates and only 1 outlier Qualify all compounds if qualification is required.
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard

Table: NFG-VOC_GCMS Revision No.: 9 Last Rev. Date: 1/29/2015

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Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8260C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Ac	curacy (continued)				
MS/MSD (recovery)	One per matrix per batch (of \leq 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) If RPD > control limit	9	Qualify parent sample only
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified
Compound Ident	ification and Quantitation				
Retention Time Relative Ion Intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ TIC R (pos) if common laboratory contaminants	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re- extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Organic Data Review, June, 2008

(pos): Positive Result (ND): Non-detect

² National Functional Guidelines for Organic Data Review, Oct, 1999

³ Method SW846 8260C Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

^{* &}quot;Poor responder" compounds: Acetone, 2-butanone, carbon disulfide, chloroethane, chloromethane, cyclohexane, 1,2-dibromoethane, dichlorodifluoromethane, cis-1,2-dichloroethene, 1,2-dichloropropane, 1,2-dibromo-3-chloropropane, 2-hexanone, isopropylbenzene, methyl acetate, methylene chloride, methylcyclohexane, 4-methyl-2-pentanone, methyl tert-butyl ether, trans-1,2-dichloroethene, trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane criterion is 0.010 RRF; 1,4-dioxane RRF criterion is 0.005.

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EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6°C	1	
Holding Time	Waters: 14 days preserved 7 days unpreserved Solids: 14 Days	J(+)/UJ(-) if hold times exceeded $J(+)/R(-)$ if exceeded > 3X	1	Professional Judgement
Instrument Performance				
	5 calibration points (All within 15% of true value)	Narrate if fewer than 5 calibration levels or if %R >15%		
Initial Calibration	Linear Regression: r ² ≥0.990 If used, RSD of response factors ≤20%	$J(+)/UJ(-)$ if $r^2 < 0.990$ J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 80% to 120%	Narrate if frequency not met. J(+)/UJ(-) if %R < 80% J(+) if %R > 120%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤10 samples)	U (at the RL) if sample result is < RL & < 5X blank result.	7	
Wedned Blank	No results >RL	U (at reported sample value) if sample result is ≥ RL and < 5X blank result	7	
Trip Blank (if required by project)	No results >RL	Action is same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned.	18	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in field blank after method and trip blank qualifiers are assigned.	6	

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EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R <10%	10	Professional Judgement
Surrogates	Bromofluorobenzene and/or 1,4-difluorobenzene added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R >UCL J(+)/R(-) if any %R <10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate outliers If required by project, qualify with J(+)/UJ(-)	9	
Compound ID and Calculation				
Two analyses for one sample (e.g., dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

Table No.: NWTPH-Dx Revision No.: 2.1 Last Rev. Date: 5/24/16 Page: 1 of 3

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling		•	•	
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6 deg. C	1	
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J(+)/UJ(-) if hold times exceeded $J(+)/R(-)$ if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: r²≥0.990	Narrate if fewer than 5 calibration levels or if $R > 15\%$ $J(+)/UJ(-) \text{ if } r^2 < 0.990$	5A	
	If used, RSD of response factors ≤20%	J(+)/UJ(-) if %RSD > 20%		
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. $J(+)/UJ(-) \text{ if } \%R < 85\%$ $J(+) \text{ if } \%R > 115\%$	5B	
Blank Contamination				
Method Blank	At least one per batch (≤20 samples)	U (at the RL) if sample result is < RL & < 5X blank result.	7	
Wethod Dialik	No results >RL	U (at reported sample value) if sample result is ≥ RL and < 5X blank result	7	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.	6	

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EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R <10%	10	Professional Judgement
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R <10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate (Use Professional Judgement to qualify)	9	

DATA VALIDATION CRITERIA

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EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound ID and Calculation				
Two analyses	Report only one result per	"DNR" (or client requested qualifier) all results that	11	See EcoChem
for one sample (dilution)	analyte	should not be reported.	11	TM-04

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Metals by ICP-MS

(Based on Inorganic NFG 2010 and SW-846 6020A)

(Based on Inorganic NFG 2010 and SW-846 6020A)								
QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-	Reason	Discussion and Comments			
	<u> </u>		Conformance	Code				
Sample Handlin	g			T				
Cooler / Storage Temperature Preservation	Solid: Cooler temperature 4°C±2°C Aqueous: Nitric Acid to pH < 2 Dissolved Metals: 0.45 µm filter, preserve to pH < 2 after filtration	NFG ⁽¹⁾ Method ⁽²⁾	Cooler Temps: If required by project J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use PJ to qualify for temperature outlier. Current SW846 criterion is \leq 6° C $^{(4)}$ No quals for pH if samples preserved by lab immediately upon receipt and within 1 day of collection.			
Holding Time	All matrices: 180 days from date sampled Frozen soils, sediments, tissues (-20°C) - HT extended to 1 year	NFG ⁽¹⁾ Method ⁽²⁾ EcoChem standard policy	J (pos)/UJ (ND) if holding time exceeded	1				
Instrument Perf								
Tune	Analyzed prior to ICAL tunignsolution analyzed 5 times with Std. Dev. ≤ 5% Mass calibration < 0.1 amu difference from target mass Resolution < 0.9 amu @ 10% peak height	NFG ⁽¹⁾ Method ⁽²⁾	J(pos)/UJ(ND) if tune criteria not met	5A	Use PJ to evaluate tune. Alternate Resolution critteria may apply based on instrument specs (i.e < 0.75 amu at 5% peak height)			
Initial Calibration (ICAL)	Based on instrument requirements, blank + 1 standard minimum requirement for calibration If more than 1 standard used, $r \ge 0.995$	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if r < 0.995	5A				
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration ${ m \%R}$ within ${ m \pm 10\%}$ of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R >111%	5A (H,L) ³	Qualify all samples in run			
Reporting Limit (RL) Standard Low Level ICV/CCV	concentration at RL %R = 70%-130%	Method ⁽²⁾	J (pos) < 2x RL / R (ND) if %R <50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L) ³	Qualify all samples in run			

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Metals by ICP-MS

(Based on Inorganic NFG 2010 and SW-846 6020A)

			EcoChem Action for Non-	Reason	Discussion and Comments					
QC Element	EcoChem Acceptance Criteria	Source of Criteria	Conformance	Code						
Instrument Per	Instrument Performance cont'd									
Continuing Calibration Verification (CCV)	Immediately following ICV/ICB, then every two hours or ten samples, and at end of run. %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R >111%	5B (H,L) ³	Qualify samples bracketed by CCV outliers					
Interference Check Samples (ICSA / ICSAB)	ICSAB %R 80% - 120% for all spiked elements ICSA < MDL for all unspiked elements	NFG ⁽¹⁾ Method ⁽²⁾	For samples with Al, Ca, Fe, Mg > ICS levels: ICSAB: J(pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R = 50% - 79% J (pos) if %R > 120% ICSA: J (pos) < 2x ICSA/UJ (ND) for ICSA < Neg MDL J (pos) < 2x ICSA for ICSA > MDL	17 (H,L) ³	Use PJ and molecular interferences to evaluate ICSA to determine if bias is present. Refer to TM-14 for additional information.					
Blank Contamir	ation									
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is < 5X method blank concentration	7	Refer to TM-02 for additional information. Blank Evaluation based on NFG 1994					
Instrument Blanks (ICB/CCB)	After each ICV & CCV blank concentration < MDL	NFG ⁽¹⁾ Method ⁽²⁾	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blks: 7 Neg Blks: 7L ³	Use blanks bracketing samples for Qualification Refer to TM-02 for additional information. Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review IB, qualify as needed #3 - Review FB, qualify as needed					
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to TM-02 for additional information.					

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Metals by ICP-MS

(Based on Inorganic NFG 2010 and SW-846 6020A)

(Based on Inorganic NFG 2010 and SW-846 6020A)								
QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-	Reason	Discussion and Comments			
QC Liement	Ecochem Acceptance Citteria	Source of Cifteria	Conformance	Code	Discussion and comments			
Precision and Accuracy								
Internal Standards (IS)	Added to all samples. All analytes must be associated with an internal standard 60-125% of cal blank IS	NFG ⁽¹⁾ Method ⁽²⁾	J(pos)/UJ(ND) all analytes associated with IS outlier	19	6020A criteria - IS >70% of ICAL std			
LCS (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method ⁽²⁾	J (pos)/R (ND) if %R <50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L) ³	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG Limits 70% -130%			
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.			
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if %R > 125% J (pos)/UJ (ND) if %R <75% J (pos)/R (ND) if %R < 30%, unless post digestion spike analyzed, J (pos)/UJ (ND) if post digestion spike %R OK	8 (H,L) ³	No action if only one spike %R is outside criteria. NA if parent concentration >4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.			
Post Digestion Spikes	If MS is outside 75-125%, post-spike should be analyzed %R 80%-120% (method); 75%-125% (NFG)	NFG ⁽¹⁾ Method ⁽²⁾	Only used to support MS qualification decisions	NA	No qualifiers assigned based solely on this element.			
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.			
Laboratory Duplicate	One per matrix per batch (of \le 20 samples) RPD \le 20% for results \ge 5x RL Solids: difference $<$ 2X RL for results $<$ 5X RL Aqueous: difference $<$ 1X RL for results $<$ 5X RL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.			

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Metals by ICP-MS

(Based on Inorganic NFG 2010 and SW-846 6020A)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-	Reason	Discussion and Comments			
,	Conformance		Conformance	Code	Discussion and Comments			
Precision and Accuracy cont'd								
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ³	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits			
Serial Dilution	Analyze one sample per matrix at a 5x dilution %D <10% for original sample conc. > 50x MDL	NFG ⁽¹⁾	J(pos)/UJ(ND) if %D > 10% and native sample concentration > 50x MDL	16	Note serial dilutions for soil are reported in ug/L, but the MDL is in mg/kg. The units need to be adjusted. Qualify all samples in batch.			
Field Duplicate	Solids: RPD <50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Narrate and qualify if required by project (EcoChem PJ) Qualify only field duplicate samples J(pos)/UJ(ND)	9	QAPP may have overriding precision limits.			
Compound Qua	antitation							
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14				
Calibration Range	Results < instrument linear range	NFG ⁽¹⁾ Method ⁽²⁾	if result exceeds linear range and sample was not diluted J (pos)	20				
Dilutions, Re- extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results			

¹ National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

(pos): Positive Result (ND): Not detected

² Method SW846 6020A Inductively Coupled Plasma-Mass Spectrometry (ICP-MS), Revision 1, February 2007.

³ "H" = high bias indicated; "L" = low bias indicated

⁴ SW846, Chapter 3, Inorganic Analytes



APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table Boeing Kent Space Center

								Validation	Validation
SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	Qualifier	Reason
1759258	KSC-SB9-GW	8807832RE	NWTPH-Dx modified	Diesel/#2 Fuel		mg/l	U	DNR	11
1759258	KSC-SB8-GW	8807830RE	NWTPH-Dx modified	Diesel/#2 Fuel	0.2	mg/l		DNR	11
1759258	KSC-SB10-GW	8807833RE	NWTPH-Dx modified	Diesel/#2 Fuel	0.17	mg/l		DNR	11
1759258	KSC-SB12-GW	8807835RE	NWTPH-Dx modified	Diesel/#2 Fuel	0.2	mg/l		DNR	11
1759258	KSC-SB11-GW	8807834RE	NWTPH-Dx modified	Diesel/#2 Fuel	0.32	mg/l		DNR	11
1759258	KSC-SB11-GW	8807834	NWTPH-Dx modified	Diesel/#2 Fuel	0.29	mg/l		J	13L
1759258	KSC-SB7-GW	8807829RE	NWTPH-Dx modified	Diesel/#2 Fuel	0.12	mg/l		DNR	11
1759258	KSC-SB6-GW	8807828RE	NWTPH-Dx modified	Diesel/#2 Fuel	0.13	mg/l		DNR	11
1759258	KSCRI-SB2-(11.5-12.5)	8807839	SW6020A	Arsenic	8.59	mg/kg		J	9
1759258	KSCRI-SB1-(11.5-12.5)	8807838	SW6020A	Arsenic	7.57	mg/kg		J	9
1759583	KSCRI-SB3-(8.5-9.5')	8809612	SW6020A	Arsenic	6.71	mg/kg		J	9



DATA VALIDATION REPORT

BOEING KENT SPACE CENTER GROUNDWATER & SEDIMENT SAMPLING

Revision 1

Prepared for:

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EcoChem Project: C8105-1

July 11, 2017

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PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of the summary validation (Stage 2A) performed on groundwater and sediment samples and the associated laboratory and field quality control samples for the Boeing Kent Space Center. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Eurofins Lancaster Laboratories Environmental, LLC, Lancaster, Pennsylvania and Analytical Resources, Incorporated, Tukwila, Washington. The analytical method and EcoChem project chemists are listed in the following table:

Analysis	METHOD OF ANALYSIS	PRIMARY REVIEW	SECONDARY REVIEW	
Polynuclear Aromatic Hydrocarbon Compounds (PAH)	SW8270D-SIM			
PCB Aroclors	SW8082A			
Total Petroleum Hydrocarbons – Diesel & Residual Range	NWTPH-Dx	R. Frans	C. Frans	
Total & Dissolved Metals and	EPA 200.8, SW6020A			
Mercury	& SW7470A			
Nitrate & Sulfate	EPA 300.0			

The data were reviewed using guidance and quality control criteria documented in the analytical methods; the sampling and analysis plan (SAP) for the *Remedial Investigation Work Plan Boeing Kent Space Center Facility, Ecology Review Draft* (Landau Associates, July 29, 2016); *USEPA National Functional Guidelines for Organic Data Review* (EPA, 1999 & 2008); and *USEPA National Functional Guidelines for Inorganic Data Review* (EPA, 2010 & 2014).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reason codes, and validation criteria are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index Boeing Kent Space Center

SDG	Sample ID	Lab Sample ID	NWTPH-Dx	PAHs	РСВ	Total Metals	Dissolved Metals	Nitrate & Sulfate
	KSCRI-MW1-2.5	8941816				✓		
	KSCRI-MW2-2.5	8941817				✓		
	KSCRI-MW3-2.5	8941818				✓		
1789843	KSCRI-MW4-2.5	8941819				✓		
	KSCRI-MW5-2.5	8941820				✓		
	KSCRI-MW6-2.5	8941821				✓		
	KSCRI-MW7-2.5	8941822				✓		
	KSCRI-MW2-050317	8974896	✓					✓
	KSCRI-MW2-050317	8974897					✓	
	KSCRI-MW3-050317	8974898	✓					✓
	KSCRI-MW3-050317	8974899					✓	
1797131	KSCRI-MW4-050317	8974900	✓					✓
1/9/151	KSCRI-MW4-050317	8974901					✓	
	KSCRI-MW5-050317	8974902	✓					✓
	KSCRI-MW5-050317	8974903					✓	
	KSCRI-DUP-050317	8974904	✓					✓
	KSCRI-DUP-050317	8974905					✓	
	KSCRI-MW1-050417	8981034	✓					✓
	KSCRI-MW1-050417	8981035					✓	
1798513	KSCRI-MW61-050417	8981036	✓					✓
1/30513	KSCRI-MW6-050417	8981037					✓	
	KSCRI-MW7-050417	8981038	✓					✓
	KSCRI-MW7-050417	8981039					✓	
17E0094	KSC-OF-16-0.3	17E0094-01	✓	✓	✓	✓		
17 50094	KSC-OF-DP-0.3	17E0094-02	✓	✓	✓	✓		

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Polynuclear Aromatic Hydrocarbons - Method SW8270D-SIM

This report documents the review of analytical data from the analyses of sediment samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Analytical Resources, Incorporated, Tukwila, Washington. Refer to the Sample Index for a complete list of samples.

SDG	Number of Samples	VALIDATION LEVEL
17E0094	2 sediment samples	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
√	Laboratory Blanks	1	Field Duplicates
1	Field Blanks	\	Target Analyte List
√	Surrogate Compounds	√	Reporting Limits
√	Laboratory Control Samples (LCS)	√	Reported Results

[✓] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be extracted within 7 days for aqueous samples and extracts must be analyzed within 40 days of extraction.

All samples were received at a temperature greater than the advisory temperature range at 8.6°C. The coolers were received within several hours after the samples were collected preventing sufficient time for cooling; no results qualified.

All samples were extracted and analyzed within the required holding times.

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Field blanks were not submitted with this data set.

Matrix Spike/Matrix Spike Duplicate

No matrix spikes were analyzed with this analytical batch. The laboratory did not perform a laboratory control sample duplicate; therefore, no measure of precision was available for evaluation.

Field Duplicates

Field duplicates were not submitted with this data set.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

No anomalies were noted during validation for evaluated results.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and laboratory control sample (LCS) recovery values. No measure of precision was available for evaluation.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Polychlorinated Biphenyl Compounds - Method SW8082A

This report documents the review of analytical data from the analyses of sediment samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Analytical Resources, Incorporated, Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	VALIDATION LEVEL	
17E0094	2 sediment samples	Stage 2A	

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Preservation and Holding Times	1	Matrix Spikes/Matrix Spike Duplicates
✓	Laboratory Blanks	1	Field Duplicates
1	Field Blanks	✓	Target Analyte List
✓	Surrogate Compounds	✓	Reporting Limits
✓	Laboratory Control Samples (LCS)	2	Reported Results

[✓] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be extracted within 14 days for sediment samples and extracts must be analyzed within 40 days of extraction.

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

All samples were received at a temperature greater than the advisory temperature range at 8.6°C. The coolers were received within several hours after the samples were collected preventing sufficient time for cooling; no results qualified.

All samples were extracted and analyzed within the required holding times.

Field Blanks

No field blanks were submitted with this sampling event.

Matrix Spikes/Matrix Spike Duplicates

No matrix spikes were analyzed with this analytical batch. The laboratory did not perform a laboratory control sample duplicate; therefore, no measure of precision was available for evaluation.

Field Duplicates

No field duplicates were submitted with this sampling event.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

Results were reported from both the primary and confirmation column analyses in the EDD. The results for the confirmation analysis were flagged as do-not-report (DNR-11) to indicate which results from multiple reported results should not be used.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable, as demonstrated by the surrogate and laboratory control sample (LCS) percent recovery values. No measure of precision was available for evaluation.

Results were flagged as do-not-report (DNR) to indicate which result, from multiple analyses, should not be used; data that have been flagged as DNR should not be used for any purpose.

All other data, samples; comp	as reported, are lleteness is unaffe	acceptable for use.	A useable result	remains for all	analytes in all

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Diesel Range Organics (DRO) - Method NWTPH-Dx

This report documents the review of analytical data from the analyses of groundwater and sediment samples and the associated field and laboratory quality control (QC) samples. Samples were analyzed by Eurofins Lancaster Laboratories Environmental, LLC, Lancaster, Pennsylvania and Analytical Resources, Incorporated, Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	VALIDATION LEVEL
1797131	5 groundwater samples	Stage 2A
1798513	3 groundwater samples	Stage 2A
17E0094	2 sediment samples	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Preservation and Holding Times	1	Matrix Spikes/Matrix Spike Duplicates
✓	Laboratory Blanks	2	Field Duplicates
1	Field Blanks	✓	Target Analyte List
✓	Surrogate Compounds	✓	Reporting Limits
\checkmark	Laboratory Control Samples (LCS)	1	Reported Results

[✓] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be extracted within 14 days for preserved aqueous samples and extracts must be analyzed within 40 days of extraction.

With the following exceptions, all coolers were received at the laboratory within the advisory temperature range. All samples were extracted and analyzed within the required holding times.

SDG 1795813: All samples were received at a temperature greater than the advisory temperature range at 13.3°C. Diesel and heavy range organics are stable at this temperature; therefore, no action was taken.

SDG 17E0094: All samples were received at a temperature greater than the advisory temperature range at 8.6°C. The coolers were received within several hours after the samples were collected preventing sufficient time for cooling; no results qualified.

Field Blanks

No field blanks were submitted with this sampling event.

Matrix Spike/Matrix Spike Duplicate

SDGs 1797131 and 1798513: Matrix spikes were not performed for these SDGs. Laboratory control sample/laboratory control sample duplicates were used to evaluate precision.

SDG 17E0094: Matrix spikes were not performed for this SDG. The laboratory did not perform a laboratory control sample duplicate; therefore, no measure of precision was available for evaluation.

Field Duplicates

For water samples, the RPD control limit is 20% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than the RL.

SDG 1797131: One field duplicate set was submitted with this SDG: KSCRI-MW4-050317 & KSCRI-DUP-050317. The difference value was greater than the reporting limit for DRO. The parent and duplicate samples were estimated (J/UJ-9).

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

No anomalies were noted during validation for evaluated results.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the surrogate and laboratory control sample/laboratory control sample duplicate (LCS/LCSD) percent recovery values. With the exception previously noted, precision was also acceptable as demonstrated by the LCS/LCSD relative percent difference values.

Two results were estimated based on field duplicate imprecision.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT

DOF – Boeing Kent Space Center Total & Dissolved Metals – EPA Methods 200.8 & 245.1 Total Metals – EPA Method 6020A

This report documents the review of analytical data from the analyses of groundwater and sediment samples and the associated field and laboratory quality control (QC) samples. Samples were analyzed by Eurofins Lancaster Laboratories Environmental, LLC, Lancaster, Pennsylvania and Analytical Resources, Incorporated, Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES AND MATRIX	VALIDATION LEVEL
1789843	7 soil samples	Stage 2A
1797131	5 groundwater samples	Stage 2A
1798513	3 groundwater samples	Stage 2A
17E0094	2 sediment samples	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	2	Laboratory Duplicates
2	Laboratory Blanks	1	Field Duplicates
✓	Laboratory Control Samples (LCS)	✓	Target Analyte List
2	Matrix Spikes (MS)	✓	Reporting Limits
1	Field Blanks	✓	Reported Results

[✓] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and be analyzed within 180 days for aqueous and solid ICP-MS metals samples.

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

With the following exceptions, all coolers were received at the laboratory within the advisory temperature range. All samples were analyzed within the required holding times.

SDG 1795813: All samples were received at a temperature greater than the advisory temperature range at 13.3°C. Aqueous metals samples do not require temperature preservation; no results qualified.

SDG 17E0094: All samples were received at a temperature greater than the advisory temperature range at 8.6°C. The coolers were received within several hours after the samples were collected preventing sufficient time for cooling; no results qualified.

Method Blanks

To assess the impact of any blank contaminant on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-7). No action is taken if the sample result is greater than the action level, or for non-detected results. For laboratory blanks that are less than the negative MDL, positive results less than the action level of five times the absolute value of the blank concentration are estimated (J-7L) and non-detects are estimated (UJ-7L) to indicate a potential low bias.

Laboratory blanks were analyzed at the appropriate frequency. Contaminant levels, associated samples, and action levels are documented in the data validation worksheets.

SDG 17E0094: Mercury was detected in the method blank at a concentration greater than the method detection limit but less than the reporting limit. The concentration reported for Sample KSC-OF-16-0.3 was less than the action level and was qualified (U-7) as not detected at the reported concentration; all other results were greater than the action level.

Matrix Spikes

SDG 1798513: Sample KSCRI-MW1-050417 was used for the matrix spike analysis. The percent recovery for copper was less than the lower control limit indicating a potential low bias. All samples in the batch were estimated (J/UJ-8L).

SDG 189843: A batch QC sample was used for the matrix spike analysis. The percent recovery for arsenic was greater than the upper control limit indicating a potential high bias. All samples in the batch were estimated (J-8H).

Field Blanks

Field blanks were not submitted with this data set.

Laboratory Duplicates

For laboratory duplicate samples, the RPD control limit is 20% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and replicate must be less than the RL.

SDG 1759584: Sample KSCRI-MW1-050417 was used for analysis of the laboratory duplicate. The difference values for copper and zinc were greater than the associated reporting limits. All samples in the batch were estimated (J/UJ-9).

SDG 17E0094: A laboratory duplicate was not performed for this SDG. The laboratory did not perform a laboratory control sample duplicate; therefore, no measure of precision was available for evaluation.

Field Duplicates

SDG 1759584: One field duplicate set was submitted with this SDG: KSC-SB13-GW & KSC-SBD1-GW. Field precision was acceptable.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

SDG 17E0094: Reporting limits were elevated for both samples due to required dilutions.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable, as demonstrated by the laboratory control sample (LCS) and matrix spike/matrix spike duplicate (MS/MSD) recovery values. With the exceptions previously noted, precision was acceptable as demonstrated by the MS/MSD and laboratory and field duplicate RPD values.

The detection limit for one result was elevated due to method blank contamination. Results were estimated based on matrix spike recovery outliers and on laboratory duplicate imprecision.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT DOF – Boeing Kent Space Center Nitrate & Sulfate – EPA Method 300.0

This report documents the review of analytical data from the analyses of groundwater samples and the associated field and laboratory quality control (QC) samples. Samples were analyzed by Eurofins Lancaster Laboratories Environmental, LLC, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES AND MATRIX	VALIDATION LEVEL
1797131	5 groundwater samples	Stage 2A
1798513	3 groundwater samples	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

2	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Duplicates
✓	Laboratory Blanks	1	Field Duplicates
✓	Laboratory Control Samples (LCS)	✓	Target Analyte List
2	Matrix Spikes (MS)	✓	Reporting Limits
1	Field Blanks	✓	Reported Results

[√] Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C. Aqueous samples must be analyzed within 48 hours for nitrate and within 28 days for sulfate.

With the following exception, all coolers were received at the laboratory within the advisory temperature range. All samples were analyzed within the required holding times.

¹ Quality control outliers are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

SDG 1795813: All samples were received at a temperature greater than the advisory temperature range at 13.3°C. In addition, all three samples were analyzed for nitrate 3 days beyond the holding time. Based on the cooler temperature at arrival and the analysis of nitrate outside of the holding time, all sulfate and nitrate results and detection limits have be estimated (J/UJ-1).

Matrix Spikes

SDG 1797131: A sample from another client was used for the matrix spike analysis. The percent recoveries for both nitrate and sulfate were less than the lower control limit indicating a potential low bias. All samples in the batch were estimated (J/UJ-8L).

SDG 1798513: A sample from another client was used for the matrix spike analysis. The percent recoveries for both nitrate and sulfate were greater than the upper control limit indicating a potential high bias. All sulfate results in the batch were estimated (J-8H). Nitrate was not detected in any of the samples in the batch; no qualification was required.

Field Blanks

Field blanks were not submitted with this data set.

Field Duplicates

SDG 1797131: One field duplicate set was submitted with this SDG: KSCRI-MW4-050317 & KSCRI-DUP-050317. Field precision was acceptable.

Target Analyte List

All target analytes as specified in the QAPP/SAP were reported.

Reporting Limits

The target analyte reporting limits specified in the QAPP/SAP were met.

Reported Results

Reporting limits for sulfate were elevated in several samples due to required dilutions.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions previously noted, accuracy was acceptable, as demonstrated by the laboratory control sample (LCS) and matrix spike/matrix spike duplicate (MS/MSD) recovery values. Precision was acceptable as demonstrated by the MS/MSD and laboratory and field duplicate RPD values.

Results were estimated based on cooler temperature upon receipt at the laboratory, holding time, and matrix spike accuracy outliers.

All data, as qualified, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r²)
Instrument Performance	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L)¹ where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L)¹ where appropriate
	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
Blank Contamination	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L)¹ for negative instrument blanks
	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L)¹ where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
Precision and Accuracy	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L)¹ where appropriate
	12	Reference Material Use bias flags (H,L)¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L)¹ where appropriate
	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L)¹ where appropriate
Interferences	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
	2	Chromatographic pattern in sample does not match pattern of calibration standard
IdealCont.	3	2 nd column confirmation (RPD or %D)
Identification and Quantitation	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, reextractions, etc. Associated with "R" and "DNR" only)
Miscellaneous	14	Other (See DV report for details)
	26	Method QC information not provided

¹H = high bias indicated

L = low bias indicated

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Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C sediment/tissues may require storage at -20°C	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 Current SW846 criterion is \leq 6° C (3)
Holding Time	Extraction Aqueous: 7 days from collection Extraction Solid: 14 days from collection Analysis (all matrices): 40 days from extraction Holding time may be extended to 1 year for frozen sediments/tissues	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Perfo	rmance		,		
Tuning	DFTPP Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	RRF \geq 0.05 except: RRF \geq 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	Minimum 5 standards $\%$ RSD $\leq 20.0\%$ except: $\%$ RSD $\leq 40.0\%$ poor responders * or co-efficient of determination (r^2) > 0.99	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit or r ² value <0.99	5A	
Initial Calibration Verification Check	Prepared from second source; analyze after each ICAL Percent recovery limits = 70-130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.

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Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Perfo	rmance (continued)				
Continuing Calibration Sensitivity	RRF \geq 0.05 except: RRF \geq 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	Prior to sample analysis and every 12 hours %D ≤ 25% except: %D ≤ 40.0% poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	
Blank Contamina	tion	ı	<u> </u>		
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U(pos) if result is < 5X or 10X action level	7	10X action level applies to phthalates only. 5X for all other target analytes
	No TICs present		R (pos) TICs using 10X rule	7	Hierarchy of blank review:
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	#1 - Review MB, qualify as needed #2 - Review FB , qualify as needed
					Note: Actions as per 1999 NFG
Precision and Acc	curacy				
LCS/LCSD (recovery)	One per matrix per batch (of ≤ 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%.
(.000.0.),	limits		J (pos)/R (ND)%R < 10%		QAPP may have overriding accuracy limits. Qualify all associated samples.
LCS/LCSD (RPD)	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.

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Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Acc	curacy (continued)				
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers have different RM control limits
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) in parent sample if RPD >	9	Qualify parent sample only
Surrogates	Minimum of 3 acid & 3 base/neutral (B/N) compounds added to all samples Within method control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	13 (H,L) ⁴	Qualify all compounds in associated fraction. Do not qualify if only 1 acid and/or 1 B/N surrogate is out, unless <10%. If 1 surrogate outlier < 10% then J (pos)/R (ND)
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT > 30 seconds use PJ	19	Qualify compounds quantified using particular internal standard
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified

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Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS) (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Ident	ification and Quantitation and Calculation				
Retention times and relative ion intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ the TIC unless: R (pos) common laboratory contaminants	4	
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re- extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Organic Data Review, June, 2008

² National Functional Guidelines for Organic Data Review, October, 1999

(pos): Positive Result(s)

(ND): Non-detects

³ Method SW846 8270D Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4, February 2007.

⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

^{* &}quot;Poor responder" compounds: acetophenone, atrazine, benzaldehyde, 1,1'-biphenyl, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, caprolactam, carbazole, 4-chloroaniline, diethylphthalate, di-n-butylphthalate, 3-3'-dichlorobenzidine, dimethylphthalate, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, di-n-octylphthalate, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, N-nitrosodiphenylamine, 2,2'-oxybis-(1-chloropropane), 1,2,4,5-tetrachlorobenzene use a 0.010 RRF criterion.

PCB Aroclors by GC (Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance		Discussion and Comments			
Sample								
Cooler/Storage Temperature Preservation	4°C ± 2°C Tissue/sediments (may be frozen -20°C)	NFG ⁽¹⁾ Method ⁽²⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use Professional Judgment (PJ) to qualify for temperature outlier. Current SW846 criterion is \leq 6° C (3)			
Holding Time	Extraction Aqueous: 7 days from collection Extraction Solid: 14 days from collection Exraction Tissue/Sediment (frozen): 1 year Analysis (all matrices): 40 days from extraction	NFG ⁽¹⁾ Method ⁽²⁾	If required by project: J (pos)/UJ (ND) if ext/analyzed > HT J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Use PJ to qualify for holding time outlier. Current SW846 does not have an extraction holding time limit. ⁽³⁾ Gross exceedance > 2x HT, as per NFG 1999			
Instrument Perfor	Instrument Performance							
Retention Times	Surrogates: TCMX (± 0.05); DCB (± 0.10) Aroclors (± 0.07)	NFG (1)	NJ (pos)/R (ND) results for analytes with RT shifts	24				
Initial Calibration	Minimum 5 point with RSD ≤ 20% OR correlation coefficient (r-value) ≥ 0.995 OR Minimum 6-point with co-efficient of determination (r2-value) ≥ 0.99	NFG ⁽¹⁾ Method ⁽⁴⁾	J (pos) if %RSD greater than 20% OR r-value < 0.995 OR r²-value < 0.99	5A	Refer to TM-01 for additional information. Use bias flags (H,L) ⁽⁵⁾ where appropriate			
Initial Calibration Verification (ICV)	No NFG criteria. Project specific.	Project	J (pos) if > UCL J (pos)/UJ (ND) if < LCL	5B	Use bias flags (H,L) where appropriate			
Continuing Calibration (Prior to each 12 hr. shift)	%D ± 20%	Method ⁽²⁾	If > 20% (high bias): J (pos) If <20% (low bias: J (pos)/UJ (ND)	5B	Refer to TM-01 for additional information. Use bias flags (H,L) where appropriate			
Blank Contaminat								
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > RL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is less than appropriate 5X action level.	7	Hierarchy of blank review: #1 - Review MB and IB, qualify as needed			
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is less than appropriate 5X action level.	6	#2 - Review FB , qualify as needed			
Instrument Blanks (IB)	Analyzed at the beginning and end of every 12 hour sequence No analyte > CRQL	NFG ⁽¹⁾	U (pos) if result is less than appropriate 5X action level.	7	Note: Actions as per NFG 1999 Note: IB not required by method			

PCB Aroclors by GC (Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Criteria		Action for Non-Conformance	Reason Code	Discussion and Comments	
Precision and Acc	uracy				,	
MS/MSD (recovery)	One set per matrix per batch (of ≤ 20 samples) AR1016 and AR1260: %R = 29% - 135%, or project limits	NFG ⁽¹⁾ Method ⁽²⁾	Qualify parent only unless other QC indicates systematic problems. J (pos) if both %R > upper control limit (UCL) J (pos)/UJ (ND) if both %R < lower control limit (LCL) J (pos)/R (ND) if both %R < 10%	8	No action if only one spike %R is outside criteria. No action if native analyte conc. > 5x the amount spiked. Use bias flags (H,L) where appropriate. Actions apply to all Aroclors in parent sample.	
MS/MSD (RPD)	One set per matrix per batch (of ≤ 20 samples) AR1016: RPD < 15%, AR1260: RPD < 20% or project limits	NFG ⁽¹⁾ Method ⁽²⁾	Qualify parent only unless other QC indicates systematic problems. J (pos) if RPD > control limit	9	No action if parent is ND.	
LCS	One per lab batch (of ≤ 20 samples) AR1016 and AR1260: %R = 50% - 150%, or project limits	NFG ⁽¹⁾	J (pos) if %R > UCL	10	Use bias flags (H,L) where appropriate. Actions apply to all Aroclors in associated samples.	
LCS/LCSD (RPD)	if analyzed use MS/MSD RPD criteria	NFG (1)	J (pos) assoc. compound in all samples	9	LCSD not required by method or NFG	
Precision and Acc						
Surrogates	TCMX and DCBP added to every sample %R = 30% - 150% or project limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if either %R > UCL J (pos)/UJ (ND) if either %R < LCL J (pos)/R (ND) if either %R < 10%	13	If %R < 10% (sample dilution is a factor), use PJ Use bias flags (H,L) where appropriate	
Internal Standards (if used)	Acceptable Range: IS area = 50% to 200% of CCAL area RT within 30 seconds of CC RT	Method ⁽²⁾	J (pos) if area > 200% J (pos)/UJ (ND) if area < 50% J (pos)/R (ND) if area < 25% RT > 30 seconds, narrate	19		
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	use project limits if specified	

PCB Aroclors by GC (Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Acceptance Criteria (NFG) Action for Non-Conformance		Reason Code	Discussion and Comments
Compound Identi	fication/Quantification				
Quantitation/ Identification	Between two columns: RPD < 40% or %D < 25% Within Retention Time Windows on both columns.	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if RPD = 40% - 60% (25% - 60% for %D) NJ (pos) if > 60% R (pos) if RTW criterion not met	3	See TM-08 for additional info.
Calibration Range	on column concentration < high calibration standard	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if conc > high standard and sample was not diluted	20	
Dilutions, Re- extractions and/or Reanalyses	Report only one result per analyte	Standard reporting policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 for additional info.
Sample Clean-up					
GPC/Sulfur/ Florisil/Acid	No criteria - cleanups are optional	NFG ⁽¹⁾ Method ⁽²⁾	Use Professional Judgment	14	special cleanups may be required for project cleanup standards may be associated with GPC/florisil cleanups

¹ National Functional Guidelines for Organic Data Review, June, 2008

² Polychlorinated Biphenyls (PCBs) by Gas Chromatography USEPA Method SW846 8082A, Feb 2007, Rev. 1

³ SW846, Chapter 4, Organic Analytes

⁴ Determinative Chromatographic Separations , Method 8000C , March 2003, Rev.3

⁵ "H" = high bias indicated; "L" = low bias indicated

Table No.: NWTPH-Dx Revision No.: 2.1 Last Rev. Date: 5/24/16 Page: 1 of 3

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling		•	•	
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6 deg. C	1	
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J(+)/UJ(-) if hold times exceeded $J(+)/R(-)$ if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: r²≥0.990	Narrate if fewer than 5 calibration levels or if $R > 15\%$ $J(+)/UJ(-) \text{ if } r^2 < 0.990$	5A	
	If used, RSD of response factors ≤20%	J(+)/UJ(-) if %RSD > 20%		
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. $J(+)/UJ(-) \text{ if } \%R < 85\%$ $J(+) \text{ if } \%R > 115\%$	5B	
Blank Contamination				
Method Blank	At least one per batch (≤20 samples)	U (at the RL) if sample result is < RL & < 5X blank result.	7	
Wethou Blank	No results >RL	U (at reported sample value) if sample result is ≥ RL and < 5X blank result	7	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.	6	

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EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R <10%	10	Professional Judgement
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R <10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate (Use Professional Judgement to qualify)	9	

DATA VALIDATION CRITERIA

Table No.: NWTPH-Dx Revision No.: 2.1 Last Rev. Date: 5/24/16

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EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx, June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance		Discussion and Comments		
Compound ID and Calculation						
Two analyses	Report only one result per	"DNR" (or client requested qualifier) all results that	11	See EcoChem		
for one sample (dilution)	analyte	should not be reported.	11	TM-04		

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Metals by ICP-MS

(Based on Inorganic NFG 2010 and SW-846 6020A)

(Based on Inorganic NFG 2010 and SW-846 6020A)						
QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-	Reason	Discussion and Comments	
	<u> </u>		Conformance	Code		
Sample Handlin	g			T		
Cooler / Storage Temperature Preservation	Solid: Cooler temperature 4°C±2°C Aqueous: Nitric Acid to pH < 2 Dissolved Metals: 0.45 µm filter, preserve to pH < 2 after filtration	NFG ⁽¹⁾ Method ⁽²⁾	Cooler Temps: If required by project J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use PJ to qualify for temperature outlier. Current SW846 criterion is \leq 6° C $^{(4)}$ No quals for pH if samples preserved by lab immediately upon receipt and within 1 day of collection.	
Holding Time	All matrices: 180 days from date sampled Frozen soils, sediments, tissues (-20°C) - HT extended to 1 year	NFG ⁽¹⁾ Method ⁽²⁾ EcoChem standard policy	J (pos)/UJ (ND) if holding time exceeded	1		
Instrument Perf						
Tune	Analyzed prior to ICAL tunignsolution analyzed 5 times with Std. Dev. ≤ 5% Mass calibration < 0.1 amu difference from target mass Resolution < 0.9 amu @ 10% peak height	NFG ⁽¹⁾ Method ⁽²⁾	J(pos)/UJ(ND) if tune criteria not met	5A	Use PJ to evaluate tune. Alternate Resolution critteria may apply based on instrument specs (i.e < 0.75 amu at 5% peak height)	
Initial Calibration (ICAL)	Based on instrument requirements, blank + 1 standard minimum requirement for calibration If more than 1 standard used, $r \ge 0.995$	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if r < 0.995	5A		
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration $\% R$ within $\pm~10\%$ of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R >111%	5A (H,L) ³	Qualify all samples in run	
Reporting Limit (RL) Standard Low Level ICV/CCV	concentration at RL %R = 70%-130%	Method ⁽²⁾	J (pos) < 2x RL / R (ND) if %R <50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L) ³	Qualify all samples in run	

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Metals by ICP-MS

(Based on Inorganic NFG 2010 and SW-846 6020A)

		EcoChem Action for Non-		Reason	
QC Element	EcoChem Acceptance Criteria	Source of Criteria	Conformance	Code	Discussion and Comments
Instrument Per	ormance cont'd				
Continuing Calibration Verification (CCV)	Immediately following ICV/ICB, then every two hours or ten samples, and at end of run. %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R >111%	5B (H,L) ³	Qualify samples bracketed by CCV outliers
Interference Check Samples (ICSA / ICSAB)	ICSAB %R 80% - 120% for all spiked elements ICSA < MDL for all unspiked elements	NFG ⁽¹⁾ Method ⁽²⁾	For samples with Al, Ca, Fe, Mg > ICS levels: ICSAB: J(pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R = 50% - 79% J (pos) if %R > 120% ICSA: J (pos) < 2x ICSA/UJ (ND) for ICSA < Neg MDL J (pos) < 2x ICSA for ICSA > MDL	17 (H,L) ³	Use PJ and molecular interferences to evaluate ICSA to determine if bias is present. Refer to TM-14 for additional information.
Blank Contamir	ation				
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is < 5X method blank concentration	7	Refer to TM-02 for additional information. Blank Evaluation based on NFG 1994
Instrument Blanks (ICB/CCB)	After each ICV & CCV blank concentration < MDL	NFG ⁽¹⁾ Method ⁽²⁾	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blks: 7 Neg Blks: 7L ³	Use blanks bracketing samples for Qualification Refer to TM-02 for additional information. Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review IB, qualify as needed #3 - Review FB, qualify as needed
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to TM-02 for additional information.

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Metals by ICP-MS

(Based on Inorganic NFG 2010 and SW-846 6020A)

	(Based on Inorganic NFG 2010 and SW-846 6020A)							
QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-	Reason	Discussion and Comments			
QC Liement	Ecochem Acceptance Citteria	Source of Cifteria	Conformance	Code	Discussion and comments			
Precision and Accuracy								
Internal Standards (IS)	Added to all samples. All analytes must be associated with an internal standard 60-125% of cal blank IS	NFG ⁽¹⁾ Method ⁽²⁾	J(pos)/UJ(ND) all analytes associated with IS outlier	19	6020A criteria - IS >70% of ICAL std			
LCS (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method ⁽²⁾	J (pos)/R (ND) if %R <50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L) ³	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG Limits 70% -130%			
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.			
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if %R > 125% J (pos)/UJ (ND) if %R <75% J (pos)/R (ND) if %R < 30%, unless post digestion spike analyzed, J (pos)/UJ (ND) if post digestion spike %R OK	8 (H,L) ³	No action if only one spike %R is outside criteria. NA if parent concentration >4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.			
Post Digestion Spikes	If MS is outside 75-125%, post-spike should be analyzed %R 80%-120% (method); 75%-125% (NFG)	NFG ⁽¹⁾ Method ⁽²⁾	Only used to support MS qualification decisions	NA	No qualifiers assigned based solely on this element.			
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.			
Laboratory Duplicate	One per matrix per batch (of \le 20 samples) RPD \le 20% for results \ge 5x RL Solids: difference $<$ 2X RL for results $<$ 5X RL Aqueous: difference $<$ 1X RL for results $<$ 5X RL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.			

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Metals by ICP-MS

(Based on Inorganic NFG 2010 and SW-846 6020A)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-	Reason	Discussion and Comments					
,	·	Source of Criteria	Conformance	Code	Discussion and Comments					
Precision and A	Precision and Accuracy cont'd									
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ³	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits					
Serial Dilution	Analyze one sample per matrix at a 5x dilution %D <10% for original sample conc. > 50x MDL	NFG ⁽¹⁾	J(pos)/UJ(ND) if %D > 10% and native sample concentration > 50x MDL	16	Note serial dilutions for soil are reported in ug/L, but the MDL is in mg/kg. The units need to be adjusted. Qualify all samples in batch.					
Field Duplicate	Solids: RPD <50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Narrate and qualify if required by project (EcoChem PJ) Qualify only field duplicate samples J(pos)/UJ(ND)	9	QAPP may have overriding precision limits.					
Compound Qua	antitation									
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14						
Calibration Range	Results < instrument linear range	NFG ⁽¹⁾ Method ⁽²⁾	if result exceeds linear range and sample was not diluted J (pos)	20						
Dilutions, Re- extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results					

¹ National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

(pos): Positive Result (ND): Not detected

² Method SW846 6020A Inductively Coupled Plasma-Mass Spectrometry (ICP-MS), Revision 1, February 2007.

³ "H" = high bias indicated; "L" = low bias indicated

⁴ SW846, Chapter 3, Inorganic Analytes

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Mercury by CVAA (Based on Inorganic NFG 2010 and SW846 7470A & 7471B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler / Storage Temperature Preservation	Solid: Cooler temperature 4°C±2°C Aqueous: Nitric Acid to pH < 2 Dissolved Metals: 0.45 µm filter, preserve to pH < 2 after filtration	NFG ⁽¹⁾ Method ⁽²⁾	Cooler Temps: If required by project J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use PJ to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C (4) No quals for pH if samples preserved by lab immediately upon receipt and within 1 day of collection.
Holding Time	28 days from date sampled Frozen solids and tissues HT extended to 6 months	NFG ⁽¹⁾ Method ⁽²⁾ EcoChem standard policy	J (pos)/UJ (ND) if HT exceeded	1	
Instrument Performa	ance				
Initial Calibration (ICAL)	Daily Calibration Blank + 5 standards, one \leq RL Correlation coefficient (r) \geq 0.995	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if r < 0.995	5A (H,L) ³	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after ICAL $\%$ R within \pm 15% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R(pos/ND) if %R <70% J(pos)/UJ(ND) if %R = 70-84% J(pos) if %R = > 116%	5A (H,L) ³	Qualify all samples in run
Reporting Limit (RL) Standard	Conc = RL %R = 70-130%	Method ⁽²⁾	J (pos) < 2x RL / R (ND) if %R <50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L) ³	Qualify all samples in run
Continuing Calibration Verification (CCV)	At beginning of run, every ten samples, and again after last sample. %R within ± 15% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R(pos/ND) if %R <70% J(pos)/UJ(ND) if %R = 70-84% J(pos) if %R = > 116%	5B (H,L) ³	Qualify samples bracketed by CCV outliers
Blank Contamination					
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is < 5X method blank concentration	7	Refer to TM-02 for additional information. Blank Evaluation based on NFG 1994

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Mercury by CVAA (Based on Inorganic NFG 2010 and SW846 7470A & 7471B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Blanks (ICB/CCB)	After each ICV & CCV blank concentration < MDL	NFG ⁽¹⁾ Method ⁽²⁾	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blanks: 7 Neg Blanks: 7L ³	Use blanks bracketing samples for Qualification Refer to TM-02 for additional information. Hierarchy of blank review: #1 - Review MB, quaify as needed #2 - Review IB, qualify as needed #3 - Review FB, qualify as needed
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to TM-02 for additional information.
Precision and Accura	асу				
Laboratroy Control Sample (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method ⁽²⁾	J (pos)/R (ND) if %R <50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L) ³	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG does not address LCS
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.
Matris Spike/Matrix Spike Duplicate MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if %R > 125% J (pos)/UJ (ND) if %R < 75% J (pos)/R (ND) if %R < 30%	8 (H,L) ³	No action if only one spike %R is outside criteria. NA if parent concentration >4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.
Laboratory Duplicate	One per matrix per batch (of ≤ 20 samples) RPD $\le 20\%$ for results $\ge 5x$ RL Solids: difference $< 2X$ RL for results $< 5X$ RL Aqueous: difference $< 1X$ RL for results $< 5X$ RL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.

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Mercury by CVAA (Based on Inorganic NFG 2010 and SW846 7470A & 7471B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ³	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Field Duplicate	Solids: RPD <50% (for results \geq 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results \geq 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.
Compound Quantitat	tion	•		•	
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14	
Calibration Range	Results < instrument linear range	NFG ⁽¹⁾ Method ⁽²⁾	if result exceeds linear range and sample was not diluted J (pos)	20	
Dilutions, Re- extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

(pos): Positive Result (ND): Not Detected

² Method SW846 7470A Mercury in Liquid Waste (Manual Cold-Vapor Technique), Revision 1, September 1994. Method SW846 7471B Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique), Revision 2, February 2007.

³ "H" = high bias indicated; "L" = low bias indicated

⁴ SW846, Chapter 3, Inorganic Analytes

Table: CONV-Calibrated

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Conventional Methods with Instrument Calibrations (i.e., Ion Chromatography, Total Organic Carbon) (Based on Inorganic NFG 2010 and EPA methods)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments			
Sample Handling	Sample Handling							
Cooler/Storage Temperature Preservation	Cooler temperature: 4°C±2°C Preservation: Analyte/Method Specific	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if preservation requirements not met	1	Use PJ to qualify for cooler temp outliers.			
Holding Time	Analyte/Method Specific	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if holding time exceeded	1				
Instrument Performa	ince							
Initial Calibration (ICAL)	blank + multiple standards as per method requirements $r \geq 0.995$	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) for r < 0.995	5A				
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R method specific	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if %R < lower control limit (LCL) J (pos) if %R > upper control limit (UCL)	5A (H,L) ³	Qualify all samples in run			
Continuing Calibration Verification (CCV)	Immediately following ICV, every 10 samples, and end of run %R method specific	NFG ⁽¹⁾ Method ⁽²⁾	J(pos)/UJ(ND) if %R < LCL J(pos) if %R > UCL	5B (H,L) ³	Qualify samples bracketed by CCV outliers			
Blank Contamination								
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is < 5X method blank concentration	7	Refer to TM-02 for additional information. Blank Evaluation based on NFG 1994			

Table: CONV-Calibrated

Revision No.: 0

Last Rev. Date: 01/14/2015

Page: 2 of 3

Conventional Methods with Instrument Calibrations (i.e., Ion Chromatography, Total Organic Carbon) (Based on Inorganic NFG 2010 and EPA methods)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Blanks (ICB/CCB)	After each ICV & CCV blank concentration < MDL	NFG ⁽¹⁾ Method ⁽²⁾	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blanks: 7 Neg Blanks: 7L ³	Use blanks bracketing samples for Qualification Refer to TM-02 for additional information. Hierarchy of blank review: #1 - Review MB, quaify as needed #2 - Review IB , qualify as needed #3 - Review FB , qualify as needed
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to TM-02 for additional information.
Precision and Accura	су	<u></u>			
Laboratory Control Sample (LCS)	One per matrix per batch (of ≤ 20 samples) %R within Method control limits (or Laboratory control limtis if none specified in method)	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if %R < LCL J (pos) if %R > UCL	10 (H,L) ³	Qualify all samples in batch QAPP may have overriding accuracy limits.
Reference Materials (RM, CRM, SRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ³	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits

Table: CONV-Calibrated

Revision No.: 0

Last Rev. Date: 01/14/2015

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Conventional Methods with Instrument Calibrations (i.e., Ion Chromatography, Total Organic Carbon) (Based on Inorganic NFG 2010 and EPA methods)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	Where applicable to method; MSD may not be required One per matrix per batch (of ≤ 20 samples) For samples <4x spike level, %R within method control limits (or Laboratory control limits if none specified in method)	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if %R < LCL J (pos) if %R > UCL	8 (H,L)3	Qualify all samples in batch No action if native analyte concentration ≥ 4x spike added. Qualify all samples in batch. QAPP may have overriding accuracy limits.
Laboratory Duplicate (or MS/MSD)	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.
Field Duplicate	Solids: RPD <50% (for results ≥ 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results ≥ 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.
Compound Quantita	tion				
Linear Range	Sample concentrations less than highest calibration standard	NFG ⁽¹⁾ Method ⁽²⁾	If result exceeds linear range & sample was not diluted J (pos)	20	
Dilutions, Re- extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

(pos): Positive Result (ND): Not Detected

² SW846 or EPA Standard Methods

 $^{^{3}}$ "H" = high bias indicated; "L" = low bias indicated



APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table Boeing Kent Space Center

								Validation	Validation
SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	Qualifier	Reason
	KSCRI-MW1-2.5	8941816	SW6020A	Arsenic	1.31	mg/kg		J	8H
	KSCRI-MW2-2.5	8941817	SW6020A	Arsenic	4.78	mg/kg		J	8H
	KSCRI-MW3-2.5	8941818	SW6020A	Arsenic	3.26	mg/kg		J	8H
1789843	KSCRI-MW4-2.5	8941819	SW6020A	Arsenic	5.76	mg/kg		J	8H
	KSCRI-MW5-2.5	8941820	SW6020A	Arsenic	3.44	mg/kg		J	8H
	KSCRI-MW6-2.5	8941821	SW6020A	Arsenic	4.64	mg/kg		J	8H
	KSCRI-MW7-2.5	8941822	SW6020A	Arsenic	2.93	mg/kg		J	8H
	KSCRI-MW2-050317	8974896	E300.0 NWTPH-Dx	Sulfate		mg/l	U	UJ	8L
	KSCRI-DUP-050317	8974904	modified	Diesel Range Organics C12-C24	216	ug/l		J	9
	KSCRI-DUP-050317	8974904	E300.0	Nitrate Nitrogen		mg/l	U	UJ	8L
	KSCRI-DUP-050317	8974904	E300.0	Sulfate	3.1	mg/l		J	8L
1797131	KSCRI-MW4-050317	8974900	NWTPH-Dx modified	Diesel Range Organics C12-C24		ug/l	U	UJ	9
	KSCRI-MW3-050317	8974898	E300.0	Nitrate Nitrogen		mg/l	U	UJ	8L
	KSCRI-MW2-050317	8974896	E300.0	Nitrate Nitrogen		mg/l	U	UJ	8L
	KSCRI-MW4-050317	8974900	E300.0	Nitrate Nitrogen		mg/l	U	UJ	8L
	KSCRI-MW4-050317	8974900	E300.0	Sulfate	3	mg/l	U	J	8L
	KSCRI-MW3-050317	8974898	E300.0	Sulfate	J	mg/l	U	UJ	8L
	KSCRI-MW6-050417	8981037	EPA 200.8	Zinc, dissolved		mg/l	U	UJ	9
	KSCRI-MW7-050417	8981038	EPA 300.0	Sulfate	1.2	mg/l	U	J	1,8H
	KSCRI-MW7-050417	8981038	EPA 300.0	Nitrate Nitrogen	1.2	mg/l	U	UJ	1,011
	KSCRI-MW6-050417	8981037	EPA 200.8	Copper, dissolved		mg/l	U	UJ	8L,9
	KSCRI-MW7-050417	8981039	EPA 200.8	Copper, dissolved	0.0024	mg/l		J	8L,9
	KSCRI-MW7-050417	8981039	EPA 200.8	Zinc, dissolved	0.0021	mg/l	U	UJ	9
1798513	KSCRI-MW1-050417	8981034	EPA 300.0	Sulfate	1.4	mg/l		J	1,8H
	KSCRI-MW1-050417	8981034	EPA 300.0	Nitrate Nitrogen		mg/l	U	UJ	1
	KSCRI-MW1-050417	8981035	EPA 200.8	Copper, dissolved	0.0398	mg/l		J	8L,9
	KSCRI-MW1-050417	8981035	EPA 200.8	Zinc, dissolved	0.0356	mg/l		J	9
	KSCRI-MW6-050417	8981036	EPA 300.0	Sulfate	14.6	mg/l		J	1,8H
	KSCRI-MW6-050417	8981036	EPA 300.0	Nitrate Nitrogen		mg/l	U	UJ	1
	KSC-0F-DP-0.3	17E0094-02	SW8082A	Aroclor 1248		ug/kg	U	DNR	11
	KSC-0F-DP-0.3	17E0094-02	SW8082A	Aroclor 1232		ug/kg	U	DNR	11
17E0094	KSC-0F-DP-0.3	17E0094-02	SW8082A	Aroclor 1221		ug/kg	U	DNR	11
	KSC-0F-DP-0.3	17E0094-02	SW8082A	Aroclor 1254	130	ug/kg		DNR	11
	KSC-0F-DP-0.3	17E0094-02	SW8082A	Aroclor 1242		ug/kg	U	DNR	11

Qualified Data Summary Table Boeing Kent Space Center

								Validation	Validation
SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Lab Flag	Qualifier	Reason
	KSC-0F-DP-0.3	17E0094-02	SW8082A	Aroclor 1260	62.6	ug/kg		DNR	11
	KSC-0F-DP-0.3	17E0094-02	SW8082A	Aroclor 1016		ug/kg	U	DNR	11
	KSC-0F-16-0.3	17E0094-01	SW8082A	Aroclor 1248		ug/kg	U	DNR	11
	KSC-0F-16-0.3	17E0094-01	SW8082A	Aroclor 1232		ug/kg	U	DNR	11
17E0094	KSC-0F-16-0.3	17E0094-01	SW8082A	Aroclor 1221		ug/kg	U	DNR	11
1720034	KSC-0F-16-0.3	17E0094-01	SW8082A	Aroclor 1254		ug/kg	U	DNR	11
	KSC-0F-16-0.3	17E0094-01	SW8082A	Aroclor 1260	9.6	ug/kg	J	DNR	11
	KSC-0F-16-0.3	17E0094-01	SW8082A	Aroclor 1242		ug/kg	U	DNR	11
	KSC-0F-16-0.3	17E0094-01	SW8082A	Aroclor 1016		ug/kg	U	DNR	11
	KSC-0F-16-0.3	17E0094-01	SW7471B	Mercury	0.02258	mg/kg	В	U	7



02 March 2017

Nick Garson The Boeing Company PO Box 3707 M/S 1W-12 Seattle, WA 98124

RE: Boeing Kent Sampling Stormwaters

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)

Associated SDG ID(s)

17A0195

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kelly Bottem, Client Services Manager

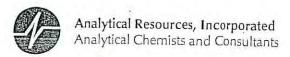


4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

ARI Assigned Number	Turn-around Requested:	equested:	S S	Normal	Date:		1/18/17			-		Analytic Analytic	Analytical Resources, Incorporated Analytical Chemists and Consultants
ARI Client Company: Dalton Olmsted & Fuglevand		Phone: 206-660-3466	466		Page:	_	of	~				4611 8	4611 South 134th Place, Suite 100 Tukwila, WA 98168
Dave Cooper					No. of. Coolers:		Cooler Temps:		11111111111			206-6	206-695-6200 206-695-6201 (fax)
Client Project Name:					u		Ana	Analysis Requested	sted				Notes/Comments
	Samplers: DG Cooper				als - As r, Cu, i, Pb, Z	l Metals d, Cr, e, Ni,	5-1	_		sH	sa		
Sample ID	Date	Time	Matrix	No. Containers	Total Meta Ag, Cd, C Hg, Se, N	Dissolved As, Ag, C Cu, Hg, S Pb, Zn	HdT	-IqT -IqT	ΟΛ	IA9	ьс		
KSC - MH-20.237 - W	1/18/2017	0820	water	13	×	×	×	×	×	×	×		
KSC - MH-20.235 - W	1/18/2017	0840	water	13	×	X	×	×	×	×	×		
KSC - MH-16.12 - W	1/19/2017	0945	water	13	×	×	×	×	×	×	×		
KSC - MH-15.10 - W	1/20/2017	0915	water	13	×	×	×	×	×	×	×		
KSC - 0F-16 - W	1/21/2017	1000	water	13	×	×	×	×	×	×	×		
KSC - OF-NDP - W	1/22/2017	0810	water	13	×	×	×	×	×	×	×		
Trip Blank	1/23/2017	1	water	3									
									+				
					2								
Comments/Special Instructions - Dissolved metals	Relinqushed by (Signature)	(57)		Received by: (Signature)	X	NOWON	2 8	Relinquished by (Signature)			Received by: (Signature)		
NOT Field filtered	Printed Name:			Printed Name:	3	Jaka J	1	Printed Name:			Printed Name:		
	Company:			Company:	3		0	Company:			Company:		
	Date & Time:	10.70	1	Date & Time:				Date & Time:			Date & Time		

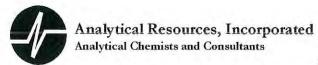
Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.



Cooler Receipt Form

ARI Client: Boung /	DOF	R	1/50		
COC No(s):		Project Name: Boeing	KOC	5	_
Assigned ARI Job No: _17A	NA NA	Delivered by: Fed-Ex UPS Co	urier Hand Delive	ered Other:	_
Preliminary Examination Phase		Tracking No:			NA
	*				
Were intact, properly signed and				YES 🗬	NO
Were custody papers included w			0	YES> 1	NO
Were custody papers properly fi	led out (ink, signed, etc.)			YES 1	NO
Temperature of Cooler(s) (°C) (r Time:14_5	econtinended 2.0-6.0 °C for cher	2.2 3.5	45 1.8		
If cooler temperature is out of co	mpliance fill out form 00070F			. DOOSZ	76
cooler Accepted by:	TH	Date:	111111		
	Complete custody forms	and attach all shipping documents	V		
.og-In Phase:		The state of the s	/a*		
Was a temperature blank include What kind of packing material Was sufficient ice used (if approp Were all bottles sealed in individ	was used? Bubble Wrap priate)?	Wet Ice Gel Packs Baggies Foam	n Block Paper O NA	ther:N	40
Did all bottles arrive in good con-	dition (unbroken)?			-	NO
Were all bottle labels complete a	nd legible?			~	NO NO
Did the number of containers list	ed on COC match with the numb	per of containers received?			10
Did all bottle labels and tags agre	ee with custody papers?	·			NO)
Were all bottles used correct for	the requested analyses?				NO
Do any of the analyses (bottles)	require preservation? (attach pre	eservation sheet, excluding VOCs)	NA	500	4O
Were all VOC vials free of air but	obles?		NA	YES N	OV
Was sufficient amount of sample	sent in each bottle?		B-H	YES N	OV
			NA	12-6-	160
Was Sample Split by ARI : N.	A YES Date/Time:	Equipment:		Split by:	
amples Logged by:	H, Date:	: 1/18/17 Time:	15.11		
		r of discrepancies or concerns **	15 - 46	-	
		. or cross optimises of concerns			
Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Samo	le ID on COC	
	4	- Dotte	Janip	ie in ou coc	
	Th.				
	a d				
Additional Notes, Discrepancie	s, & Resolutions:	orded on bottles (3 vo	a viale 1		
HODE: KSC-MH-16	12-W no time r	recorded on bottle	*		
coc says there	were 13 contai	ners given per sa ainers per sampl	male he	Side II	
trip blank, we y By: B: H. Da	received 15 cont	ainers per sample	e.	rides +1	ne anchi
by. B: H. Da	te: 1/18/11/ 7/11 0	ares on bottles 1/18/1°	7, COC had	from	1/18
Small Air Bubbles Pesbubb = 2mm 2-4 mm	LANGE NA DEGLASS	Small → "sm" (<2 mm)			
00	11 - 2 men	Peabubbles > "pb" (2 to < 4 mm)			
0		Large → "lg" (4 to < 6 mm)			
	The second second second	Headspace → "hs" (>6 mm)			



WORK ORDER

17A0195

Client: The Boeing Company

Project Manager: Kelly Bottem

Project: Boeing Kent Sampling Non contract

Project Number: [none]

Preservation Confirmation

Container ID	Container Type	pН		
17A0195-01 A	VOA Vial, Clear, 40 mL, HCL			
17A0195-01 B	VOA Vial, Clear, 40 mL, HCL			
17A0195-01 C	VOA Vial, Clear, 40 mL, HCL			
17A0195-01 D	VOA Vial, Clear, 40 mL, HCL			
17A0195-01 E	VOA Vial, Clear, 40 mL, HCL			
17A0195-01 F	Glass NM, Amber, 500 mL			
17A0195-01 G	Glass NM, Amber, 500 mL			
17A0195-01 H	Glass NM, Amber, 500 mL			
17A0195-01 I	Glass NM, Amber, 500 mL			
17A0195-01 J	Glass NM, Amber, 500 mL			
17A0195-01 K	Glass NM, Amber, 500 mL			
17A0195-01 L	Glass NM, Amber, 1000 mL			
17A0195-01 M	Glass NM, Amber, 1000 mL			
17A0195-01 N	HDPE NM, 500 mL, 1:1 HNO3	42	Pass	
17A0195-02 A	VOA Vial, Clear, 40 mL, HCL			
17A0195-02 B	VOA Vial, Clear, 40 mL, HCL			
17A0195-02 C	VOA Vial, Clear, 40 mL, HCL			
17A0195-02 D	VOA Vial, Clear, 40 mL, HCL			
17A0195-02 E	VOA Vial, Clear, 40 mL, HCL			
17A0195-02 F	Glass NM, Amber, 500 mL			
17A0195-02 G	Glass NM, Amber, 500 mL			
17A0195-02 H	Glass NM, Amber, 500 mL			
17A0195-02 I	Glass NM, Amber, 500 mL			
17A0195-02 J	Glass NM, Amber, 500 mL			
17A0195-02 K	Glass NM, Amber, 500 mL			
17A0195-02 L	Glass NM, Amber, 1000 mL			
17A0195-02 M	Glass NM, Amber, 1000 mL			
17A0195-02 N	HDPE NM, 500 mL, 1:1 HNO3	12	Pass	
17A0195-03 A	VOA Vial, Clear, 40 mL, HCL			
17A0195-03 B	VOA Vial, Clear, 40 mL, HCL			
17A0195-03 C	VOA Vial, Clear, 40 mL, HCL			

B.H.

1/18/17



WORK ORDER

17A0195

Client: The Boeir	ng Company	Project Manager:	Kelly Bottem	
Project: Boeing Ke	ent Sampling Non contract	Project Number:	[none]	
17A0195-03 D	VOA Vial, Clear, 40 mL, HCL			
17A0195-03 E	VOA Vial, Clear, 40 mL, HCL			
17A0195-03 F	Glass NM, Amber, 500 mL			
17A0195-03 G	Glass NM, Amber, 500 mL			
17A0195-03 H	Glass NM, Amber, 500 mL			
17A0195-03 I	Glass NM, Amber, 500 mL			
17A0195-03 J	Glass NM, Amber, 500 mL			
17A0195-03 K	Glass NM, Amber, 500 mL			
17A0195-03 L	Glass NM, Amber, 1000 mL			
17A0195-03 M	Glass NM, Amber, 1000 mL			
17A0195-03 N	HDPE NM, 500 mL, 1:1 HNO3	42	Pass	
17A0195-04 A	VOA Vial, Clear, 40 mL, HCL			
17A0195-04 B	VOA Vial, Clear, 40 mL, HCL			
17A0195-04 C	VOA Vial, Clear, 40 mL, HCL			
17A0195-04 D	VOA Vial, Clear, 40 mL, HCL			
17A0195-04 E	VOA Vial, Clear, 40 mL, HCL			
17A0195-04 F	Glass NM, Amber, 500 mL			
17A0195-04 G	Glass NM, Amber, 500 mL			
17A0195-04 H	Glass NM, Amber, 500 mL			
17A0195-04 I	Glass NM, Amber, 500 mL			
17A0195-04 J	Glass NM, Amber, 500 mL			
17A0195-04 K	Glass NM, Amber, 500 mL			***************************************
17A0195-04 L	Glass NM, Amber, 1000 mL			
17A0195-04 M	Glass NM, Amber, 1000 mL			
17A0195-04 N	HDPE NM, 500 mL, 1:1 HNO3	42	Pass	
17A0195-05 A	VOA Vial, Clear, 40 mL, HCL			
17A0195-05 B	VOA Vial, Clear, 40 mL, HCL			
17A0195-05 C	VOA Vial, Clear, 40 mL, HCL			
17A0195-05 D	VOA Vial, Clear, 40 mL, HCL			
17A0195-05 E	VOA Vial, Clear, 40 mL, HCL			
17A0195-05 F	Glass NM, Amber, 500 mL			
17A0195-05 G	Glass NM, Amber, 500 mL			
17A0195-05 H	Glass NM, Amber, 500 mL			
17A0195-05 I	Glass NM, Amber, 500 mL			



Printed: 1/18/2017 4:34:01PM

WORK ORDER

7.7%	Y 100 10 10 10	
17	40195	
1/1	10193	

Client: The Boein	ng Company	Project Manager:	Kelly Bottem	
Project: Boeing K	ent Sampling Non contract	Project Number:	[none]	
17A0195-05 J	Glass NM, Amber, 500 mL			
17A0195-05 K	Glass NM, Amber, 500 mL			
17A0195-05 L	Glass NM, Amber, 1000 mL			
17A0195-05 M	Glass NM, Amber, 1000 mL			
17A0195-05 N	HDPE NM, 500 mL, 1:1 HNO3	42	Pass	
17A0195-06 A	VOA Vial, Clear, 40 mL, HCL			
17A0195-06 B	VOA Vial, Clear, 40 mL, HCL			
17A0195-06 C	VOA Vial, Clear, 40 mL, HCL			
17A0195-06 D	VOA Vial, Clear, 40 mL, HCL			
17A0195-06 E	VOA Vial, Clear, 40 mL, HCL			
17A0195-06 F	Glass NM, Amber, 500 mL			
17A0195-06 G	Glass NM, Amber, 500 mL			
17A0195-06 H	Glass NM, Amber, 500 mL			
17A0195-06 I	Glass NM, Amber, 500 mL			
17A0195-06 J	Glass NM, Amber, 500 mL			
17A0195-06 K	Glass NM, Amber, 500 mL			
17A0195-06 L	Glass NM, Amber, 1000 mL			
17A0195-06 M	Glass NM, Amber, 1000 mL			
17A0195-06 N	HDPE NM, 500 mL, 1:1 HNO3	42	Pass	
17A0195-07 A	VOA Vial, Clear, 40 mL, HCL			
17A0195-07 B	VOA Vial, Clear, 40 mL, HCL			
17A0195-07 C	VOA Vial, Clear, 40 mL, HCL			
17A0195-08 A	HDPE NM, 500 mL	>2	Fail	
17A0195-09 A	HDPE NM, 500 mL	>2	Fall	
17A0195-10 A	HDPE NM, 500 mL	>2	Fail	
17A0195-11 A	HDPE NM, 500 mL	72	Fail	
17A0195-12 A	HDPE NM, 500 mL	>2	Fail	
17A0195-13 A	HDPE NM, 500 mL	>2	Fail	

B.H.

1/18/17 Date

Preservation Confirmed By

B.H.

1/18/17

Dat

Materials Testing & Consulting, Inc. Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



Project: 17A0195	Date Received: January 19, 2017
Project #: 17T001-004	Sampled By: Others
Client: Analytical Resources, Inc.	Date Tested: January 20, 2017
Source: Multiple	Tested By: B. Goble
Sample#: Multiple	
	A CE MADDA WILLE
CA	ASE NARRATIVE
Engineers draft interim guide lines. The sample minutes. The resulting liquid sample was deca	on of solids by means of centrifuging according to modified Corp of as were centrifuged in a pre-cooled centrifuge (4°C) at 1,000 x g for 30 nted into the original sample bottles. Were decontaminated prior to sample preparation.
results apply only to actual locations and materials tested. As a mutual protection to cli ements, conclusions or extracts from or regarding our reports is reserved pending our w	
ements, conclusions or extracts from or regarding our reports is reserved pending our wi	
	ents, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of the approval.

 $Corporate \sim 777\ Chrysler\ Drive \quad \bullet\ Burlington, WA\ 98233 \quad \bullet\ \ Phone\ (360)\ 755-1990 \quad \bullet\quad Fax\ (360)\ 755-1980$

Regional Offices: Olympia ~ 360.534.9777 $Bellingham \sim 360.647.6111 \qquad Silverdale \sim 360.698.6787 \qquad Tukwila \sim 206.241.1974$

Visit our website: www.mtc-inc.net

RE: Boeing Kent

Tasya Gray <ngray@dofnw.com>

Thu 1/19/2017 1:21 PM

To:Kelly Bottem <kellyb@arilabs.com>;

cc:'David Cooper' <dcooper@dofnw.com>;

1 attachments (546 KB)

itadmin@dofnw.com_20170119_122840.pdf;

Revised COC attached.

- Corrected dates all samples collected on 1/18/2017
- Requested analysis of trip blank for VOCs and gas
- Requested a MS/MSD on one of our project samples (if you have enough volume if you don't we can
 probably get extra volume when we take that last stormwater sample in the next few days, just tell us how
 much to get)
- Added methods
- Noted which require SIM and table in QAPP that has reporting limit goals
- Added centrifuge note

Please let me know if you have any questions, hopefully that helps.

Tasya

Tasya Gray, LG

Consulting Geologist

DOF Dalton, Olmsted & Fuglevand

10827 NE 68th St., Suite B

Kirkland, WA 98033

Office: (425) 827-4588

Fax: (866) 370-9466

Cell: (206) 375-0211

ngray@dofnw.com

www.dofnw.com

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From: Kelly Bottem [mailto:kellyb@arilabs.com]

Sent: Thursday, January 19, 2017 1:05 PM

Chain c stody Record & Laboratory Analysis Request

ants 100 168 fax)

ARI Client Company: Phone: Dalton Olmsted & Fuglevand client Contact: 206-660-3466 Client Contact: Tasya Gray / Dave Cooper Client Project Name: Boeing KSC Client Project #: DG Cooper B-002 Date Sample ID Date KSC - MH-20.237 - W 1/18/2017 O850 "										Analytical Chemists and Consultan
Samplers: Samplers: Troject #: Samplers: DG Cooper Sample ID Date SSAMH-20.237 - W 1/18/2017	3466		Page:	1 of		-	1			4611 South 134th Place, Suite 10 Tukwila, WA 9816
roject Name: 1 KSC roject #: DG Cooper Sample ID Date KSC - MH-20.237 - W 1/18/2017			No. of Coolers:	Cooler	ller lps:					206-695-6200 206-695-6201 (fa
Namplers: Samplers: P.G. Cooper Sample D.G. Cooper D				11	Analysis	Analysis Requested				Notes/Comments
Sample ID Date CSC - MH-20.237 - W 1/18/2017			uz	8°				M		LAVAC. C.
Sample ID Date (SC - MH-20.237 - W 1/18/2017			Cu,	QC 'IN	5-	(*			* 100° + 8
Date 1/18/2017			CL, I	'es	H-E)-H	70		*	SIM: 11-DCE,
1/18/2017	Matrix	No. Containers	Total Me Ag, Cd, Hg, Se, C	As, Ag, Pb, Zn, TP	TWN		0078 1	OF 18		vinyl chlorid
_	water	13	×	×	×	×	×	×		Table B-4 iv
KSC - MH-20,235 - W 1/18/2017 0840	water	13	×	×	×	×	×	×		aAPP for
KSC - MH-16.12 - W 1/19/2017 0945	water	13	×	×	×	×	×	×		all reports
KSC - MH-15.10 - W 1/20/2017 C 0915	water	. 13	×	×	×	×	×	×		limit goals
KSC - OF-16 - W 1/24/2017	water	13	×	×	×	×	×	x x		
KSC-OF-NDP-W 1/22/2017	water	13	×	×	×	×	×	x x		
Trip Blank 1723/2017 -	water	3		X	7,		X			
(Hazlani					, ,		2			
NOT THE REAL PROPERTY.										
			á	-	-					
Comments/Special Instructions Reinquaned by		Received by	X	1	(Signature)	Refinquished by: (Signature)		Received by (Signature)	by:	
	The state of the s	Printed Name	MAN	200	Printed Name	Name:		Printed Name	ame:	
- Pleus perferen NS/MSD Company		Company:	3	2	Company	ıy:		Сотрану		
	45	Date & Time:	[]	4	Date & Time	lime:		Date & Time	me:	

「Centrifuge PAHs 全 PCB~ Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Involced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not with standing any provision to the confract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.

Edited Majort by Tasya Grat, DOF



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
KSC - MH-20.237 - W	17A0195-01	Water	18-Jan-2017 08:50	18-Jan-2017 14:45
KSC - MH-20.235 - W	17A0195-02	Water	18-Jan-2017 08:40	18-Jan-2017 14:45
KSC - MH-16.12 - W	17A0195-03	Water	18-Jan-2017 09:45	18-Jan-2017 14:45
KSC - MH-15.10 - W	17A0195-04	Water	18-Jan-2017 09:15	18-Jan-2017 14:45
KSC - OF-16 - W	17A0195-05	Water	18-Jan-2017 10:00	18-Jan-2017 14:45
KSC - OF-NDP - W	17A0195-06	Water	18-Jan-2017 08:10	18-Jan-2017 14:45
Trip Blank	17A0195-07	Water	18-Jan-2017 00:00	18-Jan-2017 14:45
KSC - MH-20.237 - W	17A0195-08	Water	18-Jan-2017 08:50	18-Jan-2017 14:45
KSC - MH-20.235 - W	17A0195-09	Water	18-Jan-2017 08:40	18-Jan-2017 14:45
KSC - MH-16.12 - W	17A0195-10	Water	18-Jan-2017 09:45	18-Jan-2017 14:45
KSC - MH-15.10 - W	17A0195-11	Water	18-Jan-2017 09:15	18-Jan-2017 14:45
KSC - OF-16 - W	17A0195-12	Water	18-Jan-2017 10:00	18-Jan-2017 14:45
KSC - OF-NDP - W	17A0195-13	Water	18-Jan-2017 08:10	18-Jan-2017 14:45



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Case Narrative

Volatiles - EPA Method SW8260C

The sample(s) were run within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of the CCAL which is out of control high for bromoform. All associated samples that contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS/LCSD percent recoveries and RPD were within control limits.

The Matrix Spike/Matrix Spike duplicate recoveries and RPD were within limits.

Volatiles - EPA Method 8260C-SIM (Selected Ion Monitoring)

The sample(s) were run within the recommended holding times.

A revised COC was submitted with the SIM VOCs request.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The Matrix Spike/Matrix Spike were not analyzed as of the sample volumes were consumed during the 8260 analysis. A LCS and LCSD were analyzed with this batch of samples.

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

All of the associated samples were subcontracted to MTC to be centrifuged before analysis.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270D-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

The original COC did not have centrifuge analysis requested and the samples were logged without the request. Upon review of the work submitted the ARI project manager went into the lab to review the work started. All of the associated samples had been started and a centrifuge analysis was not done. Only sample KSC-OF-16-W (ARI sample 17A0195-05)

contained a little particulate and the second bottle was sent to MTC for a centrifuge analysis (ARI sample 17A0195-12). This sample

was reported twice for your review.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The Matrix Spike/Matrix Spike duplicate recoveries and RPD were within limits.

Total and Dissolved Metals - EPA Method 200.8

The sample(s) were digested and analyzed within the recommended holding times.

The samples for dissolved metals were filtered in the lab.

Analytical Resources, Inc.



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The Matrix Spike/Matrix Spike duplicate recoveries and RPD were within limits.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The Matrix Spike/Matrix Spike duplicate recoveries and RPD were within limits.

Gasoline by NWTPH-g (GC/MS)

The sample(s) were run within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The Matrix Spike/Matrix Spike duplicate recoveries and RPD were within limits.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-01 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 08:50

 Instrument: NT3
 Analyzed: 01/20/2017 12:47

Sample Preparation:

Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0388 Sample Size: 10 mL
Prepared: 01/20/2017 12:47 Final Volume: 10 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	5.22	ug/L	
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
	103 12 3	•	0.20		-B-2	ū

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-01 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 08:50

 Instrument: NT3
 Analyzed: 01/20/2017 12:47

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	97.9 %		
Surrogate: Toluene-d8			80-120 %	98.1 %		
Surrogate: 4-Bromofluorobenzene			80-120 %	97.6 %		
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	102 %		



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-01 (Water)

Volatile Organic Compounds

 Method: NWTPHg
 Sampled: 01/18/2017 08:50

 Instrument: NT3
 Analyzed: 01/20/2017 12:47

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0388 Sample Size: 10 mL Prepared: 01/20/2017 12:47 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	: U	nits	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	u	g/L	U
Surrogate: Toluene-d8			80-120 %	98.1	%		
Surrogate: 4-Bromofluorobenzene			80-120 %	97.6	%		



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-01 (Water)

Volatile Organic Compounds - SIM

 Method: EPA 8260C-SIM
 Sampled: 01/18/2017 08:50

 Instrument: NT15
 Analyzed: 01/27/2017 13:02

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0576 Sample Size: 10 mL Prepared: 01/27/2017 07:38 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Resul	t Units	Notes
Vinyl chloride	75-01-4	1	20.0	NE	ng/L	U
1,1-Dichloroethene	75-35-4	1	20.0	NE	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	113	%	
Surrogate: Toluene-d8			80-120 %	81.4	%	
Surrogate: 4-Bromofluorobenzene			75-125 %	96.4	%	





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-01 (Water)

Semivolatile Organic Compounds - SIM

 Method: EPA 8270D-SIM
 Sampled: 01/18/2017 08:50

 Instrument: NT11
 Analyzed: 01/25/2017 13:56

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0320 Sample Size: 500 mL Prepared: 01/19/2017 12:15 Final Volume: 0.5 mL

Sample Cleanup: Cleanup Method: Silica Gel

Cleanup Batch: CFA0117 Initial Volume: 0.5 mL Cleaned: 24-Jan-2017 Final Volume: 0.5 mL

		Report				
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.010	0.012	ug/L	
2-Methylnaphthalene	91-57-6	1	0.010	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	0.010	ND	ug/L	U
Acenaphthylene	208-96-8	1	0.010	ND	ug/L	U
Acenaphthene	83-32-9	1	0.010	ND	ug/L	U
Dibenzofuran	132-64-9	1	0.010	ND	ug/L	U
Fluorene	86-73-7	1	0.010	ND	ug/L	U
Phenanthrene	85-01-8	1	0.010	ND	ug/L	U
Anthracene	120-12-7	1	0.010	ND	ug/L	U
Fluoranthene	206-44-0	1	0.010	ND	ug/L	U
Pyrene	129-00-0	1	0.010	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	0.010	ND	ug/L	U
Chrysene	218-01-9	1	0.010	ND	ug/L	U
Benzofluoranthenes, Total		1	0.010	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.010	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.010	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.010	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	0.010	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			42-120 %	81.2 %		
Surrogate: Dibenzo[a,h]anthracene-d14			29-120 %	84.2 %		
Surrogate: Fluoranthene-d10			57-120 %	75.2 %		

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

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Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-01 (Water)

Petroleum Hydrocarbons

 Method: NWTPH-Dx
 Sampled: 01/18/2017 08:50

 Instrument: FID3
 Analyzed: 01/25/2017 18:10

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0319 Sample Size: 500 mL Prepared: 01/19/2017 10:47 Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	0.100	ND	mg/L	U
Motor Oil Range Organics (C24-C38)		1	0.200	ND	mg/L	U
Surrogate: o-Terphenyl			50-150 %	106 %		



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-01 (Water)

Aroclor PCB

Method: EPA 8082A Instrument: ECD5							18/2017 08:50 26/2017 18:57
Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BFA0316	Sample Size: 1					
	Prepared: 01/23/2017 16:50	Final Volume: ().5 mL				
Sample Cleanup:	Cleanup Method: Silica Gel						
	Cleanup Batch: CFA0130	Initial Volume:	0.5 mL				
	Cleaned: 26-Jan-2017	Final Volume: ().5 mL				
Sample Cleanup:	Cleanup Method: Sulfuric Acid						
	Cleanup Batch: CFA0128	Initial Volume:	0.5 mL				
	Cleaned: 25-Jan-2017	Final Volume: ().5 mL				
Sample Cleanup:	Cleanup Method: Sulfur						
	Cleanup Batch: CFA0129	Initial Volume:	0.5 mL				
	Cleaned: 25-Jan-2017	Final Volume: 0).5 mL				
				Reporting			
Analyte		CAS Number	Dilution	Limit	Result	Units	Notes
Aroclor 1016		12674-11-2	1	0.010	ND	ug/L	U

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
Surrogate: Decachlorobiphenyl			29-120 %	79.3	%	
Surrogate: Tetrachlorometaxylene			32-120 %	65.1	%	
Surrogate: Decachlorobiphenyl [2C]			29-120 %	75.8	%	
Surrogate: Tetrachlorometaxylene [2C]			32-120 %	49.2	%	

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

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Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-01 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8
 Sampled: 01/18/2017 08:50

 Instrument: ICPMS2
 Analyzed: 01/19/2017 16:02

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0317 Sample Size: 25 mL

Prepared: 01/19/2017 07:19 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium	7440-47-3	1	0.500	ND	ug/L	U
Copper	7440-50-8	1	0.500	2.92	ug/L	
Lead	7439-92-1	1	0.100	0.503	ug/L	
Selenium	7782-49-2	1	2.00	ND	ug/L	U
Silver	7440-22-4	1	0.200	ND	ug/L	U



The Boeing Company Project: Boeing Kent Sampling Stormwaters

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Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-01 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8 UCT-KED
 Sampled: 01/18/2017 08:50

 Instrument: ICPMS2
 Analyzed: 01/19/2017 16:02

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0317 Sample Size: 25 m

Prepared: 01/19/2017 07:19 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.200	0.373	ug/L	
Cadmium	7440-43-9	1	0.100	ND	ug/L	U
Nickel	7440-02-0	1	0.500	0.608	ug/L	
Zinc	7440-66-6	1	4.00	25.1	ug/L	

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-01 (Water)

Metals and Metallic Compounds

 Method: EPA 7470A
 Sampled: 01/18/2017 08:50

 Instrument: CETAC
 Analyzed: 01/23/2017 12:50

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0385 Sample Size: 20 mL Prepared: 01/20/2017 11:01 Final Volume: 20 mL

Analyte CAS Number Dilution Result Units Notes

Mercury 7439-97-6 1 0.000100 ND mg/L U

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.235 - W 17A0195-02 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 08:40

 Instrument: NT3
 Analyzed: 01/20/2017 13:13

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0388 Sample Size: 10 mL Prepared: 01/20/2017 13:13 Final Volume: 10 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	6.27	ug/L	
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
rrans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
p-Xylene	95-47-6	1	0.20	ND	ug/L	U
•	100-42-5	=	0.20	ND		U

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.235 - W 17A0195-02 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 08:40

 Instrument: NT3
 Analyzed: 01/20/2017 13:13

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	99.8 %		
Surrogate: Toluene-d8			80-120 %	98.6 %		
Surrogate: 4-Bromofluorobenzene			80-120 %	96.7 %		
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	103 %		



The Boeing Company Project: Boeing Kent Sampling Stormwaters

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Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.235 - W 17A0195-02 (Water)

Volatile Organic Compounds

 Method: NWTPHg
 Sampled: 01/18/2017 08:40

 Instrument: NT3
 Analyzed: 01/20/2017 13:13

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0388 Sample Size: 10 mL Prepared: 01/20/2017 13:13 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Ţ	Jnits	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ι	ug/L	U
Surrogate: Toluene-d8			80-120 %	98.6	%		
Surrogate: 4-Bromofluorobenzene			80-120 %	96.7	%		

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.235 - W 17A0195-02 (Water)

Volatile Organic Compounds - SIM

 Method: EPA 8260C-SIM
 Sampled: 01/18/2017 08:40

 Instrument: NT15
 Analyzed: 01/27/2017 13:25

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0576 Sample Size: 10 mL Prepared: 01/27/2017 07:38 Final Volume: 10 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Resu	lt Units	Notes
Vinyl chloride	75-01-4	1	20.0	NI	O ng/L	U
1,1-Dichloroethene	75-35-4	1	20.0	NI	O ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	123	%	
Surrogate: Toluene-d8			80-120 %	82.2	%	
Surrogate: 4-Bromofluorobenzene			75-125 %	96.1	%	





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KSC - MH-20.235 - W 17A0195-02 (Water)

Semivolatile Organic Compounds - SIM

 Method: EPA 8270D-SIM
 Sampled: 01/18/2017 08:40

 Instrument: NT11
 Analyzed: 01/25/2017 14:27

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0320 Sample Size: 500 mL Prepared: 01/19/2017 12:15 Final Volume: 0.5 mL

Sample Cleanup: Cleanup Method: Silica Gel

Cleanup Batch: CFA0117 Initial Volume: 0.5 mL Cleaned: 24-Jan-2017 Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes	
Naphthalene	91-20-3	1	0.010	0.011	ug/L		
2-Methylnaphthalene	91-57-6	1	0.010	ND	ug/L	U	
1-Methylnaphthalene	90-12-0	1	0.010	ND	ug/L	U	
Acenaphthylene	208-96-8	1	0.010	ND	ug/L	U	
Acenaphthene	83-32-9	1	0.010	ND	ug/L	U	
Dibenzofuran	132-64-9	1	0.010	ND	ug/L	U	
Fluorene	86-73-7	1	0.010	ND	ug/L	U	
Phenanthrene	85-01-8	1	0.010	0.013	ug/L		
Anthracene	120-12-7	1	0.010	ND	ug/L	U	
Fluoranthene	206-44-0	1	0.010	ND	ug/L	U	
Pyrene	129-00-0	1	0.010	ND	ug/L	U	
Benzo(a)anthracene	56-55-3	1	0.010	ND	ug/L	U	
Chrysene	218-01-9	1	0.010	ND	ug/L	U	
Benzofluoranthenes, Total		1	0.010	ND	ug/L	U	
Benzo(a)pyrene	50-32-8	1	0.010	ND	ug/L	U	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.010	ND	ug/L	U	
Dibenzo(a,h)anthracene	53-70-3	1	0.010	ND	ug/L	U	
Benzo(g,h,i)perylene	191-24-2	1	0.010	ND	ug/L	U	
Surrogate: 2-Methylnaphthalene-d10			42-120 %	68.0 %	;		
Surrogate: Dibenzo[a,h]anthracene-d14			29-120 %	74.3 %	i		
Surrogate: Fluoranthene-d10			57-120 %	65.1 %	,		

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.235 - W 17A0195-02 (Water)

Petroleum Hydrocarbons

 Method: NWTPH-Dx
 Sampled: 01/18/2017 08:40

 Instrument: FID3
 Analyzed: 01/25/2017 18:34

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0319 Sample Size: 500 mL Prepared: 01/19/2017 10:47 Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	0.100	ND	mg/L	U
Motor Oil Range Organics (C24-C38)		1	0.200	ND	mg/L	U
Surrogate: o-Terphenyl			50-150 %	104 %		



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.235 - W 17A0195-02 (Water)

Aroclor PCB

Method: EPA 8082A Instrument: ECD5							18/2017 08:40 26/2017 19:17
Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BFA0316 Prepared: 01/23/2017 16:50	Sample Size: 1 Final Volume:				-	
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CFA0130 Cleaned: 26-Jan-2017	Initial Volume: Final Volume:	***				
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CFA0128 Cleaned: 25-Jan-2017	Initial Volume: Final Volume:	***				
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CFA0129 Cleaned: 25-Jan-2017	Initial Volume: 0.5 mL Final Volume: 0.5 mL					
Analyte		CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016 Aroclor 1254		12674-11-2 11097-69-1	1 1	0.010 0.010	ND 0.013	ug/L ug/L	U
Aroclor 1260		11096-82-5	1	0.010	ND	ug/L	U
Surrogate: Decachlorobipho Surrogate: Tetrachlorometa. Surrogate: Decachlorobipho Surrogate: Tetrachlorometa.	xylene enyl [2C]			29-120 % 32-120 % 29-120 % 32-120 %	79.7 % 62.9 % 79.0 % 49.9 %		

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

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Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.235 - W 17A0195-02 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8
 Sampled: 01/18/2017 08:40

 Instrument: ICPMS2
 Analyzed: 01/19/2017 17:28

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0317 Sample Size: 25 mL

Prepared: 01/19/2017 07:19 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium	7440-47-3	1	0.500	0.571	ug/L	
Copper	7440-50-8	1	0.500	3.47	ug/L	
Lead	7439-92-1	1	0.100	0.591	ug/L	
Selenium	7782-49-2	1	2.00	ND	ug/L	U
Silver	7440-22-4	1	0.200	ND	ug/L	U



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.235 - W 17A0195-02 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8 UCT-KED
 Sampled: 01/18/2017 08:40

 Instrument: ICPMS2
 Analyzed: 01/19/2017 17:28

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0317 Sample Size: 25 mL

Prepared: 01/19/2017 07:19 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.200	0.562	ug/L	
Cadmium	7440-43-9	1	0.100	ND	ug/L	U
Nickel	7440-02-0	1	0.500	0.501	ug/L	
Zinc	7440-66-6	1	4.00	47.8	ug/L	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.235 - W 17A0195-02 (Water)

Metals and Metallic Compounds

 Method: EPA 7470A
 Sampled: 01/18/2017 08:40

 Instrument: CETAC
 Analyzed: 01/23/2017 12:55

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0385 Sample Size: 20 mL Prepared: 01/20/2017 11:01 Final Volume: 20 mL

 Analyte
 CAS Number
 Dilution
 Limit
 Result
 Units
 Notes

 Mercury
 7439-97-6
 1
 0.000100
 ND
 mg/L
 U

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-03 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 09:45

 Instrument: NT2
 Analyzed: 01/19/2017 13:11

Sample Preparation: Preparation

Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0329 Sample Size: 10 mL Prepared: 01/19/2017 13:11 Final Volume: 10 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	8.18	ug/L	
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-03 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 09:45

 Instrument: NT2
 Analyzed: 01/19/2017 13:11

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	94.5 %	6	
Surrogate: Toluene-d8			80-120 %	97.8 %	ó	
Surrogate: 4-Bromofluorobenzene			80-120 %	97.1 %	ó	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	101 %	5	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-03 (Water)

Volatile Organic Compounds

 Method: NWTPHg
 Sampled: 01/18/2017 09:45

 Instrument: NT2
 Analyzed: 01/19/2017 13:11

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0329 Sample Size: 10 mL Prepared: 01/19/2017 13:11 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Resul	t	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	NE)	ug/L	U
Surrogate: Toluene-d8			80-120 %	97.8	%		
Surrogate: 4-Bromofluorobenzene			80-120 %	97.1	%		



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-03 (Water)

Volatile Organic Compounds - SIM

 Method: EPA 8260C-SIM
 Sampled: 01/18/2017 09:45

 Instrument: NT15
 Analyzed: 01/27/2017 13:49

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0576 Sample Size: 10 mL Prepared: 01/27/2017 07:38 Final Volume: 10 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Resul	t Units	Notes
Vinyl chloride	75-01-4	1	20.0	NE	ng/L	U
1,1-Dichloroethene	75-35-4	1	20.0	NE	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	124	%	
Surrogate: Toluene-d8			80-120 %	83.4	%	
Surrogate: 4-Bromofluorobenzene			75-125 %	94.9	%	





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-03 (Water)

Semivolatile Organic Compounds - SIM

 Method: EPA 8270D-SIM
 Sampled: 01/18/2017 09:45

 Instrument: NT11
 Analyzed: 01/25/2017 14:58

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0320 Sample Size: 500 mL Prepared: 01/19/2017 12:15 Final Volume: 0.5 mL

Sample Cleanup: Cleanup Method: Silica Gel

Cleanup Batch: CFA0117 Initial Volume: 0.5 mL Cleaned: 24-Jan-2017 Final Volume: 0.5 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.010	0.012	ug/L	
2-Methylnaphthalene	91-57-6	1	0.010	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	0.010	ND	ug/L	U
Acenaphthylene	208-96-8	1	0.010	ND	ug/L	U
Acenaphthene	83-32-9	1	0.010	ND	ug/L	U
Dibenzofuran	132-64-9	1	0.010	ND	ug/L	U
Fluorene	86-73-7	1	0.010	ND	ug/L	U
Phenanthrene	85-01-8	1	0.010	0.012	ug/L	
Anthracene	120-12-7	1	0.010	ND	ug/L	U
Fluoranthene	206-44-0	1	0.010	ND	ug/L	U
Pyrene	129-00-0	1	0.010	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	0.010	ND	ug/L	U
Chrysene	218-01-9	1	0.010	ND	ug/L	U
Benzofluoranthenes, Total		1	0.010	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.010	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.010	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.010	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	0.010	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			42-120 %	76.2 %		
Surrogate: Dibenzo[a,h]anthracene-d14			29-120 %	78.5 %		
Surrogate: Fluoranthene-d10			57-120 %	71.5 %		

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-03 (Water)

Petroleum Hydrocarbons

 Method: NWTPH-Dx
 Sampled: 01/18/2017 09:45

 Instrument: FID3
 Analyzed: 01/25/2017 18:58

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0319 Sample Size: 500 mL Prepared: 01/19/2017 10:47 Final Volume: 1 mL

Analyte	CAS Number Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	1	0.100	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	1	0.200	ND	mg/L	U
Surrogate: o-Terphenyl		50-150 %	98.7 %	;	



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-03 (Water)

Aroclor PCB

Method: EPA 8082A Instrument: ECD5						•	18/2017 09:45 26/2017 20:16
Sample Preparation:	Preparation Method: EPA 3510C SepF					-	
• •	Preparation Batch: BFA0316	Sample Size: 1	000 mL				
	Prepared: 01/23/2017 16:50	Final Volume:	0.5 mL				
Sample Cleanup:	Cleanup Method: Silica Gel						
	Cleanup Batch: CFA0130	Initial Volume:	0.5 mL				
	Cleaned: 26-Jan-2017	Final Volume:	0.5 mL				
Sample Cleanup:	Cleanup Method: Sulfuric Acid						
	Cleanup Batch: CFA0128	Initial Volume:	0.5 mL				
	Cleaned: 25-Jan-2017	Final Volume:	0.5 mL				
Sample Cleanup:	Cleanup Method: Sulfur						
	Cleanup Batch: CFA0129	Initial Volume:					
	Cleaned: 25-Jan-2017	Final Volume:					
				Reporting			
Analyte		CAS Number	Dilution	Limit	Result	Units	Notes
Aroclor 1016		12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1254		11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260		11096-82-5	1	0.010	ND	ug/L	U
Surrogate: Decachlorobiphe	enyl			29-120 %	78.1 %	i	
Surrogate: Tetrachlorometa.	xylene			32-120 %	60.5 %		
Surrogate: Decachlorobiphe	enyl [2C]			29-120 %	79.6 %		
Surrogate: Tetrachlorometa	xvlene [2C]			32-120 %	46.6 %		

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported: Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 01/18/2017 09:45 Instrument: ICPMS2 Analyzed: 01/19/2017 17:33

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix Preparation Batch: BFA0317

Prepared: 01/19/2017 07:19 Final Volume: 25 mL Reporting CAS Number Dilution Limit Result Units Notes 7440-47-3 0.500 ND ug/L U



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-03 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8 UCT-KED
 Sampled: 01/18/2017 09:45

 Instrument: ICPMS2
 Analyzed: 01/19/2017 17:33

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0317 Sample Size: 25 m

Prepared: 01/19/2017 07:19 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.200	ND	ug/L	U
Cadmium	7440-43-9	1	0.100	ND	ug/L	U
Nickel	7440-02-0	1	0.500	ND	ug/L	U
Zinc	7440-66-6	1	4.00	59.8	ug/L	

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-03 (Water)

Metals and Metallic Compounds

 Method: EPA 7470A
 Sampled: 01/18/2017 09:45

 Instrument: CETAC
 Analyzed: 01/23/2017 12:57

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0385 Sample Size: 20 mL Prepared: 01/20/2017 11:01 Final Volume: 20 mL

Analyte CAS Number Dilution Result Units Notes

Mercury 7439-97-6 1 0.000100 ND mg/L U

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-04 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 09:15

 Instrument: NT2
 Analyzed: 01/19/2017 13:31

Sample Preparation:

Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0329 Sample Size: 10 mL Prepared: 01/19/2017 13:31 Final Volume: 10 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	5.67	ug/L	
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Styrene	100-42-3	1	0.20	1110	ug/L	C

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-04 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 09:15

 Instrument: NT2
 Analyzed: 01/19/2017 13:31

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	97.9 %		
Surrogate: Toluene-d8			80-120 %	98.1 %		
Surrogate: 4-Bromofluorobenzene			80-120 %	96.8 %		
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	98.3 %		



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-04 (Water)

Volatile Organic Compounds

 Method: NWTPHg
 Sampled: 01/18/2017 09:15

 Instrument: NT2
 Analyzed: 01/19/2017 13:31

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0329 Sample Size: 10 mL Prepared: 01/19/2017 13:31 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			80-120 %	98.1	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	96.8	%	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-04 (Water)

Volatile Organic Compounds - SIM

 Method: EPA 8260C-SIM
 Sampled: 01/18/2017 09:15

 Instrument: NT15
 Analyzed: 01/27/2017 14:12

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0576 Sample Size: 10 mL Prepared: 01/27/2017 07:38 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	t Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
1,1-Dichloroethene	75-35-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	127	%	
Surrogate: Toluene-d8			80-120 %	83.7	%	
Surrogate: 4-Bromofluorobenzene			75-125 %	95.4	%	





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-04 (Water)

Semivolatile Organic Compounds - SIM

 Method: EPA 8270D-SIM
 Sampled: 01/18/2017 09:15

 Instrument: NT11
 Analyzed: 01/25/2017 15:30

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0320 Sample Size: 500 mL Prepared: 01/19/2017 12:15 Final Volume: 0.5 mL

Sample Cleanup: Cleanup Method: Silica Gel

Cleanup Batch: CFA0117 Initial Volume: 0.5 mL Cleaned: 24-Jan-2017 Final Volume: 0.5 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.010	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	0.010	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	0.010	ND	ug/L	U
Acenaphthylene	208-96-8	1	0.010	ND	ug/L	U
Acenaphthene	83-32-9	1	0.010	ND	ug/L	U
Dibenzofuran	132-64-9	1	0.010	ND	ug/L	U
Fluorene	86-73-7	1	0.010	ND	ug/L	U
Phenanthrene	85-01-8	1	0.010	0.013	ug/L	
Anthracene	120-12-7	1	0.010	ND	ug/L	U
Fluoranthene	206-44-0	1	0.010	ND	ug/L	U
Pyrene	129-00-0	1	0.010	0.013	ug/L	
Benzo(a)anthracene	56-55-3	1	0.010	ND	ug/L	U
Chrysene	218-01-9	1	0.010	ND	ug/L	U
Benzofluoranthenes, Total		1	0.010	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.010	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.010	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.010	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	0.010	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			42-120 %	76.5 %		
Surrogate: Dibenzo[a,h]anthracene-d14			29-120 %	81.9 %		
Surrogate: Fluoranthene-d10			57-120 %	68.7 %		

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-04 (Water)

Petroleum Hydrocarbons

 Method: NWTPH-Dx
 Sampled: 01/18/2017 09:15

 Instrument: FID3
 Analyzed: 01/25/2017 20:10

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0319 Sample Size: 500 mL Prepared: 01/19/2017 10:47 Final Volume: 1 mL

Analyte	CAS Number Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	1	0.100	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	1	0.200	ND	mg/L	U
Surrogate: o-Terphenyl		50-150 %	107 %		



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-04 (Water)

Aroclor PCB

Method: EPA 8082A Instrument: ECD5						•	18/2017 09:15 26/2017 21:16
Sample Preparation:	Preparation Method: EPA 3510C SepF						
	Preparation Batch: BFA0316	Sample Size: 1	000 mL				
	Prepared: 01/23/2017 16:50	Final Volume:	0.5 mL				
Sample Cleanup:	Cleanup Method: Silica Gel						
	Cleanup Batch: CFA0130	Initial Volume:	0.5 mL				
	Cleaned: 26-Jan-2017	Final Volume:	0.5 mL				
Sample Cleanup:	Cleanup Method: Sulfuric Acid						
	Cleanup Batch: CFA0128	Initial Volume:					
	Cleaned: 25-Jan-2017	Final Volume:	0.5 mL				
Sample Cleanup:	Cleanup Method: Sulfur						
	Cleanup Batch: CFA0129	Initial Volume:	0.5 mL				
	Cleaned: 25-Jan-2017	Final Volume:	0.5 mL				
				Reporting			
Analyte		CAS Number	Dilution	Limit	Result	Units	Notes
Aroclor 1016		12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1254		11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260		11096-82-5	1	0.010	ND	ug/L	U
Surrogate: Decachlorobiphe	enyl			29-120 %	85.3 %		
Surrogate: Tetrachlorometa	xylene			32-120 %	66.6 %		
Surrogate: Decachlorobiphe	enyl [2C]			29-120 %	81.8 %		
Surrogate: Tetrachlorometa	rvlene [2C]			32-120 %	50.8 %		

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-04 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8
 Sampled: 01/18/2017 09:15

 Instrument: ICPMS2
 Analyzed: 01/19/2017 17:37

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0317 Sample Size: 25 mL

Prepared: 01/19/2017 07:19 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium	7440-47-3	1	0.500	0.844	ug/L	
Copper	7440-50-8	1	0.500	2.85	ug/L	
Lead	7439-92-1	1	0.100	2.18	ug/L	
Selenium	7782-49-2	1	2.00	ND	ug/L	U
Silver	7440-22-4	1	0.200	ND	ug/L	U



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-04 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8 UCT-KED
 Sampled: 01/18/2017 09:15

 Instrument: ICPMS2
 Analyzed: 01/19/2017 17:37

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0317 Sample Size: 25 mL

Prepared: 01/19/2017 07:19 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.200	0.381	ug/L	
Cadmium	7440-43-9	1	0.100	ND	ug/L	U
Nickel	7440-02-0	1	0.500	ND	ug/L	U
Zinc	7440-66-6	1	4.00	21.4	ug/L	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-04 (Water)

Metals and Metallic Compounds

 Method: EPA 7470A
 Sampled: 01/18/2017 09:15

 Instrument: CETAC
 Analyzed: 01/23/2017 12:58

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0385 Sample Size: 20 mL Prepared: 01/20/2017 11:01 Final Volume: 20 mL

Analyte CAS Number Dilution Result Units Notes

Mercury 7439-97-6 1 0.000100 ND mg/L U

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-05 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 10:00

 Instrument: NT2
 Analyzed: 01/19/2017 13:51

Sample Preparation: Preparation N

Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0329 Sample Size: 10 mL Prepared: 01/19/2017 13:51 Final Volume: 10 mL

			Reporting	Reporting		
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	20.2	ug/L	
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-05 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 10:00

 Instrument: NT2
 Analyzed: 01/19/2017 13:51

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	98.9 %		
Surrogate: Toluene-d8			80-120 %	97.9 %		
Surrogate: 4-Bromofluorobenzene			80-120 %	95.8 %	i	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	99.0 %		



The Boeing Company Project: Boeing Kent Sampling Stormwaters

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Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-05 (Water)

Volatile Organic Compounds

 Method: NWTPHg
 Sampled: 01/18/2017 10:00

 Instrument: NT2
 Analyzed: 01/19/2017 13:51

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0329 Sample Size: 10 mL Prepared: 01/19/2017 13:51 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Resul	t	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	NΙ)	ug/L	U
Surrogate: Toluene-d8			80-120 %	97.9	%		
Surrogate: 4-Bromofluorobenzene			80-120 %	95.8	%		



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-05 (Water)

Volatile Organic Compounds - SIM

 Method: EPA 8260C-SIM
 Sampled: 01/18/2017 10:00

 Instrument: NT15
 Analyzed: 01/27/2017 14:36

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0576 Sample Size: 10 mL Prepared: 01/27/2017 07:38 Final Volume: 10 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Resul	t Units	Notes
Vinyl chloride	75-01-4	1	20.0	NI	ng/L	U
1,1-Dichloroethene	75-35-4	1	20.0	NI	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	122	%	
Surrogate: Toluene-d8			80-120 %	85.1	%	
Surrogate: 4-Bromofluorobenzene			75-125 %	96.5	%	





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-05 (Water)

Semivolatile Organic Compounds - SIM

 Method: EPA 8270D-SIM
 Sampled: 01/18/2017 10:00

 Instrument: NT11
 Analyzed: 01/25/2017 17:04

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0320 Sample Size: 500 mL Prepared: 01/19/2017 12:15 Final Volume: 0.5 mL

Sample Cleanup: Cleanup Method: Silica Gel

Cleanup Batch: CFA0117 Initial Volume: 0.5 mL Cleaned: 24-Jan-2017 Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.010	0.012	ug/L	
2-Methylnaphthalene	91-57-6	1	0.010	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	0.010	ND	ug/L	U
Acenaphthylene	208-96-8	1	0.010	ND	ug/L	U
Acenaphthene	83-32-9	1	0.010	ND	ug/L	U
Dibenzofuran	132-64-9	1	0.010	ND	ug/L	U
Fluorene	86-73-7	1	0.010	ND	ug/L	U
Phenanthrene	85-01-8	1	0.010	0.034	ug/L	
Anthracene	120-12-7	1	0.010	ND	ug/L	U
Fluoranthene	206-44-0	1	0.010	0.018	ug/L	
Pyrene	129-00-0	1	0.010	0.020	ug/L	
Benzo(a)anthracene	56-55-3	1	0.010	ND	ug/L	U
Chrysene	218-01-9	1	0.010	0.010	ug/L	
Benzofluoranthenes, Total		1	0.010	0.011	ug/L	
Benzo(a)pyrene	50-32-8	1	0.010	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.010	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.010	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	0.010	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			42-120 %	59.9 %	5	
Surrogate: Dibenzo[a,h]anthracene-d14			29-120 %	71.9 %	ó	
Surrogate: Fluoranthene-d10			57-120 %	65.0 %	ó	

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-05 (Water)

Petroleum Hydrocarbons

 Method: NWTPH-Dx
 Sampled: 01/18/2017 10:00

 Instrument: FID3
 Analyzed: 01/25/2017 20:34

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0319 Sample Size: 500 mL Prepared: 01/19/2017 10:47 Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	0.100	ND	mg/L	U
Motor Oil Range Organics (C24-C38)		1	0.200	0.219	mg/L	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			50-150 %	105 %		





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Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-05 (Water)

Aroclor PCB

Method: EPA 8082A Instrument: ECD5							18/2017 10:00 26/2017 21:36
Sample Preparation:	Preparation Method: EPA 3510C SepF						
	Preparation Batch: BFA0316	Sample Size: 1					
	Prepared: 01/23/2017 16:50	Final Volume:	0.5 mL				
Sample Cleanup:	Cleanup Method: Silica Gel						
	Cleanup Batch: CFA0130	Initial Volume:	0.5 mL				
	Cleaned: 26-Jan-2017	Final Volume:	0.5 mL				
Sample Cleanup:	Cleanup Method: Sulfuric Acid						
	Cleanup Batch: CFA0128	Initial Volume:					
	Cleaned: 25-Jan-2017	Final Volume:					
Sample Cleanup:	Cleanup Method: Sulfur						
	Cleanup Batch: CFA0129	Initial Volume:					
	Cleaned: 25-Jan-2017	Final Volume:	0.5 mL				
				Reporting			
Analyte		CAS Number	Dilution	Limit	Result	Units	Notes
Aroclor 1016		12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1254		11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260		11096-82-5	1	0.010	ND	ug/L	U
Surrogate: Decachlorobiph	enyl			29-120 %	78.7 %		
Surrogate: Tetrachlorometaxylene				32-120 %	62.9 %		
Surrogate: Decachlorobiphenyl [2C]				29-120 %	76.4 %		
Surrogate: Tetrachlorometa	xylene [2C]			32-120 %	48.3 %		



The Boeing Company Project: Boeing Kent Sampling Stormwaters

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Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-05 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8
 Sampled: 01/18/2017 10:00

 Instrument: ICPMS2
 Analyzed: 01/19/2017 17:42

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0317 Sample Size: 25 mL

Prepared: 01/19/2017 07:19 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium	7440-47-3	1	0.500	0.632	ug/L	
Copper	7440-50-8	1	0.500	3.21	ug/L	
Lead	7439-92-1	1	0.100	1.42	ug/L	
Selenium	7782-49-2	1	2.00	ND	ug/L	U
Silver	7440-22-4	1	0.200	ND	ug/L	U



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-05 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8 UCT-KED
 Sampled: 01/18/2017 10:00

 Instrument: ICPMS2
 Analyzed: 01/19/2017 17:42

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0317 Sample Size: 25 mL

Prepared: 01/19/2017 07:19 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.200	ND	ug/L	U
Cadmium	7440-43-9	1	0.100	ND	ug/L	U
Nickel	7440-02-0	1	0.500	0.555	ug/L	
Zinc	7440-66-6	1	4.00	57.5	ug/L	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-05 (Water)

Metals and Metallic Compounds

 Method: EPA 7470A
 Sampled: 01/18/2017 10:00

 Instrument: CETAC
 Analyzed: 01/23/2017 13:00

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0385 Sample Size: 20 mL Prepared: 01/20/2017 11:01 Final Volume: 20 mL

Analyte CAS Number Dilution Result Units Notes

Mercury 7439-97-6 1 0.000100 ND mg/L U

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-06 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 08:10

 Instrument: NT2
 Analyzed: 01/19/2017 14:10

Sample Preparation:

Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0329 Sample Size: 10 mL Prepared: 01/19/2017 14:10 Final Volume: 10 mL

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			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	5.72	ug/L	
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-06 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 08:10

 Instrument: NT2
 Analyzed: 01/19/2017 14:10

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	92.7 %		
Surrogate: Toluene-d8			80-120 %	99.5 %		
Surrogate: 4-Bromofluorobenzene			80-120 %	95.5 %		
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	99.3 %		



The Boeing Company Project: Boeing Kent Sampling Stormwaters

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Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-06 (Water)

Volatile Organic Compounds

 Method: NWTPHg
 Sampled: 01/18/2017 08:10

 Instrument: NT2
 Analyzed: 01/19/2017 14:10

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0329 Sample Size: 10 mL Prepared: 01/19/2017 14:10 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	t U	Inits	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	u	ıg/L	U
Surrogate: Toluene-d8			80-120 %	99.5	%		
Surrogate: 4-Bromofluorobenzene			80-120 %	95.5	%		



The Boeing Company Project: Boeing Kent Sampling Stormwaters

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Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-06 (Water)

Volatile Organic Compounds - SIM

 Method: EPA 8260C-SIM
 Sampled: 01/18/2017 08:10

 Instrument: NT15
 Analyzed: 01/27/2017 14:59

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0576 Sample Size: 10 mL Prepared: 01/27/2017 07:38 Final Volume: 10 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Resul	t Units	Notes
Vinyl chloride	75-01-4	1	20.0	NI	ng/L	U
1,1-Dichloroethene	75-35-4	1	20.0	NI	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	129	%	
Surrogate: Toluene-d8			80-120 %	81.9	%	
Surrogate: 4-Bromofluorobenzene			75-125 %	92.9	%	





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-06 (Water)

Semivolatile Organic Compounds - SIM

 Method: EPA 8270D-SIM
 Sampled: 01/18/2017 08:10

 Instrument: NT11
 Analyzed: 01/25/2017 17:35

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0320 Sample Size: 500 mL Prepared: 01/19/2017 12:15 Final Volume: 0.5 mL

Sample Cleanup: Cleanup Method: Silica Gel

Cleanup Batch: CFA0117 Initial Volume: 0.5 mL Cleaned: 24-Jan-2017 Final Volume: 0.5 mL

	2					
Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.010	0.014	ug/L	
2-Methylnaphthalene	91-57-6	1	0.010	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	0.010	ND	ug/L	U
Acenaphthylene	208-96-8	1	0.010	ND	ug/L	U
Acenaphthene	83-32-9	1	0.010	ND	ug/L	U
Dibenzofuran	132-64-9	1	0.010	ND	ug/L	U
Fluorene	86-73-7	1	0.010	ND	ug/L	U
Phenanthrene	85-01-8	1	0.010	ND	ug/L	U
Anthracene	120-12-7	1	0.010	ND	ug/L	U
Fluoranthene	206-44-0	1	0.010	ND	ug/L	U
Pyrene	129-00-0	1	0.010	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	0.010	ND	ug/L	U
Chrysene	218-01-9	1	0.010	ND	ug/L	U
Benzofluoranthenes, Total		1	0.010	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.010	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.010	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.010	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	0.010	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			42-120 %	70.6 %	;	
Surrogate: Dibenzo[a,h]anthracene-d14			29-120 %	75.0 %	;	
Surrogate: Fluoranthene-d10			57-120 %	70.7 %	;	

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-06 (Water)

Petroleum Hydrocarbons

 Method: NWTPH-Dx
 Sampled: 01/18/2017 08:10

 Instrument: FID3
 Analyzed: 01/25/2017 20:58

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0319 Sample Size: 500 mL Prepared: 01/19/2017 10:47 Final Volume: 1 mL

Analyte	CAS Number Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	1	0.100	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	1	0.200	ND	mg/L	U
Surrogate: o-Terphenyl		50-150 %	109 %		



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-06 (Water)

Aroclor PCB

Method: EPA 8082A Instrument: ECD5							/18/2017 08:10 /26/2017 21:56
Sample Preparation:	Preparation Method: EPA 3510C SepF						
	Preparation Batch: BFA0316	Sample Size: 1	000 mL				
	Prepared: 01/23/2017 16:50	Final Volume: 0.5 mL					
Sample Cleanup:	Cleanup Method: Silica Gel						
	Cleanup Batch: CFA0130	Initial Volume: 0.5 mL					
	Cleaned: 26-Jan-2017	Final Volume: 0.5 mL					
Sample Cleanup:	Cleanup Method: Sulfuric Acid						
	Cleanup Batch: CFA0128	Initial Volume: 0.5 mL					
	Cleaned: 25-Jan-2017	Final Volume:	0.5 mL				
Sample Cleanup:	Cleanup Method: Sulfur						
	Cleanup Batch: CFA0129	Initial Volume:	0.5 mL				
	Cleaned: 25-Jan-2017	Final Volume:	0.5 mL				
				Reporting			
Analyte		CAS Number	Dilution	Limit	Result	Units	Notes
Aroclor 1016		12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1254		11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260		11096-82-5	1	0.010	ND	ug/L	U
Surrogate: Decachlorobiphe	enyl			29-120 %	78.3 %		
Surrogate: Tetrachlorometa.	xylene			32-120 %	63.8 %		
Surrogate: Decachlorobiphe	enyl [2C]			29-120 %	73.8 %	i	
Surrogate: Tetrachlorometa	xylene [2C]			32-120 %	48.7 %		

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-06 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8
 Sampled: 01/18/2017 08:10

 Instrument: ICPMS2
 Analyzed: 01/19/2017 17:47

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0317 Sample Size: 25 mL

Prepared: 01/19/2017 07:19 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium	7440-47-3	1	0.500	0.606	ug/L	
Copper	7440-50-8	1	0.500	5.03	ug/L	
Lead	7439-92-1	1	0.100	0.358	ug/L	
Selenium	7782-49-2	1	2.00	ND	ug/L	U
Silver	7440-22-4	1	0.200	ND	ug/L	U



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-06 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8 UCT-KED
 Sampled: 01/18/2017 08:10

 Instrument: ICPMS2
 Analyzed: 01/19/2017 17:47

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Preparation Batch: BFA0317 Sample Size: 25 mL Prepared: 01/19/2017 07:19 Final Volume: 25 mL

Reporting Analyte CAS Number Dilution Limit Result Units Notes Arsenic 7440-38-2 0.200 0.506 ug/L ug/L Cadmium 7440-43-9 1 0.100 ND U Nickel 7440-02-0 1 0.500 0.713 ug/L Zinc 7440-66-6 4.00 ug/L 1 15.9

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-06 (Water)

Metals and Metallic Compounds

 Method: EPA 7470A
 Sampled: 01/18/2017 08:10

 Instrument: CETAC
 Analyzed: 01/23/2017 13:02

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0385 Sample Size: 20 mL Prepared: 01/20/2017 11:01 Final Volume: 20 mL

Analyte CAS Number Dilution Result Units Notes

Mercury 7439-97-6 1 0.000100 ND mg/L U

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Trip Blank 17A0195-07 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 00:00

 Instrument: NT2
 Analyzed: 01/19/2017 14:30

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0329 Sample Size: 10 mL Prepared: 01/19/2017 14:30 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
·						
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
					-	

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Trip Blank 17A0195-07 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/18/2017 00:00

 Instrument: NT2
 Analyzed: 01/19/2017 14:30

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	97.3	%	
Surrogate: Toluene-d8			80-120 %	98.5	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	96.0	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	100	%	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Trip Blank 17A0195-07 (Water)

Volatile Organic Compounds

 Method: NWTPHg
 Sampled: 01/18/2017 00:00

 Instrument: NT2
 Analyzed: 01/19/2017 14:30

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0329 Sample Size: 10 mL Prepared: 01/19/2017 14:30 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Unit	s Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/I	L U
Surrogate: Toluene-d8			80-120 %	98.5	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	96.0	%	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-08 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8
 Sampled: 01/18/2017 08:50

 Instrument: ICPMS2
 Analyzed: 01/20/2017 17:26

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0369 Sample Size: 25 mL

Prepared: 01/20/2017 07:06 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium, Dissolved	7440-47-3	1	0.500	ND	ug/L	U
Lead, Dissolved	7439-92-1	1	0.100	ND	ug/L	U
Silver, Dissolved	7440-22-4	1	0.200	ND	ug/L	U

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-08 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8 UCT-KED
 Sampled: 01/18/2017 08:50

 Instrument: ICPMS2
 Analyzed: 01/20/2017 17:26

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0369 Sample Size: 25 mL

Prepared: 01/20/2017 07:06 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	0.257	ug/L	
Cadmium, Dissolved	7440-43-9	1	0.100	ND	ug/L	U
Copper, Dissolved	7440-50-8	1	0.500	2.00	ug/L	
Nickel, Dissolved	7440-02-0	1	0.500	ND	ug/L	U
Selenium, Dissolved	7782-49-2	1	0.500	ND	ug/L	U
Zinc, Dissolved	7440-66-6	1	4.00	19.0	ug/L	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.237 - W 17A0195-08 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 7470A
 Sampled: 01/18/2017 08:50

 Instrument: CETAC
 Analyzed: 01/31/2017 15:23

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0620 Sample Size: 20 mL Prepared: 01/30/2017 12:35 Final Volume: 20 mL

Analyte CAS Number Dilution Result Units Notes

Mercury, Dissolved 7439-97-6 1 0.000100 ND mg/L U

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.235 - W 17A0195-09 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8
 Sampled: 01/18/2017 08:40

 Instrument: ICPMS2
 Analyzed: 01/20/2017 18:27

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0369 Sample Size: 25 mL

Prepared: 01/20/2017 07:06 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium, Dissolved	7440-47-3	1	0.500	ND	ug/L	U
Lead, Dissolved	7439-92-1	1	0.100	0.110	ug/L	
Silver, Dissolved	7440-22-4	1	0.200	ND	ug/L	U

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.235 - W 17A0195-09 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8 UCT-KED
 Sampled: 01/18/2017 08:40

 Instrument: ICPMS2
 Analyzed: 01/20/2017 18:27

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0369 Sample Size: 25 mL

Prepared: 01/20/2017 07:06 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	0.462	ug/L	
Cadmium, Dissolved	7440-43-9	1	0.100	ND	ug/L	U
Copper, Dissolved	7440-50-8	1	0.500	2.25	ug/L	
Nickel, Dissolved	7440-02-0	1	0.500	ND	ug/L	U
Selenium, Dissolved	7782-49-2	1	0.500	ND	ug/L	U
Zinc, Dissolved	7440-66-6	1	4.00	37.2	ug/L	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-20.235 - W 17A0195-09 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 7470A
 Sampled: 01/18/2017 08:40

 Instrument: CETAC
 Analyzed: 01/31/2017 15:28

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0620 Sample Size: 20 mL Prepared: 01/30/2017 12:35 Final Volume: 20 mL

Analyte CAS Number Dilution Limit Result Units Notes

Mercury, Dissolved 7439-97-6 1 0.000100 ND mg/L U

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-10 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8
 Sampled: 01/18/2017 09:45

 Instrument: ICPMS2
 Analyzed: 01/20/2017 18:32

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0369 Sample Size: 25 mL

Prepared: 01/20/2017 07:06 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium, Dissolved	7440-47-3	1	0.500	ND	ug/L	U
Lead, Dissolved	7439-92-1	1	0.100	0.182	ug/L	
Silver, Dissolved	7440-22-4	1	0.200	ND	ug/L	U

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-10 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8 UCT-KED
 Sampled: 01/18/2017 09:45

 Instrument: ICPMS2
 Analyzed: 01/20/2017 18:32

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0369 Sample Size: 25 mL

Prepared: 01/20/2017 07:06 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	ND	ug/L	U
Cadmium, Dissolved	7440-43-9	1	0.100	ND	ug/L	U
Copper, Dissolved	7440-50-8	1	0.500	1.77	ug/L	
Nickel, Dissolved	7440-02-0	1	0.500	ND	ug/L	U
Selenium, Dissolved	7782-49-2	1	0.500	ND	ug/L	U
Zinc, Dissolved	7440-66-6	1	4.00	50.5	ug/L	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-16.12 - W 17A0195-10 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 7470A
 Sampled: 01/18/2017 09:45

 Instrument: CETAC
 Analyzed: 01/31/2017 15:29

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0620 Sample Size: 20 mL Prepared: 01/30/2017 12:35 Final Volume: 20 mL

Analyte CAS Number Dilution Result Units Notes

Mercury, Dissolved 7439-97-6 1 0.000100 ND mg/L U

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-11 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8
 Sampled: 01/18/2017 09:15

 Instrument: ICPMS2
 Analyzed: 01/20/2017 18:37

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0369 Sample Size: 25 mL

Prepared: 01/20/2017 07:06 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium, Dissolved	7440-47-3	1	0.500	0.601	ug/L	
Lead, Dissolved	7439-92-1	1	0.100	0.155	ug/L	
Silver, Dissolved	7440-22-4	1	0.200	ND	ug/L	U

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-11 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8 UCT-KED
 Sampled: 01/18/2017 09:15

 Instrument: ICPMS2
 Analyzed: 01/20/2017 18:37

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0369 Sample Size: 25 mL

Prepared: 01/20/2017 07:06 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	0.272	ug/L	
Cadmium, Dissolved	7440-43-9	1	0.100	ND	ug/L	U
Copper, Dissolved	7440-50-8	1	0.500	1.60	ug/L	
Nickel, Dissolved	7440-02-0	1	0.500	ND	ug/L	U
Selenium, Dissolved	7782-49-2	1	0.500	ND	ug/L	U
Zinc, Dissolved	7440-66-6	1	4.00	8.46	ug/L	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - MH-15.10 - W 17A0195-11 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 7470A
 Sampled: 01/18/2017 09:15

 Instrument: CETAC
 Analyzed: 01/31/2017 15:31

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0620 Sample Size: 20 mL Prepared: 01/30/2017 12:35 Final Volume: 20 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Mercury, Dissolved	7439-97-6	1	0.000100	ND	mg/L	U





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-12 (Water)

Semivolatile Organic Compounds - SIM

 Method: EPA 8270D-SIM
 Sampled: 01/18/2017 10:00

 Instrument: NT11
 Analyzed: 02/03/2017 13:45

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0449 Sample Size: 455 mL Prepared: 01/24/2017 16:15 Final Volume: 0.5 mL

Sample Cleanup: Cleanup Method: Silica Gel

Cleanup Batch: CFA0134 Initial Volume: 0.5 mL Cleaned: 26-Jan-2017 Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.011	0.017	ug/L	
2-Methylnaphthalene	91-57-6	1	0.011	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	0.011	ND	ug/L	U
Acenaphthylene	208-96-8	1	0.011	ND	ug/L	U
Acenaphthene	83-32-9	1	0.011	ND	ug/L	U
Dibenzofuran	132-64-9	1	0.011	ND	ug/L	U
Fluorene	86-73-7	1	0.011	ND	ug/L	U
Phenanthrene	85-01-8	1	0.011	0.018	ug/L	
Anthracene	120-12-7	1	0.011	ND	ug/L	U
Fluoranthene	206-44-0	1	0.011	ND	ug/L	U
Pyrene	129-00-0	1	0.011	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	0.011	ND	ug/L	U
Chrysene	218-01-9	1	0.011	ND	ug/L	U
Benzofluoranthenes, Total		1	0.011	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.011	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.011	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.011	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	0.011	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			42-120 %	72.2 %	ś	
Surrogate: Dibenzo[a,h]anthracene-d14			29-120 %	94.7 %	ó	
Surrogate: Fluoranthene-d10			57-120 %	53.7 %	ó	*

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-12 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8
 Sampled: 01/18/2017 10:00

 Instrument: ICPMS2
 Analyzed: 01/20/2017 18:41

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0369 Sample Size: 25 mL

Preparation Batch: BFA0369 Sample Size: 25 mL Prepared: 01/20/2017 07:06 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium, Dissolved	7440-47-3	1	0.500	ND	ug/L	U
Lead, Dissolved	7439-92-1	1	0.100	ND	ug/L	U
Silver, Dissolved	7440-22-4	1	0.200	ND	ug/L	U



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-12 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8 UCT-KED
 Sampled: 01/18/2017 10:00

 Instrument: ICPMS2
 Analyzed: 01/20/2017 18:41

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0369 Sample Size: 25 mL

Prepared: 01/20/2017 07:06 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	ND	ug/L	U
Cadmium, Dissolved	7440-43-9	1	0.100	ND	ug/L	U
Copper, Dissolved	7440-50-8	1	0.500	0.945	ug/L	
Nickel, Dissolved	7440-02-0	1	0.500	ND	ug/L	U
Selenium, Dissolved	7782-49-2	1	0.500	ND	ug/L	U
Zinc, Dissolved	7440-66-6	1	4.00	37.7	ug/L	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-16 - W 17A0195-12 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 7470A
 Sampled: 01/18/2017 10:00

 Instrument: CETAC
 Analyzed: 01/31/2017 15:33

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0620 Sample Size: 20 mL Prepared: 01/30/2017 12:35 Final Volume: 20 mL

Analyte CAS Number Dilution Result Units Notes

Mercury, Dissolved 7439-97-6 1 0.000100 ND mg/L U

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-13 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8
 Sampled: 01/18/2017 08:10

 Instrument: ICPMS2
 Analyzed: 01/20/2017 18:46

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0369 Sample Size: 25 mL

Prepared: 01/20/2017 07:06 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium, Dissolved	7440-47-3	1	0.500	ND	ug/L	U
Lead, Dissolved	7439-92-1	1	0.100	ND	ug/L	U
Silver, Dissolved	7440-22-4	1	0.200	ND	ug/L	U

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-13 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8 UCT-KED
 Sampled: 01/18/2017 08:10

 Instrument: ICPMS2
 Analyzed: 01/20/2017 18:46

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Preparation Batch: BFA0369 Sample Size: 25 mL Prepared: 01/20/2017 07:06 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	0.356	ug/L	
Cadmium, Dissolved	7440-43-9	1	0.100	ND	ug/L	U
Copper, Dissolved	7440-50-8	1	0.500	2.02	ug/L	
Nickel, Dissolved	7440-02-0	1	0.500	ND	ug/L	U
Selenium, Dissolved	7782-49-2	1	0.500	ND	ug/L	U
Zinc, Dissolved	7440-66-6	1	4.00	9.88	ug/L	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

KSC - OF-NDP - W 17A0195-13 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 7470A
 Sampled: 01/18/2017 08:10

 Instrument: CETAC
 Analyzed: 01/31/2017 15:38

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0620 Sample Size: 20 mL Prepared: 01/30/2017 12:35 Final Volume: 20 mL

Analyte CAS Number Dilution Result Units Notes

Mercury, Dissolved 7439-97-6 1 0.000100 ND mg/L U

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0329 - EPA 5030 (Purge and Trap)

Instrument: NT2

QC Sample/Analyte	Result	Re	porting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
QC Sample/Tiliary to	Result		Limit							Liiiit	Tiotes
Blank (BFA0329-BLK1)					red: 19-Jan	-2017 Ana	lyzed: 19-J	an-2017 09:	29		
Gasoline Range Organics (Tol-Nap)	ND		100	ug/L							U
Surrogate: Toluene-d8		4.88		ug/L	5.00		97.7 %	80-120			
Surrogate: 4-Bromofluorobenzene		4.77		ug/L	5.00		95.3 %	80-120			
Blank (BFA0329-BLK2)				Prepa	red: 19-Jan	-2017 Ana	lyzed: 19-Ja	an-2017 09:	29		
Chloromethane	ND		0.50	ug/L							U
Vinyl Chloride	ND		0.20	ug/L							U
Bromomethane	ND		1.00	ug/L							U
Chloroethane	ND		0.20	ug/L							U
Trichlorofluoromethane	ND		0.20	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		0.20	ug/L							U
Acetone	ND		5.00	ug/L							U
1,1-Dichloroethene	ND		0.20	ug/L							U
Methylene Chloride	ND		1.00	ug/L							U
Carbon Disulfide	ND		0.20	ug/L							U
trans-1,2-Dichloroethene	ND		0.20	ug/L							U
Vinyl Acetate	ND		0.20	ug/L							U
1,1-Dichloroethane	ND		0.20	ug/L							U
2-Butanone	ND		5.00	ug/L							U
cis-1,2-Dichloroethene	ND		0.20	ug/L							U
Chloroform	ND		0.20	ug/L							U
1,1,1-Trichloroethane	ND		0.20	ug/L							U
Carbon tetrachloride	ND		0.20	ug/L							U
1,2-Dichloroethane	ND		0.20	ug/L							U
Benzene	ND		0.20	ug/L							U
Trichloroethene	ND		0.20	ug/L							U
1,2-Dichloropropane	ND		0.20	ug/L							U
Bromodichloromethane	ND		0.20	ug/L							U
4-Methyl-2-Pentanone	ND		5.00	ug/L							U
cis-1,3-Dichloropropene	ND		0.20	ug/L							U
Toluene	ND		0.20	ug/L							U
trans-1,3-Dichloropropene	ND		0.20	ug/L							U
1,1,2-Trichloroethane	ND		0.20	ug/L							U
Tetrachloroethene	ND		0.20	ug/L							U

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0329 - EPA 5030 (Purge and Trap)

Instrument: NT2

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFA0329-BLK2)				ared: 19-Jan-	2017 Ana	alvzed: 19-1	an-2017 09	:29		
Dibromochloromethane	ND	0.20	ug/L	va. 17 Jail-		, 17-3	2017 09.			U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4		4.99	ug/L	5.00		99.7 %	81-118			
Surrogate: Toluene-d8		4.88	ug/L	5.00		97.7 %	89-112			
Surrogate: 4-Bromofluorobenzene		4.77	ug/L	5.00		95.3 %	85-114			
Surrogate: 1,2-Dichlorobenzene-d4		5.09	ug/L	5.00		102 %	80-120			
LCS (BFA0329-BS1)			Prep	ared: 19-Jan-	2017 Ana	alyzed: 19-J	an-2017 07	:50		
Gasoline Range Organics (Tol-Nap)	1090	100	ug/L	1000		109 %	80-120			
Surrogate: Toluene-d8		4.91	ug/L	5.00		98.1 %	80-120			
Surrogate: 4-Bromofluorobenzene		4.91	ug/L	5.00		98.2 %	80-120			
LCS (BFA0329-BS2)			Prep	ared: 19-Jan-	2017 Ana	alyzed: 19-J	an-2017 08	:30		
Chloromethane	9.42	0.50	ug/L	10.0		94.2 %	77-122			
Vinyl Chloride	10.2	0.20	ug/L	10.0		102 %	74-123			
Bromomethane	9.29	1.00	ug/L	10.0		92.9 %	72-130			
Chloroethane	11.2	0.20	ug/L	10.0		112 %	68-133			
Trichlorofluoromethane	9.74	0.20	ug/L	10.0		97.4 %	80-129			
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.1	0.20	ug/L	10.0		101 %	76-124			
Acetone	47.1	5.00	ug/L	50.0		94.1 %	64-125			
1,1-Dichloroethene	10.1	0.20	ug/L	10.0		101 %	74-120			
Methylene Chloride	9.31	1.00	ug/L	10.0		93.1 %	71-125			
Carbon Disulfide	9.43	0.20	ug/L	10.0		94.3 %	78-124			
trans-1,2-Dichloroethene	10.9	0.20	ug/L	10.0		109 %	78-120			
Vinyl Acetate	9.16	0.20	ug/L	10.0		91.6 %	74-120			
1,1-Dichloroethane	10.1	0.20	ug/L	10.0		101 %	80-120			
2-Butanone	46.8	5.00	ug/L	50.0		93.7 %	73-123			
cis-1,2-Dichloroethene	10.0	0.20	ug/L	10.0		100 %	80-120			

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0329 - EPA 5030 (Purge and Trap)

Instrument: NT2

OC Comple/Amelote	D14	Reporting	T I : 4	Spike	Source	0/DEC	%REC	DDD	RPD	NI-4
QC Sample/Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
LCS (BFA0329-BS2)				ared: 19-Jan-	-2017 Anal	yzed: 19-Ja	an-2017 08:	30		
Chloroform	10.2	0.20	ug/L	10.0		102 %	80-120			
1,1,1-Trichloroethane	10.1	0.20	ug/L	10.0		101 %	79-123			
Carbon tetrachloride	9.35	0.20	ug/L	10.0		93.5 %	71-137			
1,2-Dichloroethane	10.1	0.20	ug/L	10.0		101 %	80-121			
Benzene	10.0	0.20	ug/L	10.0		100 %	80-120			
Trichloroethene	10.2	0.20	ug/L	10.0		102 %	80-120			
1,2-Dichloropropane	10.1	0.20	ug/L	10.0		101 %	80-120			
Bromodichloromethane	9.93	0.20	ug/L	10.0		99.3 %	80-121			
4-Methyl-2-Pentanone	52.2	5.00	ug/L	50.0		104 %	80-125			
eis-1,3-Dichloropropene	10.5	0.20	ug/L	10.0		105 %	80-124			
Toluene	9.95	0.20	ug/L	10.0		99.5 %	80-120			
trans-1,3-Dichloropropene	10.4	0.20	ug/L	10.0		104 %	79-127			
1,1,2-Trichloroethane	10.6	0.20	ug/L	10.0		106 %	80-120			
Tetrachloroethene	9.97	0.20	ug/L	10.0		99.7 %	80-120			
Dibromochloromethane	9.77	0.20	ug/L	10.0		97.7 %	80-120			
Chlorobenzene	10.0	0.20	ug/L	10.0		100 %	80-120			
Ethylbenzene	9.69	0.20	ug/L	10.0		96.9 %	80-120			
m,p-Xylene	19.4	0.40	ug/L	20.0		97.0 %	80-121			
o-Xylene	9.75	0.20	ug/L	10.0		97.5 %	80-121			
Styrene	10.7	0.20	ug/L	10.0		107 %	80-121			
Bromoform	7.69	0.20	ug/L	10.0		76.9 %	62-134			Q
1,1,2,2-Tetrachloroethane	9.78	0.20	ug/L	10.0		97.8 %	80-120			
Surrogate: Dibromofluoromethane		5.04	ug/L	5.00		101 %	80-119			
Surrogate: 1,2-Dichloroethane-d4		5.08	ug/L	5.00		102 %	81-118			
Surrogate: Toluene-d8		5.01	ug/L	5.00		100 %	89-112			
Surrogate: 4-Bromofluorobenzene		4.92	ug/L	5.00		98.3 %	85-114			
Surrogate: 1,2-Dichlorobenzene-d4		4.98	ug/L	5.00		99.6 %	80-120			
LCS Dup (BFA0329-BSD1)			Prep	ared: 19-Jan-	-2017 Anal	yzed: 19-Ja	an-2017 08:	10		
Gasoline Range Organics (Tol-Nap)	1070	100	ug/L	1000		107 %	80-120	1.15	30	
Surrogate: Toluene-d8		4.93	ug/L	5.00		98.5 %	80-120			
Surrogate: 4-Bromofluorobenzene		4.72	ug/L	5.00		94.3 %	80-120			

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LCS Dup (BFA0329-BSD2)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Prepared: 19-Jan-2017 Analyzed: 19-Jan-2017 08:49





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0329 - EPA 5030 (Purge and Trap)

Instrument: NT2

OC Samuela/Amalista	D. 1	Reporting	11-7	Spike	Source	0/PEC	%REC	DDD	RPD	NI-
QC Sample/Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
LCS Dup (BFA0329-BSD2)	-		Prepa	ared: 19-Jan-	-2017 Ana	lyzed: 19-J	an-2017 08:	49		
Chloromethane	9.20	0.50	ug/L	10.0		92.0 %	77-122	2.36	30	
Vinyl Chloride	10.3	0.20	ug/L	10.0		103 %	74-123	0.55	30	
Bromomethane	9.76	1.00	ug/L	10.0		97.6 %	72-130	5.03	30	
Chloroethane	11.1	0.20	ug/L	10.0		111 %	68-133	0.57	30	
Trichlorofluoromethane	9.70	0.20	ug/L	10.0		97.0 %	80-129	0.40	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.1	0.20	ug/L	10.0		101 %	76-124	0.20	30	
Acetone	46.1	5.00	ug/L	50.0		92.1 %	64-125	2.13	30	
1,1-Dichloroethene	9.85	0.20	ug/L	10.0		98.5 %	74-120	2.03	30	
Methylene Chloride	9.40	1.00	ug/L	10.0		94.0 %	71-125	0.94	30	
Carbon Disulfide	9.41	0.20	ug/L	10.0		94.1 %	78-124	0.27	30	
trans-1,2-Dichloroethene	10.5	0.20	ug/L	10.0		105 %	78-120	3.80	30	
Vinyl Acetate	9.13	0.20	ug/L	10.0		91.3 %	74-120	0.30	30	
1,1-Dichloroethane	9.88	0.20	ug/L	10.0		98.8 %	80-120	1.73	30	
2-Butanone	45.8	5.00	ug/L	50.0		91.5 %	73-123	2.33	30	
cis-1,2-Dichloroethene	10.1	0.20	ug/L	10.0		101 %	80-120	0.30	30	
Chloroform	10.0	0.20	ug/L	10.0		100 %	80-120	1.80	30	
1,1,1-Trichloroethane	10.0	0.20	ug/L	10.0		100 %	79-123	1.07	30	
Carbon tetrachloride	10.0	0.20	ug/L	10.0		100 %	71-137	7.01	30	
1,2-Dichloroethane	10.6	0.20	ug/L	10.0		106 %	80-121	4.69	30	
Benzene	10.5	0.20	ug/L	10.0		105 %	80-120	4.92	20	
Trichloroethene	10.7	0.20	ug/L	10.0		107 %	80-120	4.51	30	
1,2-Dichloropropane	10.4	0.20	ug/L	10.0		104 %	80-120	3.01	30	
Bromodichloromethane	10.6	0.20	ug/L	10.0		106 %	80-121	6.09	30	
4-Methyl-2-Pentanone	53.2	5.00	ug/L	50.0		106 %	80-125	1.98	30	
cis-1,3-Dichloropropene	10.9	0.20	ug/L	10.0		109 %	80-124	3.98	30	
Toluene	10.3	0.20	ug/L	10.0		103 %	80-120	3.23	20	
trans-1,3-Dichloropropene	11.1	0.20	ug/L	10.0		111 %	79-127	6.53	30	
1,1,2-Trichloroethane	11.1	0.20	ug/L	10.0		111 %	80-120	4.43	30	
Tetrachloroethene	10.4	0.20	ug/L	10.0		104 %	80-120	4.62	30	
Dibromochloromethane	10.3	0.20	ug/L	10.0		103 %	80-120	5.25	30	
Chlorobenzene	10.3	0.20	ug/L	10.0		103 %	80-120	2.48	30	
Ethylbenzene	10.0	0.20	ug/L	10.0		100 %	80-120	3.20	20	
m,p-Xylene	20.1	0.40	ug/L	20.0		100 %	80-121	3.41	20	
o-Xylene	10.0	0.20	ug/L	10.0		100 %	80-121	2.96	20	
Styrene	10.9	0.20	ug/L	10.0		109 %	80-121	1.71	30	

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0329 - EPA 5030 (Purge and Trap)

Instrument: NT2

		Reporting		Spike	Source		%REC		RPD	
QC Sample/Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
LCS Dup (BFA0329-BSD2)			Prepa	ared: 19-Jan	-2017 Ana	lyzed: 19-Ja	an-2017 08:	:49		
Bromoform	8.03	0.20	ug/L	10.0		80.3 %	62-134	4.32	30	Q
1,1,2,2-Tetrachloroethane	10.3	0.20	ug/L	10.0		103 %	80-120	4.88	30	
Surrogate: Dibromofluoromethane		5.00	ug/L	5.00		100 %	80-119			
Surrogate: 1,2-Dichloroethane-d4		4.91	ug/L	5.00		98.2 %	81-118			
Surrogate: Toluene-d8		5.16	ug/L	5.00		103 %	89-112			
Surrogate: 4-Bromofluorobenzene		5.01	ug/L	5.00		100 %	85-114			
Surrogate: 1,2-Dichlorobenzene-d4		5.08	ug/L	5.00		102 %	80-120			
Matrix Spike (BFA0329-MS5)	Source	e: 17A0195-05	Prepa	ared: 19-Jan	-2017 Ana	lyzed: 19-Ja	an-2017 17:	:27		
Chloromethane	8.89	0.50	ug/L	10.0	ND	88.9 %	77-122			
Vinyl Chloride	9.96	0.20	ug/L	10.0	ND	99.6 %	74-123			
Bromomethane	9.33	1.00	ug/L	10.0	ND	93.3 %	72-130			
Chloroethane	11.1	0.20	ug/L	10.0	ND	111 %	68-133			
Trichlorofluoromethane	9.51	0.20	ug/L	10.0	ND	95.1 %	80-129			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.83	0.20	ug/L	10.0	ND	98.3 %	76-124			
Acetone	65.1	5.00	ug/L	50.0	20.2	89.9 %	64-125			
1,1-Dichloroethene	9.69	0.20	ug/L	10.0	ND	96.9 %	74-120			
Methylene Chloride	8.85	1.00	ug/L	10.0	ND	88.5 %	71-125			
Carbon Disulfide	9.19	0.20	ug/L	10.0	ND	91.9 %	78-124			
trans-1,2-Dichloroethene	10.4	0.20	ug/L	10.0	ND	104 %	78-120			
Vinyl Acetate	7.82	0.20	ug/L	10.0	ND	78.2 %	74-120			
1,1-Dichloroethane	9.79	0.20	ug/L	10.0	ND	97.9 %	80-120			
2-Butanone	47.6	5.00	ug/L	50.0	ND	92.1 %	73-123			
cis-1,2-Dichloroethene	9.78	0.20	ug/L	10.0	ND	97.8 %	80-120			
Chloroform	10.0	0.20	ug/L	10.0	ND	100 %	80-120			
1,1,1-Trichloroethane	9.80	0.20	ug/L	10.0	ND	98.0 %	79-123			
Carbon tetrachloride	9.53	0.20	ug/L	10.0	ND	95.3 %	71-137			
1,2-Dichloroethane	10.2	0.20	ug/L	10.0	ND	102 %	80-121			
Benzene	10.3	0.20	ug/L	10.0	ND	103 %	80-120			
Trichloroethene	10.5	0.20	ug/L	10.0	ND	105 %	80-120			
1,2-Dichloropropane	10.4	0.20	ug/L	10.0	ND	104 %	80-120			
Bromodichloromethane	9.94	0.20	ug/L	10.0	ND	99.4 %	80-121			
4-Methyl-2-Pentanone	51.8	5.00	ug/L	50.0	ND	104 %	80-125			
cis-1,3-Dichloropropene	10.5	0.20	ug/L	10.0	ND	105 %	80-124			

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0329 - EPA 5030 (Purge and Trap)

Instrument: NT2

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BFA0329-MS5)	Source:	Source: 17A0195-05		ared: 19-Jan-	-2017 Ana	lyzed: 19-Ja	an-2017 17:	27		
Toluene	10.1	0.20	ug/L	10.0	ND	101 %	80-120			
trans-1,3-Dichloropropene	10.5	0.20	ug/L	10.0	ND	105 %	79-127			
1,1,2-Trichloroethane	10.7	0.20	ug/L	10.0	ND	107 %	80-120			
Tetrachloroethene	10.6	0.20	ug/L	10.0	ND	106 %	80-120			
Dibromochloromethane	9.95	0.20	ug/L	10.0	ND	99.5 %	80-120			
Chlorobenzene	10.4	0.20	ug/L	10.0	ND	104 %	80-120			
Ethylbenzene	10.2	0.20	ug/L	10.0	ND	102 %	80-120			
m,p-Xylene	20.3	0.40	ug/L	20.0	ND	102 %	80-121			
o-Xylene	10.2	0.20	ug/L	10.0	ND	102 %	80-121			
Styrene	11.1	0.20	ug/L	10.0	ND	111 %	80-121			
Bromoform	7.79	0.20	ug/L	10.0	ND	77.9 %	62-134			Q
1,1,2,2-Tetrachloroethane	10.3	0.20	ug/L	10.0	ND	103 %	80-120			
Surrogate: Dibromofluoromethane		5.04	ug/L	5.00		101 %	80-119			
Surrogate: 1,2-Dichloroethane-d4		4.81	ug/L	5.00	4.95	96.2 %	81-118			
Surrogate: Toluene-d8		4.98	ug/L	5.00	4.90	99.5 %	89-112			
Surrogate: 4-Bromofluorobenzene		4.91	ug/L	5.00	4.79	98.2 %	85-114			
Surrogate: 1,2-Dichlorobenzene-d4		4.99	ug/L	5.00	4.95	99.9 %	80-120			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike (BFA0329-MS6)	Source: 17	A0195-06	Prepa	ared: 19-Jan-	2017 Ana	ılyzed: 19-J	an-2017 18:07
Gasoline Range Organics (Tol-Nap)	1010	100	ug/L	1000	ND	101 %	80-120
Surrogate: Toluene-d8	4.9	99	ug/L	5.00	4.98	99.9 %	80-120
Surrogate: 4-Bromofluorobenzene	4.8	30	ug/L	5.00	4.78	96.0 %	80-120

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BFA0329-MSD5)	Source: 1	7A0195-05	Prepa	red: 19-Jan-	2017 Ana	alyzed: 19-J	an-2017 17:	:47	
Chloromethane	8.93	0.50	ug/L	10.0	ND	89.3 %	77-122	0.41	30
Vinyl Chloride	10.2	0.20	ug/L	10.0	ND	102 %	74-123	2.31	30
Bromomethane	9.80	1.00	ug/L	10.0	ND	98.0 %	72-130	4.94	30
Chloroethane	11.1	0.20	ug/L	10.0	ND	111 %	68-133	0.11	30
Trichlorofluoromethane	9.61	0.20	ug/L	10.0	ND	96.1 %	80-129	1.04	30
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.97	0.20	ug/L	10.0	ND	99.7 %	76-124	1.50	30
Acetone	65.3	5.00	ug/L	50.0	20.2	90.2 %	64-125	0.24	30
1,1-Dichloroethene	9.86	0.20	ug/L	10.0	ND	98.6 %	74-120	1.76	30

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0329 - EPA 5030 (Purge and Trap)

Instrument: NT2

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BFA0329-MSD5)	Source	: 17A0195-05	Prena	red: 19-Jan	-2017 Ana	lvzed: 19-J	an-2017 17:	47		
Methylene Chloride	8.95	1.00	ug/L	10.0	ND	89.5 %	71-125	1.15	30	
Carbon Disulfide	9.20	0.20	ug/L	10.0	ND	92.0 %	78-124	0.11	30	
trans-1,2-Dichloroethene	10.5	0.20	ug/L	10.0	ND	105 %	78-120	1.10	30	
Vinyl Acetate	7.66	0.20	ug/L	10.0	ND	76.6 %	74-120	2.10	30	
1,1-Dichloroethane	9.88	0.20	ug/L	10.0	ND	98.8 %	80-120	0.89	30	
2-Butanone	47.8	5.00	ug/L	50.0	ND	92.4 %	73-123	0.26	30	
cis-1,2-Dichloroethene	9.89	0.20	ug/L	10.0	ND	98.9 %	80-120	1.11	30	
Chloroform	10.2	0.20	ug/L	10.0	ND	102 %	80-120	2.06	30	
1,1,1-Trichloroethane	9.98	0.20	ug/L	10.0	ND	99.8 %	79-123	1.88	30	
Carbon tetrachloride	9.46	0.20	ug/L	10.0	ND	94.6 %	71-137	0.73	30	
1,2-Dichloroethane	9.93	0.20	ug/L	10.0	ND	99.3 %	80-121	2.76	30	
Benzene	9.82	0.20	ug/L	10.0	ND	98.2 %	80-120	4.49	20	
Trichloroethene	10.0	0.20	ug/L	10.0	ND	100 %	80-120	4.61	30	
1,2-Dichloropropane	9.72	0.20	ug/L	10.0	ND	97.2 %	80-120	6.66	30	
Bromodichloromethane	9.74	0.20	ug/L	10.0	ND	97.4 %	80-121	2.05	30	
4-Methyl-2-Pentanone	49.6	5.00	ug/L	50.0	ND	99.2 %	80-125	4.24	30	
cis-1,3-Dichloropropene	10.3	0.20	ug/L	10.0	ND	103 %	80-124	2.58	30	
Toluene	9.71	0.20	ug/L	10.0	ND	96.6 %	80-120	4.24	20	
trans-1,3-Dichloropropene	10.1	0.20	ug/L	10.0	ND	101 %	79-127	4.23	30	
1,1,2-Trichloroethane	10.3	0.20	ug/L	10.0	ND	103 %	80-120	3.97	30	
Tetrachloroethene	10.2	0.20	ug/L	10.0	ND	102 %	80-120	3.77	30	
Dibromochloromethane	9.80	0.20	ug/L	10.0	ND	98.0 %	80-120	1.51	30	
Chlorobenzene	10.0	0.20	ug/L	10.0	ND	100 %	80-120	3.67	30	
Ethylbenzene	9.85	0.20	ug/L	10.0	ND	98.5 %	80-120	3.99	20	
m,p-Xylene	19.6	0.40	ug/L	20.0	ND	97.9 %	80-121	3.63	20	
o-Xylene	9.88	0.20	ug/L	10.0	ND	98.8 %	80-121	2.75	20	
Styrene	10.6	0.20	ug/L	10.0	ND	106 %	80-121	4.93	30	
Bromoform	7.78	0.20	ug/L	10.0	ND	77.8 %	62-134	0.09	30	Q
1,1,2,2-Tetrachloroethane	9.86	0.20	ug/L	10.0	ND	98.6 %	80-120	4.30	30	
Surrogate: Dibromofluoromethane		5.20	ug/L	5.00		104 %	80-119			
Surrogate: 1,2-Dichloroethane-d4		4.93	ug/L	5.00	4.95	98.6 %	81-118			
Surrogate: Toluene-d8		5.00	ug/L	5.00	4.90	100 %	89-112			
Surrogate: 4-Bromofluorobenzene		5.05	ug/L	5.00	4.79	101 %	85-114			
Surrogate: 1,2-Dichlorobenzene-d4		5.04	ug/L	5.00	4.95	101 %	80-120			

Analytical Resources, Inc.



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0329 - EPA 5030 (Purge and Trap)

Instrument: NT2

		Reporting		Spike	Source		%REC		RPD	
QC Sample/Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BFA0329-MSD6)	Source: 17A0195-06 Prepared: 19-Jan-2017 Analyzed: 19-Jan-2017 18:27									
Gasoline Range Organics (Tol-Nap)	1020	100	ug/L	1000	ND	102 %	80-120	0.44	30	
Surrogate: Toluene-d8	5.1	1	ug/L	5.00	4.98	102 %	80-120			
Surrogate: 4-Bromofluorobenzene	4.8	2	ug/L	5.00	4.78	96.3 %	80-120			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0388 - EPA 5030 (Purge and Trap)

Instrument: NT3

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	Kesuit	Liiilt							LIIIII	INOTES
Blank (BFA0388-BLK1)				red: 20-Jan-	-2017 Ana	lyzed: 20-Ja	an-2017 12:	:10		
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Styrene	ND	0.20	ug/L							U

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0388 - EPA 5030 (Purge and Trap)

Instrument: NT3

		Reporting		Spike	Source		%REC		RPD	
QC Sample/Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Blank (BFA0388-BLK1)			Prep	ared: 20-Jan	-2017 An	alyzed: 20-J	an-2017 12:	:10		
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4		5.19	ug/L	5.00		104 %	81-118			
Surrogate: Toluene-d8		4.98	ug/L	5.00		99.7 %	89-112			
Surrogate: 4-Bromofluorobenzene		4.88	ug/L	5.00		97.6 %	85-114			
Surrogate: 1,2-Dichlorobenzene-d4		5.08	ug/L	5.00		102 %	80-120			
Blank (BFA0388-BLK2)			Prep	ared: 20-Jan	1-2017 An	alyzed: 20-J	an-2017 12:	10		
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8		4.98	ug/L	5.00		99.7 %	80-120			
Surrogate: 4-Bromofluorobenzene		4.88	ug/L	5.00		97.6 %	80-120			
LCS (BFA0388-BS1)			Prep	ared: 20-Jan	-2017 An	alyzed: 20-J	an-2017 10:	26		
Chloromethane	8.85	0.50	ug/L	10.0		88.5 %	77-122			
Vinyl Chloride	9.07	0.20	ug/L	10.0		90.7 %	74-123			
Bromomethane	9.37	1.00	ug/L	10.0		93.7 %	72-130			
Chloroethane	8.72	0.20	ug/L	10.0		87.2 %	68-133			
Trichlorofluoromethane	9.60	0.20	ug/L	10.0		96.0 %	80-129			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.56	0.20	ug/L	10.0		95.6 %	76-124			
Acetone	44.9	5.00	ug/L	50.0		89.9 %	64-125			
1,1-Dichloroethene	9.03	0.20	ug/L	10.0		90.3 %	74-120			
Methylene Chloride	8.17	1.00	ug/L	10.0		81.7 %	71-125			
Carbon Disulfide	9.15	0.20	ug/L	10.0		91.5 %	78-124			
trans-1,2-Dichloroethene	9.25	0.20	ug/L	10.0		92.5 %	78-120			
Vinyl Acetate	8.90	0.20	ug/L	10.0		89.0 %	74-120			
1,1-Dichloroethane	9.11	0.20	ug/L	10.0		91.1 %	80-120			
2-Butanone	41.8	5.00	ug/L	50.0		83.5 %	73-123			
cis-1,2-Dichloroethene	9.20	0.20	ug/L	10.0		92.0 %	80-120			
Chloroform	9.15	0.20	ug/L	10.0		91.5 %	80-120			
1,1,1-Trichloroethane	9.26	0.20	ug/L	10.0		92.6 %	79-123			
Carbon tetrachloride	9.16	0.20	ug/L	10.0		91.6 %	71-137			
1,2-Dichloroethane	9.04	0.20	ug/L	10.0		90.4 %	80-121			
Benzene	9.13	0.20	ug/L	10.0		91.3 %	80-120			
Trichloroethene	9.16	0.20	-	10.0		91.6 %	80-120			

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0388 - EPA 5030 (Purge and Trap)

Instrument: NT3

		Reporting		Spike	Source		%REC		RPD	
QC Sample/Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
LCS (BFA0388-BS1)			Prepa	red: 20-Jan-	2017 Ana	lyzed: 20-Ja	an-2017 10:	26		
1,2-Dichloropropane	8.91	0.20	ug/L	10.0		89.1 %	80-120			
Bromodichloromethane	9.15	0.20	ug/L	10.0		91.5 %	80-121			
4-Methyl-2-Pentanone	41.8	5.00	ug/L	50.0		83.6 %	80-125			
cis-1,3-Dichloropropene	9.27	0.20	ug/L	10.0		92.7 %	80-124			
Toluene	9.08	0.20	ug/L	10.0		90.8 %	80-120			
trans-1,3-Dichloropropene	9.11	0.20	ug/L	10.0		91.1 %	79-127			
1,1,2-Trichloroethane	8.84	0.20	ug/L	10.0		88.4 %	80-120			
Tetrachloroethene	9.41	0.20	ug/L	10.0		94.1 %	80-120			
Dibromochloromethane	9.20	0.20	ug/L	10.0		92.0 %	80-120			
Chlorobenzene	9.24	0.20	ug/L	10.0		92.4 %	80-120			
Ethylbenzene	9.35	0.20	ug/L	10.0		93.5 %	80-120			
m,p-Xylene	19.1	0.40	ug/L	20.0		95.6 %	80-121			
o-Xylene	9.26	0.20	ug/L	10.0		92.6 %	80-121			
Styrene	9.86	0.20	ug/L	10.0		98.6 %	80-121			
Bromoform	8.95	0.20	ug/L	10.0		89.5 %	62-134			
1,1,2,2-Tetrachloroethane	8.67	0.20	ug/L	10.0		86.7 %	80-120			
Surrogate: Dibromofluoromethane		5.03	ug/L	5.00		101 %	80-119			
Surrogate: 1,2-Dichloroethane-d4		4.86	ug/L	5.00		97.1 %	81-118			
Surrogate: Toluene-d8		4.96	ug/L	5.00		99.2 %	89-112			
Surrogate: 4-Bromofluorobenzene		5.09	ug/L	5.00		102 %	85-114			
Surrogate: 1,2-Dichlorobenzene-d4		4.84	ug/L	5.00		96.9 %	80-120			
LCS (BFA0388-BS2)			Prena	ared: 20-Jan-	2017 Ana	lvzed: 20-Ja	an-2017 11:	19		
Gasoline Range Organics (Tol-Nap)	904	100	ug/L	1000		90.4 %	80-120			
Surrogate: Toluene-d8		4.92	ug/L	5.00		98.3 %	80-120			
Surrogate: 4-Bromofluorobenzene		4.88	ug/L	5.00		97.5 %	80-120			
LCS Dup (BFA0388-BSD1)			Prepa	ared: 20-Jan-	2017 Ana	lyzed: 20-Ja	an-2017 10::	53		
Chloromethane	9.64	0.50	ug/L	10.0		96.4 %	77-122	8.48	30	
Vinyl Chloride	9.92	0.20	ug/L	10.0		99.2 %	74-123	8.98	30	
Bromomethane	10.2	1.00	ug/L	10.0		102 %	72-130	8.77	30	
Chloroethane	9.38	0.20	ug/L	10.0		93.8 %	68-133	7.33	30	
Trichlorofluoromethane	10.3	0.20	ug/L	10.0		103 %	80-129	7.47	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.1	0.20	ug/L	10.0		101 %	76-124	5.58	30	

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0388 - EPA 5030 (Purge and Trap)

Instrument: NT3

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	Ttebut	Ziiiii								11000
LCS Dup (BFA0388-BSD1) Acetone	52.0	5.00	ug/L	ared: 20-Jan- 50.0	-2017 Ana	104 %	64-125	14.60	30	
1,1-Dichloroethene	9.93	0.20	ug/L ug/L	10.0		99.3 %	74-120	9.42	30	
Methylene Chloride	9.33	1.00	ug/L ug/L	10.0		93.3 %	71-125	13.20	30	
Carbon Disulfide	9.91	0.20	ug/L ug/L	10.0		99.1 %	78-124	7.98	30	
trans-1,2-Dichloroethene	10.0	0.20	ug/L ug/L	10.0		100 %	78-124	8.20	30	
Vinyl Acetate	9.98	0.20	ug/L ug/L	10.0		99.8 %	74-120	11.50	30	
1,1-Dichloroethane	9.97	0.20	ug/L ug/L	10.0		99.7 %	80-120	9.06	30	
2-Butanone	50.6	5.00	ug/L ug/L	50.0		101 %	73-123	19.20	30	
cis-1,2-Dichloroethene	10.1	0.20	ug/L ug/L	10.0		101 %	80-120	8.91	30	
Chloroform	10.2	0.20	ug/L ug/L	10.0		102 %	80-120	10.80	30	
1,1,1-Trichloroethane	10.2	0.20	ug/L ug/L	10.0		102 %	79-123	9.29	30	
Carbon tetrachloride	10.3	0.20	ug/L ug/L	10.0		103 %	71-137	11.60	30	
1,2-Dichloroethane	10.4	0.20	ug/L	10.0		104 %	80-121	14.40	30	
Benzene	10.1	0.20	ug/L ug/L	10.0		101 %	80-120	10.50	20	
Trichloroethene	10.2	0.20	ug/L	10.0		102 %	80-120	10.30	30	
1,2-Dichloropropane	9.65	0.20	ug/L	10.0		96.5 %	80-120	8.05	30	
Bromodichloromethane	10.4	0.20	ug/L	10.0		104 %	80-121	12.60	30	
4-Methyl-2-Pentanone	50.4	5.00	ug/L	50.0		101 %	80-125	18.60	30	
cis-1,3-Dichloropropene	10.4	0.20	ug/L	10.0		104 %	80-124	11.70	30	
Toluene	10.1	0.20	ug/L	10.0		101 %	80-120	10.60	20	
trans-1,3-Dichloropropene	10.3	0.20	ug/L	10.0		103 %	79-127	11.90	30	
1,1,2-Trichloroethane	10.2	0.20	ug/L	10.0		102 %	80-120	14.20	30	
Tetrachloroethene	10.0	0.20	ug/L	10.0		100 %	80-120	6.23	30	
Dibromochloromethane	10.2	0.20	ug/L	10.0		102 %	80-120	10.60	30	
Chlorobenzene	10.0	0.20	ug/L	10.0		100 %	80-120	8.07	30	
Ethylbenzene	10.1	0.20	ug/L	10.0		101 %	80-120	7.48	20	
m,p-Xylene	20.5	0.40	ug/L	20.0		102 %	80-121	6.87	20	
o-Xylene	9.91	0.20	ug/L	10.0		99.1 %	80-121	6.76	20	
Styrene	10.7	0.20	ug/L	10.0		107 %	80-121	8.05	30	
Bromoform	10.5	0.20	ug/L	10.0		105 %	62-134	16.40	30	
1,1,2,2-Tetrachloroethane	9.91	0.20	ug/L	10.0		99.1 %	80-120	13.40	30	
Surrogate: Dibromofluoromethane		5.04	ug/L	5.00		101 %	80-119			
Surrogate: 1,2-Dichloroethane-d4		5.00	ug/L	5.00		99.9 %	81-118			
Surrogate: Toluene-d8		5.03	ug/L	5.00		101 %	89-112			

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - Quality Control

Batch BFA0388 - EPA 5030 (Purge and Trap)

Instrument: NT3

QC Sample/Analyte	Result	R	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BFA0388-BSD1)				Prepa	ared: 20-Jan-	-2017 Ana	lyzed: 20-J	an-2017 10:	53		
Surrogate: 4-Bromofluorobenzene		5.21		ug/L	5.00		104 %	85-114			
Surrogate: 1,2-Dichlorobenzene-d4		5.05		ug/L	5.00		101 %	80-120			
LCS Dup (BFA0388-BSD2)				Prepa	ared: 20-Jan-	-2017 Ana	lyzed: 20-J	an-2017 11:	44		
Gasoline Range Organics (Tol-Nap)	907		100	ug/L	1000		90.7 %	80-120	0.34	30	
Surrogate: Toluene-d8		5.08		ug/L	5.00		102 %	80-120			
Surrogate: 4-Bromofluorobenzene		5.08		ug/L	5.00		102 %	80-120			





The Boeing Company

Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Volatile Organic Compounds - SIM - Quality Control

Batch BFA0576 - EPA 5030 (Purge and Trap)

Instrument: NT15

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	resur	Ellin							Ziiiit	1.000
Blank (BFA0576-BLK1)				ared: 27-Jan	-2017 Ana	ılyzed: 27-J	an-2017 11:	:30		
Vinyl chloride	ND	20.0	ng/L							U
1,1-Dichloroethene	ND	20.0	ng/L							U
Surrogate: 1,2-Dichloroethane-d4		1170	ng/L	1000		117 %	80-129			
Surrogate: Toluene-d8		829	ng/L	1000		82.9 %	80-120			
Surrogate: 4-Bromofluorobenzene		950	ng/L	1000		95.0 %	75-125			
LCS (BFA0576-BS1)			Prep	ared: 27-Jan	-2017 Ana	ılyzed: 27-J	an-2017 10:	:28		
Vinyl chloride	943		ng/L	1000		94.3 %	76-120			
1,1-Dichloroethene	1020		ng/L	1000		102 %	80-120			
Surrogate: 1,2-Dichloroethane-d4		906	ng/L	1000		90.6 %	80-129			
Surrogate: Toluene-d8		829	ng/L	1000		82.9 %	80-120			
Surrogate: 4-Bromofluorobenzene		1090	ng/L	1000		109 %	75-125			
LCS Dup (BFA0576-BSD1)			Prep	ared: 27-Jan	-2017 Ana	ılyzed: 27-J	an-2017 11:	:07		
Vinyl chloride	1130		ng/L	1000		113 %	76-120	18.10	30	
1,1-Dichloroethene	1160		ng/L	1000		116 %	80-120	12.70	30	
Surrogate: 1,2-Dichloroethane-d4		1010	ng/L	1000		101 %	80-129			
Surrogate: Toluene-d8		834	ng/L	1000		83.4 %	80-120			
Surrogate: 4-Bromofluorobenzene		1130	ng/L	1000		113 %	75-125			

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Semivolatile Organic Compounds - SIM - Quality Control

Batch BFA0320 - EPA 3510C SepF

Instrument: NT11

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	TOBUT									110100
Blank (BFA0320-BLK1)	ND	0.010	ug/L	red: 19-Jan	-2017 Anal	lyzed: 25-Ja	an-201/10:	46		U
Naphthalene 2-Methylnaphthalene	ND ND	0.010	ug/L ug/L							U
1-Methylnaphthalene	ND ND	0.010	ug/L ug/L							U
2-Chloronaphthalene	ND	0.010	ug/L ug/L							U
Acenaphthylene	ND	0.010	ug/L ug/L							U
Acenaphthylene	ND	0.010	ug/L							U
Dibenzofuran	ND	0.010	ug/L							U
Fluorene	ND	0.010	ug/L							U
Phenanthrene	ND	0.010	ug/L							U
Anthracene	ND	0.010	ug/L							U
Carbazole	ND	0.010	ug/L							U
Fluoranthene	ND	0.010	ug/L							U
Pyrene	ND	0.010	ug/L							U
Benzo(a)anthracene	ND	0.010	ug/L							U
Chrysene	ND	0.010	ug/L							U
Benzo(b)fluoranthene	ND	0.010	ug/L							U
Benzo(k)fluoranthene	ND	0.010	ug/L							U
Benzo(j)fluoranthene	ND	0.010	ug/L							U
Benzofluoranthenes, Total	ND	0.010	ug/L							U
Benzo(a)pyrene	ND	0.010	ug/L							U
Indeno(1,2,3-cd)pyrene	ND	0.010	ug/L							U
Dibenzo(a,h)anthracene	ND	0.010	ug/L							U
Benzo(g,h,i)perylene	ND	0.010	ug/L							U
Surrogate: 2-Methylnaphthalene-d10		0.209	ug/L	0.300		69.6 %	42-120			
Surrogate: Dibenzo[a,h]anthracene-d14		0.205	ug/L	0.300		68.2 %	29-120			
Surrogate: Fluoranthene-d10		0.230	ug/L	0.300		76.8 %	57-120			
LCS (BFA0320-BS1)			Prena	red: 19-Jan	-2017 Anal	lvzed: 25-J	an-2017 11:	18		
Naphthalene	0.216	0.010	ug/L	0.300		72.1 %	37-120	-		
2-Methylnaphthalene	0.229	0.010	ug/L	0.300		76.2 %	37-120			
1-Methylnaphthalene	0.227	0.010	ug/L	0.300		75.7 %	29-120			
2-Chloronaphthalene	0.220	0.010	ug/L	0.300		73.2 %	30-160			
Acenaphthylene	0.221	0.010	ug/L	0.300		73.8 %	41-120			
Acenaphthene	0.224	0.010	ug/L	0.300		74.6 %	41-120			

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Semivolatile Organic Compounds - SIM - Quality Control

Batch BFA0320 - EPA 3510C SepF

Instrument: NT11

Dibenzofuran Dibe	Notes
Dibenzofuran 0.232	
Phenanthrene 0.227 0.010 ug/L 0.300 75.7% 41-120 Anthracene 0.219 0.010 ug/L 0.300 73.0% 40-120 Anthracene 0.225 0.010 ug/L 0.300 84.0% 30-160 Fluoranthene 0.249 0.010 ug/L 0.300 84.0% 30-160 Fluoranthene 0.253 0.010 ug/L 0.300 84.3% 41-120 Fluoranthene 0.244 0.010 ug/L 0.300 81.6% 42-120 Fluoranthene 0.244 0.010 ug/L 0.300 81.6% 44-120 Flenzo(a)anthracene 0.244 0.010 ug/L 0.300 81.5% 50-120 Flenzo(b)fluoranthene 0.253 0.010 ug/L 0.300 81.5% 50-120 Flenzo(b)fluoranthene 0.244 0.010 ug/L 0.300 81.5% 50-120 Flenzo(b)fluoranthene 0.244 0.010 ug/L 0.300 81.5% 50-120 Flenzo(b)fluoranthene 0.263 0.010 ug/L 0.300 81.5% 39-160 Flenzo(b)fluoranthene 0.263 0.010 ug/L 0.300 81.5% 39-160 Flenzo(a)fluoranthenes, Total 0.761 0.010 ug/L 0.300 81.4% 37-120 Flenzo(a)fluoranthene 0.244 0.010 ug/L 0.300 81.4% 37-120 Flenzo(a)fluoranthene 0.244 0.010 ug/L 0.300 81.4% 37-120 Flenzo(a,h)anthracene 0.240 0.010 ug/L 0.300 81.4% 37-120 Flenzo(a,h)anthracene 0.237 0.010 ug/L 0.300 81.4% 37-120 Flenzo(a,h)aphthalene-410 0.236 ug/L 0.300 81.4% 37-120 Flenzo(a,h)aphthalene-410 0.236 ug/L 0.300 85.3% 29-120 Flenzo(a,h)aphthalene 0.464 0.020 ug/L 0.300 ND 73.5% 29-120 Flenzo(a,h)aphthalene 0.464 0.020 ug/L 0.600 ND 73.5% 29-120 Flenzo(a,h)aphthalene 0.445 0.020 ug/L 0.600 ND 73.5% 29-120 Flenzo(a,h)aphthalene 0.445 0.020 ug/L 0.600 ND 72.3% 31-120 Flenzo(a,h)aphthalene 0.445 0.020 ug/L 0.600 ND 72.3% 31-120 Flenzo(a,h)aphthalene 0.445 0.020 ug/L 0.600 ND 73.5% 29-120 Flenzo(a,h)aphthalene 0.448 0.020 ug/L 0.600 ND 72.3% 31-120 Flenzo(a,h)aphthalene 0.448 0.020 ug/L 0.600 ND 72.3% 31-120 Flenzo(a,h)aphthalene 0.445 0.020 ug/L 0.600 N	
Anthracene 0.219 0.010 ug/L 0.300 73.0% 40-120 Carbazole 0.252 0.010 ug/L 0.300 84.0% 30-160 Fluoranthene 0.249 0.010 ug/L 0.300 82.9% 45-120 Pyrene 0.253 0.010 ug/L 0.300 81.6% 41-120 Benzo(a)nthracene 0.244 0.010 ug/L 0.300 81.6% 42-120 Chrysene 0.244 0.010 ug/L 0.300 81.6% 42-120 Benzo(b)fluoranthene 0.253 0.010 ug/L 0.300 81.6% 44-120 Benzo(b)fluoranthene 0.253 0.010 ug/L 0.300 81.5% 50-120 Benzo(a)fluoranthene 0.263 0.010 ug/L 0.300 81.5% 39-160 Benzo(a)pyrene 0.211 0.010 ug/L 0.300 81.5% 35-120 Benzo(a,h)perylene 0.244 0.010 ug/L 0.300 81.4% <td></td>	
Carbazole 0.252 0.010 ug/L 0.300 84.0 % 30-160 Fluoranthene 0.249 0.010 ug/L 0.300 82.9 % 45-120 Pyrene 0.253 0.010 ug/L 0.300 84.3 % 41-120 Benzo(a)anthracene 0.244 0.010 ug/L 0.300 81.2 % 42-120 Chrysene 0.244 0.010 ug/L 0.300 81.2 % 44-120 Benzo(b)fluoranthene 0.253 0.010 ug/L 0.300 81.5 % 50-120 Benzo(b)fluoranthene 0.263 0.010 ug/L 0.300 81.5 % 50-120 Benzo(la)fluoranthenes, Total 0.761 0.010 ug/L 0.300 81.5 % 30-160 Benzo(la)pyrene 0.211 0.010 ug/L 0.300 81.4 % 37-120 Indeno(1,2,3-ed)pyrene 0.244 0.010 ug/L 0.300 81.4 % 37-120 Benzo(g,h)perylene 0.244 0.01 ug/L 0	
Fluoranthene 0.249 0.010 ug/L 0.300 82.9 % 45.120	
Pyrene 0.253 0.010 ug/L 0.300 84.3 % 41-120 Benzo(a)anthracene 0.245 0.010 ug/L 0.300 81.6 % 42-120 Chrysene 0.244 0.010 ug/L 0.300 81.2 % 44-120 Benzo(b)fluoranthene 0.253 0.010 ug/L 0.300 81.5 % 44-120 Benzo(f)fluoranthene 0.244 0.010 ug/L 0.300 81.5 % 44-120 Benzo(f)fluoranthene 0.263 0.010 ug/L 0.300 87.8 % 39-160 Benzofluoranthenes, Total 0.761 0.010 ug/L 0.900 84.5 % 46-120 Benzo(a)pyrene 0.211 0.010 ug/L 0.300 81.4 % 37-120 Dibenzo(a,b)anthracene 0.240 0.010 ug/L 0.300 81.4 % 37-120 Surrogate: 2-Methylnapthtalene-410 0.236 ug/L 0.300 85.3 % 29-120 Surrogate: Fluoranthene-410 0.254 ug/L 0.300 <td></td>	
Benzo(a)anthracene 0.245 0.010 ug/L 0.300 81.6 % 42-120	
Chrysene 0.244 0.010 ug/L 0.300 81.2 % 44-120 Benzo(b)fluoranthene 0.253 0.010 ug/L 0.300 84.3 % 44-120 Benzo(k)fluoranthene 0.244 0.010 ug/L 0.300 81.5 % 50-120 Benzo(j)fluoranthene 0.263 0.010 ug/L 0.300 87.8 % 39-160 Benzo(a)pyrene 0.211 0.010 ug/L 0.900 84.5 % 46-120 Benzo(a)pyrene 0.211 0.010 ug/L 0.300 70.3 % 35-120 Dibenzo(a,h)anthracene 0.244 0.010 ug/L 0.300 81.4 % 37-120 Benzo(g,h)perylene 0.237 0.010 ug/L 0.300 80.1 % 38-120 Surrogate: 2-Methylnaphthalene-d10 0.237 0.010 ug/L 0.300 85.3 % 29-120 Surrogate: Fluoranthene-d10 0.254 ug/L 0.300 84.7 % 57-120 0.254 ug/L <td< td=""><td></td></td<>	
Benzo(b)fluoranthene 0.253 0.010 ug/L 0.300 84.3 % 44-120	
Benzo(k)fluoranthene 0.244 0.010 ug/L 0.300 81.5% 50-120 Benzo(j)fluoranthene 0.263 0.010 ug/L 0.300 87.8% 39-160 Benzofluoranthenes, Total 0.761 0.010 ug/L 0.900 84.5% 46-120 Benzo(a)pyrene 0.211 0.010 ug/L 0.300 70.3% 35-120 Indeno(1,2,3-ed)pyrene 0.244 0.010 ug/L 0.300 81.4% 37-120 Dibenzo(a,h)anthracene 0.240 0.010 ug/L 0.300 80.1% 34-120 Benzo(g,h,i)perylene 0.237 0.010 ug/L 0.300 78.7% 42-120 Surrogate: 2-Methylnaphthalene-d10 0.236 ug/L 0.300 85.3% 29-120 Surrogate: Fluoranthene-d10 0.256 ug/L 0.300 85.3% 29-120 Matrix Spike (BFA0320-MS1) Source: 17A0195-04 Prepared: 19-Jan-2017 Analyzed: 25-Jan-2017 16:01 16:01 Naphthalene 0.436 0.020 ug/L 0.6	
Benzo(j)fluoranthene 0.263 0.010 ug/L 0.300 87.8 % 39-160	
Benzofluoranthenes, Total 0.761 0.010 ug/L 0.900 84.5 % 46-120	
Benzo(a)pyrene 0.211 0.010 ug/L 0.300 70.3 % 35-120 Indeno(1,2,3-cd)pyrene 0.244 0.010 ug/L 0.300 81.4 % 37-120 Dibenzo(a,h)anthracene 0.240 0.010 ug/L 0.300 80.1 % 34-120 Benzo(g,h,i)perylene 0.237 0.010 ug/L 0.300 78.7 % 42-120 Surrogate: 2-Methylnaphthalene-d10 0.236 ug/L 0.300 85.3 % 29-120 Surrogate: Dibenzo[a,h]anthracene-d14 0.256 ug/L 0.300 85.3 % 29-120 Surrogate: Fluoranthene-d10 0.254 ug/L 0.300 84.7 % 57-120 Matrix Spike (BFA0320-MS1) Source: 17A0195-04 Prepared: 19-Jan-2017 Analyzed: 25-Jan-2017 16:01 Naphthalene 0.436 0.020 ug/L 0.600 ND 71.1 % 37-120 2-Methylnaphthalene 0.445 0.020 ug/L 0.600 ND 73.5 % 29-120 2-Chloronaphthalene 0.432 0.020 ug/L 0.600 ND 73.5 % 29-120 2-Chloronaphthalene 0.434 0.020 ug/L 0.600 ND 72.0 % 30-160 Acenaphthylene 0.439 0.020 ug/L 0.600 ND 73.1 % 41-120 Dibenzofuran 0.438 0.020 ug/L 0.600 ND 73.1 % 41-120 Dibenzofuran 0.438 0.020 ug/L 0.600 ND 72.4 % 38-120	
Indeno(1,2,3-cd)pyrene 0.244 0.010 ug/L 0.300 81.4 % 37-120	
Dibenzo(a,h)anthracene 0.240 0.010 ug/L 0.300 80.1 % 34-120	
Benzo(g,h,i)perylene 0.237 0.010 ug/L 0.300 78.9 % 38-120	
Surrogate: 2-Methylnaphthalene-d10 0.236 ug/L 0.300 78.7 % 42-120 Surrogate: Dibenzo[a,h]anthracene-d14 0.256 ug/L 0.300 85.3 % 29-120 Surrogate: Fluoranthene-d10 0.254 ug/L 0.300 84.7 % 57-120 Matrix Spike (BFA0320-MS1) Source: 17A0195-04 Prepared: 19-Jan-2017 Analyzed: 25-Jan-2017 16:01 Naphthalene 0.436 0.020 ug/L 0.600 ND 71.1 % 37-120 2-Methylnaphthalene 0.464 0.020 ug/L 0.600 ND 76.4 % 37-120 1-Methylnaphthalene 0.445 0.020 ug/L 0.600 ND 73.5 % 29-120 2-Chloronaphthalene 0.432 0.020 ug/L 0.600 ND 72.0 % 30-160 Acenaphthylene 0.434 0.020 ug/L 0.600 ND 73.1 % 41-120 Dibenzofuran 0.438 0.020 ug/L 0.600 ND 72.4 % 38-120	
Surrogate: Dibenzo[a,h]anthracene-d14 0.256 ug/L 0.300 85.3 % 29-120 Surrogate: Fluoranthene-d10 0.254 ug/L 0.300 84.7 % 57-120 Matrix Spike (BFA0320-MS1) Source: 17A0195-04 Prepared: 19-Jan-2017 Analyzed: 25-Jan-2017 16:01 Naphthalene 0.436 0.020 ug/L 0.600 ND 71.1 % 37-120 2-Methylnaphthalene 0.464 0.020 ug/L 0.600 ND 76.4 % 37-120 1-Methylnaphthalene 0.445 0.020 ug/L 0.600 ND 73.5 % 29-120 2-Chloronaphthalene 0.432 0.020 ug/L 0.600 ND 72.0 % 30-160 Acenaphthylene 0.434 0.020 ug/L 0.600 ND 72.3 % 41-120 Dibenzofuran 0.438 0.020 ug/L 0.600 ND 72.4 % 38-120	
Surrogate: Fluoranthene-d10 0.254 ug/L 0.300 84.7 % 57-120 Matrix Spike (BFA0320-MS1) Source: 17A0195-04 Prepared: 19-Jan-2017 Analyzed: 25-Jan-2017 16:01 Naphthalene 0.436 0.020 ug/L 0.600 ND 71.1 % 37-120 2-Methylnaphthalene 0.464 0.020 ug/L 0.600 ND 76.4 % 37-120 1-Methylnaphthalene 0.445 0.020 ug/L 0.600 ND 73.5 % 29-120 2-Chloronaphthalene 0.432 0.020 ug/L 0.600 ND 72.0 % 30-160 Acenaphthylene 0.434 0.020 ug/L 0.600 ND 72.3 % 41-120 Dibenzofuran 0.438 0.020 ug/L 0.600 ND 72.4 % 38-120	
Matrix Spike (BFA0320-MS1) Source: 17A0195-04 Prepared: 19-Jan-2017 Analyzed: 25-Jan-2017 16:01 Naphthalene 0.436 0.020 ug/L 0.600 ND 71.1 % 37-120 2-Methylnaphthalene 0.464 0.020 ug/L 0.600 ND 76.4 % 37-120 1-Methylnaphthalene 0.445 0.020 ug/L 0.600 ND 73.5 % 29-120 2-Chloronaphthalene 0.432 0.020 ug/L 0.600 ND 72.0 % 30-160 Acenaphthylene 0.434 0.020 ug/L 0.600 ND 72.3 % 41-120 Acenaphthene 0.439 0.020 ug/L 0.600 ND 73.1 % 41-120 Dibenzofuran 0.438 0.020 ug/L 0.600 ND 72.4 % 38-120	
Naphthalene 0.436 0.020 ug/L 0.600 ND 71.1 % 37-120 2-Methylnaphthalene 0.464 0.020 ug/L 0.600 ND 76.4 % 37-120 1-Methylnaphthalene 0.445 0.020 ug/L 0.600 ND 73.5 % 29-120 2-Chloronaphthalene 0.432 0.020 ug/L 0.600 ND 72.0 % 30-160 Acenaphthylene 0.434 0.020 ug/L 0.600 ND 72.3 % 41-120 Acenaphthene 0.439 0.020 ug/L 0.600 ND 73.1 % 41-120 Dibenzofuran 0.438 0.020 ug/L 0.600 ND 72.4 % 38-120	
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2-Chloronaphthalene 0.432 0.020 ug/L 0.600 ND 72.0 % 30-160 Acenaphthylene 0.434 0.020 ug/L 0.600 ND 72.3 % 41-120 Acenaphthene 0.439 0.020 ug/L 0.600 ND 73.1 % 41-120 Dibenzofuran 0.438 0.020 ug/L 0.600 ND 72.4 % 38-120	
Acenaphthylene 0.434 0.020 ug/L 0.600 ND 72.3 % 41-120 Acenaphthene 0.439 0.020 ug/L 0.600 ND 73.1 % 41-120 Dibenzofuran 0.438 0.020 ug/L 0.600 ND 72.4 % 38-120	
Acenaphthene 0.439 0.020 ug/L 0.600 ND 73.1 % 41-120 Dibenzofuran 0.438 0.020 ug/L 0.600 ND 72.4 % 38-120	
Dibenzofuran 0.438 0.020 ug/L 0.600 ND 72.4 % 38-120	
,	
Fluorene 0.444 0.020 ug/L 0.600 ND 74.0 % 43-120	
1.107ene 0.011 0.020 Mg E 0.000 11D /1.070 TJ-120	
Phenanthrene 0.451 0.020 ug/L 0.600 0.013 73.0 % 41-120	
Anthracene 0.446 0.020 ug/L 0.600 ND 74.3 % 40-120	
Carbazole 0.484 0.020 ug/L 0.600 ND 80.7 % 30-160	
Fluoranthene 0.455 0.020 ug/L 0.600 ND 74.7 % 45-120	

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Semivolatile Organic Compounds - SIM - Quality Control

Batch BFA0320 - EPA 3510C SepF

Instrument: NT11

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BFA0320-MS1)	Source:	17A0195-04	Prep	ared: 19-Jan-	-2017 Ana	lyzed: 25-Ja	an-2017 16:	01		
Pyrene	0.511	0.020	ug/L	0.600	0.013	83.0 %	41-120			
Benzo(a)anthracene	0.469	0.020	ug/L	0.600	ND	78.2 %	42-120			
Chrysene	0.466	0.020	ug/L	0.600	ND	77.1 %	44-120			
Benzo(b)fluoranthene	0.459	0.020	ug/L	0.600	ND	76.4 %	44-120			
Benzo(k)fluoranthene	0.454	0.020	ug/L	0.600	ND	75.7 %	50-120			
Benzo(j)fluoranthene	0.455	0.020	ug/L	0.600	ND	75.8 %	39-160			
Benzofluoranthenes, Total	1.37	0.020	ug/L	1.80	ND	76.0 %	46-120			
Benzo(a)pyrene	0.429	0.020	ug/L	0.600	ND	71.5 %	35-120			
Indeno(1,2,3-cd)pyrene	0.488	0.020	ug/L	0.600	ND	81.4 %	37-120			
Dibenzo(a,h)anthracene	0.492	0.020	ug/L	0.600	ND	81.9 %	34-120			
Benzo(g,h,i)perylene	0.477	0.020	ug/L	0.600	ND	78.6 %	38-120			
Surrogate: 2-Methylnaphthalene-d10	0	0.446	ug/L	0.600	0.230	74.4 %	42-120			
Surrogate: Dibenzo[a,h]anthracene-d14	C	.494	ug/L	0.600	0.246	82.4 %	29-120			
Surrogate: Fluoranthene-d10	0	0.445	ug/L	0.600	0.206	74.2 %	57-120			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BFA0320-MSD1)	Source:	17A0195-04	Prepa	red: 19-Jan-	2017 Ana	lyzed: 25-Ja	an-2017 16:	32	
Naphthalene	0.428	0.020	ug/L	0.600	ND	69.7 %	37-120	1.87	30
2-Methylnaphthalene	0.452	0.020	ug/L	0.600	ND	74.4 %	37-120	2.63	30
1-Methylnaphthalene	0.434	0.020	ug/L	0.600	ND	71.7 %	29-120	2.49	30
2-Chloronaphthalene	0.423	0.020	ug/L	0.600	ND	70.5 %	30-160	2.09	30
Acenaphthylene	0.423	0.020	ug/L	0.600	ND	70.5 %	41-120	2.53	30
Acenaphthene	0.421	0.020	ug/L	0.600	ND	70.2 %	41-120	4.07	30
Dibenzofuran	0.437	0.020	ug/L	0.600	ND	72.1 %	38-120	0.35	30
Fluorene	0.432	0.020	ug/L	0.600	ND	72.0 %	43-120	2.75	30
Phenanthrene	0.444	0.020	ug/L	0.600	0.013	71.8 %	41-120	1.54	30
Anthracene	0.442	0.020	ug/L	0.600	ND	73.6 %	40-120	0.98	30
Carbazole	0.465	0.020	ug/L	0.600	ND	77.4 %	30-160	4.15	30
Fluoranthene	0.433	0.020	ug/L	0.600	ND	70.9 %	45-120	5.08	30
Pyrene	0.507	0.020	ug/L	0.600	0.013	82.3 %	41-120	0.84	30
Benzo(a)anthracene	0.463	0.020	ug/L	0.600	ND	77.1 %	42-120	1.41	30
Chrysene	0.456	0.020	ug/L	0.600	ND	75.4 %	44-120	2.21	30
Benzo(b)fluoranthene	0.443	0.020	ug/L	0.600	ND	73.9 %	44-120	3.39	30
Benzo(k)fluoranthene	0.434	0.020	ug/L	0.600	ND	72.3 %	50-120	4.60	30

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Semivolatile Organic Compounds - SIM - Quality Control

Batch BFA0320 - EPA 3510C SepF

Instrument: NT11

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BFA0320-MSD1)	Source:	17A0195-04	Prepa	ared: 19-Jan-	-2017 Ana	lyzed: 25-J	an-2017 16:	:32		
Benzo(j)fluoranthene	0.444	0.020	ug/L	0.600	ND	74.0 %	39-160	2.39	30	
Benzofluoranthenes, Total	1.32	0.020	ug/L	1.80	ND	73.4 %	46-120	3.46	30	
Benzo(a)pyrene	0.431	0.020	ug/L	0.600	ND	71.8 %	35-120	0.42	30	
Indeno(1,2,3-cd)pyrene	0.483	0.020	ug/L	0.600	ND	80.4 %	37-120	1.20	30	
Dibenzo(a,h)anthracene	0.482	0.020	ug/L	0.600	ND	80.4 %	34-120	1.94	30	
Benzo(g,h,i)perylene	0.476	0.020	ug/L	0.600	ND	78.5 %	38-120	0.04	30	
Surrogate: 2-Methylnaphthalene-d10	0	.439	ug/L	0.600	0.230	73.2 %	42-120			
Surrogate: Dibenzo[a,h]anthracene-d14	0	.482	ug/L	0.600	0.246	80.4 %	29-120			
Surrogate: Fluoranthene-d10	0	.415	ug/L	0.600	0.206	69.2 %	57-120			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Semivolatile Organic Compounds - SIM - Quality Control

Batch BFA0449 - EPA 3510C SepF

Instrument: NT11

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFA0449-BLK1)			Prepa	red: 24-Jan-	-2017 Ana	lyzed: 03-F	eb-2017 15	:35		
Naphthalene	ND	0.010	ug/L							U
2-Methylnaphthalene	ND	0.010	ug/L							U
1-Methylnaphthalene	ND	0.010	ug/L							U
2-Chloronaphthalene	ND	0.010	ug/L							U
Acenaphthylene	ND	0.010	ug/L							U
Acenaphthene	ND	0.010	ug/L							U
Dibenzofuran	ND	0.010	ug/L							U
Fluorene	ND	0.010	ug/L							U
Phenanthrene	ND	0.010	ug/L							U
Anthracene	ND	0.010	ug/L							U
Carbazole	ND	0.010	ug/L							U
Fluoranthene	ND	0.010	ug/L							U
Pyrene	ND	0.010	ug/L							U
Benzo(a)anthracene	ND	0.010	ug/L							U
Chrysene	ND	0.010	ug/L							U
Benzo(b)fluoranthene	ND	0.010	ug/L							U
Benzo(k)fluoranthene	ND	0.010	ug/L							U
Benzo(j)fluoranthene	ND	0.010	ug/L							U
Benzofluoranthenes, Total	ND	0.010	ug/L							U
Benzo(a)pyrene	ND	0.010	ug/L							U
Indeno(1,2,3-cd)pyrene	ND	0.010	ug/L							U
Dibenzo(a,h)anthracene	ND	0.010	ug/L							U
Benzo(g,h,i)perylene	ND	0.010	ug/L							U
Surrogate: 2-Methylnaphthalene-d10		0.228	ug/L	0.300		76.1 %	42-120			
Surrogate: Dibenzo[a,h]anthracene-d14		0.261	ug/L	0.300		87.1 %	29-120			
Surrogate: Fluoranthene-d10		0.192	ug/L	0.300		64.0 %	57-120			
LCS (BFA0449-BS1)			Prepa	red: 24-Jan-	-2017 Ana	lyzed: 03-F	eb-2017 13	:08		
Naphthalene	0.212	0.010	ug/L	0.300		70.6 %	37-120			
2-Methylnaphthalene	0.207	0.010	ug/L	0.300		69.2 %	37-120			
1-Methylnaphthalene	0.215	0.010	ug/L	0.300		71.5 %	29-120			
2-Chloronaphthalene	0.238	0.010	ug/L	0.300		79.4 %	30-160			
Acenaphthylene	0.204	0.010	ug/L	0.300		68.0 %	41-120			
Acenaphthene	0.198	0.010	ug/L	0.300		65.9 %	41-120			

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Semivolatile Organic Compounds - SIM - Quality Control

Batch BFA0449 - EPA 3510C SepF

Instrument: NT11

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BFA0449-BS1)			Prepa	ared: 24-Jan-	-2017 Anal	lyzed: 03-F	eb-2017 13	:08		
Dibenzofuran	0.228	0.010	ug/L	0.300		75.9 %	38-120			
Fluorene	0.217	0.010	ug/L	0.300		72.2 %	43-120			
Phenanthrene	0.211	0.010	ug/L	0.300		70.5 %	41-120			
Anthracene	0.147	0.010	ug/L	0.300		49.0 %	40-120			
Carbazole	0.182	0.010	ug/L	0.300		60.8 %	30-160			
Fluoranthene	0.198	0.010	ug/L	0.300		65.9 %	45-120			
Pyrene	0.210	0.010	ug/L	0.300		70.0 %	41-120			
Benzo(a)anthracene	0.198	0.010	ug/L	0.300		65.9 %	42-120			
Chrysene	0.206	0.010	ug/L	0.300		68.8 %	44-120			
Benzo(b)fluoranthene	0.244	0.010	ug/L	0.300		81.2 %	44-120			
Benzo(k)fluoranthene	0.253	0.010	ug/L	0.300		84.2 %	50-120			
Benzo(j)fluoranthene	0.249	0.010	ug/L	0.300		82.9 %	39-160			
Benzofluoranthenes, Total	0.745	0.010	ug/L	0.900		82.8 %	46-120			
Benzo(a)pyrene	0.155	0.010	ug/L	0.300		51.5 %	35-120			
Indeno(1,2,3-cd)pyrene	0.246	0.010	ug/L	0.300		81.9 %	37-120			
Dibenzo(a,h)anthracene	0.260	0.010	ug/L	0.300		86.6 %	34-120			
Benzo(g,h,i)perylene	0.255	0.010	ug/L	0.300		85.1 %	38-120			
Surrogate: 2-Methylnaphthalene-d10		0.220	ug/L	0.300		73.3 %	42-120			
Surrogate: Dibenzo[a,h]anthracene-d14		0.295	ug/L	0.300		98.2 %	29-120			
Surrogate: Fluoranthene-d10		0.222	ug/L	0.300		74.1 %	57-120			

Analytical Resources, Inc.



The Boeing Company

Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Petroleum Hydrocarbons - Quality Control

Batch BFA0319 - EPA 3510C SepF

Instrument: FID3

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFA0319-BLK1)			Prena	ared: 19-Jan	-2017 Ana	lyzed: 25-J	an-2017 14:	24		
Diesel Range Organics (C12-C24)	ND	0.100	mg/L		2017 1111	1,200.200				U
Motor Oil Range Organics (C24-C38)	ND	0.200	mg/L							U
Surrogate: o-Terphenyl	0.08	382	mg/L	0.0900		98.0 %	50-150			
LCS (BFA0319-BS1)			Prepa	ared: 19-Jan	-2017 Ana	lyzed: 25-J	an-2017 14:	50		
Diesel Range Organics (C12-C24)	2.76	0.100	mg/L	3.00		91.9 %	56-120			
Surrogate: o-Terphenyl	0.08	360	mg/L	0.0900		95.6 %	50-150			
Matrix Spike (BFA0319-MS1)	Source: 1	7A0195-02	Prepa	ared: 19-Jan	-2017 Ana	lyzed: 25-J	an-2017 21:	22		
Diesel Range Organics (C12-C24)	5.90	0.200	mg/L	6.00	ND	98.3 %	56-120			
Surrogate: o-Terphenyl	0.1	.96	mg/L	0.180	0.0934	109 %	50-150			
Recovery limits for target analytes in MS/MSD	QC samples are advisory	only.								
Matrix Spike Dup (BFA0319-MSD1)	Source: 1	7A0195-02	Prepa	ared: 19-Jan	-2017 Ana	lyzed: 25-J	an-2017 21:	46		
Diesel Range Organics (C12-C24)	5.73	0.200	mg/L	6.00	ND	95.5 %	56-120	2.85	30	
Surrogate: o-Terphenyl	0.1	.90	mg/L	0.180	0.0934	105 %	50-150			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Analytical Resources, Inc.





Project Number: Boeing Kent Sampling PO Box 3707 M/S 1W-12 Reported: Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Aroclor PCB - Quality Control

Batch BFA0316 - EPA 3510C SepF

Instrument: ECD5

OC Samula/Analyta		Reporting	I Imir-	Spike	Source	0/DEC	%REC	DDD	RPD	NT-4
QC Sample/Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Blank (BFA0316-BLK1)			Prepa	ared: 23-Jan-	-2017 Ana	lyzed: 26-Ja	an-2017 16:	58		
Aroclor 1016	ND	0.010	ug/L							U
Aroclor 1254	ND	0.010	ug/L							U
Aroclor 1260	ND	0.010	ug/L							U
Surrogate: Decachlorobiphenyl	0.0140	<u> </u>	ug/L	0.0200		70.0 %	29-120			
Surrogate: Tetrachlorometaxylene	0.0126		ug/L	0.0200		63.1 %	32-120			
Surrogate: Decachlorobiphenyl [2C]	0.0140		ug/L	0.0200		70.0 %	29-120			
Surrogate: Tetrachlorometaxylene [2C]	0.00967		ug/L	0.0200		48.4 %	32-120			
LCS (BFA0316-BS1)			Prepa	ared: 23-Jan-	-2017 Ana	lyzed: 26-Ja	an-2017 17:	18		
Aroclor 1016	0.048	0.010	ug/L	0.0500		96.4 %	54-120			
Aroclor 1260	0.042	0.010	ug/L	0.0500		83.6 %	51-128			
Surrogate: Decachlorobiphenyl	0.0148		ug/L	0.0200		73.9 %	29-120			
Surrogate: Tetrachlorometaxylene	0.0146		ug/L	0.0200		72.8 %	32-120			
Surrogate: Decachlorobiphenyl [2C]	0.0153		ug/L	0.0200		76.3 %	29-120			
Surrogate: Tetrachlorometaxylene [2C]	0.0109		ug/L	0.0200		54.3 %	32-120			
Matrix Spike (BFA0316-MS1)	Source: 17A0	195-03	Prepa	ared: 23-Jan-	-2017 Ana	lyzed: 26-Ja	an-2017 20:	36		
Aroclor 1016	0.094	0.019	ug/L	0.0952	ND	98.3 %	54-120			-
Aroclor 1260	0.086	0.019	ug/L	0.0952	ND	90.7 %	51-128			
Surrogate: Decachlorobiphenyl	0.0296		ug/L	0.0381	0.0156	77.8 %	29-120			
Surrogate: Tetrachlorometaxylene	0.0232		ug/L	0.0381	0.0121	60.9 %	32-120			
Surrogate: Decachlorobiphenyl [2C]	0.0308		ug/L	0.0381	0.0159	80.9 %	29-120			
Surrogate: Tetrachlorometaxylene [2C]	0.0172		ug/L	0.0381	0.00933	45.2 %	32-120			

Matrix Spike Dup (BFA0316-MSD1)	Source: 1	7A0195-03	Prep	ared: 23-Jan	-2017 Ana	lyzed: 26-J	an-2017 20:	56		
Aroclor 1016	0.099	0.019	ug/L	0.0952	ND	104 %	54-120	5.18	30	
Aroclor 1260	0.090	0.019	ug/L	0.0952	ND	94.5 %	51-128	4.11	30	
Surrogate: Decachlorobiphenyl	0.03	15	ug/L	0.0381	0.0156	82.6 %	29-120			
Surrogate: Tetrachlorometaxylene	0.02	47	ug/L	0.0381	0.0121	64.9 %	32-120			
Surrogate: Decachlorobiphenyl [2C]	0.03	09	ug/L	0.0381	0.0159	81.2 %	29-120			
Surrogate: Tetrachlorometaxylene [2C]	0.01	85	ug/L	0.0381	0.00933	48.5 %	32-120			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Metals and Metallic Compounds - Quality Control

Batch BFA0317 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2

	.		Reporting	TT *:	Spike	Source	0/B=~	%REC	D.C.	RPD	3.7
QC Sample/Analyte	Isotope	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Blank (BFA0317-BLK1)				Prepa	ared: 19-Jan	-2017 Ana	lyzed: 19-J	an-2017 15:	52		
Chromium		ND	0.500	ug/L							U
Copper		ND	0.500	ug/L							U
Lead		ND	0.100	ug/L							U
Selenium		ND	2.00	ug/L							U
Silver		ND	0.200	ug/L							U
Arsenic		ND	0.200	ug/L							U
Cadmium		ND	0.100	ug/L							U
Nickel		ND	0.500	ug/L							U
Zinc		ND	4.00	ug/L							U
LCS (BFA0317-BS1)				Prepa	ared: 19-Jan	-2017 Ana	lyzed: 19-Ja	an-2017 16:	13		
Chromium		26.5	0.500	ug/L	25.0		106 %	80-120			
Copper		27.3	0.500	ug/L	25.0		109 %	80-120			
Lead		29.1	0.100	ug/L	25.0		116 %	80-120			
Selenium		74.4	2.00	ug/L	80.0		93.0 %	80-120			
Silver		26.2	0.200	ug/L	25.0		105 %	80-120			
Arsenic		24.1	0.200	ug/L	25.0		96.6 %	80-120			
Cadmium		24.9	0.100	ug/L	25.0		99.5 %	80-120			
Nickel		26.7	0.500	ug/L	25.0		107 %	80-120			
Zinc		81.6	4.00	ug/L	80.0		102 %	80-120			
Duplicate (BFA0317-DUP1)		Sour	ce: 17A0195-01	Prepa	ared: 19-Jan	-2017 Ana	lyzed: 19-Ja	an-2017 15:	57		
Chromium		0.591	0.500	ug/L		ND	•		26.20	20	L
Copper		2.85	0.500	ug/L		2.92			2.18	20	
Lead		0.527	0.100	ug/L		0.503			4.66	20	
Selenium		ND	2.00	ug/L		ND					U
Silver		ND	0.200	ug/L		ND					U
Arsenic		0.348	0.200	ug/L		0.373			6.93	20	
Cadmium		ND	0.100	ug/L		ND					U
Nickel		0.619	0.500	ug/L		0.608			1.79	20	
Zinc		23.8	4.00	ug/L		25.1			5.06	20	
Matrix Spike (BFA0317-MS1)		Sour	ce: 17A0195-01	Prepa	ared: 19-Jan	-2017 Ana	lyzed: 19-Ja	an-2017 16:	07		
Chromium		26.6	0.500	ug/L	25.0	ND	104 %	75-125			
Copper		29.7	0.500	ug/L	25.0	2.92	107 %	75-125			

Analytical Resources, Inc.



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Metals and Metallic Compounds - Quality Control

Batch BFA0317 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BFA0317-MS1)		Source	e: 17A0195-01	Prepa	ared: 19-Jan	-2017 Ana	lyzed: 19-Ja	an-2017 16:	07		
Lead		28.9	0.100	ug/L	25.0	0.503	114 %	75-125			
Selenium		73.7	2.00	ug/L	80.0	ND	92.1 %	75-125			
Silver		26.4	0.200	ug/L	25.0	ND	106 %	75-125			
Arsenic		24.4	0.200	ug/L	25.0	0.373	95.9 %	75-125			
Cadmium		24.4	0.100	ug/L	25.0	ND	97.3 %	75-125			
Nickel		27.8	0.500	ug/L	25.0	0.608	109 %	75-125			
Zinc		103	4.00	ug/L	80.0	25.1	97.4 %	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Metals and Metallic Compounds - Quality Control

Batch BFA0385 - TWM EPA 7470A

Instrument: CETAC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFA0385-BLK1)			Prepa	ared: 20-Jan-	-2017 Ana	lyzed: 23-J	an-2017 12:	38		
Mercury	ND	0.000100	mg/L							U
LCS (BFA0385-BS1)			Prepa	ared: 20-Jan-	-2017 Ana	lyzed: 23-J	an-2017 12:	39		
Mercury	0.00220	0.000100	mg/L	0.00200		110 %	80-120			
Duplicate (BFA0385-DUP1)	Source	: 17A0195-01	Prepa	ared: 20-Jan-	-2017 Ana	lyzed: 23-J	an-2017 12:	52		
Mercury	ND	0.000100	mg/L		ND					U
Matrix Spike (BFA0385-MS1)	Source	: 17A0195-01	Prepa	ared: 20-Jan-	-2017 Ana	lyzed: 23-J	an-2017 12:	54		
Mercury	0.00112	0.000100	mg/L	0.00100	ND	112 %	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BFA0369 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
-	Isotope	ixesuit	Liiiit							Liiiit	110168
Blank (BFA0369-BLK1)					red: 20-Jan	-2017 Ana	lyzed: 20-Ja	an-2017 17:	16		
Chromium		ND	0.500	ug/L							U
Lead		ND	0.100	ug/L							U
Silver		ND	0.200	ug/L							U
Arsenic		ND	0.200	ug/L							U
Cadmium		ND	0.100	ug/L							U
Copper		ND	0.500	ug/L							U
Nickel		ND	0.500	ug/L							U
Selenium		ND	0.500	ug/L							U
Zinc		ND	4.00	ug/L							U
LCS (BFA0369-BS1)				Prepa	red: 20-Jan	-2017 Ana	lyzed: 20-Ja	an-2017 17:	36		
Chromium		26.2	0.500	ug/L	25.0		105 %	80-120			
Lead		27.2	0.100	ug/L	25.0		109 %	80-120			
Silver		26.3	0.200	ug/L	25.0		105 %	80-120			
Arsenic		23.7	0.200	ug/L	25.0		94.8 %	80-120			
Cadmium		23.3	0.100	ug/L	25.0		93.0 %	80-120			
Copper		25.6	0.500	ug/L	25.0		102 %	80-120			
Nickel		25.3	0.500	ug/L	25.0		101 %	80-120			
Selenium		70.0	0.500	ug/L	80.0		87.5 %	80-120			
Zinc		74.9	4.00	ug/L	80.0		93.7 %	80-120			
Duplicate (BFA0369-DUP1)		Sou	rce: 17A0195-08	Prepa	ared: 20-Jan	-2017 Ana	lyzed: 20-Ja	an-2017 17:	21		
Chromium		ND	0.500	ug/L		ND					U
Lead		ND	0.100	ug/L		ND					U
Silver		ND	0.200	ug/L		ND					U
Arsenic		0.240	0.200	ug/L		0.257			6.84	20	
Cadmium		ND	0.100	ug/L		ND					U
Copper		1.96	0.500	ug/L		2.00			1.82	20	
Nickel		ND	0.500	ug/L		ND					U
Selenium		ND	0.500	ug/L		ND					U
Zinc		19.8	4.00	ug/L		19.0			3.98	20	
Matrix Spike (BFA0369-MS1)		Sou	rce: 17A0195-08	Prens	red: 20-Jan	-2017 Ana	lyzed: 20-1	an-2017 17·	31		
Chromium		26.3	0.500	ug/L	25.0	ND	104 %	75-125			
		27.5	0.100	ug/L ug/L	25.0	. 112	10170	, 5 125			

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BFA0369 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BFA0369-MS1)		Source	: 17A0195-08	Prepa	ared: 20-Jan-	-2017 Ana	lyzed: 20-Ja	an-2017 17:	31		
Silver		26.2	0.200	ug/L	25.0	ND	105 %	75-125			
Arsenic		23.8	0.200	ug/L	25.0	0.257	94.0 %	75-125			
Cadmium		23.2	0.100	ug/L	25.0	ND	92.7 %	75-125			
Copper		27.9	0.500	ug/L	25.0	2.00	104 %	75-125			
Nickel		25.4	0.500	ug/L	25.0	ND	101 %	75-125			
Selenium		69.9	0.500	ug/L	80.0	ND	87.4 %	75-125			
Zinc		93.5	4.00	ug/L	80.0	19.0	93.1 %	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BFA0620 - TWM EPA 7470A

Instrument: CETAC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFA0620-BLK1)			Prepa	red: 30-Jan-	-2017 Ana	lyzed: 31-J	an-2017 15:	15		
Mercury	ND	0.000100	mg/L							U
LCS (BFA0620-BS1)			Prepa	ared: 30-Jan-	-2017 Ana	lyzed: 31-J	an-2017 15:	21		
Mercury	0.00212	0.000100	mg/L	0.00200		106 %	80-120			
Duplicate (BFA0620-DUP1)	Source	: 17A0195-08	Prepa	ared: 30-Jan-	-2017 Ana	lyzed: 31-J	an-2017 15:	25		
Mercury	ND	0.000100	mg/L		ND					U
Matrix Spike (BFA0620-MS1)	Source	: 17A0195-08	Prepa	ared: 30-Jan-	-2017 Ana	lyzed: 31-J	an-2017 15:	26		
Mercury	0.00112	0.000100	mg/L	0.00100	ND	112 %	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
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Certified Analyses included in this Report

Analyte	Certifications	
EPA 200.8 in Water		
Silver-107	WADOE,WA-DW,DoD-ELAP,NELAP	
Chromium-52	NELAP,WADOE,WA-DW,DoD-ELAP	
Chromium-53	NELAP,WADOE,WA-DW,DoD-ELAP	
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP	
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP	
Lead-208	NELAP,WADOE,WA-DW,DoD-ELAP	
Selenium-82	NELAP,WADOE,WA-DW,DoD-ELAP	
Selenium-78	NELAP,WADOE,WA-DW,DoD-ELAP	
Silver-107	WADOE,WA-DW,DoD-ELAP,NELAP	
Chromium-52	NELAP,WADOE,WA-DW,DoD-ELAP	
Chromium-53	NELAP,WADOE,WA-DW,DoD-ELAP	
Lead-208	NELAP,WADOE,WA-DW,DoD-ELAP	
EPA 200.8 UCT-KED in Water		
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP	
Cadmium-111	NELAP,WADOE,WA-DW,DoD-ELAP	
Cadmium-114	NELAP,WADOE,WA-DW,DoD-ELAP	
Nickel-60	NELAP,WADOE,WA-DW,DoD-ELAP	
Nickel-62	NELAP,WADOE,WA-DW,DoD-ELAP	
Zinc-66	NELAP,WADOE,WA-DW,DoD-ELAP	
Zinc-67	NELAP,WADOE,WA-DW,DoD-ELAP	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP	
Cadmium-111	NELAP,WADOE,WA-DW,DoD-ELAP	
Cadmium-114	NELAP,WADOE,WA-DW,DoD-ELAP	
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP	
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP	
Nickel-60	NELAP,WADOE,WA-DW,DoD-ELAP	
Nickel-62	NELAP,WADOE,WA-DW,DoD-ELAP	
Selenium-78	NELAP,WADOE,WA-DW,DoD-ELAP	
Zinc-66	NELAP,WADOE,WA-DW,DoD-ELAP	
Zinc-67	NELAP,WADOE,WA-DW,DoD-ELAP	
EPA 7470A in Water		
Mercury	WADOE,NELAP,DoD-ELAP,CALAP	
Mercury	WADOE,NELAP,DoD-ELAP,CALAP	

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EPA 8082A in Water

Aroclor 1016 WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1016 [2C] WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1221 WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1221 [2C] WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1232 WADOE.DoD-ELAP.NELAP.CALAP.ADEC Aroclor 1232 [2C] WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1242 WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1242 [2C] WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1248 WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1248 [2C] WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1254 WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1254 [2C] WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1260 WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1260 [2C] WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1262 WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1262 [2C] WADOE.DoD-ELAP.NELAP.CALAP.ADEC Aroclor 1268 WADOE, DoD-ELAP, NELAP, CALAP, ADEC Aroclor 1268 [2C] WADOE, DoD-ELAP, NELAP, CALAP, ADEC

EPA 8260C in Water

Chloromethane DoD-ELAP,ADEC,NELAP,CALAP,WADOE Vinyl Chloride DoD-ELAP,ADEC,NELAP,CALAP,WADOE Bromomethane DoD-ELAP,ADEC,NELAP,CALAP,WADOE Chloroethane DoD-ELAP,ADEC,NELAP,CALAP,WADOE Trichlorofluoromethane DoD-ELAP,ADEC,NELAP,CALAP,WADOE

Acrolein DoD-ELAP, NELAP, CALAP, WADOE

1,1,2-Trichloro-1,2,2-TrifluoroethaneDoD-ELAP,ADEC,NELAP,CALAP,WADOEAcetoneDoD-ELAP,ADEC,NELAP,CALAP,WADOE1,1-DichloroetheneDoD-ELAP,ADEC,NELAP,CALAP,WADOE

Bromoethane DoD-ELAP,NELAP,CALAP,WADOE DoD-ELAP,NELAP,CALAP,WADOE

Methylene Chloride DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acrylonitrile DoD-ELAP,NELAP,CALAP,WADOE

Carbon Disulfide DoD-ELAP,NELAP,CALAP,WADOE trans-1,2-Dichloroethene DoD-ELAP,ADEC,NELAP,CALAP,WADOE

Vinyl Acetate DoD-ELAP,NELAP,CALAP,WADOE

1,1-Dichloroethane DoD-ELAP,ADEC,NELAP,CALAP,WADOE

2-Butanone DoD-ELAP,NELAP,CALAP,WADOE

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The Boeing Company	Project: Boeing Kent Sampling Stormwaters	
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Seattle, WA 98124	Project Manager: Nick Garson	02-Mar-2017 10:18

2,2-Dichloropropane DoD-ELAP, ADEC, NELAP, CALAP, WADOE cis-1,2-Dichloroethene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Chloroform DoD-ELAP, ADEC, NELAP, CALAP, WADOE Bromochloromethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,1,1-Trichloroethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,1-Dichloropropene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Carbon tetrachloride DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1.2-Dichloroethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE Benzene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Trichloroethene DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,2-Dichloropropane DoD-ELAP, ADEC, NELAP, CALAP, WADOE Bromodichloromethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE Dibromomethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 2-Chloroethyl vinyl ether DoD-ELAP, ADEC, NELAP, CALAP, WADOE 4-Methyl-2-Pentanone DoD-ELAP, NELAP, CALAP, WADOE cis-1,3-Dichloropropene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Toluene DoD-ELAP, ADEC, NELAP, CALAP, WADOE DoD-ELAP,ADEC,NELAP,CALAP,WADOE trans-1,3-Dichloropropene 2-Hexanone DoD-ELAP, NELAP, CALAP, WADOE 1,1,2-Trichloroethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,3-Dichloropropane DoD-ELAP, ADEC, NELAP, CALAP, WADOE Tetrachloroethene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Dibromochloromethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,2-Dibromoethane DoD-ELAP, NELAP, CALAP, WADOE Chlorobenzene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Ethylbenzene DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,1,1,2-Tetrachloroethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE m,p-Xylene DoD-ELAP, ADEC, NELAP, CALAP, WADOE o-Xylene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Styrene DoD-ELAP, NELAP, CALAP, WADOE Bromoform DoD-ELAP, NELAP, CALAP, WADOE 1,1,2,2-Tetrachloroethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,2,3-Trichloropropane DoD-ELAP, ADEC, NELAP, CALAP, WADOE trans-1,4-Dichloro 2-Butene DoD-ELAP, ADEC, NELAP, CALAP, WADOE n-Propylbenzene DoD-ELAP, NELAP, CALAP, WADOE Bromobenzene DoD-ELAP, NELAP, CALAP, WADOE Isopropyl Benzene DoD-ELAP, NELAP, CALAP, WADOE 2-Chlorotoluene DoD-ELAP,ADEC,NELAP,CALAP,WADOE

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:

Seattle, WA 98124 Project Manager: Nick Garson 02-Mar-2017 10:18

4-Chlorotoluene DoD-ELAP, ADEC, NELAP, CALAP, WADOE t-Butylbenzene DoD-ELAP, NELAP, CALAP, WADOE 1,3,5-Trimethylbenzene DoD-ELAP, NELAP, CALAP, WADOE 1,2,4-Trimethylbenzene DoD-ELAP, NELAP, CALAP, WADOE s-Butylbenzene DoD-ELAP, NELAP, CALAP, WADOE 4-Isopropyl Toluene DoD-ELAP, NELAP, CALAP, WADOE DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,3-Dichlorobenzene 1,4-Dichlorobenzene DoD-ELAP, ADEC, NELAP, CALAP, WADOE DoD-ELAP, NELAP, CALAP, WADOE n-Butylbenzene 1,2-Dichlorobenzene DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,2-Dibromo-3-chloropropane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,2,4-Trichlorobenzene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Hexachloro-1,3-Butadiene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Naphthalene DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,2,3-Trichlorobenzene DoD-ELAP, ADEC, NELAP, CALAP, WADOE

Dichlorodifluoromethane

DoD-ELAP,ADEC,NELAP,CALAP,WADOE

Methyl tert-butyl Ether

DoD-ELAP,ADEC,NELAP,CALAP,WADOE

n-Hexane WADOE 2-Pentanone WADOE

EPA 8260C-SIM in Water

NELAP, CALAP, WADOE Acrylonitrile NELAP, CALAP, WADOE Vinyl chloride 1,1-Dichloroethene NELAP, CALAP, WADOE cis-1,2-Dichloroethene NELAP, CALAP, WADOE trans-1,2-Dichloroethene NELAP, CALAP, WADOE Trichloroethene NELAP, CALAP, WADOE Tetrachloroethene NELAP, CALAP, WADOE 1,1,2,2-Tetrachloroethane NELAP, CALAP, WADOE 1,2-Dichloroethane NELAP, CALAP, WADOE NELAP, CALAP, WADOE Benzene

EPA 8270D-SIM in Water

Naphthalene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

2-Methylnaphthalene ADEC,DoD-ELAP,NELAP,CALAP

1-Methylnaphthalene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

Biphenyl NELAP

Acenaphthylene ADEC,DoD-ELAP,NELAP,CALAP,WADOE Acenaphthene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

Dibenzofuran ADEC, DoD-ELAP, NELAP, CALAP

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The Boeing CompanyProject:Boeing Kent Sampling StormwatersPO Box 3707 M/S 1W-12Project Number:Boeing Kent SamplingSeattle, WA 98124Project Manager:Nick Garson02-Mar-2017 10:18

Fluorene ADEC,DoD-ELAP,NELAP,CALAP,WADOE Phenanthrene ADEC,DoD-ELAP,NELAP,CALAP,WADOE Anthracene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

Carbazole NELAP

Fluoranthene ADEC,DoD-ELAP,NELAP,CALAP,WADOE
Pyrene ADEC,DoD-ELAP,NELAP,CALAP,WADOE
Benzo(a)anthracene ADEC,DoD-ELAP,NELAP,CALAP,WADOE
Chrysene ADEC,DoD-ELAP,NELAP,CALAP,WADOE
Benzo(b)fluoranthene ADEC,DoD-ELAP,NELAP,CALAP,WADOE
Benzo(k)fluoranthene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

Benzo(j)fluoranthene ADEC,DoD-ELAP,NELAP,WADOE

Benzo(e)pyrene NELAP

Benzo(a)pyrene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

Perylene ADEC,NELAP,CALAP

Indeno(1,2,3-cd)pyrene ADEC,DoD-ELAP,NELAP,CALAP,WADOE Dibenzo(a,h)anthracene ADEC,DoD-ELAP,NELAP,CALAP,WADOE Benzo(g,h,i)perylene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

NWTPH-Dx in Water

Diesel Range Organics (C12-C24) DoD-ELAP, NELAP, WADOE Diesel Range Organics (C10-C25) DoD-ELAP, NELAP, WADOE Diesel Range Organics (Tol-C18) DoD-ELAP, NELAP, WADOE Diesel Range Organics (C10-24) DoD-ELAP, NELAP, WADOE Diesel Range Organics (C10-C28) DoD-ELAP, NELAP, WADOE Motor Oil Range Organics (C24-C38) DoD-ELAP, NELAP, WADOE Motor Oil Range Organics (C25-C36) DoD-ELAP, NELAP, WADOE Motor Oil Range Organics (C24-C40) DoD-ELAP, NELAP, WADOE Mineral Spirits Range Organics (Tol-C12) DoD-ELAP, NELAP, WADOE Mineral Oil Range Organics (C16-C28) DoD-ELAP, NELAP, WADOE Kerosene Range Organics (Tol-C18) DoD-ELAP, NELAP, WADOE JP8 Range Organics (C8-C18) DoD-ELAP, NELAP, WADOE JP5 Range Organics (C10-C16) DoD-ELAP, NELAP, WADOE JP4 Range Organics (Tol-C14) DoD-ELAP, NELAP, WADOE Jet-A Range Organics (C10-C18) DoD-ELAP, NELAP, WADOE Creosote Range Organics (C12-C22) DoD-ELAP, NELAP, WADOE Bunker C Range Organics (C10-C38) DoD-ELAP, NELAP, WADOE Stoddard Range Organics (C8-C12) DoD-ELAP, NELAP, WADOE Transformer Oil Range Organics (C12-C28) DoD-ELAP, NELAP, WADOE

NWTPHg in Water

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Gasoline Range Organics (Tol-Nap)

Gasoline Range Organics (2MP-TMB)

Gasoline Range Organics (Tol-C12)

Gasoline Range Organics (Tol-C12)

WADOE,DoD-ELAP

WADOE,DoD-ELAP

WADOE,ADEC,DoD-ELAP

Gasoline Range Organics (C5-C12)

WADOE,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	UST-033	05/06/2017
CALAP	California Department of Public Health CAELAP	2748	02/28/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	03/30/2017
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006	05/11/2017
WADOE	WA Dept of Ecology	C558	06/30/2017
WA-DW	Ecology - Drinking Water	C558	06/30/2017





[2C]

The Boeing Company Project: Boeing Kent Sampling Stormwaters

Indicates this result was quantified on the second column on a dual column analysis.

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
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Notes and Definitions

	Total and Definitions
*	Flagged value is not within established control limits.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the applicable reporting or detection limit.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



10 February 2017

Nick Garson The Boeing Company PO Box 3707 M/S 1W-12 Seattle, WA 98124

RE: Boeing Kent Sampling Stormwaters

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)

Associated SDG ID(s)

17A0243

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kelly Bottem, Client Services Manager

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: $C(AO24)$ Turn-around Requested:	June (7月2年3 Turn-around Requested: Normal	equested:	N N	Normal	Date:		1/20/17			-	An	Analytical Resources, Incorporated Analytical Chemists and Consultants
ARI Client Company: Dalton Olmsted & Fuglevand		Phone: 206-660-3466	466		Page:	~	of	<u></u>				4611 South 134th Place, Suite 100 Tukwila. WA 98168
Client Contact: Tasya Gray / Dave Cooper					No. of Coolers.		Cooler Temps:		terres series			206-695-6200 206-695-6201 (fax)
Client Project Name:							Anal	Analysis Requested	ested			Notes/Comments
Boeing KSC Client Project # B-002	Samplers: DG Cooper				als - d, g, Se, Ni, 200.8	l Metals - d, M, Se, Ni, 2003	X9-H	s O	He OC*	sg		*VOCs for SIM: 1,1- DCE, Vinyl Chloride
Sample ID	Date	Time	Matrix	No. Containers	Total Met As, Ag, C Cr,Cu, Hg Pb, Zn	Dissolvec As, Ag, C Cr, Cu, Hg Pb, Zn	ATWN	9TWN OV)328 Aq 0728	808 Dd		**see Table B-4 in QAPP for all reporting limits
KSC - OF 20 - W	1/20/2017	1230	water	15	×	×	×	X	X	×		
Trip Blank	1/20/2017		water	3			×	×	_			
	, c											
Comments/Special Instructions - Dissolved metals	Relinqushed by: (Signature)	36		Received by: 7	Dank Mark	mk	Re (Si	Relinquished by: (Signature)			Received by: (Signature)	
NOT Field filtered - Centrifuge PAHs & PCBs	Printed Name: DG Cooper			Printed Name:	Paul Mork	ark ark	.E	Printed Name:			Printed Name:	
	Company:			Company:	ARI		ပိ	Company:			Company:	
	Date & Time: /	1335	35	Date & Time:	1/20/17	1335		Date & Time:		W , 1	Date & Time:	

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.

Printed: 1/20/2017 2:59:52PM

WORK ORDER

17A0243

Client: The Boeing Company

Project Manager: Kelly Bottem

Project: Boeing Kent Sampling

Project Number: Boeing Kent Sampling

Preservation Confirmation

Container ID	Container Type	рH	ſ	
17A0243-01 A	VOA Vial, Clear, 40 mL, HCL	P		
17A0243-01 B	VOA Vial, Clear, 40 mL, HCL			
17A0243-01 C	VOA Vial, Clear, 40 mL, HCL			
17A0243-01 D	VOA Vial, Clear, 40 mL, HCL			
17A0243-01 E	VOA Vial, Clear, 40 mL, HCL			
17A0243-01 F	Glass NM, Amber, 500 mL			
17A0243-01 G	Glass NM, Amber, 500 mL			
17A0243-01 H	Glass NM, Amber, 500 mL			
17A0243-01 I	Glass NM, Amber, 500 mL			
17A0243-01 J	Glass NM, Amber, 500 mL			
17A0243-01 K	Glass NM, Amber, 500 mL			
17A0243-01 L	Glass NM, Amber, 1000 mL			
17A0243-01 M	Glass NM, Amber, 1000 mL			
17A0243-01 N	HDPE NM, 500 mL, 1:1 HNO3	42	Pass	
17A0243-02 A	HDPE NM, 500 mL	-	(697)	
7A0243-03 A	VOA Vial, Clear, 40 mL, HCL			
7A0243-03 B	VOA Vial, Clear, 40 mL, HCL			
7A0243-03 C	VOA Vial, Clear, 40 mL, HCL			

	PM
Preservation C	Confirmed By

01/2s/2017 Date

D .	4	T
12 ave	ewed	D _T



Cooler Receipt Form

ARI Client: DOF		Project Name: Boei (2 KSC		
COC No(s):	NA NA				-
Assigned ARI Job No:		Delivered by: Fed-Ex UPS Con	Trier (Hand De	livered Other	
Preliminary Examination Pl	nase:	Tracking No:			NA
Were intact, properly signed	and dated custody seals attached	to the outside asks and a			
Were custody papers includ	ed with the cooler?	to the outside of to cooler?		YES	(NO)
Were custody papers prope	rly filled out (ink, signed, etc.)			YES	NO
remperature of Cooler(s) ("	C) (recommended 2.0-6.0 °C for ch	emistry)		YES	NO
11110:	the state of the s	5.4			
	of compliance fill out form 00070F	Total Control		D#: D0052	76
Cooler Accepted by:	PIN	Date:01 /20 /2017_ Time	: 1335		
Log-In Phase:	Complete custody forms	s and attach all shipping documents		-	
Log-III Filase.					
Was a temperature blank inc	cluded in the cooler?				
What kind of packing mate	rial was used? Bubble Wra	Wet Ice Gel Packs Baggies Form	Block Dones	YES	(NO)
was sufficient ice used (if ap	propriate)?				-
Were all bottles sealed in ind	ividual plastic bags?		NA	YES	NO
Did all bottles arrive in good	condition (unbroken)?	(Augustana)		YES	NO
Were all bottle labels comple	te and legible?			(YES)	NO
Did the number of containers	listed on COC match with the num	ber of containers received?		(YES)	NO
Did all bottle labels and tags	agree with custody papers?			(YES)	NO
Were all bottles used correct	for the requested analyses?			(YES)	NO
Do any of the analyses (bottle	es) require preservation? (attach pre	eservation sheet excluding VOCa		(YES)	NO
Were all VOC vials free of air	bubbles?		NA	YES	NO
Was sufficient amount of sam	ple sent in each bottle?	· · · · · · · · · · · · · · · · · · ·	NA	YES	NO
Date VOC Trip Blank was ma	de at ARI		(11)	YES	NO
Was Sample Split by ARI:	NA) YES Date/Time:	Equipment:	(NA)	0.111	
Pomples I am all has	DiM		11 20	Split by:	
Samples Logged by:	Date	I III (E.	(4:28		
	** Notify Project Manage	er of discrepancies or concerns **			
Sample ID on Bottle		-			
Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sam	ple ID on CC	C
	*				
	, i , ,				
Additional Notes, Discrepan	cias & Resolution				
Troise, Pieci epair	cies, a Resolutions:				
×					
Ву:	Date:				
[B 141 B 212 15		Small > "am" (2			
1	mm > 4 mm	Small → "sm" (<2 mm)			
0	0000	Peabubbles > "pb" (2 to < 4 mm)			
ė		Large > "lg" (4 to < 6 mm)			
		Headspace → "hs" (>6 mm)			

Materials Testing & Consulting, Inc.



Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

i rojeci.	17A0243	Date Received: January 23, 2017
Project #:	17T001-005	Sampled By: Others
Client:	Analytical Resources, Inc.	Date Tested: January 23, 2017
Source:	17A0243-01	Tested By: K. O'Connell
Sample#:	T17-0185	
	(CASE NARRATIVE
		of solids by means of centrifuging according to modified Corp of
		ple was centrifuged in a pre-cooled centrifuge (4°C) at 1,000 x g for 30
		canted into the original sample bottles.
		nt were decontaminated prior to sample preparation.
ತ. There	were no anomalies in this project.	

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980

 $\textbf{Regional Offices:} \quad \text{Olympia} \sim 360.534.9777 \qquad \quad \text{Bellingham} \sim 360.647.6111 \qquad \quad \text{Silverdale} \sim 360.698.6787 \qquad \quad \text{Tukwila} \sim 206.241.1974$

Visit our website: www.mtc-inc.net



Analytical Report

The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
KSC - OF 20 - W	17A0243-01	Water	20-Jan-2017 12:30	20-Jan-2017 13:35
KSC - OF 20 - W	17A0243-02	Water	20-Jan-2017 12:30	20-Jan-2017 13:35
Trip Blank	17A0243-03	Water	20-Jan-2017 00:00	20-Jan-2017 13:35



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Case Narrative

Volatiles - EPA Method SW8260C

The sample(s) were run within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS/LCSD percent recoveries and RPD were within control limits.

Volatiles - EPA Method 8260C-SIM (Selected Ion Monitoring)

The sample(s) were run within the recommended holding times.

A revised COC was submitted with the SIM VOCs request.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The Matrix Spike/Matrix Spike were not analyzed as of the sample volumes were consumed during the 8260 analysis. A LCS and LCSD were analyzed with this batch of samples.

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.

All of the associated samples were subcontracted to MTC to be centrifuged before analysis.

Initial and continuing calibrations were within method requirements.

Analytical Resources, Inc.



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270D-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

All of the associated samples were subcontracted to MTC to be centrifuged before analysis.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits with the exception of fluoranthene-d10 which is out of control low in the associated sample.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Total and Dissolved Metals - EPA Method 200.8

The sample(s) were digested and analyzed within the recommended holding times.

The samples for dissolved metals were filtered in the lab.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The Matrix Spike/Matrix Spike duplicate recoveries and RPD were within limits.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Gasoline by NWTPH-g (GC/MS)

The sample(s) were run within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-01 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/20/2017 12:30

 Instrument: NT3
 Analyzed: 01/23/2017 17:22

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0423 Sample Size: 10 mL Prepared: 01/23/2017 17:22 Final Volume: 10 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	5.33	ug/L	
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
	103 12 3	•	0.20		-B-2	ū

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-01 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/20/2017 12:30

 Instrument: NT3
 Analyzed: 01/23/2017 17:22

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	101 %	;	
Surrogate: Toluene-d8			80-120 %	97.4 %	ó	
Surrogate: 4-Bromofluorobenzene			80-120 %	102 %		
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	102 %	•	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-01 (Water)

Volatile Organic Compounds

 Method: EPA 8260C-SIM
 Sampled: 01/20/2017 12:30

 Instrument: NT15
 Analyzed: 01/27/2017 15:23

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0576 Sample Size: 10 mL Prepared: 01/27/2017 07:38 Final Volume: 10 mL

	-		Reporting			
Analyte	CAS Number	Dilution	Limit	Resul	lt Units	Notes
Vinyl chloride	75-01-4	1	20.0	NI	O ng/L	U
1,1-Dichloroethene	75-35-4	1	20.0	NI	O ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	127	%	
Surrogate: Toluene-d8			80-120 %	83.2	%	
Surrogate: 4-Bromofluorobenzene			75-125 %	93.1	%	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-01 (Water)

Volatile Organic Compounds

 Method: NWTPHg
 Sampled: 01/20/2017 12:30

 Instrument: NT3
 Analyzed: 01/23/2017 17:22

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0423 Sample Size: 10 mL Prepared: 01/23/2017 17:22 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Resul	t l	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	NE)	ug/L	U
Surrogate: Toluene-d8			80-120 %	97.4	%		
Surrogate: 4-Bromofluorobenzene			80-120 %	102	%		





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-01 (Water)

Semivolatile Organic Compounds

 Method: EPA 8270D-SIM
 Sampled: 01/20/2017 12:30

 Instrument: NT11
 Analyzed: 02/03/2017 16:48

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0449 Sample Size: 500 mL Prepared: 01/24/2017 16:15 Final Volume: 0.5 mL

Sample Cleanup: Cleanup Method: Silica Gel

Cleanup Batch: CFA0134 Initial Volume: 0.5 mL Cleaned: 26-Jan-2017 Final Volume: 0.5 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.010	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	0.010	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	0.010	ND	ug/L	U
Acenaphthylene	208-96-8	1	0.010	ND	ug/L	U
Acenaphthene	83-32-9	1	0.010	ND	ug/L	U
Dibenzofuran	132-64-9	1	0.010	ND	ug/L	U
Fluorene	86-73-7	1	0.010	ND	ug/L	U
Phenanthrene	85-01-8	1	0.010	ND	ug/L	U
Anthracene	120-12-7	1	0.010	ND	ug/L	U
Fluoranthene	206-44-0	1	0.010	ND	ug/L	U
Pyrene	129-00-0	1	0.010	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	0.010	ND	ug/L	U
Chrysene	218-01-9	1	0.010	ND	ug/L	U
Benzofluoranthenes, Total		1	0.010	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.010	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.010	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.010	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	0.010	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			42-120 %	55.4 %		
Surrogate: Dibenzo[a,h]anthracene-d14			29-120 %	71.2 %		
Surrogate: Fluoranthene-d10			57-120 %	43.2 %		*

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-01 (Water)

Aroclor PCB

Method: EPA 8082A Instrument: ECD5							20/2017 12:30 31/2017 17:56
Sample Preparation:	Preparation Method: EPA 3510C SepF				All	laryzed. 017	31/2017 17.30
Sample Freparation.	Preparation Batch: BFA0492	Sample Size: 1	000 mL				
	Prepared: 01/27/2017 12:35	Final Volume:					
Sample Cleanup:	Cleanup Method: Silica Gel						
	Cleanup Batch: CFA0161	Initial Volume:	0.5 mL				
	Cleaned: 30-Jan-2017	Final Volume:	0.5 mL				
Sample Cleanup:	Cleanup Method: Sulfuric Acid						
	Cleanup Batch: CFA0159	Initial Volume:	0.5 mL				
	Cleaned: 30-Jan-2017	Final Volume:	0.5 mL				
Sample Cleanup:	Cleanup Method: Sulfur						
	Cleanup Batch: CFA0160	Initial Volume:					
	Cleaned: 30-Jan-2017	Final Volume:	0.5 mL				
				Reporting			
Analyte		CAS Number	Dilution	Limit	Result	Units	Notes
Aroclor 1016		12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1254		11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260		11096-82-5	1	0.010	ND	ug/L	U
Surrogate: Decachlorobiphe	enyl			29-120 %	73.5 %	i	
Surrogate: Tetrachlorometa.	xylene			32-120 %	65.3 %		
Surrogate: Decachlorobiphe	enyl [2C]			29-120 %	76.8 %		
Surrogate: Tetrachlorometa	rylene [2C]			32-120 %	56.8 %		



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-01 (Water)

Petroleum Hydrocarbons

 Method: NWTPH-Dx
 Sampled: 01/20/2017 12:30

 Instrument: FID4
 Analyzed: 01/27/2017 14:32

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0546 Sample Size: 500 mL Prepared: 01/26/2017 15:10 Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	0.100	ND	mg/L	U
Motor Oil Range Organics (C24-C38)		1	0.200	ND	mg/L	U
Surrogate: o-Terphenyl			50-150 %	80.4 %	;	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-01 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8
 Sampled: 01/20/2017 12:30

 Instrument: ICPMS2
 Analyzed: 01/23/2017 14:09

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0409 Sample Size: 25 mL

Prepared: 01/23/2017 07:25 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium	7440-47-3	1	0.500	ND	ug/L	U
Copper	7440-50-8	1	0.500	2.29	ug/L	
Lead	7439-92-1	1	0.100	0.329	ug/L	
Selenium	7782-49-2	1	2.00	ND	ug/L	U
Silver	7440-22-4	1	0.200	ND	ug/L	U



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-01 (Water)

Metals and Metallic Compounds

 Method: EPA 200.8 UCT-KED
 Sampled: 01/20/2017 12:30

 Instrument: ICPMS2
 Analyzed: 01/23/2017 14:09

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Preparation Batch: BFA0409 Sample Size: 25 mL Prepared: 01/23/2017 07:25 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.200	0.481	ug/L	
Cadmium	7440-43-9	1	0.100	ND	ug/L	U
Nickel	7440-02-0	1	0.500	0.590	ug/L	
Zinc	7440-66-6	1	4.00	12.4	ug/L	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-01 (Water)

Metals and Metallic Compounds

 Method: EPA 7470A
 Sampled: 01/20/2017 12:30

 Instrument: CETAC
 Analyzed: 02/09/2017 10:39

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFB0136 Sample Size: 20 mL Prepared: 02/07/2017 10:30 Final Volume: 20 mL

Analyte CAS Number Dilution Result Units Notes

Mercury 7439-97-6 1 0.000100 ND mg/L U

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-02 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8
 Sampled: 01/20/2017 12:30

 Instrument: ICPMS2
 Analyzed: 01/24/2017 22:10

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0461 Sample Size: 25 mL

Prepared: 01/24/2017 12:32 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Chromium, Dissolved	7440-47-3	1	0.500	ND	ug/L	U
Lead, Dissolved	7439-92-1	1	0.100	0.117	ug/L	
Silver, Dissolved	7440-22-4	1	0.200	ND	ug/L	U



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-02 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 200.8 UCT-KED
 Sampled: 01/20/2017 12:30

 Instrument: ICPMS2
 Analyzed: 01/24/2017 22:10

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFA0461 Sample Size: 25 m

Preparation Batch: BFA0461 Sample Size: 25 mL Prepared: 01/24/2017 12:32 Final Volume: 25 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.200	0.330	ug/L	
Cadmium, Dissolved	7440-43-9	1	0.100	ND	ug/L	U
Copper, Dissolved	7440-50-8	1	0.500	1.61	ug/L	
Nickel, Dissolved	7440-02-0	1	0.500	ND	ug/L	U
Selenium, Dissolved	7782-49-2	1	0.500	ND	ug/L	U
Zinc, Dissolved	7440-66-6	1	4.00	9.41	ug/L	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

KSC - OF 20 - W 17A0243-02 (Water)

Metals and Metallic Compounds (dissolved)

 Method: EPA 7470A
 Sampled: 01/20/2017 12:30

 Instrument: CETAC
 Analyzed: 01/27/2017 14:25

Sample Preparation: Preparation Method: TWM EPA 7470A

Preparation Batch: BFA0562 Sample Size: 20 mL Prepared: 01/27/2017 09:14 Final Volume: 20 mL

Analyte CAS Number Dilution Result Units Notes

Mercury, Dissolved 7439-97-6 1 0.000100 ND mg/L U





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Trip Blank 17A0243-03 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/20/2017 00:00

 Instrument: NT3
 Analyzed: 01/23/2017 17:48

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0423 Sample Size: 10 mL Prepared: 01/23/2017 17:48 Final Volume: 10 mL

			Reporting				
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes	
Chloromethane	74-87-3	1	0.50	ND	ug/L	U	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U	
Chloroethane	75-00-3	1	0.20	ND	ug/L	U	
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U	
Acetone	67-64-1	1	5.00	ND	ug/L	U	
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U	
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U	
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U	
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U	
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U	
2-Butanone	78-93-3	1	5.00	ND	ug/L	U	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U	
Chloroform	67-66-3	1	0.20	ND	ug/L	U	
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U	
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U	
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U	
Benzene	71-43-2	1	0.20	ND	ug/L	U	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U	
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U	
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U	
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U	
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U	
Toluene	108-88-3	1	0.20	ND	ug/L	U	
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U	
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U	
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U	
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U	
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U	
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U	
o-Xylene	95-47-6	1	0.20	ND	ug/L	U	
Styrene	100-42-5	1	0.20	ND	ug/L ug/L	U	
Styrene	100-42-3	1	0.20	1110	ug/L	C	

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The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Trip Blank 17A0243-03 (Water)

Volatile Organic Compounds

 Method: EPA 8260C
 Sampled: 01/20/2017 00:00

 Instrument: NT3
 Analyzed: 01/23/2017 17:48

			Reporting			•
Analyte	CAS Number	Dilution	Limit	Result	Units	Notes
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	105	%	
Surrogate: Toluene-d8			80-120 %	101	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	97.9	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	100	%	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Trip Blank 17A0243-03 (Water)

Volatile Organic Compounds

 Method: EPA 8260C-SIM
 Sampled: 01/20/2017 00:00

 Instrument: NT15
 Analyzed: 01/27/2017 15:46

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0576 Sample Size: 10 mL Prepared: 01/27/2017 07:38 Final Volume: 10 mL

			Reporting			
Analyte	CAS Number	Dilution	Limit	Resul	t Units	Notes
Vinyl chloride	75-01-4	1	20.0	NE	ng/L	U
1,1-Dichloroethene	75-35-4	1	20.0	NE	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	127	%	
Surrogate: Toluene-d8			80-120 %	82.3	%	
Surrogate: 4-Bromofluorobenzene			75-125 %	95.1	%	



The Boeing Company Project: Boeing Kent Sampling Stormwaters

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Trip Blank 17A0243-03 (Water)

Volatile Organic Compounds

 Method: NWTPHg
 Sampled: 01/20/2017 00:00

 Instrument: NT3
 Analyzed: 01/23/2017 17:48

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)

Preparation Batch: BFA0423 Sample Size: 10 mL Prepared: 01/23/2017 17:48 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Resul	t	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	NI)	ug/L	U
Surrogate: Toluene-d8			80-120 %	101	%		
Surrogate: 4-Bromofluorobenzene			80-120 %	97.9	%		

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Volatile Organic Compounds - Quality Control

Batch BFA0423 - EPA 5030 (Purge and Trap)

Instrument: NT3

OC Samula/Analyta	Domlt	Reporting	Lluita	Spike	Source	0/DEC	%REC	DDD	RPD	Notes
QC Sample/Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Blank (BFA0423-BLK1)			Prepa	ared: 23-Jan-	-2017 Ana	lyzed: 23-Ja	an-2017 11:	38		
Chloromethane	ND	0.50	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Volatile Organic Compounds - Quality Control

Batch BFA0423 - EPA 5030 (Purge and Trap)

Instrument: NT3

QC Sample/Analyte	Result	R	eporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	Result		Lillit							Liiiit	110003
Blank (BFA0423-BLK1)	ND		0.20		ared: 23-Jan	-2017 Ana	lyzed: 23-Ja	an-2017 11:	38		**
1,1,2,2-Tetrachloroethane	ND		0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4		4.99		ug/L	5.00		99.8 %	80-129			
Surrogate: Toluene-d8		4.98		ug/L	5.00		99.6 %	80-120			
Surrogate: 4-Bromofluorobenzene		4.79		ug/L	5.00		95.8 %	80-120			
Surrogate: 1,2-Dichlorobenzene-d4		5.11		ug/L	5.00		102 %	80-120			
Blank (BFA0423-BLK2)				Prepa	ared: 23-Jan	-2017 Ana	lyzed: 23-Ja	an-2017 11:	38		
Gasoline Range Organics (Tol-Nap)	ND		100	ug/L							U
Surrogate: Toluene-d8		4.98		ug/L	5.00		99.6 %	80-120			
Surrogate: 4-Bromofluorobenzene		4.79		ug/L	5.00		95.8 %	80-120			
LCS (BFA0423-BS1)				Prepa	ared: 23-Jan	-2017 Ana	lyzed: 23-Ja	an-2017 09:	54		
Chloromethane	9.37		0.50	ug/L	10.0		93.7 %	60-138			
Bromomethane	10.3		1.00	ug/L	10.0		103 %	72-131			
Chloroethane	9.44		0.20	ug/L	10.0		94.4 %	60-155			
Trichlorofluoromethane	10.6		0.20	ug/L	10.0		106 %	80-129			
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.3		0.20	ug/L	10.0		103 %	76-129			
Acetone	49.3		5.00	ug/L	50.0		98.6 %	58-142			
Methylene Chloride	9.24		1.00	ug/L	10.0		92.4 %	65-135			
Carbon Disulfide	10.1		0.20	ug/L	10.0		101 %	78-125			
trans-1,2-Dichloroethene	10.3		0.20	ug/L	10.0		103 %	78-128			
Vinyl Acetate	9.49		0.20	ug/L	10.0		94.9 %	55-138			
1,1-Dichloroethane	9.96		0.20	ug/L	10.0		99.6 %	76-124			
2-Butanone	46.9		5.00	ug/L	50.0		93.8 %	61-140			
cis-1,2-Dichloroethene	10.1		0.20	ug/L	10.0		101 %	80-121			
Chloroform	10.1		0.20	ug/L	10.0		101 %	80-122			
1,1,1-Trichloroethane	10.4		0.20	ug/L	10.0		104 %	79-123			
Carbon tetrachloride	10.5		0.20	ug/L	10.0		105 %	53-137			
1,2-Dichloroethane	9.81		0.20	ug/L	10.0		98.1 %	75-123			
Benzene	10.1		0.20	ug/L	10.0		101 %	80-120			
Trichloroethene	10.0		0.20	ug/L	10.0		100 %	80-120			
1,2-Dichloropropane	9.81		0.20	ug/L	10.0		98.1 %	80-120			
Bromodichloromethane	9.77		0.20	ug/L	10.0		97.7 %	80-121			
4-Methyl-2-Pentanone	47.5		5.00	ug/L	50.0		95.0 %	67-133			

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Volatile Organic Compounds - Quality Control

Batch BFA0423 - EPA 5030 (Purge and Trap)

Instrument: NT3

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BFA0423-BS1)			Prep	pared: 23-Jan-20	017 Ana	alyzed: 23-Ja	an-2017 09:	:54		
cis-1,3-Dichloropropene	10.1	0.20	ug/L	10.0		101 %	80-124			
Toluene	10.1	0.20	ug/L	10.0		101 %	80-120			
trans-1,3-Dichloropropene	10.2	0.20	ug/L	10.0		102 %	71-127			
1,1,2-Trichloroethane	9.61	0.20	ug/L	10.0		96.1 %	80-121			
Tetrachloroethene	10.1	0.20	ug/L	10.0		101 %	80-120			
Dibromochloromethane	9.90	0.20	ug/L	10.0		99.0 %	65-135			
Chlorobenzene	10.0	0.20	ug/L	10.0		100 %	80-120			
Ethylbenzene	9.98	0.20	ug/L	10.0		99.8 %	80-120			
m,p-Xylene	20.9	0.40	ug/L	20.0		104 %	80-121			
o-Xylene	9.96	0.20	ug/L	10.0		99.6 %	80-121			
Styrene	10.6	0.20	ug/L	10.0		106 %	80-124			
Bromoform	10.0	0.20	ug/L	10.0		100 %	51-134			
1,1,2,2-Tetrachloroethane	9.67	0.20	ug/L	10.0		96.7 %	77-123			
Surrogate: Dibromofluoromethane		4.97	ug/L	5.00		99.4 %	80-120			
Surrogate: 1,2-Dichloroethane-d4		4.66	ug/L	5.00		93.3 %	80-129			
Surrogate: Toluene-d8		5.02	ug/L	5.00		100 %	80-120			
Surrogate: 4-Bromofluorobenzene		4.95	ug/L	5.00		99.0 %	80-120			
Surrogate: 1,2-Dichlorobenzene-d4		4.99	ug/L	5.00		99.9 %	80-120			
LCS (BFA0423-BS2)			Prep	pared: 23-Jan-20	017 Ana	alyzed: 23-Ja	an-2017 10:	:46		
Gasoline Range Organics (Tol-Nap)	1050	100	ug/L	1000		105 %	80-120			
Surrogate: Toluene-d8		4.95	ug/L	5.00		98.9 %	80-120			
Surrogate: 4-Bromofluorobenzene		5.00	ug/L	5.00		100 %	80-120			
LCS Dup (BFA0423-BSD1)			Prep	pared: 23-Jan-20	017 Ana	alyzed: 23-Ja	an-2017 10:	:20		
Chloromethane	10.0	0.50	ug/L	10.0		100 %	60-138	6.71	30	
Bromomethane	10.7	1.00	ug/L	10.0		107 %	72-131	4.04	30	
Chloroethane	10.2	0.20	ug/L	10.0		102 %	60-155	7.39	30	
Trichlorofluoromethane	11.1	0.20	ug/L	10.0		111 %	80-129	4.83	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.6	0.20	ug/L	10.0		106 %	76-129	3.45	30	
Acetone	54.5	5.00	ug/L	50.0		109 %	58-142	9.95	30	
Methylene Chloride	9.70	1.00	ug/L	10.0		97.0 %	65-135	4.84	30	
Carbon Disulfide	10.5	0.20	ug/L	10.0		105 %	78-125	4.10	30	
trans-1,2-Dichloroethene	10.6	0.20	ug/L	10.0		106 %	78-128	3.29	30	

Analytical Resources, Inc.





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Volatile Organic Compounds - Quality Control

Batch BFA0423 - EPA 5030 (Purge and Trap)

Instrument: NT3

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BFA0423-BSD1)			Prens	red: 23-Jan-	-2017 Anal	vzed: 23-1:	an-2017 10·	20		
Vinyl Acetate	10.6	0.20	ug/L	10.0	2017 711141	106 %	55-138	11.30	30	
1,1-Dichloroethane	10.5	0.20	ug/L	10.0		105 %	76-124	5.35	30	
2-Butanone	53.3	5.00	ug/L	50.0		107 %	61-140	12.70	30	
cis-1,2-Dichloroethene	10.9	0.20	ug/L	10.0		109 %	80-121	7.70	30	
Chloroform	10.8	0.20	ug/L	10.0		108 %	80-122	6.28	30	
1,1,1-Trichloroethane	11.0	0.20	ug/L	10.0		110 %	79-123	5.55	30	
Carbon tetrachloride	11.2	0.20	ug/L	10.0		112 %	53-137	6.19	30	
1,2-Dichloroethane	11.0	0.20	ug/L	10.0		110 %	75-123	11.00	30	
Benzene	10.8	0.20	ug/L	10.0		108 %	80-120	6.79	30	
Trichloroethene	11.1	0.20	ug/L	10.0		111 %	80-120	10.30	30	
1,2-Dichloropropane	10.5	0.20	ug/L	10.0		105 %	80-120	6.81	30	
Bromodichloromethane	11.1	0.20	ug/L	10.0		111 %	80-121	12.50	30	
4-Methyl-2-Pentanone	54.7	5.00	ug/L	50.0		109 %	67-133	14.10	30	
cis-1,3-Dichloropropene	11.2	0.20	ug/L	10.0		112 %	80-124	10.30	30	
Toluene	10.8	0.20	ug/L	10.0		108 %	80-120	6.04	30	
trans-1,3-Dichloropropene	11.2	0.20	ug/L	10.0		112 %	71-127	9.41	30	
1,1,2-Trichloroethane	10.9	0.20	ug/L	10.0		109 %	80-121	12.50	30	
Tetrachloroethene	10.4	0.20	ug/L	10.0		104 %	80-120	3.51	30	
Dibromochloromethane	10.9	0.20	ug/L	10.0		109 %	65-135	9.33	30	
Chlorobenzene	10.7	0.20	ug/L	10.0		107 %	80-120	6.68	30	
Ethylbenzene	10.6	0.20	ug/L	10.0		106 %	80-120	5.98	30	
m,p-Xylene	21.9	0.40	ug/L	20.0		110 %	80-121	5.01	30	
o-Xylene	10.6	0.20	ug/L	10.0		106 %	80-121	5.96	30	
Styrene	11.3	0.20	ug/L	10.0		113 %	80-124	6.08	30	
Bromoform	11.2	0.20	ug/L	10.0		112 %	51-134	11.20	30	
1,1,2,2-Tetrachloroethane	10.8	0.20	ug/L	10.0		108 %	77-123	11.20	30	
Surrogate: Dibromofluoromethane		5.01	ug/L	5.00		100 %	80-120			
Surrogate: 1,2-Dichloroethane-d4		4.98	ug/L	5.00		99.6 %	80-129			
Surrogate: Toluene-d8		5.05	ug/L	5.00		101 %	80-120			
Surrogate: 4-Bromofluorobenzene		4.97	ug/L	5.00		99.3 %	80-120			
Surrogate: 1,2-Dichlorobenzene-d4		5.04	ug/L	5.00		101 %	80-120			
LCS Dup (BFA0423-BSD2)			Prepa	red: 23-Jan-	-2017 Anal	yzed: 23-Ja	an-2017 11:	12		
Gasoline Range Organics (Tol-Nap)	1090	100	ug/L	1000		109 %	80-120	4.51	30	

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Volatile Organic Compounds - Quality Control

Batch BFA0423 - EPA 5030 (Purge and Trap)

Instrument: NT3

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BFA0423-BSD2)			Prepa	ared: 23-Jan-	2017 Anal	yzed: 23-Ja	n-2017 11:	12		
Surrogate: Toluene-d8		5.01	ug/L	5.00		100 %	80-120			
Surrogate: 4-Bromofluorobenzene		4.93	ug/L	5.00		98.6 %	80-120			





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Volatile Organic Compounds - Quality Control

Batch BFA0576 - EPA 5030 (Purge and Trap)

Instrument: NT15

	5 . 1.	Reporting	TT *:	Spike	Source	0/PEC	%REC	DPP	RPD	NI ·
QC Sample/Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Blank (BFA0576-BLK1)	-		Prep	ared: 27-Jan	-2017 Ana	ılyzed: 27-J	an-2017 11:	:30	_	
Vinyl chloride	ND	20.0	ng/L							U
1,1-Dichloroethene	ND	20.0	ng/L							U
Surrogate: 1,2-Dichloroethane-d4		1170	ng/L	1000		117 %	80-129		·	
Surrogate: Toluene-d8		829	ng/L	1000		82.9 %	80-120			
Surrogate: 4-Bromofluorobenzene		950	ng/L	1000		95.0 %	75-125			
LCS (BFA0576-BS1)			Prep	ared: 27-Jan	-2017 Ana	ılyzed: 27-J	an-2017 10:	:28		
Vinyl chloride	943		ng/L	1000		94.3 %	76-120			
1,1-Dichloroethene	1020		ng/L	1000		102 %	80-120			
Surrogate: 1,2-Dichloroethane-d4		906	ng/L	1000		90.6 %	80-129			
Surrogate: Toluene-d8		829	ng/L	1000		82.9 %	80-120			
Surrogate: 4-Bromofluorobenzene		1090	ng/L	1000		109 %	75-125			
LCS Dup (BFA0576-BSD1)			Prep	ared: 27-Jan	-2017 Ana	ılyzed: 27-J	an-2017 11:	:07		
Vinyl chloride	1130		ng/L	1000		113 %	76-120	18.10	30	
1,1-Dichloroethene	1160		ng/L	1000		116 %	80-120	12.70	30	
Surrogate: 1,2-Dichloroethane-d4		1010	ng/L	1000		101 %	80-129			
Surrogate: Toluene-d8		834	ng/L	1000		83.4 %	80-120			
Surrogate: 4-Bromofluorobenzene		1130	ng/L	1000		113 %	75-125			

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Semivolatile Organic Compounds - Quality Control

Batch BFA0449 - EPA 3510C SepF

Instrument: NT11

QC Sample/Analyte	Result	Reporting Limi		Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFA0449-BLK1)		2		ared: 24-Jan-						
Naphthalene	ND	0.010		ared: 24-Jan	2017 Ana	ilyzed: 05-r	60-201/13	1:33		U
2-Methylnaphthalene	ND	0.010								U
1-Methylnaphthalene	ND	0.010	-							U
Acenaphthylene	ND	0.010	_							U
Acenaphthene	ND	0.010	-							U
Dibenzofuran	ND	0.010	-							U
Fluorene	ND	0.010	_							U
Phenanthrene	ND	0.010	-							U
Anthracene	ND	0.010								U
Fluoranthene	ND	0.010	ug/L							U
Pyrene	ND	0.010								U
Benzo(a)anthracene	ND	0.010	ug/L							U
Chrysene	ND	0.010								U
Benzofluoranthenes, Total	ND	0.010	ug/L							U
Benzo(a)pyrene	ND	0.010	ug/L							U
Indeno(1,2,3-cd)pyrene	ND	0.010	ug/L							U
Dibenzo(a,h)anthracene	ND	0.010	ug/L							U
Benzo(g,h,i)perylene	ND	0.010	ug/L							U
Surrogate: 2-Methylnaphthalene-d10		0.228	ug/L	0.300		76.1 %	42-120			
Surrogate: Dibenzo[a,h]anthracene-d14		0.261	ug/L	0.300		87.1 %	29-120			
Surrogate: Fluoranthene-d10		0.192	ug/L	0.300		64.0 %	57-120			
LCS (BFA0449-BS1)			Prep	ared: 24-Jan-	2017 Ana	lyzed: 03-F	eb-2017 13	5:08		
Naphthalene	0.212	0.010		0.300		70.6 %	37-120			
2-Methylnaphthalene	0.207	0.010	ug/L	0.300		69.2 %	37-120			
1-Methylnaphthalene	0.215	0.010	ug/L	0.300		71.5 %	29-120			
Acenaphthylene	0.204	0.010	ug/L	0.300		68.0 %	41-120			
Acenaphthene	0.198	0.010	ug/L	0.300		65.9 %	41-120			
Dibenzofuran	0.228	0.010	ug/L	0.300		75.9 %	38-120			
Fluorene	0.217	0.010	ug/L	0.300		72.2 %	43-120			
Phenanthrene	0.211	0.010	ug/L	0.300		70.5 %	41-120			
Anthracene	0.147	0.010	ug/L	0.300		49.0 %	40-120			
Fluoranthene	0.198	0.010	ug/L	0.300		65.9 %	45-120			
Pyrene	0.210	0.010	ug/L	0.300		70.0 %	41-120			

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Semivolatile Organic Compounds - Quality Control

Batch BFA0449 - EPA 3510C SepF

Instrument: NT11

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BFA0449-BS1)			Prep	pared: 24-Jan-	·2017 Ana	lyzed: 03-F	eb-2017 13	:08		
Benzo(a)anthracene	0.198	0.010	ug/L	0.300		65.9 %	42-120			
Chrysene	0.206	0.010	ug/L	0.300		68.8 %	44-120			
Benzofluoranthenes, Total	0.745	0.010	ug/L	0.900		82.8 %	46-120			
Benzo(a)pyrene	0.155	0.010	ug/L	0.300		51.5 %	35-120			
Indeno(1,2,3-cd)pyrene	0.246	0.010	ug/L	0.300		81.9 %	37-120			
Dibenzo(a,h)anthracene	0.260	0.010	ug/L	0.300		86.6 %	34-120			
Benzo(g,h,i)perylene	0.255	0.010	ug/L	0.300		85.1 %	38-120			
Surrogate: 2-Methylnaphthalene-d10		0.220	ug/L	0.300		73.3 %	42-120			
Surrogate: Dibenzo[a,h]anthracene-d14		0.295	ug/L	0.300		98.2 %	29-120			
Surrogate: Fluoranthene-d10		0.222	ug/L	0.300		74.1 %	57-120			



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Aroclor PCB - Quality Control

Batch BFA0492 - EPA 3510C SepF

Instrument: ECD5

QC Sample/Analyte	Result	R	eporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFA0492-BLK1)				Prep	ared: 25-Jan-	·2017 Ana	lyzed: 31-J	an-2017 17:	16		
Aroclor 1016	ND		0.010	ug/L			-				U
Aroclor 1254	ND		0.010	ug/L							U
Aroclor 1260	ND		0.010	ug/L							U
Surrogate: Decachlorobiphenyl		0.0101		ug/L	0.0200		50.6 %	29-120			
Surrogate: Tetrachlorometaxylene		0.0101		ug/L	0.0200		50.3 %	32-120			
Surrogate: Decachlorobiphenyl [2C]		0.00989		ug/L	0.0200		49.5 %	29-120			
Surrogate: Tetrachlorometaxylene [2C]		0.00909		ug/L	0.0200		45.5 %	32-120			
LCS (BFA0492-BS1)				Prep	ared: 25-Jan-	2017 Ana	lyzed: 31-J	an-2017 17:	36		
Aroclor 1016	0.045		0.010	ug/L	0.0500		89.7 %	54-120			
Aroclor 1260	0.040		0.010	ug/L	0.0500		79.5 %	51-128			
Surrogate: Decachlorobiphenyl		0.0136		ug/L	0.0200		67.8 %	29-120			
Surrogate: Tetrachlorometaxylene		0.0127		ug/L	0.0200		63.4 %	32-120			
Surrogate: Decachlorobiphenyl [2C]		0.0134		ug/L	0.0200		67.2 %	29-120			
Surrogate: Tetrachlorometaxylene [2C]		0.0107		ug/L	0.0200		53.7 %	32-120			





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Petroleum Hydrocarbons - Quality Control

Batch BFA0546 - EPA 3510C SepF

Instrument: FID4

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFA0546-BLK1)			Prep	ared: 26-Jan-2	2017 Ana	lyzed: 27-J	an-2017 13:	:33		
Diesel Range Organics (C12-C24)	ND	0.100	mg/L							U
Motor Oil Range Organics (C24-C38)	ND	0.200	mg/L							U
Surrogate: o-Terphenyl		0.0616	mg/L	0.0900		68.4 %	50-150			
LCS (BFA0546-BS1)			Prep	ared: 26-Jan-2	2017 Ana	lyzed: 27-J	an-2017 14:	:02		
Diesel Range Organics (C12-C24)	2.27	0.100	mg/L	3.00		75.7 %	56-120			
Surrogate: o-Terphenyl		0.0842	mg/L	0.0900		93.6 %	50-150			





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Metals and Metallic Compounds - Quality Control

Batch BFA0409 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2

			Reporting		Spike	Source		%REC		RPD	
QC Sample/Analyte	Isotope	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Blank (BFA0409-BLK1)				Prepa	ared: 23-Jan	-2017 Ana	lyzed: 23-J	an-2017 14:	00		
Chromium		ND	0.500	ug/L							U
Copper		ND	0.500	ug/L							U
Lead		ND	0.100	ug/L							U
Silver		ND	0.200	ug/L							U
Arsenic		ND	0.200	ug/L							U
Cadmium		ND	0.100	ug/L							U
Nickel		ND	0.500	ug/L							U
Zinc	66	ND	4.00	ug/L							U
Zinc	67	ND	4.00	ug/L							U
Blank (BFA0409-BLK2)				Prepa	ared: 23-Jan	-2017 Ana	lyzed: 24-J	an-2017 23:	01		
Selenium		ND	2.00	ug/L							U
LCS (BFA0409-BS1)				Prepa	ared: 23-Jan	-2017 Ana	lyzed: 23-J	an-2017 14:	19		
Chromium		26.5	0.500	ug/L	25.0		106 %	80-120			
Copper		26.1	0.500	ug/L	25.0		104 %	80-120			
Lead		27.7	0.100	ug/L	25.0		111 %	80-120			
Silver		26.8	0.200	ug/L	25.0		107 %	80-120			
Arsenic		24.2	0.200	ug/L	25.0		96.9 %	80-120			
Cadmium		24.5	0.100	ug/L	25.0		98.1 %	80-120			
Nickel		25.6	0.500	ug/L	25.0		102 %	80-120			
Zinc	66	78.4	4.00	ug/L	80.0		98.0 %	80-120			
Zinc	67	74.9	4.00	ug/L	80.0		93.6 %	80-120			
LCS (BFA0409-BS2)				Prepa	ared: 23-Jan	-2017 Ana	lyzed: 24-J	an-2017 23:	21		
Selenium		73.4	2.00	ug/L	80.0		91.7 %	80-120			
Duplicate (BFA0409-DUP1)		Sou	rce: 17A0243-01	Prepa	ared: 23-Jan	-2017 Ana	lyzed: 23-J	an-2017 14:	04		
Chromium		ND	0.500	ug/L		ND	-		15.20	20	U
Copper		2.49	0.500	ug/L		2.29			8.08	20	
Lead		0.343	0.100	ug/L		0.329			4.17	20	
Silver		ND	0.200	ug/L		ND				20	U
Arsenic		0.508	0.200	ug/L		0.481			5.46	20	
Cadmium		ND	0.100	ug/L		ND				20	U
Nickel		0.612	0.500	ug/L		0.590			3.66	20	

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Metals and Metallic Compounds - Quality Control

Batch BFA0409 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Duplicate (BFA0409-DUP1)		Source:	17A0243-01	Prepa	ared: 23-Jan	-2017 Ana	lyzed: 23-J	an-2017 14:	04		
Zinc		12.5	4.00	ug/L		12.4			1.37	20	
Duplicate (BFA0409-DUP2)		Source:	17A0243-01	Prepa	ared: 23-Jan	-2017 Ana	lyzed: 24-J	an-2017 23:	06		
Selenium		ND	2.00	ug/L		ND				20	U
Matrix Spike (BFA0409-MS1)		Source:	17A0243-01	Prepa	ared: 23-Jan	-2017 Ana	lyzed: 23-J	an-2017 14:	13		
Chromium		25.8	0.500	ug/L	25.0	ND	102 %	75-125			
Copper		27.7	0.500	ug/L	25.0	2.29	101 %	75-125			
Lead		26.8	0.100	ug/L	25.0	0.329	106 %	75-125			
Silver		26.1	0.200	ug/L	25.0	ND	104 %	75-125			
Arsenic		24.7	0.200	ug/L	25.0	0.481	96.7 %	75-125			
Cadmium		23.5	0.100	ug/L	25.0	ND	94.2 %	75-125			
Nickel		25.7	0.500	ug/L	25.0	0.590	101 %	75-125			
Zinc		88.8	4.00	ug/L	80.0	12.4	95.6 %	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike (BFA0409-MS2)	Source: 17	'A0243-01	Prepa	red: 23-Jan-	2017 Ana	alyzed: 24-J	an-2017 23:16	
Selenium	71.5	2.00	ug/L	80.0	ND	89.4 %	75-125	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Metals and Metallic Compounds - Quality Control

Batch BFB0136 - TWM EPA 7470A

Instrument: CETAC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFB0136-BLK1)			Prepa	ared: 07-Feb	-2017 Ana	ılyzed: 09-l	Feb-2017 10):36		
Mercury	ND	0.000100	mg/L							U
LCS (BFB0136-BS1)			Prepa	ared: 07-Feb	-2017 Ana	alyzed: 09-1	Feb-2017 10):38		
Mercury	0.00210	0.000100	mg/L	0.00200		105 %	80-120			
Duplicate (BFB0136-DUP1)	Source	: 17A0243-01	Prepa	ared: 07-Feb	-2017 Ana	alyzed: 09-1	Feb-2017 10):41		
Mercury	ND	0.000100	mg/L		ND			0.00	20	U
Matrix Spike (BFB0136-MS1)	Source	: 17A0243-01	Prepa	ared: 07-Feb	-2017 Ana	alyzed: 09-1	Feb-2017 10):43		
Mercury	0.00107	0.000100	mg/L	0.00100	ND	106 %	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BFA0461 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2

			Reporting		Spike	Source		%REC		RPD	
QC Sample/Analyte	Isotope	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Blank (BFA0461-BLK1)				Prepa	ared: 24-Jan	-2017 Ana	lyzed: 24-J	an-2017 17:	48		
Chromium		ND	0.500	ug/L							U
Lead		ND	0.100	ug/L							U
Silver		ND	0.200	ug/L							U
Arsenic		ND	0.200	ug/L							U
Cadmium		ND	0.100	ug/L							U
Copper		ND	0.500	ug/L							U
Nickel		ND	0.500	ug/L							U
Selenium		ND	0.500	ug/L							U
Zinc		ND	4.00	ug/L							U
LCS (BFA0461-BS1)				Prepa	ared: 24-Jan	-2017 Ana	lyzed: 24-J	an-2017 18:	08		
Chromium		26.9	0.500	ug/L	25.0		108 %	80-120			
Lead		27.7	0.100	ug/L	25.0		111 %	80-120			
Silver		26.4	0.200	ug/L	25.0		105 %	80-120			
Arsenic		24.0	0.200	ug/L	25.0		96.1 %	80-120			
Cadmium		24.2	0.100	ug/L	25.0		96.7 %	80-120			
Copper		25.8	0.500	ug/L	25.0		103 %	80-120			
Nickel		26.1	0.500	ug/L	25.0		104 %	80-120			
Selenium		71.6	0.500	ug/L	80.0		89.5 %	80-120			
Zinc		77.5	4.00	ug/L	80.0		96.9 %	80-120			

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PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BFA0562 - TWM EPA 7470A

Instrument: CETAC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFA0562-BLK1)	Prepared: 27-Jan-2017 Analyzed: 27-Jan-2017 14:01									
Mercury	ND	0.000100	mg/L							U





PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle, WA 98124 Project Manager: Nick Garson 10-Feb-2017 12:41

Certified Analyses included in this Report

EPA 200.8 in Water Silver-107 WADDE,WA-DW,DoD-ELAP,NELAP Chromium-52 NELAP,WADDE,WA-DW,DoD-ELAP Chromium-53 NELAP,WADDE,WA-DW,DoD-ELAP Copper-63 NELAP,WADDE,WA-DW,DoD-ELAP Copper-65 NELAP,WADDE,WA-DW,DoD-ELAP Lead-208 NELAP,WADDE,WA-DW,DoD-ELAP Selenium-82 NELAP,WADDE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADDE,WA-DW,DoD-ELAP Selenium-76 WADDE,WA-DW,DoD-ELAP Chromium-52 NELAP,WADDE,WA-DW,DoD-ELAP Chromium-53 NELAP,WADDE,WA-DW,DoD-ELAP Chead-208 NELAP,WADDE,WA-DW,DoD-ELAP EPA 200.8 UCT-KED in Water NELAP,WADDE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADDE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADDE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADDE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADDE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADDE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADDE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADDE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADDE,WA-DW,DoD-ELAP Copper-63 NELAP,WADDE,WA-DW,	Analyte	Certifications
Chromium-52 NELAP,WADOE,WA-DW,DoD-ELAP Chromium-53 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-82 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Silver-107 WADOE,WA-DW,DoD-ELAP,NELAP Chromium-52 NELAP,WADOE,WA-DW,DoD-ELAP Chromium-53 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP FPA 200.8 UCT-KED in Water Arsenic-75a Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP	EPA 200.8 in Water	
Chromium-53 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-82 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Silver-107 WADOE,WA-DW,DoD-ELAP,NEAP Chromium-52 NELAP,WADOE,WA-DW,DoD-ELAP Chromium-53 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP FPA 200.8 UCT-KED in Water Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP <t< td=""><td>Silver-107</td><td>WADOE,WA-DW,DoD-ELAP,NELAP</td></t<>	Silver-107	WADOE,WA-DW,DoD-ELAP,NELAP
Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-82 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Silver-107 WADOE,WA-DW,DoD-ELAP,NELAP Chromium-52 NELAP,WADOE,WA-DW,DoD-ELAP Chromium-53 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP EPA 200.8 UCT-KED in Water Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-61 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,	Chromium-52	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-82 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Silver-107 WADOE,WA-DW,DoD-ELAP,NELAP Chromium-52 NELAP,WADOE,WA-DW,DoD-ELAP Chromium-53 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP EPA 200.8 UCT-KED in Water Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-61 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-117 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-118 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-119 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WA	Chromium-53	NELAP,WADOE,WA-DW,DoD-ELAP
Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-82 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Silver-107 WADOE,WA-DW,DoD-ELAP,NELAP Chromium-52 NELAP,WADOE,WA-DW,DoD-ELAP Chromium-53 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP EPA 200.8 UCT-KED in Water Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-66 NELAP,WADOE,WA-D	Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Selenium-82 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Silver-107 WADOE,WA-DW,DoD-ELAP Chromium-52 NELAP,WADOE,WA-DW,DoD-ELAP Chromium-53 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP EPA 200.8 UCT-KED in Water Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD	Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Silver-107 WADOE,WA-DW,DoD-ELAP,NELAP Chromium-52 NELAP,WADOE,WA-DW,DoD-ELAP Chromium-53 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP EPA 200.8 UCT-KED in Water Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,D	Lead-208	NELAP,WADOE,WA-DW,DoD-ELAP
Silver-107 WADOE,WA-DW,DoD-ELAP,NELAP Chromium-52 NELAP,WADOE,WA-DW,DoD-ELAP Chromium-53 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP EPA 200.8 UCT-KED in Water Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-63 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-64 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-66 NELAP,W	Selenium-82	NELAP,WADOE,WA-DW,DoD-ELAP
Chromium-52 NELAP,WADOE,WA-DW,DoD-ELAP Chromium-53 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP EPA 200.8 UCT-KED in Water Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-1144 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-63 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP<	Selenium-78	NELAP,WADOE,WA-DW,DoD-ELAP
Chromium-53 NELAP,WADOE,WA-DW,DoD-ELAP Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP EPA 200.8 UCT-KED in Water NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67	Silver-107	WADOE,WA-DW,DoD-ELAP,NELAP
Lead-208 NELAP,WADOE,WA-DW,DoD-ELAP EPA 200.8 UCT-KED in Water NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELA	Chromium-52	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 200.8 UCT-KED in Water Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP	Chromium-53	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water WADOE,NELAP,DoD-ELAP,CALAP	Lead-208	NELAP,WADOE,WA-DW,DoD-ELAP
Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water WADOE,NELAP,DoD-ELAP,CALAP	EPA 200.8 UCT-KED in Water	
Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water WADOE,NELAP,DoD-ELAP,CALAP	Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Nickel-60 Nickel-62 Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 Selenium-78 Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 WELAP,WADOE,WA-DW,DoD-ELAP NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 WELAP,WADOE,WA-DW,DoD-ELAP NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 WELAP,WADOE,WA-DW,DOD-ELAP	Cadmium-111	NELAP,WADOE,WA-DW,DoD-ELAP
Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water Mercury WADOE,NELAP,DoD-ELAP,CALAP	Cadmium-114	NELAP,WADOE,WA-DW,DoD-ELAP
Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Mercury WADOE,WA-DW,DoD-ELAP WADOE,NELAP,WADOE,WA-DW,DoD-ELAP WADOE,NELAP,WADOE,WA-DW,DoD-ELAP	Nickel-60	NELAP,WADOE,WA-DW,DoD-ELAP
Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water Mercury WADOE,NELAP,DoD-ELAP,CALAP	Nickel-62	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75a NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water Mercury WADOE,NELAP,DoD-ELAP,CALAP	Zinc-66	NELAP,WADOE,WA-DW,DoD-ELAP
Cadmium-111 NELAP,WADOE,WA-DW,DoD-ELAP Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water Mercury WADOE,NELAP,DoD-ELAP,CALAP	Zinc-67	NELAP,WADOE,WA-DW,DoD-ELAP
Cadmium-114 NELAP,WADOE,WA-DW,DoD-ELAP Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 WELAP,WADOE,WA-DW,DoD-ELAP WHATOR IN Water WADOE,NELAP,DoD-ELAP,CALAP	Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63 NELAP,WADOE,WA-DW,DoD-ELAP Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water Mercury WADOE,NELAP,DoD-ELAP,CALAP	Cadmium-111	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water Mercury WADOE,NELAP,DoD-ELAP,CALAP	Cadmium-114	NELAP,WADOE,WA-DW,DoD-ELAP
Nickel-60 NELAP,WADOE,WA-DW,DoD-ELAP Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water Mercury WADOE,NELAP,DoD-ELAP,CALAP	Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Nickel-62 NELAP,WADOE,WA-DW,DoD-ELAP Selenium-78 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water Mercury WADOE,NELAP,DoD-ELAP,CALAP	Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
Selenium-78NELAP,WADOE,WA-DW,DoD-ELAPZinc-66NELAP,WADOE,WA-DW,DoD-ELAPZinc-67NELAP,WADOE,WA-DW,DoD-ELAPEPA 7470A in WaterWADOE,NELAP,DoD-ELAP,CALAP	Nickel-60	NELAP,WADOE,WA-DW,DoD-ELAP
Zinc-66 NELAP,WADOE,WA-DW,DoD-ELAP Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water Mercury WADOE,NELAP,DoD-ELAP,CALAP	Nickel-62	NELAP,WADOE,WA-DW,DoD-ELAP
Zinc-67 NELAP,WADOE,WA-DW,DoD-ELAP EPA 7470A in Water Mercury WADOE,NELAP,DoD-ELAP,CALAP	Selenium-78	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 7470A in Water Mercury WADOE,NELAP,DoD-ELAP,CALAP	Zinc-66	NELAP,WADOE,WA-DW,DoD-ELAP
Mercury WADOE,NELAP,DoD-ELAP,CALAP	Zinc-67	NELAP,WADOE,WA-DW,DoD-ELAP
	EPA 7470A in Water	
	Mercury	WADOE,NELAP,DoD-ELAP,CALAP
Mercury WADOE,NELAP,DoD-ELAP,CALAP	Mercury	WADOE,NELAP,DoD-ELAP,CALAP

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EPA 8082A in Water

Aroclor 1016	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1016 [2C]	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1221	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1221 [2C]	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1232	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1232 [2C]	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1242	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1242 [2C]	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1248	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1248 [2C]	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1254	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1254 [2C]	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1260	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1260 [2C]	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1262	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1262 [2C]	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1268	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1268 [2C]	WADOE, DoD-ELAP, NELAP, CALAP, ADEC

EPA 8260C in Water

Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE

Acrolein DoD-ELAP,NELAP,CALAP,WADOE

1,1,2-Trichloro-1,2,2-TrifluoroethaneDoD-ELAP,ADEC,NELAP,CALAP,WADOEAcetoneDoD-ELAP,ADEC,NELAP,CALAP,WADOE1,1-DichloroetheneDoD-ELAP,ADEC,NELAP,CALAP,WADOEBromoethaneDoD-ELAP,NELAP,CALAP,WADOEIodomethaneDoD-ELAP,NELAP,CALAP,WADOEMethylene ChlorideDoD-ELAP,ADEC,NELAP,CALAP,WADOE

Acrylonitrile DoD-ELAP,NELAP,CALAP,WADOE Carbon Disulfide DoD-ELAP,NELAP,CALAP,WADOE

trans-1,2-Dichloroethene DoD-ELAP,ADEC,NELAP,CALAP,WADOE

Vinyl Acetate DoD-ELAP, NELAP, CALAP, WADOE

1,1-Dichloroethane DoD-ELAP,ADEC,NELAP,CALAP,WADOE

2-Butanone DoD-ELAP, NELAP, CALAP, WADOE

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2,2-Dichloropropane DoD-ELAP, ADEC, NELAP, CALAP, WADOE cis-1,2-Dichloroethene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Chloroform DoD-ELAP, ADEC, NELAP, CALAP, WADOE Bromochloromethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,1,1-Trichloroethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,1-Dichloropropene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Carbon tetrachloride DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1.2-Dichloroethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE Benzene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Trichloroethene DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,2-Dichloropropane DoD-ELAP, ADEC, NELAP, CALAP, WADOE Bromodichloromethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE Dibromomethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 2-Chloroethyl vinyl ether DoD-ELAP, ADEC, NELAP, CALAP, WADOE 4-Methyl-2-Pentanone DoD-ELAP, NELAP, CALAP, WADOE cis-1,3-Dichloropropene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Toluene DoD-ELAP, ADEC, NELAP, CALAP, WADOE DoD-ELAP,ADEC,NELAP,CALAP,WADOE trans-1,3-Dichloropropene 2-Hexanone DoD-ELAP, NELAP, CALAP, WADOE 1,1,2-Trichloroethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,3-Dichloropropane DoD-ELAP, ADEC, NELAP, CALAP, WADOE Tetrachloroethene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Dibromochloromethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,2-Dibromoethane DoD-ELAP, NELAP, CALAP, WADOE Chlorobenzene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Ethylbenzene DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,1,1,2-Tetrachloroethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE m,p-Xylene DoD-ELAP, ADEC, NELAP, CALAP, WADOE o-Xylene DoD-ELAP, ADEC, NELAP, CALAP, WADOE Styrene DoD-ELAP, NELAP, CALAP, WADOE Bromoform DoD-ELAP, NELAP, CALAP, WADOE 1,1,2,2-Tetrachloroethane DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,2,3-Trichloropropane DoD-ELAP, ADEC, NELAP, CALAP, WADOE trans-1,4-Dichloro 2-Butene DoD-ELAP, ADEC, NELAP, CALAP, WADOE n-Propylbenzene DoD-ELAP, NELAP, CALAP, WADOE Bromobenzene DoD-ELAP, NELAP, CALAP, WADOE Isopropyl Benzene DoD-ELAP, NELAP, CALAP, WADOE 2-Chlorotoluene DoD-ELAP,ADEC,NELAP,CALAP,WADOE

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4-Chlorotoluene DoD-ELAP, ADEC, NELAP, CALAP, WADOE t-Butylbenzene DoD-ELAP, NELAP, CALAP, WADOE 1,3,5-Trimethylbenzene DoD-ELAP, NELAP, CALAP, WADOE 1,2,4-Trimethylbenzene DoD-ELAP, NELAP, CALAP, WADOE s-Butylbenzene DoD-ELAP, NELAP, CALAP, WADOE 4-Isopropyl Toluene DoD-ELAP, NELAP, CALAP, WADOE DoD-ELAP, ADEC, NELAP, CALAP, WADOE 1,3-Dichlorobenzene 1,4-Dichlorobenzene DoD-ELAP, ADEC, NELAP, CALAP, WADOE DoD-ELAP, NELAP, CALAP, WADOE n-Butylbenzene 1,2-Dichlorobenzene DoD-ELAP, ADEC, NELAP, CALAP, WADOE

1,2-Dichlorobenzene DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromo-3-chloropropane DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,4-Trichlorobenzene DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Hexachloro-1,3-Butadiene DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Naphthalene DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichlorobenzene DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dichlorodifluoromethane DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methyl tert-butyl Ether DoD-ELAP,ADEC,NELAP,CALAP,WADOE

n-Hexane WADOE 2-Pentanone WADOE

EPA 8260C-SIM in Water

NELAP, CALAP, WADOE Acrylonitrile NELAP, CALAP, WADOE Vinyl chloride 1,1-Dichloroethene NELAP, CALAP, WADOE cis-1,2-Dichloroethene NELAP, CALAP, WADOE trans-1,2-Dichloroethene NELAP, CALAP, WADOE Trichloroethene NELAP, CALAP, WADOE Tetrachloroethene NELAP, CALAP, WADOE 1,1,2,2-Tetrachloroethane NELAP, CALAP, WADOE 1,2-Dichloroethane NELAP, CALAP, WADOE NELAP, CALAP, WADOE Benzene

EPA 8270D-SIM in Water

Naphthalene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

2-Methylnaphthalene ADEC,DoD-ELAP,NELAP,CALAP

1-Methylnaphthalene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

Biphenyl NELAP

Acenaphthylene ADEC,DoD-ELAP,NELAP,CALAP,WADOE Acenaphthene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

Dibenzofuran ADEC, DoD-ELAP, NELAP, CALAP

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Fluorene ADEC,DoD-ELAP,NELAP,CALAP,WADOE Phenanthrene ADEC,DoD-ELAP,NELAP,CALAP,WADOE Anthracene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

Carbazole NELAP

Fluoranthene ADEC,DoD-ELAP,NELAP,CALAP,WADOE
Pyrene ADEC,DoD-ELAP,NELAP,CALAP,WADOE
Benzo(a)anthracene ADEC,DoD-ELAP,NELAP,CALAP,WADOE
Chrysene ADEC,DoD-ELAP,NELAP,CALAP,WADOE
Benzo(b)fluoranthene ADEC,DoD-ELAP,NELAP,CALAP,WADOE
Benzo(k)fluoranthene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

Benzo(j)fluoranthene ADEC,DoD-ELAP,NELAP,WADOE

Benzo(e)pyrene NELAP

Benzo(a)pyrene ADEC,DoD-ELAP,NELAP,CALAP,WADOE

Perylene ADEC,NELAP,CALAP

Indeno(1,2,3-cd)pyreneADEC,DoD-ELAP,NELAP,CALAP,WADOEDibenzo(a,h)anthraceneADEC,DoD-ELAP,NELAP,CALAP,WADOEBenzo(g,h,i)peryleneADEC,DoD-ELAP,NELAP,CALAP,WADOE

NWTPH-Dx in Water

Diesel Range Organics (C12-C24) DoD-ELAP, NELAP, WADOE Diesel Range Organics (C10-C25) DoD-ELAP, NELAP, WADOE Diesel Range Organics (Tol-C18) DoD-ELAP, NELAP, WADOE Diesel Range Organics (C10-24) DoD-ELAP, NELAP, WADOE Diesel Range Organics (C10-C28) DoD-ELAP, NELAP, WADOE Motor Oil Range Organics (C24-C38) DoD-ELAP, NELAP, WADOE Motor Oil Range Organics (C25-C36) DoD-ELAP, NELAP, WADOE Motor Oil Range Organics (C24-C40) DoD-ELAP, NELAP, WADOE Mineral Spirits Range Organics (Tol-C12) DoD-ELAP, NELAP, WADOE Mineral Oil Range Organics (C16-C28) DoD-ELAP, NELAP, WADOE Kerosene Range Organics (Tol-C18) DoD-ELAP, NELAP, WADOE JP8 Range Organics (C8-C18) DoD-ELAP, NELAP, WADOE JP5 Range Organics (C10-C16) DoD-ELAP, NELAP, WADOE JP4 Range Organics (Tol-C14) DoD-ELAP, NELAP, WADOE Jet-A Range Organics (C10-C18) DoD-ELAP, NELAP, WADOE Creosote Range Organics (C12-C22) DoD-ELAP, NELAP, WADOE Bunker C Range Organics (C10-C38) DoD-ELAP, NELAP, WADOE Stoddard Range Organics (C8-C12) DoD-ELAP, NELAP, WADOE Transformer Oil Range Organics (C12-C28) DoD-ELAP, NELAP, WADOE

NWTPHg in Water

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Gasoline Range Organics (Tol-Nap)

Gasoline Range Organics (2MP-TMB)

Gasoline Range Organics (Tol-C12)

Gasoline Range Organics (Tol-C12)

WADOE,DoD-ELAP

WADOE,DoD-ELAP

WADOE,ADEC,DoD-ELAP

Gasoline Range Organics (C5-C12)

WADOE,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	UST-033	05/06/2017
CALAP	California Department of Public Health CAELAP	2748	02/28/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	03/30/2017
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006	05/11/2017
WADOE	WA Dept of Ecology	C558	06/30/2017
WA-DW	Ecology - Drinking Water	C558	06/30/2017



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Notes and Definitions

* Flagged value is not within established control limits.

D The reported value is from a dilution

D1 Surrogate was not detected due to sample extract dilution

E The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)

J Estimated concentration value detected below the reporting limit.

NRS This surrogate not reported due to chromatographic interference

U This analyte is not detected above the applicable reporting or detection limit.

Y1 Raised reporting limit due to interference

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

[2C] Indicates this result was quantified on the second column on a dual column analysis.



01 February 2017

Nick Garson The Boeing Company PO Box 3707 M/S 1W-12 Seattle, WA 98124

RE: Boeing KSC RI

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s) Associated SDG ID(s) 17A0322

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the reqirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its

Kelly Bottem, Client Services Manager

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around	Turn-around Requested:	SANSAN	S	Page:	ō	-		Analytica Analytica	Analytical Resources, Incorporated Analytical Chemists and Consultants	orated sultants
ARI Client Company: ARI Client Company:	MSON	Phone:			Date: 126/17	7 Present?	ent?		Tukwila, 1	4611 South 134th Place, Suite 100 Tukwila, WA 98168 206-695-6200 206-695-6201 (fax)	(fax)
Client Contact: THSY4 CAPT					No. of Coolers:	Cooler Temps:	es:		www.arilabs.com	abs.com	(Vin)
Client Project Name:	SC. RT						Analysis Requested	sted		Notes/Comments	6
Client Project #:	Samplers:	icarly			70-PX 2017						
Sample ID	Date	Time	Matrix	No. Containers	MUNTA						
KSC - 589 - GW	1/22/17	2045	MATE	2	×						
MSC- 5B10-GW	4	1930	_	4	×						
166-5B11-6W		1745		2	~						
KSC-5B12-6W	1	1615	*	2	×						
Comments/Special Instructions	Relinquished W. (Signature)	" les		Received by: (Signature)	Vatate	WILL	Relinquished by: (Signature)	THIN MILES	Received by: (Signature)	withren Hell	97
	Printed Name:	2000		Printed Name:	ya Gree	6	Printed Name: Matasyk	Chross	Printed Name:	Britines Hall	
	Company			Company:	, ·	,	Company: '		Company:	- 17	
	Date & Time:	Ы	1355	Date & Time:	7 (355		Date & Time: 17	1413	Date & Time:	17 1413	

meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate refention schedules have been established by work-order or contract.



Cooler Receipt Form

ARI Client: Boeing - Nick Gat	50n	Project Name: Boeing	KSC RT
COC No(s):	NA	Delivered by: Fed-Ex UPS Cou	
Assigned ARI Job No: 17A0322			
Preliminary Examination Phase:		Tracking No:	(NA)
Were intact, properly signed and dated custody	seals attached to	the outside of to poole ?	
Were custody papers included with the cooler?			YES (NO)
			YES NO
Were custody papers properly filled out (ink, sig Temperature of Cooler(s) (°C) (recommended 2 Time:(4;13	.0-6.0 °C for cher	nistry) 2.3	YES NO
If cooler temperature is out of compliance fill out	t form 00070F		Temp Gun ID#: 005276
Cooler Accepted by:		Date: 1/26/17 Time	
	custody forms	and attach all shipping documents	e: 14:13
Log-In Phase:		and an emploing documents	
Was a temperature blank included in the cooler	?		YES NO
What kind of packing material was used?	Bubble Wrap	Wet Ice Gel Packs Bangies Foam	YES NO
Was sufficient ice used (if appropriate)?		Daggies Foam	—
Were all bottles sealed in individual plastic bags			NA YES NO
Did all bottles arrive in good condition (unbroken	1)3	***************************************	YES NO
Were all bottle labels complete and legible?			YES NO
Did the number of containers listed on COC mat		***************************************	YES NO
Did all bottle labels and tags acres with and the	on with the numb	er of containers received?	YES NO
Did all bottle labels and tags agree with custody	papers?	***************************************	YES (NO)
Were all bottles used correct for the requested a	nalyses?		YES NO
Do any of the analyses (bottles) require preserve	ation? (attach pre-	servation sheet, excluding VOCs)	NA YES NO
Were all VOC vials free of air bubbles?			NA YES NO
Was sufficient amount of sample sent in each bo			YES NO
Date VOC Trip Blank was made at ARI		***************************************	(NA)
	Date/Time:		Split by:
Samples Logged by: B.H.	Date:		14:55
		of discrepancies or concerns **	
Sample ID on Bottle Sample	ID on COC	0	
Gample	15 011 000	Sample ID on Bottle	Sample ID on COC
	1		
	34		
Additional Notes, Discrepancies, & Resolution	200		
one both of sample KS	C-SDIO	Gilliant III	A STATE OF THE STA
site name location on t	0-2810-	bw had the same	ble hama in the
is call on a	the bottle	label.	
By: 13 H Date: 1/2/a/	1,0		
		E W X # - F	
l e-Terrer II in	E Lea Poblicies	Small → "sm" (<2 mm)	
. 6		Peabubbles > "pb" (2 to < 4 mm)	
		Large → "lg" (4 to < 6 mm)	
		Headspace → "hs" (>6 mm)	

The Boeing CompanyProject:Boeing KSC RIPO Box 3707 M/S 1W-12Project Number:Boeing Kent SamplingReported:Seattle WA, 98124Project Manager:Nick Garson01-Feb-2017 14:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
KSC-SB9-GW	17A0322-01	Water	25-Jan-2017 20:45	26-Jan-2017 14:13
KSC-SB10-GW	17A0322-02	Water	25-Jan-2017 19:30	26-Jan-2017 14:13
KSC-SB11-GW	17A0322-03	Water	25-Jan-2017 17:45	26-Jan-2017 14:13
KSC-SB12-GW	17A0322-04	Water	25-Jan-2017 16:15	26-Jan-2017 14:13



The Boeing Company Project: Boeing KSC RI

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle WA, 98124 Project Manager: Nick Garson 01-Feb-2017 14:01

Case Narrative

Mineral Oil Range Organics - WA-Ecology Method NW-TPHDx

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits for the disel range organics and not reported with this set of data as the client requested mineral oil only.



The Boeing Company Project: Boeing KSC RI
PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sam

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle WA, 98124 Project Manager: Nick Garson 01-Feb-2017 14:01

KSC-SB9-GW 17A0322-01 (Water)

Petroleum Hydrocarbons

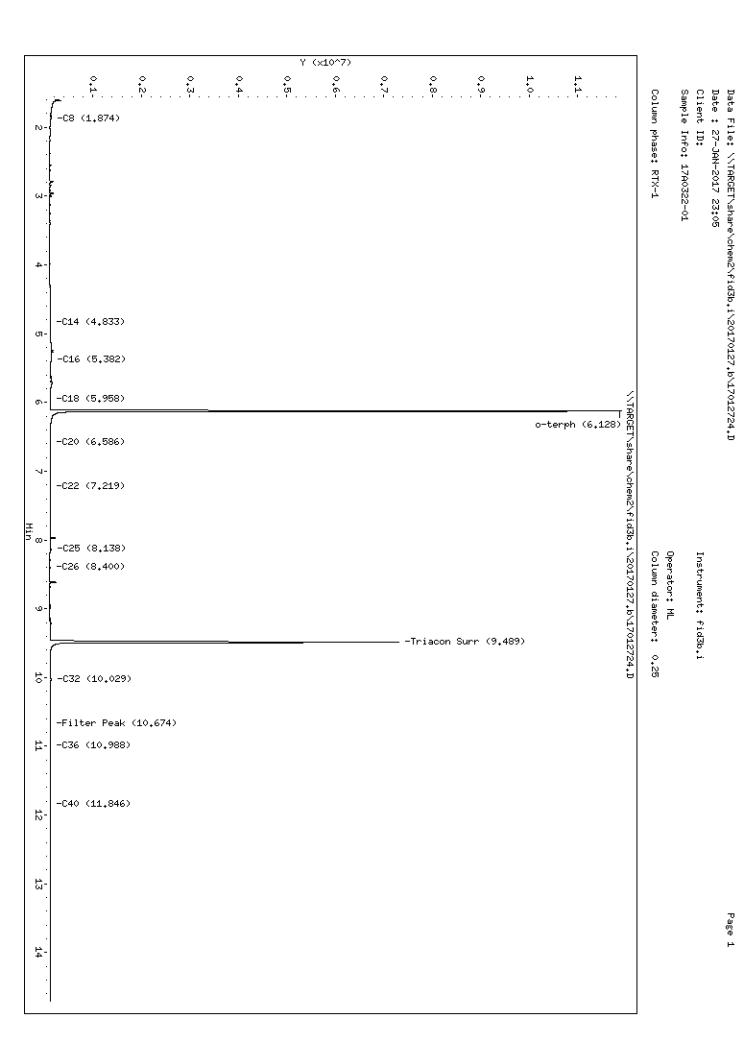
 Method: NWTPH-Dx
 Sampled: 01/25/2017 20:45

 Instrument: FID3
 Analyzed: 27-Jan-2017 23:05

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0552 Sample Size: 500 mL Prepared: 27-Jan-2017 Final Volume: 1 mL

Reporting CAS Number Dilution Limit Units Analyte Result Notes Mineral Oil Range Organics (C16-C28) 0.200 ND mg/L U Surrogate: o-Terphenyl 50-150 % 88.0 %



Analytical Resources Inc. TPH Quantitation Report

Data file: 20170127.b/17012724.D ARI ID: 17A0322-01

Method: 20170127.b\FID3TPH.m Client ID:

Instrument: fid3b.i Injection: 27-JAN-2017 23:05
Operator: ML Dilution Factor: 1

Report Date: 01/30/2017 Macro: FID3 011117

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.611	0.009	229804	 521433	 WATPHG	(Tol-C12)	 1364983	62.8
C8	1.874	-0.018	32311	100275	WATPHD	(C12-C24)	3174354	18.0
C10					WATPHM	(C24-C38)	1462888	9.8
C12								
C14	4.833	0.031	18092	27037	1			
C16	5.382	0.002	32787	67814	1			
C18	5.958	-0.008	22104	49685	1			
C20	6.586	-0.004	20053	28135	MIN.OIL	(C16-C28)	4322074	19.7
C22	7.219	0.000	25100	49183	1			
C24								
C25	8.138	0.012	34590	54045				
C26	8.400	-0.012	11392	26740				
C28								
C32	10.029	0.031	31953	151165	1			
C34					1			
Filter Peak	10.674	-0.037	19152	57669	1			
C36	10.988	0.036	15709	47584				
o-terph	6.128	-0.007	11806519	9830897	1			
Triacon Surr	9.489	-0.011	7203916	7877534				

Range Times: NW Diesel(4.184 - 7.881) NW Gas(1.552 - 4.184) NW M.Oil(7.881 - 11.448)

AK102(3.238 - 8.076) AK103(8.076 - 11.002) Jet A(3.238 - 6.017)

Surrogate	Area	Amount	%Rec
o-Terphenyl	9830897	39.6	88.1
Triacontane	7877534	39.4	87.5

Analyte	RF	Curve Date
o-Terph Surr Triacon Surr	247956.6 199968.6	11-JAN-2017 11-JAN-2017
Gas	21747.6	xx-xx-xxxx
Diesel	176632.0	11-JAN-2017
Motor Oil	149513.0	11-JAN-2017
Min Oil	219047.1	27-JAN-2017



The Boeing Company Project: Boeing KSC RI
PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle WA, 98124 Project Manager: Nick Garson 01-Feb-2017 14:01

KSC-SB10-GW 17A0322-02 (Water)

Petroleum Hydrocarbons

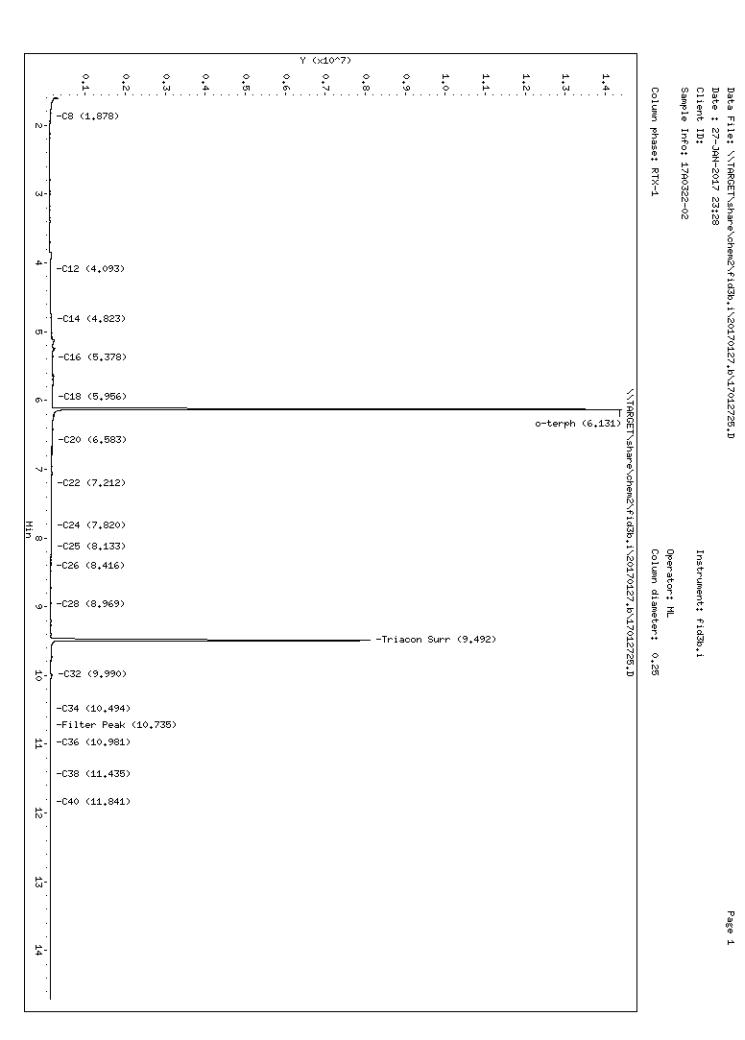
 Method: NWTPH-Dx
 Sampled: 01/25/2017 19:30

 Instrument: FID3
 Analyzed: 27-Jan-2017 23:28

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0552 Sample Size: 500 mL Prepared: 27-Jan-2017 Final Volume: 1 mL

Reporting CAS Number Dilution Limit Units Analyte Result Notes Mineral Oil Range Organics (C16-C28) 0.200 ND mg/L U Surrogate: o-Terphenyl 50-150 % 104 %



Analytical Resources Inc. TPH Quantitation Report

Data file: 20170127.b/17012725.D ARI ID: 17A0322-02

Method: 20170127.b\FID3TPH.m Client ID:

Instrument: fid3b.i Injection: 27-JAN-2017 23:28

Operator: ML Dilution Factor: 1

Report Date: 01/30/2017 Macro: FID3 011117

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.609	0.007	204600	436998	WATPHG	(Tol-C12)	1742338	80.1
C8	1.878	-0.013	26813	59507	WATPHD	(C12-C24)	12373930	70.1
C10					WATPHM	(C24-C38)	4922805	32.9
C12	4.093	-0.041	19239	38979	1			
C14	4.823	0.021	42656	121891	1			
C16	5.378	-0.002	81876	138735	1			
C18	5.956	-0.010	77051	157282	1			
C20	6.583	-0.007	67249	103068	MIN.OIL	(C16-C28)	13571137	62.0 M
C22	7.212	-0.007	55431	92217				
C24	7.820	-0.011	45414	72087				
C25	8.133	0.007	48810	109581	1			
C26	8.416	0.005	35317	53006				
C28	8.969	0.011	34314	51716	1			
C32	9.990	-0.008	74775	254380				
C34	10.494	0.007	26444	40002				
Filter Peak	10.735	0.024	22959	35618				
C36	10.981	0.029	22290	63538				
o-terph	6.131	-0.003	14211255	11570058				
Triacon Surr	9.492	-0.008	8017847	9230097	1			

Range Times: NW Diesel(4.184-7.881) NW Gas(1.552-4.184) NW M.Oil(7.881-11.448) AK102(3.238-8.076) AK103(8.076-11.002) Jet A(3.238-6.017)

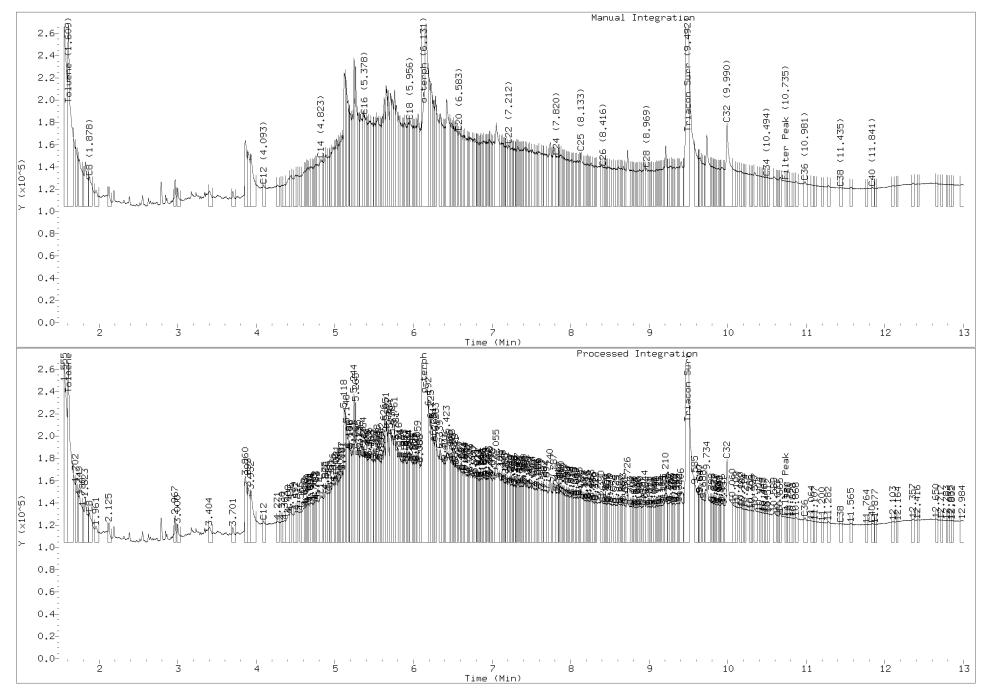
Surrogate	Area	Amount	%Rec
o-Terphenyl	 11570058	46.7	103.7
Triacontane	9230097	46.2	102.6

Analyte	RF	Curve Date
o-Terph Surr Triacon Surr	247956.6 199968.6	11-JAN-2017 11-JAN-2017
Gas	21747.6	xx-xx-xxxx
Diesel	176632.0	11-JAN-2017
Motor Oil	149513.0	11-JAN-2017
Min Oil	219047.1	27-JAN-2017

TPH Manual Integrations Report

Datafile: FID3B, 20170127.b/17012725.D Injection: 27-JAN-2017 23:28

Lab ID:17A0322-02





The Boeing Company Project: Boeing KSC RI

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle WA, 98124 Project Manager: Nick Garson 01-Feb-2017 14:01

KSC-SB11-GW 17A0322-03 (Water)

Petroleum Hydrocarbons

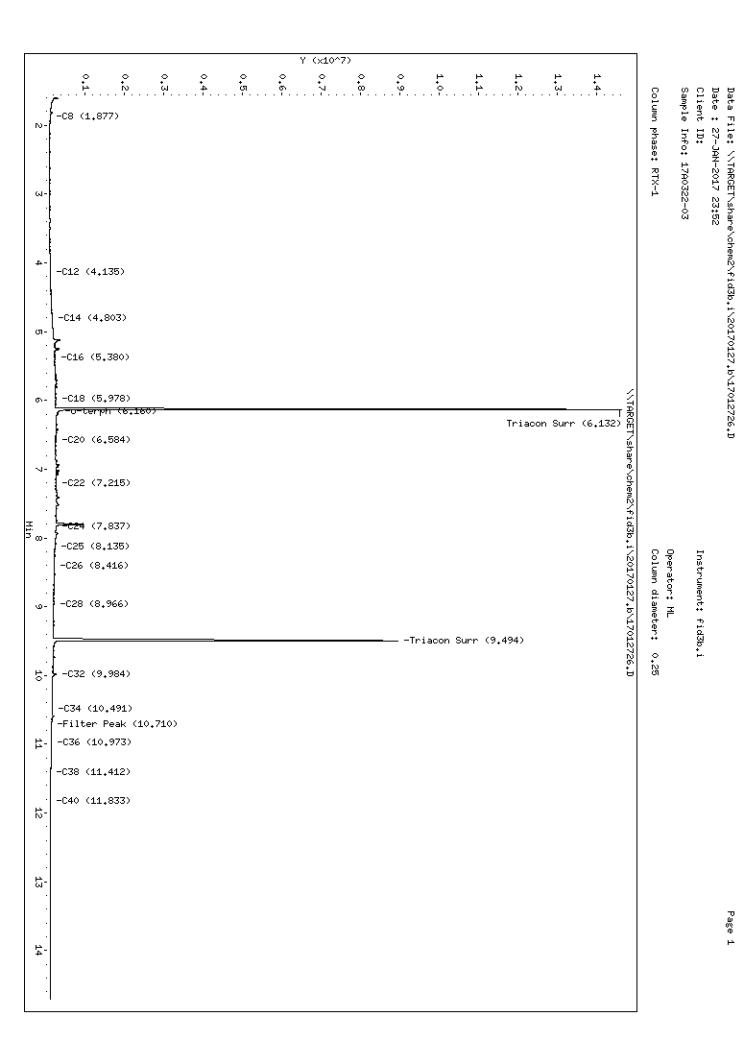
 Method: NWTPH-Dx
 Sampled: 01/25/2017 17:45

 Instrument: FID3
 Analyzed: 27-Jan-2017 23:52

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0552 Sample Size: 500 mL Prepared: 27-Jan-2017 Final Volume: 1 mL

Reporting CAS Number Dilution Limit Units Analyte Result Notes Mineral Oil Range Organics (C16-C28) 0.200 0.325 mg/L HC ID: MINERAL RANGE ORGANICS Surrogate: o-Terphenyl 50-150 % 120 %



Analytical Resources Inc. TPH Quantitation Report

Data file: 20170127.b/17012726.D ARI ID: 17A0322-03

Method: 20170127.b\FID3TPH.m Client ID:

Instrument: fid3b.i Injection: 27-JAN-2017 23:52
Operator: ML Dilution Factor: 1

Operator: ML Dilu Report Date: 01/30/2017

Macro: FID3 011117

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.610	0.008	 207356	479849	WATPHG	(Tol-C12)	1385023	===== 63.7
C8	1.877	-0.014	32117	101346	WATPHD	(C12-C24)	29735628	168.3
C10					WATPHM	(C24-C38)	19143532	128.0
C12	4.135	0.001	20427	32268	1			
C14	4.803	0.001	69849	68556				
C16	5.380	-0.001	141319	155489				
C18	5.978	0.011	176096	372817				
C20	6.584	-0.006	161930	142376	MIN.OIL	(C16-C28)	35629790	162.7 M
C22	7.215	-0.004	177749	314245				
C24	7.837	0.007	172794	158205				
C25	8.135	0.009	149487	286609				
C26	8.416	0.005	129554	163862	1			
C28	8.966	0.008	110403	231121				
C32	9.984	-0.014	173443	447900				
C34	10.491	0.005	66120	32810	1			
Filter Peak	10.710	-0.001	58562	25486				
C36	10.973	0.021	54278	133410				
o-terph	6.132	-0.002	14521718	13397298	1			
Triacon Surr	9.494	-0.006	8749157	10238782	1			

Range Times: NW Diesel(4.184-7.881) NW Gas(1.552-4.184) NW M.Oil(7.881-11.448) AK102(3.238-8.076) AK103(8.076-11.002) Jet A(3.238-6.017)

Surrogate	Area	Amount	%Rec
o-Terphenyl	13397298	54.0	120.1
Triacontane	10238782	51.2	113.8

Analyte	RF	Curve Date
o-Terph Surr Triacon Surr	247956.6 199968.6	11-JAN-2017 11-JAN-2017
Gas	21747.6	xx-xx-xxxx
Diesel	176632.0	11-JAN-2017
Motor Oil	149513.0	11-JAN-2017
Min Oil	219047.1	27-JAN-2017



The Boeing Company Project: Boeing KSC RI
PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Samp

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle WA, 98124 Project Manager: Nick Garson 01-Feb-2017 14:01

KSC-SB12-GW 17A0322-04 (Water)

Petroleum Hydrocarbons

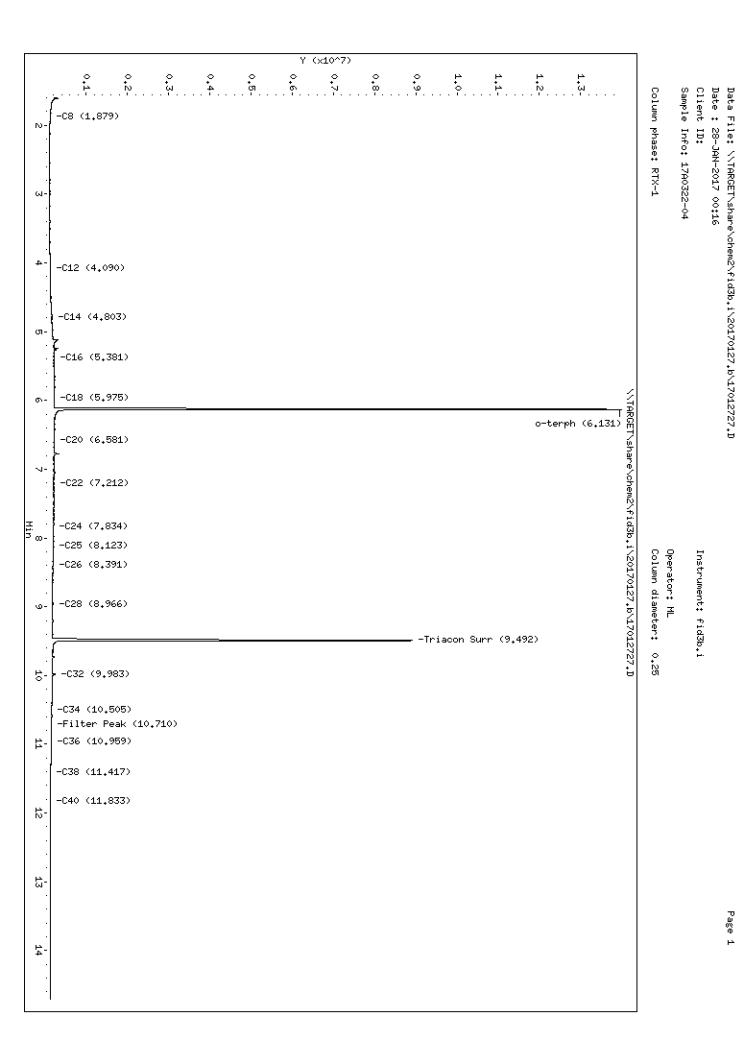
 Method: NWTPH-Dx
 Sampled: 01/25/2017 16:15

 Instrument: FID3
 Analyzed: 28-Jan-2017 00:16

Sample Preparation: Preparation Method: EPA 3510C SepF

Preparation Batch: BFA0552 Sample Size: 500 mL Prepared: 27-Jan-2017 Final Volume: 1 mL

Reporting CAS Number Dilution Limit Units Analyte Result Notes Mineral Oil Range Organics (C16-C28) 0.200 0.216 mg/L HC ID: MINERAL RANGE ORGANICS Surrogate: o-Terphenyl 50-150 % 107 %



Analytical Resources Inc. TPH Quantitation Report

Data file: 20170127.b/17012727.D ARI ID: 17A0322-04

Method: 20170127.b\FID3TPH.m Client ID:

Instrument: fid3b.i Injection: 28-JAN-2017 00:16

Operator: ML Dilution Factor: 1

Report Date: 01/30/2017 Macro: FID3 011117

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.610	0.008	217799	377939	WATPHG	(Tol-C12)	 1291099	59 . 4
C8	1.879	-0.013	29751	87560	WATPHD	(C12-C24)	20783089	117.7
C10					WATPHM	(C24-C38)	14065327	94.1
C12	4.090	-0.045	22815	73690	1			
C14	4.803	0.001	58449	58225				
C16	5.381	0.000	118097	139660				
C18	5.975	0.008	115162	75056				
C20	6.581	-0.009	110858	212672	MIN.OIL	(C16-C28)	23649542	108.0 M
C22	7.212	-0.008	107628	165765				
C24	7.834	0.003	104468	183161				
C25	8.123	-0.003	93319	54785				
C26	8.391	-0.021	84438	115194				
C28	8.966	0.008	84777	122265				
C32	9.983	-0.015	144788	359606				
C34	10.505	0.019	55901	60734				
Filter Peak	10.710	-0.002	50976	81607				
C36	10.959	0.007	44595	26327				
o-terph	6.131	-0.004	13752588	11915484				
Triacon Surr	9.492	-0.008	8715516	9866943				

Range Times: NW Diesel(4.184 - 7.881) NW Gas(1.552 - 4.184) NW M.Oil(7.881 - 11.448)

AK102(3.238 - 8.076) AK103(8.076 - 11.002) Jet A(3.238 - 6.017)

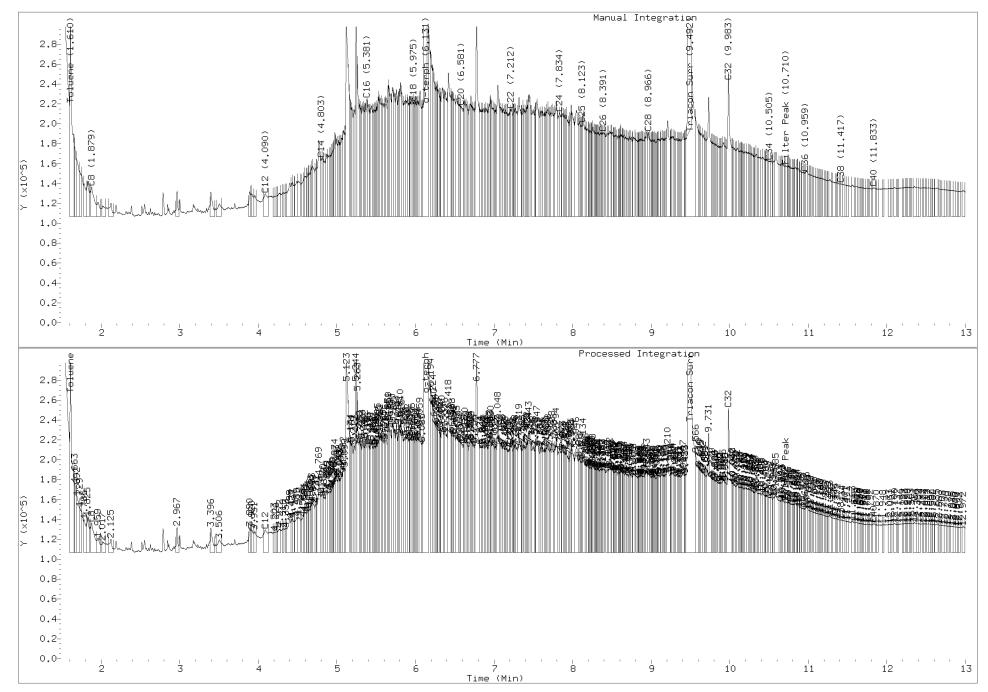
Surrogate	Area	Amount	%Rec
o-Terphenyl	 11915484	 48.1	106.8
Triacontane	9866943	49.3	100.6

Analyte	RF	Curve Date
o-Terph Surr Triacon Surr	247956.6 199968.6	11-JAN-2017 11-JAN-2017
Gas	21747.6	xx-xx-xxx
Diesel	176632.0	11-JAN-2017
Motor Oil	149513.0	11-JAN-2017
Min Oil	219047.1	27-JAN-2017

TPH Manual Integrations Report

Datafile: FID3B, 20170127.b/17012727.D Injection: 28-JAN-2017 00:16

Lab ID:17A0322-04





The Boeing Company Project: Boeing KSC RI

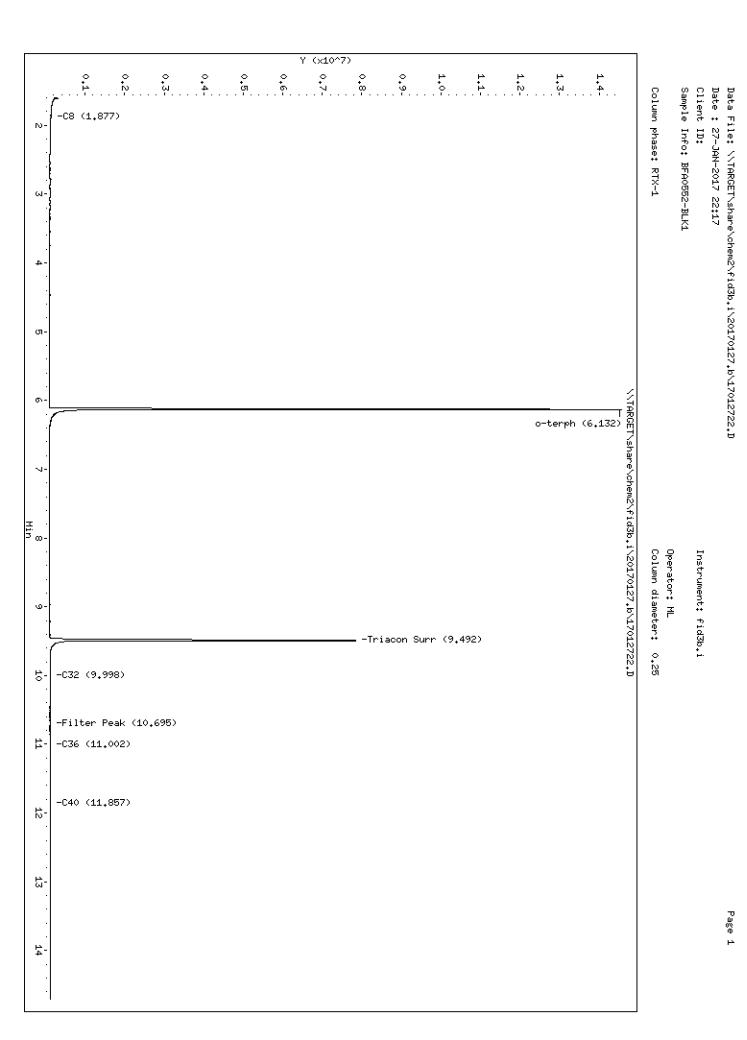
PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle WA, 98124 Project Manager: Nick Garson 01-Feb-2017 14:01

Petroleum Hydrocarbons - Quality Control

Batch BFA0552 - EPA 3510C SepF

Instrument: FID3

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFA0552-BLK1)			Prepa	ared: 27-Jan-	-2017 Ana	lyzed: 27-J	an-2017 22:	17		
Mineral Oil Range Organics (C16-C28)	ND	0.200	mg/L							U
Surrogate: o-Terphenyl	0.102		mg/L	0.0900		113	50-150			



Analytical Resources Inc. TPH Quantitation Report

Data file: 20170127.b/17012722.D ARI ID: BFA0552-BLK1

Method: 20170127.b\FID3TPH.m

Instrument: fid3b.i Injection: 27-JAN-2017 22:17 Operator: ML Dilution Factor: 1

Report Date: 01/30/2017 Macro: FID3 011117

FID:3B RESULTS

Client ID:

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.610	0.008	 220247	========== 567976	WATPHG	 (Tol-C12)	======================================	96.3
C8	1.877	-0.015	53903	144504	WATPHD	(C12-C24)	379376	2.1
C10					WATPHM	(C24-C38)	896362	6.0
C12					1			
C14					1			
C16								
C18					1			
C20					MIN.OIL	(C16-C28)	4274643	19.5
C22					1			
C24								
C25					1			
C26					1			
C28					1			
C32	9.998	-0.000	14535	36609	1			
C34					1			
Filter Peak	10.695	-0.017	13893	42375	1			
C36	11.002	0.049	14436	44688	1			
o-terph	6.132	-0.003	14474127	12644521				
Triacon Surr	9.492	-0.008	7759180	8711096	1			

Range Times: NW Diesel(4.184 - 7.881) NW Gas(1.552 - 4.184) NW M.Oil(7.881 - 11.448)

AK102(3.238 - 8.076) AK103(8.076 - 11.002) Jet A(3.238 - 6.017)

Surrogate	Area	Amount	%Rec
o-Terphenyl	 12644521	 51.0	113.3
Triacontane	8711096	43.6	96.8

Analyte	RF	Curve Date
o-Terph Surr Triacon Surr	247956.6 199968.6	11-JAN-2017 11-JAN-2017
Gas	21747.6	xx-xx-xxxx
Diesel	176632.0	11-JAN-2017
Motor Oil	149513.0	11-JAN-2017
Min Oil	219047.1	27-JAN-2017





The Boeing CompanyProject:Boeing KSC RIPO Box 3707 M/S 1W-12Project Number:Boeing Kent SamplingReported:Seattle WA, 98124Project Manager:Nick Garson01-Feb-2017 14:01

Certified Analyses included in this Report

Analyte Cert	tifications
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NWTPH-Dx in Water	
Diesel Range Organics (C12-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C25)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C28)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C38)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C25-C36)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C40)	DoD-ELAP,NELAP,WADOE
Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,NELAP,WADOE
Mineral Oil Range Organics (C16-C28)	DoD-ELAP,NELAP,WADOE
Kerosene Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
JP8 Range Organics (C8-C18)	DoD-ELAP,NELAP,WADOE
JP5 Range Organics (C10-C16)	DoD-ELAP,NELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,NELAP,WADOE
Jet-A Range Organics (C10-C18)	DoD-ELAP,NELAP,WADOE
Creosote Range Organics (C12-C22)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,NELAP,WADOE
Stoddard Range Organics (C8-C12)	DoD-ELAP,NELAP,WADOE
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,NELAP,WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	UST-033	05/06/2017
CALAP	California Department of Public Health CAELAP	2748	02/28/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	03/30/2017
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006	05/11/2017
WADOE	WA Dept of Ecology	C558	06/30/2017
WA-DW	Ecology - Drinking Water	C558	06/30/2017



The Boeing Company Project: Boeing KSC RI

PO Box 3707 M/S 1W-12 Project Number: Boeing Kent Sampling Reported:
Seattle WA, 98124 Project Manager: Nick Garson 01-Feb-2017 14:01

Notes and Definitions

U This analyte is not detected above the applicable reporting or detection limit.

* Flagged value is not within established control limits.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

[2C] Indicates this result was quantified on the second column on a dual column analysis.



16 May 2017

Lindsey Mahrt The Boeing Company P.O. Box 3707 MS 1W-12 Seattle, WA 98124

RE: Boeing Kent Sediments

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)

Associated SDG ID(s)

17E0094

N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the reqirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kelly Bottem, Client Services Manager

PJLA Testing correditation # 66169

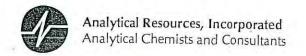
4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Request
Analysis
Chain of Custody Record & Laboratory Analysis Request
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Record
Custody
of
Chain (

ARI Assigned Number:	Turn-around	Turn-around Requested:	MONM		Page:	~	of Of		Analy	Analytical Chemists and Consultants
ARI Client Company: AOF		Phone:	Phone: 166-34(6)	9	Date	11/	Ice Present?		Tukwi 706-6	4611 South 134th Place, Suite 100 Tukwila, WA 98168 206-695-6200-206-695-6201 (fax)
Olient Contact: TRITH GRAY					No. of Coolers:		Cooler Temps:		WWW.	www.arilabs.com
ient Project Name:	" C tons	1 1/1					Anal	Analysis Requested		Notes/Comments
Olient Project #: χ - ∞ χ Samplers: χ - χ	Samplers:	Samplers: On K 1979K	1000			415-		12/12/12/12/12/12/12/12/12/12/12/12/12/1		
0			2			0D 2	7.	100		
Sample ID	Date	Time	Matrix	No. Containers	TWV	HTY 128	42°C 1457 1457 1457 1457 1457	7209 1986 11 90		
KK-0F-16-0.3	5/4/17	1045	7199	7	X	X	×			
WSC-OF-DP-0.3	5/1	1210			X	×	\ \ \	<u> </u>		
	1 ,		t	\						
					*					
Comments/Special Instructions	Refinquished by: (Signature)	1		Received by:	7	Jun		Relinquished by: (Signature)	Received by (Signature)	by:
	Printed Name:	aren		Printed Name:	J. S.	Mork	1	Printed Name:	Printed Name:	ате:
	Company			Company:	ARI		Company:	any:	Сотрапу:	
	Date & Time:	1/1	(2)	Date & Time:	14/201	& Time: 5/4/2017 (1000		Date & Time:	Date & Time	пе:

said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

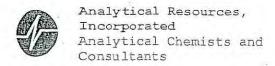


Cooler Receipt Form

ARI Client: DOF		Project Name: Project	a Kents	pace Ce	nter
COC No(s):	NA		0		
Assigned ARI Job No: 17E0094		Delivered by: Fed-Ex UPS C			
Preliminary Examination Phase:	÷0	Tracking No:	9		NA
Were intact, properly signed and dated custody sea	als attached to	the outside of to cooler?		YES	NO
Were custody papers included with the cooler?				150	(NO)
Were custody papers properly filled out (ink, signed				(153)	NO
Temperature of Cooler(s) (°C) (recommended 2.0-6	6.0 °C for cher	mistry) o		YES	NO
Time:		8.6			
If cooler temperature is out of compliance fill out for	m 00070F	1 P	Temp Gun II	D#: 10053	206
Cooler Accepted by:			me: 1600	1	
Complete cus	stody forms a	and attach all shipping documen	ts		
Log-In Phase:					
Was a temperature blank included in the cooler?				VEO	
What kind of packing material was used?			m Plack Danes	YES	(NO)
Was sufficient ice used (if appropriate)?		Coll Boys Daggles Pos			
Were all bottles sealed in individual plastic bags?			NA	YES	NO
Did all bottles arrive in good condition (unbroken)? .				YES	NO
Were all bottle labels complete and legible?				YES	NO
Did the number of containers listed on COC match v	with the numb	er of containers received?		YES	NO
Did all bottle labels and tags agree with custody paper	ners?	cr of containers received?	144	YES	NO
Were all bottles used correct for the requested analy	vses?		•	YES	NO
Do any of the analyses (bottles) require preservation	n? (attach nra	Constion sheet and Jan 1900 1		YES	NO
Were all VOC vials free of air bubbles?	ii: (attacii pie	servation sheet, excluding VOCs)		YES	NO
Was sufficient amount of sample sent in each bottle			NA	YES	NO
Date VOC Trip Blank was made at ARI				YES	NO
The first of the control of the cont		Equipment:	(NA)	-	
				Split by:	
Samples Logged by:	Date:	5/5/17 Time	9:4-)	
		r of discrepancies or concerns **		1	
		-,			
Sample ID on Bottle Sample ID	on COC	Sample ID on Bottle	1 6-4	-I- ID - 60	
KSC-0F16-0.3 KSC-0F-1			Sam	ple ID on CO	JC
KSC-OF DP-0-3 KSC-OF-D	The second secon				
	0.0)			
	4)				
Additional Notes, Discrepancies, & Resolutions:		1			
Sampling year missing f		bels.			
0,					
					H = 1 ~
By: B . H . Date: 5/5/	7				
Small his Buibbles		Small → "sm" (<2 mm)			
-2mm 2-4 mm >4 m	- Properties	Peabubbles > "pb" (2 to <4 mm)			
		Large > "lg" (4 to < 6 mm)			
		Headspace → "hs" (>6 mm)			

0016F 3/2/10 Cooler Receipt Form

Revision 014



Cooler Temperature Compliance Form

17E009	4		
Cooler#:	Tempe	rature(°C): 8.	
Sample ID		Bottle Count	Bottle Type
Samples	received above		9
600			
G C			
			4
4		-	
1:0	-		*
			HC HC
Cooler#:	Tempe	rature(°C):	
Sample ID		Bottle Count	Bottle Type
÷ 141			
			4
		146	
Cooler#:	Temper	rature(°C):	
Sample ID		Bottle Count	Bottle Type
		1	
1			
Cooler#:	7	4 (0.0)	
Sample ID	iemper	ature(°C): Bottle Count	D 10 2
Gampio 15		Bottle Count	Bottle Type
	•	ů.	
91			
		±	
		**	
		440	
Completed by:	PM	4	
completed by.	PM	Date	: 5/4/2017 Time: 1,1000



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
KSC-0F-16-0.3	17E0094-01	Solid	04-May-2017 10:45	04-May-2017 16:00
KSC-0F-DP-0.3	17E0094-02	Solid	04-May-2017 12:10	04-May-2017 16:00

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Case Narrative

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270D-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx (Ac/Si cleaned)

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Total Metals - EPA Method 6020A and 7471

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Analytical Resources, Inc.

The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-16-0.3 17E0094-01 (Solid)

Semivolatile Organic Compounds - SIM

 Method: EPA 8270D-SIM
 Sampled: 05/04/2017 10:45

 Instrument: NT8
 Analyzed: 15-May-2017 14:44

Sample Preparation:

Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BFE0259
Prepared: 10-May-2017
Sample Size: 13.23 g (wet)
Prepared: 10-May-2017
Final Volume: 0.5 mL

Dry Weight: 10.59 g
% Solids: 80.04

Sample Cleanup: Cleanup Method: Silica Gel

Cleanup Batch: CFE0105 Initial Volume: 0.5 mL Cleaned: 15-May-2017 Final Volume: 0.5 mL

			Detection	Reporting			
Analyte	CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.20	4.72	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	1.04	4.72	2.38	ug/kg	J
1-Methylnaphthalene	90-12-0	1	0.38	4.72	ND	ug/kg	U
Acenaphthylene	208-96-8	1	1.02	4.72	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.54	4.72	ND	ug/kg	U
Dibenzofuran	132-64-9	1	1.30	4.72	ND	ug/kg	U
Fluorene	86-73-7	1	0.60	4.72	3.14	ug/kg	J
Phenanthrene	85-01-8	1	0.68	4.72	33.6	ug/kg	
Anthracene	120-12-7	1	0.82	4.72	6.04	ug/kg	
Fluoranthene	206-44-0	1	0.44	4.72	113	ug/kg	
Pyrene	129-00-0	1	0.59	4.72	101	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.78	4.72	47.6	ug/kg	
Chrysene	218-01-9	1	0.99	4.72	97.3	ug/kg	
Benzofluoranthenes, Total		1	2.84	9.44	158	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.58	4.72	62.3	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.99	4.72	70.5	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.84	4.72	16.8	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	1.01	4.72	87.9	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				32-120 %	62.6	%	
Surrogate: Dibenzo[a,h]anthracene-d14				21-133 %	83.5	%	
Surrogate: Fluoranthene-d10				36-134 %	74.6	%	

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

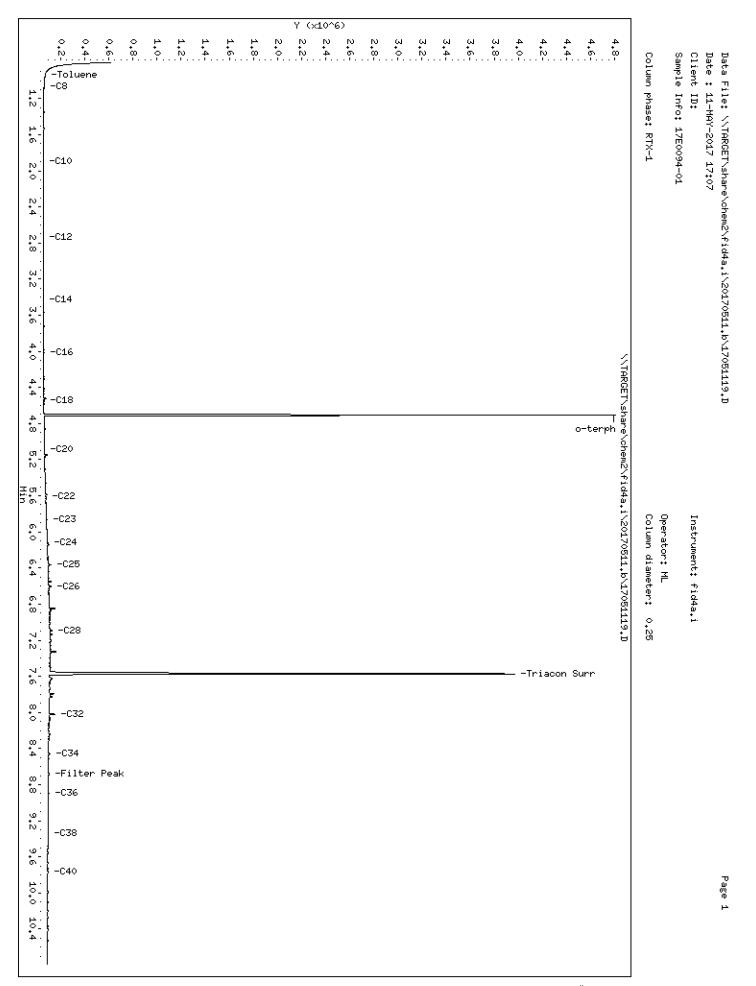
P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-16-0.3 17E0094-01 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx						Sa	mpled: 05/	04/2017 10:45
Instrument: FID4						Analy	yzed: 11-M	ay-2017 17:07
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BFE0272 Prepared: 10-May-2017	Sample Size: 1 Final Volume:	· /		-	y Weight:8.12 Solids: 80.04	2 g	
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CFE0084 Cleaned: 11-May-2017	Initial Volume: Final Volume:						
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CFE0083 Cleaned: 11-May-2017	Initial Volume: Final Volume:						
Analyte		CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12	-C24)		1	2.88	6.15	19.7	mg/kg	
HC ID: DRO Motor Oil Range Organics (O HC ID: MOTOR OIL	C24-C38)		1	3.68	12.3	89.0	mg/kg	
Surrogate: o-Terphenyl					50-150 %	84.4	%	

Analytical Resources, Inc.



Analytical Resources Inc. TPH Quantitation Report

Data file: 20170511.b/17051119.D ARI ID: 17E0094-01

Method: 20170511.b\FID4TPH.m Client ID:

Instrument: fid4a.i, ML Injection: 11-MAY-2017 17:07

Report Date: 05/15/2017 Dilution Factor: 1

Macro: 08-MAY-2017

Calibration Dates: Gas:XX-XXX-XXXX Diesel:08-MAY-2017 M.Oil:08-MAY-2017

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc(mg per L
Toluene	0.943	-0.000	14227	 26478	 WATPHG	 (Tol-C12)	130563	5.4
C8	1.065	0.018	4645	5606	WATPHD	(C12-C24)	1697003	160.2
C10	1.898	0.007	1442	1752	WATPHM	(C24-C38)	9046090	722.8
C12	2.742	-0.000	1541	1565	AK102	(C10-C25)	2000219	162.3
C14	3.425	0.002	2540	1920				
C16	4.010	-0.000	4258	3017	OR.DIES	(C10-C28)	4488556	361.2
C18	4.548	-0.000	6665	8500				
C20	5.088	0.005	11238	21123				
C22	5.610	-0.000	21284	19974				
C24	6.118	-0.002	40211	52924				
C25	6.365	-0.002	66547	86260				
C26	6.605	-0.005	65371	158397				
C28	7.095	0.005	69071	126998				
C32	8.020	-0.002	91727	147188				
C34	8.462	-0.002	53388	117726				
Filter Peak	8.685	0.093	48804	146090				
C36	8.902	-0.002	44109	54691				
C38	9.340	-0.002	41283	120796				
C40	9.773	-0.003	40179	112778				
o-terph	4.707	0.005	4746307	2840803				
Triacon Surr	7.573	0.008	3861548	3246389	NAS DIES	S (C10-C24)	1713907	139.6

Range Times: NW Diesel(2.742 - 6.120) AK102(1.89 - 6.37) Jet A(1.89 - 4.55)

NW M.Oil(6.12 - 9.34) AK103(6.37 - 8.90) OR Diesel(1.89 - 7.09)

Surrogate	Area	Amount	
o-Terphenyl	2840803	190.0	Μ
Triacontane	3246389	184.3	Μ

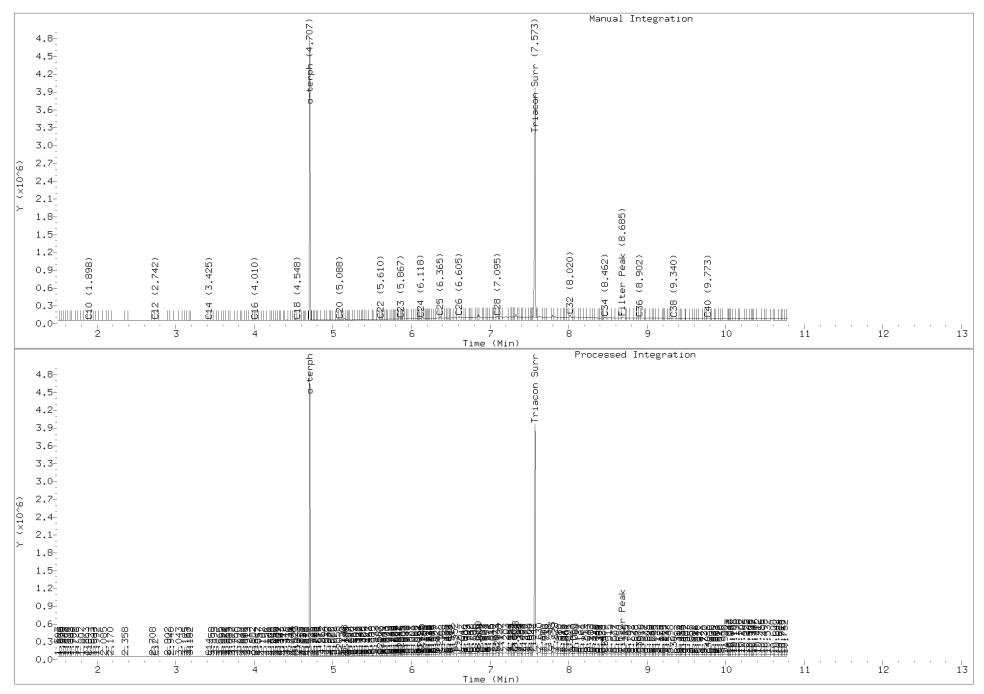
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	14950.1	08-MAY-2017
Triacon Surr	17617.0	08-MAY-2017
Gas	24336.2	XX-XXX-XXXX
Diesel	10593.0	08-MAY-2017
Motor Oil	12516.0	08-MAY-2017
AK102	12327.0	08-MAY-2017
OR Diesel	12427.0	08-MAY-2017
NAS Diesel	12277.0	08-MAY-2017

TPH Manual Integrations Report

Datafile: FID4A, 20170511.b/17051119.D Injection: 11-MAY-2017 17:07

Lab ID:17E0094-01



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-16-0.3 17E0094-01 (Solid)

Aroclor PCB

Method: EPA 8082A Instrument: ECD5		Sampled: 05/04/2017 10:45	
			Analyzed: 12-May-2017 21:55
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BFE0256 Prepared: 10-May-2017	Sample Size: 7.08 g (wet) Final Volume: 5 mL	Dry Weight:5.67 g % Solids: 80.04
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CFE0090 Cleaned: 12-May-2017	Initial Volume: 5 mL Final Volume: 5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CFE0088 Cleaned: 12-May-2017	Initial Volume: 5 mL Final Volume: 5 mL	
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CFE0089 Cleaned: 12-May-2017	Initial Volume: 5 mL Final Volume: 5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	7.1	17.6	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	7.1	17.6	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	7.1	17.6	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	7.1	17.6	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	7.1	17.6	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	7.1	17.6	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	8.2	17.6	9.6	ug/kg	J
Surrogate: Decachlorobiphenyl				40-133 %	80.5	%	
Surrogate: Tetrachlorometaxylene				53-120 %	76.6	%	
Surrogate: Decachlorobiphenyl [2C]				40-133 %	73.0	%	
Surrogate: Tetrachlorometaxylene [2C]				53-120 %	60.1	%	

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-16-0.3 17E0094-01 (Solid)

Metals and Metallic Compounds

 Method: EPA 6020A
 Sampled: 05/04/2017 10:45

 Instrument: ICPMS2
 Analyzed: 12-May-2017 18:45

Sample Preparation: Preparation Method: SWN EPA 3050B

Preparation Batch: BFE0225 Sample Size: 1.083 g (wet) Dry Weight: 0.77 g
Prepared: 09-May-2017 Final Volume: 50 mL % Solids: 70.86

			Detection I	Reporting			
Analyte	CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Chromium	7440-47-3	20	0.09	0.65	18.7	mg/kg	
Lead	7439-92-1	20	0.01	0.13	9.02	mg/kg	
Silver	7440-22-4	20	0.004	0.26	0.08	mg/kg	J

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-16-0.3 17E0094-01 (Solid)

Metals and Metallic Compounds

 Method: EPA 6020A UCT-KED
 Sampled: 05/04/2017 10:45

 Instrument: ICPMS2
 Analyzed: 12-May-2017 18:45

Sample Preparation: Preparation Method: SWN EPA 3050B
Preparation Batch: BFE0225 Sample Size: 1.083 g (wet) Dry Weight: 0.77 g
Prepared: 09-May-2017 Final Volume: 50 mL % Solids: 70.86

	1 7 7							
				Detection I	Reporting			
Analyte		CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Arsenic		7440-38-2	20	0.04	0.26	3.01	mg/kg	
Cadmium		7440-43-9	20	0.009	0.13	0.31	mg/kg	
Copper		7440-50-8	20	0.05	0.65	29.2	mg/kg	
Nickel		7440-02-0	20	0.35	0.65	15.7	mg/kg	
Selenium		7782-49-2	20	0.51	0.65	0.94	mg/kg	
Zinc		7440-66-6	20	0.4	5.2	109	mg/kg	

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-16-0.3 17E0094-01 (Solid)

Metals and Metallic Compounds

 Method: EPA 7471B
 Sampled: 05/04/2017 10:45

 Instrument: CETAC
 Analyzed: 11-May-2017 13:23

Sample Preparation: Preparation Method: SMM EPA 7471B

Preparation Batch: BFE0246 Sample Size: 0.25 g (wet) Dry Weight: 0.18 g
Prepared: 09-May-2017 Final Volume: 50 mL % Solids: 70.86

Detection Reporting CAS Number Limit Limit Dilution Result Units Notes Analyte 7439-97-6 0.002371 0.02822 0.02258 Mercury mg/kg

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-16-0.3 17E0094-01 (Solid)

Metals and Metallic Compounds

 Method: SM 2540 G-97
 Sampled: 05/04/2017 10:45

 Instrument: N/A
 Analyzed: 09-May-2017 10:12

Sample Preparation: Preparation Method: No Prep-Metals

Preparation Batch: BFE0202 Sample Size: 10 g (wet)
Prepared: 08-May-2017 Final Volume: 10 g

Analyte CAS Number Dilution Result Units Notes

Total Solids 1 0.04 70.86 %

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-16-0.3 17E0094-01 (Solid)

Extractions

 Method: PSEP 1986
 Sampled: 05/04/2017 10:45

 Instrument: N/A
 Analyzed: 05-May-2017 12:38

Sample Preparation: Preparation Method: No Prep-Organics

Preparation Batch: BFE0175 Sample Size: 1 g (wet)
Prepared: 05-May-2017 Final Volume: 1 g

Analyte CAS Number Dilution Result Units Notes

Total Solids 1 0.01 80.04 %

Analytical Resources, Inc.

The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-DP-0.3 17E0094-02 (Solid)

Semivolatile Organic Compounds - SIM

 Method: EPA 8270D-SIM
 Sampled: 05/04/2017 12:10

 Instrument: NT8
 Analyzed: 15-May-2017 15:10

Final Volume: 0.5 mL

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BFE0259 Sample Size: 28.22 g (wet) Dry Weight: 10.11 g
Prepared: 10-May-2017 Final Volume: 0.5 mL % Solids: 35.84

Sample Cleanup: Cleanup Method: Silica Gel
Cleanup Batch: CFE0105 Initial Volume: 0.5 mL

Cleaned: 15-May-2017

Detection Reporting Analyte CAS Number Dilution Limit Limit Result Units Notes 91-20-3 4.94 Naphthalene 1.26 9.02 ug/kg 2-Methylnaphthalene 91-57-6 1 1.09 4.94 4.99 ug/kg 1-Methylnaphthalene 90-12-0 0.40 4.94 ND ug/kg U Acenaphthylene 208-96-8 1.07 4.94 5.01 ug/kg Acenaphthene 83-32-9 0.56 4.94 ND U ug/kg Dibenzofuran 132-64-9 1 1.36 4 94 3.43 J ug/kg Fluorene 86-73-7 0.62 4.94 3.57 J ug/kg 85-01-8 Phenanthrene 0.71 4.94 23.0 ug/kg Anthracene 120-12-7 0.86 4.94 3.92 ug/kg J Fluoranthene 206-44-0 0.46 4.94 38.1 ug/kg Pyrene 129-00-0 0.62 4.94 41.7 ug/kg Benzo(a)anthracene 56-55-3 4.94 0.81 13.8 ug/kg 218-01-9 Chrysene 1.04 4.94 42.6 ug/kg Benzofluoranthenes, Total 2.98 9.89 66.6 ug/kg Benzo(a)pyrene 50-32-8 0.61 4.94 21.0 ug/kg 193-39-5 Indeno(1,2,3-cd)pyrene 1.04 4.94 29.4 ug/kg Dibenzo(a,h)anthracene 53-70-3 8.47 1 0.884.94 ug/kg Benzo(g,h,i)perylene 191-24-2 1 1.05 4.94 61.0 ug/kg Surrogate: 2-Methylnaphthalene-d10 32-120 % 53.4 % Surrogate: Dibenzo[a,h]anthracene-d14 21-133 % 67.9 % Surrogate: Fluoranthene-d10 36-134 % 59.8 %

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

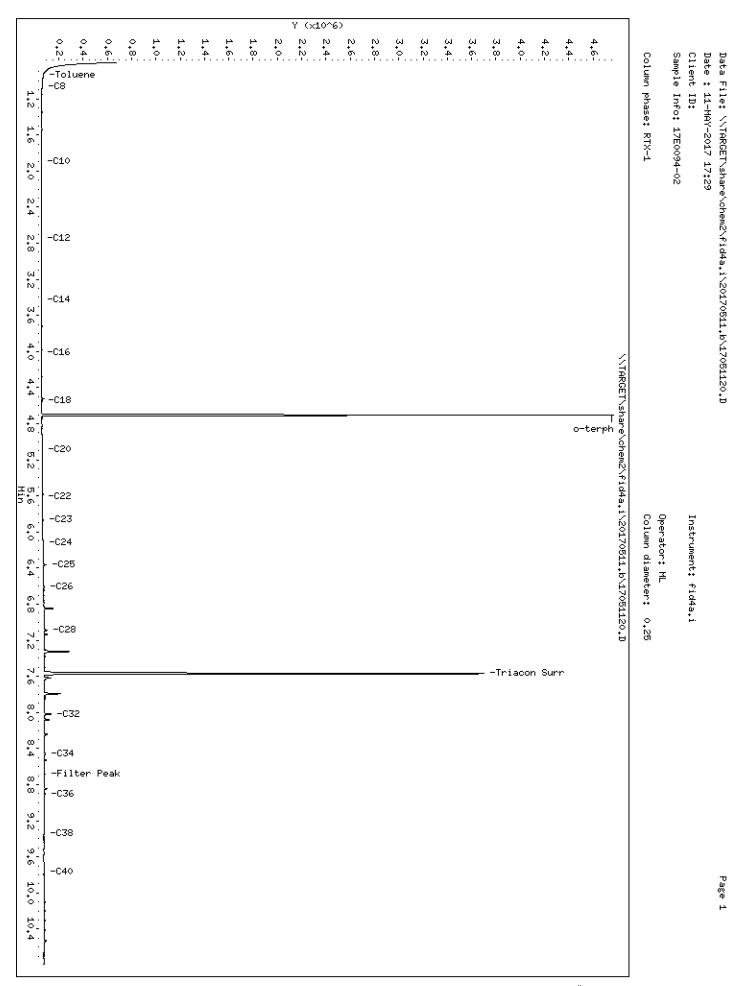
P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-DP-0.3 17E0094-02 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx			Sa	mpled: 05/	04/2017 12:10			
Instrument: FID4			Analy	yzed: 11-M	ay-2017 17:29			
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BFE0272 Prepared: 10-May-2017	Sample Size: 1 Final Volume:	Ü ()		-	/ Weight:3.61 Solids: 35.84	g	
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CFE0084 Cleaned: 11-May-2017	Initial Volume: Final Volume:						
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CFE0083 Cleaned: 11-May-2017	Initial Volume: Final Volume:						
Analyte		CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-	-C24)		1	6.49	13.9	20.8	mg/kg	
HC ID: DRO Motor Oil Range Organics (O	C24-C38)		1	8.29	27.7	103	mg/kg	
Surrogate: o-Terphenyl					50-150 %	84.1	%	

Analytical Resources, Inc.



Analytical Resources Inc. TPH Quantitation Report

Data file: 20170511.b/17051120.D ARI ID: 17E0094-02

Method: 20170511.b\FID4TPH.m Client ID:

Instrument: fid4a.i, ML Injection: 11-MAY-2017 17:29

Report Date: 05/15/2017 Dilution Factor: 1

Macro: 08-MAY-2017

Calibration Dates: Gas:XX-XXXX-XXXX Diesel:08-MAY-2017 M.Oil:08-MAY-2017

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc(mg per L)
Toluene	0.944	0.001	15800	59611	======= WATPHG	(Tol-C12)	160518	6.6
C8	1.066	0.019	5063	5611	WATPHD	(C12-C24)	794266	75.0
C10	1.898	0.006	1396	1511	WATPHM	(C24-C38)	4653663	371.8
C12	2.743	0.001	1690	1645	AK102	(C10-C25)	916179	74.3
C14	3.424	0.001	2678	2269				
C16	4.011	0.001	3780	2758	OR.DIES	(C10-C28)	1999345	160.9
C18	4.548	-0.001	5686	6882				
C20	5.089	0.006	8345	16892				
C22	5.609	-0.001	10714	10186				
C24	6.119	-0.001	16843	22386				
C25	6.364	-0.002	38726	38605				
C26	6.608	-0.002	25628	73680				
C28	7.089	-0.001	46248	93300				
C32	8.019	-0.002	78360	100467				
C34	8.461	-0.002	35365	92049				
Filter Peak	8.683	0.091	29659	45255				
C36	8.903	-0.001	29980	100635				
C38	9.338	-0.004	25668	78077				
C40	9.773	-0.004	26221	61899				
o-terph	4.706	0.004	4708132	2829739				
Triacon Surr		0.006	3621841 ======	3059012	NAS DIES	S (C10-C24)	810496	66.0

Range Times: NW Diesel(2.742 - 6.120) AK102(1.89 - 6.37) Jet A(1.89 - 4.55)

NW M.Oil(6.12 - 9.34) AK103(6.37 - 8.90) OR Diesel(1.89 - 7.09)

Surrogate	Area	Amount	
o-Terphenyl	2829739	189.3	Μ
Triacontane	3059012	173.6	Μ

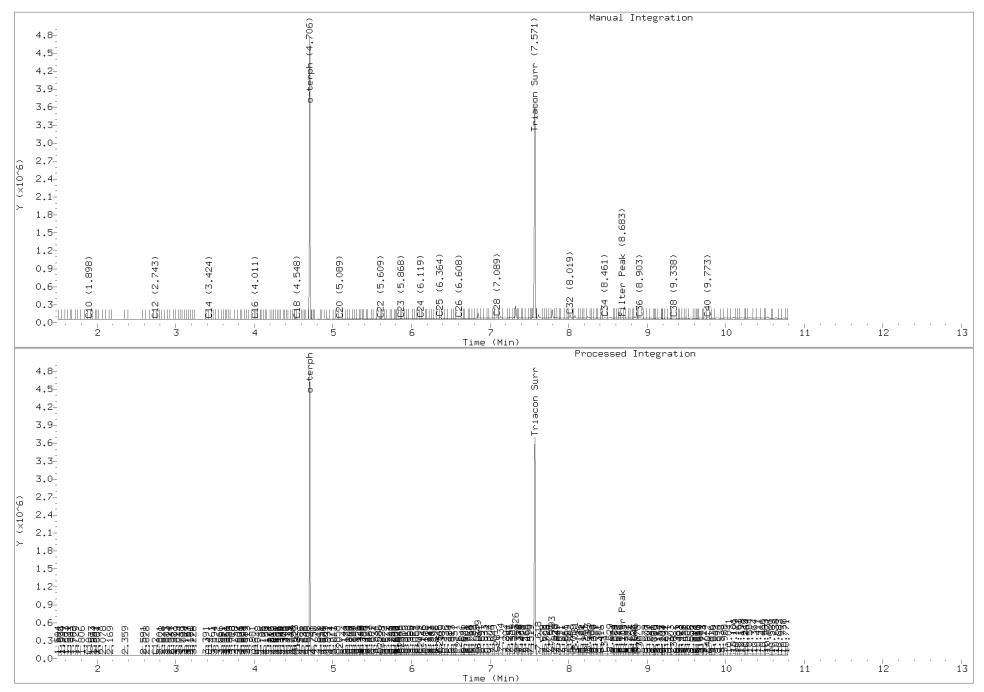
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr Triacon Surr	14950.1	08-MAY-2017
Gas	17617.0 24336.2	08-MAY-2017 XX-XXX-XXXX
Diesel	10593.0	08-MAY-2017
Motor Oil	12516.0	08-MAY-2017
AK102	12327.0	08-MAY-2017
OR Diesel	12427.0	08-MAY-2017
NAS Diesel	12277.0	08-MAY-2017

TPH Manual Integrations Report

Datafile: FID4A, 20170511.b/17051120.D Injection: 11-MAY-2017 17:29

Lab ID:17E0094-02



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-DP-0.3 17E0094-02 (Solid)

Aroclor PCB

Method: EPA 8082A Instrument: ECD5			Sampled: 05/04/2017 12:10
			Analyzed: 12-May-2017 22:16
Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		
	Preparation Batch: BFE0256	Sample Size: 14.29 g (wet)	Dry Weight:5.12 g
	Prepared: 10-May-2017	Final Volume: 5 mL	% Solids: 35.84
Sample Cleanup:	Cleanup Method: Silica Gel		_
	Cleanup Batch: CFE0090	Initial Volume: 5 mL	
	Cleaned: 12-May-2017	Final Volume: 5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		
	Cleanup Batch: CFE0088	Initial Volume: 5 mL	
	Cleaned: 12-May-2017	Final Volume: 5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		_
	Cleanup Batch: CFE0089	Initial Volume: 5 mL	
	Cleaned: 12-May-2017	Final Volume: 5 mL	

	CACN 1	D'L e'	Detection	Reporting	D. It	TT '.	NI.
Analyte	CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	7.8	19.5	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	7.8	19.5	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	7.8	19.5	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	7.8	19.5	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	7.8	19.5	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	7.8	19.5	122	ug/kg	
Aroclor 1260	11096-82-5	1	9.1	19.5	67.5	ug/kg	
Surrogate: Decachlorobiphenyl				40-133 %	84.6	%	
Surrogate: Tetrachlorometaxylene				53-120 %	84.1	%	
Surrogate: Decachlorobiphenyl [2C]				40-133 %	84.9	%	
Surrogate: Tetrachlorometaxylene [2C]				53-120 %	73.1	%	

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-DP-0.3 17E0094-02 (Solid)

Metals and Metallic Compounds

 Method: EPA 6020A
 Sampled: 05/04/2017 12:10

 Instrument: ICPMS2
 Analyzed: 12-May-2017 18:50

Sample Preparation: Preparation Method: SWN EPA 3050B

Preparation Batch: BFE0225 Sample Size: 1.042 g (wet) Dry Weight: 0.36 g
Prepared: 09-May-2017 Final Volume: 50 mL % Solids: 34.26

			Detection I	Reporting			
Analyte	CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Chromium	7440-47-3	20	0.19	1.40	45.1	mg/kg	
Lead	7439-92-1	20	0.02	0.28	50.5	mg/kg	
Silver	7440-22-4	20	0.009	0.56	0.29	mg/kg	J

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-DP-0.3 17E0094-02 (Solid)

Metals and Metallic Compounds

 Method: EPA 6020A UCT-KED
 Sampled: 05/04/2017 12:10

 Instrument: ICPMS2
 Analyzed: 12-May-2017 18:50

Sample Preparation: Preparation Method: SWN EPA 3050B
Preparation Batch: BFE0225 Sample Size: 1.042 g (wet) Dry Weight: 0.36 g
Prepared: 09-May-2017 Final Volume: 50 mL % Solids: 34.26

	Trepared: 05 May 2017	i mai voiame.	J U 1112		, , ,	5011 4 5. 5 1.20		
				Detection	Reporting			
Analyte		CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Arsenic		7440-38-2	20	0.08	0.56	38.4	mg/kg	
Cadmium		7440-43-9	20	0.02	0.28	1.41	mg/kg	
Copper		7440-50-8	20	0.10	1.40	195	mg/kg	
Nickel		7440-02-0	20	0.05	1.40	35.2	mg/kg	
Selenium		7782-49-2	20	1.10	1.40	1.59	mg/kg	
Zinc		7440-66-6	20	0.8	11.2	415	mg/kg	



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-DP-0.3 17E0094-02 (Solid)

Metals and Metallic Compounds

 Method: EPA 7471B
 Sampled: 05/04/2017 12:10

 Instrument: CETAC
 Analyzed: 11-May-2017 13:24

Sample Preparation: Preparation Method: SMM EPA 7471B

Preparation Batch: BFE0246 Sample Size: 0.212 g (wet) Dry Weight: 0.07 g
Prepared: 09-May-2017 Final Volume: 50 mL % Solids: 34.26

Detection Reporting CAS Number Limit Limit Dilution Result Units Notes Analyte 7439-97-6 0.005783 0.06884 0.1721 Mercury mg/kg

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-DP-0.3 17E0094-02 (Solid)

Metals and Metallic Compounds

 Method: SM 2540 G-97
 Sampled: 05/04/2017 12:10

 Instrument: N/A
 Analyzed: 09-May-2017 10:12

Sample Preparation: Preparation Method: No Prep-Metals

Preparation Batch: BFE0202 Sample Size: 10 g (wet)
Prepared: 08-May-2017 Final Volume: 10 g

Analyte CAS Number Dilution Result Units Notes

Total Solids 1 0.04 34.26 %

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

KSC-0F-DP-0.3 17E0094-02 (Solid)

Extractions

 Method: PSEP 1986
 Sampled: 05/04/2017 12:10

 Instrument: N/A
 Analyzed: 05-May-2017 12:38

Sample Preparation: Preparation Method: No Prep-Organics

Preparation Batch: BFE0175 Sample Size: 1 g (wet)
Prepared: 05-May-2017 Final Volume: 1 g

Analyte CAS Number Dilution Result Units Notes

Total Solids 1 0.01 35.84 %

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Semivolatile Organic Compounds - SIM - Quality Control

Batch BFE0259 - EPA 3546 (Microwave)

Instrument: NT8

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFE0259-BLK1)				Prepa	ared: 10-May	7-2017 Ans	alyzed: 15-	May-2017 1	3:51		
Naphthalene	ND	1.28	5.00	ug/kg							U
2-Methylnaphthalene	ND	1.10	5.00	ug/kg							U
1-Methylnaphthalene	ND	0.40	5.00	ug/kg							U
Acenaphthylene	ND	1.08	5.00	ug/kg							U
Acenaphthene	ND	0.57	5.00	ug/kg							U
Dibenzofuran	ND	1.38	5.00	ug/kg							U
Fluorene	ND	0.63	5.00	ug/kg							U
Phenanthrene	ND	0.72	5.00	ug/kg							U
Anthracene	ND	0.87	5.00	ug/kg							U
Fluoranthene	ND	0.47	5.00	ug/kg							U
Pyrene	ND	0.63	5.00	ug/kg							U
Benzo(a)anthracene	ND	0.82	5.00	ug/kg							U
Chrysene	ND	1.05	5.00	ug/kg							U
Benzofluoranthenes, Total	ND	3.01	10.0	ug/kg							U
Benzo(a)pyrene	ND	0.61	5.00	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	1.05	5.00	ug/kg							U
Dibenzo(a,h)anthracene	ND	0.89	5.00	ug/kg							U
Benzo(g,h,i)perylene	ND	1.07	5.00	ug/kg							U
Surrogate: 2-Methylnaphthalene-d10	79.2			ug/kg	150		52.8	32-120			
Surrogate: Dibenzo[a,h]anthracene-d14	133			ug/kg	150		88.9	21-133			
Surrogate: Fluoranthene-d10	122			ug/kg	150		81.4	36-134			

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Semivolatile Organic Compounds - SIM - Quality Control

Batch BFE0259 - EPA 3546 (Microwave)

Instrument: NT8

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BFE0259-BS1)				Prep	ared: 10-May	y-2017 Ana	alyzed: 15-	May-2017 1	4:17		
Naphthalene	81.4	1.28	5.00	ug/kg	150		54.3	36-120			
2-Methylnaphthalene	84.1	1.10	5.00	ug/kg	150		56.0	35-120			
1-Methylnaphthalene	84.0	0.40	5.00	ug/kg	150		56.0	39-120			
Acenaphthylene	85.5	1.08	5.00	ug/kg	150		57.0	35-120			
Acenaphthene	81.3	0.57	5.00	ug/kg	150		54.2	39-120			
Dibenzofuran	85.9	1.38	5.00	ug/kg	150		57.3	38-120			
Fluorene	87.4	0.63	5.00	ug/kg	150		58.3	41-120			
Phenanthrene	92.3	0.72	5.00	ug/kg	150		61.5	46-120			
Anthracene	96.9	0.87	5.00	ug/kg	150		64.6	36-120			
Fluoranthene	108	0.47	5.00	ug/kg	150		71.8	46-120			
Pyrene	108	0.63	5.00	ug/kg	150		71.9	49-120			
Benzo(a)anthracene	114	0.82	5.00	ug/kg	150		76.0	42-120			
Chrysene	104	1.05	5.00	ug/kg	150		69.6	48-120			
Benzofluoranthenes, Total	338	3.01	10.0	ug/kg	450		75.1	46-120			
Benzo(a)pyrene	111	0.61	5.00	ug/kg	150		73.8	36-120			
Indeno(1,2,3-cd)pyrene	124	1.05	5.00	ug/kg	150		82.8	40-120			
Dibenzo(a,h)anthracene	136	0.89	5.00	ug/kg	150		90.7	38-120			
Benzo(g,h,i)perylene	123	1.07	5.00	ug/kg	150		81.7	38-120			
Surrogate: 2-Methylnaphthalene-d10	87.5			ug/kg	150		58.3	32-120			
Surrogate: Dibenzo[a,h]anthracene-d14	138			ug/kg	150		91.8	21-133			
Surrogate: Fluoranthene-d10	113			ug/kg	150		75.4	36-134			

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

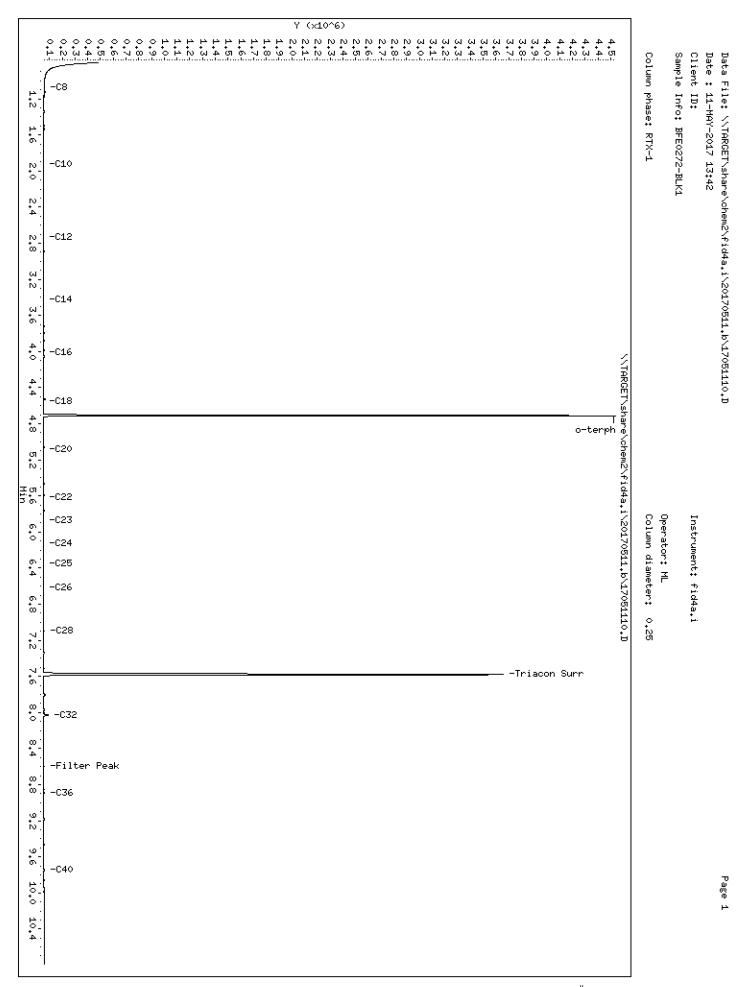
P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Petroleum Hydrocarbons - Quality Control

Batch BFE0272 - EPA 3546 (Microwave)

Instrument: FID4

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFE0272-BLK1)				Prepa	ared: 10-May	y-2017 An	alyzed: 11-	May-2017	13:42		
Diesel Range Organics (C12-C24)	ND	2.34	5.00	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	2.99	10.0	mg/kg							U
Surrogate: o-Terphenyl	18.1			mg/kg	22.5		80.6	50-150			



Analytical Resources Inc. TPH Quantitation Report

Data file: 20170511.b/17051110.D ARI ID: BFE0272-BLK1

Method: 20170511.b\FID4TPH.m Client ID:

Instrument: fid4a.i, ML Injection: 11-MAY-2017 13:42

Report Date: 05/15/2017 Dilution Factor: 1

Macro: 08-MAY-2017

Calibration Dates: Gas:XX-XXX-XXXX Diesel:08-MAY-2017 M.Oil:08-MAY-2017

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc(mg per L)
Toluene					WATPHG	(Tol-C12)	85717	 3.5
C8	1.079	0.032	8333	12647	WATPHD	(C12-C24)	145364	13.7
C10	1.925	0.034	1928	2397	WATPHM	(C24-C38)	80844	6.5
C12	2.739	-0.003	2510	1850	AK102	(C10-C25)	150906	12.2
C14	3.427	0.004	1657	1141				
C16	4.014	0.004	2010	1229	OR.DIES	(C10-C28)	162402	13.1
C18	4.554	0.005	2070	2265				
C20	5.092	0.009	2145	2756				
C22	5.617	0.007	1772	2873				
C24	6.130	0.010	1168	1267				
C25	6.352	-0.015	1202	1107				
C26	6.617	0.007	977	1093				
C28	7.100	0.010	2446	2802				
C32	8.030	0.009	37344	29934				
C34					1			
Filter Peak	8.600	0.009	1289	1382	[
C36	8.894	-0.010	1494	1883				
C38					1			
C40	9.745	-0.031	1938	3786				
o-terph	4.712	0.010	4485196	2710159	1			
Triacon Surr	7.582	0.017	3605402	2983988 ======	NAS DIES	(C10-C24)	149612 =========	12.2

Range Times: NW Diesel(2.742 - 6.120) AK102(1.89 - 6.37) Jet A(1.89 - 4.55) NW M.Oil(6.12 - 9.34) AK103(6.37 - 8.90) OR Diesel(1.89 - 7.09)

Surrogate Area Amount
o-Terphenyl 2710159 181.3
Triacontane 2983988 169.4

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	14950.1	08-MAY-2017
Triacon Surr	17617.0	08-MAY-2017
Gas	24336.2	XX-XXX-XXXX
Diesel	10593.0	08-MAY-2017
Motor Oil	12516.0	08-MAY-2017
AK102	12327.0	08-MAY-2017
OR Diesel	12427.0	08-MAY-2017
NAS Diesel	12277.0	08-MAY-2017



The Boeing Company Project: Boeing Kent Sediments

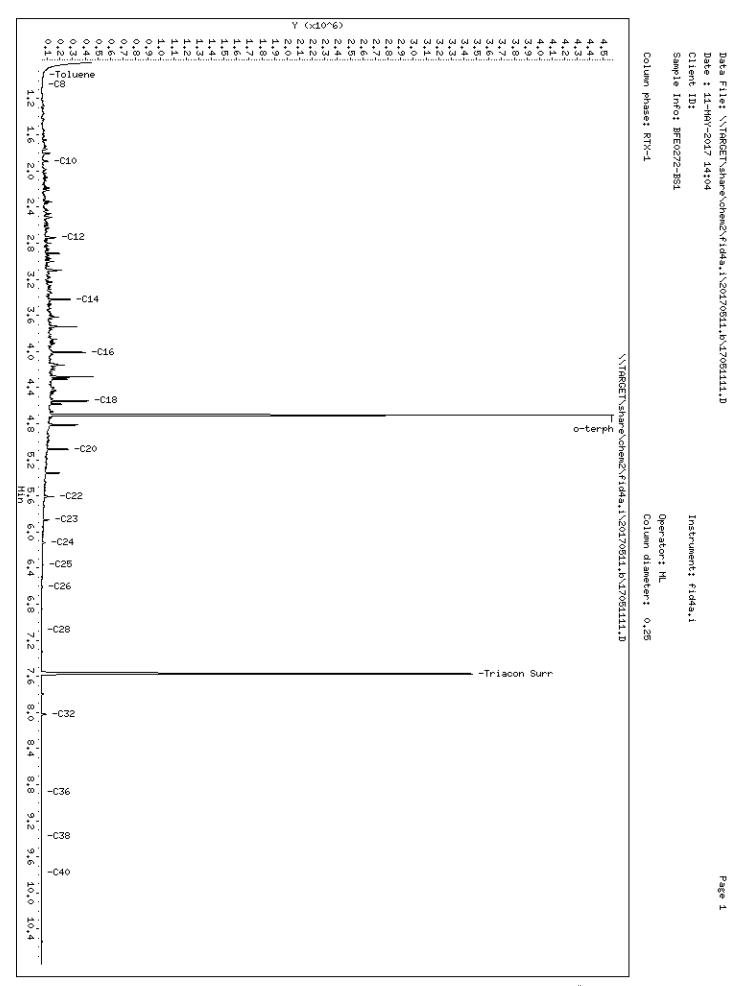
P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Petroleum Hydrocarbons - Quality Control

Batch BFE0272 - EPA 3546 (Microwave)

Instrument: FID4

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BFE0272-BS1)				Prepa	ared: 10-May	y-2017 An	alyzed: 11-	May-2017	14:04		
Diesel Range Organics (C12-C24)	110	2.34	5.00	mg/kg	150		73.0	63-120			
Surrogate: o-Terphenyl	18.1			mg/kg	22.5		80.5	50-150			



Analytical Resources Inc. TPH Quantitation Report

Data file: 20170511.b/17051111.D ARI ID: BFE0272-BS1

Method: 20170511.b\FID4TPH.m Client ID:

Instrument: fid4a.i, ML Injection: 11-MAY-2017 14:04

Report Date: 05/15/2017 Dilution Factor: 1

Macro: 08-MAY-2017

Calibration Dates: Gas:XX-XXX-XXXX Diesel:08-MAY-2017 M.Oil:08-MAY-2017

FID:4A RESULTS

Compound	RT	Shift	Height	Area 	Method	Range	Total Area	Conc(mg per L)
Toluene	0.945	0.001	15275	33050	 WATPHG	(Tol-C12)	2314845	95.1
C8	1.050	0.003	7134	15537	WATPHD	(C12-C24)	11605923	1095.6
C10	1.893	0.001	50130	61456	WATPHM	(C24-C38)	257295	20.6
C12	2.741	-0.000	115772	132384	AK102	(C10-C25)	13322786	1080.8
C14	3.425	0.001	229409	273552				
C16	4.010	-0.000	353010	279227	OR.DIES	(C10-C28)	13453592	1082.6
C18	4.550	0.001	375099	346738	1			
C20	5.083	-0.000	211964	198954				
C22	5.610	-0.000	98018	83986	1			
C24	6.120	-0.000	34223	31449	1			
C25	6.366	-0.000	17227	24465				
C26	6.610	-0.000	8773	21385	1			
C28	7.091	0.001	3708	6110				
C32	8.021	-0.000	34473	30044	1			
C34					1			
Filter Peak								
C36	8.883	-0.020	740	1423	1			
C38	9.376	0.035	669	1177	1			
C40	9.776	-0.000	1442	1929				
o-terph	4.706	0.005	4468268	2708904	1			
Triacon Surr	7.573	0.008	3418164	2851585 ======	NAS DIES	(C10-C24)	13268070	1080.7

Range Times: NW Diesel(2.742 - 6.120) Ak102(1.89 - 6.37) Jet A(1.89 - 4.55) NW M.Oil(6.12 - 9.34) Ak103(6.37 - 8.90) OR Diesel(1.89 - 7.09)

Surrogate	Area	Amount	
o-Terphenyl	2708904	181.2	М
Triacontane	2851585	161.9	

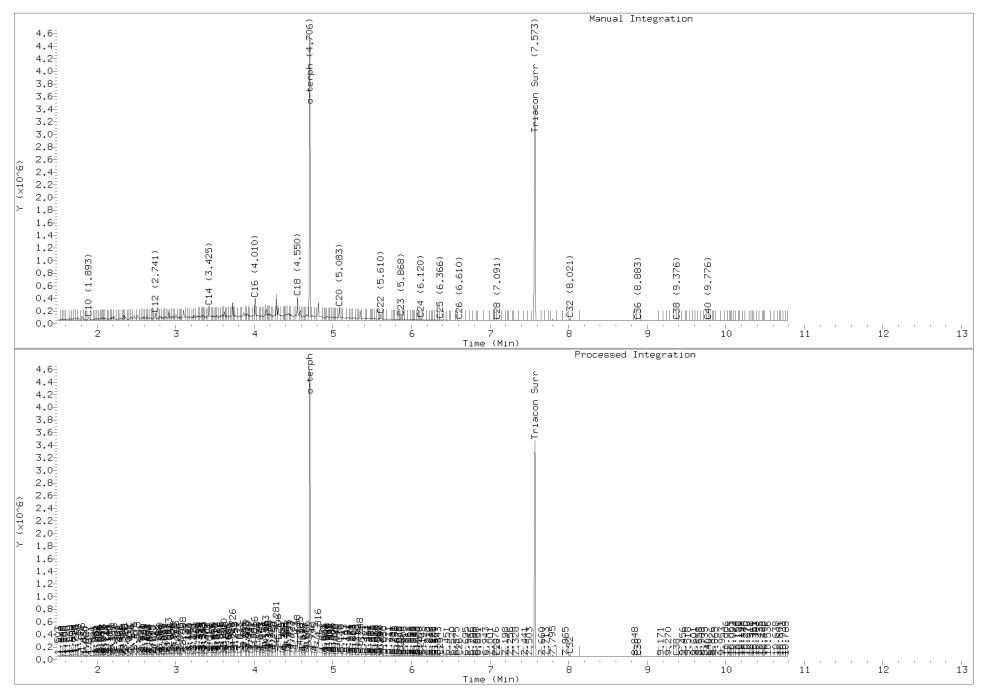
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	14950.1	08-MAY-2017
Triacon Surr	17617.0	08-MAY-2017
Gas	24336.2	XX-XXX-XXXX
Diesel	10593.0	08-MAY-2017
Motor Oil	12516.0	08-MAY-2017
AK102	12327.0	08-MAY-2017
OR Diesel	12427.0	08-MAY-2017
NAS Diesel	12277.0	08-MAY-2017

TPH Manual Integrations Report

Datafile: FID4A, 20170511.b/17051111.D Injection: 11-MAY-2017 14:04

Lab ID:BFE0272-BS1



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Aroclor PCB - Quality Control

Batch BFE0256 - EPA 3546 (Microwave)

Instrument: ECD5

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFE0256-BLK1)				Prepa	ared: 10-Ma	y-2017 An	alyzed: 12-	May-2017	18:12		
Aroclor 1016	ND	8.0	20.0	ug/kg							U
Aroclor 1221	ND	8.0	20.0	ug/kg							U
Aroclor 1232	ND	8.0	20.0	ug/kg							U
Aroclor 1242	ND	8.0	20.0	ug/kg							U
Aroclor 1248	ND	8.0	20.0	ug/kg							U
Aroclor 1254	ND	8.0	20.0	ug/kg							U
Aroclor 1260	ND	9.3	20.0	ug/kg							U
Surrogate: Decachlorobiphenyl	34.3			ug/kg	40.0		85.7	40-133			
Surrogate: Tetrachlorometaxylene	31.4			ug/kg	40.0		78.6	53-120			
Surrogate: Decachlorobiphenyl [2C]	35.3			ug/kg	40.0		88.3	40-133			
Surrogate: Tetrachlorometaxylene [2C]	26.4			ug/kg	40.0		66.1	53-120			

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Aroclor PCB - Quality Control

Batch BFE0256 - EPA 3546 (Microwave)

Instrument: ECD5

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BFE0256-BS1)				Prep	ared: 10-May	y-2017 Ar	nalyzed: 12-	May-2017	18:33		
Aroclor 1016	416	8.0	20.0	ug/kg	500		83.1	52-120			
Aroclor 1260	366	9.3	20.0	ug/kg	500		73.2	57-120			
Surrogate: Decachlorobiphenyl	32.9			ug/kg	40.0		82.4	40-133			
Surrogate: Tetrachlorometaxylene	32.4			ug/kg	40.0		81.0	53-120			
Surrogate: Decachlorobiphenyl [2C]	34.3			ug/kg	40.0		85.8	40-133			
Surrogate: Tetrachlorometaxylene [2C]	26.7			ug/kg	40.0		66.6	53-120			

The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Metals and Metallic Compounds - Quality Control

Batch BFE0225 - SWN EPA 3050B

Instrument: ICPMS2

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFE0225-BLK1)					Prep	ared: 09-Ma	y-2017 An	alyzed: 12-	May-2017	18:18		
Chromium	52	ND	0.07	0.50	mg/kg							U
Chromium	53	ND	0.04	0.50	mg/kg							U
Lead	208	ND	0.008	0.10	mg/kg							U
Silver	107	ND	0.003	0.20	mg/kg							U
Arsenic	75a	ND	0.03	0.20	mg/kg							U
Cadmium	111	ND	0.007	0.10	mg/kg							U
Cadmium	114	ND	0.005	0.10	mg/kg							U
Copper	63	ND	0.04	0.50	mg/kg							U
Copper	65	ND	0.03	0.50	mg/kg							U
Nickel	60	ND	0.02	0.50	mg/kg							U
Nickel	62	ND	0.27	0.50	mg/kg							U
Selenium	78	ND	0.39	0.50	mg/kg							U
Zinc	66	ND	0.3	4.0	mg/kg							U
Zinc	67	ND	0.2	4.0	mg/kg							U

Analytical Resources, Inc.

The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Metals and Metallic Compounds - Quality Control

Batch BFE0225 - SWN EPA 3050B

Instrument: ICPMS2

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BFE0225-BS1)					Prep	ared: 09-Ma	y-2017 Ar	alyzed: 12-	May-2017 1	8:39		
Chromium	52	25.9	0.07	0.50	mg/kg	25.0		104	80-120			
Chromium	53	25.6	0.04	0.50	mg/kg	25.0		103	80-120			
Lead	208	27.1	0.008	0.10	mg/kg	25.0		108	80-120			
Silver	107	25.3	0.003	0.20	mg/kg	25.0		101	80-120			
Arsenic	75a	24.2	0.03	0.20	mg/kg	25.0		96.7	80-120			
Cadmium	111	25.8	0.007	0.10	mg/kg	25.0		103	80-120			
Cadmium	114	25.8	0.005	0.10	mg/kg	25.0		103	80-120			
Copper	63	26.1	0.04	0.50	mg/kg	25.0		105	80-120			
Copper	65	26.2	0.03	0.50	mg/kg	25.0		105	80-120			
Nickel	60	26.3	0.02	0.50	mg/kg	25.0		105	80-120			
Nickel	62	25.3	0.27	0.50	mg/kg	25.0		101	80-120			
Selenium	78	76.1	0.39	0.50	mg/kg	80.0		95.1	80-120			
Zinc	66	80.7	0.3	4.0	mg/kg	80.0		101	80-120			
Zinc	67	75.2	0.2	4.0	mg/kg	80.0		94.1	80-120			

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Metals and Metallic Compounds - Quality Control

Batch BFE0246 - SMM EPA 7471B

Instrument: CETAC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFE0246-BLK1)				Prepa	ared: 09-Ma	y-2017 An	alyzed: 11-	May-2017	12:39		
	0.005000	0.002100	0.02500	mg/kg							

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Metals and Metallic Compounds - Quality Control

Batch BFE0246 - SMM EPA 7471B

Instrument: CETAC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BFE0246-BS1)				Prep	ared: 09-May	7-2017 Ana	alyzed: 11-	May-2017	12:41		
Mercury	0.5000	0.002100	0.02500	mg/kg	0.5000		100	80-120			

Analytical Resources, Inc.





The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Certified Analyses included in this Report

Analyte	Certifications
EPA 6020A in Solid	
Silver-107	NELAP,DoD-ELAP,WADOE
Chromium-52	NELAP,DoD-ELAP,WADOE,ADEC
Chromium-53	NELAP,DoD-ELAP,WADOE,ADEC
Lead-208	NELAP,DoD-ELAP,WADOE,ADEC
EPA 6020A UCT-KED in Solid	
Arsenic-75a	NELAP,DoD-ELAP,WADOE,ADEC
Cadmium-111	NELAP,DoD-ELAP,WADOE,ADEC
Cadmium-114	NELAP,DoD-ELAP,WADOE,ADEC
Copper-63	NELAP,DoD-ELAP,WADOE
Copper-65	NELAP,DoD-ELAP,WADOE
Nickel-60	NELAP,DoD-ELAP,WADOE,ADEC
Nickel-62	NELAP,DoD-ELAP,WADOE,ADEC
Selenium-78	NELAP,DoD-ELAP,WADOE
Zinc-66	NELAP,DoD-ELAP,WADOE
Zinc-67	NELAP,DoD-ELAP,WADOE
EPA 7471B in Solid	
Mercury	WADOE,NELAP,DoD-ELAP,CALAP
EPA 8082A in Solid	
Aroclor 1016	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1016 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1221	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1221 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1232	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1232 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1242	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1242 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1248	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1248 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1254	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1254 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1260	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1260 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1262	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1262 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Aroclor 1268 WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1268 [2C] WADOE, DoD-ELAP, NELAP, CALAP, ADEC

EPA 8270D-SIM in Solid

Naphthalene ADEC, DoD-ELAP, NELAP, WADOE

2-Methylnaphthalene ADEC,DoD-ELAP,NELAP

1-Methylnaphthalene ADEC,DoD-ELAP,NELAP,WADOE

Biphenyl ADEC, DoD-ELAP, NELAP

2,6-Dimethylnaphthalene ADEC,WADOE

Acenaphthylene ADEC,DoD-ELAP,NELAP,WADOE Acenaphthene ADEC,DoD-ELAP,NELAP,WADOE

Dibenzofuran ADEC, DoD-ELAP, NELAP

Fluorene ADEC,DoD-ELAP,NELAP,WADOE
Phenanthrene ADEC,DoD-ELAP,NELAP,WADOE
Anthracene ADEC,DoD-ELAP,NELAP,WADOE

Carbazole ADEC, DoD-ELAP, NELAP

1-Methylphenanthrene ADEC

Fluoranthene ADEC,DoD-ELAP,NELAP,WADOE
Pyrene ADEC,DoD-ELAP,NELAP,WADOE
Benzo(a)anthracene ADEC,DoD-ELAP,NELAP,WADOE
Chrysene ADEC,DoD-ELAP,NELAP,WADOE
Benzo(b)fluoranthene ADEC,DoD-ELAP,NELAP,WADOE
Benzo(k)fluoranthene ADEC,DoD-ELAP,NELAP,WADOE
Benzo(j)fluoranthene ADEC,DoD-ELAP,NELAP,WADOE

Benzo(e)pyrene ADEC,NELAP

Benzo(a)pyrene ADEC,DoD-ELAP,WADOE

Perylene ADEC,NELAP

Indeno(1,2,3-cd)pyrene ADEC,DoD-ELAP,NELAP,WADOE

Dibenzo(a,h)anthracene ADEC,DoD-ELAP

Benzo(g,h,i)perylene ADEC,DoD-ELAP,NELAP,WADOE

NWTPH-Dx in Solid

Diesel Range Organics (C12-C24) DoD-ELAP, NELAP, WADOE Diesel Range Organics (C10-C25) DoD-ELAP, NELAP, WADOE Diesel Range Organics (Tol-C18) DoD-ELAP, NELAP, WADOE Diesel Range Organics (C10-24) DoD-ELAP, NELAP, WADOE Diesel Range Organics (C10-C28) DoD-ELAP, NELAP, WADOE Motor Oil Range Organics (C24-C38) DoD-ELAP, NELAP, WADOE Motor Oil Range Organics (C25-C36) DoD-ELAP, NELAP, WADOE Motor Oil Range Organics (C24-C40) DoD-ELAP, NELAP, WADOE

Analytical Resources, Inc.





The Boeing Company	Project: Boeing Kent Sediments	
P.O. Box 3707 MS 1W-12	Project Number: B-002	Reported:
Seattle WA, 98124	Project Manager: Lindsey Mahrt	16-May-2017 16:40

DoD-ELAP,NELAP,WADOE
DoD-ELAP,NELAP,WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	UST-033	05/06/2017
CALAP	California Department of Public Health CAELAP	2748	02/28/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	03/30/2017
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006	05/11/2017
WADOE	WA Dept of Ecology	C558	06/30/2017
WA-DW	Ecology - Drinking Water	C558	06/30/2017

Analytical Resources, Inc.



The Boeing Company Project: Boeing Kent Sediments

P.O. Box 3707 MS 1W-12 Project Number: B-002 Reported:
Seattle WA, 98124 Project Manager: Lindsey Mahrt 16-May-2017 16:40

Notes and Definitions

U	This analyte is not detected above the applicable reporting or detection limit.
0	This didn't is not detected doo're the applicable reporting of detection inint.

P1 The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.

J Estimated concentration value detected below the reporting limit.

D The reported value is from a dilution

Flagged value is not within established control limits.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

[2C] Indicates this result was quantified on the second column on a dual column analysis.



17 July 2017

Dave Cooper Dalton, Olmsted & Fuglevand, Inc 10827 NE 68th Street Suite B Kirkland, WA 98033-4400

RE: Boeing Kent Space Center

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s) Associated SDG ID(s)

17G0005

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the reqirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

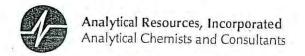
Analytical Resources, Inc.

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meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.



Cooler Receipt Form

ARI Client: DPF	Project Name:
COC No(s):NA	Delivered by: Fed-Ex UPS Courier Hand Delivered Other:
Assigned ARI Job No: 1790005	Tarablan Ma
Preliminary Examination Phase:	Tracking No:NA
Were intact, properly signed and dated custody seals attached	to the outside of to cooler?
Were custody papers included with the cooler?	
Were custody papers properly filled out (ink, signed, etc.)	
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for ch	
If cooler temperature is out of compliance fill out form 00070F	Temp Gun ID#: 100256
Cooler Accepted by:	Dolaria 1211
10.	Date: Del Oll Time: 124) Is and attach all shipping documents
Log-In Phase:	e and accor an ampping documents
Was a torrespond to black in the U.S. II	
Was a temperature blank included in the cooler?	YES (NO)
Was sufficient is used (if approximately)	rap Wet Ice Gel Packs Baggies Foam Block Paper Other:
Was sufficient ice used (if appropriate)?	
Were all bottles sealed in individual plastic bags?	
Did all bottles arrive in good condition (unbroken)?	
Were all bottle labels complete and legible?	
Did the number of containers listed on COC match with the num	mper of containers received? YES NO
Did all bottle labels and tags agree with custody papers?	
Were all bottles used correct for the requested analyses?	
Do any of the analyses (bottles) require preservation? (attach p Were all VOC vials free of air bubbles?	oreservation sheet, excluding VOCs) (NA YES NO
Was sufficient amount of sample sent in coch bettle?	NA YES NO
Was sufficient amount of sample sent in each bottle?	YES NO
Date VOC Trip Blank was made at ARI	
011271	Equipment: Split by: Split by:
Samples Logged by: Dail	
\ ** Notify Project Manag	ger of discrepancies or concerns ** DID () 5F0 U3 1
Sample ID on Bottle Sample ID on COC	
oumple is off occ	Sample ID on Bottle Sample ID on COC
Additional Notes, Discrepancies, & Resolutions:	
By: Date:	
Small Air Bubbles Peshubbles LARGE Air Bubbles	Small → "sm" (<2 mm)
2mm 2-4 mm > 4 mm	Peabubbles \rightarrow "pb" (2 to < 4 mm)
	Large → "lg" (4 to < 6 mm)
	Headspace → "hs" (>6 mm)
	The second secon

0016F 3/2/10

Cooler Receipt Form

Revision 014



Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
KSC-OF-20-0.3	17G0005-01	Solid	29-Jun-2017 14:30	30-Jun-2017 12:45

Analytical Resources, Inc.



Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

Case Narrative

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270D-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx (Ac/Si cleaned)

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Total Metals -

Analytical Resources, Inc.



Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

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Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

KSC-OF-20-0.3 17G0005-01 (Solid)

Semivolatile Organic Compounds - SIM

 Method: EPA 8270D-SIM
 Sampled: 06/29/2017 14:30

 Instrument: NT8
 Analyzed: 12-Jul-2017 14:57

Sample Preparation: Preparation Method: EPA 3546 (Microwave)

Preparation Batch: BFG0141Sample Size: 13.32 g (wet)Dry Weight: 10.26 gPrepared: 10-Jul-2017Final Volume: 0.5 mL% Solids: 77.02

Sample Cleanup: Cleanup Method: Silica Gel

Cleanup Batch: CFG0062 Initial Volume: 0.5 mL Cleaned: 12-Jul-2017 Final Volume: 0.5 mL

			Detection	Reporting			
Analyte	CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.24	4.87	3.42	ug/kg	J
2-Methylnaphthalene	91-57-6	1	1.08	4.87	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	0.39	4.87	ND	ug/kg	U
Acenaphthylene	208-96-8	1	1.06	4.87	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.56	4.87	2.46	ug/kg	J
Dibenzofuran	132-64-9	1	1.34	4.87	ND	ug/kg	U
Fluorene	86-73-7	1	0.62	4.87	3.37	ug/kg	J
Phenanthrene	85-01-8	1	0.70	4.87	10.6	ug/kg	
Anthracene	120-12-7	1	0.85	4.87	ND	ug/kg	U
Fluoranthene	206-44-0	1	0.46	4.87	13.8	ug/kg	
Pyrene	129-00-0	1	0.61	4.87	14.6	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.80	4.87	5.50	ug/kg	
Chrysene	218-01-9	1	1.03	4.87	9.01	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	1.34	4.87	5.52	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.74	4.87	2.55	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.66	4.87	3.05	ug/kg	J
Benzofluoranthenes, Total		1	2.93	9.75	9.95	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.60	4.87	5.11	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.02	4.87	4.06	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.87	4.87	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	1.04	4.87	5.53	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				32-120 %	55.1	%	
Surrogate: Dibenzo[a,h]anthracene-d14				21-133 %	101	%	
Surrogate: Fluoranthene-d10				36-134 %	67.7	%	

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Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

KSC-OF-20-0.3 17G0005-01 (Solid)

Petro	aum	Hyd	raca	rhone
retro	leum	пva	roca	roons

Method: NWTPH-Dx					Sa	mpled: 06/	29/2017 14:30
Instrument: FID4					Ana	lyzed: 14-J	Jul-2017 15:13
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BFG0140 Prepared: 12-Jul-2017	Sample Size: 1 Final Volume:	U ()	•	Weight:7.70 Solids: 77.02	g	
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CFG0080 Cleaned: 13-Jul-2017	Initial Volume: Final Volume:					
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CFG0079 Cleaned: 13-Jul-2017	Initial Volume: Final Volume:					
Analyte		CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12	2-C24)		1	6.49	9.72	mg/kg	
HC ID: DRO							
Motor Oil Range Organics ((C24-C38)		1	13.0	20.8	mg/kg	
HC ID: RRO							
Surrogate: o-Terphenyl				50-150 %	79.6	%	

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Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

KSC-OF-20-0.3 17G0005-01 (Solid)

A	_1		D/	TD
Aro	CI	or	r	ъß

Method: EPA 8082A				Sampled: 06/29/2017 14:
Instrument: ECD7				Analyzed: 13-Jul-2017 10:
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BFG0066 Prepared: 10-Jul-2017	Sample Size: 7.1 g (wet) Final Volume: 5 mL		Dry Weight:5.47 g % Solids: 77.02
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CFG0060 Cleaned: 12-Jul-2017	Initial Volume: 5 mL Final Volume: 5 mL		
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CFG0058 Cleaned: 12-Jul-2017	Initial Volume: 5 mL Final Volume: 5 mL		
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CFG0059 Cleaned: 12-Jul-2017	Initial Volume: 5 mL Final Volume: 5 mL		
		De	etection Rep	porting

			Detection	Reporting			
Analyte	CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	7.3	18.3	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	7.3	18.3	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	7.3	18.3	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	7.3	18.3	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	7.3	18.3	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	7.3	18.3	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	8.5	18.3	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	8.5	18.3	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	8.5	18.3	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				40-133 %	92.5	%	
Surrogate: Tetrachlorometaxylene				53-120 %	79.7	%	
Surrogate: Decachlorobiphenyl [2C]				40-133 %	88.8	%	
Surrogate: Tetrachlorometaxylene [2C]				53-120 %	65.2	%	

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Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

KSC-OF-20-0.3 17G0005-01 (Solid)

Metals and Metallic Compounds

 Method: EPA 6020A
 Sampled: 06/29/2017 14:30

 Instrument: ICPMS2
 Analyzed: 07-Jul-2017 17:18

Sample Preparation: Preparation Method: SWN EPA 3050B
Preparation Batch: BFG0026 Sample Size: 1.013 g (wet) Dry Weight: 0.76 g
Prepared: 06-Jul-2017 Final Volume: 50 mL % Solids: 74.72

	Prepared: 06-Jul-201/	Final volume:	50 mL		% 5	Solias: /4./2		
				Detection	Reporting			
Analyte		CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Arsenic		7440-38-2	20	0.04	0.26	3.80	mg/kg	
Cadmium		7440-43-9	20	0.009	0.13	0.13	mg/kg	
Chromium		7440-47-3	20	0.09	0.66	13.2	mg/kg	
Copper		7440-50-8	20	0.05	0.66	21.9	mg/kg	
Lead		7439-92-1	20	0.01	0.13	9.85	mg/kg	
Nickel		7440-02-0	20	0.02	0.66	11.4	mg/kg	
Selenium		7782-49-2	20	0.52	2.64	0.71	mg/kg	J
Silver		7440-22-4	20	0.004	0.26	0.05	mg/kg	J
Zinc		7440-66-6	20	0.4	5.3	44.1	mg/kg	

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Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

KSC-OF-20-0.3 17G0005-01 (Solid)

Metals and Metallic Compounds

 Method: EPA 7471B
 Sampled: 06/29/2017 14:30

 Instrument: CETAC
 Analyzed: 07-Jul-2017 13:43

Sample Preparation: Preparation Method: SMM EPA 7471B

Preparation Batch: BFG0028 Sample Size: 0.224 g (wet) Dry Weight: 0.17 g
Prepared: 07-Jul-2017 Final Volume: 50 mL % Solids: 74.72

 Analyte
 CAS Number
 Dilution
 Reporting Limit
 Result
 Units
 Notes

 Mercury
 7439-97-6
 1
 0.02987
 0.04481
 mg/kg

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Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

Semivolatile Organic Compounds - SIM - Quality Control

Batch BFG0141 - EPA 3546 (Microwave)

Instrument: NT8 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
-	Resuit	PIIIII	LIIIII							Lillit	110108
Blank (BFG0141-BLK1)					red: 10-Jul-	2017 Ana	lyzed: 12-Jı	ul-2017 13:1	12		
Naphthalene	ND	1.28	5.00	ug/kg							U
2-Methylnaphthalene	ND	1.10	5.00	ug/kg							U
1-Methylnaphthalene	ND	0.40	5.00	ug/kg							U
Acenaphthylene	ND	1.08	5.00	ug/kg							U
Acenaphthene	ND	0.57	5.00	ug/kg							U
Dibenzofuran	ND	1.38	5.00	ug/kg							U
Fluorene	ND	0.63	5.00	ug/kg							U
Phenanthrene	ND	0.72	5.00	ug/kg							U
Anthracene	ND	0.87	5.00	ug/kg							U
Fluoranthene	ND	0.47	5.00	ug/kg							U
Pyrene	ND	0.63	5.00	ug/kg							U
Benzo(a)anthracene	ND	0.82	5.00	ug/kg							U
Chrysene	ND	1.05	5.00	ug/kg							U
Benzo(b)fluoranthene	ND	1.37	5.00	ug/kg							U
Benzo(k)fluoranthene	ND	0.76	5.00	ug/kg							U
Benzo(j)fluoranthene	ND	0.68	5.00	ug/kg							U
Benzofluoranthenes, Total	ND	3.01	10.0	ug/kg							U
Benzo(a)pyrene	ND	0.61	5.00	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	1.05	5.00	ug/kg							U
Dibenzo(a,h)anthracene	ND	0.89	5.00	ug/kg							U
Benzo(g,h,i)perylene	ND	1.07	5.00	ug/kg							U
Surrogate: 2-Methylnaphthalene-d10		90.0		ug/kg	150		60.0	32-120			
Surrogate: Dibenzo[a,h]anthracene-d14		170		ug/kg	150		113	21-133			
Surrogate: Fluoranthene-d10		116		ug/kg	150		77.2	36-134			
LCS (BFG0141-BS1)				Prepa	red: 10-Jul-	2017 Ana	lyzed: 12-Jı	ul-2017 13:3	38		
Naphthalene	77.1	1.28	5.00	ug/kg	150		51.4	36-120			
2-Methylnaphthalene	73.8	1.10	5.00	ug/kg	150		49.2	35-120			
1-Methylnaphthalene	79.9	0.40	5.00	ug/kg	150		53.3	39-120			
Acenaphthylene	81.5	1.08	5.00	ug/kg	150		54.3	35-120			
Acenaphthene	76.5	0.57	5.00	ug/kg	150		51.0	39-120			
Dibenzofuran	83.3	1.38	5.00	ug/kg	150		55.6	38-120			
Fluorene	84.3	0.63	5.00	ug/kg	150		56.2	41-120			
Phenanthrene	88.6	0.72	5.00	ug/kg	150		59.1	46-120			
Anthracene	90.1	0.87	5.00	ug/kg	150		60.0	36-120			

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Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

Semivolatile Organic Compounds - SIM - Quality Control

Batch BFG0141 - EPA 3546 (Microwave)

Instrument: NT8 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BFG0141-BS1)				Prep	ared: 10-Jul-	-2017 Anal	yzed: 12-Ju	ıl-2017 13:3	8		
Fluoranthene	95.6	0.47	5.00	ug/kg	150		63.8	46-120			
Pyrene	98.9	0.63	5.00	ug/kg	150		65.9	49-120			
Benzo(a)anthracene	108	0.82	5.00	ug/kg	150		72.1	42-120			
Chrysene	96.4	1.05	5.00	ug/kg	150		64.2	48-120			
Benzo(b)fluoranthene	113	1.37	5.00	ug/kg	150		75.2	35-127			
Benzo(k)fluoranthene	110	0.76	5.00	ug/kg	150		73.4	37-129			
Benzo(j)fluoranthene	92.8	0.68	5.00	ug/kg	150		61.9	40-120			
Benzofluoranthenes, Total	299	3.01	10.0	ug/kg	450		66.4	46-120			
Benzo(a)pyrene	91.3	0.61	5.00	ug/kg	150		60.9	36-120			
Indeno(1,2,3-cd)pyrene	102	1.05	5.00	ug/kg	150		67.8	40-120			
Dibenzo(a,h)anthracene	112	0.89	5.00	ug/kg	150		74.5	38-120			
Benzo(g,h,i)perylene	103	1.07	5.00	ug/kg	150		68.5	38-120			
Surrogate: 2-Methylnaphthalene-d10		87.3		ug/kg	150		58.2	32-120			
Surrogate: Dibenzo[a,h]anthracene-d14		174		ug/kg	150		116	21-133			
Surrogate: Fluoranthene-d10		114		ug/kg	150		76.0	36-134			

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Dalton, Olmsted & Fuglevand, Inc

Project: Boeing Kent Space Center

10827 NE 68th Street Suite B Kirkland WA, 98033-4400 Project Number: [none]
Project Manager: Dave Cooper

Reported: 17-Jul-2017 15:39

Petroleum Hydrocarbons - Quality Control

Batch BFG0140 - EPA 3546 (Microwave)

Instrument: FID4 Analyst: ML

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFG0140-BLK1)			Prepa	ared: 12-Jul-	2017 Ana	lyzed: 14-J	ul-2017 14:2	.3		
Diesel Range Organics (C12-C24)	ND	5.00	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	10.0	mg/kg							U
Surrogate: o-Terphenyl		17.2	mg/kg	22.5		76.3	50-150			
LCS (BFG0140-BS1)			Prepa	ared: 12-Jul-	2017 Ana	lyzed: 14-J	ul-2017 14:4	18		
Diesel Range Organics (C12-C24)	104	5.00	mg/kg	150		69.6	63-120			
Surrogate: o-Terphenyl		19.3	mg/kg	22.5		85.9	50-150			

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Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

Aroclor PCB - Quality Control

Batch BFG0066 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JR

		Detection	Reporting		Spike	Source		%REC		RPD	
QC Sample/Analyte	Result	Limit	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Blank (BFG0066-BLK1)				Prepa	ared: 10-Jul-	2017 Ana	lyzed: 13-Jı	ul-2017 08:5	59		
Aroclor 1016	ND	8.0	20.0	ug/kg							U
Aroclor 1221	ND	8.0	20.0	ug/kg							U
Aroclor 1232	ND	8.0	20.0	ug/kg							U
Aroclor 1242	ND	8.0	20.0	ug/kg							U
Aroclor 1248	ND	8.0	20.0	ug/kg							U
Aroclor 1254	ND	8.0	20.0	ug/kg							U
Aroclor 1260	ND	9.3	20.0	ug/kg							U
Aroclor 1262	ND	9.3	20.0	ug/kg							U
Aroclor 1268	ND	9.3	20.0	ug/kg							U
Surrogate: Decachlorobiphenyl		36.8		ug/kg	40.0		91.9	40-133			
Surrogate: Tetrachlorometaxylene		31.7		ug/kg	40.0		79.2	53-120			
Surrogate: Decachlorobiphenyl [2C]		35.9		ug/kg	40.0		89.7	40-133			
Surrogate: Tetrachlorometaxylene [2C]		25.5		ug/kg	40.0		63.8	53-120			
LCS (BFG0066-BS1)				Prepa	ared: 10-Jul-	2017 Ana	lyzed: 13-Jı	ul-2017 09:2	21		
Aroclor 1016	420	8.0	20.0	ug/kg	500		84.0	52-120			
Aroclor 1260	440	9.3	20.0	ug/kg	500		88.1	57-120			
Surrogate: Decachlorobiphenyl		35.0		ug/kg	40.0		87.6	40-133			
Surrogate: Tetrachlorometaxylene		30.2		ug/kg	40.0		75.4	53-120			
Surrogate: Decachlorobiphenyl [2C]		34.1		ug/kg	40.0		85.3	40-133			
Surrogate: Tetrachlorometaxylene [2C]		28.9		ug/kg	40.0		72.2	53-120			

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Dalton, Olmsted & Fuglevand, Inc

Project: Boeing Kent Space Center

10827 NE 68th Street Suite B Kirkland WA, 98033-4400 Project Number: [none]
Project Manager: Dave Cooper

Reported: 17-Jul-2017 15:39

Metals and Metallic Compounds - Quality Control

Batch BFG0026 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: TCH

			Detection	Reporting		Spike	Source		%REC		RPD	
QC Sample/Analyte	Isotope	Result	Limit	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Blank (BFG0026-BLK1)					Prepa	red: 06-Jul-	-2017 Anal	yzed: 07-Ju	ıl-2017 13:4	1 1		
Arsenic	75a	ND	0.03	0.20	mg/kg							U
Cadmium	111	ND	0.007	0.10	mg/kg							U
Cadmium	114	ND	0.005	0.10	mg/kg							U
Chromium	52	ND	0.07	0.50	mg/kg							U
Chromium	53	ND	0.04	0.50	mg/kg							U
Copper	63	ND	0.04	0.50	mg/kg							U
Copper	65	ND	0.03	0.50	mg/kg							U
Lead	208	ND	0.008	0.10	mg/kg							U
Nickel	60	ND	0.02	0.50	mg/kg							U
Nickel	62	ND	0.27	0.50	mg/kg							U
Selenium	78	ND	0.39	2.00	mg/kg							U
Silver	107	0.005	0.003	0.20	mg/kg							J
Zinc	66	ND	0.3	4.0	mg/kg							U
Zinc	67	0.3	0.2	4.0	mg/kg							J
LCS (BFG0026-BS1)		· · · · · ·	· · · · · · · · · · · · · · · · · · ·		Prepa	ared: 06-Jul-	-2017 Anal	yzed: 07-Jı	ıl-2017 14:2	25		·
Arsenic	75a	25.3	0.03	0.20	mg/kg	25.0		101	80-120			
Cadmium	111	25.4	0.007	0.10	mg/kg	25.0		102	80-120			
Cadmium	114	25.2	0.005	0.10	mg/kg	25.0		101	80-120			
Chromium	52	25.7	0.07	0.50	mg/kg	25.0		103	80-120			
Chromium	53	26.0	0.04	0.50	mg/kg	25.0		104	80-120			
Copper	63	27.1	0.04	0.50	mg/kg	25.0		108	80-120			
Copper	65	27.6	0.03	0.50	mg/kg	25.0		110	80-120			
Lead	208	27.0	0.008	0.10	mg/kg	25.0		108	80-120			
Nickel	60	26.7	0.02	0.50	mg/kg	25.0		107	80-120			
Nickel	62	27.0	0.27	0.50	mg/kg	25.0		108	80-120			
Selenium	78	78.7	0.39	2.00	mg/kg	80.0		98.4	80-120			
Silver	107	25.8	0.003	0.20	mg/kg	25.0		103	80-120			
Zinc	66	85.5	0.3	4.0	mg/kg	80.0		107	80-120			
Zinc	67	81.4	0.2	4.0	mg/kg	80.0		102	80-120			

Analytical Resources, Inc.



Dalton, Olmsted & Fuglevand, Inc

Project: Boeing Kent Space Center

10827 NE 68th Street Suite B Kirkland WA, 98033-4400 Project Number: [none]
Project Manager: Dave Cooper

Reported: 17-Jul-2017 15:39

Metals and Metallic Compounds - Quality Control

Batch BFG0028 - SMM EPA 7471B

Instrument: CETAC Analyst: MCB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFG0028-BLK1)			Prepa	ared: 07-Jul-	2017 Anal	lyzed: 07-Jı	ul-2017 13:2	27		
Mercury	ND	0.02500	mg/kg							U
LCS (BFG0028-BS1)			Prepa	ared: 07-Jul-	2017 Anal	lyzed: 07-Ji	ul-2017 13:2	29		
Mercury	0.5700	0.02500	mg/kg	0.5000		114	80-120			

Analytical Resources, Inc.





Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

Certified Analyses included in this Report

Analyte	Certifications
EPA 6020A in Solid	
Silver-107	NELAP,DoD-ELAP,WADOE
Arsenic-75a	NELAP,ADEC,DoD-ELAP,WADOE
Arsenic-75b	ADEC,DoD-ELAP,WADOE
Cadmium-111	NELAP,DoD-ELAP,WADOE,ADEC
Cadmium-114	NELAP,DoD-ELAP,WADOE,ADEC
Chromium-52	NELAP,DoD-ELAP,WADOE,ADEC
Chromium-53	NELAP,DoD-ELAP,WADOE,ADEC
Copper-63	NELAP,DoD-ELAP,WADOE
Copper-65	NELAP,DoD-ELAP,WADOE
Nickel-60	NELAP,DoD-ELAP,WADOE,ADEC
Nickel-62	NELAP,DoD-ELAP,WADOE,ADEC
Lead-208	NELAP,DoD-ELAP,WADOE,ADEC
Selenium-82	NELAP,DoD-ELAP,WADOE
Selenium-78	NELAP,DoD-ELAP,WADOE
Zinc-66	NELAP,DoD-ELAP,WADOE
Zinc-67	NELAP,DoD-ELAP,WADOE
EPA 7471B in Solid	
Mercury	WADOE,NELAP,DoD-ELAP,CALAP
EPA 8082A in Solid	
Aroclor 1016	WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1016 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1221	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1221 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1232	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1232 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1242	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1242 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1248	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1248 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1254	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1254 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1260	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1260 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1262	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Aroclor 1262 [2C]	WADOE,DoD-ELAP,NELAP,CALAP,ADEC

Analytical Resources, Inc.



Dalton, Olmsted & Fuglevand, Inc

Project: Boeing Kent Space Center

Project Number: [none]

Reported:

Kirkland WA, 98033-4400

Project Manager: Dave Cooper

17-Jul-2017 15:39

Aroclor 1268 WADOE, DoD-ELAP, NELAP, CALAP, ADEC
Aroclor 1268 [2C] WADOE, DoD-ELAP, NELAP, CALAP, ADEC

EPA 8270D-SIM in Solid

Naphthalene ADEC, DoD-ELAP, NELAP, WADOE

2-Methylnaphthalene ADEC,DoD-ELAP,NELAP

1-Methylnaphthalene ADEC,DoD-ELAP,NELAP,WADOE

Biphenyl ADEC, DoD-ELAP, NELAP

2,6-Dimethylnaphthalene ADEC,WADOE

Acenaphthylene ADEC,DoD-ELAP,NELAP,WADOE Acenaphthene ADEC,DoD-ELAP,NELAP,WADOE

Dibenzofuran ADEC, DoD-ELAP, NELAP

Fluorene ADEC,DoD-ELAP,NELAP,WADOE Phenanthrene ADEC,DoD-ELAP,NELAP,WADOE Anthracene ADEC,DoD-ELAP,NELAP,WADOE

Carbazole ADEC, DoD-ELAP, NELAP

1-Methylphenanthrene ADEC

Fluoranthene ADEC,DoD-ELAP,NELAP,WADOE
Pyrene ADEC,DoD-ELAP,NELAP,WADOE
Benzo(a)anthracene ADEC,DoD-ELAP,NELAP,WADOE
Chrysene ADEC,DoD-ELAP,NELAP,WADOE
Benzo(b)fluoranthene ADEC,DoD-ELAP,NELAP,WADOE
Benzo(k)fluoranthene ADEC,DoD-ELAP,NELAP,WADOE
Benzo(j)fluoranthene ADEC,DoD-ELAP,NELAP,WADOE

Benzo(e)pyrene ADEC,NELAP

Benzo(a)pyrene ADEC,DoD-ELAP,NELAP,WADOE

Perylene ADEC,NELAP

Indeno(1,2,3-cd)pyrene ADEC,DoD-ELAP,NELAP,WADOE

Dibenzo(a,h)anthracene ADEC,DoD-ELAP

Benzo(g,h,i)perylene ADEC,DoD-ELAP,NELAP,WADOE

NWTPH-Dx in Solid

DoD-ELAP, NELAP, WADOE Diesel Range Organics (C12-C24) Diesel Range Organics (C10-C25) DoD-ELAP, NELAP, WADOE Diesel Range Organics (Tol-C18) DoD-ELAP, NELAP, WADOE Diesel Range Organics (C10-24) DoD-ELAP, NELAP, WADOE Diesel Range Organics (C10-C28) DoD-ELAP, NELAP, WADOE Motor Oil Range Organics (C24-C38) DoD-ELAP, NELAP, WADOE Motor Oil Range Organics (C25-C36) DoD-ELAP, NELAP, WADOE Motor Oil Range Organics (C24-C40) DoD-ELAP, NELAP, WADOE Mineral Oil Range Organics (C16-C28) DoD-ELAP, NELAP, WADOE

Analytical Resources, Inc.





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l	10827 NE 68th Street Suite B	Project Number: [none]	Reported:
l	Kirkland WA, 98033-4400	Project Manager: Dave Cooper	17-Jul-2017 15:39

Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,NELAP,WADOE
JP8 Range Organics (C8-C18)	DoD-ELAP,NELAP,WADOE
JP5 Range Organics (C10-C16)	DoD-ELAP,NELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,NELAP,WADOE
Jet-A Range Organics (C10-C18)	DoD-ELAP,NELAP,WADOE
Kerosene Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Stoddard Range Organics (C8-C12)	DoD-ELAP,NELAP,WADOE
Creosote Range Organics (C12-C22)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,NELAP,WADOE
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,NELAP,WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	UST-033	09/01/2017
CALAP	California Department of Public Health CAELAP	2748	02/28/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/07/2019
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006	05/11/2018
WADOE	WA Dept of Ecology	C558	06/30/2018
WA-DW	Ecology - Drinking Water	C558	06/30/2018

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Dalton, Olmsted & Fuglevand, Inc Project: Boeing Kent Space Center

10827 NE 68th Street Suite BProject Number: [none]Reported:Kirkland WA, 98033-4400Project Manager: Dave Cooper17-Jul-2017 15:39

Notes and Definitions

U This analyte is not detected above the applicable reporting or detection limit.

J Estimated concentration value detected below the reporting limit.

D The reported value is from a dilution

* Flagged value is not within established control limits.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

[2C] Indicates this result was quantified on the second column on a dual column analysis.



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ANALYTICAL RESULTS

Prepared by:

Prepared for:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 The Boeing Company PO Box 3707 MC 1W-12 Seattle WA 98124

Report Date: February 23, 2017

Project: Boeing Kent Space Center

Submittal Date: 01/27/2017 Group Number: 1759258 State of Sample Origin: WA

	Lancaster Labs
Client Sample Description	<u>(LL) #</u>
KSC-SB1-GW Dissolved Metals Water	8807826
KSC-SB2-GW Dissolved Metals Water	8807827
KSC-SB6-GW Water	8807828
KSC-SB7-GW Water	8807829
KSC-SB8-GW Water	8807830
KSC-SB8-GW Dissolved Metals Water	8807831
KSC-SB9-GW Water	8807832
KSC-SB10-GW Water	8807833
KSC-SB11-GW Water	8807834
KSC-SB12-GW Water	8807835
KSC-SB12-GW Dissolved Metals Water	8807836
Trip Blank 1 Water	8807837
KSCRI-SB1-(11.5-12.5) Soil	8807838
KSCRI-SB2-(11.5-12.5) Soil	8807839
KSC-SB19-GW Water	8807840

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To The Boeing Company Attn: Lindsey Mahrt Electronic Copy To Dalton, Olmstead and Fuglevand Attn: Tasya Gray



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Respectfully Submitted,

Kay Hower

(717) 556-7364

Project Name: Boeing Kent Space Center LL Group #: 1759258

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

ECY 97-602 NWTPH-Dx modified, GC Petroleum Hydrocarbons

<u>Sample #s: 8807832</u>

The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The LCS/LCSD surrogate(s) recovery is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported.

Sample #s: 8807828, 8807829, 8807833, 8807835

The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The LCS/LCSD surrogate(s) recovery is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported. The sample pattern does not match our reference standard for #2fuel/diesel.

Sample #s: 8807830

The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The LCS/LCSD surrogate(s) recovery is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported. The sample pattern is most similar to our reference standard for #2fuel/diesel.

Sample #s: 8807834

The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The LCS/LCSD surrogate(s) recovery is outside the QC acceptance limits as noted on the QC Summary.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported.

The sample pattern does not match our reference standard for #2fuel/diesel.

Batch #: 170380015A (Sample number(s): 8807828-8807830, 8807832-8807835)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8807834, Blank, LCS, LCSD

SW-846 6020A, Metals

<u>Batch #: 170310637001A (Sample number(s): 8807838-8807839 UNSPK: P809612 BKG: P809612)</u>

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Lead, Zinc, Arsenic, Copper

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside acceptance windows: Arsenic, Lead, Silver, Zinc



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Sample Description: KSC-SB1-GW Dissolved Metals Water

Being Kent Space Center

LL Sample # WW 8807826 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/27/2017 09:30

Collected: 01/24/2017 17:50 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/23/2017 21:24 Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	Dissolved	EPA 200.8 rev 5.4	mg/l	mg/l	
06025	Arsenic	7440-38-2	0.193	0.0020	1
06031	Chromium	7440-47-3	0.0020 U	0.0020	1
06033	Copper	7440-50-8	0.0027	0.0020	1
06035	Lead	7439-92-1	0.0010 U	0.0010	1
06039	Nickel	7440-02-0	0.0054	0.0020	1
06042	Silver	7440-22-4	0.00050 U	0.00050	1
06049	Zinc	7440-66-6	0.0150 U	0.0150	1

Sample Comments

State of Washington Lab Certification No. C457 This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	e	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 1	15:22	Patrick J Engle	1
06031	Chromium	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 1	15:22	Patrick J Engle	1
06033	Copper	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 1	15:22	Patrick J Engle	1
06035	Lead	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 1	15:22	Patrick J Engle	1
06039	Nickel	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 1	15:22	Patrick J Engle	1
06042	Silver	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 1	15:22	Patrick J Engle	1
06049	Zinc	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 1	15:22	Patrick J Engle	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	170317050003	02/02/2017 1	16:50	JoElla L Rice	1



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Sample Description: KSC-SB2-GW Dissolved Metals Water

Being Kent Space Center

LL Sample # WW 8807827 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/27/2017 09:30

Collected: 01/24/2017 18:40 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/23/2017 21:24 Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	Dissolved	EPA 200.8 rev 5.4	mg/l	mg/l	
06025	Arsenic	7440-38-2	0.133	0.0020	1
06031	Chromium	7440-47-3	0.0020 U	0.0020	1
06033	Copper	7440-50-8	0.0020 U	0.0020	1
06035	Lead	7439-92-1	0.0010 U	0.0010	1
06039	Nickel	7440-02-0	0.0188	0.0020	1
06042	Silver	7440-22-4	0.00050 U	0.00050	1
06049	Zinc	7440-66-6	0.0150 U	0.0150	1

Sample Comments

State of Washington Lab Certification No. ${\rm C457}$ This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis	Analyst	Dilution
No.					Date and Time		Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 15:23	Patrick J Engle	1
06031	Chromium	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 15:23	Patrick J Engle	1
06033	Copper	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 15:23	Patrick J Engle	1
06035	Lead	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 15:23	Patrick J Engle	1
06039	Nickel	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 15:23	Patrick J Engle	1
06042	Silver	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 15:23	Patrick J Engle	1
06049	Zinc	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 15:23	Patrick J Engle	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	170317050003	02/02/2017 16:50	JoElla L Rice	1



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Sample Description: KSC-SB6-GW Water

Being Kent Space Center

LL Sample # WW 8807828 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/27/2017 09:30

Collected: 01/24/2017 15:30 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/23/2017 21:24 Seattle WA 98124

KSC06

CAT No.	Analysis Name		CAS Number	Result	t	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 82	60C	ug/l		ug/l	
11996	Benzene		71-43-2	0.3		0.2	1
11996	cis-1,2-Dichloro	ethene	156-59-2	0.2		0.2	1
11996	trans-1,2-Dichloroe	ethene	156-60-5	0.2	U	0.2	1
11996	Ethylbenzene		100-41-4	0.5	U	0.5	1
11996	Toluene		108-88-3	0.2	U	0.2	1
11996	Trichloroethene		79-01-6	0.2	U	0.2	1
11996	Xylene (Total)		1330-20-7	0.5	U	0.5	1
GC/MS	Volatiles	SW-846 82	60C SIM	ug/l		ug/l	
12030	Vinyl chloride		75-01-4	0.19		0.020	1
	troleum carbons	ECY 97-60 modified	2 NWTPH-Dx	mg/l		mg/l	
12082	Diesel/#2 Fuel		68334-30-5	0.095	U	0.095	1
Tria	al ID: RE						
12082	Diesel/#2 Fuel		68334-30-5	0.13		0.10	1

TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons. The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The LCS/LCSD surrogate(s) recovery is outside the QC acceptance limits as noted on the QC Summary.

The following corrective action was taken:

The sample was re-extracted outside the method required holding

time and the QC is compliant. All results are reported.

The sample pattern does not match our reference standard for #2fuel/diesel.

Sample Comments

State of Washington Lab Certification No. ${\rm C457}$

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C	SW-846 8260C	1	H170372AA	02/06/2017 13:55	Kevin A Sposito	1
	BTEX, TCE, c12DCE, t12DCE						
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E170331AA	02/02/2017 11:38	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E170331AA	02/02/2017 11:38	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H170372AA	02/06/2017 13:55	Kevin A Sposito	1
12082	NWTPH-Dx (Diesel)	ECY 97-602	1	170380015A	02/14/2017 15:19	Heather E William	s 1
		NWTPH-Dx modified					



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Sample Description: KSC-SB6-GW Water

Being Kent Space Center

LL Sample # WW 8807828 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/24/2017 15:30 by DC The Boeing Company

PO Box 3707 MC 1W-12

Seattle WA 98124

Submitted: 01/27/2017 09:30

Reported: 02/23/2017 21:24

KSC06

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	2-RE	170480013A	02/21/2017 00:38	Heather E Williams	3 1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	1	170380015A	02/07/2017 22:30	Nicholas W Shroyer	1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	2	170480013A	02/17/2017 16:00	Shawn J McMullen	1



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Sample Description: KSC-SB7-GW Water

Being Kent Space Center

LL Sample # WW 8807829 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/27/2017 09:30

Collected: 01/24/2017 14:30 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/23/2017 21:24 Seattle WA 98124

KSC07

CAT No.	Analysis Name		CAS Number	Result	:	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 826	0C	ug/l		ug/l	
11996	Benzene		71-43-2	0.2	U	0.2	1
11996	cis-1,2-Dichloroeth	ene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroe	thene	156-60-5	0.2	U	0.2	1
11996	Ethylbenzene		100-41-4	0.5	U	0.5	1
11996	Toluene		108-88-3	0.2	U	0.2	1
11996	Trichloroethene		79-01-6	0.2	U	0.2	1
11996	Xylene (Total)		1330-20-7	0.5	U	0.5	1
GC/MS	Volatiles	SW-846 826	OC SIM	ug/l		ug/l	
12030	Vinyl chloride		75-01-4	0.020	U	0.020	1
	croleum carbons	ECY 97-602 modified	NWTPH-Dx	mg/l		mg/l	
12082	Diesel/#2 Fuel		68334-30-5	0.095	U	0.095	1
Tria	l ID: RE						
12082	Diesel/#2 Fuel		68334-30-5	0.12		0.099	1

TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons.

The recovery for the method blank surrogate(s) is outside the

QC acceptance limits as noted on the QC Summary. The LCS/LCSD surrogate(s)

recovery is outside the QC acceptance

limits as noted on the QC Summary.

The following corrective action was taken:

The sample was re-extracted outside the method required holding

time and the QC is compliant. All results are reported.

The sample pattern does not match our reference standard for #2fuel/diesel.

Sample Comments

State of Washington Lab Certification No. ${\tt C457}$

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	•	Analyst	Dilution Factor
11996	8260C BTEX,TCE,c12DCE,t12DCE	SW-846 8260C	1	H170372AA	02/06/2017 1	4:15	Kevin A Sposito	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E170331AA	02/02/2017 1	1:58	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E170331AA	02/02/2017 1	1:58	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H170372AA	02/06/2017 1	4:15	Kevin A Sposito	1
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	1	170380015A	02/14/2017 1	6:09	Heather E Williams	1



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Sample Description: KSC-SB7-GW Water

Being Kent Space Center

LL Sample # WW 8807829 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/24/2017 14:30 by DC The Boeing Company

PO Box 3707 MC 1W-12

Seattle WA 98124

Submitted: 01/27/2017 09:30

Reported: 02/23/2017 21:24

KSC07

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
12082	NWTPH-Dx (Diesel)	ECY 97-602	2-RE	170480013A	02/21/2017	01:27	Heather E Williams	1
12119	TPH-Dx w/Fuel Water Ext.	NWTPH-Dx modified ECY 97-602 NWTPH-Dx 06/97	1	170380015A	02/07/2017	22:30	Nicholas W Shroyer	1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	2	170480013A	02/17/2017	16:00	Shawn J McMullen	1



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Sample Description: KSC-SB8-GW Water

Being Kent Space Center

LL Sample # WW 8807830 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/27/2017 09:30

Collected: 01/24/2017 12:30 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/23/2017 21:24 Seattle WA 98124

KSC08

CAT No.	Analysis Name		CAS Number	Resul	t	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	3260C	ug/l		ug/l	
11996	Benzene		71-43-2	0.2	U	0.2	1
11996	cis-1,2-Dichloroe	thene	156-59-2	0.2		0.2	1
11996	trans-1,2-Dichloroe	thene	156-60-5	0.2	U	0.2	1
11996	Ethylbenzene		100-41-4	0.5	U	0.5	1
11996	Toluene		108-88-3	0.2	U	0.2	1
11996	Trichloroethene		79-01-6	0.2	U	0.2	1
11996	Xylene (Total)		1330-20-7	0.5	U	0.5	1
GC/MS	Volatiles	SW-846	8260C SIM	ug/l		ug/l	
12030	Vinyl chloride		75-01-4	0.19		0.020	1
GC Petroleum ECY 97-602 Hydrocarbons modified		602 NWTPH-Dx	mg/l		mg/l		
12082	Diesel/#2 Fuel		68334-30-5	0.13		0.095	1
Trial ID: RE							
12082	Diesel/#2 Fuel		68334-30-5	0.20		0.10	1

TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons.

The recovery for the method blank surrogate(s) is outside the

QC acceptance limits as noted on the QC Summary. The LCS/LCSD surrogate(s) $\,$

recovery is outside the QC acceptance $\,$

limits as noted on the QC Summary.

The following corrective action was taken:

The sample was re-extracted outside the method required holding

time and the QC is compliant. All results are reported.

The sample pattern is most similar to our reference standard for #2fuel/diesel.

Sample Comments

State of Washington Lab Certification No. ${\tt C457}$

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C	SW-846 8260C	1	H170372AA	02/06/2017 14:35	Kevin A Sposito	1
	BTEX, TCE, c12DCE, t12DCE						
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E170331AA	02/02/2017 12:19	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E170331AA	02/02/2017 12:19	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H170372AA	02/06/2017 14:35	Kevin A Sposito	1
12082	NWTPH-Dx (Diesel)	ECY 97-602	1	170380015A	02/14/2017 16:59	Heather E Williams	3 1
		NWTPH-Dx modified					



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Sample Description: KSC-SB8-GW Water

Being Kent Space Center

LL Sample # WW 8807830 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/24/2017 12:30 by DC The Boeing Company

PO Box 3707 MC 1W-12

Seattle WA 98124

Submitted: 01/27/2017 09:30

Reported: 02/23/2017 21:24

KSC08

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	2-RE	170480013A	02/21/2017 02:1	Heather E Williams	: 1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	1	170380015A	02/07/2017 22:3) Nicholas W Shroyer	1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	2	170480013A	02/17/2017 16:0) Shawn J McMullen	1



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Sample Description: KSC-SB8-GW Dissolved Metals Water

Being Kent Space Center

LL Sample # WW 8807831 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/27/2017 09:30

Collected: 01/24/2017 12:30 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/23/2017 21:24 Seattle WA 98124

CAT No. Analysis Name CAS Number Result Limit of Dilution Factor

 Metals Dissolved
 EPA 200.8 rev 5.4
 mg/l
 mg/l

 06025 Arsenic
 7440-38-2
 0.0483
 0.0020
 1

Sample Comments

State of Washington Lab Certification No. C457 This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
	Arsenic	EPA 200.8 rev 5.4	1	170317050003A		Patrick J Engle	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	170317050003	02/02/2017 16:50	JoElla L Rice	1



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Sample Description: KSC-SB9-GW Water

Being Kent Space Center

LL Sample # WW 8807832 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/27/2017 09:30

Collected: 01/25/2017 20:45 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/23/2017 21:24 Seattle WA 98124

KSC09

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation	Dilution Factor
	troleum carbons	ECY 97-602 modified	NWTPH-Dx	mg/l	mg/l	
12082	Diesel/#2 Fuel		68334-30-5	0.095 U	0.095	1
Tria	al ID: RE					
TPH that C8 (The QC a reco limi The	of a hydrocarbon conn-octane) through C4 recovery for the met.	mponent mix ca 0 (n-tetracont hod blank surr noted on the Q QC acceptance C Summary. action was ta ted outside th	libration in a ane) normal hydrogate(s) is our C Summary. The ken:	the sample pattern to range that includes drocarbons. tside the e LCS/LCSD surrogate(s)	0.11	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	ı	Analyst	Dilution Factor
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	1	170380015A	02/14/2017 1	7:49	Heather E Williams	1
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	2-RE	170480013A	02/21/2017 0	3:03	Heather E Williams	1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	1	170380015A	02/07/2017 2	2:30	Nicholas W Shroyer	1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	2	170480013A	02/17/2017 1	6:00	Shawn J McMullen	1



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Sample Description: KSC-SB10-GW Water

Being Kent Space Center

LL Sample # WW 8807833 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/27/2017 09:30

Collected: 01/25/2017 19:30 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/23/2017 21:24 Seattle WA 98124

KSC10

CAT No. Analysis Name		CAS Number	Result	Limit of Quantitation	Dilution Factor			
GC Petroleum Hydrocarbons	ECY 97-602 modified	NWTPH-Dx	mg/l	mg/l				
12082 Diesel/#2 Fuel		68334-30-5	0.13	0.095	1			
Trial ID: RE								
12082 Diesel/#2 Fuel		68334-30-5	0.17	0.098	1			
12082 Diesel/#2 Fuel 68334-30-5 0.17 0.098 1 TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons. The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The LCS/LCSD surrogate(s) recovery is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the OC is compliant. All results are reported.								

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

The sample pattern does not match our reference standard for #2fuel/diesel.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	e	Analyst	Dilution Factor
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	1	170380015A	02/14/2017	18:39	Heather E Williams	1
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	2-RE	170480013A	02/21/2017	03:52	Heather E Williams	1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	1	170380015A	02/07/2017	22:30	Nicholas W Shroyer	1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602	2	170480013A	02/17/2017	16:00	Shawn J McMullen	1



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Sample Description: KSC-SB11-GW Water

Being Kent Space Center

LL Sample # WW 8807834 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/25/2017 17:45 by DC The Boeing Company

PO Box 3707 MC 1W-12

Seattle WA 98124

Submitted: 01/27/2017 09:30 Reported: 02/23/2017 21:24

KSC11

CAT No. Analysis Name	CAS Number	er Result	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons	ECY 97-602 NWTPH-	Dx mg/l	mg/l	
12082 Diesel/#2 Fuel	68334-30	-5 0.29	0.095	1
Trial ID: RE				
12082 Diesel/#2 Fuel	68334-30-	-5 0.32	0.098	1

TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons. The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary.

The LCS/LCSD surrogate(s) recovery is outside the QC acceptance

limits as noted on the QC Summary.

The recovery for the sample surrogate(s) is outside the QC

acceptance limits as noted on the QC Summary.

The following corrective action was taken:

The sample was re-extracted outside the method required holding

time and the QC is compliant. All results are reported.

The sample pattern does not match our reference standard for #2fuel/diesel.

Sample Comments

State of Washington Lab Certification No. ${\tt C457}$

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	1	170380015A	02/14/2017 19:28	Heather E Williams	3 1
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	2-RE	170480013A	02/21/2017 04:40	Heather E Williams	3 1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	1	170380015A	02/07/2017 22:30	Nicholas W Shroye	1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	2	170480013A	02/17/2017 16:00	Shawn J McMullen	1



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Sample Description: KSC-SB12-GW Water

Being Kent Space Center

LL Sample # WW 8807835 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/27/2017 09:30

Collected: 01/25/2017 16:15 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/23/2017 21:24 Seattle WA 98124

KSC12

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation	Dilution Factor		
	roleum carbons	ECY 97-602 modified	NWTPH-Dx	mg/l	mg/l			
•	Diesel/#2 Fuel		68334-30-5	0.18	0.095	1		
Tria	l ID: RE							
12082	Diesel/#2 Fuel		68334-30-5	0.20	0.098	1		
TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons.								

TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons. The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The LCS/LCSD surrogate(s) recovery is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported.

The sample pattern does not match our reference standard for #2fuel/diesel.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	ı	Analyst	Dilution Factor
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	1	170380015A	02/14/2017 20	0:17	Heather E Williams	1
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	2-RE	170480013A	02/21/2017 0	5:29	Heather E Williams	1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	1	170380015A	02/07/2017 2:	2:30	Nicholas W Shroyer	1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	2	170480013A	02/17/2017 10	6:00	Shawn J McMullen	1



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Sample Description: KSC-SB12-GW Dissolved Metals Water

Being Kent Space Center

LL Sample # WW 8807836 LL Group # 1759258

Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/27/2017 09:30

Collected: 01/25/2017 16:15 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/23/2017 21:24 Seattle WA 98124

CAT Limit of Dilution No. Analysis Name CAS Number Result Quantitation Factor

 Metals Dissolved
 EPA 200.8 rev 5.4
 mg/l
 mg/l

 06025 Arsenic
 7440-38-2
 0.266
 0.0020
 1

Sample Comments

State of Washington Lab Certification No. C457 This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 15:30	Patrick J Engle	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	170317050003	02/02/2017 16:50	JoElla L Rice	1



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Sample Description: Trip Blank 1 Water

Being Kent Space Center

LL Sample # WW 8807837 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/27/2017 09:30

Collected: 01/24/2017 The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/23/2017 21:24 Seattle WA 98124

KSCTB

CAT No.	Analysis Name		CAS Number	Result	:	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260C	ug/l		ug/l	
11996	Benzene		71-43-2	0.2	U	0.2	1
11996	cis-1,2-Dichloroeth	ene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroe	thene	156-60-5	0.2	U	0.2	1
11996	Ethylbenzene		100-41-4	0.5	U	0.5	1
11996	Toluene		108-88-3	0.2	U	0.2	1
11996	Trichloroethene		79-01-6	0.2	U	0.2	1
11996	Xylene (Total)		1330-20-7	0.5	U	0.5	1
GC/MS	Volatiles	SW-846	8260C SIM	ug/l		ug/l	
12030	Vinyl chloride		75-01-4	0.020	U	0.020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C	SW-846 8260C	1	H170372AA	02/06/2017 13:14	Kevin A Sposito	1
	BTEX, TCE, c12DCE, t12DCE						
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E170331AA	02/02/2017 11:17	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E170331AA	02/02/2017 11:17	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H170372AA	02/06/2017 13:14	Kevin A Sposito	1



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Sample Description: KSCRI-SB1-(11.5-12.5) Soil

Being Kent Space Center

LL Sample # SW 8807838 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/24/2017 17:40 by DC The Boeing Company

PO Box 3707 MC 1W-12

Seattle WA 98124

Submitted: 01/27/2017 09:30 Reported: 02/23/2017 21:24

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
Metal	s	SW-846 6020A	mg/kg	mg/kg	
06125	Arsenic	7440-38-2	7.57	0.929	2
06131	Chromium	7440-47-3	24.2	0.929	2
06133	Copper	7440-50-8	37.6	0.929	2
06135	Lead	7439-92-1	6.78	0.465	2
06139	Nickel	7440-02-0	21.7	0.929	2
06142	Silver	7440-22-4	0.232 U	0.232	2
06149	Zinc	7440-66-6	80.3	6.97	2
Wet C	hemistry	SM 2540 G-1997	8	%	
00111	Moisture	n.a.	30.0	0.50	1
	Moisture represents	the loss in weight of the	sample after oven	drying at	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. ${\tt C457}$

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	9	Analyst	Dilution Factor
06125	Arsenic	SW-846 6020A	1	170310637001A	02/06/2017 0)5:36	Choon Y Tian	2
06131	Chromium	SW-846 6020A	1	170310637001A	02/06/2017 0)5:36	Choon Y Tian	2
06133	Copper	SW-846 6020A	1	170310637001A	02/06/2017 0)5:36	Choon Y Tian	2
06135	Lead	SW-846 6020A	1	170310637001A	02/06/2017 0)5:36	Choon Y Tian	2
06139	Nickel	SW-846 6020A	1	170310637001A	02/06/2017 0)5:36	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	170310637001A	02/06/2017 0)5:36	Choon Y Tian	2
06149	Zinc	SW-846 6020A	1	170310637001A	02/06/2017 0	05:36	Choon Y Tian	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	170310637001	01/31/2017 0	06:04	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	17033820006B	02/02/2017 1	L9:39	Scott W Freisher	1



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Sample Description: KSCRI-SB2-(11.5-12.5) Soil

Being Kent Space Center

LL Sample # SW 8807839 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/24/2017 18:30 by DC The Boeing Company

PO Box 3707 MC 1W-12

Submitted: 01/27/2017 09:30 MC 1W-12 Reported: 02/23/2017 21:24 Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
Metal	S	SW-846 6020A	mg/kg	mg/kg	
06125	Arsenic	7440-38-2	8.59	1.01	2
06131	Chromium	7440-47-3	25.5	1.01	2
06133	Copper	7440-50-8	42.7	1.01	2
06135	Lead	7439-92-1	7.30	0.505	2
06139	Nickel	7440-02-0	24.3	1.01	2
06142	Silver	7440-22-4	0.252 U	0.252	2
06149	Zinc	7440-66-6	54.4	7.57	2
Wet C	hemistry	SM 2540 G-1997	8	%	
00111	Moisture	n.a.	30.5	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. ${\tt C457}$

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
06125	Arsenic	SW-846 6020A	1	170310637001A	02/06/2017	05:38	Choon Y Tian	2
06131	Chromium	SW-846 6020A	1	170310637001A	02/06/2017	05:38	Choon Y Tian	2
06133	Copper	SW-846 6020A	1	170310637001A	02/06/2017	05:38	Choon Y Tian	2
06135	Lead	SW-846 6020A	1	170310637001A	02/06/2017	05:38	Choon Y Tian	2
06139	Nickel	SW-846 6020A	1	170310637001A	02/06/2017	05:38	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	170310637001A	02/06/2017	05:38	Choon Y Tian	2
06149	Zinc	SW-846 6020A	1	170310637001A	02/06/2017	05:38	Choon Y Tian	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	170310637001	01/31/2017	06:04	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	17033820006В	02/02/2017	19:39	Scott W Freisher	1



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Sample Description: KSC-SB19-GW Water

Being Kent Space Center

LL Sample # WW 8807840 LL Group # 1759258 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/27/2017 09:30

Collected: 01/25/2017 13:30 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/23/2017 21:24 Seattle WA 98124

KSC19

CAT No.	Analysis Name		CAS Number	Result	:	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 826	0C	ug/l		ug/l	
11996	Benzene		71-43-2	0.2	U	0.2	1
11996	Ethylbenzene		100-41-4	0.5	U	0.5	1
11996	Toluene		108-88-3	0.9		0.2	1
11996	Xylene (Total)		1330-20-7	0.5	U	0.5	1
GC Vol	latiles	ECY 97-602	NWTPH-Gx	ug/l		ug/l	
08273	NWTPH-Gx water C7-0	212	n.a.	250	U	250	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
11996	8260C BTEX	SW-846 8260C	1	H170372AA	02/06/2017	14:56	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H170372AA	02/06/2017	14:56	Kevin A Sposito	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	17033A53A	02/02/2017	17:30	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030C	1	17033A53A	02/02/2017	17:30	Brett W Kenyon	1



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759258

Reported: 02/23/2017 21:24

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	LOQ
	ug/l	ug/l
Batch number: E170331AA Vinyl chloride	Sample number 0.020 U	r(s): 8807828-8807830,8807837 0.020
Batch number: H170372AA Benzene cis-1,2-Dichloroethene trans-1,2-Dichloroethene Ethylbenzene Toluene Trichloroethene Xylene (Total)	Sample number 0.2 U 0.2 U 0.2 U 0.5 U 0.2 U 0.5 U 0.2 U 0.5 U 0.5 U	c(s): 8807828-8807830,8807837,8807840 0.2 0.2 0.2 0.5 0.2 0.5
Batch number: 17033A53A NWTPH-Gx water C7-C12	Sample number 250 U	r(s): 8807840 250
	mg/l	mg/l
Batch number: 170380015A Diesel/#2 Fuel	Sample number 0.10 U	r(s): 8807828-8807830,8807832-8807835 0.10
Batch number: 170480013A Diesel/#2 Fuel	Sample number 0.10 U	r(s): 8807828-8807830,8807832-8807835 0.10
	mg/kg	mg/kg
Batch number: 170310637001A Arsenic Chromium Copper Lead Nickel Silver Zinc	Sample number 0.800 U 0.800 U 0.800 U 0.400 U 0.800 U 0.200 U 0.6.00 U	c(s): 8807838-8807839 0.800 0.800 0.400 0.800 0.200 6.00
	mg/l	mg/l
Batch number: 170317050003A Arsenic Chromium Copper Lead Nickel Silver Zinc	Sample number 0.0020 U 0.0020 U 0.0020 U 0.0010 U 0.0010 U 0.0020 U 0.00050 U 0.0050 U 0.0150 U	E(s): 8807826-8807827,8807831,8807836 0.0020 0.0020 0.0020 0.0010 0.0020 0.0020 0.00050 0.0150

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

^{*-} Outside of specification

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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759258

Reported: 02/23/2017 21:24

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: E170331AA	Sample numbe	r(s): 8807	828-8807830,88	07837					
Vinyl chloride	2.00	1.88	2.00	1.88	94	94	63-137	0	30
Batch number: H170372AA	-		828-8807830,88	07837,8807					
Benzene	5.00	4.88			98		80-120		
cis-1,2-Dichloroethene	5.00	5.10			102		80-120		
trans-1,2-Dichloroethene	5.00	5.06			101		80-120		
Ethylbenzene	5.00	4.68			94		80-120		
Toluene	5.00	4.62			92		80-120		
Trichloroethene	5.00	5.15			103		80-120		
Xylene (Total)	15	14.08			94		80-120		
	ug/l	ug/l	ug/l	ug/l					
Batch number: 17033A53A	Sample numbe	r(s): 8807	840						
NWTPH-Gx water C7-C12	1100	990.7			90		79-120		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 170380015A	Sample numbe	r(s): 8807	828-8807830,88	07832-8807	7835				
Diesel/#2 Fuel	0.801	0.561	0.801	0.557	70	70	60-120	1	20
Batch number: 170480013A	-		828-8807830,88						
Diesel/#2 Fuel	0.801	0.541	0.801	0.515	67	64	60-120	5	20
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 170310637001A	Sample numbe	r(s): 8807	838-8807839						
Arsenic	1.00	0.964			96		80-120		
Chromium	5.00	5.29			106		80-120		
Copper	5.00	5.18			104		80-120		
Lead	1.50	1.59			106		80-120		
Nickel	5.00	5.06			101		80-120		
Silver	5.00	5.27			105		80-120		
Zinc	50	51.64			103		80-120		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 170317050003A	Sample numbe	r(s): 8807	826-8807827,88	07831,8807	7836				
Arsenic	0.0100	0.0102			102		85-115		
Chromium	0.0500	0.0495			99		85-115		
Copper	0.0500	0.0492			98		85-115		
Lead	0.0150	0.0149			99		85-115		
Nickel	0.0500	0.0488			98		85-115		
Silver	0.0500	0.0493			99		85-115		
Zinc	0.500	0.500			100		85-115		
	%	%	%	%					
Batch number: 17033820006B	Sample numbe	r(s): 8807	838-8807839						
Moisture	89.5	89.47			100		99-101		

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759258

Reported: 02/23/2017 21:24

LCS/LCSD (continued)

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	٠	٠	٠	٠					

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: H170372AA	Sample numb	er(s): 8805	7828-8807	830,8807837	.8807840 t	INSPK: P	309615			
Benzene	0.2 U	5.00	5.22	5.00	5.18	104	104	80-120	1	30
cis-1,2-Dichloroethene	0.2 U	5.00	5.36	5.00	5.38	107	108	80-120	1	30
trans-1,2-Dichloroethene	0.2 U	5.00	5.52	5.00	5.51	110	110	80-120	0	30
Ethylbenzene	0.5 U	5.00	5.20	5.00	5.15	104	103	80-120	1	30
Toluene	0.2 U	5.00	5.17	5.00	5.07	103	101	80-120	2	30
Trichloroethene	0.2 U	5.00	5.59	5.00	5.68	112	114	80-120	2	30
Xylene (Total)	0.5 U	15	15.63	15	15.21	104	101	80-120	3	30
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 17033A53A	Sample numb	er(s): 8807	7840 UNSP	K: P809615						
NWTPH-Gx water C7-C12	250 U	1100	1088.45	1100	1097.17	99	100	79-120	1	30
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 170310637001A	Sample numb	er(s): 8807	7838-8807	839 UNSPK: 1	P809612					
Arsenic	4.78	1.83	8.20	1.44	6.02	186*	86	75-125	31*	20
Chromium	17.11	9.17	24.59	7.19	22.79	82	79	75-125	8	20
Copper	23.23	9.17	35.21	7.19	30.82	131*	106	75-125	13	20
Lead	5.37	2.75	13.36	2.16	6.48	290*	52*	75-125	69*	20
Nickel	13.54	9.17	22.11	7.19	19.96	93	89	75-125	10	20
Silver	0.0318	9.17	8.72	7.19	6.79	95	94	75-125	25*	20
Zinc	31.41	45.87	122.11	35.97	94.79	198*	176*	75-125	25*	20
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 170317050003A	Sample numb	er(s): 8807	7826-8807	827,8807831	,8807836 t	JNSPK: P8	309616			
Arsenic	0.0167	0.0100	0.0271			103		70-130		
Chromium	0.0020 U	0.0500	0.0477			95		70-130		
Copper	0.0020 U	0.0500	0.0478			96		70-130		
Lead	0.0010 U	0.0150	0.0147			98		70-130		
Nickel	0.000817	0.0500	0.0488			96		70-130		
Silver	0.00050 U	0.0500	0.0481			96		70-130		
Zinc	0.0150 U	0.500	0.470			94		70-130		

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759258

Reported: 02/23/2017 21:24

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 170310637001A	Sample number(s):		PKC: D800612	
Arsenic	4.78	4.82	1	20
Chromium	17.11	16.61	3	20
Copper	23.23	23.19	0	20
Lead	5.37	5.32	1	20
Nickel	13.54	13.6	0	20
Silver	0.0318	0.0330	4 (1)	20
Zinc	31.41	30.16	4	20
21110	31.11	30.10	-	20
	mg/l	mg/l		
Batch number: 170317050003A	Sample number(s):	8807826-8807827,8	8807831,8807836	BKG: P809616
Arsenic	0.0167	0.0163	3	20
Chromium	0.0020 U	0.0020 U	0 (1)	20
Copper	0.0020 U	0.0020 U	0 (1)	20
Lead	0.0010 U	0.0010 U	0 (1)	20
Nickel	0.000817	0.000825	1 (1)	20
Silver	0.00050 U	0.00050 U	0 (1)	20
Zinc	0.0150 U	0.0150 U	0 (1)	20
	8	%		
Batch number: 17033820006B	Sample number(s):	8807838-8807839 E	BKG: 8807839	
Moisture	30.46	30.26	1	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C SIM VC Only

Batch number: E170331AA

	Toluene-d8	1,4-Difluorobenzene	
8807828	108	99	_
8807829	109	99	
8807830	99	99	
8807837	99	99	
Blank	109	99	
LCS	90	99	
LCSD	99	94	_
Limits:	80-120	80-120	

Analysis Name: 8260C BTEX,TCE,c12DCE,t12DCE

Batch number: H170372AA

*- Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759258

Reported: 02/23/2017 21:24

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C BTEX,TCE,c12DCE,t12DCE

Batch number: H170372AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8807828	109	105	95	92
8807829	109	105	95	93
8807830	108	108	97	95
8807837	110	106	96	92
8807840	111	108	94	94
Blank	108	105	96	93
LCS	111	109	93	96
MS	108	103	97	95
MSD	111	109	94	96
Limits:	77-114	74-113	77-110	78-110

Analysis Name: NWTPH-Gx water C7-C12

Batch number: 17033A53A

	Trifluorotoluene-F
8807840	114
Blank	118
LCS	104
MS	105
MSD	104

Limits: 63-135

Analysis Name: NWTPH-Dx (Diesel)

Batch number: 170380015A

	Chlorobenzene	Ortnoterpnenyi	
8807828	57	80	
8807829	59	83	
8807830	58	79	
8807832	61	81	
8807833	55	76	
8807834	46*	82	
8807835	51	72	
Blank	28*	68	
LCS	28*	83	
LCSD	39*	85	
Limita:	50-150	50-150	

Analysis Name: NWTPH-Dx (Diesel)

Batch number: 170480013A

	Chlorobenzene	Orthoterphenyl
8807828RE	79	90
8807829RE	78	87
8807830RE	79	88

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759258

Reported: 02/23/2017 21:24

Surrogate Quality Control (continued)

Analysis Name: NWTPH-Dx (Diesel)

Batch number: 170480013A

	Chlorobenzene	Orthoterphenyl	
8807832RE	79	84	
8807833RE	70	81	
8807834RE	73	83	
8807835RE	75	85	
Blank	52	73	
LCS	62	79	
LCSD	68	77	
T.imits:	50-150	50-150	

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

Boeing Chain of Custody

Laboratories Lancaster SULOLINS SULOLINS

Acct. #]34(19

For Eurofins Lancaster Laboratories, use only < 2 L - 40 Group # 0 < 0 < 0 < 0 < 0 Sample # 0 < 0 < 0 < 0 < 0 < 0 Please print. Instructions on reverse side correspond.

*All dissolved metals field filtered - 0.45 pm 256 Remarks/Comments Date/Time J. L-1-5. Date/Time 6.27.5 ŝ Temperature upon Receipt: Custody Seals Intact?: Received by (2) Received by: Received-by: Relinquished by commercial carrier (circle): 471333 8708 Date/Time Date/Time Date/Time Analyses Requested MIS-20028-200V YINO-20028-200V YINO-20028-200V YINO-20028-200V YINO-2003 212-1X XQ-HAIMN Relinquished by: Relinquished by: 378 Relinquished by: hosylozeja N bsvicezia Len novek ** MS+015 8.00 \bigcirc Containers as va Gray/Dalton, Olmstry & Fightan No. of N 1 N 3 N 00/0 E \$ N CHE # of Coolers: 24 hour Matrix 4 day 20 \odot 445 しらら Other (specify): 1930 1230 2045 1740 450 430 1530 1830 1840 Time パかごわのと Collected Washington Client Information (DOF) 1125/17 124 17 174/17 48 hour 5 day 6) Turnaround Time Requested (please circle) Date Garson SPACE Dave Cooper S スシロスメージを一つに、ラース -582-11.5-12 lasya Giray X Boeing EHS ST-Sample Identification 3 **会**し、 SO <u>કુ</u> I S Date needed: Ĭ Ž 108 Kent スのにむ Standard 72 hour ļ SC-5812 -SB10 1 1881 SRZ - 5B9 TID Blank この地し -586 1.500 Consultant Contact: <u>~</u> Site Program/#: Site Location: 大公の内上 Site Project: Boeing PM: nvoice To: Report To: Sampler: TN. N. (\sim) Page 29 of 33

The white copy should accompany samples to Eurofins Lancaster Laboratories. The yellow copy should be retained by the client. Eurofins Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300

Issued by Dept. 40 Management



Kay Hower

From: Dave Cooper <dcooper@dofnw.com>
Sent: Thursday, January 26, 2017 11:33 PM

To: Kay Hower Cc: 'Tasya Gray'

Subject:Boeing KSC - Amended COCAttachments:KSC amended COC 1-26-17.pdf

Kay,

Two coolers were shipped today and should arrive tomorrow by Fed Ex, tracking #s: 804713338708 804713338693

Please find attached an amended COC to supersede the one enclosed in the cooler.

Dave

*David G. Cooper, LG*Principal Geologist

www.dofnw.com

DOF Dalton, Olmsted & Fuglevand 10827 NE 68th St., Suite B Kirkland, WA 98033 Office: (425) 827-4588 Fax: (866) 370-9466 Cell: (206) 660-3466 dcooper@dofnw.com

Notify us here to report this email as spam.

Boeing Chain of Custody

Lancaster Laboratories eurofins 💸

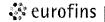
Acct. # 134(9

For Eurofins Lancaster Laboratories use only 82C – UO Group # 1754 258 Sample # 84C 78C – UO Please print. Instructions on reverse side correspond.

930 Remarks/Comments PARCIAIR Jate/Time Date/Time ŝ Custody Seals Intact?: (Yes Received by: Cubbalty Temperature upon Receipt: Received by Start Millo 2 Received by: Relinquished by commercial carrier (circle): Date/Time Date/Time Date/Time Analyses Requested 5-HOLL 4 Relinquished by Relinquished by: Relinquished by: UPS No. of Containers ۷ Ţ 0 # of Coolers: 込むな 24 hour Matrix 4 day (m) Other (specify): 1330 になけ Time シャング 3 Collected Client Information 1/22/1 48 hour アピシン Date 5 day 6) Turnaround Time Requested (please circle) 1 70000 N Boeing EHS Sample Identification 1 KSC - 5819 - GW BY 3 5 3 Date needed: 3 Standard 72 hour Consultant Contact: Site Program/#: Site Location: Site Project: Boeing PM: Report To: nvoice To: Sampler: (N)

The white copy should accompany samples to Eurofins Lancaster Laboratories. The yellow copy should be retained by the client. Eurofins Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300

7063.02 Issued by Dept. 40 Management



Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID:

174162

Group Number(s):

759258

Client: Boeing

Delivery and Receipt Information

Delivery Method:

Fed Ex

Arrival Timestamp:

01/27/2017 9:30

Number of Packages:

2

Number of Projects:

1

Arrival Condition Summary

Shipping Container Sealed:

Discrepancy in Container Qty on COC:

Yes

Sample IDs on COC match Containers:

Yes

Custody Seal Present:

Yes

Sample Date/Times match COC:

Yes

Custody Seal Intact:

Yes

VOA Vial Headspace ≥ 6mm:

No

Samples Chilled:

Yes

Total Trip Blank Qty:

6

Paperwork Enclosed:

Yes

Trip Blank Type:

HCL

Samples Intact:

Yes

Air Quality Samples Present:

No

Missing Samples:

No No

Extra Samples:

No

Unpacked by Timothy Cubberley (6520) at 12:36 on 01/27/2017

Samples Chilled Details

Thermometer Types:

DT = Digital (Temp. Bottle)

IR = Infrared (Surface Temp)

All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	<u>Ice Type</u>	Ice Present?	Ice Container	Elevated Temp?
1	DT131	1.5	DT	Wet	Υ	Bagged	N
2	DT131	1.7	DT	Wet	Υ	Bagged	N



Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL Below Minimum Quantitation Level mq milligram(s) degrees Celsius mĹ milliliter(s) cfu colony forming units MPN Most Probable Number **CP Units** cobalt-chloroplatinate units N.D. none detected F degrees Fahrenheit ng nanogram(s) nephelometric turbidity units gram(s) NTU g IÚ International Units pg/L picogram/liter kilogram(s) RLReporting Limit kg **TNTC** liter(s) Too Numerous To Count lb. pound(s) microgram(s) μg μĹ microliter(s) m3 cubic meter(s) milliequivalents umhos/cm micromhos/cm meg

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an

as-received basis.

Laboratory Data Qualifiers:

C - Result confirmed by reanalysis

E - Concentration exceeds the calibration range

J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)

P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.

U - Analyte was not detected at the value indicated

V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference...

W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



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ANALYTICAL RESULTS

Prepared by:

Prepared for:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 The Boeing Company PO Box 3707 MC 1W-12 Seattle WA 98124

Report Date: February 24, 2017

Project: Boeing Kent Space Center

Submittal Date: 01/28/2017 Group Number: 1759583 State of Sample Origin: WA

	Lancaster Labs
Client Sample Description	<u>(LL) #</u>
KSC-SB3-GW Water	8809605
KSC-SB3-GW Dissolved Metals Water	8809606
KSC-SB4-GW Water	8809607
KSC-SB5-GW Water	8809608
KSC-SB18-GW Water	8809609
KSC-SB20-GW Water	8809610
Trip Blank 3 Water	8809611
KSCRI-SB3-(8.5-9.5') Soil	8809612
KSCRI-SB4-(8-9') Soil	8809613
KSCRI-SB5-(11-12') Soil	8809614

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To The Boeing Company Attn: Lindsey Mahrt Electronic Copy To Dalton, Olmstead and Fuglevand Attn: Tasya Gray



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Respectfully Submitted,

Kay Hower

(717) 556-7364



Project Name: Boeing Kent Space Center LL Group #: 1759583

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8260C, GC/MS Volatiles

Sample #s: 8809609, 8809610

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

ECY 97-602 NWTPH-Dx modified, GC Petroleum Hydrocarbons

Sample #s: 8809607

The sample pattern does not match our reference standard for #2fuel/diesel.

<u>SW-846 6020A, Metals</u>

Batch #: 170310637001A (Sample number(s): 8809612 UNSPK: 8809612 BKG: 8809612)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Arsenic

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: Arsenic

SM 2540 G-1997, Wet Chemistry

Batch #: 17034820008A (Sample number(s): 8809612-8809614 BKG: P812942)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Moisture



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Sample Description: KSC-SB3-GW Water

Being Kent Space Center

LL Sample # WW 8809605 LL Group # 1759583 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/28/2017 09:45

Collected: 01/27/2017 13:00 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/24/2017 09:42 Seattle WA 98124

KSC03

CAT No. Ana	alysis Name		CAS Number	Result	Limit of Quantitation	Dilution Factor	
GC Petro	leum	ECY 97-602	NWTPH-Dx	mg/l	mg/l		
Hydrocar	bons	modified					
12082 Die	esel/#2 Fuel		68334-30-5	0.099 U	0.099	1	
12082 Mot	tor Oil		n.a.	0.25 U	0.25	1	
TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons.							

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12082	NWTPH-Dx (Diesel, Motor Oil)	ECY 97-602 NWTPH-Dx modified	1	170390007A	02/14/2017 15:1	9 Heather E Williams	3 1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	1	170390007A	02/08/2017 17:3	O Ryan J Dowdy	1



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Sample Description: KSC-SB3-GW Dissolved Metals Water

Being Kent Space Center

LL Sample # WW 8809606 LL Group # 1759583 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/28/2017 09:45

Collected: 01/27/2017 13:00 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/24/2017 09:42 Seattle WA 98124

CAT No. Analysis Name CAS Number Result Limit of Dilution Factor

 Metals Dissolved
 EPA 200.8 rev 5.4
 mg/l
 mg/l

 06025
 Arsenic
 7440-38-2
 0.0511
 0.0020
 1

Sample Comments

State of Washington Lab Certification No. ${\rm C457}$ This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
NO.					Date and Time		Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 15:32	Patrick J Engle	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	170317050003	02/02/2017 16:50	JoElla L Rice	1



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Sample Description: KSC-SB4-GW Water

Being Kent Space Center

LL Sample # WW 8809607 LL Group # 1759583 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/28/2017 09:45

Collected: 01/27/2017 13:45 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/24/2017 09:42 Seattle WA 98124

KSC04

CAT No. Analysis Name	CAS Num	ber Result	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons	ECY 97-602 NWTPH modified	-Dx mg/l	mg/l	
12082 Diesel/#2 Fuel 12082 Motor Oil TPH quantitation is base that of a hydrocarbon co C8 (n-octane) through C4 The sample pattern does	mponent mix calibratio) (n-tetracontane) nor	cludes	1 1	

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
12082		ECY 97-602	1	170390007A	02/14/2017	21:06	Heather E Williams	1
	Oil)	NWTPH-Dx modified						
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602	1	170390007A	02/08/2017	17:30	Ryan J Dowdy	1
		NWTPH-Dx 06/97						



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Sample Description: KSC-SB5-GW Water

Being Kent Space Center

LL Sample # WW 8809608 LL Group # 1759583 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/28/2017 09:45

Collected: 01/27/2017 15:30 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/24/2017 09:42 Seattle WA 98124

KSC05

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Pe	troleum	ECY 97-602	NWTPH-Dx	mg/l	mg/l	
Hydro	carbons	modified				
12082	Diesel/#2 Fuel		68334-30-5	0.097 U	0.097	1
12082	Motor Oil		n.a.	0.24 U	0.24	1
that	-	mponent mix ca	libration in a	the sample pattern to range that includes drocarbons.		

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
12082	NWTPH-Dx (Diesel, Motor	ECY 97-602	1	170390007A	02/14/2017 1	6:09	Heather E Williams	1
12119	Oil) TPH-Dx w/Fuel Water Ext.	NWTPH-Dx modified ECY 97-602 NWTPH-Dx 06/97	1	170390007A	02/08/2017 1	7:30	Ryan J Dowdy	1



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Sample Description: KSC-SB18-GW Water

Being Kent Space Center

LL Sample # WW 8809609 LL Group # 1759583 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/28/2017 09:45

Collected: 01/27/2017 11:15 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/24/2017 09:42 Seattle WA 98124

KSC18

CAT No.	Analysis Name		CAS Number	Resul	t	Limit of Quantitation	Dilution Factor		
GC/MS	Volatiles	SW-846	8260C	ug/l		ug/l			
11996	Benzene		71-43-2	0.2	U	0.2	1		
11996	Ethylbenzene		100-41-4	0.5	U	0.5	1		
11996	Toluene		108-88-3	0.2	U	0.2	1		
11996	Xylene (Total)		1330-20-7	0.5	U	0.5	1		
anti	Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.								
GC Vo 3	latiles NWTPH-Gx water C7-C		602 NWTPH-Gx	ug/l 250	U	ug/1 250	1		

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C BTEX	SW-846 8260C	1	H170392AA	02/08/2017 21:31	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H170392AA	02/08/2017 21:31	Matthew S Krause	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	17033A53A	02/02/2017 17:58	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030C	1	17033A53A	02/02/2017 17:58	Brett W Kenyon	1



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Sample Description: KSC-SB20-GW Water

Being Kent Space Center

LL Sample # WW 8809610 LL Group # 1759583 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/28/2017 09:45

Collected: 01/27/2017 10:30 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/24/2017 09:42 Seattle WA 98124

KSC20

CAT No.	Analysis Name	CAS N	umber Resu	lt	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles SW-	846 8260C	ug/l		ug/l	
11996	Benzene	71-43	-2 0.2	U	0.2	1
11996	Ethylbenzene	100-43	1-4 0.5	U	0.5	1
11996	Toluene	108-88	3-3 0.2	Ŭ	0.2	1
11996	Xylene (Total)	1330-	20-7 0.5	Ŭ	0.5	1
anti	e the analyst observed the -foaming agent was added to r dilution factor.	_	_			
GC Vol	Latiles ECY NWTPH-Gx water C7-C12	97-602 NWTF	H-Gx ug/1	Ū	ug/1 250	1
00273	NWIPH-GX Water C/-C12	11.a.	250	U	250	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C BTEX	SW-846 8260C	1	H170392AA	02/08/2017 21:52	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H170392AA	02/08/2017 21:52	Matthew S Krause	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	17033A53A	02/02/2017 14:44	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030C	1	17033A53A	02/02/2017 14:44	Brett W Kenyon	1



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Sample Description: Trip Blank 3 Water

Being Kent Space Center

LL Sample # WW 8809611 LL Group # 1759583 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/28/2017 09:45

Collected: 01/27/2017 The Boeing Company

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Reported: 02/24/2017 09:42 Seattle WA 98124

KSCT3

CAT No.	Analysis Name		CAS Number	Result	:	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 82	60C	ug/l		ug/l	
11996	Benzene		71-43-2	0.2	U	0.2	1
11996	Ethylbenzene		100-41-4	0.5	U	0.5	1
11996	Toluene		108-88-3	0.2	U	0.2	1
11996	Xylene (Total)		1330-20-7	0.5	U	0.5	1
GC Vol	latiles	ECY 97-60	2 NWTPH-Gx	ug/l		ug/l	
08273	NWTPH-Gx water C7-C	12	n.a.	250	U	250	1

Sample Comments

State of Washington Lab Certification No. ${\tt C457}$

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
11996	8260C BTEX	SW-846 8260C	1	H170372AA	02/06/2017	13:34	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H170372AA	02/06/2017	13:34	Kevin A Sposito	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	17033A53A	02/02/2017	13:21	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030C	1	17033A53A	02/02/2017	13:21	Brett W Kenyon	1



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Sample Description: KSCRI-SB3-(8.5-9.5') Soil

Being Kent Space Center

LL Sample # SW 8809612 LL Group # 1759583 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/28/2017 09:45

Collected: 01/27/2017 12:45 by DC The Boeing Company

PO Box 3707 MC 1W-12

Drv

Reported: 02/24/2017 09:42 Seattle WA 98124

KSCS3

CAT No.	Analysis Name		CAS Number	Dry Result	:	Limit of Quantitation	Dilution Factor
GC Pet	troleum	ECY 97-602	NWTPH-Dx	mg/kg		mg/kg	
Hydro	carbons w/Si	modified					
12093	Diesel/#2 Fuel w/Si	Gel	68334-30-5	9.7	U	9.7	1
12093	Motor Oil w/Si Gel		n.a.	42	U	42	1
	of a hydrocarbon com n-octane) through C40	-	ane) normal hyd	_		mg/kg	
06125	Arsenic		7440-38-2	6.71		1.03	2
Wet Cl	nemistry	SM 2540 G-	1997	%		%	
00111	Moisture		n.a.	28.7		0.50	1
	Moisture represents 103 - 105 degrees Coas-received basis.		_	-		=	

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
12093	NWTPH-Dx (Diesel, Motor Oil)	ECY 97-602 NWTPH-Dx modified	1	170390017A	02/15/2017	04:26	Heather E Williams	1
12118	TPH-Dx w/Fuel Soil Ext. (SG)	ECY 97-602 NWTPH-Dx 06/97	1	170390017A	02/08/2017	18:15	Elizabeth E Donovan	1
06125	Arsenic	SW-846 6020A	1	170310637001A	02/06/2017	05:22	Choon Y Tian	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	170310637001	01/31/2017	06:04	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	17034820008A	02/04/2017	19:47	Scott W Freisher	1



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Sample Description: KSCRI-SB4-(8-9') Soil

Being Kent Space Center

LL Sample # SW 8809613 LL Group # 1759583 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/28/2017 09:45

Collected: 01/27/2017 13:20 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/24/2017 09:42 Seattle WA 98124

KSCS4

CAT No.	Analysis Name		CAS Numbe	Dry r Result	Dry Limit o: Quantita	7t	n
GC Pe	troleum	ECY 97-	602 NWTPH-I	mg/kg	mg/kg		
Hydro	carbons w/Si	modifie	d				
12093	Diesel/#2 Fuel w/S	Si Gel	68334-30-	5 8.3 U	8.3	1	
12093	Motor Oil w/Si Gel	-	n.a.	36 U	36	1	
that	quantitation is bas of a hydrocarbon c n-octane) through C	omponent mi	x calibration	in a range tha	t includes		
Wet C	hemistry	SM 2540	G-1997	%	%		
00111	Moisture		n.a.	15.9	0.50	1	
	Moisture represent	s the loss	in weight of	the sample afte	r oven drying at		

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12093	NWTPH-Dx (Diesel, Motor Oil)	ECY 97-602 NWTPH-Dx modified	1	170390017A	02/15/2017 05:15	Heather E Williams	1
12118	TPH-Dx w/Fuel Soil Ext. (SG)	ECY 97-602 NWTPH-Dx 06/97	1	170390017A	02/08/2017 18:15	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997	1	17034820008A	02/04/2017 19:47	Scott W Freisher	1



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Sample Description: KSCRI-SB5-(11-12') Soil

Being Kent Space Center

LL Sample # SW 8809614 LL Group # 1759583 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 01/28/2017 09:45

Collected: 01/27/2017 15:00 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 02/24/2017 09:42 Seattle WA 98124

KSCS5

CAT No.	Analysis Name		Dry CAS Number Result			Dry Limit of Quantitation	Dilution Factor	
GC Pe	troleum	ECY	97-602	NWTPH-Dx	mg/kg		mg/kg	
Hydro	carbons w/Si	mod:	ified					
12093	Diesel/#2 Fuel w/Si	Gel		68334-30-5	7.8	U	7.8	1
12093	Motor Oil w/Si Gel			n.a.	33	U	33	1
that	quantitation is base of a hydrocarbon con- n-octane) through C4	mponer	nt mix ca	libration in a	range t	that includes		
Wet C	hemistry	SM	2540 G-	1997	%		%	
00111	Moisture			n.a.	10		0.50	1
	Moisture represents	the	loss in w	veight of the s	ample a	fter oven drying at	:	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12093	NWTPH-Dx (Diesel, Motor Oil)	ECY 97-602 NWTPH-Dx modified	1	170390017A	02/15/2017 06:04	Heather E Williams	1
12118	TPH-Dx w/Fuel Soil Ext. (SG)	ECY 97-602 NWTPH-Dx 06/97	1	170390017A	02/08/2017 18:15	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997	1	17034820008A	02/04/2017 19:47	Scott W Freisher	1



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759583

Reported: 02/24/2017 09:42

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	LOQ				
	ug/l	ug/l				
Batch number: H170372AA Benzene Ethylbenzene Toluene Xylene (Total)	Sample number 0.2 U 0.5 U 0.2 U 0.5 U 0.5 U	• •				
Batch number: H170392AA Benzene Ethylbenzene Toluene Xylene (Total)	Sample number 0.2 U 0.5 U 0.2 U 0.5 U 0.5 U	0.2				
Batch number: 17033A53A NWTPH-Gx water C7-C12	Sample number 250 U	c(s): 8809609-8809611 250				
	mg/l	mg/l				
Batch number: 170390007A Diesel/#2 Fuel Motor Oil	Sample number 0.10 U 0.25 U	c(s): 8809605,8809607-8809608 0.10 0.25				
	mg/kg	mg/kg				
Batch number: 170390017A Diesel/#2 Fuel w/Si Gel Motor Oil w/Si Gel	Sample number 7.0 U 30 U					
Batch number: 170310637001A Arsenic	Sample number 0.800 U	c(s): 8809612 0.800				
	mg/l	mg/l				
Batch number: 170317050003A Arsenic	Sample number 0.0020 U	c(s): 8809606 0.0020				

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: H170372AA Benzene	Sample number 5.00	(s): 88096 4.88	511		98		80-120		

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759583

Reported: 02/24/2017 09:42

LCS/LCSD (continued)

Analysis Name	LCS Spike	LCS	LCSD Spike	LCSD	LCS	LCSD	LCS/LCSD	RPD	RPD
	Added ug/l	Conc ug/l	Added ug/l	Conc ug/l	%REC	%REC	Limits		Max
		-	ug/1	ug/I					
Ethylbenzene	5.00	4.68			94		80-120		
Toluene	5.00	4.62			92		80-120		
Xylene (Total)	15	14.08			94		80-120		
Batch number: H170392AA	Sample numbe	r(s): 8809	509-8809610						
Benzene	5.00	4.86	5.00	4.90	97	98	80-120	1	30
Ethylbenzene	5.00	4.58	5.00	4.70	92	94	80-120	3	30
Toluene	5.00	4.48	5.00	4.60	90	92	80-120	3	30
Xylene (Total)	15	13.77	15	14.08	92	94	80-120	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 17033A53A	Sample numbe	r(s): 8809	509-8809611						
NWTPH-Gx water C7-C12	1100	990.7			90		79-120		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 170390007A	Sample numbe	r(s): 8809	605,8809607-88	09608					
Diesel/#2 Fuel	0.801	0.720			90		60-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 170390017A	Sample numbe	r(s): 8809	512-8809614						
Diesel/#2 Fuel w/Si Gel	133	139.41	133	136.94	105	103	60-120	2	20
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 170310637001A	Sample numbe	r(s): 8809	512						
Arsenic	1.00	0.964	012		96		80-120		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 170317050003A	Sample numbe	r(s): 8809	506						
Arsenic	0.0100	0.0102			102		85-115		
	%	%	%	%					
Batch number: 17034820008A	Sample numbe	r(s): 8809	512-8809614						
Moisture	89.5	89.43			100		99-101		

MS/MSD

 ${\tt Unspiked} \ ({\tt UNSPK}) \ = \ {\tt the} \ {\tt sample} \ {\tt used} \ {\tt in} \ {\tt conjunction} \ {\tt with} \ {\tt the} \ {\tt matrix} \ {\tt spike}$

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: H170372AA Benzene	Sample numb	er(s): 8809 5.00	611 UNSP 5.22	K: P809615 5.00	5.18	104	104	80-120	1	30

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759583

Reported: 02/24/2017 09:42

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
0.5 U	5.00	5.20	5.00	5.15	104	103	80-120	1	30
0.2 U	5.00	5.17	5.00	5.07	103	101	80-120	2	30
0.5 U	15	15.63	15	15.21	104	101	80-120	3	30
ug/l	ug/l	ug/l	ug/l	ug/l					
Sample number	er(s): 8809	9609-8809	611 UNSPK: 1	P809615					
250 U	1100	1088.45	1100	1097.17	99	100	79-120	1	30
mg/l	mg/l	mg/l	mg/l	mg/l					
Sample number	er(s): 8809	9605,8809	607-8809608	UNSPK: P8	09615				
0.097 U	0.774	0.597	0.771	0.698	77	90	60-120	16	20
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Sample number	er(s): 8809	9612 UNSP	K: 8809612						
4.78	1.83	8.20	1.44	6.02	186*	86	75-125	31*	20
mg/l	mg/l	mg/l	mg/l	mg/l					
Sample number 0.0167	er(s): 8809 0.0100	9606 UNSP	K: P809616		103		70-130		
	Concug/1 0.5 U 0.2 U 0.5 U ug/1 Sample numbe 250 U mg/1 Sample numbe 0.097 U mg/kg Sample numbe 4.78 mg/1 Sample numbe	Conc ug/l ug/l 0.5 U 5.00 0.2 U 5.00 0.5 U 15 ug/l ug/l Sample number(s): 8809 250 U 1100 mg/l mg/l Sample number(s): 8809 0.097 U 0.774 mg/kg mg/kg Sample number(s): 8809 4.78 1.83 mg/l mg/l Sample number(s): 8809	Conc Added ug/l Conc ug/l ug/l ug/l ug/l 0.5 U 5.00 5.20 0.2 U 5.00 5.17 0.5 U 15 15.63 ug/l ug/l ug/l Sample number(s): 8809609-8809 250-8809 250 U 1100 1088.45 mg/l mg/l mg/l Sample number(s): 8809605,8809 0.597 mg/kg mg/kg mg/kg Sample number(s): 8809612 UNSP 4.78 1.83 8.20 mg/l mg/l Sample Sample number(s): 8809606 UNSP	Conc Added ug/l Conc Added ug/l ug/l ug/l ug/l ug/l 0.5 U 5.00 5.20 5.00 0.2 U 5.00 5.17 5.00 0.5 U 15 15.63 15 ug/l ug/l ug/l ug/l Sample number(s): 8809609-8809611 UNSPK: 1 250 U 1100 1088.45 1100 mg/l mg/l mg/l mg/l Sample number(s): 8809605,8809607-8809607-8809608 0.097 0.771 mg/kg mg/kg mg/kg mg/kg Sample number(s): 8809612 UNSPK: 8809612 4.78 1.83 8.20 1.44 mg/l mg/l mg/l Mg/l Sample number(s): 8809606 UNSPK: P809616	Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l 0.5 U 5.00 5.20 5.00 5.15 0.2 U 5.00 5.17 5.00 5.07 0.5 U 15 15.63 15 15.21 ug/l ug/l ug/l ug/l ug/l Sample number(s): 8809609-8809611 UNSPK: P809615 250 U 1100 1088.45 1100 1097.17 mg/l mg/l mg/l mg/l mg/l Sample number(s): 8809605,8809607-8809608 UNSPK: P8 0.097 U 0.774 0.597 0.771 0.698 mg/kg mg/kg mg/kg mg/kg mg/kg Sample number(s): 8809612 UNSPK: 8809612 4.78 1.83 8.20 1.44 6.02 mg/l mg/l mg/l mg/l mg/l <tr< td=""><td>Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l %Rec ug/l 0.5 U 5.00 5.20 5.00 5.15 104 0.2 U 5.00 5.17 5.00 5.07 103 0.5 U 15 15.63 15 15.21 104 ug/l ug/l ug/l ug/l ug/l ug/l 104 Sample number(s): 8809609-8809611 UNSPK: P809615 250 U 1100 1097.17 99 mg/l mg/l mg/l mg/l 99 100 1097.17 99 Sample number(s): 8809605,8809607-8809608 UNSPK: P809615 0.077 0.698 77 0.698 77 mg/kg mg/kg mg/kg mg/kg mg/kg 186* mg/kg 1.83 8.20 1.44 6.02 186* mg/l mg/l mg/l mg/l 186*</td><td>Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l %Rec ug/l \$Rec ug/l</td><td>Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l Rec ug/l *Rec ug/l *Rec ug/l Limits 0.5 U 5.00 5.20 5.00 5.15 104 103 80-120 0.2 U 5.00 5.17 5.00 5.07 103 101 80-120 0.5 U 15 15.63 15 15.21 104 101 80-120 ug/l ug/l ug/l ug/l 104 101 80-120 ug/l ug/l ug/l ug/l 104 101 80-120 ug/l ug/l ug/l ug/l 104 101 80-120 sample number(s): 8809609-8809611 UNSPK: P809615 100 79-120 79-120 mg/l mg/l mg/l mg/l 90 60-120 sample number(s): 8809605, 8809607 - 8809608 UNSPK: P809615 90 60-120 mg/kg mg/kg mg/kg mg/kg 86 75-125</td><td>Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l Rec ug/l *Rec ug/l Limits 0.5 U 5.00 5.20 5.00 5.15 104 103 80-120 1 0.2 U 5.00 5.17 5.00 5.07 103 101 80-120 2 0.5 U 15 15.63 15 15.21 104 101 80-120 3 ug/l ug/l ug/l ug/l 104 101 80-120 3 ug/l ug/l ug/l ug/l 104 101 80-120 3 ug/l ug/l ug/l ug/l ug/l 104 101 80-120 3 ug/l ug/l</td></tr<>	Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l %Rec ug/l 0.5 U 5.00 5.20 5.00 5.15 104 0.2 U 5.00 5.17 5.00 5.07 103 0.5 U 15 15.63 15 15.21 104 ug/l ug/l ug/l ug/l ug/l ug/l 104 Sample number(s): 8809609-8809611 UNSPK: P809615 250 U 1100 1097.17 99 mg/l mg/l mg/l mg/l 99 100 1097.17 99 Sample number(s): 8809605,8809607-8809608 UNSPK: P809615 0.077 0.698 77 0.698 77 mg/kg mg/kg mg/kg mg/kg mg/kg 186* mg/kg 1.83 8.20 1.44 6.02 186* mg/l mg/l mg/l mg/l 186*	Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l %Rec ug/l \$Rec ug/l	Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l Rec ug/l *Rec ug/l *Rec ug/l Limits 0.5 U 5.00 5.20 5.00 5.15 104 103 80-120 0.2 U 5.00 5.17 5.00 5.07 103 101 80-120 0.5 U 15 15.63 15 15.21 104 101 80-120 ug/l ug/l ug/l ug/l 104 101 80-120 ug/l ug/l ug/l ug/l 104 101 80-120 ug/l ug/l ug/l ug/l 104 101 80-120 sample number(s): 8809609-8809611 UNSPK: P809615 100 79-120 79-120 mg/l mg/l mg/l mg/l 90 60-120 sample number(s): 8809605, 8809607 - 8809608 UNSPK: P809615 90 60-120 mg/kg mg/kg mg/kg mg/kg 86 75-125	Conc ug/l Added ug/l Conc ug/l Added ug/l Conc ug/l Rec ug/l *Rec ug/l Limits 0.5 U 5.00 5.20 5.00 5.15 104 103 80-120 1 0.2 U 5.00 5.17 5.00 5.07 103 101 80-120 2 0.5 U 15 15.63 15 15.21 104 101 80-120 3 ug/l ug/l ug/l ug/l 104 101 80-120 3 ug/l ug/l ug/l ug/l 104 101 80-120 3 ug/l ug/l ug/l ug/l ug/l 104 101 80-120 3 ug/l ug/l

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 170390017A Diesel/#2 Fuel w/Si Gel Motor Oil w/Si Gel	Sample number(s): 7.0 U 30 U	8809612-8809614 BKG: 7.0 U 30 U	8809614 0 (1) 0 (1)	20 20
	mg/kg	mg/kg		
Batch number: 170310637001A Arsenic	Sample number(s): 4.78	8809612 BKG: 8809612 4.82	1	20
	mg/l	mg/l		
Batch number: 170317050003A Arsenic	Sample number(s): 0.0167	8809606 BKG: P809616 0.0163	3	20
	%	%		
Batch number: 17034820008A Moisture	Sample number(s): 4.36	8809612-8809614 BKG: 5.00	P812942 14*	5

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759583

Reported: 02/24/2017 09:42

Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name BKG Conc DUP Conc DUP RPD DUP RPD Max %

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C BTEX Batch number: H170372AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8809611	111	106	95	93
Blank	108	105	96	93
LCS	111	109	93	96
MS	108	103	97	95
MSD	111	109	94	96
Limits:	77-114	74-113	77-110	78-110

Analysis Name: 8260C BTEX Batch number: H170392AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8809609	108	103	95	110
8809610	106	105	97	106
Blank	110	108	95	93
LCS	111	113	92	96
LCSD	111	111	93	95
Limits:	77-114	74-113	77-110	78-110

Analysis Name: NWTPH-Gx water C7-C12

Batch number: 17033A53A

	Trifluorotoluene-F	
8809609	98	
8809610	118	
8809611	99	
Blank	118	
LCS	104	
MS	105	
MSD	104	

Limits: 63-135

Analysis Name: NWTPH-Dx (Diesel, Motor Oil)

Batch number: 170390007A

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759583

Reported: 02/24/2017 09:42

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx (Diesel, Motor Oil)

Batch number: 170390007A

	Chlorobenzene	Orthoterphenyl	
8809605	78	78	
8809607	81	85	
8809608	82	82	
Blank	63	76	
LCS	66	90	
MS	72	77	
MSD	87	87	
Limits:	50-150	50-150	

DIMICD: 30 130

Analysis Name: NWTPH-Dx (Diesel, Motor Oil)

Batch number: 170390017A

	Chlorobenzene	Orthoterphenyl	
8809612	83	102	
8809613	88	100	
8809614	86	98	
Blank	99	103	
DUP	97	107	
LCS	86	108	
LCSD	86	107	
Limits:	50-150	50-150	

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

Boeing Chain of Custody

Acct. # Lancaster Laboratories

" eurofins

For Eurofins Lancaster Laboratories, use only COS - ICO Group # 15 45 5 Sample # 5 50 PC OS - ICO Please print. Instructions on reverse side correspond. 3414

HELD PHIENER DAS MA * AL DISONA PROFES 5 Remarks/Comments Analyses Requested Xa- HARWIN 137 15/M 0-4147 130 12/W XQ-HUMN J-HOU MAN3M SA V 02.09 7-160 X9-HOTTUN 0-401 XQ-HUMON C-HOLL XCI-HOLLINA X319 2012.8 XX sations as menter * 4 3'00L Containers NORTH BOKNU. COM No. of 2/2 N **(1**) N Q # of Coolers: ころが Matrix 3 $^{(m)}$ Other (specify): 030 1745 530 Time 是 88 Collected KEUT WASHINGTON MENT SPACE CENTER Client Information からないとうか 11/21 Date MCK GAMSON となる。 DAN COCKL W Boeing EHS KXC21-583-18,5-9,5 Sample Identification KSC - SB 20 - GW KSC-5B 18-6W KSC-585-6W 43C-5B4-GW XX - SR3-6W MUP BLANK Consultant Contact: Site Program/#: Site Location: Boeing PM: Site Project: Report To: Invoice To: Sampler:

SULCA GEL CUERVILO TOH

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(B-B)

1-485-2020

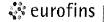
Page 19 of 21

X5CRI-335-(11-12)

Issued by Dept. 40 Ma the client.	Eurofins Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300 opps should accompany samples to Eurofins Lancaster Laboratories. The yellow copy should be retained by the client.	Lancaster Laboratories, Inc., 2425 New Id accompany samples to Eurofins Lanc	Eurofins Lancaster Lak The white copy should accompany	
Custody Seals Intact?: (Yes No	UPS FedEx Other		en in een sterke sterke sterke ferste en	лением вистем при пределения в п
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6) Turnaround Time Requested (please circle)



Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID:

174268

Group Number(s): 759583

Client: BOEING

Delivery and Receipt Information

Delivery Method:

Fed Ex

Arrival Timestamp:

01/28/2017 9:45

Number of Packages:

<u>3</u>

Number of Projects:

1

Arrival Condition Summary

Shipping Container Sealed:

Yes

Sample IDs on COC match Containers:

Yes

Custody Seal Present:

Yes

Sample Date/Times match COC:

Yes

Custody Seal Intact:

Yes

VOA Vial Headspace ≥ 6mm:

Air Quality Samples Present:

No

Samples Chilled:

Yes

Total Trip Blank Qty:

12 HCI

Paperwork Enclosed: Samples Intact:

Yes Yes Trip Blank Type:

No.

Missing Samples:

No

Extra Samples:

No

Discrepancy in Container Qty on COC:

No

Unpacked by Karen Diem (3060) at 12:54 on 01/28/2017

Samples Chilled Details

Thermometer Types:

DT = Digital (Temp. Bottle)

IR = Infrared (Surface Temp)

All Temperatures in °C.

Cooler#	Thermometer ID	Corrected Temp	<u>Therm. Type</u>	<u>Ice Type</u>	<u>lce Present?</u>	Ice Container	Elevated Temp?
1	DT146	4.1	DT	Wet	Υ	Bagged	N
2	DT146	4.8	DT .	Wet	Υ	Bagged	N
3	DT146	5.8	DT	Wet	Υ	Bagged	N

General Comments:

Sample SB-18-GW NOT WERE LABELED



Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL Below Minimum Quantitation Level mq milligram(s) degrees Celsius mĹ milliliter(s) cfu colony forming units MPN Most Probable Number **CP Units** cobalt-chloroplatinate units N.D. none detected F degrees Fahrenheit ng nanogram(s) nephelometric turbidity units gram(s) NTU g IÚ International Units pg/L picogram/liter kilogram(s) RLReporting Limit kg **TNTC** liter(s) Too Numerous To Count lb. pound(s) microgram(s) μg μĹ microliter(s) m3 cubic meter(s) milliequivalents umhos/cm micromhos/cm meg

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an

as-received basis.

Laboratory Data Qualifiers:

C - Result confirmed by reanalysis

E - Concentration exceeds the calibration range

J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)

P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.

U - Analyte was not detected at the value indicated

V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference...

W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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ANALYTICAL RESULTS

Prepared by:

Prepared for:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 The Boeing Company P.O. Box 3707 MC9U4-26 Seattle WA 98124-2207

Report Date: February 22, 2017

Project: Boeing Kent Space Center

Submittal Date: 01/28/2017 Group Number: 1759584 State of Sample Origin: WA

	Lancaster Labs
Client Sample Description	<u>(LL) #</u>
KSC-SB13-GW Water	8809615
KSC-SB13-GW Dissolved Metals Water	8809616
KSC-SB14-GW Water	8809617
KSC-SB14-GW Dissolved Metals Water	8809618
KSC-SB15-GW Water	8809619
KSC-SB16-GW Water	8809620
KSC-SB17-GW Water	8809621
KSC-SB17-GW Dissolved Metals Water	8809622
KSC-SBDI-GW Water	8809623
KSC-SBDI-GW Dissolved Metals Water	8809624
Trip Blank 2 Water	8809625

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/. To request copies of prior scopes of accreditation, contact your project manager.

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Electronic Copy To	Dalton, Olmstead and Fuglevand	Attn: Tasya Gray
Electronic Copy To	The Boeing Company	Attn: Y. Nicholas Garson



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Respectfully Submitted,

Kay Hower

(717) 556-7364



Project Name: Boeing Kent Space Center LL Group #: 1759584

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

ECY 97-602 NWTPH-Dx modified, GC Petroleum Hydrocarbons

Sample #s: 8809617, 8809619, 8809620

The sample pattern does not match our reference standard for #2fuel/diesel.



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Sample Description: KSC-SB13-GW Water

Being Kent Space Center

LL Sample # WW 8809615 LL Group # 1759584 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/26/2017 13:00 by DC The Boeing Company P.O. Box 3707 MC9U4-26 Seattle WA 98124-2207

Submitted: 01/28/2017 09:45

Reported: 02/22/2017 14:54

KSC13

CAT No.	Analysis Name			CAS Number	Result	:	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-8	46 826	0C	ug/l		ug/l	
11996	Benzene			71-43-2	0.2	U	0.2	1
11996	Ethylbenzene			100-41-4	0.5	U	0.5	1
11996	Toluene			108-88-3	0.2	U	0.2	1
11996	Xylene (Total)			1330-20-7	0.5	U	0.5	1
GC Vol	latiles	ECY	97-602	NWTPH-Gx	ug/l		ug/l	
08273	NWTPH-Gx water C7-C	12		n.a.	250	U	250	1
GC Pet	roleum	ECY	97-602	NWTPH-Dx	mg/l		mg/l	
Hydrod	arbons	modi	fied					
12082	Diesel/#2 Fuel			68334-30-5	0.097	U	0.097	1
that	quantitation is based of a hydrocarbon com n-octane) through C40	nponent	mix cal	libration in a	range	that includes		

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tir	ne	Analyst	Dilution Factor
11996	8260C BTEX	SW-846 8260C	1	H170372AA	02/06/2017	17:50	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H170372AA	02/06/2017	17:50	Kevin A Sposito	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	17033A53A	02/02/2017	15:39	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030C	1	17033A53A	02/02/2017	15:39	Brett W Kenyon	1
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	1	170390007A	02/14/2017	16:59	Heather E Williams	1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	1	170390007A	02/08/2017	17:30	Ryan J Dowdy	1



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Sample Description: KSC-SB13-GW Dissolved Metals Water

Being Kent Space Center

LL Sample # WW 8809616 LL Group # 1759584 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/26/2017 13:00 by DC

The Boeing Company

P.O. Box 3707 MC9U4-26 Seattle WA 98124-2207

Submitted: 01/28/2017 09:45 Reported: 02/22/2017 14:54

KS13D

CAT Limit of Dilution No. Analysis Name CAS Number Result Quantitation Factor

Metals Dissolved EPA 200.8 rev 5.4 mg/l mg/l

06025 **Arsenic** 7440-38-2 **0.0167** 0.0020 1

Sample Comments

State of Washington Lab Certification No. C457 This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis	Analyst	Dilution
No.					Date and Time		Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 15:13	Patrick J Engle	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	170317050003	02/02/2017 16:50	JoElla L Rice	1



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Sample Description: KSC-SB14-GW Water

Being Kent Space Center

LL Sample # WW 8809617 LL Group # 1759584 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/26/2017 16:00 by DC

The Boeing Company P.O. Box 3707 MC9U4-26 Seattle WA 98124-2207

Submitted: 01/28/2017 09:45

Reported: 02/22/2017 14:54

KSC14

CAT Dilution Limit of Analysis Name CAS Number No. Result Factor Quantitation

ECY 97-602 NWTPH-Dx mg/l GC Petroleum

 ${\tt modified}$ Hydrocarbons

12082 Diesel/#2 Fuel 68334-30-5 0.096 1 0.25

TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons. The sample pattern does not match our reference standard for #2fuel/diesel.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	1	170390007A	02/14/2017 20:1	7 Heather E Williams	3 1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	1	170390007A	02/08/2017 17:3	0 Ryan J Dowdy	1



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Sample Description: KSC-SB14-GW Dissolved Metals Water

Being Kent Space Center

LL Sample # WW 8809618 LL Group # 1759584 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/26/2017 16:00 by DC

P.O. Box 3707 MC9U4-26 Seattle WA 98124-2207

The Boeing Company

Submitted: 01/28/2017 09:45 Reported: 02/22/2017 14:54

CAT No. Analysis Name CAS Number Result Limit of Dilution Factor

 Metals Dissolved
 EPA 200.8 rev 5.4
 mg/l
 mg/l

 06025 Arsenic
 7440-38-2
 0.105
 0.0020
 1

Sample Comments

State of Washington Lab Certification No. C457 This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis	Analyst	Dilution
No.					Date and Time		Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017 15:33	Patrick J Engle	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	170317050003	02/02/2017 16:50	JoElla L Rice	1



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Sample Description: KSC-SB15-GW Water

Being Kent Space Center

LL Sample # WW 8809619 LL Group # 1759584 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/26/2017 17:15 by DC

The Boeing Company P.O. Box 3707 MC9U4-26 Seattle WA 98124-2207

Submitted: 01/28/2017 09:45

Reported: 02/22/2017 14:54

KSC15

CAT No. And	alysis Name		CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Petro		ECY 97-602 modified	NWTPH-Dx	mg/l	mg/l	
12082 Di	esel/#2 Fuel		68334-30-5	0.28	0.098	1
TPH quantitation is based on peak area con that of a hydrocarbon component mix calibr C8 (n-octane) through C40 (n-tetracontane) The sample pattern does not match our refe			libration in a ane) normal hyd	range that includes drocarbons.		

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
12082	NWTPH-Dx (Diesel)	ECY 97-602	1	170390007A	02/14/2017	22:44	Heather E Williams	1
12119	TPH-Dx w/Fuel Water Ext.	NWTPH-Dx modified ECY 97-602 NWTPH-Dx 06/97	1	170390007A	02/08/2017	17:30	Ryan J Dowdy	1



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Sample Description: KSC-SB16-GW Water

Being Kent Space Center

LL Sample # WW 8809620 LL Group # 1759584 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/26/2017 15:30 by DC

The Boeing Company P.O. Box 3707 MC9U4-26 Seattle WA 98124-2207

Submitted: 01/28/2017 09:45

Reported: 02/22/2017 14:54

KSC16

CAT No. Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons	ECY 97-602 NWTPH-Dx modified	mg/l	mg/l	
12082 Diesel/#2 Fuel	68334-30-5	0.42	0.10	1
that of a hydrocarbon	sed on peak area comparison o component mix calibration in C40 (n-tetracontane) normal h	a range that includes		

The sample pattern does not match our reference standard for #2fuel/diesel.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	1	170390007A	02/14/2017	21:55	Heather E Williams	1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	1	170390007A	02/08/2017	17:30	Ryan J Dowdy	1



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Sample Description: KSC-SB17-GW Water

Being Kent Space Center

LL Sample # WW 8809621 LL Group # 1759584 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/26/2017 18:15 by DC

The Boeing Company P.O. Box 3707 MC9U4-26

Submitted: 01/28/2017 09:45

Seattle WA 98124-2207

Reported: 02/22/2017 14:54

KSC17

CAT No.	Analysis Name		CAS Number	Result	È	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 826	50C	ug/l		ug/l	
11996	Benzene		71-43-2	0.2	U	0.2	1
11996	Ethylbenzene		100-41-4	0.5	U	0.5	1
11996	Toluene		108-88-3	0.2	U	0.2	1
11996	Xylene (Total)		1330-20-7	0.5	U	0.5	1
GC Vol	latiles	ECY 97-602	NWTPH-Gx	ug/l		ug/l	
08273	NWTPH-Gx water C7-C	12	n.a.	250	Ū	250	1

Sample Comments

State of Washington Lab Certification No. ${\tt C457}$

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	9	Analyst	Dilution Factor
11996	8260C BTEX	SW-846 8260C	1	H170372AA	02/06/2017 1	L8:51	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H170372AA	02/06/2017 1	L8:51	Kevin A Sposito	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	17033A53A	02/02/2017 1	L5:12	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030C	1	17033A53A	02/02/2017 1	L5:12	Brett W Kenyon	1



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Sample Description: KSC-SB17-GW Dissolved Metals Water

Being Kent Space Center

LL Sample # WW 8809622 LL Group # 1759584 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/26/2017 18:15 by DC The Boeing Company

P.O. Box 3707 MC9U4-26 Seattle WA 98124-2207

Submitted: 01/28/2017 09:45

Reported: 02/22/2017 14:54

CAT No. Analysis Name CAS Number Result Limit of Dilution Factor

Metals Dissolved EPA 200.8 rev 5.4 mg/l mg/l

06025 Arsenic 7440-38-2 0.0020 U 0.0020 1

Sample Comments

State of Washington Lab Certification No. C457 This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Tim	ie		Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	170317050003A	02/03/2017	15:35	Patrick J Engle	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	170317050003	02/02/2017	16:50	JoElla L Rice	1



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Sample Description: KSC-SBDI-GW Water

Being Kent Space Center

LL Sample # WW 8809623 LL Group # 1759584 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/26/2017 13:15 by DC The Boeing Company P.O. Box 3707 MC9U4-26 Seattle WA 98124-2207

Submitted: 01/28/2017 09:45

Reported: 02/22/2017 14:54

KSCDI

CAT No.	Analysis Name			CAS Number	Result	:	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-8	46 826	0C	ug/l		ug/l	
11996	Benzene			71-43-2	0.2	U	0.2	1
11996	Ethylbenzene			100-41-4	0.5	U	0.5	1
11996	Toluene			108-88-3	0.2	U	0.2	1
11996	Xylene (Total)			1330-20-7	0.5	U	0.5	1
GC Vol	atiles	ECY	97-602	NWTPH-Gx	ug/l		ug/l	
08273	NWTPH-Gx water C7-C	12		n.a.	250	U	250	1
GC Pet	roleum	ECY	97-602	NWTPH-Dx	mg/l		mg/l	
Hydrod	arbons	modi	fied					
12082	Diesel/#2 Fuel			68334-30-5	0.097	U	0.097	1
that	TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons.							

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C BTEX	SW-846 8260C	1	H170372AA	02/06/2017 17:0	9 Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H170372AA	02/06/2017 17:0	9 Kevin A Sposito	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	17033A53A	02/02/2017 13:4	9 Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030C	1	17033A53A	02/02/2017 13:4	9 Brett W Kenyon	1
12082	NWTPH-Dx (Diesel)	ECY 97-602 NWTPH-Dx modified	1	170390007A	02/14/2017 19:2	B Heather E Williams	3 1
12119	TPH-Dx w/Fuel Water Ext.	ECY 97-602 NWTPH-Dx 06/97	1	170390007A	02/08/2017 17:3) Ryan J Dowdy	1



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Sample Description: KSC-SBDI-GW Dissolved Metals Water

Being Kent Space Center

LL Sample # WW 8809624 LL Group # 1759584 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/26/2017 13:15 by DC

The Boeing Company P.O. Box 3707 MC9U4-26

Submitted: 01/28/2017 09:45 Reported: 02/22/2017 14:54 P.O. Box 3707 MC9U4-26 Seattle WA 98124-2207

No. Analysis Name

CAT

CAS Number

Result

mg/l

Limit of Quantitation Dilution Factor

Metals Dissolved
06025 Arsenic

EPA 200.8 rev 5.4

7440-38-2 **0.0166**

mg/l 0.0020

1

Sample Comments

State of Washington Lab Certification No. C457 This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
	Arsenic	EPA 200.8 rev 5.4	1	170317050003A		Patrick J Engle	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	170317050003	02/02/2017 16:50	JoElla L Rice	1



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Sample Description: Trip Blank 2 Water

Being Kent Space Center

LL Sample # WW 8809625 LL Group # 1759584 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 01/26/2017

The Boeing Company
P.O. Box 3707 MC9U4-26
Seattle WA 98124-2207

Submitted: 01/28/2017 09:45

Reported: 02/22/2017 14:54

KSCT2

CAT No.	Analysis Name		CAS Number	Result	Ε	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 826	50C	ug/l		ug/l	
11996	Benzene		71-43-2	0.2	U	0.2	1
11996	Ethylbenzene		100-41-4	0.5	U	0.5	1
11996	Toluene		108-88-3	0.2	U	0.2	1
11996	Xylene (Total)		1330-20-7	0.5	U	0.5	1
	latiles		NWTPH-Gx	ug/l		ug/l	
08273	NWTPH-Gx water C7	-C12	n.a.	250	U	250	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C BTEX	SW-846 8260C	1	H170372AA	02/06/2017 17:	30 Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H170372AA	02/06/2017 17:	30 Kevin A Sposito	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	17033A53A	02/02/2017 14:	16 Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030C	1	17033A53A	02/02/2017 14:	16 Brett W Kenvon	1



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759584

Reported: 02/22/2017 14:54

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOÇ)
	ug/l		ug/	1
Batch number: H170372AA Benzene Ethylbenzene Toluene Xylene (Total)	0.2	number U U U U	0.2 0.5 0.2	5 1
Batch number: 17033A53A NWTPH-Gx water C7-C12	250	number U	250	
	mg/l		mg/	1
Batch number: 170390007A Diesel/#2 Fuel	-	number U	(s) 0.1	8809615,8809617,8809619-8809620,8809623 0
Batch number: 170317050003A Arsenic	Sample 0.0020			8809616,8809618,8809622,8809624

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: H170372AA	Sample number	r(s): 88096	515,8809621,88	09623,8809	625				
Benzene	5.00	4.88			98		80-120		
Ethylbenzene	5.00	4.68			94		80-120		
Toluene	5.00	4.62			92		80-120		
Xylene (Total)	15	14.08			94		80-120		
	ug/l	ug/l	ug/l	ug/l					
Batch number: 17033A53A	Sample number	r(s): 88096	515,8809621,88	09623,8809	625				
NWTPH-Gx water C7-C12	1100	990.7		•	90		79-120		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 170390007A	Sample number	r(s): 88096	515,8809617,88	09619-8809	620.8809	623			
Diesel/#2 Fuel	0.801	0.720	010,000,01,,00	0,01, 000,	90	023	60-120		
DIESCI/ #Z Tuci	0.001	0.720			50		00 120		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 170317050003A	Sample number	r(s): 88096	516,8809618,88	09622,8809	624				
Arsenic	0.0100	0.0102	,	,	102		85-115		

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759584

Reported: 02/22/2017 14:54

LCS/LCSD (continued)

Analysis Name	LCS Spike	LCS	LCSD Spike	LCSD	LCS	LCSD	LCS/LCSD	RPD	RPD
	Added	Conc	Added	Conc	%REC	%REC	Limits		Max
	mg/l	mg/l	mg/l	mg/l					

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	d MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: H170372AA	Sample nu	mber(s): 880	9615,8809	621,8809623	,8809625	UNSPK: 8	809615			
Benzene	0.2 t	5.00	5.22	5.00	5.18	104	104	80-120	1	30
Ethylbenzene	0.5 t	5.00	5.20	5.00	5.15	104	103	80-120	1	30
Toluene	0.2 t	5.00	5.17	5.00	5.07	103	101	80-120	2	30
Xylene (Total)	0.5 t	J 15	15.63	15	15.21	104	101	80-120	3	30
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 17033A53A	Sample nu	mber(s): 880	9615,8809	621,8809623	,8809625	UNSPK: 8	809615			
NWTPH-Gx water C7-C12	250	U 1100	1088.45	1100	1097.17	99	100	79-120	1	30
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 170390007A	Sample nu	mber(s): 880	9615.8809	617.8809619	-8809620.	8809623	UNSPK:	8809615		
Diesel/#2 Fuel	0.097 t		0.597	0.771	0.698	77	90	60-120	16	20
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 170317050003A	Sample nu	mber(s): 880	9616,8809	618,8809622	,8809624	UNSPK: 8	809616			
Arsenic	0.0167	0.0100	0.0271			103		70-130		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name BKG Conc DUP Conc DUP RPD DUP RPD Max mg/l mg/l

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1759584

Reported: 02/22/2017 14:54

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C BTEX Batch number: H170372AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8809615	108	101	95	91
8809621	112	108	95	94
8809623	111	102	97	91
8809625	112	107	95	91
Blank	108	105	96	93
LCS	111	109	93	96
MS	108	103	97	95
MSD	111	109	94	96
Limits:	77-114	74-113	77-110	78-110

Analysis Name: NWTPH-Gx water C7-C12

Batch number: 17033A53A

	Trifluorotoluene-F
8809615	124
8809621	120
8809623	122
8809625	119
Blank	118
LCS	104
MS	105
MSD	104

Limits: 63-135

Analysis Name: NWTPH-Dx (Diesel)

Batch number: 170390007A

	Chlorobenzene	Orthoterphenyl	
8809615	74	74	
8809617	62	64	
8809619	72	79	
8809620	80	87	
8809623	69	71	
Blank	63	76	
LCS	66	90	
MS	72	77	
MSD	87	87	
Limits:	50-150	50-150	

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

Boeing Chain of Custody

Acct. # 13419

SULOTIN

* ALL DISSOURD METHS
FRED FLENES OFFIN Remarks/Comments Date/Time Date/Time g なのみとないで Custody Seals Intact?: (Yes Temperature upon Receipt: Received byn Received by: Received by: Relinquished by permercial carrier (circle): Color (BPA) 1923 8687 Date/Fime 3até/†ime For Eurofins Lancaster Laboratories use only.

Group # 5550 Sample # 56050 (5-25 Please print. Instructions on reverse side correspond. Analyses Requested 9-411 X9-HULLAN MA-HMUNN Relinquished by: Relinquished by: Relinquished by 70928 XZID STANOSSIO 4 8,005 57411341 No. of Containers THEORY CONTINUED 200 M 3 62 O # of Coolers: STEN STEN Matrix 24 hour 4 day (m) Other (specify): S 1300 3 S. 12 SIS Time 1 Collected 3 Client Information KENT SPACE CENTER 5 1 | | | | | | | | KEUT WASHIOLIES 48 hour Date 5 day 6) Turnaround Time Requested (please circle) 126 TASTACOAY Lancaster Laboratories NICK CARSON 知るの子 DANK COOPEN N Boeing EHS Sample Identification Date needed: KSC-SB 17-6W 45C-58 16-6W 436-58 21-6W KSC-58 14-6W KSC. SB 15-6W N 15-535-67 15-535-67 Standard 72 hour TICIN BLANK Consultant Contact: Site Program/#: Site Location: Site Project: Boeing PM: nvoice To: Report To: Sampler: Page 18 of 20

The white copy should accompany samples to Eurofins Lancaster Laboratories. The yellow copy should be retained by the client. Eurofins Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300

7063.02 Issued by Dept. 40 Management



Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID:

174268

Group Number(s): 759584

Client: BOEING

Delivery and Receipt Information

Delivery Method:

Fed Ex

Arrival Timestamp:

01/28/2017 9:45

Number of Packages:

3

Number of Projects:

1

Arrival Condition Summary

Shipping Container Sealed:

Yes

Sample IDs on COC match Containers:

Yes

Custody Seal Present:

Yes

Sample Date/Times match COC:

Yes

Custody Seal Intact:

Yes

VOA Vial Headspace ≥ 6mm:

Air Quality Samples Present:

No

No

Samples Chilled:

Yes

Total Trip Blank Qty:

12

Paperwork Enclosed:

Yes

Trip Blank Type:

HCI

Samples Intact: Missing Samples:

Extra Samples:

Yes No

No

Discrepancy in Container Qty on COC:

No

Unpacked by Karen Diem (3060) at 12:54 on 01/28/2017

Samples Chilled Details

Thermometer Types:

DT = Digital (Temp. Bottle)

IR = Infrared (Surface Temp)

All Temperatures in °C.

Cooler#	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	4.1	DT	Wet	Υ	Bagged	N `
2	DT146	4.8	DT ·	Wet	Υ	Bagged	N
3	DT146	5.8	DT	Wet	Υ	Bagged	N

General Comments:

Sample SB-18-GW NOT WERE LABELED



Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
С	degrees Celsius	mĹ	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	none detected
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IŬ	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
Ĺ	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	μg	microgram(s)
m3	cubic meter(s)	μĹ	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

C - Result confirmed by reanalysis

E - Concentration exceeds the calibration range

J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)

P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.

U - Analyte was not detected at the value indicated

V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference...

W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



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ANALYTICAL RESULTS

Prepared by:

Prepared for:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 The Boeing Company PO Box 3707 MC 1W-12 Seattle WA 98124

Report Date: April 21, 2017

Project: Boeing Kent Space Center

Submittal Date: 04/15/2017 Group Number: 1789843 State of Sample Origin: WA

	Lancaster Labs
Client Sample Description	<u>(LL) #</u>
KSCRI-MW1-2.5 Soil	8941816
KSCRI-MW2-2.5 Soil	8941817
KSCRI-MW3-2.5 Soil	8941818
KSCRI-MW4-2.5 Soil	8941819
KSCRI-MW5-2.5 Soil	8941820
KSCRI-MW6-2.5 Soil	8941821
KSCRI-MW7-2.5 Soil	8941822

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Dalton, Olmstead and Fuglevand Attn: Tasya Gray
Electronic Copy To The Boeing Company Attn: Lindsey Mahrt

Respectfully Submitted,

Kay Morung Kay Hower

(717) 556-7364

Project Name: Boeing Kent Space Center LL Group #: 1789843

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 6020A, Metals

Batch #: 171100637001A (Sample number(s): 8941816-8941822 UNSPK: P940952 BKG: P940952)

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Arsenic



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Sample Description: KSCRI-MW1-2.5 Soil

Boeing Kent Space Center

LL Sample # SW 8941816 LL Group # 1789843 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 04/15/2017 10:00

Collected: 04/12/2017 09:30 The Boeing Company

PO Box 3707 MC 1W-12

Reported: 04/21/2017 11:39 Seattle WA 98124

KSC01

CAT No.	Analysis Name		CAS Number	Dry Result		Dry Limit of Quantitation	Dilution Factor
Metal	S	SW-846	6020A	mg/kg		mg/kg	
06125	Arsenic		7440-38-2	1.31		0.637	2
Wet Cl	hemistry	SM 2540	G-1997	8		%	
00111	Moisture		n.a.	15.2		0.50	1
	Moisture represents	the loss	in weight of th	ne sample after ov	ven drving at		

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06125	Arsenic	SW-846 6020A	1	171100637001A	04/21/2017	04:13	Choon Y Tian	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	171100637001	04/20/2017	16:10	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	2	17109820008B	04/19/2017	23:42	Scott W Freisher	1



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Sample Description: KSCRI-MW2-2.5 Soil

Boeing Kent Space Center

LL Sample # SW 8941817 LL Group # 1789843 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 04/15/2017 10:00

Collected: 04/11/2017 09:45 The Boeing Company

> PO Box 3707 MC 1W-12

Reported: 04/21/2017 11:39 Seattle WA 98124

KSC02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
Metal	s	SW-846 6020A	mg/kg	mg/kg	
06125	Arsenic	7440-38-2	4.78	0.729	2
Wet C	hemistry	SM 2540 G-1997	%	%	
00111	Moisture	n.a.	22.2	0.50	1
		s the loss in weight of the Celsius. The moisture result			

as-received basis.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06125	Arsenic	SW-846 6020A	1	171100637001A	04/21/2017	04:15	Choon Y Tian	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	171100637001	04/20/2017	16:10	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	2	17109820008B	04/19/2017	23:42	Scott W Freisher	1



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Sample Description: KSCRI-MW3-2.5 Soil

Boeing Kent Space Center

LL Sample # SW 8941818 LL Group # 1789843 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 04/15/2017 10:00

Collected: 04/11/2017 11:05 The Boeing Company

PO Box 3707 MC 1W-12

Reported: 04/21/2017 11:39 Seattle WA 98124

KSC03

CAT No. Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
Metals	SW-846 6020A	mg/kg	mg/kg	
06125 Arsenic	7440-38-2	3.26	0.891	2
Wet Chemistry	SM 2540 G-1997	8	8	
00111 Moisture	n.a.	12.8	0.50	1
Moisture represents	the loss in weight of the	sample after oven drying at		

Moisture represents the loss in weight of the sample after oven drying a 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tir	me	Analyst	Dilution Factor
06125	Arsenic	SW-846 6020A	1	171100637001A	04/21/2017	04:20	Choon Y Tian	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	171100637001	04/20/2017	16:10	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	2	17109820008B	04/19/2017	23:42	Scott W Freisher	1



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Sample Description: KSCRI-MW4-2.5 Soil

Boeing Kent Space Center

LL Sample # SW 8941819 LL Group # 1789843 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 04/15/2017 10:00

Collected: 04/11/2017 11:45 The Boeing Company

PO Box 3707 MC 1W-12

Reported: 04/21/2017 11:39 Seattle WA 98124

KSC04

CAT No.	Analysis Name			CAS N	umber	Dry Result		Dry Limit of Quantitation	Dilution Factor
Metals	5	SW-	-846	6020A		mg/kg		mg/kg	
06125	Arsenic			7440-	38-2	5.76		0.799	2
Wet Ch	nemistry	SM	2540	G-1997		%		%	
00111	Moisture			n.a.		22.4		0.50	1
	Moisture represents	the	loss	in weight	of the	sample after over	n drying at		

Moisture represents the loss in weight of the sample after oven drying a 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06125	Arsenic	SW-846 6020A	1	171100637001A	04/21/2017	04:22	Choon Y Tian	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	171100637001	04/20/2017	16:10	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	2	17109820008B	04/19/2017	23:42	Scott W Freisher	1



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Sample Description: KSCRI-MW5-2.5 Soil

Boeing Kent Space Center

LL Sample # SW 8941820 LL Group # 1789843 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 04/15/2017 10:00

Collected: 04/11/2017 12:30 The Boeing Company

PO Box 3707 MC 1W-12

Reported: 04/21/2017 11:39 Seattle WA 98124

KSC05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
Metal	5	SW-846 6020A	mg/kg	mg/kg	
06125	Arsenic	7440-38-2	3.44	0.765	2
Wet C	nemistry	SM 2540 G-1997	%	8	
00111	Moisture	n.a.	9.8	0.50	1
	-	the loss in weight of the	1 3		

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
06125	Arsenic	SW-846 6020A	1	171100637001A	04/21/2017	04:24	Choon Y Tian	2
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	171100637001	04/20/2017	16:10	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	2	17109820008B	04/19/2017	23:42	Scott W Freisher	1



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Sample Description: KSCRI-MW6-2.5 Soil

Boeing Kent Space Center

LL Sample # SW 8941821 LL Group # 1789843 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 04/15/2017 10:00

Collected: 04/13/2017 10:00 The Boeing Company

PO Box 3707 MC 1W-12

Reported: 04/21/2017 11:39 Seattle WA 98124

KSC06

CAT No.	Analysis Name		CAS Number	Dry Result		Dry Limit of Quantitation	Dilution Factor
Metal	S	SW-846	6020A	mg/kg		mg/kg	
06125	Arsenic		7440-38-2	4.64		0.803	2
Wet C	hemistry	SM 254	10 G-1997	%		%	
00111	Moisture		n.a.	18.3		0.50	1
	Moisture represents	the los	s in weight of th	e sample after ov	ven drving at		

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor	
06125	Arsenic	SW-846 6020A	1	171100637001A	04/21/2017	04:26	Choon Y Tian	2	
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	171100637001	04/20/2017	16:10	JoElla L Rice	1	
00111	Moisture	SM 2540 G-1997	2	17109820008B	04/19/2017	23:42	Scott W Freisher	1	



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Sample Description: KSCRI-MW7-2.5 Soil

Boeing Kent Space Center

LL Sample # SW 8941822 LL Group # 1789843 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 04/15/2017 10:00

Collected: 04/11/2017 14:00 The Boeing Company

> PO Box 3707 MC 1W-12

Reported: 04/21/2017 11:39 Seattle WA 98124

KSC07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor			
Metal	S	SW-846 6020A	mg/kg	mg/kg				
06125	Arsenic	7440-38-2	2.93	0.779	2			
Wet C	hemistry	SM 2540 G-1997	8	8				
00111	Moisture	n.a.	9.9	0.50	1			
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an								

as-received basis.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial# Batch#		Analysis Date and Ti	me	Analyst	Dilution Factor	
06125	Arsenic	SW-846 6020A	1	171100637001A	04/21/2017	04:27	Choon Y Tian	2	
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	171100637001	04/20/2017	16:10	JoElla L Rice	1	
00111	Moisture	SM 2540 G-1997	2	17109820008B	04/19/2017	23:42	Scott W Freisher	1	



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1789843

Reported: 04/21/2017 11:39

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name Result LOQ $\label{eq:condition} \operatorname{mg/kg} \qquad \operatorname{mg/kg}$

Batch number: 171100637001A Sample number(s): 8941816-8941822

Arsenic 0.800 U 0.800

LCS/LCSD

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 171100637001A Arsenic	Sample numbe		99		80-120				
	%	%	8	8					
Batch number: 17109820008B Moisture	Sample numbe 89.5	r(s): 89418 89.41	816-8941822		100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name		Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 171100637001A Sample number(s): 8941816-8941822 UNSPK: P940952											
Arsenic		2.40	1.50	4.37	1.79	4.66	131*	127*	75-125	6	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name BKG Conc DUP Conc DUP RPD DUP RPD Max mg/kg mg/kg

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1789843

Reported: 04/21/2017 11:39

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/kg	mg/kg		
Batch number: 171100637001A Arsenic	Sample number(s): 2.40	8941816-8941822 2.38	BKG: P940952 1 (1)	20
	%	%		
Batch number: 17109820008B Moisture	Sample number(s): 13.66	8941816-8941822 13.98	BKG: P941847	5

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

Boeing Chain of Custody

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2 Sample Identification	Collec	cted	(3)	No. of	METALS													
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KSCRI-MWZ-2.5	4/11/17	0945	1		X													
KSCAI-MW3-2,5	4/11/17	1105			X													
KSCRI-MW4-Z.5	4/11/17	1145			X													
KOCRI-MWJ-2,5	4/11/17	1230			X													
KSCNI-MW6-2.5	4/13/17	1000			X													
KUCRI-MW7-2,5	4/11/17	1400			V													

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Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL Below Minimum Quantitation Level mq milligram(s) degrees Celsius mĹ milliliter(s) cfu colony forming units MPN Most Probable Number **CP Units** cobalt-chloroplatinate units N.D. none detected F degrees Fahrenheit ng nanogram(s) nephelometric turbidity units gram(s) NTU g IÚ International Units pg/L picogram/liter kilogram(s) RL Reporting Limit kg **TNTC** liter(s) Too Numerous To Count lb. pound(s) microgram(s) μg μĹ microliter(s) m3 cubic meter(s) milliequivalents umhos/cm micromhos/cm meg

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an

as-received basis.

Laboratory Data Qualifiers:

C - Result confirmed by reanalysis

E - Concentration exceeds the calibration range

J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)

P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.

U - Analyte was not detected at the value indicated

V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference...

W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



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ANALYTICAL RESULTS

Prepared by:

Prepared for:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 The Boeing Company PO Box 3707 MC 1W-12 Seattle WA 98124

Report Date: May 18, 2017

Project: Boeing Kent Space Center

Submittal Date: 05/04/2017 Group Number: 1797131 State of Sample Origin: WA

	Lancaster Labs
Client Sample Description	<u>(LL) #</u>
KSCRI-MW2-050317 Water	8974896
KSCRI-MW2-050317 Dissolved Metals Water	8974897
KSCRI-MW3-050317 Water	8974898
KSCRI-MW3-050317 Dissolved Metals Water	8974899
KSCRI-MW4-050317 Water	8974900
KSCRI-MW4-050317 Dissolved Metals Water	8974901
KSCRI-MW5-050317 Water	8974902
KSCRI-MW5-050317 Dissolved Metals Water	8974903
KSCRI-DUP-050317 Water	8974904
KSCRI-DUP-050317 Dissolved Metals Water	8974905

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Dalton, Olmstead and Fuglevand Attn: Tasya Gray Electronic Copy To The Boeing Company Attn: Lindsey Mahrt



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Respectfully Submitted,

Kay Hower

(717) 556-7364



Project Name: Boeing Kent Space Center LL Group #: 1797131

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

ECY 97-602 NWTPH-Dx modified, GC Petroleum Hydrocarbons

Sample #s: 8974904

The observed sample pattern includes an additional pattern which elutes later than the DRO range.

EPA 300.0, Wet Chemistry

Batch #: 17124249113B (Sample number(s): 8974896, 8974898, 8974900, 8974904 UNSPK: P974842 BKG: P974842)

The recovery(ies) for the following analyte(s) in the MS were below the acceptance window: Sulfate, Nitrate Nitrogen



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Sample Description: KSCRI-MW2-050317 Water

Boeing Kent Space Center

LL Sample # WW 8974896 LL Group # 1797131 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 05/04/2017 09:20

Collected: 05/03/2017 13:05 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 05/18/2017 11:52 Seattle WA 98124

KCS02

CAT No.	Analysis Name		CAS Number	Result		Limit of Quantitation	Dilution Factor
	roleum arbons	ECY 97-602 modified	NWTPH-Dx	ug/l		ug/l	
	Diesel Range Organics Heavy Range Organics		n.a. n.a.	97.6 244	U U	97.6 244	1 1
Wet Ch 00368 00228	nemistry Nitrate Nitrogen Sulfate	EPA 300.0	14797-55-8 14808-79-8	mg/l 0.10 1.0	U U	mg/l 0.10 1.0	1 1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08271	NWTPH-Dx water	ECY 97-602 NWTPH-Dx modified	1	171290025A	05/11/2017 02:46	Amy Lehr	1
11197	WA DRO NW DX Ext (Non SG)	ECY 97-602	1	171290025A	05/09/2017 17:00	Kate E Lutte	1
00368	Nitrate Nitrogen	NWTPH-Dx 06/97 EPA 300.0	1	17124249113B	05/05/2017 10:07	Zachary W Enck	1
00228	Sulfate	EPA 300.0	1	17124249113B	05/05/2017 10:07	Zachary W Enck	1



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Sample Description: KSCRI-MW2-050317 Dissolved Metals Water

Boeing Kent Space Center

LL Sample # WW 8974897 LL Group # 1797131 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 05/04/2017 09:20

Reported: 05/18/2017 11:52

Collected: 05/03/2017 13:05 by DC The Boeing Company

PO Box 3707 MC 1W-12

Seattle WA 98124

CAT No.	Analysis Name	CAS Numbe	er Result	Limit of Quantitation	Dilution Factor
Metal	s Dissolved	EPA 200.8 rev 5.4	mg/l	mg/l	
06025	Arsenic	7440-38-2	0.0282	0.0020	1
06028	Cadmium	7440-43-9	0.00050 U	0.00050	1
06031	Chromium	7440-47-3	0.0020 U	0.0020	1
06033	Copper	7440-50-8	0.0020 U	0.0020	1
06035	Lead	7439-92-1	0.0010 U	0.0010	1
06039	Nickel	7440-02-0	0.0079	0.0020	1
06041	Selenium	7782-49-2	0.0020 U	0.0020	1
06042	Silver	7440-22-4	1 0.00050 U	0.00050	1
06049	Zinc	7440-66-6	0.0150 U	0.0150	1
		EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	0.00020 U	0.00020	1

Sample Comments

State of Washington Lab Certification No. C457 This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis	Analyst	Dilution
No.					Date and Time		Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:42	Patrick J Engle	1
06028	Cadmium	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:42	Patrick J Engle	1
06031	Chromium	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:42	Patrick J Engle	1
06033	Copper	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:42	Patrick J Engle	1
06035	Lead	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:42	Patrick J Engle	1
06039	Nickel	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:42	Patrick J Engle	1
06041	Selenium	EPA 200.8 rev 5.4	1	171290705003B	05/10/2017 18:42	Patrick J Engle	1
06042	Silver	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:42	Patrick J Engle	1
06049	Zinc	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:42	Patrick J Engle	1
00259	Mercury	EPA 245.1 rev 3	1	171290571304	05/10/2017 08:41	Damary Valentin	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	171290705003	05/09/2017 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	171290571304	05/09/2017 22:30	Annamaria Kuhns	1



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Sample Description: KSCRI-MW3-050317 Water

Boeing Kent Space Center

LL Sample # WW 8974898 LL Group # 1797131 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 05/04/2017 09:20

Collected: 05/03/2017 14:10 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 05/18/2017 11:52 Seattle WA 98124

KCS03

CAT No.	Analysis Name		CAS Number	Result	=	Limit of Quantitation	Dilution Factor
	troleum carbons	ECY 97-602 modified	NWTPH-Dx	ug/l		ug/l	
08271 08271	Diesel Range Organi Heavy Range Organic	cs C12-C24	n.a. n.a.	96.4 241	U U	96.4 241	1 1
Wet Cl 00368 00228	nemistry Nitrate Nitrogen Sulfate	EPA 300.0	14797-55-8 14808-79-8	mg/l 0.10 1.0	U U	mg/1 0.10 1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	e	Analyst	Dilution Factor
08271	NWTPH-Dx water	ECY 97-602 NWTPH-Dx modified	1	171290025A	05/11/2017	03:08	Amy Lehr	1
11197	WA DRO NW DX Ext (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	171290025A	05/09/2017	17:00	Kate E Lutte	1
00368	Nitrate Nitrogen	EPA 300.0	1	17124249113B	05/05/2017	10:24	Zachary W Enck	1
00228	Sulfate	EPA 300.0	1	17124249113B	05/05/2017	10:24	Zachary W Enck	1



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Sample Description: KSCRI-MW3-050317 Dissolved Metals Water

Boeing Kent Space Center

LL Sample # WW 8974899 LL Group # 1797131 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 05/04/2017 09:20

Collected: 05/03/2017 14:10 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 05/18/2017 11:52 Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metal	s Dissolved	EPA 200.8 rev 5.4	mg/l	mg/l	
06025	Arsenic	7440-38-2	0.0256	0.0020	1
06028	Cadmium	7440-43-9	0.00050 U	0.00050	1
06031	Chromium	7440-47-3	0.0020 U	0.0020	1
06033	Copper	7440-50-8	0.0021	0.0020	1
06035	Lead	7439-92-1	0.0010 U	0.0010	1
06039	Nickel	7440-02-0	0.0020 U	0.0020	1
06041	Selenium	7782-49-2	0.0020 U	0.0020	1
06042	Silver	7440-22-4	0.00050 U	0.00050	1
06049	Zinc	7440-66-6	0.0150 U	0.0150	1
		EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	0.00020 U	0.00020	1

Sample Comments

State of Washington Lab Certification No. C457 This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:53	Patrick J Engle	1
06028	Cadmium	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:53	Patrick J Engle	1
06031	Chromium	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:53	Patrick J Engle	1
06033	Copper	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:53	Patrick J Engle	1
06035	Lead	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:53	Patrick J Engle	1
06039	Nickel	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:53	Patrick J Engle	1
06041	Selenium	EPA 200.8 rev 5.4	1	171290705003B	05/10/2017 18:53	Patrick J Engle	1
06042	Silver	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:53	Patrick J Engle	1
06049	Zinc	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:53	Patrick J Engle	1
00259	Mercury	EPA 245.1 rev 3	1	171290571304	05/10/2017 08:44	Damary Valentin	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	171290705003	05/09/2017 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	171290571304	05/09/2017 22:30	Annamaria Kuhns	1



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Sample Description: KSCRI-MW4-050317 Water

Boeing Kent Space Center

LL Sample # WW 8974900 LL Group # 1797131 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 05/04/2017 09:20

Collected: 05/03/2017 15:15 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 05/18/2017 11:52 Seattle WA 98124

KCS04

CAT No.	Analysis Name		CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Petr Hydroca		ECY 97-602 modified	NWTPH-Dx	ug/l		ug/l	
08271 E	Diesel Range Organio Heavy Range Organios		n.a.	100 250	U U	100 250	1
	emistry Nitrate Nitrogen Sulfate	EPA 300.0	14797-55-8 14808-79-8	mg/l 0.10 3.0	υ	mg/l 0.10 1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08271	NWTPH-Dx water	ECY 97-602	1	171290025A	05/11/2017 03:29	Amy Lehr	1
		NWTPH-Dx modified					
11197	WA DRO NW DX Ext (Non SG)	ECY 97-602	1	171290025A	05/09/2017 17:00	Kate E Lutte	1
		NWTPH-Dx 06/97					
00368	Nitrate Nitrogen	EPA 300.0	1	17124249113B	05/05/2017 10:41	Zachary W Enck	1
00228	Sulfate	EPA 300.0	1	17124249113B	05/05/2017 10:41	Zachary W Enck	1



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Sample Description: KSCRI-MW4-050317 Dissolved Metals Water

Boeing Kent Space Center

LL Sample # WW 8974901 LL Group # 1797131 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 05/04/2017 09:20

Collected: 05/03/2017 15:15 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 05/18/2017 11:52 Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metal	s Dissolved	EPA 200.8 rev 5.4	mg/l	mg/l	
06025	Arsenic	7440-38-2	0.0189	0.0020	1
06028	Cadmium	7440-43-9	0.00050 U	0.00050	1
06031	Chromium	7440-47-3	0.0020 U	0.0020	1
06033	Copper	7440-50-8	0.0021	0.0020	1
06035	Lead	7439-92-1	0.0010 U	0.0010	1
06039	Nickel	7440-02-0	0.0020 U	0.0020	1
06041	Selenium	7782-49-2	0.0020 U	0.0020	1
06042	Silver	7440-22-4	0.00050 U	0.00050	1
06049	Zinc	7440-66-6	0.0150 U	0.0150	1
		EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	0.00020 U	0.00020	1

Sample Comments

State of Washington Lab Certification No. C457 This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:56	Patrick J Engle	1
06028	Cadmium	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:56	Patrick J Engle	1
06031	Chromium	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:56	Patrick J Engle	1
06033	Copper	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:56	Patrick J Engle	1
06035	Lead	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:56	Patrick J Engle	1
06039	Nickel	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:56	Patrick J Engle	1
06041	Selenium	EPA 200.8 rev 5.4	1	171290705003B	05/10/2017 18:56	Patrick J Engle	1
06042	Silver	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:56	Patrick J Engle	1
06049	Zinc	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:56	Patrick J Engle	1
00259	Mercury	EPA 245.1 rev 3	1	171290571304	05/10/2017 08:31	Damary Valentin	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	171290705003	05/09/2017 23:00	Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	171290571304	05/09/2017 22:30	Annamaria Kuhns	1



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Sample Description: KSCRI-MW5-050317 Water

Boeing Kent Space Center

LL Sample # WW 8974902 LL Group # 1797131 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 05/04/2017 09:20

Collected: 05/03/2017 16:20 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 05/18/2017 11:52 Seattle WA 98124

KCS05

CAT No.	Analysis Name		CAS Number	Result		Limit of Quantitation	Dilution Factor
	croleum	ECY 97-602 modified	NWTPH-Dx	ug/l		ug/l	
-				100		100	
08271	Diesel Range Organio	cs C12-C24	n.a.	103	U	103	1
08271	Heavy Range Organics	s C24-C40	n.a.	257	U	257	1
Wet Ch	nemistry	EPA 300.0		mg/l		mg/l	
00368	Nitrate Nitrogen		14797-55-8	1.6		0.10	1
00228	Sulfate		14808-79-8	36.7		10.0	10

Sample Comments

State of Washington Lab Certification No. ${\rm C457}$

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08271	NWTPH-Dx water	ECY 97-602 NWTPH-Dx modified	1	171290025A	05/11/2017 03:51	Amy Lehr	1
11197	WA DRO NW DX Ext (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	171290025A	05/09/2017 17:00	Kate E Lutte	1
00368	Nitrate Nitrogen	EPA 300.0	1	17124249106A	05/05/2017 09:17	Zachary W Enck	1
00228	Sulfate	EPA 300 0	1	171242491062	05/09/2017 03:44	Zachary W Enck	1.0



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Sample Description: KSCRI-MW5-050317 Dissolved Metals Water

Boeing Kent Space Center

LL Sample # WW 8974903 LL Group # 1797131 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 05/03/2017 16:20 by DC The Boeing Company

PO Box 3707 MC 1W-12

Seattle WA 98124

Submitted: 05/04/2017 09:20 Reported: 05/18/2017 11:52

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metal	s Dissolved	EPA 200.8 rev 5.4	mg/l	mg/l	
06025	Arsenic	7440-38-2	0.0033	0.0020	1
06028	Cadmium	7440-43-9	0.00050 U	0.00050	1
06031	Chromium	7440-47-3	0.0020 U	0.0020	1
06033	Copper	7440-50-8	0.0029	0.0020	1
06035	Lead	7439-92-1	0.0010 U	0.0010	1
06039	Nickel	7440-02-0	0.0020 U	0.0020	1
06041	Selenium	7782-49-2	0.0020 U	0.0020	1
06042	Silver	7440-22-4	0.00050 U	0.00050	1
06049	Zinc	7440-66-6	0.0150 U	0.0150	1
		EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	0.00020 U	0.00020	1

Sample Comments

State of Washington Lab Certification No. C457 This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis	Analyst	Dilution
No.				24001111	Date and Time		Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:5	Patrick J Engle	1
06028	Cadmium	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:5	Patrick J Engle	1
06031	Chromium	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:5	Patrick J Engle	1
06033	Copper	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:5	Patrick J Engle	1
06035	Lead	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:5	Patrick J Engle	1
06039	Nickel	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:5	Patrick J Engle	1
06041	Selenium	EPA 200.8 rev 5.4	1	171290705003B	05/10/2017 18:5	Patrick J Engle	1
06042	Silver	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:5	Patrick J Engle	1
06049	Zinc	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 18:5	Patrick J Engle	1
00259	Mercury	EPA 245.1 rev 3	1	171290571304	05/10/2017 08:5	Damary Valentin	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	171290705003	05/09/2017 23:0) Annamaria Kuhns	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	171290571304	05/09/2017 22:3) Annamaria Kuhns	1



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Sample Description: KSCRI-DUP-050317 Water

Boeing Kent Space Center

LL Sample # WW 8974904 LL Group # 1797131 Account # 13419

Project Name: Boeing Kent Space Center

Submitted: 05/04/2017 09:20

Collected: 05/03/2017 15:20 by DC The Boeing Company

PO Box 3707 MC 1W-12

Reported: 05/18/2017 11:52 Seattle WA 98124

KCSFD

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation	Dilution Factor
	troleum carbons	ECY 97-602 modified	NWTPH-Dx	ug/l	ug/l	
08271	Diesel Range Orga C12-C24	nics	n.a.	216	98.9	1
08271	Heavy Range Organ C24-C40	ics	n.a.	400	247	1
	observed sample patter r than the DRO range		n additional pa	attern which elutes		
Wet Cl	nemistry	EPA 300.0		mg/l	mg/l	
00368	Nitrate Nitrogen		14797-55-8	0.10 U	0.10	1
00228	Sulfate		14808-79-8	3.1	1.0	1

Sample Comments

State of Washington Lab Certification No. ${\tt C457}$

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
082	71 NWTPH-Dx water	ECY 97-602	1	171290025A	05/11/2017	05:19	Amy Lehr	1
		NWTPH-Dx modified						
111	97 WA DRO NW DX Ext (Non SG)	ECY 97-602	1	171290025A	05/09/2017	17:00	Kate E Lutte	1
		NWTPH-Dx 06/97						
003	58 Nitrate Nitrogen	EPA 300.0	1	17124249113B	05/05/2017	10:57	Zachary W Enck	1
002	28 Sulfate	EPA 300.0	1	17124249113B	05/05/2017	10:57	Zachary W Enck	1



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Sample Description: KSCRI-DUP-050317 Dissolved Metals Water

Boeing Kent Space Center

LL Sample # WW 8974905 LL Group # 1797131 Account # 13419

Project Name: Boeing Kent Space Center

Collected: 05/03/2017 15:20 by DC The Boeing Company

PO Box 3707 MC 1W-12

Seattle WA 98124

Submitted: 05/04/2017 09:20 Reported: 05/18/2017 11:52

CAT No.	Analysis Name	CAS	Number	Result	Limit of Quantitation	Dilution Factor
Metal	s Dissolved	EPA 200.8 rev	7 5.4	mg/l	mg/l	
06025	Arsenic	744	10-38-2	0.0184	0.0020	1
06028	Cadmium	744	10-43-9	0.00050 U	0.00050	1
06031	Chromium	744	10-47-3	0.0020 U	0.0020	1
06033	Copper	744	10-50-8	0.0020 U	0.0020	1
06035	Lead	743	89-92-1	0.0010 U	0.0010	1
06039	Nickel	744	10-02-0	0.0020 U	0.0020	1
06041	Selenium	778	32-49-2	0.0020 U	0.0020	1
06042	Silver	744	10-22-4	0.00050 U	0.00050	1
06049	Zinc	744	10-66-6	0.0150 U	0.0150	1
		EPA 245.1 rev	7 3	mg/l	mg/l	
00259	Mercury	743	39-97-6	0.00020 U	0.00020	1

Sample Comments

State of Washington Lab Certification No. C457 This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

САП	Amalusis Nama	Method	m1#	Batch#	31	3	Dilution
CAT	Analysis Name		IIIaI#	Batti#	Analysis	Analyst	
No.					Date and Time		Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 19:05	Patrick J Engle	1
06028	Cadmium	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 19:05	Patrick J Engle	1
06031	Chromium	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 19:05	Patrick J Engle	1
06033	Copper	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 19:05	Patrick J Engle	1
06035	Lead	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 19:05	Patrick J Engle	1
06039	Nickel	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 19:05	Patrick J Engle	1
06041	Selenium	EPA 200.8 rev 5.4	1	171290705003B	05/10/2017 19:05	Patrick J Engle	1
06042	Silver	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 19:05	Patrick J Engle	1
06049	Zinc	EPA 200.8 rev 5.4	1	171290705003A	05/10/2017 19:05	Patrick J Engle	1
00259	Mercury	EPA 245.1 rev 3	1	171290571304	05/10/2017 08:54	Damary Valentin	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	171290705003	05/09/2017 23:00	Annamaria Kuhns	1
05713	WW SW846 Ha Digest	SW-846 7470A	1	171290571304	05/09/2017 22:30	Annamaria Kuhns	1

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Quality Control Summary

Client Name: The Boeing Company Group Number: 1797131

Reported: 05/18/2017 11:52

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result ug/l	LOQ ug/l
Batch number: 171290025A Diesel Range Organics C12-C24 Heavy Range Organics C24-C40	-	r(s): 8974896,8974898,8974900,8974902,8974904 100 250
	mg/l	mg/l
Batch number: 171290571304 Mercury	Sample number 0.00020 U	r(s): 8974897,8974899,8974901,8974903,8974905 0.00020
Batch number: 171290705003A Arsenic Cadmium Chromium Copper Lead Nickel Silver Zinc	0.0020 U 0.00050 U 0.0020 U 0.0020 U 0.0010 U	0.0020 0.0010 0.0020
Batch number: 171290705003B Selenium	Sample number 0.0020 U	r(s): 8974897,8974899,8974901,8974903,8974905 0.0020
Batch number: 17124249106A Nitrate Nitrogen Sulfate	Sample number 0.10 U	c(s): 8974902 0.10 1.0
Batch number: 17124249113B Nitrate Nitrogen Sulfate	Sample number 0.10 U	r(s): 8974896,8974898,8974900,8974904 0.10 1.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 171290025A Diesel Range Organics C12-C24	Sample numbe	r(s): 89748 1207.67	896,8974898,89 1600	74900,8974 1231.62	902,8974 75	904 77	50-113	2	20
	mg/l	mg/l	mg/l	mg/l					
Batch number: 171290571304	Sample numbe	r(s): 89748	897,8974899,89	74901,8974	903,8974	905			

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

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Quality Control Summary

Client Name: The Boeing Company Group Number: 1797131

Reported: 05/18/2017 11:52

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Mercury	0.00100	0.000857			86		80-120		
Batch number: 171290705003A	Sample numbe	r(s): 89748	97,8974899,89	74901,8974	1903,8974	905			
Arsenic	0.0100	0.00946			95		85-115		
Cadmium	0.00500	0.00484			97		85-115		
Chromium	0.0500	0.0499			100		85-115		
Copper	0.0500	0.0494			99		85-115		
Lead	0.0150	0.0148			99		85-115		
Nickel	0.0500	0.0481			96		85-115		
Silver	0.0500	0.0491			98		85-115		
Zinc	0.500	0.493			99		85-115		
Batch number: 171290705003B	Sample numbe	r(s): 89748	97,8974899,89	74901,8974	1903,8974	905			
Selenium	0.0100	0.00948			95		85-115		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 17124249106A	Sample numbe	r(s): 89749	02						
Nitrate Nitrogen	0.750	0.735			98		90-110		
Sulfate	7.50	7.53			100		90-110		
Batch number: 17124249113B	Sample numbe	r(s): 89748	96,8974898,89	74900,8974	1904				
Nitrate Nitrogen	0.750	0.737			98		90-110		
Sulfate	7.50	7.36			98		90-110		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name		Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number:	171290571304	Sample numbe	er(s): 897	4897,8974	899,8974901	,8974903,8	3974905	UNSPK:	8974901		
Mercury		0.00020 U		0.000893	•	0.000904	89	90	80-120	1	20
Batch number:	171290705003A	Sample numbe	er(s): 897	4897,8974	899,8974901	,8974903,8	3974905	UNSPK:	8974897		
Arsenic		0.0282	0.0100	0.0397			115		70-130		
Cadmium		0.00050 U	0.00500	0.00500			100		70-130		
Chromium		0.00119	0.0500	0.0531			104		70-130		
Copper		0.00155	0.0500	0.0521			101		70-130		
Lead		0.0010 U	0.0150	0.0154			102		70-130		
Nickel		0.00785	0.0500	0.0599			104		70-130		
Silver		0.00050 U	0.0500	0.0510			102		70-130		
Zinc		0.00725	0.500	0.487			96		70-130		
Batch number:	171290705003В	Sample numbe	er(s): 897	4897,8974	899,8974901	,8974903,8	3974905	UNSPK:	8974897		
Selenium		0.0020 U	0.0100	0.0103			103		70-130		

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.

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Quality Control Summary

Client Name: The Boeing Company Group Number: 1797131

Reported: 05/18/2017 11:52

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 17124249106A	Sample numb	er(s): 8974	902 UNSE	K: 8974902						
Nitrate Nitrogen	1.61	5.00	6.39			96		90-110		
Sulfate	36.74	50	91.85			110		90-110		
Batch number: 17124249113B	Sample numb	er(s): 8974	896,8974	1898,8974900,	8974904	UNSPK: P9	74842			
Nitrate Nitrogen	0.194	0.500	0.634			88*		90-110		
Sulfate	9.11	5.00	13.53			89*		90-110		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name		BKG Conc	DUP Conc	DUP RPD	DUP RPD Max	
		mg/l	mg/l			
Batch number: 1	171290571304	Sample number(s): 0.00020 U	8974897,8974899, 0.00020 U	8974901,8974903 0 (1)	,8974905 BKG: 20	8974901
Batch number: I Arsenic Cadmium Chromium Copper Lead Nickel Silver Zinc	171290705003A	Sample number(s):	8974897,8974899, 0.0289 0.00050 U 0.00113 0.00157 0.0010 U 0.00766 0.00050 U 0.00831	8974901,8974903 3 0 (1) 5 (1) 1 (1) 0 (1) 2 (1) 0 (1) 14 (1)	,8974905 BKG: 20 20 20 20 20 20 20 20 20 20 20 20	8974897
Batch number: 1 Selenium	171290705003В	Sample number(s): 0.0020 U mg/l	8974897,8974899, 0.0020 U mg/l	8974901,8974903 0 (1)	,8974905 BKG: 20	8974897
Batch number: 1 Nitrate Nitroge Sulfate		Sample number(s): 1.61 36.74	8974902 BKG: 897 1.61 36.74	4902 0 0 (1)	15 15	
Batch number: 1 Nitrate Nitroge Sulfate		Sample number(s): 0.194 9.11	8974896,8974898, 0.181 9.07	8974900,8974904 7 (1) 0	BKG: P974842 15 15	

Analugia Nama

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

⁽²⁾ The unspiked result was more than four times the spike added.



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Quality Control Summary

Client Name: The Boeing Company Group Number: 1797131

Reported: 05/18/2017 11:52

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx water Batch number: 171290025A

	Orthoterphenyl
8974896	96
8974898	93
8974900	94
8974902	94
8974904	96
Blank	92
LCS	99
LCSD	100
Limits:	50-150

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ.

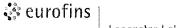
⁽²⁾ The unspiked result was more than four times the spike added.

Boeing Chain of Custody

& eurofins Lancaster Laboratorie	, es	Acct. #	3419	For E Group #	urofin ase prin	s Land 1	caster L 31 ctions on i	_abora Samp reverse s	tories le # side corr	use o <u>n</u> l espond.	^{ly} u ^s	896	-9	do					
1 Client	Information			*	4			A	hnaly	ses R	≀equ	iested	Í			59 SM	5 Remarks	/Commer	nts
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Report To:						3	53	•											
Invoice To: Boeing EHS	Other (Ž	',	12.4												
Sampler: <u>NAUL COOF</u>	<u> </u>	# 0	of Coolers:		н '	Th	20												
② Sample Identification	Collect	ed	3	No. of	NUTTER	NITHERE	37	1											
Gample Identification	Date	Time	Matrix	Containers	3		ad A												
NSCRI-MUZ-DJD317	5/3/17	1305	WAFN	5	X	X	X										ACCORDING TO MAKE AND AND AND AND AND AND AND AND AND AND		
KSCRI-MW3-050317	' '	1410		5	X	X													
KSCRT-19W4-050317		12/2		5	X	<u>X</u>	X				·····						10 m - 10 m - 11 m - 12 m - 12 m - 12 m - 12 m - 12 m - 12 m - 12 m - 12 m - 12 m - 12 m - 12 m - 12 m - 12 m -	Commence of Management of State of Stat	
USCRI-MUS-050317		1620		5	丛	X	1							······································					
KSCRI-DUP-050317		1570		5	X	×	X												
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6 Turnaround Time Requested (ple	ase circle)				Relino	quishe	ed kX	İsa				Date/T	ime		Recei	ved by	11.20 11.50	Date/Time	7
Standard	5 day		4 day		Relino	auishe	ed Windows	UEL				Date/1	ime	100	191 Recei	ved by	word chin	Date/Time	
	·		•																
72 hour	48 hour		24 hour		Relind	•			,	/		Date/T	me			ved by	$\mathcal{O}_{\mathcal{X}}$	Date/Time 5/4/け	05R
Date needed:					Relino	quishe	d by co	mmer	cialea	rrier (ci	ircle):				Temp	erature	e upon Receipt:	3. 8 °C	
					U	PS	(F	edEx)	Other	:				Custo	dy Sea	als Intact?: (Yes,) No	



Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID:

182669

Group Number(s): 179713

Client: BOEING

Delivery and Receipt Information

Delivery Method:

Fed Ex

Arrival Timestamp:

05/04/2017 9:20

Number of Packages:

1

Number of Projects:

1

Arrival Condition Summary

Shipping Container Sealed:

Yes

Sample IDs on COC match Containers:

Yes

Custody Seal Present:

Yes

Sample Date/Times match COC:

Yes

Custody Seal Intact:

Yes

VOA Vial Headspace ≥ 6mm:

Air Quality Samples Present:

No

No

Samples Chilled:

Yes

Total Trip Blank Qty:

1

Paperwork Enclosed:

Yes

Trip Blank Type:

HCL

Samples Intact: Missing Samples: No

No

Extra Samples:

No .No

Unpacked by Evelyn Shank (12390) at 12:18 on 05/04/2017

Samples Chilled Details

Thermometer Types:

DT = Digital (Temp. Bottle)

IR = Infrared (Surface Temp)

All Temperatures in °C.

Cooler#

Thermometer ID

Corrected Temp

Therm, Type

Ice Type Ice Present? Ice Container

DT121

3.8

Discrepancy in Container Qty on COC:

DT

Wet

Υ

Bagged

Elevated Temp?

Ν

Samples Not Intact Details

Sample ID on Label

Bottle Code

Bottle Quantity Container Salvageable?

Comments

KSCRI - MW4-050317

1000 ml round amber glass -None

ARRIVED SHATTERED

KSCRI - MW4-050317

40 ml glass vial - None

1

ARRIVED SHATTERED



Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL Below Minimum Quantitation Level mq milligram(s) degrees Celsius mĹ milliliter(s) cfu colony forming units MPN Most Probable Number **CP Units** cobalt-chloroplatinate units N.D. none detected F degrees Fahrenheit ng nanogram(s) nephelometric turbidity units gram(s) NTU g IÚ International Units pg/L picogram/liter kilogram(s) RL kg Reporting Limit **TNTC** liter(s) Too Numerous To Count lb. pound(s) microgram(s) μg μĹ microliter(s) m3 cubic meter(s) milliequivalents umhos/cm micromhos/cm meg

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an

as-received basis.

Laboratory Data Qualifiers:

C - Result confirmed by reanalysis

E - Concentration exceeds the calibration range

J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)

P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.

U - Analyte was not detected at the value indicated

V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference...

W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

<u>Appendix D</u> Geology Summary (from RI Work Plan)

4.0 PRELIMINARY CONCEPTUAL SITE MODEL

This section describes the geology and hydrogeology of the KSC based on information developed during previous investigations. Further information regarding geology and hydrogeology at the Facility will be obtained during the RI and described in the RI report, and will include hydrogeologic cross sections developed from the borings advanced during the RI and existing information, and groundwater elevation contour maps developed from the monitoring of the wells installed during the RI.

This section presents a preliminary conceptual site model that identifies potential contaminants of concern (PCOCs) within the Facility, areas within the Facility that have the greatest potential to be sources of contaminants, and the potential contaminant migration pathways and receptors. A schematic of the conceptual site model will be developed and included in the RI report.

4.1 Geology

The Duwamish Valley is a north-south trending valley bounded on the west and east by glacial upland areas. The valley walls are relatively steep-sided and rise about 350 to 400 ft above the valley floor. The Duwamish/Green River Valley is part of a relict subglacial meltwater trough eroded during the retreat of the Puget lobe about 14,000 years ago (Dragovich et al. 1994). As the glacial ice retreated, meltwater streams issuing from the receding ice front laid down extensive deposits of stratified sand and gravel in the area. With the retreat of the glacial ice north of the Strait of Juan de Fuca, and rapid rise of sea level due to deglaciation, marine waters entered the Duwamish/Green River trough (Dragovich et al. 1994). During this time, the valley was being filled by marine, deltaic, and alluvial deposits from the ancestral Puyallup and Green rivers.

About 5,000 years ago, Mount Rainier erupted and a large volcanic mudflow, known as the Osceola Mudflow, swept down both the White River and Puyallup River valleys. The mudflow displaced the ancestral White River from its ancient channel northward to its present location near present-day Auburn, approximately 10 miles south of the KSC. After the mudflow, rapid incision and erosion of the mudflow sediment within the White River Valley resulted in increased sediment loads and rapid delta formation. Where the White River joined the Duwamish/Green River trough, coarser-grained sediments were deposited in an alluvial fan that extended well out into the valley. The post-Osceola Mudflow river aggradation and delta progradation eventually filled the valley to near its present-day contours.

As the sediment load carried by the White River decreased, finer-grained deposits of silt, sandy silt, silty fine sand, and occasional layers of peat and organic silt were laid down by the White and Green rivers. These deposits are characteristic of the current near-surface depositional environment in the valley. The Green River, located approximately 0.3 miles west of the KSC, currently flows northward through the valley to Puget Sound approximately 15 miles to the north-northwest.

The results of subsurface investigations conducted at the KSC in 2002 indicate that the property is underlain by approximately 10 ft of fill material underlain by alluvium. The fill generally consists of gravelly, silty sand, and the alluvium generally consists of approximately 5 ft of clayey silt underlain by silty sand or sand with silt (LAI 2002b). Near Building 18-67, a 3-ft-thick clayey silt layer was encountered between about 8 and 11 ft bgs. In this area, groundwater was encountered just above the silt layer at approximately 8 ft bgs, but the primary zone of saturation was beneath the silt at a depth of approximately 11 ft bgs (Tetra Tech 1999).

4.2 Hydrogeology

The near-surface groundwater regime within the Green River Valley is generally characterized as a shallow, single-aquifer system. The KSC is located approximately 0.3 miles east of the Green River, at approximately 25 to 30 ft above mean sea level (USGS 1995). Shallow groundwater (generally encountered between 7 and 11 ft bgs) is present throughout the KSC. The groundwater gradient is locally very flat; the regional direction of groundwater flow is generally to the northwest toward the Green River. Elevation measurements from monitoring wells at the KSC in 2001 indicate local variability in groundwater elevations with no distinct direction of flow (LAI 2002b).

Appendix E Survey Information

Tasya Gray

Subject: Kent-Space Monitor Well Survey

Attachments: 17-2689MW.dwg; 17-2689MW.PDF; 17-2689MW.xls

From: Doug Hartman [mailto:dahartman.dha@frontier.com]

Sent: Monday, July 31, 2017 10:31 AM

To: 'David Cooper' < dcooper@dofnw.com

Subject: Kent-Space Monitor Well Survey

Dave: Good morning. Enclosed is the CAD, PDF plot and excel files for the MW survey.

Doug 17-2689

BOEING KENT SPACE CENTER MONITOR WELLS JULY 2017

MONITOR WELL			RIM ELEV. OF	TOP OF PIPE	
NUMBER	NORTHING	EASTING	CASE	ELEV.	PIPE TYPE
MW-1	157,218.0	1,288,399.3	29.87	29.59	2" PVC
MW-2	156,911.0	1,289,528.0	28.98	28.58	2" PVC
MW-3	155,979.9	1,289,581.4	28.78	28.47	2" PVC
MW-4	155,134.9	1,289,093.6	29.18	28.86	2" PVC
MW-5	155,231.7	1,288,197.2	30.29	29.83	2" PVC
MW-6	156,258.2	1,288,065.8	29.47	29.17	2" PVC
MW-7	156,575.9	1,287,632.9	28.27	27.92	2" PVC

Coordinate System and Zone: Washington State Plane, North Zone Coordinates

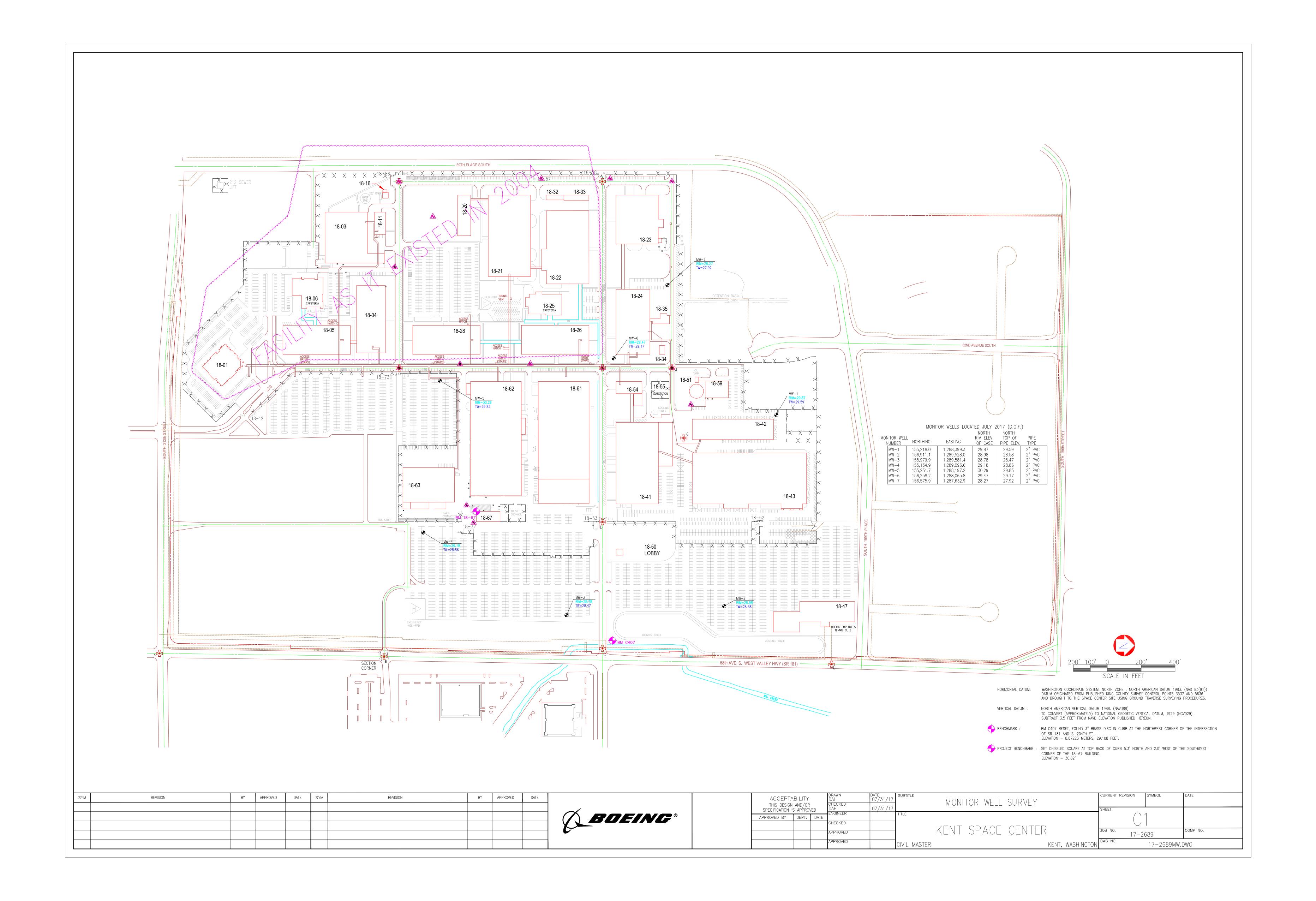
Horizontal Datum: NAD 83(91), North Zone, US FEET.

Vertical Datum: NAVD88, US FEET.

To convert elevations shown hereon to NGVD29 elevations please SUBTRACT 3.54 feet.

Survey completed on July 21, 2017 by Duane Hartman and Associates

DHA Project No.: 17-2689 07/31/17



Appendix F Previous Arsenic Evaluations

October 11, 2011 9L-22-N410-JLF-172

Washington State Department of Ecology Northwest Regional Office Hazardous Waste and Toxics Reduction Program 3190 160th Avenue SE Bellevue, Washington 98008-5452

Attn: Byung Maeng, P.E.

RE: EVALUATION OF ARSENIC IN GROUNDWATER

STRIKER PROPERTY SOUTH BOEING SPACE CENTER KENT, WASHINGTON

Dear Mr. Maeng:

The Boeing Company (Boeing) recently submitted a request to the Washington State Department of Ecology (Ecology) for removal of the Striker South Property (subject property) from the Boeing Space Center (BSC) Resource Conservation and Recovery Act (RCRA) Interim Status Facility (WAD 061670766; Boeing 2011). As part of its review, Ecology requested additional information regarding the arsenic concentrations detected in groundwater at the BSC. This letter provides a summary of the available data for arsenic in groundwater at the BSC and our evaluation of the nature and occurrence of the detected concentrations.

BACKGROUND

Groundwater sampling was conducted at the subject property in 2010 and 2011 as part of due diligence prior to potential sale of a portion of the BSC known as the Striker Property, which includes the subject property. Dissolved arsenic was detected in groundwater samples collected throughout the subject property at concentrations ranging from 0.3 micrograms per liter ($\mu g/L$) to 114 $\mu g/L$, and the concentrations detected at many locations were greater than the screening level of 5 $\mu g/L$, which was developed based on the Model Toxics Control Act (MTCA) Method B cleanup level for protection of groundwater as drinking water (Landau Associates 2010). The investigations conducted to date, which included assessment to evaluate the nature and extent of the arsenic concentrations detected in groundwater, have not identified a potential source of arsenic at the subject property or at the BSC. Based on available data, and as discussed below, the elevated concentrations of arsenic in groundwater are isolated, reflect area-wide conditions, are not attributable to sources at the BSC, and do not pose a risk to human health or the environment.



ARSENIC DATA FROM PREVIOUS INVESTIGATIONS AT BOEING SPACE CENTER

Boeing gathered and reviewed available arsenic groundwater data collected during previous investigations at the BSC, including the subject property. The available arsenic data for the BSC are summarized in Table 1. Available arsenic data for the Striker Property are presented on Figure 1.

Building 18-03

Between 1992 and 1994, groundwater samples were collected for laboratory analysis from five monitoring wells installed on the east side of Building 18-03, in the area of a former chrome waste underground storage tank (UST) system. Dissolved arsenic was detected in the samples at concentrations ranging from 16 μ g/L to 25 μ g/L (Figure 1; Weston 1994). In a letter dated February 27, 1995, Ecology accepted certification for clean closure of the tank system (Ecology 1995).

Former Gun Club

In October 1998, groundwater samples were collected from four direct-push borings during site characterization activities at the BSC Gun Club, which was formerly located directly north of the Striker Property (in the current location of the stormwater detention pond). The detected concentrations of dissolved arsenic ranged from 13 μ g/L to 42 μ g/L (Landau Associates 1999). In October 1999, following soil remediation activities in the summer of 1999, groundwater samples were collected and analyzed from three monitoring wells installed in the former source area. The dissolved arsenic concentrations detected in the groundwater samples ranged from 6.7 μ g/L to 12.4 μ g/L. The wells were re-sampled in March 2000 and the samples were analyzed for total and dissolved arsenic. The detected concentrations of total arsenic ranged from 4 μ g/L to 23 μ g/L; the dissolved arsenic concentrations were only slightly lower than the total concentrations and ranged from 3 μ g/L to 19 μ g/L. The results of the 1999 groundwater monitoring were included in the final cleanup report submitted to Ecology in April 2000 (AGI 2000). The results of the 2000 groundwater monitoring were included in an addendum to the final cleanup report (discussed below).

In April 2000, AGI Technologies prepared an addendum to the final cleanup report for the Gun Club at the request of Ecology. The addendum presented an evaluation of the source of metals detected in groundwater and concluded that the arsenic detected in groundwater at the BSC comes from natural sources. A copy of the addendum is attached. In August 2000, based on the data presented in the addendum, Ecology issued a No Further Action (NFA) determination for the Gun Club facility under the Voluntary Cleanup Program (VCP). The NFA letter acknowledged that "arsenic concentrations in groundwater that exceed MTCA Method A limits are likely the result of nature, and not the result of a known release at the Gun Club site." A copy of the NFA letter is attached.

Building 18-54

In April 2009, three monitoring wells were installed in the area of Building 18-54 (located east of the Striker Property) to document groundwater conditions prior to upgrades to an existing substation by Puget Sound Energy. Dissolved arsenic was detected in the

groundwater samples collected from each of the wells at concentrations ranging from 24 μ g/L to 51 μ g/L (Boeing 2001; GeoEngineers 2009).

DISSOLVED ARSENIC AT STRIKER SOUTH PROPERTY

The dissolved arsenic concentrations detected in the groundwater samples collected at the Striker South Property are shown on Figure 1. The highest concentrations of arsenic were detected in the groundwater samples collected from an undeveloped portion of the Striker South Property, between Building 18-20 to the north and Building 18-03 to the south. Arsenic was detected at concentrations about 20 times greater than the screening level in this area (114 µg/L at DP-5 and 111 µg/L at DP-27). There has been no handling, use, or storage of any arsenic-containing material in this area. Waste profile records for the contents of the former chrome waste UST system at Building 18-03, which is located about 600 feet to the southeast of this area, indicate that the waste stream included arsenic. Analytical results for a sample of the tank contents indicate that total arsenic was detected at a concentration of 34.9 milligrams per liter (34,900 µg/L) (Weston 1994). As noted above, during the closure of the UST system, arsenic was detected at concentrations ranging from 16 μg/L to 25 μg/L in samples collected from monitoring wells in the immediate vicinity of the UST system. The detected concentrations of dissolved arsenic in groundwater samples collected from direct-push borings DP-28 through DP-30 (located between the former UST system and direct-push borings DP-5 and DP-27) ranged from 1.1 µg/L to 31.9 µg/L. Based on the investigations conducted in the area and the associated groundwater data, the elevated concentrations of arsenic detected in groundwater at DP-5 and DP-27 appear to be isolated and are not associated with the former UST system, which is the only known potential source of arsenic on the Striker South Property.

Elevated concentrations of arsenic (65.4 μ g/L at DP-31 and 43.8 μ g/L at DP-11) were also detected in groundwater samples collected from locations in the southwest, undeveloped portion of the Striker South Property. There has been no development in this area and no handling, use, or storage of any arsenic-containing material. Arsenic was detected at concentrations below the screening level in two samples collected from the immediate vicinity of DP-31 and DP-11 (2.8 μ g/L at DP-32 and 0.3 μ g/L at DP-33); therefore, the elevated concentrations of arsenic appear to be isolated and not associated with a release. As with the other locations at the subject property, the investigations conducted and the associated groundwater data indicate that the elevated concentrations of arsenic detected in groundwater at DP-31 and DP-11 appear to be isolated and are not associated with known or potential sources of arsenic on the Striker South Property.

CONCLUSIONS

Dissolved arsenic is present in groundwater at the Striker South Property at concentrations greater than the screening level. Based on the investigations conducted to date and the available analytical and historical data, the elevated concentrations of arsenic detected in groundwater are isolated, are the result of regional conditions, and are not the result of sources associated with Boeing operations.

Page 4 of 5 Mr. Byung Maeng 9L-22-N410-JLF-172

Groundwater at the BSC is not used for drinking water. Boeing's purchase and sale agreement with the prospective buyer of the Striker Property includes a restriction on the use of groundwater. As an added level of protection, Boeing is willing to pursue a formal environmental covenant to restrict the use of groundwater. The arsenic present in groundwater at the Striker Property does not pose a potential threat to human health or the environment; therefore, Boeing requests that the site not be listed on the Confirmed and Suspected Contaminated Sites List.

We would appreciate the opportunity to discuss the information presented in this letter with you and to answer questions that you may have regarding the detected concentrations of arsenic in groundwater at the Striker South Property. Please e-mail or call me to schedule a time to discuss this request.

Sincerely,

Joe Flaherty

Project Manager EHS Remediation Group

(206) 769-5987

joseph.l.flaherty@boeing.com

REFERENCES

AGI. 2000. Report: Volume 1, Final Report, Soil Cleanup, Boeing, Boeing Kent Space Center Gun Club, 20403 68th Avenue South, Kent Washington. Prepared for The Boeing Company. AGI Technologies. April 17.

Boeing. 2011. Letter: Request for Removal of the Striker Property South From the Boeing Space Center RCRA Interim Status Facility (WAD 061670766). From J. Flaherty, Boeing EHS Remediation Group, Seattle, Washington, to B. Maeng, Washington State Department of Ecology, Hazardous Waste and Toxics Reduction Section, Bellevue, Washington. July 21.

Boeing. 2001. Drawing: *Switchyard 1855, Main Substation Power Plan*. Drawing No. E18.55-E2. October 8.

Ecology. 1995. Letter: *Ecology Acceptance of Certification of Clean Closure of the 18-03 Building Dangerous Waste Underground Storage Tank System*. From J. Sellick, Washington State Department of Ecology, Hazardous Waste and Toxics Reduction Section, Bellevue, Washington, to J.T. Johnstone, Boeing Defense and Space Group, Seattle, Washington. February 27.

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GeoEngineers. 2009. Draft Table 2: Groundwater Chemical Analytical Data, Petroleum Hydrocarbons, VOCs, BETX, SVOCs, PAHs, PCBs, Metals, Ethylene Glycol, and pH, PSE – Boeing Aerospace Facility, South 204th Street and Boeing Access Road, Kent, Washington. May 18.

Landau Associates. 2010. Report: *Phase II Environmental Site Assessment, Striker Property South, Boeing Space Center, 20403 68th Avenue South, Kent, Washington.* November 30.

Landau Associates. 1999. Report: Final Report. Site Characterization Study, Kent Gun Club, Kent, Washington. February 22.

Weston. 1994. Closure Certification Report, Building 18-03 Chrome Waste UST System. Roy F. Weston, Inc. August.

ATTACHMENTS

Figure 1: Detected Concentrations of Dissolved Arsenic in Groundwater

Table 1: Detected Concentrations of Dissolved Arsenic in Groundwater

AGI Letter Report: *Groundwater Monitoring and Evaluation Addendum, Boeing Space Center Gun Club Soil Cleanup, Kent Washington*. April 28, 2000.

Washington State Department of Ecology Letter: *No Further Action Determination*, Boeing Space Center Gun Club, Kent, Washington. August 22, 2000.

TABLE 1 DETECTED CONCENTRATIONS OF DISSOLVED ARSENIC IN GROUNDWATER BOEING STRIKER PROPERTY KENT, WASHINGTON

Sample ID	Date	Dissolved Arsenic (μg/L)
KSC-DP-1	7/28/2010	23.8
KSC-DP-2	7/30/2010	8.1
KSC-DP-3	7/30/2010	40.3
KSC-DP-4	7/29/2010	9.6
KSC-DP-5	7/30/2010	114
KSC-DP-9	7/29/2010	13.8
KSC-DP-11	7/30/2010	43.8
KSC-DP-15	7/30/2010	9.1
KSC-DP-16	7/30/2010	53.3
KSC-DP-17	1/27/2011	59.9
KSC-DP-18	1/27/2011	115
KSC-DP-19	1/27/2011	77
KSC-DP-20	1/27/2011	33.7
KSC-DP-22	1/26/2011	66
KSC-DP-23	1/26/2011	66.7
KSC-DP-24	1/26/2011	2.7
KSC-DP-25b	1/26/2011	71.6
KSC-DP-26	1/25/2011	0.8
KSC-DP-27	1/25/2011	111
KSC-DP-28	1/25/2011	18
KSC-DP-29	1/25/2011	1.1
KSC-DP-30	1/25/2011	31.9
KSC-DP-31	1/26/2011	65.4
KSC-DP-32	1/26/2011	2.8
KSC-DP-33	1/26/2011	0.3
Buildin	g 18-03	
92MW-01	11/21/1994	19
92MW-02	11/21/1994	17
92MW-03	11/21/1994	25
93MW-04	11/21/1994	17
93MW-05	11/21/1994	16
Buildin	ıg 18-54	
MW-1	4/27/2009	27
MW-2	4/27/2009	24
MW-3	4/27/2009	51
Gun	Club	
P-1	10/26/1998	42
P-2	10/26/1998	13
P-3	10/26/1998	18
P-4	10/26/1998	21
KGC-MW-1	3/6/2000	19
KGC-MW-2	3/6/2000	3
KGC-MW-3	3/6/2000	12

Bold = Detected compound.

Box = indicates detected concentration exceeds screening level (5 μ g/L).



April 28, 2000

14,327.321

Mr. Brian Anderson The Boeing Company Shared Services Group Post Office Box 3707, MC7A-WW Seattle, Washington 98124-2207

Dear Brian:

Addendum Groundwater Monitoring and Evaluation Boeing Space Center Gun Club Soil Cleanup Kent, Washington

This letter report provides additional groundwater information collected subsequent to completion of soil cleanup and reporting for a gun club operated by Boeing employees at the Kent Space Center. Low levels of lead and arsenic have been detected in shallow site groundwater. As requested by the Washington Department of Ecology (Ecology) after review of the draft soil cleanup report, this addendum further evaluates the source of metals in groundwater.

ADDENDUM BACKGROUND

Soil cleanup at the gun club was completed during late summer, early fall 1999 by stabilization and removal of 4 to 12 inches of soil from a 19.2 acre area. Conservative Model Toxics Control Act (MTCA) residential cleanup levels were met with shallow excavation depths indicating that contaminants of concern (lead and polycyclic aromatic hydrocarbons [cPAH]) had not appreciably migrated. Following soil cleanup, site groundwater in the most highly impacted source areas was evaluated by installation and sampling of three shallow groundwater monitoring wells (approximately 20 feet below ground surface). For reference, monitor well logs are included as an attachment. Well locations were chosen on the basis that source areas had not been altered and had been continuous since the early 1970's. Consequently, if groundwater had been impacted at all by gun club chemicals of concern, we expected to see impacts in the source center areas.

Water samples were collected in October 1999 and were analyzed for lead, arsenic, and carcinogenic (cPAH). The lead and cPAH were the primary chemicals of concern for gun club soils, but arsenic was also included as an analyte since it had been detected in groundwater in a precleanup assessment (Landau, 1999). The post cleanup groundwater sampling results were presented as part of the soil cleanup report (AGI, 2000). These results indicated very low lead concentrations below MTCA Method A (5 parts per billion [ppb]), except one duplicate sample which contained 6 ppb lead. CPAH was not detected in any of the three wells. Arsenic was detected at relatively low ppb levels ranging from 3 to 16 micrograms per liter (µg/L). Based on discussions with Ecology, additional

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WASHINGTON OREGON 1APAN



actions were requested to address or further define the source of very low lead and arsenic concentrations in shallow groundwater at the site. In summary, the following actions have been completed in support of this groundwater addendum:

- The three onsite groundwater monitoring wells were resampled by Boeing on March 6, 1999 and analyzed for both total and dissolved lead and arsenic.
- Further research was performed to establish typical background arsenic and lead concentrations in soil and shallow groundwater within the Kent area and Green River Valley,

KENT GUN CLUB GROUNDWATER SAMPLING

The three onsite monitoring wells, KGC-MW1 through KGC-MW3, were repurged and sampled in early March 2000 using low-flow techniques and a peristaltic pump. This sampling event would be considered a wet season event, versus the dry season performed in October 1999. Groundwater levels, as measured from top of casing, for each of the sampling events are listed as follows:

Well No.	October 25, 1999	March 6, 2000
KGC-MW1	15.3 feet	9.12 feet
KGC-MW2	14.81 feet	6.13 feet
KGC-MW3	14.17 feet	7.47 feet

Groundwater levels rose 6 to 8 feet during the winter between October and March, with the static water table occurring 5 to 7 feet below ground surface.

During the March 2000 sampling event, dissolved metals samples were collected to further evaluate whether metals concentrations could be affected by soil turbidity within the groundwater samples. The three shallow wells produce very low quantities of slightly silty water, since the first water-bearing zone encountered is fine-grained silts and silty sands. Dissolved metal samples were field-filtered with a 45 micron filter to remove suspended solids.

Results of the October 1999 and March 2000 sampling event are summarized in **Table 1**. The original lab reports and Quality Assurance/Quality Control review are included as an attachment. In summary, March 2000 arsenic concentrations range from 4 to 23 μ g/L with dissolved arsenic concentrations being slightly lower than totals. These results are consistent with the October 1999 sampling event. Total lead concentrations from the three wells were 2 to 3 μ g/L in March 2000 and dissolved concentrations were not detectable.

Total lead concentrations are below the MTCA Method A cleanup level of $5\,\mu g/L$ and sampling data also indicates that lead detected may be associated with slight to moderate soil turbidity present in the water samples collected. The lead results are typical of background in the Kent Valley and likely have no relationship to lead from gun club cleanup operations. Based on this, these levels do not require further action for the site. Arsenic concentrations slightly exceed the MTCA Method A cleanup levels for groundwater, but the arsenic appears to be associated with regional background conditions, as described in following paragraphs. Both the lead and arsenic are below current drinking water standards (Maximum Contaminant Levels [MCL]) which are 15 μ g/L for lead and 50 μ g/L for arsenic.



REGIONAL AND LOCAL OCCURRENCES OF ARSENIC AND LEAD IN GROUNDWATER AND SOIL

Groundwater

Arsenic is a naturally occurring source of regional groundwater contamination in Washington State (Ecology, 1999). Turney and others (1995) identified arsenic concentrations ranging from less than 1 to $77\mu g/L$ in 64 percent of wells sampled in East King County. Elevated concentrations of arsenic have been documented in other areas of Western Washington, including Snohomish County, which had listed groundwater concentrations as high as 15,000 $\mu g/L$. Information obtained from the Washington State Department of Health (WSDH) database showed significant arsenic in many area wells. Specifically, the WSDH database notes nine water supply wells in the vicinity of the Gun Club (Township 22, Range 4E and Range 5E) with 2 to 25 $\mu g/L$ arsenic (see Table 2).

The source of the arsenic in the groundwater comes from natural sources. The highest concentrations of arsenic are associated with igneous or volcanic "bedrock" or with sedimentary deposits containing igneous material (Turney, 1995). Although bedrock does not outcrop near the Kent Space Center and is buried beneath 800 to 1,000 feet of sediment in the area (Hill & Othberg, 1974), the uppermost sedimentary deposits in the Kent Valley are derived from the Cascade Mountains and have a high proportion of volcanic fragments. In fact, the uppermost sediments are colloquially termed the "Duwamish Sand" based on a characteristic black color speckled with red. The black particulates originate from basalts and other volcanic materials and the red particles are derived from andesite.

Significant regional lead comparison data were not available, since most testing observed had detection levels of 5 μ g/L and site lead levels are below this level. Also, since the drinking water standard for lead is 15 μ g/L, lead has not been a significant regional concern. However, the WSDH database did have several wells in the Kent area with lead, as shown in **Table 3**.

Soil

Based on review of gun club assessment data, site soil background levels for lead and arsenic can be generally determined. Site soil samples that did not appear to be impacted by gun club contaminants contained about 5 mg/kg arsenic and 10 mg/kg lead. These values are consistent with Ecology publication, *Natural Background Soil Metals Concentrations in Washington*. In this document, the Puget Sound 90th percentile value for arsenic and lead are 7.8 and 16.8, respectively. Consequently, the natural soil background concentrations of lead and arsenic in soil can contribute to groundwater detections; particularly if groundwater samples contain soil turbidity introduced by sampling procedures.

DATA FROM SHALLOW KENT VALLEY GROUNDWATER MONITORING WELLS

In order to further verify that arsenic levels and lead levels are the result of a regional condition and not onsite contamination, we also obtained locally available shallow groundwater monitoring well data. Specifically, groundwater data were available from another area of the Boeing Kent Space Center facility and the Boeing Auburn Facility, which is also located in the Green River Valley.



Kent Space Center

During the early 1990's, Boeing closed a micromation tank at the Kent Space Center. The site is approximately 3,000 feet southeast and likely upgradient of the gun club. Arsenic and lead results are shown in Table 4. Three shallow wells were installed and groundwater was tested for metals during two sampling events (December 1992 and January 1993). Arsenic concentrations (3 to 21 μ g/L) have not been linked to any contamination source at the site and can only be explained by the regional occurrence of arsenic in groundwater. Lead levels ranging from 1 to 30 μ g/L were detected. The samples with 1 to 6 μ g/L of lead are consistent with a background condition. Several higher detections in the first round could have been related to site impacts.

Boeing Auburn

The Boeing Auburn facility is also located to the south and upgradient in the Green River Valley. Due to various environmental actions, groundwater monitoring in the shallow water zone has been ongoing for many years and a similar arsenic and lead background condition has been noted. August 1999 groundwater data from the Boeing Auburn facility showed eight out of 27 samples collected exhibited concentrations of arsenic and lead in the groundwater. The arsenic concentrations ranged from 5 to $20\,\mu\text{g/L}$; lead ranged from 2 to $9\,\mu\text{g/L}$ and was detected in most wells where arsenic exceeded $5\,\mu\text{g/L}$. These arsenic and lead concentrations have not been linked to any contamination source at the site, and can best be explained by the regional occurrence of arsenic and lead in groundwater. This data is very similar to that observed at the gun club.

SUMMARY AND CONCLUSIONS

Based on additional sampling performed at the gun club, further research of regional information and data sources; and obtaining other site-specific shallow groundwater data from two Boeing sites upgradient and within the Green River Valley; we believe that conclusive statements can be made regarding metals concentration and shallow groundwater at the gun club site as follows:

Lead

The October 1999 and March 2000 sampling results indicate that lead is below MTCA Method A cleanup levels and drinking water standards during both the dry and wet seasons, and that low levels detected are associated with sample turbidity and natural soil background conditions. The lead detected is associated with soil turbidity since dissolved lead concentrations were not detectable.

Arsenic

Low levels of arsenic in site groundwater occur in the dissolved phase and exceed the MTCA Method A cleanup level of 5 µg/L, but are below current drinking water quality standards of 50 µg/L. Further research performed for this addendum indicates that arsenic concentrations in the ranges detected are commonly found as natural background conditions throughout the area and region and specifically within the Green River Valley. Background arsenic concentrations at two upgradient Boeing sites in the Green River Valley were similar to those of the gun club.



In summary, this addendum supports the statement that Boeing Gun Club activities did not adversely impact site groundwater.

Sincerely,

AGI Technologies, a CDM Company

Jessica R. Garofalo Staff Geologist

Martin E. Carlson, P.E. Principal Engineer

cc: Mr. Ron Timm, Ecology

enclosures



REFERENCES



REFERENCES

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TABLES



Table 1
Arsenic, Lead and CPAHs in Site Groundwater
Quantified by EPA Method 7060,7421, and 8270
Resing/Kent Gun Club

Boeing/Kent Gun Club Kent, Washington

		Total I	Vietals		Dissolved	l Metals	
	Sample	Arsenic	Lead	Turbidity	Arsenic	Lead	Turbidity
Sample I.D.	Date	94	/L	NTU	µg/	L	NTU
KGC-MW1-10/99	10/26/99	10	2			***	-
KGC-MW1-000306	03/06/00	23.0	2.0	40	19.0	ND	1.5
KGC-MW2-10/99	10/26/99	6	ND		-	22	
KGC-MW2-000306	03/06/00	4.0	2.0	68	3.0	ND	0.5
KGC-MW3-10/99	10/26/99	12	1	-	-	***	
KGC-MW4-10/99 (Duplicate)**	10/26/99	14	6		+4		
KGC-MW3-000306	03/06/00	15.0	3.0	57	12.0	ND	0.5
Method A Cleanup Level a		5	5		5	5	

		Sample I.D.	
	KGC-MW1 10/99	KGC-MW2 10/99	KGC-MW3 10/99
Compound		μg/L	
Naphthalene	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND
Acenaphthylene	ND	ND	ND
Acenaphthene	ND	ND	ND
Fluorene	ND	ND	ND
Phenanthrene	ND	ND	ND
Anthracene	ND	ND	ND
Fluoranthene	ND	ND	ND
Pyrene	ND	ND	ND
Benzo[a]anthracene*	ND	ND	ND
Chrysene*	ND	ND	ND
Benzo[b]fluoranthene*	ND	ND	ND
Benzo[k]fluoranthene*	ND	ND	ND
Benzo[a]pyrene*	ND	ND	ND
Indeno[1,2,3-cd]pyrene*	ND	ND	ND
Dibenz[a,h]anthracene*	ND	ND	ND
Benzo(g,h,l]perylene*	ND	ND	ND
Total CPAHs	ND	ND	ND
Method A Cleanup Level ^a (total cPAHs)	0.1	0.1	0.1

Notes:

^{*}Carcinogenic PAH (cPAH).

^{**}Sample is a duplicate of MW-3.

Detection limit for lead and PAH is 1µg/L and 0.1 µg/L, respectively.

Shaded value exceeds cleanup level.

a) Washington Administrative Code Chapter 173-340 Model Toxics Control Act Cleanup Regulation Method A suggested cleanup level for groundwater.
 μg/L - microgram per liter.

ND - not detected.

not analyzed.



Arsenic Concentrations in Groundwater, Public Water Systems in T22N, R4E and R5E, King County Washington State Department of Health Data Base Boeing/Kent Gun Club Kent, Washington Table 2

					Sample	Result
Township	Range	Section	aTa	Name	Number	(mg/L)
22	04E	8	NENE	HIGHLINE WATER DISTRICT	12015	0,023
18	04E	.00	NWSE	KING COUNTY WATER DISTRICT #54	9819	\$ 000
22	04E	o	NENE	HIGHLINE WATER DISTRICT	12015	0.023
18	390		NESW	REICHEL/SCANLON SYSTEM	15394	0.028
22	05E	21	SWSW	KING COUNTY WATER DISTRICT 111	14784	0.01
S	99E	***	SWSW	KING COUNTY WATER DISTRICT 111	505	8
22	05E	21	SWSW	KING COUNTY WATER DISTRICT 111	15402	900'0
8	05E	2	SWSW	KING COUNTY WATER DISTRICT 111	15403	988
22	05E	21	SWSW	KING COUNTY WATER DISTRICT 111	15404	0.005
18	0.5E	A	SWSW	KING COUNTY WATER DISTRICT 111	15405	8
22	05E	27	NNNN	LAKE MERIDIAN ESTATES (MHP)	28012	0.025
22	390	Š,	NWWW	SUNSET PARK WATER CO	14734	0
22	05F	27	MNNN	SUNSET PARK WATER CO	15568	0.011
22	390 190	32	SWSE	CRESTVIEW WEST WATER SYSTEM	15268	8
22	05E	32	SWSE	CRESTVIEW WEST WATER SYSTEM	15269	0.005
22	390 900	32	SWSE	CRESTVIEW WEST WATER SYSTEM	15269	0.0101
22	05E	33	SWSW	CRESTVIEW TRACTS #3	34528	0.012

Note:

mg/L - milligram per liter.



Table 3
Lead Concentrations in Groundwater, Public Water Systems in T22N, R4E and R5E, King County
Washington State Department of Health Data Base

Boeing/Kent Gun Club Kent, Washington

Township	Range	Section	QTR	Pws-Id	Pws-Name	Sample Number	Results (mg/L)
22	04E	6	NWNW	64816	OLSON, M	6855	0.002
22	04E	6	NWNW	64816	OLSON, M	6855	0.005
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	535	0.004
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	536	0.004
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6006	0.002
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6008	0.007
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6009	0.006
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6012	0.003
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6013	0.008
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6016	0.007
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6017	0.002
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6018	0.0036
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6019	0.0009
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6020	0.003
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6024	0.004
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6028	0.002
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	6170	0.002
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	8579	0.003
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	12015	0.005
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28272	0.004
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28273	0.004
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28274	0.002
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28275	0.003
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28276	0.014
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28278	0.003
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28280	0.005
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28281	0.011
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28282	0.011
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28283	0.01
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28284	0.014
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28286	0.004
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28288	0.005



Lead Concentrations in Groundwater, Public Water Systems in T22N, R4E and R5E, King County Washington State Department of Health Data Base Boeing/Kent Gun Club Table 3

Kent, Washington

						Sample	CHIPCAL
Township	Range	Section	QTR	Pws-ld	Pws-Name	Number	(mg/L)
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28289	0.003
160	04F		NENE	40650	HIGHLINE WATER DISTRICT	28290	0.008
2 1	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28291	0.005
20	046	***	NENE	40650	HIGHLINE WATER DISTRICT	28292	0.003
22	04E	®	NENE	40650	HIGHLINE WATER DISTRICT	28294	0.007
200	04	100	NENE	40650	HIGHLINE WATER DISTRICT	28295	0.00
22	04E	∞	NENE	40650	HIGHLINE WATER DISTRICT	28296	0.005
33	04E	80	NENE	40650	HIGHLINE WATER DISTRICT	28297	0.003
60	04E		NENE	40650	HIGHLINE WATER DISTRICT	28298	0.003
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28299	0.057
20	046	80	NENE	40650	HIGHEINE WATER DISTRICT	28300	50
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28301	0.002
22	04E	80	NENE	40650	HIGHLINE WATER DISTRICT	28302	0.005
22	04E	80	NENE	40650	HIGHLINE WATER DISTRICT	28303	0.005
22	04E	(80	NENE	40650	HIGHLINE WATER DISTRICT	28306	0.004
22	04E	00	NENE	40650	HIGHLINE WATER DISTRICT	28308	0.017
22	O4E	80	NENE	40650	HIGHLINE WATER DISTRICT	28309	0.004
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28313	0.014
22	04E		NENE	40650	HIGHLINE WATER DISTRICT	28314	0,003
22	04E	80	NENE	40650	HIGHLINE WATER DISTRICT	28730	0.003
22	046	200	MENE	40650	HIGHLINE WATER DISTRICT	28830	0.003
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	28836	0.004
22	04E	.00	NENE	40650	HIGHLINE WATER DISTRICT	29210	0,004
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	29212	0.003
22	04E	200	NENE	40650	HIGHLINE WATER DISTRICT	29216	0.004
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	29219	900.0
22	04E	1000	Ä	40650	HIGHLINE WATER DISTRICT	29573	0.012
22	04E	8	NENE	40650	HIGHLINE WATER DISTRICT	29574	0.005
22	04E	.00	REFE	40650	HIGHLINE WATER DISTRICT	29575	900.0
22	04E	17	SWSE	51930	MASONIC RETIREMENT CENTER	70807	0.003
22	970 07E	10000	SWSE	51930	MASONIC RETIREMENT CENTER	70808	0.004
20	П	17	SWSE	51930	MASONIC RETIREMENT CENTER	70810	0.005



Lead Concentrations in Groundwater, Public Water Systems in T22N, R4E and R5E, King County Washington State Department of Health Data Base Boeing/Kent Gun Club Kent, Washington Table 3

OTR
SWSE
SWSE
SWSE
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NENE
NENE



Lead Concentrations in Groundwater, Public Water Systems in T22N, R4E and R5E, King County Washington State Department of Health Data Base Boeing/Kent Gun Club Table 3

Kent, Washington

Results	(mg/L)	0.001	0.003	0,0059	2,000	0.002	8	0.001	0,002	0.001	0,802	0.154	600 000	0.011	0.015	0.016	0.00	0.005	0.00	0.002	0.002	0.005	000	0.003	9000	9000	0000	0,003	0,003	0.004	0.002	0.005
Sample	Number	17		17	8	18	2	21	22	23	8	24	8	25	8	26	9984	9866	9886	6866	0666	9992	9993	9994	22435	22436	22437	22438	22919	22920	22922	22923
	Pws-Name	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES		DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	DERBYSHIRE SCENIC ACRES	WELCHS WATER ASSOCIATION	WELCHS WATER ASSOCIATION	WELCHS WATER ASSOCIATION	WELCHS WATER ASSOCIATION	WELCHS WATER ASSOCIATION	WELCHS WATER ASSOCIATION	WELCHS WATER ASSOCIATION	WELCHS WATER ASSOCIATION
	Pws-ld	19000	\$9000	19000	\$9000	19000	\$6000	19000	19000	19000	19000	19000	19000	19000	19000	19000	19000	19000	19000	19000	\$5000	19000	\$000€	19000	94170	94170	94170	94170	94170	94170	94170	94170
	OTR	NWSWN	WSWN	WSWN	MSMN	MSMN	MSMN	MSMN	NWSWN	NWSW	NMSMN	NSWN	NWSW	NWSW	NWSW	NSMN	NWWN	NWSWN	NSWN	NWSM	NWSWN	NMSMN	NWSWN	NWSWN	SESW							
	Section	33	3 8	22 (33	33	30.00	33	60	33	333	33	\$25	33	200	33	1777	33		33	33	33	83	33	92	35	88	35	\$60	35	32	35
	Range	05F	270	750	ASE.	05F	0.55	05F	350	05E	05E	05E	100 H	05E	05E	05E	990 900	05E	990	05E	0.24	05E	056	05E	05E	05E	05E	05E	380	05E	390	05E
	Township	22	77	2 6	77	2,	77	20	66	22	100	2	100	20	60	22	16	22	100	22	100	22	200	22	22	22	20	22	66	22	22	22

Note:

mg/L - milligram per liter.



Table 4
Total Arsenic and Lead in Offsite Groundwater
Quantified by EPA Method 600/4-79-020 206.2
Boeing/Kent Gun Club
Kent, Washington

18-03 Building, Kent Space Center

	Sample	Arsenic	Lead
Sample I.D.	Date	μд	/L
92MW-01	12/15/92	10.0	1.0
92MW-02	12/15/92	13.0	30.0
92MW-03	12/15/92	12.0	18.0
92MW-1-02	01/29/93	21.0	5.0
92MW-2-02	01/29/93	3.0	6.0
92MW-3-02	01/29/93	14.0	1.0
Method A Cleanup	Level a	5.0	5.0

Boeing Auburn Facility

	Sample	Arsenic	Lead
Sample I.D.	Date	μg	L
AGW032-990830	08/30/99	20.0	ND
AGW049-990831	08/31/99	13.0	7.0
AGW068-990831	08/31/99	12.0	9.0
AGW038-990831	08/31/99	11.0	ND
AGW065-990831	08/31/99	11.0	ND
AGW081-990830	08/30/99	7.0	4.0
AGW082-990830	08/30/99	3.0	3.0
AGW083-990830	08/30/99	6.0	2.0
AGW080-990830	08/30/99	5.0	ND
Method A Cleanup Le	vel ^a	5.0	5.0

Notes:

Boeing Auburn facility data provide only the most recent available sampling round arsenic and lead detections. These detections are consistent over the last 5 years of monitoring.

Detection limit for arsenic and lead is 1.0 µg/L.

Shaded value exceeds cleanup level.

 a) Washington Administrative Code Chapter 173-340 Model Toxics Control Act Cleanup Regulation Method A suggested cleanup level for groundwater.
 μg/L - microgram per liter.

ND - not detected.

- not analyzed.



MONITOR WELL LOGS

	MAJOR DI	VISIONS				TYPICAL NAMES				
Ne Ne	GRAVELS	Clean gravels with	GW	000	Well graded g	gravels, gravel-sand mixtures				
COARSE GRAINED SOILS More than half is larger than No. 200 Sieve	More than half coarse fraction	little or no fines	GP			d gravels, gravel-sand mixtures				
D SC No. 2	is larger than No. 4 sieve size	Gravels with	GM	0-0-0	Silty gravels, mixtures	poorly graded gravel-sand-silt				
GRAINED larger than N		over 12% fines	GC	***	Clayey grave gravel-sand-o	ls, poorly graded clay mixtures				
GR is large	SANDS	Clean sands with	sw	.0	Well graded s	sands, gravelly sands				
COARSE re than half is	More than half coarse fraction	little or no fines	SP		Poorly grade	d sands, gravelly sands				
COA	is smaller than	Sands with	SM			oorly graded sand-silt mixtures				
N	110. 4 51616 5126	over 12% fines	sc		mixtures	s, poorly graded sand-clay				
S,	SILTS AN	ND CLAYS	ML			s and very fine sands, rock flour, silty o ands, or clayey silts with slight plasticity				
Sieve		less than 50	CL		gravelly clays	ys of low to medium plasticity, s, sandy clays, silty clays, lean clays				
NED alf is 8 200 S			OL	******	Organic clays	s and organic silty clays of low plasticit				
INE GRAINED More than half is than No. 200 S	SILTS AL	ND CLAYS	мн	莹		s, micaceous or diatomaceous fine v soils, elastic silts				
FINE GI More th than		reater than 50	СН		Inorganic cla	ys of high plasticity, fat clays				
Ε-			ОН	200000	Organic clays organic silts	s of medium to high plasticity,				
	HIGHLY ORGA	ANIC SOILS	PT	***************************************	Peat and oth	er highly organic soils				
SAMPLE		CONTACT				PHYSICAL PROPERTY TESTS				
	sturbed"			ed Chan		Consol - Consolidation LL - Liquid Limit PL - Plastic Limit Gs - Specific Gravity				
☐ Bulk/(al Chan	ye					
	ecovered	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Change ploration	0					
	vered, Not Retained	Enc	ULX	pioratio		SA - Size Analysis TxS - Triaxial Shear				
	PER FOOT	30-inch drop, unless	other	vise not	ed					
	PT Sampler (2.0-Inc		Juleiv	NISC LIOU	Perm - Permeability					
	hin Wall Sampler (2.					Po - Porosity				
	plit Barrel Sampler (MC - Moisture Content MD - Moisture/Density				
	,					DS - Direct Shear				
	RE DESCRIPTION					VS - Vane Shear				
		ss than optimum for o	compa	ction		Comp - Compaction				
	st - Near optimum n					UU - Unconsolidated, Undrained				
	et - Over optimum n		5. N. A.		المراجع والمراجع	CU - Consolidated, Undrained				
Saturate	d - Below water tab	le, in capillary zone,	or in p	erched	groundwater	CD - Consolidated, Drained				

UNIFIED SOIL CLASSIFICATION SYSTEM

TECHNOLOGIES

Soil Classification/Legend

Boeing/Kent Gun Club Kent, Washington

PLATE

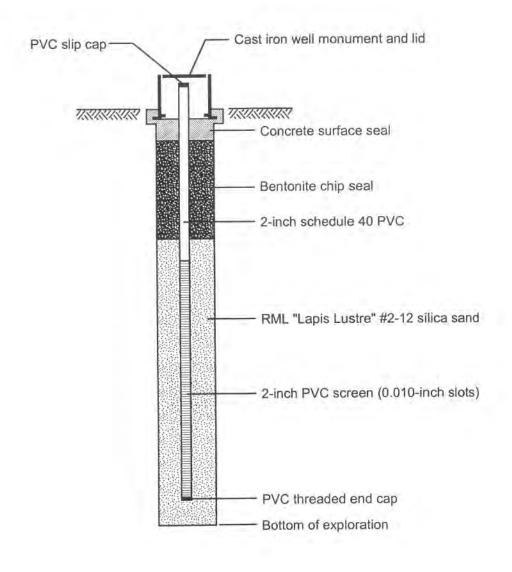
PROJECT NO. DRAWN 1 PJS 14,327.317

DATE APPROVED * REVISED

soilcleg.cdr

1/19/00

mec



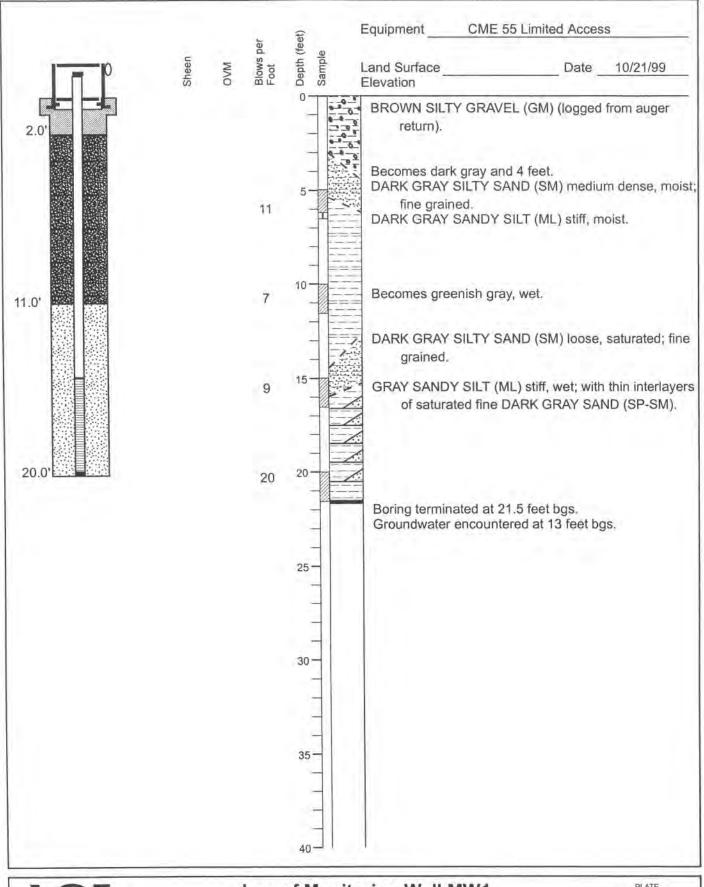
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L		
TE	CHNOLOGIES	

Monitoring Well Construction Boeing/Kent Gun Club

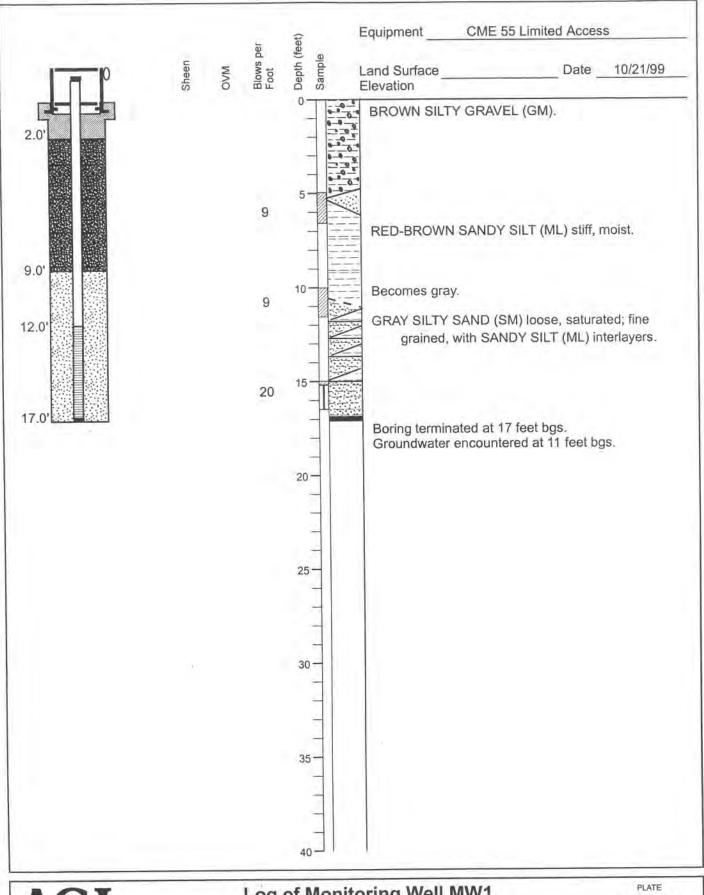
Kent, Washington

PLATE

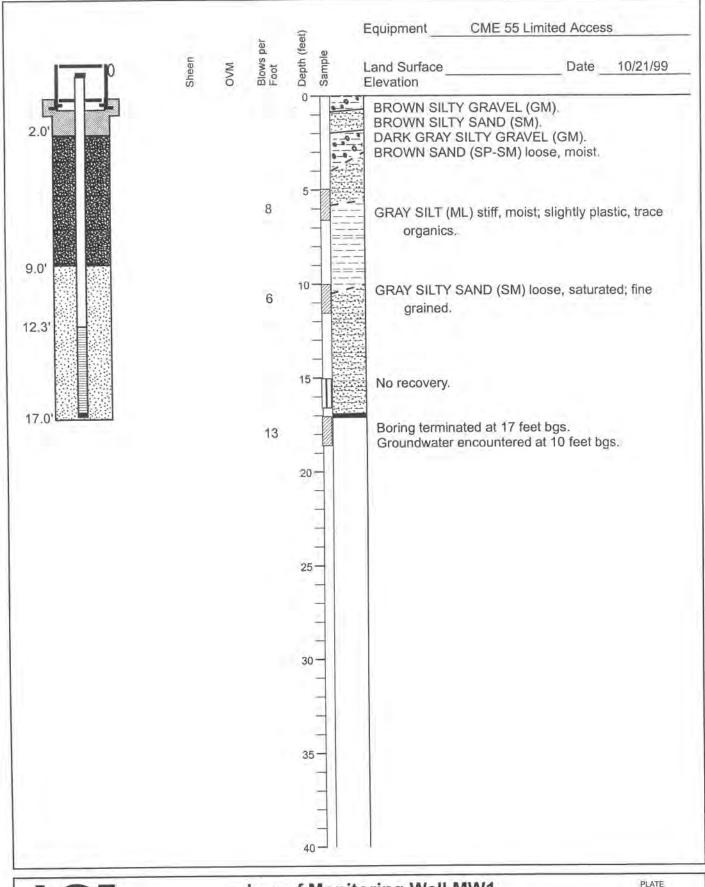
M2C REVISED" DATE PROJECT NO. DRAWN' 14,327.317 PJS 1/19/00 Wellcons.cdr



AGI		Во	lonitoring eing/Kent Gun Kent, Washingt	Club		D3
TECHNOLOGIES 4327317wl.cdr	PROJECT NO. 14,327.317	PJS	1/19/00	mgC	REVISED	DATE



AGI TECHNOLOGIES		Во	lonitoring eing/Kent Gun Kent, Washingt			D4
	PROJECT NO.	DRAWN	1/19/00	APPROVED 5	REVISED	DATE
4327317wl.cdr	14,327.317	PJS	1/19/00	1111		



AGI		Во	lonitoring eing/Kent Gun Kent, Washingt			D5
TECHNOLOGIES	PROJECT NO.	DRAWN	DATE	APPROVED	REVISED	DATE
4327317wl.cdr	14,327.317	PJS	1/19/00	11990		



CHEMISTRY DATA



QUALITY ASSURANCE/QUALITY CONTROL



QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: Kent Gun Club Project No.: 14,327.321

Lab Name: Analytical Resources, Incorporated

Lab Number: BJ29

Sample No.: KGC MW1-000306, KGC MW2-000306, KGC MW3-000306

Matrix: Water

QUALITY ASSURANCE SUMMARY

All data were of known quality and acceptable for use.

ANALYTICAL METHODS

Parameters	Technique	Method
Arsenic	AA/GF	EPA 7060
Lead	AA/GF	EPA 7421

TIMELINESS

All samples were extracted and analyzed within recommended holding times.

Parameters	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction	Time Until Analysis
Dissolved Arsenic	3/06/00	3/07/00	3/07/00	1	1(180)
Dissolved Lead	3/06/00	3/07/00	3/07/00	1	1(180)
Total Arsenic	3/06/00	3/07/00	3/09/00	1	3(180)
Total Lead	3/06/00	3/07/00	3/09/00	1	3(180)

NR - not reported. NA - not applicable.

() - numbers in parenthesis indicate recommended holding time in days.



QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: Kent Gun Club

Project No.: 14,937.073

Lab Name: Analytical Resources, Incorporated

Lab Number: BJ29

FIELD QUALITY CONTROL SAMPLES

Field Duplicates: None

Rinsate: None.

Trip Blank: None.

LAB QUALITY CONTROL SAMPLES

Method Blanks: No analytes were detected at or above ARI reporting limits.

Blank Spikes: Blank Spike recoveries were within ARI control limit criteria.

Duplicates: None.

Surrogates: None.

Laboratory Control

Sample: None.

SIGNATURES

Prepared by Atta Fully Date 4/67/60

Checked by Gay adoushi Date 4/7/00



RECEIVED

Profes

March 10, 2000

AGI/A CDM COMPANY

Brian Anderson The Boeing Company P.O. Box 3707, M/S 7A-XA Seattle, WA 98124-2207

RE: Project: Kent Gun Club

ARI Job: BJ29

Dear Brian:

Please find enclosed sample custody records and analytical results for the above referenced project. Analytical Resources, Inc. accepted three water samples in good condition on March 6, 2000.

The samples were analyzed for total and dissolved metals (arsenic and lead) referencing EPA methods 7060 and 7421. No analytical complications were noted.

Copies of the reports and all raw data will remain on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Jeff Reitan

Client Services Manager

jeff@arilabs.com

JJR/sl Enclosure

cc: Martin Carlson, AGI Technologies Inc. (Bellevue, WA)

Chain of Custody Record & Laboratory Analysis Request



Analytical Chemist and Consultants Analytical Resources, Incorporated 400 Ninth Avenue North

Laboratory Amarysis nequest	is request		7	Page of /	Seattle, WA 98109-4708
ARI Client: BOEIN G	Phone#:	:#a		Cooler Temp: 5.5	(206) 621-6490 (206) 621-7523 (Fax)
Client Contact: BRIAN	BRIAN AMDERSON			Analysis Required	Notes/Comments
Client Project ID: KENT CHN CLUB	WW CLUB			st st	00-29/10/20
Samplers: P.H. WARDY	KG. CHAPU	Th			00-29ii
	Date Time	atx	No Lab Cont ID	१९८ १९४ १८	523
1 KGC MW1-000306	3-9-00 14:45	4	u	1	Dissolved Mobals
2 Kr.C. MW 3-000366	3-6-00 15:35	4	n	7	
3 KGCMM2-000306	3-6-00 16:20	4	И	/	
4					
55					
9				d.	
7					
ARI Project No:	Relinquished by:/	3	Maps	Relinquished by: (Signature)	Relinquished by; (Signature)
T.A.T. Requested: Rush	Printed Namg:	2	tras	Printed Name:	Printed Name:
Comments/Special Instructions:	Company: Boein	والمراع		Сотрапу:	Company:
Brian Anderson	Date: 3-6-00	Time:	1726	Date: Time:	Date: Time;
	Reteived by:	LUDIC	3	Received by: (Signature)	Received by: (Signature)
	Physical Pome: M. ()	1000	and	Printed Name:	Printed Name:
	Сотрапу:	2	5	Company:	Company:
	Date: 7	(V) Time:	25	Date: Time:	Date: Time:

meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI releases ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the client. Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following Standard Operating Procedures and our Quality Assurance Program. This program



Sample No: KGCMW1-000306

TOTAL METALS

Lab Sample ID: BJ29A

QC Report No: BJ29-Boeing Corporate SHEA

LIMS ID: 00-2962

Project: Kent Gun Club

Matrix: Water

Date Sampled: 03/06/00

Date Received: 03/06/00

Data Release Authorized

Reported: 03/10/00

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L
7060	03/07/00	7060	03/09/00	7440-38-2	Arsenic	0,001	0.023
3020	03/07/00	7421	03/09/00	7439-92-1	Lead	0.001	0.002

U Analyte undetected at given RL

RL Reporting Limit



Sample No: KGCMW3-000306

TOTAL METALS

Lab Sample ID: BJ29B LIMS ID: 00-2963

QC Report No: BJ29-Boeing Corporate SHEA

Project: Kent Gun Club

Matrix: Water

Date Sampled: 03/06/00 Date Received: 03/06/00

Data Release Authorized:

Reported: 03/10/00

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L
7060	03/07/00	7060	03/09/00	7440-38-2	Arsenic	0.001	0.015
3020	03/07/00	7421	03/09/00	7439-92-1	Lead	0.001	0.003

Analyte undetected at given RL U

Reporting Limit RL



Sample No: KGCMW2-000306

TOTAL METALS

Lab Sample ID: BJ29C

QC Report No: BJ29-Boeing Corporate SHEA

LIMS ID: 00-2964

Project: Kent Gun Club

Matrix: Water

Date Sampled: 03/06/00

Date Received: 03/06/00

Data Release Authorized: Reported: 03/10/00

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L
7060	03/07/00	7060	03/09/00	7440-38-2	Arsenic	0.001	0.004
3020	03/07/00	7421	03/09/00	7439-92-1	Lead	0.001	0.002

U Analyte undetected at given RL

RL Reporting Limit



Sample No: Method Blank

TOTAL METALS

Lab Sample ID: BJ29MB

LIMS ID: 00-2962

Matrix: Water

QC Report No: BJ29-Boeing Corporate SHEA

Project: Kent Gun Club

Date Sampled: NA Date Received: NA

Data Release Authorized

Reported: 03/10/00

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L
7060	03/07/00	7060	03/09/00	7440-38-2	Arsenic	0.001	0.001 U
3020	03/07/00	7421	03/09/00	7439-92-1	Lead	0.001	0.001 U

U Analyte undetected at given RL

RL Reporting Limit

INORGANICS ANALYSIS DATA SHEET TOTAL METALS



Lab Sample ID: BJ29LCS

QC Report No: BJ29-Boeing Corporate SHEA

LIMS ID: 00-2962 Matrix: Water

Project: Kent Gun Club

Data Release Authorized:

Reported: 03/10/00

BLANK SPIKE QUALITY CONTROL REPORT

	Spike	Spike	8	
Analyte	mg/L	Added	Recovery	Q
Arsenic	0.107	0.100	107%	
Lead	0.112	0.100	112%	

'Q' codes:

N = control limit not met

Control Limits: 80-120%



DISSOLVED METALS

Sample No: KGCMW1-000306

Lab Sample ID: BJ29D

LIMS ID: 00-2965

QC Report No: BJ29-Boeing Corporate SHEA

Project: Kent Gun Club

Matrix: Water

Date Sampled: 03/06/00

Date Received: 03/06/00

Data Release Authorized

Reported: 03/10/00

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L
7000	03/07/00	7060	03/07/00	7440-38-2	Arsenic	0.001	0.019
7000	03/07/00	7421	03/07/00	7439-92-1	Lead	0.001	0.001

U Analyte undetected at given RL

RL Reporting Limit



DISSOLVED METALS

Sample No: KGCMW3-000306

Lab Sample ID: BJ29E

LIMS ID: 00-2966

QC Report No: BJ29-Boeing Corporate SHEA

Project: Kent Gun Club

Matrix: Water

Date Sampled: 03/06/00

Date Received: 03/06/00

Data Release Authorized

Reported: 03/10/00

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L
7000	03/07/00	7060	03/07/00	7440-38-2	Arsenic	0.001	0.012
7000	03/07/00	7421	03/07/00	7439-92-1	Lead	0.001	0.001 U

Analyte undetected at given RL U

Reporting Limit RL



DISSOLVED METALS

Sample No: KGCMW2-000306

Lab Sample ID: BJ29F

LIMS ID: 00-2967

QC Report No: BJ29-Boeing Corporate SHEA

Project: Kent Gun Club

Matrix: Water Date Sampled: 03/06/00

Date Received: 03/06/00

Data Release Authorized;

Reported: 03/10/00

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L
7000	03/07/00	7060	03/07/00	7440-38-2	Arsenic	0.001	0.003
7000	03/07/00	7421	03/07/00	7439-92-1	Lead	0.001	0.001 U

Analyte undetected at given RL

RL Reporting Limit



DISSOLVED METALS

Sample No: Method Blank

Lab Sample ID: BJ29MB

LIMS ID: 00-2965 Matrix: Water QC Report No: BJ29-Boeing Corporate SHEA

Project: Kent Gun Club

Date Sampled: NA

Date Received: NA

Data Release Authorized

Reported: 03/10/00

Prep Meth 7000	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L
	03/07/00	7060	03/09/00	7440-38-2	Arsenic	0.001	0.001
7000	03/07/00	7421	03/07/00	7439-92-1	Lead	0.001	0.001 (

U Analyte undetected at given RL

RL Reporting Limit

INORGANICS ANALYSIS DATA SHEET DISSOLVED METALS



Lab Sample ID: BJ29LCS

QC Report No: BJ29-Boeing Corporate SHEA

LIMS ID: 00-2965

Project: Kent Gun Club

Matrix: Water

Data Release Authorized

Reported: 03/10/00

BLANK SPIKE QUALITY CONTROL REPORT

	Spike	Spike	%	
Analyte	mg/L	Added	Recovery	
Arsenic	0.020	0.020	100%	
Lead	0.020	0.020	100%	

'Q' codes:

N = control limit not met

NA = Not applicable - analyte not spiked

Control Limits: 80-120%



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. * Bellevue, Washington 98008-5452 * (425) 649-7000

August 22, 2000

Mr. Brian Anderson
The Boeing Company
Shared Services Group
P.O. Box 3707, M/C 7A-WW
Seattle, WA. 98124-2207

Dear Mr. Anderson.

Re: Voluntary Cleanup Program Review Boeing Space Center Gun Club, 20403 68th Ave. S., Kent, WA.

Thank you for submitting the results of your voluntary cleanup for review by the State of Washington's Department of Ecology (Ecology). Ecology appreciates your initiative in pursuing this administrative option under the Model Toxics Control Act (MTCA).

Ecology's Toxics Cleanup Program has reviewed the following information regarding the former Boeing Space Center Gun Club facility, located at 20403 68th Ave. S., Kent, WA.:

- 1. Report titled "Final Report: Site Characterization Study, Kent Gun Club, Kent, Washington", prepared for Boeing Environmental Affairs, Bellevue, WA., by Landau Associates, Inc., Edmonds, WA., and dated February 22, 1999.
- 2. Report titled "Work Plan, Soil Remediation, Boeing Kent Space Center Gun Club, 20403 68th Avenue South, Kent, Washington: Contract No. ENV-G-99KSC-417", prepared for The Boeing Company, Seattle, WA., by AGI Technologies, Bellevue, WA., and dated July 14, 1999.

Mr. Brian Anderson 8/22/2000 Page 2

- 3. Report titled "Final Report, Soil Cleanup, Boeing Kent Space Center Gun Club, 20403 68th Avenue South, Kent, Washington: Volumes 1 & 2: Contract No. ENV-G-99KSC-417", prepared for The Boeing Company, Seattle, WA., by AGI Technologies, Bellevue, WA., and dated April 17, 2000.
- 4. Report titled "Addendum: Groundwater Monitoring and Evaluation, Boeing Space Center Gun Club Soil Cleanup, Kent, Washington", prepared for The Boeing Company, Seattle, WA., by AGI Technologies, Bellevue, WA., and dated April 28, 2000.

The report listed above will be kept in the Central Files of the Northwest Regional Office (NWRO) of Ecology for review by appointment only. Appointments can be made by calling Sally Perkins at the NWRO at (425) 649-7190.

Based on the information in the reports listed above, Ecology has determined that, at this time, the releases of lead and carcinogenic polynuclear aromatic hydrocarbons (cPAH) into soil and groundwater no longer poses a threat to human health or the environment. Furthermore, it has been determined that arsenic concentrations in groundwater that exceed MTCA Method A limits are likely the result of nature, and not the result of a known release at the Gun Club site.

Therefore, Ecology is issuing this determination that no further remedial action is necessary at this site under MTCA, chapter 70.105D RCW. Please note that because your actions were not, or will not be conducted under a consent decree with Ecology, this letter is not a settlement by the state under RCW 70.105D.040(4) and is not binding on the agency.

Ecology's no further action determination is made only with respect to the releases identified in the independent remedial action reports listed above. This no further action determination applies only to the areas of the property affected by the releases identified in the reports listed above for the property at 20403 68th Ave. S., Kent, WA. It does not apply to any other releases at the property, any other areas on the property, nor any other properties owned or operated by The Boeing Company.

Ecology will update its database to reflect this "No Further Action" determination. Your site will not appear in future publications of the Confirmed and Suspected Contaminated Sites Report (previously known as the Affected Media and Contaminants Report). Ecology does not assume

Mr. Brian Anderson 8/22/2000 Page 3

any liability for any release, threatened release or other conditions at the site, or for any actions taken or omitted by any person or his/her agents or employees with regard to the release. threatened release, or other conditions at the site.

Again, thank you for taking the initiative to voluntarily address the contamination at your site. Your efforts are recognized by Ecology as a positive step in our work to protect human health and the environment in the State of Washington.

If you have any questions regarding this letter, please contact me at 425-649-7185.

Sincerely,

Ronald W. Timm Hydrogeologist III

Toxics Cleanup Program

RWT

TECHNICAL MEMORANDUM



TO:

Joe Flaherty, Booing Environment, Health, and Safety Remediation

FROM:

Tim Syverson, Kathryn Hartley, and Chris Burke CFIS

DATE:

December 12, 2011

RE:

NORTH DETENTION POND SAMPLING RESULTS

BOEING STRIKER PROPERTY

KENT, WASHINGTON

Introduction

At the request of The Boeing Company (Boeing), Landau Associates conducted an investigation to document the current chemical quality of accumulated stormwater solids within and soils underlying the North Detention Pond located to the north of the Striker Property, on the west side of the Boeing Space Center at 20403 68th Avenue South, in Kent, Washington (subject property; Figure 1). The investigation was conducted as part of Boeing's pre-sale due diligence activities to document current site conditions and assess potential liabilities for Boeing due to its operations at the subject property. The scope of work (SOW) performed was established in our letter to Boeing dated October 18, 2011.

This technical memorandum summarizes the results of the soil and solids investigation conducted on November 1, 2011. The sampling locations and sample analytical results are shown on Figure 2. Table 1 summarizes the results of the soil and solids sampling analyses.

SOIL AND SOILS SAMPLING

On November 1, 2011, Landau Associates personnel mobilized to collect soil and stormwater solids samples from the North Detention Pond (NDP, Figure 2). The investigation included the collection of 21 samples from 12 locations to document the chemical quality of accumulated stormwater solids and underlying soils from the NDP. Sample locations were selected to provide spatial coverage of the NDP and included locations with ponded water, ditches leading into and out of the pond, and areas lower than the apparent high water mark of the pond where solids may have accumulated. At all locations, an attempt was made to collect two vertically discrete samples at approximate 1-foot (ft) intervals including samples of the accumulated stormwater solids (or of soil from the ground surface to a depth of 1 ft at locations where stormwater solids were not observed), and from the underlying soil (an interval from 1 to 2 ft below ground surface). Due to refusal at three locations, NDP-1, NDP-11 and NPD-12, only the upper sample interval could be collected. The samples were collected from both intervals as described above at the remaining locations.

Prior to all investigation activities, a one-call public utility clearance was requested to identify the location(s) of public subsurface utilities in the investigation area. The samples were collected at each location using a hand auger, or sediment core sampler. Samples from each interval were homogenized before being placed in the appropriate sample jars, except the samples to be analyzed for volatile organic compounds (VOCs), which were placed directly into the appropriate sample jars and not homogenized. All sampling equipment was decontaminated prior to sample collection at each interval.

The samples were delivered to Analytical Resources, Inc. (ARI) in Tukwila, Washington by a Landau Associates employee, under standard chain-of-custody procedures for analysis. All samples from the upper 1-ft interval collected during the investigation were submitted for analysis for VOCs by Method SW8260C, total petroleum hydrocarbons (TPH) using the hydrocarbon identification (HCID) method, and metals (arsenic, beryllium, cadmium, chromium, copper, lead, mercury, zinc) by Methods 6020 and 7040. The deeper samples collected were submitted to ARI and archived at the laboratory pending the analytical results for the shallower samples. Selected deeper samples were later analyzed for parameters that exceeded the screening levels in the corresponding upper-sample interval as described below.

SAMPLING RESULTS

The analytical results for the soil and solids samples were compared to preliminary Washington State Model Toxics Control Act (MTCA) Method B cleanup levels for screening purposes. The analytical results for the soil and solids samples are provided in Table 1 and are summarized as follows:

- Petroleum hydrocarbons in the diesel and gasoline ranges were not detected at concentrations greater than the laboratory reporting limits in the upper-interval samples by the HCID analysis. Therefore, none of the deeper samples were analyzed for petroleum hydrocarbons.
- VOCs were detected in each of the 12 upper-interval samples, at concentrations greater than the laboratory reporting limits, but less than the screening levels. Acetone was detected in each of the 12 samples; methylene chloride was detected in 8 samples (NDP-2, NDP-3, NDP-4, NDP-6, NDP-7, NDP-9, NDP-10, and NDP-12); and 2-butanone was detected at sampling locations NDP-1 and NDP-9. The compound 4-methyl-2-pentanone was detected at sampling location NDP-1 at a concentration greater than the laboratory reporting limit. There are no screening levels available for this compound. None of the samples collected from the lower interval was analyzed for VOCs.
- Arsenic was detected in each of the 12 upper-interval samples at concentrations greater than the laboratory reporting limits. The detected arsenic concentrations at 5 of the 12 locations were greater than the screening level [7 milligrams per kilogram (mg/kg)]: NDP-1 (21.0 mg/kg), NDP-2 (10.1 mg/kg), NDP-4 (13.2 mg/kg), NDP-5 (7.6 mg/kg), and NDP-6 (10.8 mg/kg). The deeper-interval samples collected at these locations were subsequently analyzed for arsenic, except for location NDP-1, where a deeper sample interval was not collected due to refusal. Arsenic was detected in each of the four deeper-interval samples submitted for analysis at concentrations greater than the laboratory reporting limits. The detected concentrations ranged from 4.0 mg/kg to 5.8 mg/kg and were less than in the shallower sample from the same location, and were all less than the screening level.

- Copper was detected in the upper-interval sample at NDP-1 at a concentration of 295 mg/kg, which is slightly greater than the screening level of 260 mg/kg. Cadmium was detected in this sample at a concentration of 1.7 mg/kg, which is slightly greater than the screening level of 1 mg/kg. As previously indicated, a deeper-interval sample was not collected at NDP-1.
- Beryllium, chromium, lead, mercury, and zinc were detected at concentrations greater than the laboratory reporting limits at all of the sampling locations, but the detected concentrations were all less than the respective screening levels.

CONCLUSIONS AND RECOMMENDATIONS

The purpose of the soil and solids investigation discussed above was to document the current chemical quality of the accumulated stormwater solids within and soils underlying the NDP. The analytical results for the samples collected indicate that only metals (primarily arsenic) were detected at concentrations greater than the screening levels, which were based on preliminary MTCA Method B cleanup levels. The detected concentrations in the deeper samples from the locations where the shallow metals concentrations were greater than the screening levels are all less than the screening levels. The detected metals concentrations are similar to concentrations found within stormwater solids and do not represent a potential threat to human health or the environment. Based on the findings of the investigation, further evaluation is not warranted. However, due to the presence of metals, any planning for removal of solids or soil from the pond should include provisions for appropriate handling and disposal of the material in accordance with applicable regulations.

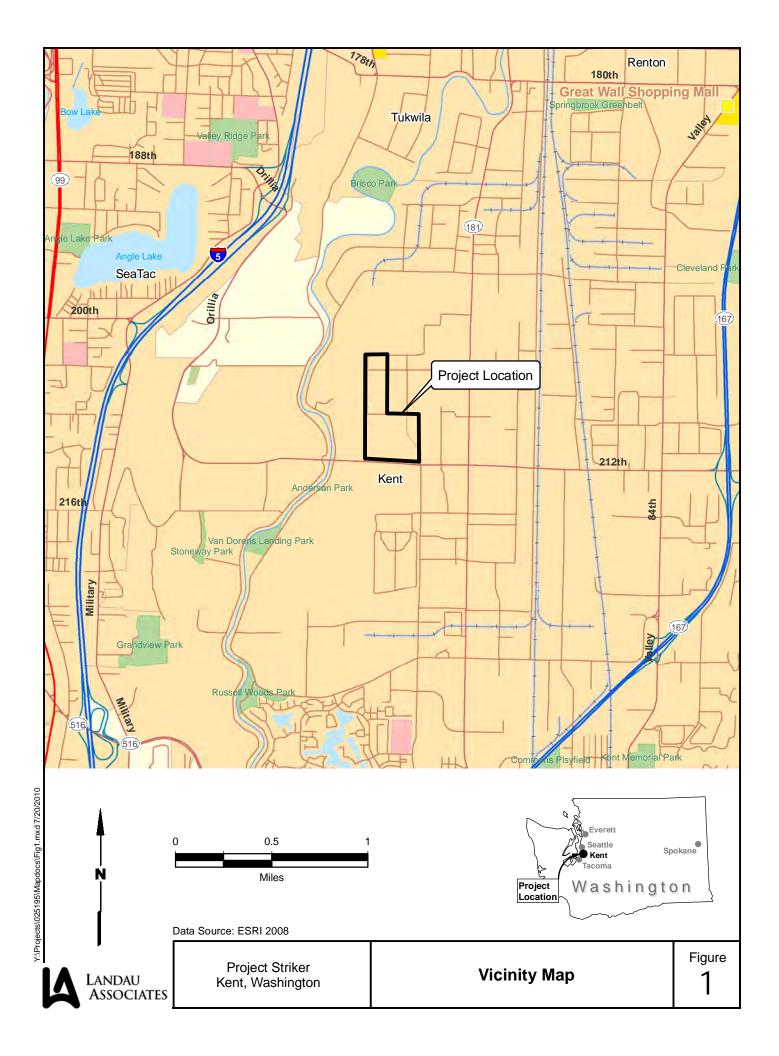
ATTACHMENTS

Figure 1: Vicinity Map

Figure 2 North Detention Pond Sampling Locations and Arsenic Exceedances

Table 1: Soil and Solids Analytical Results

Attachment 1: Laboratory Analytical Reports (on CD-ROM)



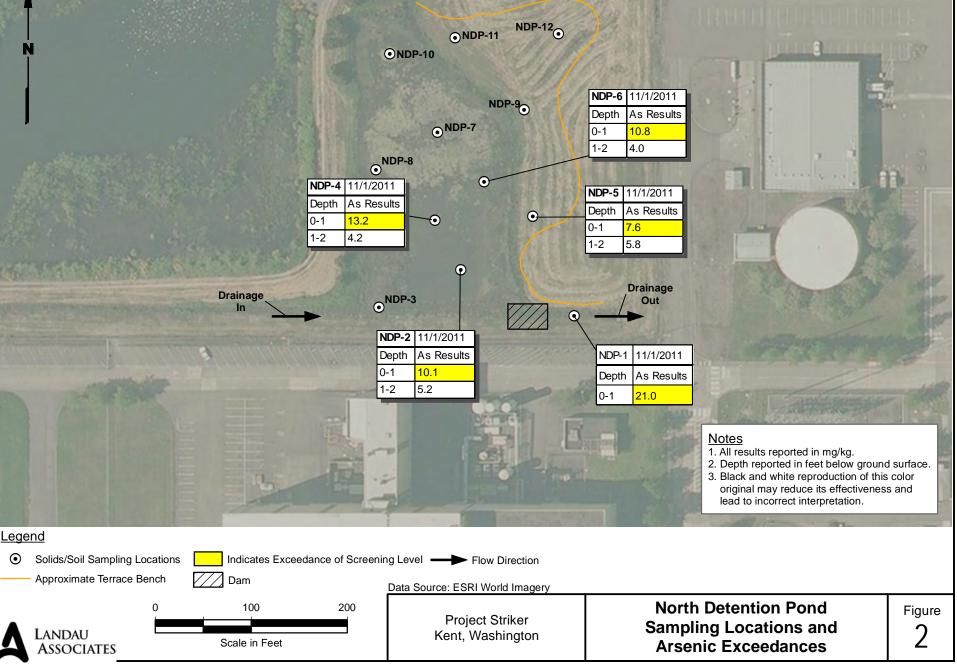


TABLE 1 SOIL ANALYTICAL RESULTS NORTH DETENTION POND BOEING STRIKER PROPERTY – KENT, WASHINGTON

	MCTA Method B Screening Levels	NDP-1(0-0.5) TU89E 11/01/2011	NDP-2(0-1) TU89D 11/01/2011	NDP-2(1-2) TW18A 11/1/2011	NDP-3(0-1) TU89C 11/01/2011	NDP-4(0-1) TU89H 11/01/2011	NDP-4(1-2) TW18C 11/1/2011	NDP-5(0-1) TU89L 11/01/2011	NDP-5(1-2) TW18D 11/1/2011	NDP-6(0-1) TU89G 11/01/2011	NDP-6(1-2) TW18B 11/1/2011	NDP-7(0-1) TU89B 11/01/2011	NDP-8(0-1) TU89I 11/01/2011	NDP-9(0-1) TU89A 11/01/2011	NDP-10(0-1) TU89F 11/01/2011	NDP-11(0-1) TU89J 11/01/2011	NDP-12(0-1) TU89K 11/01/2011
HCID (mg/kg)																	
Method NWTPH-HCID																	
Gasoline Range Organics	100	36 U	20 U 50 U	NA	20 U	20 U	NA	20 U	NA NA	20 U	NA	20 U	20 U	20 U 50 U	20 U	20 U	20 U
Diesel Range Organics Lube Oil	2,000 2,000	89 U 180 U	100 U	NA NA	50 U 100 U	50 U 100 U	NA NA	50 U 100 U	NA NA	50 U 100 U	NA NA	50 U 100 U	50 U 100 U	100 U	50 U 100 U	50 U 100 U	50 U 100 U
Lube Oil	2,000	100 0	100 0	14/1	100 0	100 0	101	100 0	14/1	100 0	147	100 0	100 0	100 0	100 0	100 0	100 0
TOTAL METALS (mg/kg)																	
Methods EPA200.8/SW7471A	_																
Arsenic	7 2	21.0 0.7 U	10.1 0.4	5.2 J NA	6.7 0.4	13.2 0.4	4.2 NA	7.6 0.5	5.8 NA	10.8 0.4	4.0 NA	6.6 0.5	6.4 0.6	5.9 0.4	7.0 0.3	6.7 0.4	5.7 0.3
Beryllium Cadmium	1	1.7	0.7	NA NA	0.4	0.5	NA NA	0.5	NA NA	0.4	NA NA	0.3	0.6 0.1 U	0.4	0.3 0.2 U	0.4	0.3 0.1 U
Chromium	120,000	49	21.3	NA	17.9	20.5	NA	19.5	NA	17.0	NA	17.4	20.3	15.7	17.0	16.7	22.4
Copper	260	295	63.4	NA	62.7	51.6	NA	40.4	NA	50.3	NA	45.7	42.3	30.6	30.7	29.4	20.5
Lead	250	132	27.8	NA	36.6	27.1	NA	15.8	NA	26.7	NA	14.2	12.0	66.8 J	9.8	88.3	7.3
Mercury	2.1	0.33	0.06	NA	0.07	0.07	NA	0.07	NA	0.05	NA	0.09	0.05	0.04	0.05	0.05	0.02 U
Zinc	6,000	400	147	NA	122	144	NA	67	NA	87	NA	65	57	62	54	50	40
VOLATILES (μg/kg) Method SW8260C																	
Chloromethane		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA NA	1.8 U	NA NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
Bromomethane Vinyl Chloride	1.8	4.1 U 4.1 U	1.6 U 1.6 U	NA NA	1.5 U 1.5 U	1.5 U 1.5 U	NA NA	1.4 U 1.4 U	NA NA	1.8 U 1.8 U	NA NA	1.6 U 1.6 U	1 5 U 1 5 U	1.3 U 1.3 U	1.8 U 1.8 U	1.1 U 1.1 U	0.8 U 0.8 U
Chloroethane	1.0	4.1 U	1.6 U	NA NA	1.5 U	1.5 U	NA NA	1.4 U	NA NA	1.8 U	NA NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
Methylene Chloride	22	8.2 U	3.9	NA	3.6	3.1	NA	2.7 U	NA	4.6	NA	4.7	29 U	4.2	4.7	2.3 U	1.7
Acetone	3,200	390	48	NA	61	28	NA	120	NA	50	NA	28	24	140	37	48	32
Carbon Disulfide	5,700	4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
1,1-Dichloroethene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
1,1-Dichloroethane		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
trans-1,2-Dichloroethene cis-1,2-Dichloroethene	350	4.1 U 4.1 U	1.6 U 1.6 U	NA NA	1.5 U 1.5 U	1.5 U 1.5 U	NA NA	1.4 U 1.4 U	NA NA	1.8 U 1.8 U	NA NA	1.6 U 1.6 U	1 5 U 1 5 U	1.3 U 1.3 U	1.8 U 1.8 U	1.1 U 1.1 U	0.8 U 0.8 U
Chloroform	330	4.1 U	1.6 U	NA NA	1.5 U	1.5 U	NA NA	1.4 U	NA NA	1.8 U	NA NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
1,2-Dichloroethane		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
2-Butanone	20,000	28	8.0 U	NA	7.4 U	7.3 U	NA	6.9 U	NA	9.1 U	NA	7.9 U	73 U	10	8.9 U	5.7 U	4.2 U
1,1,1-Trichloroethane		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
Carbon Tetrachloride		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
Vinyl Acetate Bromodichloromethane		20 U 4.1 U	8.0 U 1.6 U	NA NA	7.4 U 1.5 U	7.3 U 1.5 U	NA NA	6.9 U 1.4 U	NA NA	9.1 U 1.8 U	NA NA	7.9 U 1.6 U	7 3 U 1 5 U	6.7 U 1.3 U	8.9 U 1.8 U	5.7 U 1.1 U	4.2 U 0.8 U
1,2-Dichloropropane		4.1 U	1.6 U	NA NA	1.5 U	1.5 U	NA NA	1.4 U	NA NA	1.8 U	NA NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
cis-1,3-Dichloropropene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
Trichloroethene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
Dibromochloromethane		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
1,1,2-Trichloroethane		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
Benzene	28	4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
trans-1,3-Dichloropropene 2-Chloroethylvinylether		4.1 U 20 U	1.6 U 8.0 U	NA NA	1.5 U 7.4 U	1.5 U 7.3 U	NA NA	1.4 U 6.9 U	NA NA	1.8 U 9.1 U	NA NA	1.6 U 7.9 U	1 5 U 7 3 U	1.3 U 6.7 U	1.8 U 8.9 U	1.1 U 5.7 U	0.8 U 4.2 U
Bromoform		4.1 U		NA NA	1.5 U	1.5 U	NA NA	1.4 U	NA NA	1.8 U	NA NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	4.2 U 0.8 U
4-Me hyl-2-Pentanone (MIBK)		29 M		NA	7.4 U	7.3 U	NA	6.9 U	NA	9.1 U	NA	7.9 U	73 U	6.7 U	8.9 U	5.7 U	4.2 U
2-Hexanone		280 U	8.0 U	NA	7.4 U	7.3 U	NA	51 U	NA	9.1 U	NA	7.9 U	73 U	76 U	8.9 U	36 U	35 U
Tetrachloroethene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
1,1,2,2-Tetrachloroethane	1	4.1 U		NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
Toluene	4,700	4.1 U		NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
Chlorobenzene	6.000	4.1 U		NA NA	1.5 U	1.5 U	NA NA	1.4 U	NA NA	1.8 U	NA NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
Ethylbenzene Styrene	6,000	4.1 U 4.1 U		NA NA	1.5 U 1.5 U	1.5 U 1.5 U	NA NA	1.4 U 1.4 U	NA NA	1.8 U 1.8 U	NA NA	1.6 U 1.6 U	1 5 U 1 5 U	1.3 U 1.3 U	1.8 U 1.8 U	1.1 U 1.1 U	0.8 U 0.8 U
Trichlorofluoromethane	1	4.1 U		NA NA	1.5 U	1.5 U	NA NA	1.4 U	NA NA	1.8 U	NA NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U 1.1 U	0.8 U
1,1,2-Trichloro-1,2,2-trifluoroethane	1	8.2 U		NA NA	3.0 U	2.9 U	NA NA	2.7 U	NA NA	3.6 U	NA NA	3.2 U	29 U	2.7 U	3.6 U	2.3 U	1.7 U
m, p-Xylene	1	4.1 U		NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	15 U	1.3 U	1.8 U	1.1 U	0.8 U
o-Xylene	1	4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
1,2-Dichlorobenzene	1	4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U

TABLE 1 SOIL ANALYTICAL RESULTS NORTH DETENTION POND BOEING STRIKER PROPERTY – KENT, WASHINGTON

	MCTA Method B Screening Levels	NDP-1(0-0.5) TU89E 11/01/2011	NDP-2(0-1) TU89D 11/01/2011	NDP-2(1-2) TW18A 11/1/2011	NDP-3(0-1) TU89C 11/01/2011	NDP-4(0-1) TU89H 11/01/2011	NDP-4(1-2) TW18C 11/1/2011	NDP-5(0-1) TU89L 11/01/2011	NDP-5(1-2) TW18D 11/1/2011	NDP-6(0-1) TU89G 11/01/2011	NDP-6(1-2) TW18B 11/1/2011	NDP-7(0-1) TU89B 11/01/2011	NDP-8(0-1) TU89I 11/01/2011	NDP-9(0-1) TU89A 11/01/2011	NDP-10(0-1) TU89F 11/01/2011	NDP-11(0-1) TU89J 11/01/2011	NDP-12(0-1) TU89K 11/01/2011
1,3-Dichlorobenzene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
1,4-Dichlorobenzene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
Acrolein		200 U	80 U	NA	74 U	73 U	NA	69 U	NA	91 U	NA	79 U	73 U	67 U	89 U	57 U	42 U
Methyl lodide		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
Bromoethane		8.2 U	3.2 U	NA	3.0 U	2.9 U	NA	2.7 U	NA	3.6 U	NA	3.2 U	29 U	2.7 U	3.6 U	2.3 U	1.7 U
Acrylonitrile		20 U	8.0 U	NA	7.4 U	7.3 U	NA	6.9 U	NA	9.1 U	NA	7.9 U	7 3 U	6.7 U	8.9 U	5.7 U	4.2 U
1,1-Dichloropropene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U		1.1 U	0.8 U
Dibromomethane		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
1,1,1,2-Tetrachloroethane		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
1,2-Dibromo-3-chloropropane		20 U	8.0 U	NA	7.4 U	7.3 U	NA	6.9 U	NA	9.1 U	NA	7.9 U	7 3 U	6.7 U	8.9 U	5.7 U	4.2 U
1,2,3-Trichloropropane		8.2 U	3.2 U	NA	3.0 U	2.9 U	NA	2.7 U	NA	3.6 U	NA	3.2 U	29 U	2.7 U	3.6 U	2.3 U	1.7 U
trans-1,4-Dichloro-2-butene		20 U	8.0 U	NA	7.4 U	7.3 U	NA	6.9 U	NA	9.1 U	NA	7.9 U	7 3 U	6.7 U	8.9 U	5.7 U	4.2 U
1,3,5-Trimethylbenzene	4,000,000	4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
1,2,4-Trimethylbenzene	4,000,000	4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
Hexachlorobutadiene		20 U	8.0 U	NA	7.4 U	7.3 U	NA	6.9 U	NA	9.1 U	NA	7.9 U	7 3 U	6.7 U	8.9 U	5.7 U	4.2 U
Ethylene Dibromide		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
Bromochloromethane		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
2,2-Dichloropropane		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
1,3-Dichloropropane		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
Isopropylbenzene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
n-Propylbenzene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
Bromobenzene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
2-Chlorotoluene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
4-Chlorotoluene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
tert-Butylbenzene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
sec-Butylbenzene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
4-Isopropyltoluene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
n-Butylbenzene		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U
1,2,4-Trichlorobenzene		20 U	8.0 U	NA	7.4 U	7.3 U	NA	6.9 U	NA	9.1 U	NA	7.9 U	73 U	6.7 U	8.9 U	5.7 U	4.2 U
Naphthalene	4,500	20 U	8.0 U	NA	7.4 U	7.3 U	NA	6.9 U	NA	9.1 U	NA	7.9 U	73 U	6.7 U	8.9 U	5.7 U	4.2 U
1,2,3-Trichlorobenzene		20 U	8.0 U	NA	7.4 U	7.3 U	NA	6.9 U	NA	9.1 U	NA	7.9 U	73 U	6.7 U	8.9 U	5.7 U	4.2 U
Methyl tert-Butyl Ether		4.1 U	1.6 U	NA	1.5 U	1.5 U	NA	1.4 U	NA	1.8 U	NA	1.6 U	1 5 U	1.3 U	1.8 U	1.1 U	0.8 U

U = Indicates the compound was not detected at the reported concentration.

M = Indicates an estimated value of analyte found and confirmed by analyst but wi h low spectral match.

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Bold = Detected compound.

Box = Detected concentration is greater han screening level.

Laboratory Analytical Reports (on CD-ROM)



November 7, 2011

Kathryn Hartley Landau Associates 130 Second Avenue South Edmonds, WA 98020

RE: Project: Boeing Striker: North Detention Pond, 025195.040.045

ARI Job: TU89

Dear Kathryn,

Enclosed please find the original and revised Chain-of-Custody (COC) records, sample receipt documentation, email documentation, and the final data report for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted six soil samples, fifteen solid samples, and a trip blank on November 1, 2011. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form. Select samples were placed on hold pending further instructions.

The samples were analyzed for VOCs, NWTPH-HCID, and Total Metals, as requested on the COC.

N-Butylbenzene was out of control high in the VOCs continuing calibration. The calibration met overall acceptance criteria. There were no detections for this compound in the samples. "Q" qualifiers have been applied to the form III to indicate this outage.

Naphthalene was out of control high in the VOCs LCSD. It was in control in the LCS. The LCS and LCSD met overall acceptance criteria. There were no detections for this compound in the samples.

Lead was recovered out of control high in the Total Metals matrix spike. All other quality control measures passed, and no further corrective action was taken.

There were no other analytical complications noted.

Quality control analysis results are included for your review. An electronic copy of this report and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC

Eric Branson

Project Manager -for-

Kelly Bottem

Client Services Manager

(206) 695-6211

kellyb@arilabs.com

www.arilabs.com

Sample ID Cross Reference Report



ARI Job No: TU89

Client: Landau Associates, Inc. Project Event: 025195.040.045

Project Name: Boeing Striker: North Detention Pon

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	NDP-9(0-1)-111101	TU89A	11-25251	Soil	11/01/11 09:30	11/01/11 16:25
2.	NDP-7(0-1)-111101	TU89B	11-25252	Solid	11/01/11 10:30	11/01/11 16:25
З.	NDP-3(0-1)-111101	TU89C	11-25253	Soild	11/01/11 11:00	11/01/11 16:25
4.	NDP-2(0-1)-111101	TU89D	11-25254	Solid	11/01/11 11:30	11/01/11 16:25
5.	NDP-1(0-0.5)-111101	TU89E	11-25255	Solid	11/01/11 12:00	11/01/11 16:25
6.	NDP-10(0-1)-111101	TU89F	11-25256	Solid	11/01/11 12:20	11/01/11 16:25
7.	NDP-6(0-1)-111101	TU89G	11-25257	Solid	11/01/11 12:40	11/01/11 16:25
8.	NDP-4(0-1)-111101	TU89H	11-25258	Solid	11/01/11 13:00	11/01/11 16:25
9.	NDP-8(0-1)-111101	TU89I	11-25259	Solid	11/01/11 14:00	11/01/11 16:25
10.	NDP-11(0-1)-111101	TU89J	11-25260	Soil	11/01/11 14:20	11/01/11 16:25
11.	NDP-12(0-1)-111101	TU89K	11-25261	Soil	11/01/11 14:40	11/01/11 16:25
12.	NDP-5(0-1)-111101	TU89L	11-25262	Soil	11/01/11 15:00	11/01/11 16:25
13.	NDP-9(1-2)-111101	TU89M	11-25263	Soil	11/01/11 09:45	11/01/11 16:25
14.	NDP-7(1-2)-111101	TU89N	11-25264	Solid	11/01/11 10:45	11/01/11 16:25
15.	NDP-3(1-2)-111101	TU890	11-25265	Solid	11/01/11 11:15	11/01/11 16:25
	NDP-2(1-2)-111101	TU89P	11-25266	Solid	11/01/11 11:45	11/01/11 16:25
17.	NDP-10(1-2)-111101	TU89Q	11-25267	Solid	11/01/11 12:25	11/01/11 16:25
18.	NDP-6(1-2)-111101	TU89R	11-25268	Solid	11/01/11 12:45	11/01/11 16:25
19.	NDP-4(1-2)-111101	TU89S	11-25269	Solid	11/01/11 13:15	11/01/11 16:25
20.	NDP-8(1-2)-111101	TU89T	11-25270	Solid	11/01/11 14:05	11/01/11 16:25
21.	NDP-5(1-2)-111101	TU89U	11-25271	Soil	11/01/11 15:05	11/01/11 16:25
22.	Trip Blanks	TU89V	11-25272	Water	11/01/11	11/01/11 16:25

Printed 11/07/11

Subject: Boeing Striker North Detention Pond sampling

From: "Chris Burke" <cburke@landauinc.com>

Date: Wed, 2 Nov 2011 13:37:18 -0700 To: Kelly Bottem <kellyb@arilabs.com>

CC: "Kathryn Hartley" <khartley@landauinc.com>

Hey Kelly,

Kathryn and I noticed a few errors on the COC from yesterday's sampling at the Striker property. I've edited the COCs and attached a scan of those edits.

The changes I made were:

- fixed the sample IDs to use proper date format, i.e., NDP-1(0-1)-110111 became the correct NDP-1(0-1)-111101
- Changed matrix type from sediment to solids
- Checked VOCs analysis for the trip blanks
- -Added 'Boeing' to the project name

I highlighted all the changes for clarity, let me know if you have any questions,

Chris Burke "Senior Staff Hydrogeologist Landau Associates, Inc.

130 2nd Ave. S, Edmonds, WA 98020

425.329.0297" fax 425.778.6409" cell 716.579.2975

cburke@landauinc.com "http://www.landauinc.com

Email is a sustainable communications tool - please consider this before printing.

Notice: This communication may contain privileged or other confidential information. If you have received it in error, please advise the sender by reply email and immediately delete the message and any attachments without copying or disclosing the contents. Thank you.

Boeing Striker NPD COC 110111 - revised.pdf	Content-Description:	Boeing Striker NPD COC 110111 - revised.pdf
	Content-Type:	application/pdf
	Content-Encoding:	base64

☑ Seattle/Edmonds (425) 778-0907

[...] **Tacoma** (253) 926-2493

¹] **Spokane** (509) 327-9737

LANDAU Spokane (509) 327-9737
ASSOCIATES Portland (503) 542-1080



Date

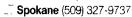
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Chain-of-Custody Record

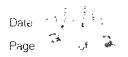
Project Name	Project No.		<i>i</i>	esting Parameters	Turnaround Time
Project Location/Event	age a later see age as				Standard Accelerated
Sampler's Name	74 3 4 4 4	,			× 3-day
Project Contact	Sign to desire the same	1 / A	# / /U/		
Send Results To		, /S/S	7 7		
Sample I,D.		No. of atrix Containers	F	<u> </u>	Observations/Comments
MD(-1(0-1)-HOTTI	11/11 0930 40	* · · · · · · · · · · · · · · · · · · ·			X Allow water samples to settle, collect
101-1(1-5)-HOHT	11/1/1/0945 50		*		aliquot from clear portion
MDP-7(0-1)-HOTH		***XXXXX			X NWTPH-Dx - run acid wash/silica gel cleanup
NDP-7(1-2)-HOLLY	1 4 , ,		×,		
NOP-3(0-1)-1+0171	11/11/1100 500	X X X X	<u> </u>	·- ·	run samples standard zed to
NOL-3(1-5)-HAH			X		product
ND6-9(0-1)-HOH	للعو 30 لذ المراه	~~~~ X X X			Analyze for EPH if no specific
WD6-3(1-3)-HOTH	1 1 1	71	X		product dentified
NOF-1 (0-05)-HOTT	11/1/11/12/20 500	<u>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</u>			VOC/BTEX/VPH (soli):
NDP-10 (0-1) - HOTTL	W 1230 44	Mari J X X X			non-preserved preserved w/methanol
NOP-10(1-2)-1+014	11/1/12/25 500		X		preserved w/sodium bisulfate
NOP-6(0-1)-140+1	Will Taro See	TOTAL XXX	<u> </u>		Freeze upon receipt
NOP-6 (1-2)-Holl	11/11 12/15 feet	most of the second	×		Dissorved metal water samples field filtered
NUP-4 (0-1)-HOLL		XXX Trom			Other Hale Sur Dr.
Not-411 - 2)-110+111	Mills 1315 500	eact 7	X		4 15 74 20 1 20 1 1 1
NDF-8(0-1)-110+11	11/1/1 1400 400	-47 XXX			Cas Pro Harris As 12 Co
NOP-8(1-2)-HOH	Will 1905 500		×		24. Pu. H. PX
NDP-11 (0-1)-11-01+1		1 7 × ××			
Special Shipment/Handling	المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية			Method Shipme	
Relinquished by	Received by		Relinquished by		Received by
1 1 3 16	1				-
Signature	Signature		Signature		Signature
Printed Name	Printed Name		Printed Name	1	Printed Name
Company	Company		Company		Company
Date 1 Time	Date	Time	Date	Time	DateTime

Tacoma (253) 926-2493



LANDAU Spokane (509) 327-9737
ASSOCIATES Portland (503) 542-1080





Chain-of-Custody Record

Project Name State	Committee of the second	-c 015 asc	· · ·	Testing Parameters	Turnaround Time		
Project Name	Project No. 0251	175. 7. 7. 7. 3	1. 150 1		Standard		
Project Location/Event Kant wA	,		1 1 1 1		_`Accelerated		
Sampler's Name (FS/M)			4////		The stand		
Project Contact Kothern Hertle	1, Tim Sivers	* / /* /					
Send Results To 1, Time CFB	Joe Flahert	4 /9			,		
Sample I.D. Date		No. of Containers	1 2 4 /)		Observations/Comments		
17/1 ## +0+ -(1-0) 21-90 N	1440 501	7 ××>	×		_X_Allow water samples to settle, collect		
NOP-5 (0-1)-HOTH 1/1/11	1500 501		X		aliquot from c'ear portion		
NOP-5(1-2)-4011 11/1	1505 Sail	7.			_X_NWTPH-Dx run acid wash/silica ger cleanup		
Trip Blanks	ive spike of	X6 1			CONT. OF COST, CARTANAMENTO, STORE AND AND AND AND AND AND AND AND AND AND		
	va. va. va.	MUB IN	.		run samples standardized to product		
					Analyze for EPH if no specific		
	* * * *				product identified		
					VOC/BTEX/VPH (soll):		
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	, error 140 (\$4.50)			processing processing control of the processing	preserved w/methanol preserved w/sodium pisulfate		
			* * * *		Freeze upon receipt		
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_					Other # Hold War Os antil		
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Seattle/Edmonds (425) 778-0907 ☐ **Tacoma** (253) 926-2493 ☐ **Spokane** (509) 327-9737 LANDAU Spokane (509) 321-9131
ASSOCIATES Portland (503) 542-1080

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Project Name Sheikel: Noval	n Detention	Project I	No. 025	૧૧૬,૦૫૦,૦	45				7 /	Testing I	Paramete	Turnaround Time
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	CFB,				- /	*0/5/0	\ \S	/, 😾		/ / /	///	
,	,			No. of	- / <u>`</u>	J/;	5 / \	10 mg	.) //		' / / /	Observations/Comments
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NDP-7(0-1)-110111 NDP-7(1-2)-110111			sedimin		×	×	X	×				X_NWTPH-Dx - run acid wash/silica gel cleanup
			sedimen		×	X	X					
	4 4		sed med Sed med	1		~	~	Х				run samples standardized to product
NDP-2(0-1)-110111			Sedimi		×	Y	X					Analyze for EPH if no specific
			Sedimu		1	2		×				product identified
NDP-1(0-0.5)-110111	4 1		estmen		×	×	×					VOC/BTEX/VPH (soll):
NDP-10(0-1)-110111	-		sedmen		X	X						non-preserved
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NPP-6(0-1)-110111			Sedimin	1	X	X	X					Freeze upon receipt
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NDP-4 (0-1)-1101/1	11/11/1		sed:mer		×	×	X					Other * Holo 6x+Dx will
NBP-4(1-2)-110111	While 1		rediment					X				HCD results are in
NDP-8(0-1)-110111	cilila 1		egimen	• • • • • • • • • • • • • • • • • • • 	X	×	×					** metals: As, Be, Cd, Cr, Cu, Pb, Hs, Zn
		• **	edimo	7.7				X				
NDP-11 (0-1)-110111	ifi/11 1	420 4	5011	7	×	X	X					
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ASSOCIATES Portland (_ Cha	ain-o	f-(Cu	sto	od	v R	eco	rd		ī	Page
Project Name Strike North Project Location/Event Kent Sampler's Name CFB/mu Project Contact Kathyn Send Results To 11, TLS	75		-1 et No. 035	145,045	- -	45		<u>/</u> <u>/</u> x./				Paran	neter	<i></i>
Send Results To 1, TUS, Sample I.D.	CFB,)ంట ౯ Time		No. of Containers	- s/ :		3	2 4	/ 9 / 				//	Observations/Comments
NDP-12 (0-1)-110111 NDP-5 (0-1)-110111	11/11	1440	5011	7	×		×							X Allow water samples to settle, collect aliquot from clear portion
NDP-5(1-2)-110111 Trip Blanks	11/1		Soil	7				×						X NWTPH-Dx - run acid wash/silica gel cleanup
11) F DIANES			1.43	MUB	11/1									run samples standardized to
														Analyze for EPH if no specific product identified
														VOC/BTEX/VPH (soll): non-preserved preserved w/methanol preserved w/sodium bisulfate Freeze upon receipt
														Dissolved metal water samples field filtered
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														Other * Hold Cox + Ox until HCID RESULTS are in ** mutals: As, be, cd, cd, Co Cu, Pb, Hg, Za
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Date 111

Date

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Time



Cooler Receipt Form

ARI Client Poemo	<u> </u>	Project Name: SHIKOL:	North E	Deten-Ho	nPorc
COC No(s)	(NA)	Delivered by: Fed-Ex UPS Cour	ner Hand Deliv	vered Other:	
Assigned ARI Job No	7285	Tracking No	()	•	NA
Preliminary Examination Phase	:				
Were intact, properly signed and	I dated custody seals attached t	to the outside of to cooler?	(YE S	NO
Were custody papers included w	vith the cooler?		(YE\$	NO
Were custody papers properly fil	lled out (ink, signed, etc.)		Ì	YES	NO
Temperature of Cooler(s) (°C) (r	ecommended 2 0-6 0 °C for che	emistry). 5,9 3,3	(
If cooler temperature is out of co	mpliance fill out form 00070F		Temp Gun ID	#_ 909	11619
Cooler Accepted by	$\Delta \gamma$	Date: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1625	5	
	1 \ -	and attach all shipping documents			
Log-In Phase:					···
Was a temperature blank include	ed in the cooler?			YEs	(NO)
•		ap Welce Gel Packs Baggies Foarh	∽ Block Paper ((NO
Was sufficient ice used (if appro			NA NA	€	NQ
Were all bottles sealed in individ	ual plastic bags?	, ,		YES	(A)
	•			(E)	NO
				YES	NO
		nber of containers received?		Y ⊋s	NO
				YÆS	NO
Were all bottles used correct for	the requested analyses?			YES	NO
Do any of the analyses (bottles)	require preservation? (attach pr	reservation sheet, excluding VOCs)	V	YES	NO
Were all VOC vials free of air bu	bbles?		NA	YES	(0)
Was sufficient amount of sample	e sent in each bottle?			(ES)	NO
Date VOC Trip Blank was made	at ARI		NA	16.21	N
Was Sample Split by ARI:	A YES Date/Time:	Equipment		Split by	
Samples Logged by	ís Dat	.e. / 1 -	800		
Campies Logged by		er of discrepancies or concerns **			
		·			
Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Samp	le ID on COC	5
Additional Notes, Discrepanci	es, & Resolutions:	11.6 Pla	nk i	'-L '	
		16.6	' '	63	
لاحد.					
$_{\rm By}$ 13 $_{\rm Da}$	ate 1 1- 2-1.				
Smalt Air Bubbles Peabubl	atc	Small → "sm"			
2mm 2-4 m		Peabubbles → "pb"			
	. • • •	Large → "lg"			
And the state of t		Was denoted at the?			



Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-9(0-1)-111101 Page 1 of 2 SAMPLE

Lab Sample ID: TU89A LIMS ID: 11-25251

Matrix: Soil

Data Release Authorized: / Reported: 11/03/11

Instrument/Analyst: NT9/PAB Date Analyzed: 11/02/11 12:44 QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Sample Amount: 3.71 g-dry-wt Purge Volume: 5.0 mL Moisture: 26.6%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.3	< 1.3	U
74-83-9	Bromomethane	1.3	< 1.3	Ū
75-01-4	Vinyl Chloride	1.3	< 1.3	Ü
75-00-3	Chloroethane	1.3	< 1.3	Ü
75-09-2	Methylene Chloride	2.7	4.2	
67-64-1	Acetone	6.7	140	
75-15-0	Carbon Disulfide	1.3	< 1.3	Ū
75-35-4	1,1-Dichloroethene	1.3	< 1.3	Ü
75-34-3	1,1-Dichloroethane	1.3	< 1.3	U
156-60-5	trans-1,2-Dichloroethene	1.3	< 1.3	U
156-59-2	cis-1,2-Dichloroethene	1.3	< 1.3	Ü
67-66-3	Chloroform	1.3	< 1.3	U
107-06-2	1,2-Dichloroethane	1.3	< 1.3	U
78-93-3	2-Butanone	6.7	10	
71-55-6	1,1,1-Trichloroethane	1.3	< 1.3	U
56-23-5	Carbon Tetrachloride	1.3	< 1.3	U
108-05-4	Vinyl Acetate	6.7	< 6.7	U
75-27-4	Bromodichloromethane	1.3	< 1.3	U
78-87-5	1,2-Dichloropropane	1.3	< 1.3	U
10061-01-5	cis-1,3-Dichloropropene	1.3	< 1.3	U
79-01-6	Trichloroethene	1.3	< 1.3	Ü
124-48-1	Dibromochloromethane	1.3	< 1.3	Ü
79-00-5	1,1,2-Trichloroethane	1.3	< 1.3	U
71-43-2	Benzene	1.3	< 1.3	U
10061-02-6	trans-1,3-Dichloropropene	1.3	< 1.3	U
110-75-8	2-Chloroethylvinylether	6.7	< 6.7	U
75-25 - 2	Bromoform	1.3	< 1.3	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	6.7	< 6.7	U
591-78-6	2-Hexanone	76	< 76	Y
127-18-4	Tetrachloroethene	1.3	< 1.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.3	< 1.3	U
108-88-3	Toluene	1.3	< 1.3	U
108-90-7	Chlorobenzene	1.3	< 1.3	U
100-41-4	Ethylbenzene	1.3	< 1.3	U
100-42-5	Styrene	1.3	< 1.3	U
75-69-4	Trichlorofluoromethane	1.3	< 1.3	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe		< 2.7	U
179601-23-1	m,p-Xylene	1.3	< 1.3	U
95-47-6	o-Xylene	1.3	< 1.3	U
95-50-1	1,2-Dichlorobenzene	1.3	< 1.3	U
541-73-1	1,3-Dichlorobenzene	1.3	< 1.3	Ü
106-46-7	1,4-Dichlorobenzene	1.3	< 1.3	Ü
107-02-8	Acrolein	67	< 67	U



Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-9(0-1)-111101

Page 2 of 2 SAMPLE

Lab Sample ID: TU89A QC Report No: TU89-Landau Associates, Inc.

LIMS ID: 11-25251 Project: Boeing Striker: North Detention Pon 025195.040.045 Matrix: Soil

Date Analyzed: 11/02/11 12:44

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	1.3	< 1.3	U
74-96-4	Bromoethane	2.7	< 2.7	U
107-13-1	Acrylonitrile	6.7	< 6.7	U
563-58-6	1,1-Dichloropropene	1.3	< 1.3	U
74-95-3	Dibromomethane	1.3	< 1.3	U
630-20-6	1,1,1,2-Tetrachloroethane	1.3	< 1.3	U
96-12-8	1,2-Dibromo-3-chloropropane	6.7	< 6.7	U
96-18-4	1,2,3-Trichloropropane	2.7	< 2.7	U
110-57-6	trans-1,4-Dichloro-2-butene	6.7	< 6.7	U
108-67-8	1,3,5-Trimethylbenzene	1.3	< 1.3	U
95-63-6	1,2,4-Trimethylbenzene	1.3	< 1.3	U
87-68-3	Hexachlorobutadiene	6.7	< 6.7	U
106-93-4	Ethylene Dibromide	1.3	< 1.3	U
74-97-5	Bromochloromethane	1.3	< 1.3	U
594-20-7	2,2-Dichloropropane	1.3	< 1.3	U
142-28-9	1,3-Dichloropropane	1.3	< 1.3	U
98-82-8	Isopropylbenzene	1.3	< 1.3	U
103-65-1	n-Propylbenzene	1.3	< 1.3	U
108-86-1	Bromobenzene	1.3	< 1.3	U
95-49-8	2-Chlorotoluene	1.3	< 1.3	U
106-43-4	4-Chlorotoluene	1.3	< 1.3	U
98-06-6	tert-Butylbenzene	1.3	< 1.3	U
135-98-8	sec-Butylbenzene	1.3	< 1.3	U
99-87-6	4-Isopropyltoluene	1.3	< 1.3	Ü
104-51-8	n-Butylbenzene	1.3	< 1.3	U
120-82-1	1,2,4-Trichlorobenzene	6.7	< 6.7	U
91-20-3	Naphthalene	6.7	< 6.7	U
87-61-6	1,2,3-Trichlorobenzene	6.7	< 6.7	U
1634-04-4	Methyl tert-Butyl Ether	1.3	< 1.3	U

Reported in µg/kg (ppb)

d4-1,2-Dichloroethane	125%
d8-Toluene	103%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	103%



Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-7(0-1)-111101

Page 1 of 2 SAMPLE

Lab Sample ID: TU89B LIMS ID: 11-25252

Matrix: Solid Data Release Authorized:

Instrument/Analyst: NT9/PAB Date Analyzed: 11/02/11 13:06

Reported: 11/03/11

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

QC Report No: TU89-Landau Associates, Inc.

Sample Amount: 3.15 g-dry-wt Purge Volume: 5.0 mL Moisture: 30.2%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.6	< 1.6	U
74-83-9	Bromomethane	1.6	< 1.6	Ū
75-01-4	Vinyl Chloride	1.6	< 1.6	Ū
75-00-3	Chloroethane	1.6	< 1.6	Ü
75-09-2	Methylene Chloride	3.2	4.7	-
67-64-1	Acetone	7.9	28	
75-15-0	Carbon Disulfide	1.6	< 1.6	U
75-35-4	1,1-Dichloroethene	1.6	< 1.6	Ū
75-34-3	1,1-Dichloroethane	1.6	< 1.6	Ū
156-60-5	trans-1,2-Dichloroethene	1.6	< 1.6	Ū
156 - 59-2	cis-1,2-Dichloroethene	1.6	< 1.6	Ū
67-66-3	Chloroform	1.6	< 1.6	Ü
107-06-2	1,2-Dichloroethane	1.6	< 1.6	U
78-93-3	2-Butanone	7.9	< 7.9	Ü
71-55-6	1,1,1-Trichloroethane	1.6	< 1.6	U
56-23 - 5	Carbon Tetrachloride	1.6	< 1.6	U
108-05-4	Vinyl Acetate	7.9	< 7.9	U
75-27-4	Bromodichloromethane	1.6	< 1.6	U
78-87-5	1,2-Dichloropropane	1.6	< 1.6	U
10061-01-5	cis-1,3-Dichloropropene	1.6	< 1.6	U
79-01-6	Trichloroethene	1.6	< 1.6	U
124-48-1	Dibromochloromethane	1.6	< 1.6	U
79-00-5	1,1,2-Trichloroethane	1.6	< 1.6	U
71-43-2	Benzene	1.6	< 1.6	U
10061-02-6	trans-1,3-Dichloropropene	1.6	< 1.6	U
110-75-8	2-Chloroethylvinylether	7.9	< 7.9	U
75-25-2	Bromoform	1.6	< 1.6	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.9	< 7.9	U
591-78-6	2-Hexanone	7.9	< 7.9	U
127-18-4	Tetrachloroethene	1.6	< 1.6	U
79-34-5	1,1,2,2-Tetrachloroethane	1.6	< 1.6	U
108-88-3	Toluene	1.6	< 1.6	U
108-90-7	Chlorobenzene	1.6	< 1.6	U
100-41-4	Ethylbenzene	1.6	< 1.6	U
100-42-5	Styrene	1.6	< 1.6	U
75-69-4	Trichlorofluoromethane	1.6	< 1.6	Ü
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe		< 3.2	Ü
179601-23-1	m,p-Xylene	1.6	< 1.6	U
95-47-6	o-Xylene	1.6	< 1.6	U
95-50-1	1,2-Dichlorobenzene	1.6	< 1.6	U
541-73-1	1,3-Dichlorobenzene	1.6	< 1.6	U
106-46-7	1,4-Dichlorobenzene	1.6	< 1.6	U
107-02-8	Acrolein	79	< 79	U



Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-7(0-1)-111101

Page 2 of 2 SAMPLE

Lab Sample ID: TU89B QC Report No: TU89-Landau Associates, Inc. LIMS ID: 11-25252

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Analyzed: 11/02/11 13:06

Matrix: Solid

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	1.6	< 1.6	U
74-96-4	Bromoethane	3.2	< 3.2	U
107-13-1	Acrylonitrile	7.9	< 7.9	U
563 - 58-6	1,1-Dichloropropene	1.6	< 1.6	U
74-95-3	Dibromomethane	1.6	< 1.6	U
630-20-6	1,1,1,2-Tetrachloroethane	1.6	< 1.6	U
96-12-8	1,2-Dibromo-3-chloropropane	7.9	< 7.9	U
96-18-4	1,2,3-Trichloropropane	3.2	< 3.2	U
110-57-6	trans-1,4-Dichloro-2-butene	7.9	< 7.9	U
108-67-8	<pre>1,3,5-Trimethylbenzene</pre>	1.6	< 1.6	U
95-63 - 6	1,2,4-Trimethylbenzene	1.6	< 1.6	U
87-68 - 3	Hexachlorobutadiene	7.9	< 7.9	U
106-93-4	Ethylene Dibromide	1.6	< 1.6	U
74-97-5	Bromochloromethane	1.6	< 1.6	U
594-20-7	2,2-Dichloropropane	1.6	< 1.6	U
142-28-9	1,3-Dichloropropane	1.6	< 1.6	Ū
98-82-8	Isopropylbenzene	1.6	< 1.6	U
103 - 65-1	n-Propylbenzene	1.6	< 1.6	U
108-86-1	Bromobenzene	1.6	< 1.6	U
95-49-8	2-Chlorotoluene	1.6	< 1.6	U
106-43-4	4-Chlorotoluene	1.6	< 1.6	U
98-06-6	tert-Butylbenzene	1.6	< 1.6	U
135-98-8	sec-Butylbenzene	1.6	< 1.6	U
99-87-6	4-Isopropyltoluene	1.6	< 1.6	U
104-51-8	n-Butylbenzene	1.6	< 1.6	U
120-82-1	1,2,4-Trichlorobenzene	7.9	< 7.9	U
91-20-3	Naphthalene	7.9	< 7.9	U
87-61-6	1,2,3-Trichlorobenzene	7.9	< 7.9	Ü
1634-04-4	Methyl tert-Butyl Ether	1.6	< 1.6	U

Reported in µg/kg (ppb)

d4-1,2-Dichloroethane	126%
d8-Toluene	103%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	104%



Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-3(0-1)-111101

Page 1 of 2 SAMPLE

Lab Sample ID: TU89C LIMS ID: 11-25253

Matrix: Soild Data Release Authorized:

Reported: 11/03/11

Date Sampled: 11/01/11 Date Received: 11/01/11

Sample Amount: 3.37 g-dry-wt Purge Volume: 5.0 mL Moisture: 24.4% Instrument/Analyst: NT9/PAB Date Analyzed: 11/02/11 13:27

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon 025195.040.045

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.5	< 1.5	U
74-83-9	Bromomethane	1.5	< 1.5	Ü
75-01-4	Vinyl Chloride	1.5	< 1.5	U
75-00-3	Chloroethane	1.5	< 1.5	U
75-09-2	Methylene Chloride	3.0	3.6	
67-64-1	Acetone	7.4	61	
75-15-0	Carbon Disulfide	1.5	< 1.5	U
75-35-4	1,1-Dichloroethene	1.5	< 1.5	U
75-34-3	1,1-Dichloroethane	1.5	< 1.5	U
156-60-5	trans-1,2-Dichloroethene	1.5	< 1.5	U
156-59 - 2	cis-1,2-Dichloroethene	1.5	< 1.5	U
67-66-3	Chloroform	1.5	< 1.5	U
107-06-2	1,2-Dichloroethane	1.5	< 1.5	U
78-93-3	2-Butanone	7.4	< 7.4	U
71-55-6	1,1,1-Trichloroethane	1.5	< 1.5	U
56-23-5	Carbon Tetrachloride	1.5	< 1.5	U
108-05-4	Vinyl Acetate	7.4	< 7.4	U
75-27-4	Bromodichloromethane	1.5	< 1.5	U
78-87-5	1,2-Dichloropropane	1.5	< 1.5	U
10061-01-5	cis-1,3-Dichloropropene	1.5	< 1.5	Ü
79-01-6	Trichloroethene	1.5	< 1.5	Ü
124-48-1	Dibromochloromethane	1.5	< 1.5	U
79-00-5	1,1,2-Trichloroethane	1.5	< 1.5	U
71-43-2	Benzene	1.5	< 1.5	U
10061-02-6	trans-1,3-Dichloropropene	1.5	< 1.5	Ü
110-75-8	2-Chloroethylvinylether	7.4	< 7.4	U
75-25-2	Bromoform	1.5	< 1.5	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.4	< 7.4	U
591-78-6	2-Hexanone	7.4	< 7.4	Ü
127-18-4	Tetrachloroethene	1.5	< 1.5	Ü
79-34-5	1,1,2,2-Tetrachloroethane	1.5	< 1.5	Ü
108-88-3	Toluene	1.5	< 1.5	Ü
108-90-7	Chlorobenzene	1.5	< 1.5	Ü
100-41-4	Ethylbenzene	1.5	< 1.5	U
100-42-5	Styrene	1.5	< 1.5	U
75-69-4	Trichlorofluoromethane	1.5	< 1.5 < 3.0	U U
76-13-1 179601-23-1	1,1,2-Trichloro-1,2,2-trifluoroe	1.5	< 1.5	Ü
95-47-6	m,p-Xylene	1.5	< 1.5	_
95-50-1	o-Xylene 1,2-Dichlorobenzene	1.5	< 1.5	U U
541-73-1	1,3-Dichlorobenzene	1.5	< 1.5	Ü
106-46-7	1,4-Dichlorobenzene	1.5	< 1.5	Ü
107-02-8	Acrolein	74	< 74	Ü
107-02-0	VCTOTETH	, 4	\ /4	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Matrix: Soild

Lab Sample ID: TU89C

LIMS ID: 11-25253

Sample ID: NDP-3(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Analyzed: 11/02/11 13:27

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	1.5	< 1.5	U
74-96-4	Bromoethane	3.0	< 3.0	U
107-13-1	Acrylonitrile	7.4	< 7.4	U
563-58-6	1,1-Dichloropropene	1.5	< 1.5	U
74-95-3	Dibromomethane	1.5	< 1.5	U
630-20-6	1,1,1,2-Tetrachloroethane	1.5	< 1.5	Ü
96-12-8	1,2-Dibromo-3-chloropropane	7.4	< 7.4	U
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0	U
110-57-6	trans-1,4-Dichloro-2-butene	7.4	< 7.4	U
108-67-8	1,3,5-Trimethylbenzene	1.5	< 1.5	U
95-63-6	1,2,4-Trimethylbenzene	1.5	< 1.5	Ü
87-68-3	Hexachlorobutadiene	7.4	< 7.4	Ü
106-93-4	Ethylene Dibromide	1.5	< 1.5	U
74-97-5	Bromoch1oromethane	1.5	< 1.5	U
594-20-7	2,2-Dichloropropane	1.5	< 1.5	U
142-28-9	1,3-Dichloropropane	1.5	< 1.5	U
98-82-8	Isopropylbenzene	1.5	< 1.5	U
103-65-1	n-Propylbenzene	1.5	< 1.5	U
108-86-1	Bromobenzene	1.5	< 1.5	U
95-49-8	2-Chlorotoluene	1.5	< 1.5	U
106-43-4	4-Chlorotoluene	1.5	< 1.5	U
98-06-6	tert-Butylbenzene	1.5	< 1.5	U
135-98-8	sec-Butylbenzene	1.5	< 1.5	U
99-87-6	4-Isopropyltoluene	1.5	< 1.5	U
104-51-8	n-Butylbenzene	1.5	< 1.5	U
120-82-1	1,2,4-Trichlorobenzene	7.4	< 7.4	U
91-20-3	Naphthalene	7.4	< 7.4	U
87-61-6	1,2,3-Trichlorobenzene	7.4	< 7.4	U
1634-04-4	Methyl tert-Butyl Ether	1.5	< 1.5	U

Reported in µg/kg (ppb)

d4-1,2-Dichloroethane	122%
d8-Toluene	102%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	103%



Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-2(0-1)-111101

Page 1 of 2 SAMPLE

Lab Sample ID: TU89D LIMS ID: 11-25254

Matrix: Solid Data Release Authorized:

Reported: 11/03/11

Date Sampled: 11/01/11 Date Received: 11/01/11

Instrument/Analyst: NT9/PAB Date Analyzed: 11/02/11 13:48

Sample Amount: 3.13 g-dry-wt Purge Volume: 5.0 mL Moisture: 35.3%

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon 025195.040.045

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.6	< 1.6	U
74-83-9	Bromomethane	1.6	< 1.6	U
75-01-4	Vinyl Chloride	1.6	< 1.6	U
75-00-3	Chloroethane	1.6	< 1.6	U
75-09-2	Methylene Chloride	3.2	3.9	
67-64-1	Acetone	8.0	48	
75 - 15-0	Carbon Disulfide	1.6	< 1.6	Ü
75-35-4	1,1-Dichloroethene	1.6	< 1.6	Ü
75-34-3	1,1-Dichloroethane	1.6	< 1.6	U
156-60-5	trans-1,2-Dichloroethene	1.6	< 1.6	U
156-59-2	cis-1,2-Dichloroethene	1.6	< 1.6	Ü
67 - 66-3	Chloroform	1,6	< 1.6	Ü
107-06-2	1,2-Dichloroethane	1.6	< 1.6	Ū
78 - 93-3	2-Butanone	8.0	< 8.0	Ū
71-55-6	1,1,1-Trichloroethane	1.6	< 1.6	Ü
56-23 - 5	Carbon Tetrachloride	1.6	< 1.6	U
108-05-4	Vinyl Acetate	8.0	< 8.0	Ū
75-27-4	Bromodichloromethane	1.6	< 1.6	Ü
78-87-5	1,2-Dichloropropane	1.6	< 1.6	Ü
10061-01-5	cis-1,3-Dichloropropene	1.6	< 1.6	U
79-01-6	Trichloroethene	1.6	< 1.6	U
124-48-1	Dibromochloromethane	1.6	< 1.6	Ü
79-00-5	1,1,2-Trichloroethane	1.6	< 1.6	U
71-43-2	Benzene	1.6	< 1.6	Ü
10061-02-6	trans-1,3-Dichloropropene	1.6	< 1.6	Ü
110-75-8	2-Chloroethylvinylether	8.0	< 8.0	U
75-25-2	Bromoform	1.6	< 1.6	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	8.0	< 8.0	U
591-78-6	2-Hexanone	8.0	< 8.0	U
127-18-4	Tetrachloroethene	1.6	< 1.6	U
79-34-5	1,1,2,2-Tetrachloroethane	1.6	< 1.6	U
108-88-3	Toluene	1.6	< 1.6	U
108-90-7	Chlorobenzene	1.6	< 1.6	U
100-41-4	Ethylbenzene	1.6	< 1.6	U
100-42-5	Styrene	1.6	< 1.6	U
75-69-4	Trichlorofluoromethane	1.6	< 1.6	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	3.2	< 3.2	U
179601-23-1	m,p-Xylene	1.6	< 1.6	U
95-47-6	o-Xylene	1.6	< 1.6	U
95-50-1	1,2-Dichlorobenzene	1.6	< 1.6	U
541-73-1	1,3-Dichlorobenzene	1.6	< 1.6	U
106-46-7	1,4-Dichlorobenzene	1.6	< 1.6	U
107-02-8	Acrolein	80	< 80	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-2(0-1)-111101

Page 2 of 2 SAMPLE

Lab Sample ID: TU89D QC Report No: TU89-Landau Associates, Inc. LIMS ID: 11-25254

Project: Boeing Striker: North Detention Pon 025195.040.045

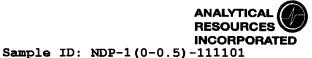
Date Analyzed: 11/02/11 13:48

Matrix: Solid

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	1.6	< 1.6	U
74-96-4	Bromoethane	3.2	< 3.2	U
107-13-1	Acrylonitrile	8.0	< 8.0	U
563-58-6	1,1-Dichloropropene	1.6	< 1.6	U
74-95-3	Dibromomethane	1.6	< 1.6	U
630-20-6	1,1,1,2-Tetrachloroethane	1.6	< 1.6	U
96-12-8	1,2-Dibromo-3-chloropropane	8.0	< 8.0	U
96-18-4	1,2,3-Trichloropropane	3.2	< 3.2	U
110-57-6	trans-1,4-Dichloro-2-butene	8.0	< 8.0	U
108-67-8	1,3,5-Trimethylbenzene	1.6	< 1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.6	< 1.6	U
87-68-3	Hexachlorobutadiene	8.0	< 8.0	U
106-93-4	Ethylene Dibromide	1.6	< 1.6	U
74-97 - 5	Bromochloromethane	1.6	< 1.6	U
594-20-7	2,2-Dichloropropane	1.6	< 1.6	U
142-28-9	1,3-Dichloropropane	1.6	< 1.6	U
98-82-8	Isopropylbenzene	1.6	< 1.6	U
103-65-1	n-Propylbenzene	1.6	< 1.6	U
108-86-1	Bromobenzene	1.6	< 1.6	U
95-49-8	2-Chlorotoluene	1.6	< 1.6	U
106-43-4	4-Chlorotoluene	1.6	< 1.6	U
98-06 - 6	tert-Butylbenzene	1.6	< 1.6	U
135-98-8	sec-Butylbenzene	1.6	< 1.6	U
99-87-6	4-Isopropyltoluene	1.6	< 1.6	U
104-51-8	n-Butylbenzene	1.6	< 1.6	U
120-82-1	1,2,4-Trichlorobenzene	8.0	< 8.0	U
91-20-3	Naphthalene	8.0	< 8.0	U
87-61-6	1,2,3-Trichlorobenzene	8.0	< 8.0	U
1634-04-4	Methyl tert-Butyl Ether	1.6	< 1.6	U

Reported in µg/kg (ppb)

d4-1,2-Dichloroethane	123%
d8-Toluene	103%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	103%



Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 2

Lab Sample ID: TU89E LIMS ID: 11-25255

Matrix: Solid
Data Release Authorized:

Instrument/Analyst: NT9/PAB

Date Analyzed: 11/02/11 14:09

Reported: 11/03/11

d: //3

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Sample Amount: 1.22 g-dry-wt

Purge Volume: 5.0 mL Moisture: 72.0%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	4.1	< 4.1	U
74-83-9	Bromomethane	4.1	< 4.1	Ü
75-01-4	Vinyl Chloride	4.1	< 4.1	Ū
75-00-3	Chloroethane	4.1	< 4.1	Ü
75 - 09-2	Methylene Chloride	8.2	< 8.2	Ü
67-64-1	Acetone	20	390	
75-15-0	Carbon Disulfide	4.1	< 4.1	U
75-35-4	1,1-Dichloroethene	4.1	< 4.1	Ū
75 - 34-3	1,1-Dichloroethane	4.1	< 4.1	Ū
156-60-5	trans-1,2-Dichloroethene	4.1	< 4.1	Ū
156-59-2	cis-1,2-Dichloroethene	4.1	< 4.1	Ū
67-66-3	Chloroform	4.1	< 4.1	U
107-06-2	1,2-Dichloroethane	4.1	< 4.1	Ü
78-93-3	2-Butanone	20	28	_
71-55-6	1,1,1-Trichloroethane	4.1	< 4.1	U
56 - 23-5	Carbon Tetrachloride	4.1	< 4.1	Ū
108-05-4	Vinyl Acetate	20	< 20	Ü
75-27-4	Bromodichloromethane	4.1	< 4.1	Ū
78-87-5	1,2-Dichloropropane	4.1	< 4.1	Ū
10061-01-5	cis-1,3-Dichloropropene	4.1	< 4.1	Ū
79-01-6	Trichloroethene	4.1	< 4.1	Ū
124-48-1	Dibromochloromethane	4.1	< 4.1	Ū
79-00-5	1,1,2-Trichloroethane	4.1	< 4.1	Ü
71-43-2	Benzene	4.1	< 4.1	Ū
10061-02-6	trans-1,3-Dichloropropene	4.1	< 4.1	Ü
110-75-8	2-Chloroethylvinylether	20	< 20	Ü
75-25-2	Bromoform	4.1	< 4.1	Ü
108-10-1	4-Methyl-2-Pentanone (MIBK)	20	29	M
591-78-6	2-Hexanone	280	< 280	Y
127-18-4	Tetrachloroethene	4.1	< 4.1	U
79-34-5	1,1,2,2-Tetrachloroethane	4.1	< 4.1	U
108-88-3	Toluene	4.1	< 4.1	U
108-90-7	Chlorobenzene	4.1	< 4.1	U
100-41-4	Ethylbenzene	4.1	< 4.1	U
100-42-5	Styrene	4.1	< 4.1	U
75-69-4	Trichlorofluoromethane	4.1	< 4.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	8.2	< 8.2	U
179601-23-1	m,p-Xylene	4.1	< 4.1	U
95-47-6	o-Xylene	4.1	< 4.1	U
95-50-1	1,2-Dichlorobenzene	4.1	< 4.1	U
541-73-1	1,3-Dichlorobenzene	4.1	< 4.1	U
106-46-7	1,4-Dichlorobenzene	4.1	< 4.1	U
107-02-8	Acrolein	200	< 200	U



Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: NDP-1(0-0.5)-111101

SAMPLE

Lab Sample ID: TU89E QC Report No: TU89-Landau Associates, Inc. LIMS ID: 11-25255 Matrix: Solid

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Analyzed: 11/02/11 14:09

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	4.1	< 4.1	U
74-96-4	Bromoethane	8.2	< 8.2	U
107-13-1	Acrylonitrile	20	< 20	U
563-58-6	1,1-Dichloropropene	4.1	< 4.1	U
74-95-3	Dibromomethane	4.1	< 4.1	U
630-20-6	1,1,1,2-Tetrachloroethane	4.1	< 4.1	U
96-12-8	1,2-Dibromo-3-chloropropane	20	< 20	U
96-18-4	1,2,3-Trichloropropane	8.2	< 8.2	U
110-57-6	trans-1,4-Dichloro-2-butene	20	< 20	Ü
108-67-8	1,3,5-Trimethylbenzene	4.1	< 4.1	Ü
95-63-6	1,2,4-Trimethylbenzene	4.1	< 4.1	Ü
87-68-3	Hexachlorobutadiene	20	< 20	Ü
106-93-4	Ethylene Dibromide	4.1	< 4.1	U
74-97-5	Bromochloromethane	4.1	< 4.1	U
594-20-7	2,2-Dichloropropane	4.1	< 4.1	U
142-28-9	1,3-Dichloropropane	4.1	< 4.1	Ü
98-82-8	Isopropylbenzene	4.1	< 4.1	U
103-65-1	n-Propylbenzene	4.1	< 4.1	Ü
108-86-1	Bromobenzene	4.1	< 4.1	U
95-49-8	2-Chlorotoluene	4.1	< 4.1	U
106-43-4	4-Chlorotoluene	4.1	< 4.1	U
98-06-6	tert-Butylbenzene	4.1	< 4.1	Ü
135-98-8	sec-Butylbenzene	4.1	< 4.1	Ü
99-87-6	4-Isopropyltoluene	4.1	< 4.1	Ü
104-51-8	n-Butylbenzene	4.1	< 4.1	Ü
120-82-1	1,2,4-Trichlorobenzene	20	< 20	U
91-20-3	Naphthalene	20	< 20	U
87-61-6	1,2,3-Trichlorobenzene	20	< 20	Ü
1634-04-4	Methyl tert-Butyl Ether	4.1	< 4.1	U

Reported in µg/kg (ppb)

d4-1,2-Dichloroethane	121%
d8-Toluene	103%
Bromofluorobenzene	99.6%
d4-1,2-Dichlorobenzene	104%



Data Release Authorized: B

Matrix: Solid

Reported: 11/03/11

Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-10(0-1)-111101

Page 1 of 2 SAMPLE

Lab Sample ID: TU89F LIMS ID: 11-25256 QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Instrument/Analyst: NT9/PAB Sample Amount: 2.81 g-dry-wt

Date Analyzed: 11/02/11 14:30 Purge Volume: 5.0 mL Moisture: 36.8%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.8	< 1.8	U
74-83-9	Bromomethane	1.8	< 1.8	U
75-01-4	Vinyl Chloride	1.8	< 1.8	U
75 - 00-3	Chloroethane	1.8	< 1.8	U
75-09-2	Methylene Chloride	3.6	4.7	
67-64-1	Acetone	8.9	37	
75-15-0	Carbon Disulfide	1.8	< 1.8	Ū
75 - 35-4	1,1-Dichloroethene	1.8	< 1.8	Ū
75-34-3	1,1-Dichloroethane	1.8	< 1.8	Ū
156-60-5	trans-1,2-Dichloroethene	1.8	< 1.8	Ū
156-59-2	cis-1,2-Dichloroethene	1.8	< 1.8	Ū
67-66-3	Chloroform	1.8	< 1.8	Ū
107-06-2	1,2-Dichloroethane	1.8	< 1.8	Ū
78-93-3	2-Butanone	8.9	< 8.9	Ū
71-55-6	1,1,1-Trichloroethane	1.8	< 1.8	Ū
56-23-5	Carbon Tetrachloride	1.8	< 1.8	Ū
108-05-4	Vinyl Acetate	8.9	< 8.9	Ū
75-27-4	Bromodichloromethane	1.8	< 1.8	Ū
78-87-5	1,2-Dichloropropane	1.8	< 1.8	Ū
10061-01-5	cis-1,3-Dichloropropene	1.8	< 1.8	Ū
79-01-6	Trichloroethene	1.8	< 1.8	Ū
124-48-1	Dibromochloromethane	1.8	< 1.8	Ū
79-00-5	1,1,2-Trichloroethane	1.8	< 1.8	Ū
71-43-2	Benzene	1.8	< 1.8	Ū
10061-02-6	trans-1,3-Dichloropropene	1.8	< 1.8	Ū
110-75-8	2-Chloroethylvinylether	8.9	< 8.9	Ū
75-25-2	Bromoform	1.8	< 1.8	Ū
108-10-1	4-Methyl-2-Pentanone (MIBK)	8.9	< 8.9	Ū
591-78-6	2-Hexanone	8.9	< 8.9	U
127-18-4	Tetrachloroethene	1.8	< 1.8	Ū
79-34-5	1,1,2,2-Tetrachloroethane	1.8	< 1.8	Ū
108-88-3	Toluene	1.8	< 1.8	Ū
108-90-7	Chlorobenzene	1.8	< 1.8	U
100-41-4	Ethylbenzene	1.8	< 1.8	Ū
100-42-5	Styrene	1.8	< 1.8	Ū
75-69-4	Trichlorofluoromethane	1.8	< 1.8	Ū
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	3.6	< 3.6	U
179601-23-1	m,p-Xylene	1.8	< 1.8	U
95-47-6	o-Xylene	1.8	< 1.8	Ū
95-50-1	1,2-Dichlorobenzene	1.8	< 1.8	Ū
541-73-1	1,3-Dichlorobenzene	1.8	< 1.8	Ū
106-46-7	1,4-Dichlorobenzene	1.8	< 1.8	U
107-02-8	Acrolein	89	< 89	U



Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-10(0-1)-111101

Page 2 of 2 SAMPLE

Lab Sample ID: TU89F QC Report No: TU89-Landau Associates, Inc.

LIMS ID: 11-25256 Project: Boeing Striker: North Detention Pon 025195.040.045 Matrix: Solid

Date Analyzed: 11/02/11 14:30

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	1.8	< 1.8	U
74-96-4	Bromoethane	3.6	< 3.6	U
107-13-1	Acrylonitrile	8.9	< 8.9	Ū
563-58-6	1,1-Dichloropropene	1.8	< 1.8	Ü
74-95-3	Dibromomethane	1.8	< 1.8	U
630-20-6	1,1,1,2-Tetrachloroethane	1.8	< 1.8	U
96-12-8	1,2-Dibromo-3-chloropropane	8.9	< 8.9	U
96-18-4	1,2,3-Trichloropropane	3.6	< 3.6	U
110-57 - 6	trans-1,4-Dichloro-2-butene	8.9	< 8.9	Ū
108-67-8	1,3,5-Trimethylbenzene	1.8	< 1.8	U
95-63-6	1,2,4-Trimethylbenzene	1.8	< 1.8	U
87-68-3	Hexachlorobutadiene	8.9	< 8.9	U
106-93-4	Ethylene Dibromide	1.8	< 1.8	U
74-97-5	Bromochloromethane	1.8	< 1.8	U
594-20-7	2,2-Dichloropropane	1.8	< 1.8	U
142-28-9	1,3-Dichloropropane	1.8	< 1.8	U
98-82-8	Isopropylbenzene	1.8	< 1.8	U
103-65-1	n-Propylbenzene	1.8	< 1.8	U
108-86-1	Bromobenzene	1.8	< 1.8	U
95-49-8	2-Chlorotoluene	1.8	< 1.8	U
106-43-4	4-Chlorotoluene	1.8	< 1.8	U
98-06-6	tert-Butylbenzene	1.8	< 1.8	Ū
135-98-8	sec-Butylbenzene	1.8	< 1.8	U
99-87-6	4-Isopropyltoluene	1.8	< 1.8	Ü
104-51-8	n-Butylbenzene	1.8	< 1.8	U
120-82-1	1,2,4-Trichlorobenzene	8.9	< 8.9	Ü
91-20-3	Naphthalene	8.9	< 8.9	Ü
87-61-6	1,2,3-Trichlorobenzene	8.9	< 8.9	Ü
1634-04-4	Methyl tert-Butyl Ether	1.8	< 1.8	U

Reported in µg/kg (ppb)

d4-1,2-Dichloroethane	120%
d8-Toluene	103%
Bromofluorobenzene	99.4%
d4-1,2-Dichlorobenzene	102%



Data Release Authorized:

Matrix: Solid

Reported: 11/03/11

Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-6(0-1)-111101

Page 1 of 2 SAMPLE

Lab Sample ID: TU89G QC Report No: TU89-Landau Associates, Inc. LIMS ID: 11-25257

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Instrument/Analyst: NT9/PAB

Sample Amount: 2.74 g-dry-wt Purge Volume: 5.0 mL Moisture: 39.0% Date Analyzed: 11/02/11 14:52

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.8	< 1.8	U
74-83-9	Bromomethane	1.8	< 1.8	Ü
75-01-4	Vinyl Chloride	1.8	< 1.8	Ū
75-00-3	Chloroethane	1.8	< 1.8	Ū
75-09-2	Methylene Chloride	3.6	4.6	
67-64-1	Acetone	9.1	50	
75-15-0	Carbon Disulfide	1.8	< 1.8	Ū
75-35-4	1,1-Dichloroethene	1.8	< 1.8	Ū
75-34-3	1,1-Dichloroethane	1.8	< 1.8	Ū
156-60-5	trans-1,2-Dichloroethene	1.8	< 1.8	Ū
156-59-2	cis-1,2-Dichloroethene	1.8	< 1.8	Ū
67-66-3	Chloroform	1.8	< 1.8	Ü
107-06-2	1,2-Dichloroethane	1.8	< 1.8	Ü
78-93-3	2-Butanone	9.1	< 9.1	Ū
71-55-6	1,1,1-Trichloroethane	1.8	< 1.8	Ü
56 - 23-5	Carbon Tetrachloride	1.8	< 1.8	Ū
108-05-4	Vinyl Acetate	9.1	< 9.1	U
75-27-4	Bromodichloromethane	1.8	< 1.8	U
78-87-5	1,2-Dichloropropane	1.8	< 1.8	U
10061-01-5	cis-1,3-Dichloropropene	1.8	< 1.8	U
79-01-6	Trichloroethene	1.8	< 1.8	U
124-48-1	Dibromochloromethane	1.8	< 1.8	U
79-00-5	1,1,2-Trichloroethane	1.8	< 1.8	U
71-43-2	Benzene	1.8	< 1.8	U
10061-02-6	trans-1,3-Dichloropropene	1.8	< 1.8	U
110-75-8	2-Chloroethylvinylether	9.1	< 9.1	U
75-25 - 2	Bromoform	1.8	< 1.8	Ü
108-10-1	4-Methyl-2-Pentanone (MIBK)	9.1	< 9.1	U
591-78-6	2-Hexanone	9.1	< 9.1	Ü
127-18-4	Tetrachloroethene	1.8	< 1.8	Ü
79-34-5	1,1,2,2-Tetrachloroethane	1.8	< 1.8	U
108-88-3	Toluene	1.8	< 1.8	U
108-90-7	Chlorobenzene	1.8	< 1.8	U
100-41-4	Ethylbenzene	1.8	< 1.8	U
100-42-5	Styrene	1.8	< 1.8	U
75-69-4	Trichlorofluoromethane	1.8	< 1.8	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	3.6	< 3.6	Ü
179601-23-1	m,p-Xylene	1.8	< 1.8	U
95-47 - 6	o-Xylene	1.8	< 1.8	U
95-50-1	1,2-Dichlorobenzene	1.8	< 1.8	U
541-73-1	1,3-Dichlorobenzene	1.8	< 1.8	Ü
106-46-7	1,4-Dichlorobenzene	1.8	< 1.8	Ü
107-02-8	Acrolein	91	< 91	Ü



Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Matrix: Solid

Lab Sample ID: TU89G

LIMS ID: 11-25257

Sample ID: NDP-6(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Analyzed: 11/02/11 14:52

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	1.8	< 1.8	U
74-96-4	Bromoethane	3.6	< 3.6	U
107-13-1	Acrylonitrile	9.1	< 9.1	U
563-58-6	1,1-Dichloropropene	1.8	< 1.8	U
74-95-3	Dibromomethane	1.8	< 1.8	U
630-20-6	1,1,1,2-Tetrachloroethane	1.8	< 1.8	U
96-12-8	1,2-Dibromo-3-chloropropane	9.1	< 9.1	U
96-18-4	1,2,3-Trichloropropane	3.6	< 3.6	U
110-57-6	trans-1,4-Dichloro-2-butene	9.1	< 9.1	U
108-67-8	1,3,5-Trimethylbenzene	1.8	< 1.8	U
95 - 63-6	1,2,4-Trimethylbenzene	1.8	< 1.8	U
87-68-3	Hexachlorobutadiene	9.1	< 9.1	U
106-93-4	Ethylene Dibromide	1.8	< 1.8	U
74-97 - 5	Bromochloromethane	1.8	< 1.8	U
594-20 - 7	2,2-Dichloropropane	1.8	< 1.8	U
142-28-9	1,3-Dichloropropane	1.8	< 1.8	U
98-82-8	Isopropylbenzene	1.8	< 1.8	U
103-65-1	n-Propylbenzene	1.8	< 1.8	U
108-86-1	Bromobenzene	1.8	< 1.8	U
95-49-8	2-Chlorotoluene	1.8	< 1.8	U
106-43-4	4-Chlorotoluene	1.8	< 1.8	U
98-06-6	tert-Butylbenzene	1.8	< 1.8	U
135-98-8	sec-Butylbenzene	1.8	< 1.8	U
99-87-6	4-Isopropyltoluene	1.8	< 1.8	U
104-51-8	n-Butylbenzene	1.8	< 1.8	U
120-82 - 1	1,2,4-Trichlorobenzene	9.1	< 9.1	U
91-20-3	Naphthalene	9.1	< 9.1	Ü
87-61-6	1,2,3-Trichlorobenzene	9.1	< 9.1	U
1634-04-4	Methyl tert-Butyl Ether	1.8	< 1.8	U

Reported in µg/kg (ppb)

d4-1,2-Dichloroethane	128%
d8-Toluene	102%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	105%



Data Release Authorized: //

Matrix: Solid

Reported: 11/03/11

Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-4(0-1)-111101

Page 1 of 2 SAMPLE

Lab Sample ID: TU89H QC Report No: TU89-Landau Associates, Inc. LIMS ID: 11-25258

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Instrument/Analyst: NT9/PAB Sample Amount: 3.42 g-dry-wt

Date Analyzed: 11/02/11 15:13 Purge Volume: 5.0 mL Moisture: 36.0%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.5	< 1.5	U
74-83-9	Bromomethane	1.5	< 1.5	U
75-01-4	Vinyl Chloride	1.5	< 1.5	U
75-00-3	Chloroethane	1.5	< 1.5	U
75-09-2	Methylene Chloride	2.9	3.1	
67-64-1	Acetone	7.3	28	
75-15-0	Carbon Disulfide	1.5	< 1.5	Ū
75-35-4	1,1-Dichloroethene	1.5	< 1.5	U
75-34 - 3	1,1-Dichloroethane	1.5	< 1.5	Ü
156-60 - 5	trans-1,2-Dichloroethene	1.5	< 1.5	Ü
156-59 - 2	cis-1,2-Dichloroethene	1.5	< 1.5	Ü
67-66-3	Chloroform	1.5	< 1.5	Ü
107-06-2	1,2-Dichloroethane	1.5	< 1.5	U
78-93-3	2-Butanone	7.3	< 7.3	U
71-55-6	1,1,1-Trichloroethane	1.5	< 1.5	U
56-23-5	Carbon Tetrachloride	1.5	< 1.5	Ü
108-05-4	Vinyl Acetate	7.3	< 7.3	U
75-27-4	Bromodichloromethane	1.5	< 1.5	U
78-87-5	1,2-Dichloropropane	1.5	< 1.5	U
10061-01-5	cis-1,3-Dichloropropene	1.5	< 1.5	U
79-01-6	Trichloroethene	1.5	< 1.5	U
124-48-1	Dibromochloromethane	1.5	< 1.5	U
79-00-5	1,1,2-Trichloroethane	1.5	< 1.5	U
71-43-2	Benzene	1.5	< 1.5	U
10061-02-6	trans-1,3-Dichloropropene	1.5	< 1.5	U
110-75-8	2-Chloroethylvinylether	7.3	< 7.3	U
75-25-2	Bromoform	1.5	< 1.5	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.3	< 7.3	U
591-78-6	2-Hexanone	7.3	< 7.3	U
127-18-4	Tetrachloroethene	1.5	< 1.5	U
79-34-5	1,1,2,2-Tetrachloroethane	1.5	< 1.5	U
108-88-3	Toluene	1.5	< 1.5	U
108-90-7	Chlorobenzene	1.5	< 1.5	Ū
100-41-4	Ethylbenzene	1.5	< 1.5	U
100-42-5	Styrene	1.5	< 1.5	Ū
75-69-4	Trichlorofluoromethane	1.5	< 1.5	Ū
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe		< 2.9	Ū
179601-23-1	m,p-Xylene	1.5	< 1.5	U
95-47-6	o-Xylene	1.5	< 1.5	U
95-50-1	1,2-Dichlorobenzene	1.5	< 1.5	U
541-73-1	1,3-Dichlorobenzene	1.5	< 1.5	U
106-46-7	1,4-Dichlorobenzene	1.5	< 1.5	U
107-02-8	Acrolein	73	< 73	Ü



Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-4(0-1)-111101

Page 2 of 2 SAMPLE

Lab Sample ID: TU89H QC Report No: TU89-Landau Associates, Inc. LIMS ID: 11-25258

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Analyzed: 11/02/11 15:13

Matrix: Solid

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	1.5	< 1.5	Ü
74-96-4	Bromoethane	2.9	< 2.9	U
107-13-1	Acrylonitrile	7.3	< 7.3	U
563 - 58-6	1,1-Dichloropropene	1.5	< 1.5	U
74-95-3	Dibromomethane	1.5	< 1.5	U
630 - 20-6	1,1,1,2-Tetrachloroethane	1.5	< 1.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.3	< 7.3	U
96-18-4	1,2,3-Trichloropropane	2.9	< 2.9	U
110-57-6	trans-1,4-Dichloro-2-butene	7.3	< 7.3	U
108-67-8	1,3,5-Trimethylbenzene	1.5	< 1.5	U
95-63 - 6	1,2,4-Trimethylbenzene	1.5	< 1.5	U
87-68-3	Hexachlorobutadiene	7.3	< 7.3	U
106-93-4	Ethylene Dibromide	1.5	< 1.5	U
74 - 97-5	Bromochloromethane	1.5	< 1.5	U
594-20-7	2,2-Dichloropropane	1.5	< 1.5	U
142-28-9	1,3-Dichloropropane	1.5	< 1.5	U
98-82-8	Isopropylbenzene	1.5	< 1.5	U
103-65-1	n-Propylbenzene	1.5	< 1.5	U
108-86-1	Bromobenzene	1.5	< 1.5	U
95-49-8	2-Chlorotoluene	1.5	< 1.5	U
106-43-4	4-Chlorotoluene	1.5	< 1.5	U
98 - 06-6	tert-Butylbenzene	1.5	< 1.5	U
135-98 - 8	sec-Butylbenzene	1.5	< 1.5	U
99-87-6	4-Isopropyltoluene	1.5	< 1.5	U
104-51-8	n-Butylbenzene	1.5	< 1.5	U
120-82-1	1,2,4-Trichlorobenzene	7.3	< 7.3	U
91-20-3	Naphthalene	7.3	< 7.3	U
87-61-6	1,2,3-Trichlorobenzene	7.3	< 7.3	U
1634-04-4	Methyl tert-Butyl Ether	1.5	< 1.5	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	131%
d8-Toluene	104%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	104%



Matrix: Solid

Reported: 11/03/11

Data Release Authorized:

Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-8(0-1)-111101

Page 1 of 2 SAMPLE

Lab Sample ID: TU89I QC Report No: TU89-Landau Associates, Inc. LIMS ID: 11-25259

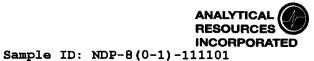
Project: Boeing Striker: North Detention Pon 025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Instrument/Analyst: NT9/PAB

Sample Amount: 3.45 g-dry-wt Purge Volume: 5.0 mL Moisture: 30.4% Date Analyzed: 11/02/11 15:34

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.5	< 1.5	U
74-83-9	Bromomethane	1.5	< 1.5	Ü
75-01-4	Vinyl Chloride	1.5	< 1.5	Ü
75-00-3	Chloroethane	1.5	< 1.5	Ü
75-09-2	Methylene Chloride	2.9	< 2.9	Ü
67-64-1	Acetone	7.3	24	-
75 - 15-0	Carbon Disulfide	1.5	< 1.5	Ü
75-35-4	1,1-Dichloroethene	1.5	< 1.5	U
75-34-3	1,1-Dichloroethane	1.5	< 1.5	Ü
156-60-5	trans-1,2-Dichloroethene	1.5	< 1.5	Ü
156-59-2	cis-1,2-Dichloroethene	1.5	< 1.5	Ü
67-66-3	Chloroform	1.5	< 1.5	Ü
107-06-2	1,2-Dichloroethane	1.5	< 1.5	Ü
78-93-3	2-Butanone	7.3	< 7.3	Ü
71-55-6	1,1,1-Trichloroethane	1.5	< 1.5	Ü
56-23-5	Carbon Tetrachloride	1.5	< 1.5	Ü
108-05-4	Vinyl Acetate	7.3	< 7.3	Ü
75-27-4	Bromodichloromethane	1.5	< 1.5	Ü
78-87-5	1,2-Dichloropropane	1.5	< 1.5	Ü
10061-01-5	cis-1,3-Dichloropropene	1.5	< 1.5	Ü
79-01-6	Trichloroethene	1.5	< 1.5	Ü
124-48-1	Dibromochloromethane	1.5	< 1.5	Ü
79-00-5	1,1,2-Trichloroethane	1.5	< 1.5	Ü
71-43-2	Benzene	1.5	< 1.5	Ü
10061-02-6	trans-1,3-Dichloropropene	1.5	< 1.5	Ü
110-75-8	2-Chloroethylvinylether	7.3	< 7.3	Ū
75-25-2	Bromoform	1.5	< 1.5	Ŭ
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.3	< 7.3	Ū
591-78-6	2-Hexanone	7.3	< 7.3	Ü
127-18-4	Tetrachloroethene	1.5	< 1.5	Ū
79-34-5	1,1,2,2-Tetrachloroethane	1.5	< 1.5	Ü
108-88-3	Toluene	1.5	< 1.5	Ü
108-90-7	Chlorobenzene	1.5	< 1.5	Ū
100-41-4	Ethylbenzene	1.5	< 1.5	Ū
100-42-5	Styrene	1.5	< 1.5	Ū
75-69-4	Trichlorofluoromethane	1.5	< 1.5	Ü
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe		< 2.9	Ū
179601-23-1	m,p-Xylene	1.5	< 1.5	Ü
95-47-6	o-Xylene	1.5	< 1.5	Ū
95-50-1	1,2-Dichlorobenzene	1.5	< 1.5	Ü
541-73-1	1,3-Dichlorobenzene	1.5	< 1.5	Ü
106-46-7	1,4-Dichlorobenzene	1.5	< 1.5	Ŭ
107-02-8	Acrolein	73	< 73	Ü



Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2 SAMPLE

Lab Sample ID: TU89I QC Report No: TU89-Landau Associates, Inc. LIMS ID: 11-25259

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Analyzed: 11/02/11 15:34

Matrix: Solid

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	1.5	< 1.5	U
74-96-4	Bromoethane	2.9	< 2.9	U
107-13-1	Acrylonitrile	7.3	< 7.3	U
563-58-6	1,1-Dichloropropene	1.5	< 1.5	U
74-95-3	Dibromomethane	1.5	< 1.5	U
630-20-6	1,1,1,2-Tetrachloroethane	1.5	< 1.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.3	< 7.3	Ü
96-18-4	1,2,3-Trichloropropane	2.9	< 2.9	U
110-57-6	trans-1,4-Dichloro-2-butene	7.3	< 7.3	Ü
108-67-8	1,3,5-Trimethylbenzene	1.5	< 1.5	Ü
95 - 63-6	1,2,4-Trimethylbenzene	1.5	< 1.5	U
87-68-3	Hexachlorobutadiene	7.3	< 7.3	U
106-93-4	Ethylene Dibromide	1.5	< 1.5	Ü
74-97-5	Bromochloromethane	1.5	< 1.5	Ü
5 94- 20-7	2,2-Dichloropropane	1.5	< 1.5	Ü
142-28-9	1,3-Dichloropropane	1.5	< 1.5	Ü
98-82 - 8	Isopropylbenzene	1.5	< 1.5	Ü
103-65-1	n-Propylbenzene	1.5	< 1.5	U
108-86-1	Bromobenzene	1.5	< 1.5	Ü
95- 49- 8	2-Chlorotoluene	1.5	< 1.5	U
106-43-4	4-Chlorotoluene	1.5	< 1.5	U
98-06-6	tert-Butylbenzene	1.5	< 1.5	U
135 - 98-8	sec-Butylbenzene	1.5	< 1.5	U
99-87-6	4-Isopropyltoluene	1.5	< 1.5	Ü
104-51-8	n-Butylbenzene	1.5	< 1.5	U
120-82-1	1,2,4-Trichlorobenzene	7.3	< 7.3	U
91-20-3	Naphthalene	7.3	< 7.3	U
87-61-6	1,2,3-Trichlorobenzene	7.3	< 7.3	U
1634-04-4	Methyl tert-Butyl Ether	1.5	< 1.5	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	129%
d8-Toluene	104%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	105%



Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-11(0-1)-111101

Page 1 of 2 SAMPLE

Lab Sample ID: TU89J LIMS ID: 11-25260

Matrix: Soil

Data Release Authorized:

Instrument/Analyst: NT9/PAB Date Analyzed: 11/02/11 15:55

Reported: 11/03/11

QC Report No: TU89-Landau Associates, Inc.

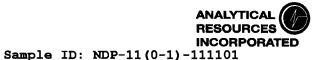
Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Sample Amount: 4.41 g-dry-wt Purge Volume: 5.0 mL Moisture: 21.1%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.1	< 1.1	U
74-83-9	Bromomethane	1.1	< 1.1	U
75-01-4	Vinyl Chloride	1.1	< 1.1	U
75-00-3	Chloroethane	1.1	< 1.1	U
75 - 09-2	Methylene Chloride	2.3	< 2.3	U
67-64-1	Acetone	5.7	48	
75-15-0	Carbon Disulfide	1.1	< 1.1	U
75-35-4	1,1-Dichloroethene	1.1	< 1.1	U
75-34-3	1,1-Dichloroethane	1.1	< 1.1	U
156-60-5	trans-1,2-Dichloroethene	1.1	< 1.1	U
156-59-2	cis-1,2-Dichloroethene	1.1	< 1.1	U
67-66-3	Chloroform	1.1	< 1.1	U
107-06-2	1,2-Dichloroethane	1.1	< 1.1	U
78 - 93-3	2-Butanone	5.7	< 5.7	U
71-55-6	1,1,1-Trichloroethane	1.1	< 1.1	U
56-23-5	Carbon Tetrachloride	1.1	< 1.1	U
108-05-4	Vinyl Acetate	5.7	< 5.7	U
75-27-4	Bromodichloromethane	1.1	< 1.1	U
78-87-5	1,2-Dichloropropane	1.1	< 1.1	U
10061-01-5	cis-1,3-Dichloropropene	1.1	< 1.1	U
79-01-6	Trichloroethene	1.1	< 1.1	U
124-48-1	Dibromochloromethane	1.1	< 1.1	U
79-00-5	1,1,2-Trichloroethane	1.1	< 1.1	U
71-43-2	Benzene	1.1	< 1.1	U
10061-02-6	trans-1,3-Dichloropropene	1.1	< 1.1	U
110-75-8	2-Chloroethylvinylether	5.7	< 5.7	U
75-25-2	Bromoform	1.1	< 1.1	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.7	< 5.7	U
591-78-6	2-Hexanone	36	< 36	Y
127-18-4	Tetrachloroethene	1.1	< 1.1	U
79-34-5	1,1,2,2-Tetrachloroethane	1.1	< 1.1	U
108-88-3	Toluene	1.1	< 1.1	U
108-90-7	Chlorobenzene	1.1	< 1.1	U
100-41-4	Ethylbenzene	1.1	< 1.1	U
100-42-5	Styrene	1.1	< 1.1	U
75-69-4	Trichlorofluoromethane	1.1	< 1.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe		< 2.3	U
179601-23-1	m,p-Xylene	1.1	< 1.1	U
95-47-6	o-Xylene	1.1	< 1.1	U
95-50-1	1,2-Dichlorobenzene	1.1	< 1.1	Ü
541-73-1	1,3-Dichlorobenzene	1.1	< 1.1	Ü
106-46-7	1,4-Dichlorobenzene	1.1	< 1.1	Ü
107-02-8	Acrolein	57	< 57	U



Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2 SAMPLE

Lab Sample ID: TU89J LIMS ID: 11-25260 Matrix: Soil QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon 025195.040.045

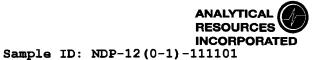
Date Analyzed: 11/02/11 15:55

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	1.1	< 1.1	U
74-96-4	Bromoethane	2.3	< 2.3	U
107-13-1	Acrylonitrile	5.7	< 5.7	U
563-58-6	1,1-Dichloropropene	1.1	< 1.1	U
74-95-3	Dibromomethane	1.1	< 1.1	U
630-20-6	1,1,1,2-Tetrachloroethane	1.1	< 1.1	U
96-12-8	1,2-Dibromo-3-chloropropane	5.7	< 5.7	U
96-18-4	1,2,3-Trichloropropane	2.3	< 2.3	U
110-57-6	trans-1,4-Dichloro-2-butene	5.7	< 5.7	U
108-67-8	1,3,5-Trimethylbenzene	1.1	< 1.1	U
95-63-6	1,2,4-Trimethylbenzene	1.1	< 1.1	U
87-68 - 3	Hexachlorobutadiene	5.7	< 5.7	U
106-93-4	Ethylene Dibromide	1.1	< 1.1	U
74-97-5	Bromochloromethane	1.1	< 1.1	U
594-20-7	2,2-Dichloropropane	1.1	< 1.1	U
142-28-9	1,3-Dichloropropane	1.1	< 1.1	U
98-82-8	Isopropylbenzene	1.1	< 1.1	U
103-65-1	n-Propylbenzene	1.1	< 1.1	U
108-86-1	Bromobenzene	1.1	< 1.1	U
95-49-8	2-Chlorotoluene	1.1	< 1.1	U
106-43-4	4-Chlorotoluene	1.1	< 1.1	U
98-06-6	tert-Butylbenzene	1.1	< 1.1	U
135-98-8	sec-Butylbenzene	1.1	< 1.1	U
99-87-6	4-Isopropyltoluene	1.1	< 1.1	U
104-51-8	n-Butylbenzene	1.1	< 1.1	U
120-82-1	1,2,4-Trichlorobenzene	5.7	< 5.7	U
91-20-3	Naphthalene	5.7	< 5.7	U
87-61-6	1,2,3-Trichlorobenzene	5.7	< 5.7	Ü
1634-04-4	Methyl tert-Butyl Ether	1.1	< 1.1	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	130%
d8-Toluene	104%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	106%



Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 2 SAMPLE

Lab Sample ID: TU89K LIMS ID: 11-25261

Matrix: Soil

Data Release Authorized:

Reported: 11/03/11

025195.040.045 Date Sampled: 11/01/11
Date Received: 11/01/11

Instrument/Analyst: NT9/PAB Sample Amount: 5.94 g-dry-wt Purge Volume: 5.0 mL Date Analyzed: 11/02/11 16:17

Moisture: 9.6%

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.8	< 0.8	U
74-83-9	Bromomethane	0.8	< 0.8	U
75-01-4	Vinyl Chloride	0.8	< 0.8	U
75-00-3	Chloroethane	0.8	< 0.8	U
75-09-2	Methylene Chloride	1.7	1.7	
67-64-1	Acetone	4.2	32	
75-15-0	Carbon Disulfide	0.8	< 0.8	U
75-35-4	1,1-Dichloroethene	0.8	< 0.8	U
75-34-3	1,1-Dichloroethane	0.8	< 0.8	U
156-60-5	trans-1,2-Dichloroethene	0.8	< 0.8	U
156-59-2	cis-1,2-Dichloroethene	0.8	< 0.8	U
67-66-3	Chloroform	0.8	< 0.8	U
107-06-2	1,2-Dichloroethane	0.8	< 0.8	U
78-93-3	2-Butanone	4.2	< 4.2	U
71-55-6	1,1,1-Trichloroethane	0.8	< 0.8	U
56-23-5	Carbon Tetrachloride	0.8	< 0.8	U
108-05-4	Vinyl Acetate	4.2	< 4.2	U
75-27-4	Bromodichloromethane	0.8	< 0.8	U
78-87-5	1,2-Dichloropropane	0.8	< 0.8	U
10061-01-5	cis-1,3-Dichloropropene	0.8	< 0.8	U
79-01-6	Trichloroethene	0.8	< 0.8	U
124-48-1	Dibromochloromethane	0.8	< 0.8	U
79-00-5	1,1,2-Trichloroethane	0.8	< 0.8	U
71-43-2	Benzene	0.8	< 0.8	U
10061-02-6	trans-1,3-Dichloropropene	0.8	< 0.8	U
110-75-8	2-Chloroethylvinylether	4.2	< 4.2	U
75-25-2	Bromoform	0.8	< 0.8	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.2	< 4.2	U
591-78-6	2-Hexanone	35	< 35	Y
127-18-4	Tetrachloroethene	0.8	< 0.8	Ü
79-34-5	1,1,2,2-Tetrachloroethane	0.8	< 0.8	U
108-88-3	Toluene	0.8	< 0.8	U
108-90-7	Chlorobenzene	0.8	< 0.8	Ü
100-41-4	Ethylbenzene	0.8	< 0.8	Ü
100-42-5	Styrene	0.8	< 0.8	Ü
75-69-4	Trichlorofluoromethane	0.8	< 0.8	Ü
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe		< 1.7	Ü
179601-23-1	m,p-Xylene	0.8	< 0.8	Ü
95-47-6	o-Xylene	0.8	< 0.8	U
95-50-1	1,2-Dichlorobenzene	0.8	< 0.8	U
541-73-1	1,3-Dichlorobenzene	0.8	< 0.8	Ü
106-46-7	1,4-Dichlorobenzene	0.8	< 0.8	U
107-02-8	Acrolein	42	< 42	Ü



Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Lab Sample ID: TU89K

LIMS ID: 11-25261 Matrix: Soil

Sample ID: NDP-12(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc. Project: Boeing Striker: North Detention Pon

025195.040.045

Date Analyzed: 11/02/11 16:17

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	0.8	< 0.8	U
74-96-4	Bromoethane	1.7	< 1.7	U
107-13-1	Acrylonitrile	4.2	< 4.2	U
563-58 - 6	1,1-Dichloropropene	0.8	< 0.8	U
74-95-3	Dibromomethane	0.8	< 0.8	U
630-20-6	1,1,1,2-Tetrachloroethane	0.8	< 0.8	U
96-12-8	1,2-Dibromo-3-chloropropane	4.2	< 4.2	U
96-18-4	1,2,3-Trichloropropane	1.7	< 1.7	U
110-57-6	trans-1,4-Dichloro-2-butene	4.2	< 4.2	U
108-67-8	1,3,5-Trimethylbenzene	0.8	< 0.8	U
95-63-6	1,2,4-Trimethylbenzene	0.8	< 0.8	U
87-68-3	Hexachlorobutadiene	4.2	< 4.2	U
106-93-4	Ethylene Dibromide	0.8	< 0.8	U
74-97-5	Bromochloromethane	0.8	< 0.8	U
594-20-7	2,2-Dichloropropane	0.8	< 0.8	U
142-28-9	1,3-Dichloropropane	0.8	< 0.8	U
98-82-8	Isopropylbenzene	0.8	< 0.8	U
103-65-1	n-Propylbenzene	0.8	< 0.8	U
108-86-1	Bromobenzene	0.8	< 0.8	U
95-49-8	2-Chlorotoluene	0.8	< 0.8	U
106-43-4	4-Chlorotoluene	0.8	< 0.8	U
98-06-6	tert-Butylbenzene	0.8	< 0.8	U
135-98-8	sec-Butylbenzene	0.8	< 0.8	U
99-87-6	4-Isopropyltoluene	0.8	< 0.8	U
104-51-8	n-Butylbenzene	0.8	< 0.8	U
120-82 - 1	1,2,4-Trichlorobenzene	4.2	< 4.2	U
91-20-3	Naphthalene	4.2	< 4.2	U
87-61-6	1,2,3-Trichlorobenzene	4.2	< 4.2	U
1634-04-4	Methyl tert-Butyl Ether	0.8	< 0.8	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	133%
d8-Toluene	105%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	105%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: NDP-5(0-1)-111101 Page 1 of 2 SAMPLE

Lab Sample ID: TU89L LIMS ID: 11-25262

Matrix: Soil

Data Release Authorized:

Reported: 11/03/11

Instrument/Analyst: NT9/PAB

Date Analyzed: 11/02/11 16:38

QC Report No: TU89-Landau Associates, Inc.
Project: Boeing Striker: North Detention Pon
025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Sample Amount: 3.65 g-dry-wt Purge Volume: 5.0 mL Moisture: 26.6%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.4	< 1.4	U
74-83-9	Bromomethane	1.4	< 1.4	U
75-01-4	Vinyl Chloride	1.4	< 1.4	Ū
75-00-3	Chloroethane	1.4	< 1.4	Ū
75-09-2	Methylene Chloride	2.7	< 2.7	Ū
67-64-1	Acetone	6.9	120	
75-15-0	Carbon Disulfide	1.4	< 1.4	U
75-35-4	1,1-Dichloroethene	1.4	< 1.4	U
75-34-3	1,1-Dichloroethane	1.4	< 1.4	U
156-60-5	trans-1,2-Dichloroethene	1.4	< 1.4	U
156-59-2	cis-1,2-Dichloroethene	1.4	< 1.4	U
67-66-3	Chloroform	1.4	< 1.4	U
107-06-2	1,2-Dichloroethane	1.4	< 1.4	U
78-93-3	2-Butanone	6.9	< 6.9	U
71-55 - 6	1,1,1-Trichloroethane	1.4	< 1.4	U
56-23-5	Carbon Tetrachloride	1.4	< 1.4	U
108-05-4	Vinyl Acetate	6.9	< 6.9	U
75-27-4	Bromodichloromethane	1.4	< 1.4	U
78-87-5	1,2-Dichloropropane	1.4	< 1.4	U
10061-01-5	cis-1,3-Dichloropropene	1.4	< 1.4	U
79-01-6	Trichloroethene	1.4	< 1.4	U
124-48-1	Dibromochloromethane	1.4	< 1.4	Ū
79-00-5	1,1,2-Trichloroethane	1.4	< 1.4	U
71-43-2	Benzene	1.4	< 1.4	U
10061-02-6	trans-1,3-Dichloropropene	1.4	< 1.4	U
110-75-8	2-Chloroethylvinylether	6.9	< 6.9	U
75-25-2	Bromoform	1.4	< 1.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	6.9	< 6.9	U
591-78-6	2-Hexanone	51	< 51	Y
127-18-4	Tetrachloroethene	1.4	< 1.4	U
79-34-5	1,1,2,2-Tetrachloroethane	1.4	< 1.4	Ū
108-88-3	Toluene	1.4	< 1.4	U
108-90-7	Chlorobenzene	1.4	< 1.4	U
100-41-4	Ethylbenzene	1.4	< 1.4	U
100-42-5	Styrene	1.4	< 1.4	U
75-69-4	Trichlorofluoromethane	1.4	< 1.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe		< 2.7	U
179601-23-1	m,p-Xylene	1.4	< 1.4	Ü
95-47-6	o-Xylene	1.4	< 1.4	Ü
95-50-1	1,2-Dichlorobenzene	1.4	< 1.4	Ü
541-73-1	1,3-Dichlorobenzene	1.4	< 1.4	Ü
106-46-7	1,4-Dichlorobenzene	1.4	< 1.4	Ü
107-02-8	Acrolein	69	< 69	Ü



Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: NDP-5(0-1)-111101

Page 2 of 2 SAMPLE

Lab Sample ID: TU89L QC Report No: TU89-Landau Associates, Inc. LIMS ID: 11-25262

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Analyzed: 11/02/11 16:38

Matrix: Soil

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	1.4	< 1.4	U
74-96-4	Bromoethane	2.7	< 2.7	Ü
107-13-1	Acrylonitrile	6.9	< 6.9	U
563-58 - 6	1,1-Dichloropropene	1.4	< 1.4	Ü
74-95-3	Dibromomethane	1.4	< 1.4	U
630-20-6	1,1,1,2-Tetrachloroethane	1.4	< 1.4	U
96-12 - 8	1,2-Dibromo-3-chloropropane	6.9	< 6.9	U
96-18-4	1,2,3-Trichloropropane	2.7	< 2.7	U
110-57-6	trans-1,4-Dichloro-2-butene	6.9	< 6.9	U
108-67-8	1,3,5-Trimethylbenzene	1.4	< 1.4	U
95-63-6	1,2,4-Trimethylbenzene	1.4	< 1.4	U
87-68-3	Hexachlorobutadiene	6.9	< 6.9	U
106-93-4	Ethylene Dibromide	1.4	< 1.4	U
74-97-5	Bromochloromethane	1.4	< 1.4	U
594 - 20-7	2,2-Dichloropropane	1.4	< 1.4	U
142-28-9	1,3-Dichloropropane	1.4	< 1.4	U
98-82-8	Isopropylbenzene	1.4	< 1.4	U
103-65-1	n-Propylbenzene	1.4	< 1.4	U
108-86-1	Bromobenzene	1.4	< 1.4	U
95- 49- 8	2-Chlorotoluene	1.4	< 1.4	Ü
106-43-4	4-Chlorotoluene	1.4	< 1.4	U
98-06-6	tert-Butylbenzene	1.4	< 1.4	U
135 - 98-8	sec-Butylbenzene	1.4	< 1.4	U
99-87 - 6	4-Isopropyltoluene	1.4	< 1.4	U
104-51-8	n-Butylbenzene	1.4	< 1.4	U
120-82-1	1,2,4-Trichlorobenzene	6.9	< 6.9	U
91-20-3	Naphthalene	6.9	< 6.9	U
87-61-6	1,2,3-Trichlorobenzene	6.9	< 6.9	U
1634-04-4	Methyl tert-Butyl Ether	1.4	< 1.4	Ü

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	129%
d8-Toluene	105%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	104%



Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: Trip Blanks Page 1 of 2 SAMPLE

Lab Sample ID: TU89V LIMS ID: 11-25272

Matrix: Water Data Release Authorized:

Instrument/Analyst: NT9/PAB

Date Analyzed: 11/02/11 16:59

Reported: 11/03/11

QC Report No: TU89-Landau Associates, Inc. Project: Boeing Striker: North Detention Pon 025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Sample Amount: 5.00 mL Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result	Q	
74-87-3	Chloromethane	1.0	< 1.0	U	
74-83-9	Bromomethane	1.0	< 1.0	U	
75-01-4	Vinyl Chloride	1.0	< 1.0	U	
75-00-3	Chloroethane	1.0	< 1.0	U	
75-09-2	Methylene Chloride	2.0	< 2.0	U	
67-64-1	Acetone	10	< 10	U	
75 - 15-0	Carbon Disulfide	1.0	< 1.0	U	
75 - 35-4	1,1-Dichloroethene	1.0	< 1.0	U	
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U	
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U	
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	Ū	
67-66-3	Chloroform	1.0	< 1.0	U	
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U	
78-93 - 3	2-Butanone	5.0	< 5.0	U	
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U	
56-23 - 5	Carbon Tetrachloride	1.0	< 1.0	U	
108-05-4	Vinyl Acetate	5.0	< 5.0	U	
75-27-4	Bromodichloromethane	1.0	< 1.0	U	
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U	
79-01-6	Trichloroethene	1.0	< 1.0	Ü	
124-48-1	Dibromochloromethane	1.0	< 1.0	Ü	
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U	
71-43-2	Benzene	1.0	< 1.0	U	
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U	
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U	
75-25-2	Bromoform	1.0	< 1.0	U	
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U	
591-78-6	2-Hexanone	5.0	< 5.0	Ü	
127-18-4	Tetrachloroethene	1.0	< 1.0	Ü	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	Ü	
108-88-3	Toluene	1.0	< 1.0	Ü	
108-90-7	Chlorobenzene	1.0	< 1.0	Ü	
100-41-4	Ethylbenzene	1.0	< 1.0	Ü	
100-42-5	Styrene	1.0	< 1.0	Ü	
75-69-4	Trichlorofluoromethane	1.0	< 1.0	Ü	



Sample ID: Trip Blanks Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2 SAMPLE

Lab Sample ID: TU89V QC Report No: TU89-Landau Associates, Inc. LIMS ID: 11-25272

Project: Boeing Striker: North Detention Pon 025195.040.045

Date Analyzed: 11/02/11 16:59

Matrix: Water

CAS Number	Analyte	RL	Result	Q
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	10	< 10	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	Ethylene Dibromide	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U
1634-04-4	Methyl tert-Butyl Ether	1.0	< 1.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	124%
d8-Toluene	104%
Bromofluorobenzene	99.8%
d4-1,2-Dichlorobenzene	106%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.



VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: TU89-Landau Associates, Inc. Project: Boeing Striker: North Detention Pon 025195.040.045

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-110211	Method Blank	Low	102%	100%	99.0%	102%	0
LCS-110211	Lab Control	Low	98.7%	100%	102%	99.5%	ő
LCSD-110211	Lab Control Dup	Low	98.2%	99.1%	97.8%	103%	Ö
TU89A	NDP-9(0-1)-111101	Low	125%	103%	102%	103%	Ö
TU89B	NDP-7(0-1)-111101	Low	126%	103%	103%	104%	Ö
TU89C	NDP-3(0-1)-111101	Low	122%	102%	100%	103%	Ö
TU89D	NDP-2(0-1)-111101	Low	123%	103%	102%	103%	Ö
TU89E	NDP-1(0-0.5)-111101	Low	121%	103%	99.6%	104%	Ö
TU89F	NDP-10(0-1)-111101	Low	120%	103%	99.4%	102%	Ö
TU89G	NDP-6(0-1)-111101	Low	128%	102%	102%	105%	Ö
TU89H	NDP-4(0-1)-111101	Low	131%	104%	103%	104%	0
TU89I	NDP-8(0-1)-111101	Low	129%	104%	103%	105%	Ö
TU89J	NDP-11(0-1)-111101	Low	130%	104%	101%	106%	0
TU89K	NDP-12(0-1)-111101	Low	133%	105%	102%	105%	Ō
TU89L	NDP-5(0-1)-111101	Low	129%	105%	102%	104%	Ō
		TCC	/MD TTM:	TMC		OC TIME	TIC .

	LCS/MB	LIMITS	QC LI	MITS
SW8260C	Low	Med	Low	Med
(DCE) = d4-1, 2-Dichloroethane	79-121	76-120	75-152	69-120
(TOL) = d8-Toluene	80-120	80-120	82-115	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	64-120	76-128
(DCB) = d4-1, 2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 11-25251 to 11-25262



VOA SURROGATE RECOVERY SUMMARY

QC Report No: TU89-Landau Associates, Inc. Project: Boeing Striker: North Detention Pon 025195.040.045 Matrix: Water

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
TU89V	Trip Blanks	5	124%	104%	99.8%	106%	0
		LCS	/MB LIMI	TS		QC LIMI	TS
SW8260C							
(DCE) = d	14-1,2-Dichloroethane		80-122			80-12	5
(TOL) = d	18-Toluene		80-120			80-12	0
(BFB) = B	Bromofluorobenzene		80-120			80-12	0
(DCB) = d	4-1,2-Dichlorobenzene		80-120			80-12	0

Prep Method: SW5030B

Log Number Range: 11-25272 to 11-25272



Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-110211 Page 1 of 2 LAB CONTROL SAMPLE

Lab Sample ID: LCS-110211

LIMS ID: 11-25251 Matrix: Soil

Data Release Authorized:

Reported: 11/03/11

Instrument/Analyst LCS: NT9/PAB

LCSD: NT9/PAB

Date Analyzed LCS: 11/02/11 09:43

LCSD: 11/02/11 10:04

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: NA Date Received: NA

Sample Amount LCS: 5.00 g-dry-wt LCSD: 5.00 g-dry-wt

Purge Volume LCS: 5.0 mL LCSD: 5.0 mL

Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	43.3	50.0	86.6%	43.8	50.0	87.6%	1.1%
Bromomethane	49.5	50.0	99.0%	50.6	50.0	101%	2.2%
Vinyl Chloride	44.8	50.0	89.6%	45.9	50.0	91.8%	2.4%
Chloroethane	43.4	50.0	86.8%	47.1	50.0	94.2%	8.2%
Methylene Chloride	40.3	50.0	80.6%	40.4	50.0	80.8%	0.2%
Acetone	263	250	105%	266	250	106%	1.1%
Carbon Disulfide	43.9	50.0	87.8%	45.3	50.0	90.6%	3.1%
1,1-Dichloroethene	43.5	50.0	87.0%	45.0	50.0	90.0%	3.4%
1,1-Dichloroethane	42.2	50.0	84.4%	43.6	50.0	87.2%	3.3%
trans-1,2-Dichloroethene	41.9	50.0	83.8%	43.3	50.0	86.6%	3.3%
cis-1,2-Dichloroethene	44.6	50.0	89.2%	46.0	50.0	92.0%	3.1%
Chloroform	44.0	50.0	88.0%	44.8	50.0	89.6%	1.8%
1,2-Dichloroethane	42.9	50.0	85.8%	44.8	50.0	89.6%	4.3%
2-Butanone	229	250	91.6%	251	250	100%	9.2%
1,1,1-Trichloroethane	45.2	50.0	90.4%	47.1	50.0	94.2%	4.1%
Carbon Tetrachloride	47.2	50.0	94.4%	50.0	50.0	100%	5.8%
Vinyl Acetate	47.4	50.0	94.8%	50.0	50.0	100%	5.3%
Bromodichloromethane	46.1	50.0	92.2%	47.5	50.0	95.0%	3.0%
1,2-Dichloropropane	43.6	50.0	87.2%	45.3	50.0	90.6%	3.8%
cis-1,3-Dichloropropene	48.7	50.0	97.4%	50.1	50.0	100%	2.8%
Trichloroethene	44.5	50.0	89.0%	46.8	50.0	93.6%	5.0%
Dibromochloromethane	47.2	50.0	94.4%	50.8	50.0	102%	7.3%
1,1,2-Trichloroethane	44.2	50.0	88.4%	46.0	50.0	92.0%	4.0%
Benzene	43.4	50.0	86.8%	46.0	50.0	92.0%	5.8%
trans-1,3-Dichloropropene	49.1	50.0	98.2%	50.6	50.0	101%	3.0%
2-Chloroethylvinylether	51.2	50.0	102%	55.3	50.0	111%	7.7%
Bromoform	47.4	50.0	94.8%	56.7	50.0	113%	17.9%
4-Methyl-2-Pentanone (MIBK)	231	250	92.4%	259	250	104%	11.4%
2-Hexanone	240	250	96.0%	285	250	114%	17.1%
Tetrachloroethene	44.6	50.0	89.2%	49.1	50.0	98.2%	9.6%
1,1,2,2-Tetrachloroethane	41.9	50.0	83.8%	52.2	50.0	104%	21.9%
Toluene	43.1	50.0	86.2%	45.3	50.0	90.6%	5.0%
Chlorobenzene	42.7	50.0	85.4%	46.1	50.0	92.2%	7.7%
Ethylbenzene	44.0	50.0	88.0%	47.8	50.0	95.6%	8.3%
Styrene	48.2	50.0	96.4%	52.0	50.0	104%	7.6%
Trichlorofluoromethane	40.8	50.0	81.6%	46.2	50.0	92.4%	12.4%
1,1,2-Trichloro-1,2,2-trifluoroetha	43.5	50.0	87.0%	44.9	50.0	89.8%	3.2%
m,p-Xylene	93.0	100	93.0%	101	100	101%	8.2%
o-Xylene	47.4	50.0	94.8%	51.1	50.0	102%	7.5%
1,2-Dichlorobenzene	42.2	50.0	84.4%	49.5	50.0	99.0%	15.9%
1,3-Dichlorobenzene	43.5	50.0	87.0%	50.6	50.0	101%	15.1%
1,4-Dichlorobenzene	42.8	50.0	85.6%	50.0	50.0	101%	15.18
Acrolein	224	250	89.6%	241			
Methyl Iodide	43.8	50.0	89.68 87.68	45.5	250 50.0	96.4% 91.0%	7.3%
Bromoethane					50.0		3.8%
	41.3 48.8	50.0	82.6%	43.2	50.0	86.4%	4.5%
Acrylonitrile	40.0	50.0	97.6%	48.2	50.0	96.4%	1.2%



Lab Sample ID: LCS-110211

LIMS ID: 11-25251

Matrix: Soil

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-110211 Page 2 of 2 LAB CONTROL SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon 025195.040.045

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,1-Dichloropropene	45.9	50.0	91.8%	49.4	50.0	98.8%	7.3%
Dibromomethane	44.2	50.0	88.4%	46.4	50.0	92.8%	4.9%
1,1,1,2-Tetrachloroethane	45.0	50.0	90.0%	48.3	50.0	96.6%	7.1%
1,2-Dibromo-3-chloropropane	46.6	50.0	93.2%	58.8	50.0	118%	23.1%
1,2,3-Trichloropropane	42.8	50.0	85.6%	53.2	50.0	106%	21.7%
trans-1,4-Dichloro-2-butene	44.3	50.0	88.6%	57.0	50.0	114%	25.1%
1,3,5-Trimethylbenzene	45.7	50.0	91.4%	53.9	50.0	108%	16.5%
1,2,4-Trimethylbenzene	46.4	50.0	92.8%	54.4	50.0	109%	15.9%
Hexachlorobutadiene	45.4	50.0	90.8%	55.7	50.0	111%	20.4%
Ethylene Dibromide	46.2	50.0	92.4%	48.5	50.0	97.0%	4.9%
Bromochloromethane	44.3	50.0	88.6%	45.6	50.0	91.2%	2.9%
2,2-Dichloropropane	47.3	50.0	94.6%	49.1	50.0	98.2%	3.7%
1,3-Dichloropropane	43.9	50.0	87.8%	47.7	50.0	95.4%	8.3%
Isopropylbenzene	45.8	50.0	91.6%	55.3	50.0	111%	18.8%
n-Propylbenzene	44.0	50.0	88.0%	52.9	50.0	106%	18.4%
Bromobenzene	42.1	50.0	84.2%	49.3	50.0	98.6%	15.8%
2-Chlorotoluene	43.6	50.0	87.2%	51.8	50.0	104%	17.2%
4-Chlorotoluene	44.4	50.0	88.8%	52.2	50.0	104%	16.1%
tert-Butylbenzene	45.4	50.0	90.8%	54.3	50.0	109%	17.9%
sec-Butylbenzene	45.2	50.0	90.4%	54.3	50.0	109%	18.3%
4-Isopropyltoluene	47.8	50.0	95.6%	57.0	50.0	114%	17.6%
n-Butylbenzene	48.4 Q	50.0	96.8%	58.0 Q	50.0	116%	18.0%
1,2,4-Trichlorobenzene	50.6	50.0	101%	58.3	50.0	117%	14.1%
Naphthalene	53.0	50.0	106%	63.8	50.0	128%	18.5%
1,2,3-Trichlorobenzene	50.4	50.0	101%	57.4	50.0	115%	13.0%
Methyl tert-Butyl Ether	44.6	50.0	89.2%	44.7	50.0	89.4%	0.2%

Reported in $\mu g/kg$ (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	98.7%	98.2%
d8-Toluene	100%	99.1%
Bromofluorobenzene	102%	97.8%
d4-1,2-Dichlorobenzene	99.5%	103%



Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-110211 Page 1 of 2 METHOD BLANK

Lab Sample ID: MB-110211

LIMS ID: 11-25251

Matrix: Soil

Data Release Authorized:

Instrument/Analyst: NT9/PAB

Date Analyzed: 11/02/11 10:25

Reported: 11/03/11

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: NA Date Received: NA

Sample Amount: 5.00 g-dry-wt Purge Volume: 5.0 mL

Moisture: NA

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83 - 9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	Ū
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15 - 0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	Ū
75-34 - 3	1,1-Dichloroethane	1.0	< 1.0	Ū
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	Ū
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	Ū
67-66-3	Chloroform	1.0	< 1.0	Ū
107-06-2	1,2-Dichloroethane	1.0	< 1.0	Ū
78 - 93-3	2-Butanone	5.0	< 5.0	Ū
71 - 55-6	1,1,1-Trichloroethane	1.0	< 1.0	Ū
56 - 23-5	Carbon Tetrachloride	1.0	< 1.0	Ū
108-05-4	Vinyl Acetate	5.0	< 5.0	Ū
75-27-4	Bromodichloromethane	1.0	< 1.0	Ü
78-87-5	1,2-Dichloropropane	1.0	< 1.0	Ü
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	Ü
79-01-6	Trichloroethene	1.0	< 1.0	Ü
124-48-1	Dibromochloromethane	1.0	< 1.0	Ŭ
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	Ü
71-43-2	Benzene	1.0	< 1.0	Ü
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	Ü
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	Ü
75-25-2	Bromoform	1.0	< 1.0	Ü
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	Ü
591-78-6	2-Hexanone	5.0	< 5.0	Ü
127-18-4	Tetrachloroethene	1.0	< 1.0	Ü
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	Ü
108-88-3	Toluene	1.0	< 1.0	Ü
108-90-7	Chlorobenzene	1.0	< 1.0	Ü
100-41-4	Ethylbenzene	1.0	< 1.0	Ü
100-42-5	Styrene	1.0	< 1.0	Ü
75-69-4	Trichlorofluoromethane	1.0	< 1.0	Ü
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	-	< 2.0	Ü
179601-23-1	m,p-Xylene	1.0	< 1.0	Ü
95-47-6	o-Xylene	1.0	< 1.0	Ü
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	Ü
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	Ū
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	Ü
107-02-8	Acrolein	50	< 50	Ü



Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: MB-110211

Page 2 of 2 METHOD BLANK

Lab Sample ID: MB-110211 QC Report No: TU89-Landau Associates, Inc. Project: Boeing Striker: North Detention Pon LIMS ID: 11-25251

025195.040.045

Matrix: Soil Date Analyzed: 11/02/11 10:25

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20 - 6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	Ethylene Dibromide	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06 - 6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U
1634-04-4	Methyl tert-Butyl Ether	1.0	< 1.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	100%
Bromofluorobenzene	99.0%
d4-1,2-Dichlorobenzene	102%



NWTPH-HCID Method by GC/FID

Page 1 of 2 Matrix: Soil

Data Release Authorized: Reported: 11/04/11

QC Report No: TU89-Landau Associates, Inc. Project: Boeing Striker: North Detention 025195.040.045

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
TU89A 11-25251	NDP-9(0-1)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 114%
TU89B 11-25252	NDP-7(0-1)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 111%
TU89C 11-25253	NDP-3(0-1)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 111%
TU89D 11-25254	NDP-2(0-1)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 112%
TU89E 11-25255	NDP-1(0-0.5)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 36 U < 89 U < 180 U 111%
TU89F 11-25256	NDP-10(0-1)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 117%
TU89G 11-25257	NDP-6(0-1)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 113%
ТU89Н 11-25258	NDP-4(0-1)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 109%
TU89I 11-25259	NDP-8(0-1)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 107%



NWTPH-HCID Method by GC/FID

Page 2 of 2 Matrix: Soil

Data Release Authorized: ## Reported: 11/04/11

QC Report No: TU89-Landau Associates, Inc. Project: Boeing Striker: North Detention

025195.040.045

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
TU89J 11-25260	NDP-11(0-1)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 108%
MB-110211 11-25261	Method Blank	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 100%
TU89K 11-25261	NDP-12(0-1)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 107%
TU89KDP 11-25261	NDP-12(0-1)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 105%
TU89L 11-25262	NDP-5(0-1)-111101 HC ID:	11/02/11	11/03/11	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 105%

Reported in mg/kg (ppm)

Gas value based on total peaks in the range from Toluene to C12. Diesel value based on the total peaks in the range from C12 to C24. Oil value based on the total peaks in the range from C24 to C38.



HCID SURROGATE RECOVERY SUMMARY

Matrix: Soil QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Client ID	O-TER	TOT OUT
NDP-9(0-1)-111101	1148	s 0
NDP-7(0-1)-111101	1118	s 0
NDP-3(0-1)-111101	1118	s 0
NDP-2(0-1)-111101	1128	s 0
NDP-1(0-0.5)-111101	1118	s 0
NDP-10(0-1)-111101	1178	s 0
NDP-6(0-1)-111101	1138	s 0
NDP-4(0-1)-111101	1098	s 0
NDP-8(0-1)-111101	1078	s 0
NDP-11(0-1)-111101	108%	s 0
110211MB	100%	s 0
NDP-12(0-1)-111101	1078	s 0
NDP-12(0-1)-111101 DP	105%	s 0
NDP-5(0-1)-111101	105%	s 0

LCS/MB LIMITS QC LIMITS

(O-TER) = o-Terphenyl

(68-122)

(50-150)

Prep Method: SW3550B

Log Number Range: 11-25251 to 11-25262



TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: TU89
Project: Boeing Striker: North Detention Pon Matrix: Soil

Date Received: 11/01/11 025195.040.045

		Sample	Final		Prep
ARI ID	Client ID	Amt	Vol	Basis	Date
11-25251-TU89A	NDP-9(0-1)-111101	7.37 g	$5.00~\mathrm{mL}$	D	11/02/11
11-25252-TU89B	NDP-7(0-1)-111101	6.99 g	$5.00~\mathrm{mL}$	D	11/02/11
11-25253-TU89C	NDP-3(0-1)-111101	7.63 g	$5.00~\mathrm{mL}$	D	11/02/11
11-25254-TU89D	NDP-2(0-1)-111101	6.47 g	$5.00 \ \mathrm{mL}$	D	11/02/11
11-25255-TU89E	NDP-1(0-0.5)-111101	2.80 g	5.00 mL	D	11/02/11
11-25256-TU89F	NDP-10(0-1)-111101	6.39 g	5.00 mL	D	11/02/11
11-25257-TU89G	NDP-6(0-1)-111101	6.25 g	5.00 mL	D	11/02/11
11-25258-TU89H	NDP-4(0-1)-111101	6.55 g	5.00 mL	D	11/02/11
11-25259-TU89I	NDP-8(0-1)-111101	6.96 g	5.00 mL	D	11/02/11
11-25260 - TU89J	NDP-11(0-1)-111101	8.08 g	5.00 mL	D	11/02/11
11-25261 - 110211MB	Method Blank	10.0 g	5.00 mL	_	11/02/11
11-25261-TU89K	NDP-12(0-1)-111101	9.04 g	5.00 mL	D	11/02/11
11-25261-TU89KDP	NDP-12(0-1)-111101	9.28 g	5.00 mL	D	11/02/11
11-25262-TU89L	NDP-5(0-1)-111101	7.36 g	5.00 mL	D	11/02/11



TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89A

LIMS ID: 11-25251

Matrix: Soil
Data Release Authorized:

Reported: 11/07/11

a: ()

Percent Total Solids: 76.7%

Sample ID: NDP-9(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.3	5.9	
3050B	11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.3	0.4	
3050B	11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.1	0.2	
3050B	11/02/11	200.8	11/03/11	7440-47-3	Chromium	0.6	15.7	
3050B	11/02/11	200.8	11/03/11	7440-50-8	Copper	0.6	30.6	
3050B	11/02/11	200.8	11/03/11	7439-92-1	Lead	0.1	66.8	
CLP	11/02/11	7471A	11/03/11	7439-97-6	Mercury	0.03	0.04	
3050B	11/02/11	200.8	11/03/11	7440-66-6	Zinc	5	62	



TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89B

LIMS ID: 11-25252

Matrix: Solid

Data Release Authorized

Reported: 11/07/11

Percent Total Solids: 68.7%

Sample ID: NDP-7(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.3	6.6	
3050B	11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.3	0.5	
3050B	11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.1	0.3	
3050B	11/02/11	200.8	11/03/11	7440-47-3	Chromium	0.7	17.4	
3050B	11/02/11	200.8	11/03/11	7440-50-8	Copper	0.7	45.7	
3050B	11/02/11	200.8	11/03/11	7439-92-1	Lead	0.1	14.2	
CLP	11/02/11	7 4 71A	11/03/11	7439-97-6	Mercury	0.03	0.09	
3050B	11/02/11	200.8	11/03/11	7440-66-6	Zinc	6	65	



TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89C

LIMS ID: 11-25253

Matrix: Soild

Data Release Authorized Reported: 11/07/11

Percent Total Solids: 75.8%

Sample ID: NDP-3(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.2	6.7	
3050B	11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.2	0.4	
3050B	11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.1	0.6	
3050B	11/02/11	200.8	11/03/11	7440-47-3	Chromium	0.6	17.9	
3050B	11/02/11	200.8	11/03/11	7440-50-8	Copper	0.6	62.7	
3050B	11/02/11	200.8	11/03/11	7439-92-1	Lead	0.1	36.6	
CLP	11/02/11	7471A	11/03/11	7439-97-6	Mercury	0.03	0.07	
3050B	11/02/11	200.8	11/03/11	7440-66-6	Zinc	5	122	



INORGANICS ANALYSIS DATA SHEET TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89D

LIMS ID: 11-25254

Matrix: Solid

Data Release Authorized Reported: 11/07/11

Percent Total Solids: 64.6%

Sample ID: NDP-2(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.3	10.1	
3050B	11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.3	0.4	
3050B	11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.1	0.7	
3050B	11/02/11	200.8	11/03/11	7440-47-3	Chromium	0.7	21.3	
3050B	11/02/11	200.8	11/03/11	7440-50-8	Copper	0.7	63.4	
3050B	11/02/11	200.8	11/03/11	7439-92-1	Lead	0.1	27.8	
CLP	11/02/11	7471A	11/03/11	7439-97-6	Mercury	0.04	0.06	
3050B	11/02/11	200.8	11/03/11	7440-66-6	Zinc	6	147	



TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89E

LIMS ID: 11-25255

Matrix: Solid
Data Release Authorized

Reported: 11/07/11

zed

Percent Total Solids: 28.5%

Sample ID: NDP-1(0-0.5)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.7	21.0	
11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.7	0.7	U
11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.3	1.7	
11/02/11	200.8	11/03/11	7440-47-3	Chromium	2	49	
11/02/11	200.8	11/03/11	7440-50-8	Copper	2	295	
11/02/11	200.8	11/03/11	7439-92-1	Lead	0.3	132	
11/02/11	7471A	11/03/11	7439-97-6	Mercury	0.08	0.33	
11/02/11	200.8	11/03/11	7440-66-6	Zinc	10	400	
	11/02/11 11/02/11 11/02/11 11/02/11 11/02/11 11/02/11 11/02/11	Date Method 11/02/11 200.8 11/02/11 200.8 11/02/11 200.8 11/02/11 200.8 11/02/11 200.8 11/02/11 200.8 11/02/11 200.8 11/02/11 7471A	Date Method Date 11/02/11 200.8 11/03/11 11/02/11 200.8 11/03/11 11/02/11 200.8 11/03/11 11/02/11 200.8 11/03/11 11/02/11 200.8 11/03/11 11/02/11 200.8 11/03/11 11/02/11 200.8 11/03/11 11/02/11 7471A 11/03/11	Date Method Date CAS Number 11/02/11 200.8 11/03/11 7440-38-2 11/02/11 200.8 11/03/11 7440-41-7 11/02/11 200.8 11/03/11 7440-43-9 11/02/11 200.8 11/03/11 7440-47-3 11/02/11 200.8 11/03/11 7440-50-8 11/02/11 200.8 11/03/11 7439-92-1 11/02/11 7471A 11/03/11 7439-97-6	Date Method Date CAS Number Analyte 11/02/11 200.8 11/03/11 7440-38-2 Arsenic 11/02/11 200.8 11/03/11 7440-41-7 Beryllium 11/02/11 200.8 11/03/11 7440-43-9 Cadmium 11/02/11 200.8 11/03/11 7440-47-3 Chromium 11/02/11 200.8 11/03/11 7440-50-8 Copper 11/02/11 200.8 11/03/11 7439-92-1 Lead 11/02/11 7471A 11/03/11 7439-97-6 Mercury	Date Method Date CAS Number Analyte RL 11/02/11 200.8 11/03/11 7440-38-2 Arsenic 0.7 11/02/11 200.8 11/03/11 7440-41-7 Beryllium 0.7 11/02/11 200.8 11/03/11 7440-43-9 Cadmium 0.3 11/02/11 200.8 11/03/11 7440-47-3 Chromium 2 11/02/11 200.8 11/03/11 7440-50-8 Copper 2 11/02/11 200.8 11/03/11 7439-92-1 Lead 0.3 11/02/11 7471A 11/03/11 7439-97-6 Mercury 0.08	Date Method Date CAS Number Analyte RL mg/kg-dry 11/02/11 200.8 11/03/11 7440-38-2 Arsenic 0.7 21.0 11/02/11 200.8 11/03/11 7440-41-7 Beryllium 0.7 0.7 11/02/11 200.8 11/03/11 7440-43-9 Cadmium 0.3 1.7 11/02/11 200.8 11/03/11 7440-47-3 Chromium 2 49 11/02/11 200.8 11/03/11 7440-50-8 Copper 2 295 11/02/11 200.8 11/03/11 7439-92-1 Lead 0.3 132 11/02/11 7471A 11/03/11 7439-97-6 Mercury 0.08 0.33



TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89F

LIMS ID: 11-25256

Matrix: Solid
Data Release Authorized

Reported: 11/07/11

Percent Total Solids: 62.7%

Sample ID: NDP-10(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.3	7.0	
3050B	11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.3	0.3	
3050B	11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.2	0.2	U
3050B	11/02/11	200.8	11/03/11	7440-47-3	Chromium	0.8	17.0	
3050B	11/02/11	200.8	11/03/11	7440-50-8	Copper	0.8	30.7	
3050B	11/02/11	200.8	11/03/11	7439-92-1	Lead	0.2	9.8	
CLP	11/02/11	7471A	11/03/11	7439-97-6	Mercury	0.03	0.05	
3050B	11/02/11	200.8	11/03/11	7440-66-6	Zinc	6	54	



TOTAL METALS

Page 1 of 1

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

Sample ID: NDP-6(0-1)-111101

SAMPLE

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

LIMS ID: 11-25257 Matrix: Solid

Data Release Authorize Reported: 11/07/11

Lab Sample ID: TU89G

Percent Total Solids: 56.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.3	10.8	
3050B	11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.3	0.4	
3050B	11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.2	0.2	
3050B	11/02/11	200.8	11/03/11	7440-47-3	Chromium	0.8	17.0	
3050B	11/02/11	200.8	11/03/11	7440-50-8	Copper	0.8	50.3	
3050B	11/02/11	200.8	11/03/11	7439-92-1	Lead	0.2	26.7	
CLP	11/02/11	7471A	11/03/11	7439-97-6	Mercury	0.04	0.05	
3050B	11/02/11	200.8	11/03/11	7440-66-6	Zinc	7	87	



TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89H

LIMS ID: 11-25258 Matrix: Solid

Data Release Authorized: Reported: 11/07/11

Percent Total Solids: 62.6%

Sample ID: NDP-4(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.3	13.2	
3050B	11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.3	0.4	
3050B	11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.1	0.5	
3050B	11/02/11	200.8	11/03/11	7440-47-3	Chromium	0.7	20.5	
3050B	11/02/11	200.8	11/03/11	7440-50-8	Copper	0.7	51.6	
3050B	11/02/11	200.8	11/03/11	7439-92-1	Lead	0.1	27.1	
CLP	11/02/11	7471A	11/03/11	7439-97-6	Mercury	0.03	0.07	
3050B	11/02/11	200.8	11/03/11	7440-66-6	Zinc	6	144	



TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89I

LIMS ID: 11-25259

Matrix: Solid

Data Release Authorized: Reported: 11/07/11

Percent Total Solids: 68.3%

Sample ID: NDP-8(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11
Date Received: 11/01/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.3	6.4	
3050B	11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.3	0.6	
3050B	11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.1	0.1	U
3050B	11/02/11	200.8	11/03/11	7440-47-3	Chromium	0.7	20.3	
3050B	11/02/11	200.8	11/03/11	7440-50-8	Copper	0.7	42.3	
3050B	11/02/11	200.8	11/03/11	7439-92-1	Lead	0.1	12.0	
CLP	11/02/11	7 4 71A	11/03/11	7439-97-6	Mercury	0.03	0.05	
3050B	11/02/11	200.8	11/03/11	7440-66-6	Zinc	6	57	



TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89J

LIMS ID: 11-25260

Matrix: Soil

Data Release Authorized Reported: 11/07/11

Percent Total Solids: 78.1%

Sample ID: NDP-11(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.2	6.7	
3050B	11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.2	0.4	
3050B	11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.1	0.2	
3050B	11/02/11	200.8	11/03/11	7440-47-3	Chromium	0.6	16.7	
3050B	11/02/11	200.8	11/03/11	7440-50-8	Copper	0.6	29.4	
3050B	11/02/11	200.8	11/03/11	7439-92-1	Lead	0.1	88.3	
CLP	11/02/11	7471A	11/03/11	7439-97-6	Mercury	0.03	0.05	
3050B	11/02/11	200.8	11/03/11	7440-66-6	Zinc	5	50	



TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89K

LIMS ID: 11-25261

Matrix: Soil

Data Release Authorized:

Reported: 11/07/11

Percent Total Solids: 90.8%

Sample ID: NDP-12(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11
Date Received: 11/01/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.2	5.7	
3050B	11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.2	0.3	
3050B	11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.1	0.1	Ü
3050B	11/02/11	200.8	11/03/11	7440-47-3	Chromium	0.5	22.4	
3050B	11/02/11	200.8	11/03/11	7440-50-8	Copper	0.5	20.5	
3050B	11/02/11	200.8	11/03/11	7439-92-1	Lead	0.1	7.3	
CLP	11/02/11	7471A	11/03/11	7439-97-6	Mercury	0.02	0.02	U
3050B	11/02/11	200.8	11/03/11	7440-66-6	Zinc	4	40	



TOTAL METALS
Page 1 of 1

Lab Sample ID: TU89L

LIMS ID: 11-25262

Matrix: Soil

Data Release Authorized: Reported: 11/07/11

Percent Total Solids: 72.8%

Sample ID: NDP-5(0-1)-111101

SAMPLE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
	2000		2000				<u> </u>	
3050B	11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.3	7.6	
3050B	11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.3	0.5	
3050B	11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.1	0.2	
3050B	11/02/11	200.8	11/03/11	7440-47-3	Chromium	0.7	19.5	
3050B	11/02/11	200.8	11/03/11	7440-50-8	Copper	0.7	40.4	
3050B	11/02/11	200.8	11/03/11	7439-92-1	Lead	0.1	15.8	
CLP	11/02/11	7471A	11/03/11	7439-97-6	Mercury	0.03	0.07	
3050B	11/02/11	200.8	11/03/11	7440-66-6	Zinc	5	67	



TOTAL METALSPage 1 of 1

Lab Sample ID: TU89A

LIMS ID: 11-25251

Matrix: Soil

Data Release Authorized Reported: 11/07/11

Sample ID: NDP-9(0-1)-111101
MATRIX SPIKE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

MATRIX SPIKE QUALITY CONTROL REPORT

	Analysis			Spike	8	
Analyte	Method	Sample	Spike	Added	Recovery	Q
Arsenic	200.8	5.9	35.3	32.0	91.9%	
Beryllium	200.8	0.4	34.5	32.0	107%	
Cadmium	200.8	0.2	32.2	32.0	100%	
Chromium	200.8	15.7	43.7	32.0	87.5%	
Copper	200.8	30.6	66.0	32.0	111%	
Lead	200.8	66.8	110	32.0	135%	N
Mercury	7471A	0.04	0.31	0.266	102%	
Zinc	200.8	62	175	102	111%	

Reported in mg/kg-dry

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%



TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89A

LIMS ID: 11-25251

Matrix: Soil

Data Release Authorized Reported: 11/07/11

Sample ID: NDP-9(0-1)-111101

DUPLICATE

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

	Analysis				Control		
Analyte	Method	Sample	Duplicate	RPD	Limit	Q	
Arsenic	200.8	5.9	6.5	9.7%	+/- 20%		
Beryllium	200.8	0.4	0.4	0.0%	+/- 0.3	L	
Cadmium	200.8	0.2	0.2	0.0%	+/- 0.1	L	
Chromium	200.8	15.7	16.4	4.4%	+/- 20%		
Copper	200.8	30.6	31.0	1.3%	+/- 20%		
Lead	200.8	66.8	64.8	3.0%	+/- 20%		
Mercury	7471A	0.04	0.05	22.2%	+/- 0.03	L	
Zinc	200.8	62	62	0.0%	+/- 20%		

Reported in mg/kg-dry

L-RPD Invalid, Limit = Detection Limit

^{*-}Control Limit Not Met



TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89LCS

LIMS ID: 11-25252

Matrix: Solid

Data Release Authorize Reported: 11/07/11

Sample ID: LAB CONTROL

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: NA Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

	Analysis	Spike	Spike	8	
Analyte	Method	Found	Added	Recovery	<u>Q</u>
Arsenic	200.8	26.1	25.0	104%	
Beryllium	200.8	27.0	25.0	108%	
Cadmium	200.8	27.2	25.0	109%	
Chromium	200.8	26.6	25.0	106%	
Copper	200.8	29.3	25.0	117%	
Lead	200.8	28.5	25.0	114%	
Mercury	7 4 71 A	0.50	0.50	100%	
Zinc	200.8	92	80	115%	

Reported in mg/kg-dry

N-Control limit not met

NA-Not Applicable, Analyte Not Spiked

Control Limits: 80-120%



TOTAL METALS

Page 1 of 1

Lab Sample ID: TU89MB

LIMS ID: 11-25252

Matrix: Solid

Data Release Authorize Reported: 11/07/11

Percent Total Solids: NA

Sample ID: METHOD BLANK

QC Report No: TU89-Landau Associates, Inc.

Project: Boeing Striker: North Detention Pon

025195.040.045

Date Sampled: NA Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/02/11	200.8	11/03/11	7440-38-2	Arsenic	0.2	0.2	U
3050B	11/02/11	200.8	11/03/11	7440-41-7	Beryllium	0.2	0.2	U
3050B	11/02/11	200.8	11/03/11	7440-43-9	Cadmium	0.1	0.1	U
3050B	11/02/11	200.8	11/03/11	7440-47-3	Chromium	0.5	0.5	U
3050B	11/02/11	200.8	11/03/11	7440-50-8	Copper	0.5	0.5	U
3050B	11/02/11	200.8	11/03/11	7439-92-1	Lead	0.1	0.1	U
CLP	11/02/11	7471A	11/03/11	7439-97-6	Mercury	0.02	0.02	U
3050B	11/02/11	200.8	11/03/11	7440-66-6	Zinc	4	4	U



November 22, 2011

Kathryn Hartley
Landau Associates
130 Second Avenue South
Edmonds, WA 98020

RE: Project: Boeing Striker: North Detention Pond, 025195.040.045

ARI Job: TW18

Dear Kathryn,

Enclosed please find a revised Chain-of-Custody (COC) record, sample receipt documentation, email documentation, and the final data report for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted six soil samples, fifteen solid samples, and a trip blank on November 1, 2011. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form. Select samples were placed on hold pending further instructions.

The samples were originally analyzed for VOCs, NWTPH-HCID, and Total Metals, as requested on the COC and reported under ARI SDG TU89.

At the request of Landau Associates, select samples were analyzed for arsenic.

The matrix spike duplicate RPD is outside the +/-20% control limit in association with sample NDP-2 (1-2)110111.

There were no other analytical complications noted.

Quality control analysis results are included for your review. An electronic copy of this report and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC

Kelly Bottem

Client Services Manager

(206) 695-6211

kellyb@arilabs.com

www.arilabs.com

■ Seattle/Edmonds (425) 778-0907 □ Tacoma (253) 926-2493 □ Spokane (509) 327-9737 □ Portland (503) 542-1080



Chain-of-Custody Record

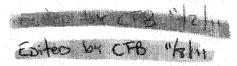
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Project Name STREAL: No	ech Derick	h dre∆ Proje	ct No. ⊝≀5	K5.000 a	u C		f	/	,	Tongs:	Tes	ting	Pa	rame	eters	Turnaround Time
Project Location/Event					and self			1	1			1/2	F	/ /	[]	Stendard
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Send Results To	<u>5, cei</u>	S. Soc	TAKE		- 7		1/	37	7	Ò	V.	1	1	[-4	[]	
Sample I.D.	Date	Time	Matrix	No. of Container	s/4	* / (*)	······································			/\ }	4.,	/ /	1	1	1	Observations/Comments
ND(-9(0-)\-H -171 (100)	anh In	6430	(3) Y	7	X	% :	4									X Allow water samples to settle, collect
101-1(1-3)-H ott	IMALA.	0115	Sein	7			*	×					1			aliquot from clear portion
Mit-1(0-1)-Herry	l in the	1076	4some				K	_								X NWTPH-Dx - run acid wash/silica gel cleanup
#85-1(1-2) = Not 11	100000	Tuple?	4000	1. 1				*					1		ļ	
ADP-3(0-1) HETE		1 ST	Change	1.4		\mathbf{X}	X						-		-	run samples standardized to
	a maga sa 14.4		(Table 1				76									product
101-5(04)-HOH	P P P P P P	MSE	The military		34.	les l	<u> </u>								ļ.,	Analyze for EPH if no specific product identified
10(1-2)-11 0111	LIMIA	1045	M. Silvert	1° 7 W	0.00	1, 1,6,71 1,5,16,71		X .	X							
110f-1(0-05)+ 110 f-1	14111	1200	The state of the s				X.	1.		-	hit				-	VOC/BTEX/VPH (soil):non-preserved
NDC-10 (o.s.) > therm		13.00	. <u>###</u> #################################			X									-	preserved w/methanol
ADF-16 (1-12) - 14-811-1		1006	ent Control	10000000	-	1/2							-	-		preserved w/sodium bisulfate
NOC-6 (0-1)-14-41	1077		September	1. 型:	×	X /	K .					31,100			-	Freeze upon receipt
Nof-6/1-2/14 0111		i .			20		- 1	X	X							Dissolved metal water samples field filtered
NORTH (CFT) HALLA	+440	1300	Se 3117 117	mercia dine	X							(Facility)				Other
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MD6-8(5-1) (1999)		1400	Barbara a		X	X	M.									Cy. B. H. Fa
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Seattle/Edmonds (425) 778-0907

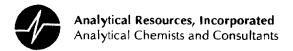
☐ **Tacoma** (253) 926-2493

[] Spokane (509) 327-9737 LANDAU Spokane (509) 327-9737 ASSOCIATES Portland (503) 542-1080



Chain-of-Custody Record

Project Name		Projec	t No. Sas	145.071	٧, ال	5		£.,	, ,		Testi	ng F	'ara	meter	
Project Location/Event	WA						1	1	1	/	17		1	1.1	Standard Accelerated
Sampler's Name 4F6/Aw							/	(m)	[.]			£.,	[MJ.	- Accelerated
		16m	Gueri					,			1 /		1	1/1	
Project Contact Korral	CFG.	1.5	1. Lert	.	/	5		$\langle \psi \rangle$	Nuge 199	\int		1	1. 7		
Sample I.D.	Date	Time	Matrix	No. of Containers	s/ 3	7 \$	/:			7	4	1	/_	[.]	Observations/Comments
NDP-12. (0-1)-HOTHA	Water	NHT	5.41	7	IX,		Χ								X Allow water samples to settle, collect
VD(-2(64)-mark	WINTER	15/00	$\langle \zeta_{ij} \rangle$		28	K,	1								aliquot from clear portion
NOS-5(1-2)-MOHA W	13. 144	1505		7				X	7						X NWTPH-Dx - run acid wash/silica gel cleanup
TITE BLUKS			MARK	_A(€	1		1.5					ļ			***************************************
MDb-5(1-3)-11H01-	بلبليد			NVB	t M	١.									run samples standardized to
M2-4(1-2)-HIGI	34H#														product
MDQ-5(1-2)-111101-	**		A CONTRACTOR OF STREET			1									Analyze for EPH if no specific
NOP-6(+2)-111101-	411				1										product identified
													, , , , , ,		VOC/BTEX/VPH (soil):
			The said of the sa		1000							1			non-preserved preserved w/methanol
															preserved w/sodium bisulfate
															Freeze upon receipt
			A STATE OF THE PARTY OF THE PAR												Dissolved metal water samples field filtered
			and the second												Other & Hold Coxy Ox until
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Special Shipment/Handling or Storage Requirements	· · · Cap	tainan ann an an an an an an an an an an an		~~~					·			,,,,,,,,,,		Metho Shipn	nent Deliver to ARI
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Cooler Receipt Form

ARI Client POPINO		Project Name: Str IKOV:	Northi	Detention	nPorc
COC No(s)	(NA)	Delivered by: Fed-Ex UPS Cou	rier Mand Deliv	vered Other:	
Assigned ARI Job No	7085	Tracking No			NA
Preliminary Examination Phase:	·				
Were intact, properly signed and	dated custody seals attached to	o the outside of to cooler?	(YES	NO
Were custody papers included wit	th the cooler?		(YES	NO
Were custody papers properly fille	ed out (ink, signed, etc.)		(YES	NO
Temperature of Cooler(s) (°C) (re	commended 2 0-6 0 °C for che	mistry). 5,9 3,3	,		
If cooler temperature is out of con	npliance fill out form 00070F	. I:	Temp Gun ID	# 9094	1169
Cooler Accepted by	AV	Date \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1005	5	
	, ,	and attach all shipping documents			
Log-In Phase:					
Was a temperature blank included	d in the cooler?			YES	(NO)
•		p Weylce Gel Packs Baggies Foarh	Block Paper		
Was sufficient ice used (if appropriate ap			NA NA	(F)	NQ
Were all bottles sealed in individu	al plastic bags?			YES	(a)
Did all bottles arrive in good cond	ition (unbroken)?	,		(E)	NO
Were all bottle labels complete an	nd legible?			YES	NO
Did the number of containers liste	d on COC match with the num	ber of containers received?		₹ Ps	NO
Did all bottle labels and tags agre	e with custody papers?			YE\$	NO
Were all bottles used correct for the	he requested analyses?			YES	NO
Do any of the analyses (bottles) re	equire preservation? (attach pr	eservation sheet, excluding VOCs)	Ø	YES	NO
Were all VOC vials free of air bub	bles?		NA	YES	©
Was sufficient amount of sample	sent in each bottle?			(ES)	NO
Date VOC Trip Blank was made a	at ARI		NA	16.21	N
Was Sample Split by ARI:	YES Date/Time:	Equipment:		Split by	
Samples Logged by		e:Time	800		
	** Notify Project Manage	er of discrepancies or concerns **			
Sample ID on Bottle	Sample ID on COC	Sample ID on Bobbs	Come	le ID 000	
Cample 10 on Bottle	Sample ID on CCC	Sample ID on Bottle	Jamp	le ID on COC	
			 		
			 		
Additional Notes, Discrepancie	s, & Resolutions:		- L	1,,,	
		The pla	-	6	
ادب					1
By 15 Dat	le 11-2-1				İ
Smalt Air Bubbles Pearbubbl	es' LARGE Air Bubbles	Small → "sm"	****	······································	
2mm 2-4 mm	> 4 mm	Peabubbles → "pb"			
		Large → "lg"			
1		Headspace → "hs"			

Sample ID Cross Reference Report



ARI Job No: TW18

Client: The Boeing Company Project Event: 02519.040.045

Project Name: Striker: North Detention Pond

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
2. 3.	NDP-2(1-2)110111 NDP-6(1-2)110111 NDP-4(1-2)110111 NDP-5(1-2)110111	TW18A TW18B TW18C TW18D	11-25906 11-25907 11-25908 11-25909	Solid Solid	11/01/11 11:45 11/01/11 12:45 11/01/11 13:15 11/01/11 15:05	11/01/11 16:25 11/01/11 16:25 11/01/11 16:25 11/01/11 16:25

Printed 11/08/11

Subject: Boeing Striker North Detention Pond sampling

From: "Chris Burke" <cburke@landauinc.com>

Date: Wed, 2 Nov 2011 13:37:18 -0700 To: Kelly Bottem <kellyb@arilabs.com>

CC: "Kathryn Hartley" <khartley@landauinc.com>

Hey Kelly,

Kathryn and I noticed a few errors on the COC from yesterday's sampling at the Striker property. I've edited the COCs and attached a scan of those edits.

The changes I made were:

- fixed the sample IDs to use proper date format, i.e., NDP-1(0-1)-110111 became the correct NDP-1(0-1)-111101
- Changed matrix type from sediment to solids
- Checked VOCs analysis for the trip blanks
- -Added 'Boeing' to the project name

I highlighted all the changes for clarity, let me know if you have any questions,

Chris Burke "Senior Staff Hydrogeologist Landau Associates, Inc.

130 2nd Ave. S, Edmonds, WA 98020

425.329.0297" fax 425.778.6409" cell 716.579.2975

cburke@landauinc.com "http://www.landauinc.com

Email is a sustainable communications tool - please consider this before printing.

Notice: This communication may contain privileged or other confidential information. If you have received it in error, please advise the sender by reply email and immediately delete the message and any attachments without copying or disclosing the contents. Thank you.

Boei	ng Striker NPD COC 110111 - revised.pd	Content-Description:	Boeing Striker NPD COC 110111 - revised.pdf
	•	Content-Type:	application/pdf base64
		Content-Encoding:	Dascot



TOTAL METALS

Page 1 of 1

Lab Sample ID: TW18A

LIMS ID: 11-25906

Matrix: Solid

Data Release Authorized; Reported: 11/22/11

Percent Total Solids: 70.3%

Sample ID: NDP-2(1-2)110111

SAMPLE

QC Report No: TW18-The Boeing Company

Project: Striker: North Detention Pond

02519.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/14/11	200.8	11/21/11	7440-38-2	Arsenic	0.3	5.2	



TOTAL METALS

Page 1 of 1

Lab Sample ID: TW18A

LIMS ID: 11-25906

Matrix: Solid

Data Release Authorized:

Reported: 11/22/11

Sample ID: NDP-2(1-2)110111

DUPLICATE

QC Report No: TW18-The Boeing Company

Project: Striker: North Detention Pond

02519.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q	
Arsenic	200.8	5.2	3.6	36.4%	+/- 20%	*	

Reported in mg/kg-dry

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit



TOTAL METALS

Page 1 of 1

Lab Sample ID: TW18A

LIMS ID: 11-25906

Matrix: Solid
Data Release Authorized:

Reported: 11/22/11

Sample ID: NDP-2(1-2)110111

MATRIX SPIKE

QC Report No: TW18-The Boeing Company

Project: Striker: North Detention Pond

02519.040.045

Date Sampled: 11/01/11
Date Received: 11/01/11

MATRIX SPIKE QUALITY CONTROL REPORT

	Analysis			Spike	8	
Analyte	Method	Sample	Spike	Added	Recovery	Q
Arsenic	200.8	5.2	39.0	33.6	101%	

Reported in mg/kg-dry

N-Control Limit Not Met H-% Recovery Not Applicable, Sample Concentration Too High NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%



TOTAL METALS

Page 1 of 1

OI MAL IIII

Sample ID: NDP-6(1-2)110111 SAMPLE

Lab Sample ID: TW18B

LIMS ID: 11-25907 Matrix: Solid

Data Release Authorized:

Reported: 11/22/11

QC Report No: TW18-The Boeing Company

Project: Striker: North Detention Pond

02519.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Percent Total Solids: 72.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/14/11	200.8	11/21/11	7440-38-2	Arsenic	0.3	4.0	



TOTAL METALS

Page 1 of 1

Sample ID: NDP-4(1-2)110111

SAMPLE

Lab Sample ID: TW18C

LIMS ID: 11-25908

Matrix: Solid

Data Release Authorized

Reported: 11/22/11

QC Report No: TW18-The Boeing Company

Project: Striker: North Detention Pond

02519.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Percent Total Solids: 73.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/14/11	200.8	11/21/11	7440-38-2	Arsenic	0.3	4.2	



TOTAL METALS

Page 1 of 1

Lab Sample ID: TW18D

LIMS ID: 11-25909

Matrix: Soil

Data Release Authorized

Reported: 11/22/11

Percent Total Solids: 74.3%

Sample ID: NDP-5(1-2)110111

SAMPLE

QC Report No: TW18-The Boeing Company

Project: Striker: North Detention Pond

02519.040.045

Date Sampled: 11/01/11 Date Received: 11/01/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/14/11	200.8	11/21/11	7440-38-2	Arsenic	0.3	5.8	



TOTAL METALS

Page 1 of 1

Lab Sample ID: TW18MB

LIMS ID: 11-25907

Matrix: Solid

Data Release Authorized:

Reported: 11/22/11

Percent Total Solids: NA

Sample ID: METHOD BLANK

QC Report No: TW18-The Boeing Company

Project: Striker: North Detention Pond

02519.040.045

Date Sampled: NA Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	11/14/11	200.8	11/21/11	7440-38-2	Arsenic	0.2	0.2	U



TOTAL METALS

Page 1 of 1

Lab Sample ID: TW18LCS

LIMS ID: 11-25907

Matrix: Solid

Data Release Authorized Reported: 11/22/11

Sample ID: LAB CONTROL

QC Report No: TW18-The Boeing Company

Project: Striker: North Detention Pond

02519.040.045

Date Sampled: NA Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	26.2	25.0	105%	

Reported in mg/kg-dry

N-Control limit not met NA-Not Applicable, Analyte Not Spiked Control Limits: 80-120% March 16, 2012 9L-22-N410-JLF-049

Washington State Department of Ecology Northwest Regional Office Hazardous Waste and Toxics Reduction Program 3190 160th Avenue SE Bellevue, Washington 98008-5452

BOEING

Attn: Byung Maeng, P.E.

RE: ADDITIONAL EVALUATION OF ARSENIC IN GROUNDWATER

BOEING SPACE CENTER AREA

KENT, WASHINGTON

Dear Mr. Maeng:

The Boeing Company (Boeing) has submitted a request to the Washington State Department of Ecology (Ecology) for removal of the Striker Property (subject property) from the Boeing Space Center (BSC) Resource Conservation and Recovery Act (RCRA) Interim Status Facility (WAD 061670766; Boeing 2011). As part of its review, Ecology requested additional information regarding the dissolved arsenic concentrations detected in groundwater at the BSC. Boeing responded with our October 11, 2011 letter that presents a summary of the available data regarding arsenic in groundwater at the subject property and the BSC.

During our meeting at Ecology's Northwest Regional Office on December 13, 2011, Ecology requested that additional data be collected to evaluate the concentrations of dissolved arsenic in groundwater including any existing data from other properties in the area around the BSC, and/or the collection and analysis of additional groundwater samples from around the subject property on the BSC or on nearby properties. We were unable to find additional existing arsenic in groundwater data for the BSC beyond what was provided in our October 11, 2011 letter. There are currently no monitoring wells located at the BSC and no offsite monitoring wells (except wells associated with the Western Processing site discussed below) were identified in the proximity of the BSC. Additional groundwater samples were collected using direct-push drilling and sampling techniques from locations at the BSC and on City of Kent Property in the area around the BSC. Samples were also collected from existing monitoring wells associated with the nearby Western Processing site.

The sampling locations were provided for Ecology's review and concurrence in advance of sample collection, and our correspondence with Ecology regarding the locations is documented in e-mails dated January 5 and 18, 2012, and February 6, 2012. The groundwater sampling was conducted between January 25 and February 9, 2012. This letter provides a summary of the additional data for dissolved arsenic in groundwater.

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BACKGROUND

Direct-push drilling and soil and groundwater sampling were conducted at the subject property in 2010 and 2011 as part of due diligence prior to the potential sale of the Striker Property. The results of the subsurface investigations indicate that the BSC and subject property are underlain by approximately 10 feet (ft) of fill material underlain by alluvium. The fill generally consists of brown, fine to medium sand to a maximum depth of 8 ft below ground surface (BGS). Beneath the fill, the native soil consists of gray sands and silts. Groundwater was encountered during drilling at depths ranging from 3 to 8 ft BGS (Landau Associates 2010). Based on topography, the groundwater gradient within the Kent Valley and the BSC area is locally very flat, with the overall direction of groundwater flow to the west-northwest toward the Green River. Elevation measurements from monitoring wells at the BSC in 2001 indicate local variability in groundwater elevations and direction of flow (Landau Associates 2002).

The dissolved arsenic concentrations detected in groundwater samples collected throughout the subject property during the 2010 and 2011 investigations range from 0.3 micrograms per liter (μ g/L) to 115 μ g/L, and the concentrations detected at many locations were greater than the screening level of 5 μ g/L, which was developed based on the Model Toxics Control Act (MTCA) Method B cleanup level for protection of groundwater as drinking water (Landau Associates 2010). The investigations conducted to date, which included assessment of the nature and extent of the dissolved arsenic concentrations detected in groundwater, have not identified a potential source of arsenic at the subject property or at the BSC. Based on the available data, and as discussed below, the elevated concentrations of arsenic in groundwater are isolated/localized, reflect area-wide conditions, are not attributable to sources at the BSC, and do not pose a risk to human health or the environment.

ADDITIONAL ARSENIC GROUNDWATER DATA

As noted above, in January and February 2012 Boeing collected groundwater samples to document dissolved arsenic concentrations in shallow groundwater at locations on and around the BSC, including locations that are hydraulically upgradient and downgradient based on overall shallow groundwater flow to the west-northwest toward the Green River. The groundwater samples were collected on the BSC, on the Western Processing site (located to the northeast of the BSC), and on City of Kent property. As requested in the e-mail correspondence with Ecology noted above, the selected City of Kent locations include the closest, upgradient, accessible locations that appeared to be the least affected by development/human activities. The selected Western Processing wells consist of a background/upgradient well, and a shallow downgradient well that are part of the Western Processing monitoring network, but that have not been affected by site activities.

Eighteen groundwater samples were collected from fifteen locations, as shown on Figure 1. The groundwater samples were submitted to Lancaster Laboratories for analysis of dissolved arsenic by U.S. Environmental Protection Agency (EPA) Method 6020. The arsenic analytical data are summarized in Table 1. Field screening conducted during direct push drilling and groundwater sample collection did not identify evidence of potential soil or

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groundwater contamination at any of the sampling locations. A summary of the information regarding the groundwater sampling and analysis is presented below:

BSC Property

- Nine groundwater samples were collected at six direct-push sampling locations (including DP-40 and -41, which are just outside the northern BSC property boundary).
- Co-located samples were collected at three locations.
- Depths to groundwater ranged from about 5 to 8 ft BGS.
- Dissolved arsenic was detected above the laboratory reporting limit in all nine samples, at concentrations ranging from 3.3 to 58.4 μg/L.

Western Processing Site

- Groundwater samples were collected from two shallow monitoring wells that have not been affected by activities at the Western Processing site.
- Depth to groundwater was about 5 ft BGS.
- Dissolved arsenic was detected above the laboratory reporting limit in one of the two samples at a concentration of 10.8 µg/L.

City of Kent Property

- Groundwater samples were collected at seven direct-push sampling locations.
- Depths to groundwater ranged from about 16 to 18 ft BGS at locations near the Green River (Kent-1 through -4) and from about 7 to 9 ft BGS at locations farther away from the river.
- Dissolved arsenic was detected above the laboratory reporting limit at four of the seven locations at concentrations ranging from 3.9 to 115 μ g/L.
- Sampling was planned for one additional location (Kent-5), but a sample could not be collected due to the presence of utilities that prevented drilling.

DISSOLVED ARSENIC CONCENTRATIONS

The dissolved arsenic concentrations detected in the additional groundwater samples are shown on Figure 1. The analytical results for dissolved arsenic are summarized as follows:

- Dissolved arsenic was detected at concentrations above the laboratory reporting limit in 14 of the 18 groundwater samples, and at concentrations ranging from 3.3 to 115 μg/L. Of the detected dissolved arsenic concentrations, 11 concentrations were greater than the screening level of 5 μg/L.
- The highest concentration of dissolved arsenic (115 μ g/L) was detected in the groundwater sample collected from southeast of the BSC at location Kent-7. The

nearest sample (Kent-8 collected approximately1,300 ft to the east of Kent-7) indicated a concentration of 14.5 μ g/L.

- The next highest concentrations were detected southwest of the BSC near the Green River (Kent-1; 59.6 μ g/L), from the north portion of the BSC (DP-39; 58.4 μ g/L), and near the east boundary of the BSC (DP-36; 47.1 μ g/L).
- The co-located samples indicated concentrations with relative percent differences (RPDs) of 0 percent (DP-40 and -41; both 3.3 μ g/L), 4.35 percent (DP-34 and -35; 12.6 and 15.0 μ g/L), and 34 percent (DP-37 and -38; 5.2 and 27.9 μ g/L). Concentrations with RPD's less than 20 are considered similar and concentrations with RPDs greater than 20 are considered different.
- The sample from Western Processing shallow monitoring well 13M30A indicated a concentration of 10.8 μg/L.
- The samples collected from east-southeast of the BSC, and hydraulically upgradient based on a west-northwest direction of groundwater flow, indicated dissolved arsenic concentrations ranging from 3.9 to 115 μg/L.
- The samples collected along the Green River to the west-northwest of the BSC, and hydraulically downgradient based on a west-northwest direction of groundwater flow, did not indicate dissolved arsenic concentrations above the laboratory reporting limit.

CONCLUSIONS

Dissolved arsenic was detected in 11 of the 18 groundwater samples collected at and around the BSC at concentrations greater than the screening level. The concentrations above the screening level were detected in samples collected upgradient and cross gradient of the subject property. As noted above, the detected concentrations varied locally, including in one pair of the co-located samples. Based on the investigations conducted to date, the available analytical data, and the historical data presented in our October 11, 2011 letter, the elevated concentrations of dissolved arsenic detected in groundwater are isolated/localized, are the result of regional conditions, and are not the result of sources associated with Boeing operations. Groundwater downgradient of the subject property does not indicate concentrations of dissolved arsenic greater than the laboratory reporting limit.

As we have discussed, groundwater at the BSC or in the surrounding area is not used for drinking water. Boeing's purchase and sale agreement with the prospective buyer of the Striker Property includes a restriction on the use of groundwater. The City of Kent does not allow the installation of private wells in areas serviced by a municipal water purveyor, which includes the BSC area. As an added level of protection, Boeing is willing to pursue a formal environmental covenant to restrict the use of groundwater. The dissolved arsenic concentrations present in groundwater at the Striker Property are similar to those detected at other locations in the Kent Valley near the BSC and do not pose a potential threat to human health or the environment; therefore, Boeing requests that the site not be listed on the Confirmed and Suspected Contaminated Sites List.

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We would appreciate the opportunity to discuss the information presented in this letter with you and to answer questions that you may have regarding the detected concentrations of dissolved arsenic in groundwater in the BSC area, and at the Striker Property. Please e-mail or call me to schedule a time to discuss this request.

Sincerely,

Joe Flaherty Project Manager EHS Remediation Group (206) 769-5987

joseph.l.flaherty@boeing.com

REFERENCES

Landau Associates. 2010. Report: *Phase II Environmental Site Assessment, Striker Property South, Boeing Space Center, 20403* 68th Avenue South, Kent, Washington. November 30.

Landau Associates. 2002b. Report: *Phase II Environmental Site Assessment, Boeing Clearwater, Kent, Washington.* June 4.

ATTACHMENTS

Figure 1: Striker Property Sampling Locations and Arsenic Concentrations

Table 1: Groundwater Analytical Results for Dissolved Arsenic

TABLE 1 GROUNDWATER ANALYTICAL RESULTS FOR DISSOLVED ARSENIC BOEING STRIKER KENT, WASHINGTON

Arsenic (Dissolved) LLI EPA Method 6020 Date Location SDG Lab ID Collected μg/L 1286934 KSC-DP-34 1/25/2012 12.6 6533689 1286934 15.0 KSC-DP-35 6533690 1/25/2012 KSC-DP-36 1286934 6533691 1/25/2012 47.1 KSC-DP-37 1286934 6533692 1/25/2012 5.2 KSC-DP-38 1286934 6533693 1/25/2012 27.9 KSC-DP-39 1286934 1/25/2012 58.4 6533694 KSC-DP-40 1286934 6533695 1/25/2012 3.3 KSC-DP-41 1286934 6533696 1/25/2012 3.3 KSC-DP-42 6.0 1289491 6546694 2/9/2012 1289491 2/9/2012 59.6 Kent-1 6546687 1289491 2.0 U Kent-2 6546688 2/9/2012 Kent-3 1289491 6546689 2/8/2012 2.0 U 6546690 Kent-4 1289491 2/8/2012 2.0 U 1289491 2/8/2012 Kent-6 6546691 3.9 Kent-7 1289491 6546692 2/9/2012 115.0 Kent-8 1289491 6546693 2/9/2012 14.5 15M17S 1289491 6546695 2/9/2012 2.0 U 15M30A 1289491 6546696 2/9/2012 10.8

U = Indicates the compound was not detected at the reported concentration. Bold = Detected compound.