

APPENDIX C

**KGP-200 FIELD DOCUMENTATION,
PHOTOGRAPHS, AND WELL LOGS**

C-1 Field Notes

KGP-200

3/13/18

Kent Highlands

TUES MARCH 13, 2018

745 MPB ON

800 HOLT ON

805 KE ON DROP OFF HASP

810 SBT UP

905 SAFETY MEETING, RIG UP

DRILLING 0-5'

KGP-200D

BROWN SILTY F-M SAND & GRAVEL

MOIST ϕ CH₄ ϕ PHD

5-10 SILTIER 4-9

LRL CHANNEL IN SILTY SAND 9-10

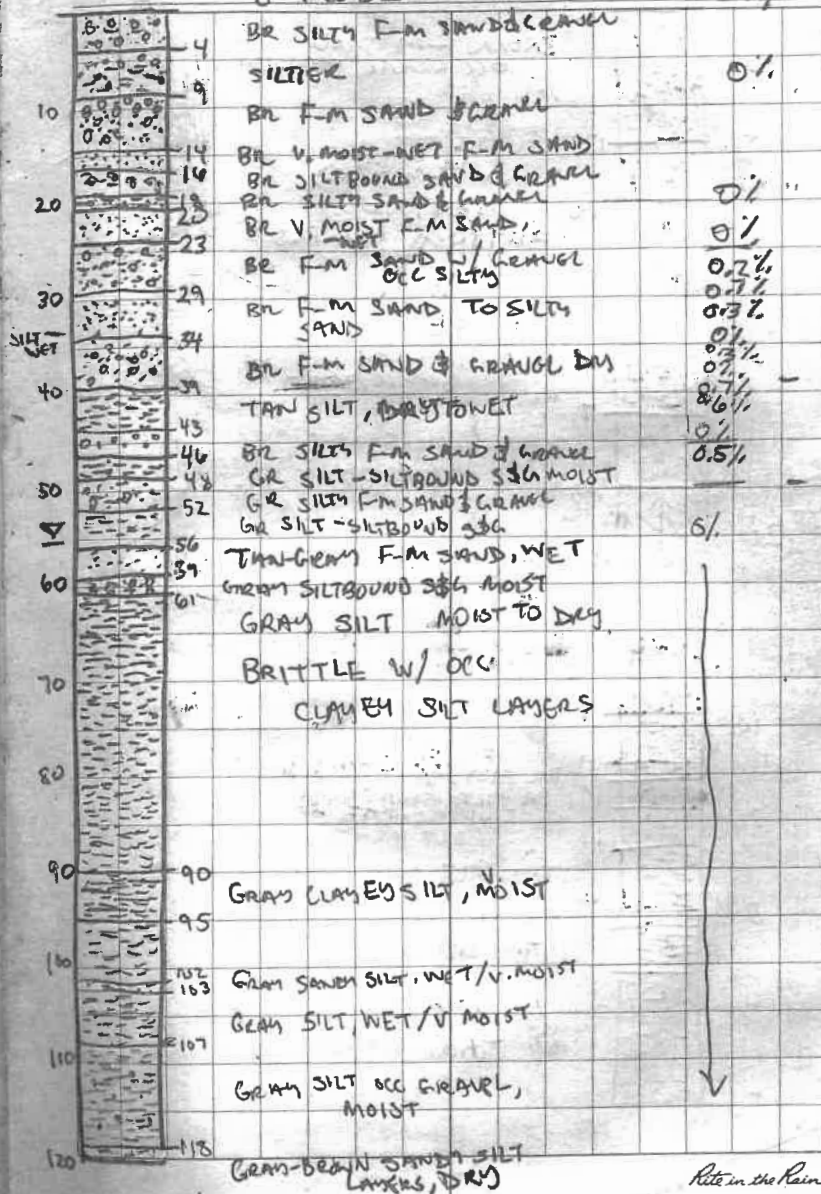
BROWN

925 10-20' ϕ CH₄ ϕ CH₄ 10-14 BR F-M SAND & GRAVEL ϕ CH₄ 14-16 ^{BR} V. MOIST-WET F-M SAND W² ϕ CH₄ 16-18 ^{BR} SILT BOUND SAND & GRAVELOCHL 18-20 ^{BR} SILTY S&G BROWN20-30' 0.1% CH₄20-23 0% CH₄25' 0.2% CH₄27' 0.7% CH₄30 0.3% CH₄

KGP-200

KH Geo Log

D-PROBE

CH₄

Rite in the Rain

Location

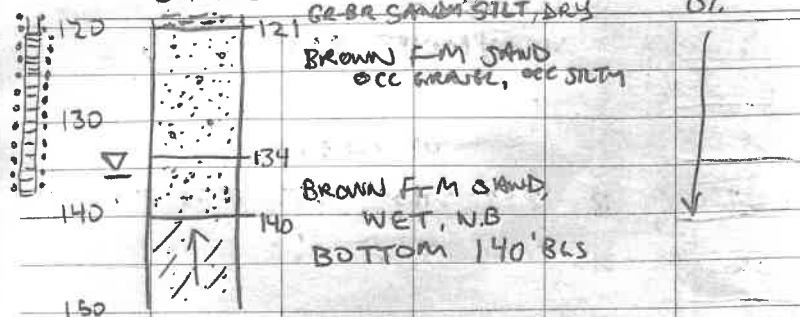
KGP-200

Date

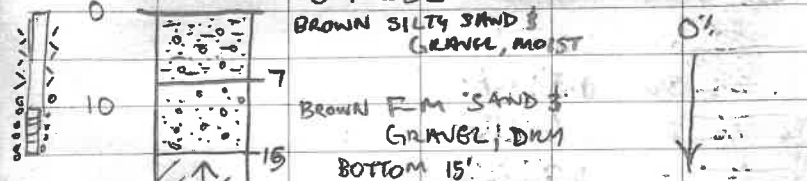
Project / Client

KH Geo Log Control

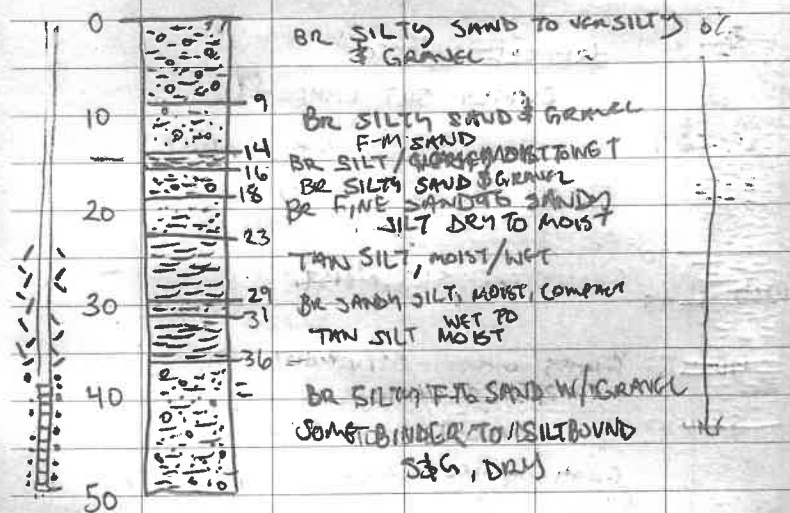
D-PROBE CONT.



S-PROBE



M-PROBE



Location

KGP-200

Date

3/13

Project / Client

KH

200D

20-23	BR	V MOIST	SILTY F-M SAND
23-25	BR	F-M	SAND & GRAVEL DRY
25-29	BR	F-M SAND	OCC SILTY DRY w/ gravel
29-30	BR	F-M	SAND DRY
945	DRILLING 30-40'		
30-34	0%	CH ₄	
34-36	0.3%	CH ₄	
36-37	0%	CH ₄	
37-38	0.7%	CH ₄	
38-40	0.6%	CH ₄	
30-34	BR	SILTY F-M SAND	OCC GRAVEL
			MOIST
34-39	BR	F-M SAND & GRAVEL	DRY
39-40	BR	SILT / SILTY SAND	SILTBOUND, DRY
015 40-46'	0%	CH ₄	at Hol
40-43	BR	SILT	SILTBOUND 0% CH ₄ MOIST
43-46	BR	SILT F-M SAND	& GRAVEL
	0.5%	CH ₄	@ 45'

Rite in the Rain

Location KGP-200

Date

3/13

Project / Client

KH

200 D

46-55 0% CH₄46-48 GRAY SILT SILTBOUND 0%
S₆, MOIST48-52 GRAY SILTY S₆, DM 0%52-55 GRAY SILT SILTBOUND
S₆, MOIST TO DM 0%55-60' WET @ S₆55-56 GRAY SILT-SILT BOUND
S₆, MOIST56-59 TAN-GRAY SILTY
F-M SAND, WET59-60 GRAY SILTBOUND SAND
S₆ SILT, MOIST

11-1130 LUNCH

JEFF NEUM ON

1205 DRILL 60-70'

60-61 GRAY SILTBOUND 0% CH₄
SAND & GRAVEL V. MOIST61-70 GRAY SILT - MOIST TO
DM 0% CH₄

Location

KGP-200

Date

3/13

Project / Client

KH

200 D

70-77 GRAY SILT 0% CH₄77-80 GRAY SILT 0% CH₄

DRILL 80-90'

GRAY SILT 0% CH₄

1330

DRILL 90-107 90' OF CONDUCTION

CASING 0% CH₄

90-95 GRAY CLAYEY-SILT

V. MOIST

95-102 GRAY SILT V. MOIST COMPACT

102-103 GRAY SANDY SILT V. MOIST WET

103-107 GRAY SILT V. MOIST
TO WET

1420

DRILL 107-120

120 0% CH₄

107-110

GRAY SILT V. MOIST 0% CH₄

110-118

GRAY SILT
OCG GRAVEL, V. MOIST

118-120

GRAY-BR SANDY SILT
DRY

Ritter's

Location KGP-200

Date 3/13

Project / Client KM

200 D

DRILL TO 130 0% CH₄120-121 TRANSITIONAL GR-BN
SILTY SAND, MOIST.121-130 BR F-M SAND
OCC GRAVEL OCC SILTY
DRY 0% CH₄

130-140

130-134 BR F-M SAND
DRY134-140 WET BR F-M
SAND,

WL COLLAPSE HOLE

1500 BACK TO 134

SCREENED ZONE TO BE

118-138

WILL CONSTRUCT IN AM

SET UP FOR CONSTRUCT

/CLEANUP

1600 OFF-SITE

Location KGP-200

Date 3/14

Project / Client KM

WED MARCH 14, 2018

750 MPB ON

805 HOLT ON

CLEANOUT HOLE TO ALLOW
FOR INSTALL, WL 138' BGS

930 START CONSTRUCTION BOTTOM 138

PEA GRAVEL -138-140 116-138

20' OF 0.10-SLOT SCREEN, 3/8" BENT ABOVE

1255 FINISH INSTALL

1300-1330 LUNCH

CLEANUP ROAD

1430 DRILLING SHALLOW PROBE KGP-200S

0'-6' 6-10 0% CH₄

10-15'

0-7 BR SILTY TO V. SILTY S&S MOIST 0%

7-10 BR F-M SAND w/ GRAVEL, DRY 0%

10-15 BR F-M SAND w/ GRAVEL, DRY 0%

1510 INSTALL 5' OF 0.10 SLOT SCREEN

10-15' BGS

PEA GRAVEL TO 8'

CHIPS ABOVE

1600 OFF SITE

Location KGP-200

Date

3/15

Project / Client

Middle Probe

200-M

755 MPB ON / HOLD ON

815 DRILLING 0-5

5-10

10-20

~18 BR SILTY S&G

18-20 BR FINE SAND, DM

20-23 BR SANDY SILT MOIST TO

23-29 TAN WGT SILT MOIST-WET

29-30 BR SAND & SILT

COMPACT, FINE

900

910 DRILLING 30-40

0% CH₄

30-31 BR SANDY SILT & GRAVEL

COMPACT MOIST

36-36 TAN SILT MOIST-WET TO DR

37-40 BR FINE SAND BOUND

SILTY SAND & GRAVEL, DR

40-50 0% CH₄

BR SILTY FINE-M SAND

W/ GRAVEL SOME BINDER

DRY, HARD, COMPACT

SETTING 39-49

1215 MPB OFF

Location

KGP-200

Date

3/16

Project / Client

PMX / SPV

ECOLOGICAL TAGS

BKK 289, 290, 291

AW/KE NOTES:

	DTW	TD	SD		BTOR	SCREEN	INT
S	—	1794	32"	2.75		7.95	17.75
M	4371	52.3	34 3/4"	2.89		39.41	49.41
D	13961	140.41	34"	2.83		117.58	137.58

3/16/2014

800 MPB HOLD ON

DTW 463' BLS

HOLD PUMPED WELL (MIDDLE PROBE)

DTW 451' BLS

PUMP ON IT

900 DTW 50.95 BTDC

1045 DTW 50.87 BTDC

TD 52.3' BTDC

1125 DTW 50.84 BTDC

1305 DTW HASN'T CHANGED

1305 DTW 50.82 BTDC

APPEARS STABLE

C-2 Photographs



Overview of the Sonic drilling rig over KGP-200 D.



Overview of the KGP-200 drilling site.



Overview of KGP-200 relative to the northern property boundary.



Photograph of the typical screen install, slotted on one-side only.



KGP-200 at 5 feet.



KGP-200 at 10 feet.



KGP-200 at 15 feet.



KGP-200 at 20 feet.



KGP-200 at 25 feet.



KGP-200 at 30 feet.



KGP-200 at 35 feet.



KGP-200 at 40 feet.



KGP-200 at 45 feet.



KGP-200 at 50 feet.



KGP-200 at 55 feet.



KGP-200 at 60 feet.



KGP-200 at 65 feet.



KGP-200 at 70 feet.



KGP-200 at 75 feet.



KGP-200 at 80 feet.



KGP-200 at 85 feet.



KGP-200 at 90 feet.



KGP-200 at 95 feet.



KGP-200 at 100 feet.



KGP-200 at 105 feet.



KGP-200 at 110 feet.



KGP-200 at 115 feet.



KGP-200 at 120 feet.



KGP-200 at 125 feet.



KGP-200 at 130 feet.



KGP-200 at 135 feet.



KGP-200 at 140 feet.

C-3 Well Logs



PROJECT: Parametrix SPU Kent Highlands Landfill	PROJECT NUMBER: 10887	
LOCATION: SW of Veterans Drive and Riverview Blvd in Kent, WA	WELL ID: KGP-200-S	
DRILLING CONTRACTOR: Holt Services	NORTHING: Approx. 47.393794	EASTING: Approx. -122.282513
DRILLING EQUIPMENT: Track Mounted Sonic	GROUNDWATER ELEV.: 	TOC ELEVATION: Approx. 260'
DRILLING METHOD: Sonic	TOTAL DEPTH: 15' bgs	DEPTH TO WATER:
LOGGED BY: MPB	SAMPLING METHOD: 6" continuous core	DATE STARTED: 03/14/18
		DATE COMPLETED: 03/14/18

Depth (feet)	Groundwater Depth	USCS	Soil / Lithologic Description	CH ₄ Reading (%)	Well Installation Data
-5					-5
0					TOC 2.75' above ground 3' Stick Up Monument
					Concrete
		GM	Brown silty sand and gravel, moist	0.0	Bentonite Chips (2' - 8' bgs)
5				0.0	3/4-inch diam. Schedule 80 PVC Blank Riser (-2.75' - 10' bgs)
		GM	Brown fine to medium sand and gravel, dry	0.0	Pea Gravel (8'-15' bgs)
10				0.0	3/4-inch diam. 0.010" Slot Schedule 80 PVC Screen (10' - 15' bgs)
15				0.0	Total well depth 17.94' BTOC
			EOB 15' bgs	0.0	
20					20

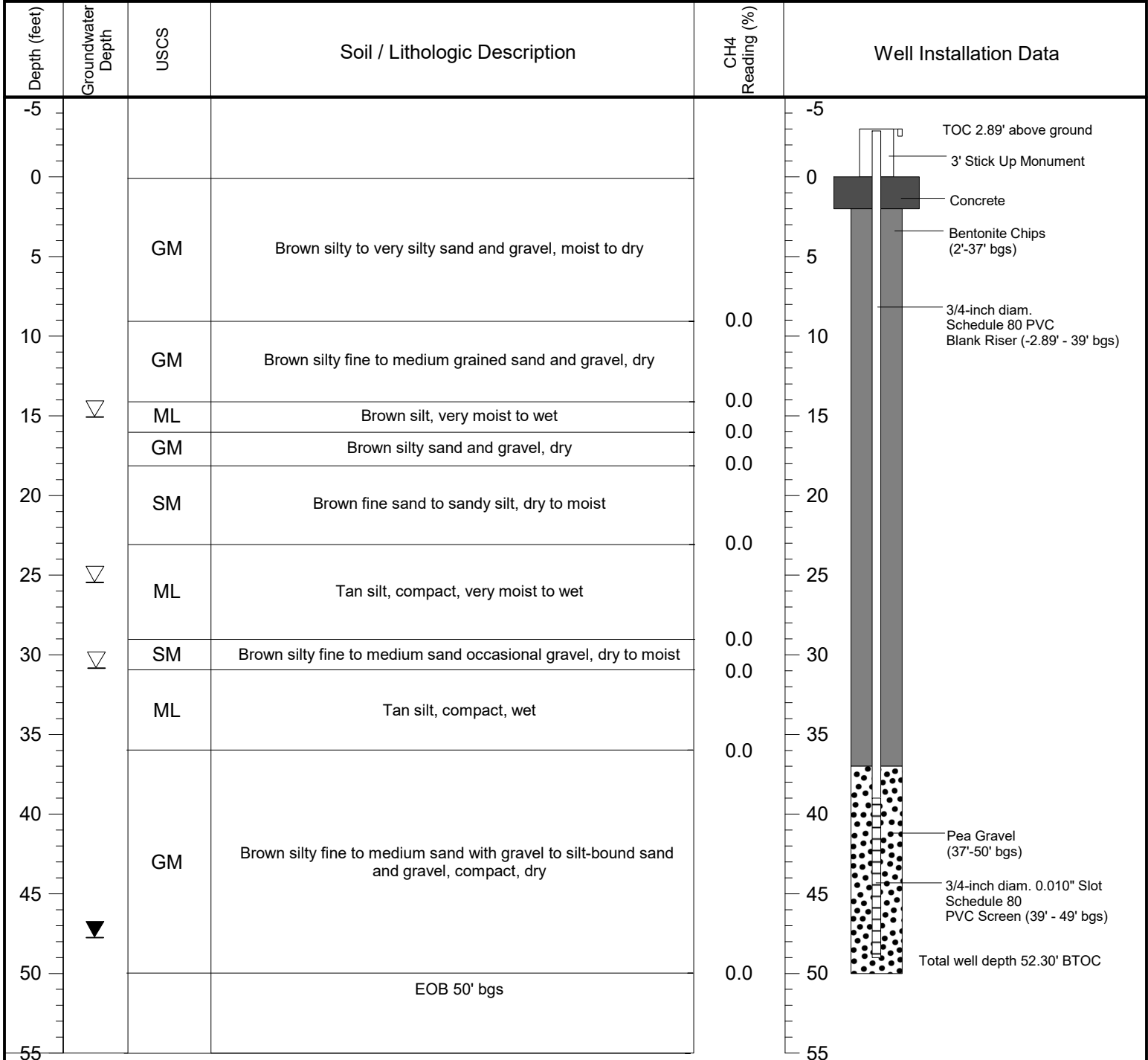
NOTES:



Water bearing zones at time of drill
Not encountered



PROJECT: Parametrix SPU Kent Highlands Landfill	PROJECT NUMBER: 10887	
LOCATION: SW of Veterans Drive and Riverview Blvd in Kent, WA	WELL ID: KGP-200-M	
DRILLING CONTRACTOR: Holt Services	NORTHING: Approx. 47.393795	EASTING: Approx. -122.282485
DRILLING EQUIPMENT: Track Mounted Sonic	GROUNDWATER ELEV.: 50' bgs	TOC ELEVATION: Approx. 260'
DRILLING METHOD: Sonic	TOTAL DEPTH: 50' bgs	DEPTH TO WATER: 50.82' BTOC
SAMPLING METHOD: 6" continuous core	DATE STARTED: 03/15/18	DATE COMPLETED: 03/15/18



NOTES: ▼ Water level in completed probe at 50.82' Below top of casing (BTOC) ▽ Water bearing zones at time of drilling: ~15.5 feet bgs, ~26 feet bgs, and ~31 feet bgs



EHS-International, Inc.
1011 SW Klickitat Way, Suite 104
Seattle, Washington 98134
Ph: 206.381.1128
Fax: 206.254.4279

PROJECT:
Parametrix SPU Kent Highlands Landfill

LOCATION:
SW of Veterans Drive and Riverview Blvd in Kent, WA

DRILLING CONTRACTOR:
Holt Services

DRILLING EQUIPMENT:
Track mount

DRILLING METHOD:
Sonic

PROJECT NUMBER:
10887

WELL ID:
KGP-200-D

NORTHING:
Approx. 47.393797

GROUNDWATER ELEV.:
140' bgs

TOTAL DEPTH:
140' bgs

EASTING:
Approx. -122.282458

TOC ELEVATION:
Approx. 260'

DEPTH TO WATER:
139.61' BTOC

LOGGED BY:
MPB

SAMPLING METHOD:
6" continuous core

DATE STARTED:
03/13/18

DATE COMPLETED:
03/14/18

Depth (feet)	Groundwater Depth	USCS	Soil / Lithologic Description	CH ₄ Reading (%)	Well Installation Data
-5					-5
0					TOC 2.83' above ground
					3' Stick Up Steel Monument
5		GM	Brown silty fine to medium sand and gravel, moist	0.0	Concrete
					Bentonite Chips (2'-116' bgs)
10		GM	Brown fine to medium sand and gravel	0.0	3/4-inch diam. Schedule 80 PVC Blank Riser (-2.83' - 118' bgs)
15	▽	SP	Brown fine to medium sand, wet		
		GM	Brown silt-bound sand and gravel, dry		
20		GM	Brown silty sand and gravel	0.0	
	▽	SP	Brown fine to medium sand, very-moist to wet	0.0	
25		GM	Brown fine to medium sand with gravel occasional silty, dry	0.2	
				0.7	
30		SM	Brown fine to medium sand to silty sand, dry	0.3	
				0.1	
35		GM	Brown fine to medium sand and gravel, dry	0.3	
				0.0	
40				0.7	
	▽	ML	Tan silt, bound/compact, dry to wet	0.6	
45		GM	Brown silty fine to medium sand and gravel, dry	0.0	

NOTES: ▽ Water level in completed well 139.61 feet below top of casing (BTOC)

▽ Water bearing zones at time of drilling: ~14 feet bgs, ~41 feet bgs, ~56 feet bgs, ~102 feet bgs, and ~137 feet bgs



PROJECT: Parametrix SPU Kent Highlands Landfill	PROJECT NUMBER: 10887		
LOCATION: SW of Veterans Drive and Riverview Blvd in Kent, WA	WELL ID: KGP-200-D		
DRILLING CONTRACTOR: Holt Services	NORTHING: Approx. 47.393797	EASTING: Approx. -122.282458	
DRILLING EQUIPMENT: Track mount	GROUNDWATER ELEV.:	TOC ELEVATION: Approx. 260'	
DRILLING METHOD: Sonic	TOTAL DEPTH: 140' bgs	DEPTH TO WATER: 139.61' BTOC	
SAMPLING METHOD: 6" continuous core	DATE STARTED: 03/13/18	DATE COMPLETED: 03/14/18	

Depth (feet)	Groundwater Depth	USCS	Soil / Lithologic Description	CH ₄ Reading (%)	Well Installation Data	
45	▽	ML-GM	Gray silt to silt-bound sand and gravel, moist	0.5	45	<p>Bentonite Chips (2'-116' bgs)</p> <p>3/4-inch diam. Schedule 80 PVC Blank Riser (138' - 140' bgs)</p>
				0.0		
50		GM	Gray silty sand and gravel, dry	0.0	50	
55		GM	Gray silt-bound sand and gravel, dry to moist	0.0	55	
60		SM	Tan-gray fine to medium grained sand, wet			
65		GM	Gray silt-bound sand and gravel, very moist	0.0	65	
70		ML	Gray silt, brittle with clayey silt and sandy silt layers, moist to very moist	0.0	70	
75				0.0	75	
80		ML-CL	Gray clayey silt / silty clay, very moist	0.0	80	
85				0.0	85	
90				0.0	90	
95					95	

NOTES: ▽ Water level in completed well 139.61 feet below top of casing (BTOC)

▽ Water bearing zones at time of drilling: ~14 feet bgs, ~41 feet bgs, ~56 feet bgs, ~102 feet bgs, and ~137 feet bgs



PROJECT: Parametrix SPU Kent Highlands Landfill	PROJECT NUMBER: 10887	
LOCATION: SW of Veterans Drive and Riverview Blvd in Kent, WA	WELL ID: KGP-200-D	
DRILLING CONTRACTOR: Holt Services	NORTHING: Approx. 47.393797	EASTING: Approx. -122.282458
DRILLING EQUIPMENT: Track mount	GROUNDWATER ELEV.: 140' bgs	TOC ELEVATION: Approx. 260'
DRILLING METHOD: Sonic	TOTAL DEPTH: 140' bgs	DEPTH TO WATER: 139.61' BTOC
SAMPLING METHOD: 6" continuous core	DATE STARTED: 03/13/18	DATE COMPLETED: 03/14/18

Depth (feet)	Groundwater Depth	USCS	Soil / Lithologic Description	CH ₄ Reading (%)	Well Installation Data
100	▽	ML	Gray silt, compact, very moist	0.0	
		ML-SM	Gray sandy silt / silty sand, wet	0.0	
105		ML	Gray silt, very moist to wet	0.0	Bentonite Chips (2'-116' bgs)
110		ML	Gray silt occasional gravel, moist	0.0	
115				0.0	3/4-inch diam. Schedule 80 PVC Blank Riser (138' - 140' bgs)
120		SM	Gray-brown sandy silt, dry	0.0	Pea Gravel (116'-140' bgs)
125		SM	Brown fine to medium sand occasional gravel and some silty sand, dry	0.0	3/4-inch diam. 0.010" Slot Schedule 80 PVC Screen (118' - 138' bgs)
130		SM	Brown fine to medium sand with some silty sand, wet	0.0	
135	▽ ▼			0.0	
140			EOB 140' bgs	0.0	Total well depth 140.41' BTOC
145					

NOTES: ▼ Water level in completed well 139.61 feet below top of casing (BTOC)

▽ Water bearing zones at time of drilling: ~14 feet bgs, ~41 feet bgs, ~56 feet bgs, ~102 feet bgs, and ~137 feet bgs