

GROUNDWATER MONITORING REPORT FOURTH QUARTER 2004

Former Texaco Service Station
13138 Interurban Avenue South
Tukwila, Washington



8410 154TH AVENUE NORTHEAST
REDMOND, WASHINGTON 98052
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Release # 369379
TEXACO 63-232-0395
TUKWILA
LIST # 4454

Report date: ☒ December 29, 2004
GeoEngineers file no.: 9876-097-00
SAP Number : 120598
Client: Tony Palagyi, Shell Oil Products US
2555 13th Avenue SW, Seattle, Washington 98134
GeoEngineers project manager: Tony N. Orme, PE
Sample date: ☒ November 23, 2004
Wells gauged: ☒ AGW-1, AGW-2, AGW-3 and AGW-4
Free product (well/thickness): None
Groundwater flow direction: ☒ South
Direction similar to previous events?: No
Wells sampled: AGW-1, AGW-2, AGW-3 and AGW-4
Purge/sample methods: No purge, sample by hand bailing techniques
Chemical testing: NWT PH-G and BETX by 8021B
Results similar to previous events?: Yes
Monitoring event frequency: Semiannually
Notes: Detected concentrations of all analytes in all sampled wells were similar to historical detected concentrations.

Prepared by



Kurt S. Anderson

Attachments:

Table 1: Summary of Groundwater Monitoring Data
Figure 1: Vicinity Map
Figure 2: Site Plan and Groundwater Flow
Chemical Analytical Data
Historical Groundwater Data
Wellhead Inspection Checklist

Distribution:

Client (one copy)
☒ John Bails
☒ Washington State Department of Ecology (Northwest Regional Office)

Kurt S. Anderson
Kurt S. Anderson, LG, LHG
Principal

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Note: We have prepared this report for the exclusive use of Shell Oil Products US (Shell), their authorized agents, and regulatory agencies. No other party may place reliance on the product of our services unless we agree in advance and in writing to such reliance. Our services were provided in accordance with our agreement with Shell. Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied should be understood.

11/4/2005
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TABLE 1
SUMMARY OF GROUNDWATER MONITORING DATA
BETX AND GASOLINE-RANGE HYDROCARBONS

13138 INTERURBAN AVENUE SOUTH
TUKWILA, WASHINGTON

Well Number	Date	Depth to Ground-water (feet)	Ground-water Elevation (feet)	Volatile Aromatic Hydrocarbons (µg/l)				Gasoline-range Hydrocarbons (mg/l)	MTBE (µg/l)
				B	E	T	X		
AGW-1	04/12/01	11.81	84.57	55.3	<0.500	<0.500	2.08 ✓	0.120	<1.00
	10/09/01	13.23	83.15	1.91	<0.500	<0.500	6.34 ✓	0.0960	<0.500
	05/07/02	11.63	84.75	6.16	0.706	<0.500	15.1 ✓	0.116	--
	10/11/02	12.87	83.51	<1.0	<1.0	<1.0	7.6 ✓	<0.25	--
	04/24/03	11.41	84.97	11	<1 ✓	<1 ✓	17.3 ✓	<0.25 ✓	<1
	10/20/03	12.38	84.00	<1 ✓	<1 ✓	<1 ✓	4.7 ✓	<0.25 ✓	--
	04/13/04	12.14	84.24	<5 ✓	<5 ✓	<5 ✓	<5 ✓	<1.2	--
	11/23/04	13.19	83.19 ✓	<5 ✓	<5 ✓	<5 ✓	<5 ✓	<1.2	--
AGW-2	04/12/01	10.92	84.55	--	--	--	--	--	--
	10/09/01	12.35	83.12	--	--	--	--	--	--
	05/07/02	--	--	--	--	--	--	--	--
	10/11/02	--	--	--	--	--	--	--	--
	04/24/03	10.47	85.00	<1	<1	<1	<1	<0.25	<1
	10/20/03	11.56	83.91	<1	<1	<1	<1	<0.25	--
	04/13/04	11.22	84.29	<5	<5	<5	<5	<1.2	--
	11/23/04	12.24	83.23	<5	<5	<5	<5	<1.2	--
AGW-3	04/12/01	11.72	84.67	0.978	<0.500	0.752	3.58	0.0839	<1.00
	10/09/01	13.19	83.20	1.60	<0.500	<0.500	2.16	0.242	--
	05/07/02	11.66	84.73	3.37	<0.500	0.651	4.28	0.258	--
	10/11/02	12.82	83.57	<1.0	<1.0	<1.0	1	<0.25	--
	04/24/03	11.44	84.95	8.1	<1	<1	4.7	<0.25	<1
	10/20/03	12.32	84.07	<1	<1	<1	<1	<0.25	--
	04/13/04	12.10	84.29	<5	<5	<5	<5	<1.2	--
	11/23/04	13.22	83.17	<1	<1	<1	<1	<0.25	--
AGW-4	04/12/01	13.00	84.61	4,090	1,070	634	5,650	28.1	<1.00
	10/09/01	14.48	83.13	9,570	3,520	4,200	20,900	100	<0.500
	05/07/02	12.87	84.74	8,010	2,370	1,500	12,600	70.6	--
	10/11/02	14.16	83.45	9,800	2,300	1,900	11,900	76	--
	04/24/03	12.63	84.98	8,800	1,800	1,200	12,200	70 ✓	120
	10/20/03	13.67	83.94	13,000	2,200	1,000	10,300	60 ✓	--
	04/13/04	13.36	84.25	11,000	2,500	1,300	12,200	77 ✓	--
	11/23/04	14.42	83.19	13,000	2,100	810	7,400	37 ✓	--
MTCA Method A Cleanup Level				5.0	700	1,000	1,000	0.8	20

Notes:

Well locations are shown in Figure 2.

Depth to water from top of well casing.

B = benzene, E = ethylbenzene, T = toluene, X = xylenes, MTBE = methyl tert-butyl ether. Analyzed using EPA Method 8021B.

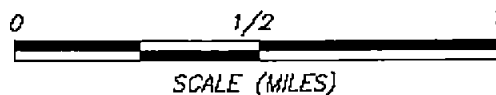
Gasoline-range hydrocarbons analyzed using NWTPH-G_x or WTPH-G.

µg/l = micrograms per liter; mg/l = milligrams per liter; ppm = parts per million

NA = Not available.

MTCA = Model Toxics Control Act

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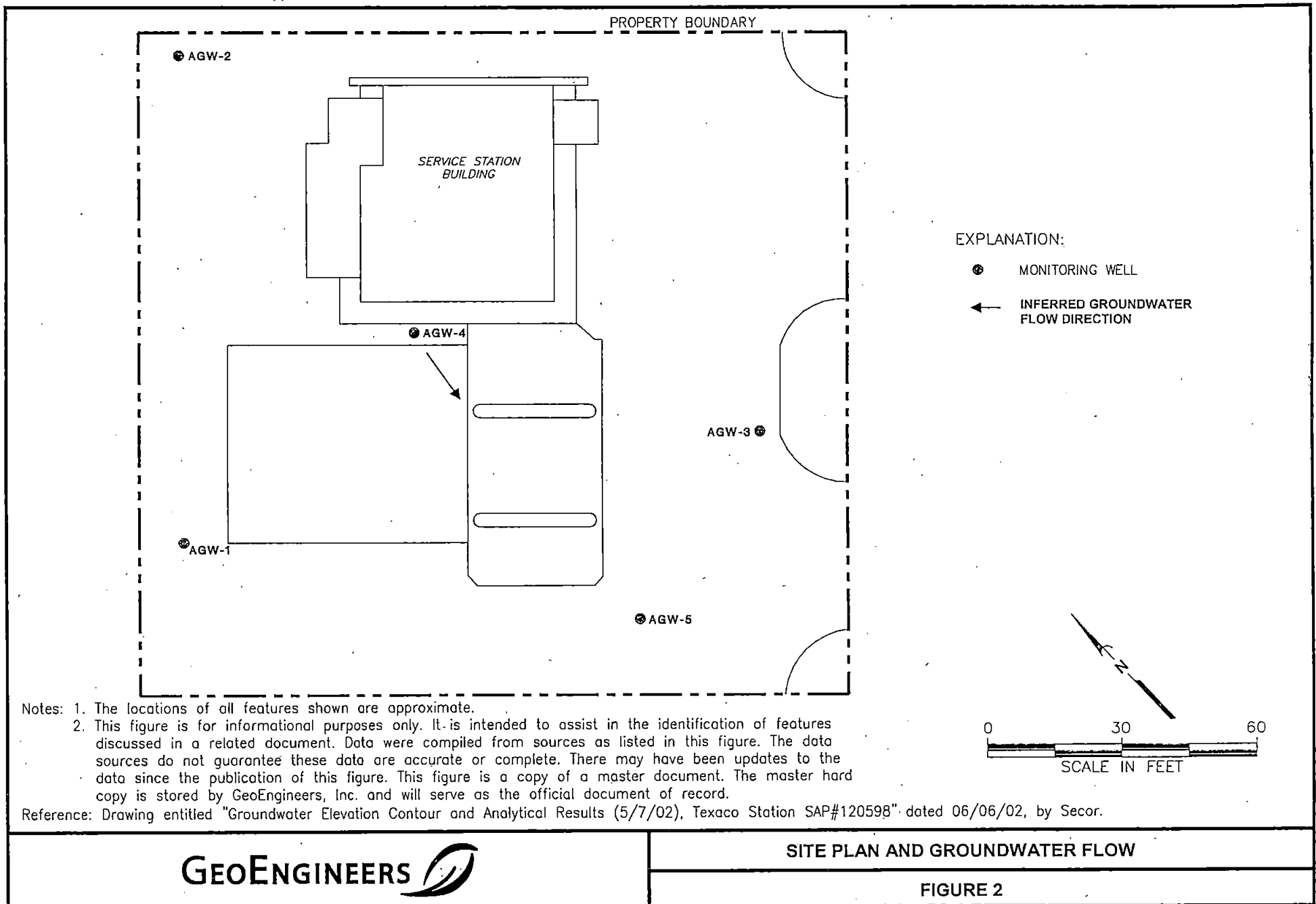
TEXACO STATION SAP NO. 120598
13138 INTERURBAN AVENUE SOUTH
TUKWILA, WASHINGTON

Reference: USGS 7.5' topographic quadrangle map "Des Moines, Wash." 1978.

GEOENGINEERS 

VICINITY MAP

FIGURE 1





HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Oil Products US

Certificate of Analysis Number:

04111183

<u>Report To:</u> Geo Engineers Inc. Tony Orme 8410 154th Avenue Northeast Redmond WA 98052 ph: (425) 861-6076 fax:	<u>Project Name:</u> INC#95995044/SAP#120598 <u>Site:</u> 13138 Interurban Ave <u>Site Address:</u> 13138 Interurban Ave Seattle WA <u>PO Number:</u> <u>State:</u> Washington <u>State Cert. No.:</u> C156 <u>Date Reported:</u> 12/6/2004
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This Report Contains A Total Of 12 Pages

Excluding This Page & COC

12/8/2004

Date



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:
Shell Oil Products US

Certificate of Analysis Number:
04111183

Report To: Geo Engineers Inc. Tony Orme 8410 154th Avenue Northeast Redmond WA 98052- ph: (425) 861-6076 fax:	Project Name: INC#95995044/SAP#120598 Site: 13138 Interurban Ave Site Address: 13138 Interurban Ave Seattle WA PO Number: State: Washington State Cert. No.: C156 Date Reported: 12/6/2004
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Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg/kg-dry " or " ug/kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Erica Rodgers
Project Manager

12/8/2004

Date



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Oil Products US

Certificate of Analysis Number:

04111183

Report To: Geo Engineers Inc.
Tony Orme
8410 154th Avenue Northeast

Redmond
WA

98052-

ph: (425) 861-6076

fax:

Project Name: INC#95995044/SAP#120598

Site: 13138 Interurban Ave

Site Address: 13138 Interurban Ave

Seattle WA

PO Number:

State: Washington

State Cert. No.: C156

Date Reported: 12/6/2004

Fax To:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
097AGW01112304	04111183-01	Water	11/23/2004 12:15:00 PM	11/30/2004 9:30:00 AM		<input type="checkbox"/>
097AGW02112304	04111183-02	Water	11/23/2004 12:30:00 PM	11/30/2004 9:30:00 AM		<input type="checkbox"/>
097AGW03112304	04111183-03	Water	11/23/2004 12:45:00 PM	11/30/2004 9:30:00 AM		<input type="checkbox"/>
097AGW04112304	04111183-04	Water	11/23/2004 1:00:00 PM	11/30/2004 9:30:00 AM		<input type="checkbox"/>

12/8/2004

Erica Rodgers
Project Manager

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

12/8/2004 2:15:18 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: 097AGW01112304

Collected: 11/23/2004 12:15

SPL Sample ID: 04111183-01

Site: 13138 Interurban Ave

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			MCL	NWTPH-GX	Units: mg/L		
Gasoline Range Organics	ND	1.2		5	12/03/04 0:58	D_R	2557686
Surr: 1,4-Difluorobenzene	95.0	% 60-155		5	12/03/04 0:58	D_R	2557686
Surr: 4-Bromofluorobenzene	90.6	% 50-158		5	12/03/04 0:58	D_R	2557686
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	5		5	12/03/04 0:58	D_R	2557620
Toluene	ND	5		5	12/03/04 0:58	D_R	2557620
Ethylbenzene	ND	5		5	12/03/04 0:58	D_R	2557620
m,p-Xylene	ND	5		5	12/03/04 0:58	D_R	2557620
o-Xylene	ND	5		5	12/03/04 0:58	D_R	2557620
Xylenes, Total	ND	5		5	12/03/04 0:58	D_R	2557620
Surr: 1,4-Difluorobenzene	102	% 39-163		5	12/03/04 0:58	D_R	2557620
Surr: 4-Bromofluorobenzene	102	% 57-157		5	12/03/04 0:58	D_R	2557620

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: 097AGW02112304

Collected: 11/23/2004 12:30

SPL Sample ID: 04111183-02

Site: 13138 Interurban Ave

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			MCL	NWTPH-GX	Units: mg/L		
Gasoline Range Organics	ND	1.2		5	12/03/04 1:25	D_R	2557687
Surr: 1,4-Difluorobenzene	99.7	% 60-155		5	12/03/04 1:25	D_R	2557687
Surr: 4-Bromofluorobenzene	92.7	% 50-158		5	12/03/04 1:25	D_R	2557687
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	5		5	12/03/04 1:25	D_R	2557621
Toluene	ND	5		5	12/03/04 1:25	D_R	2557621
Ethylbenzene	ND	5		5	12/03/04 1:25	D_R	2557621
m,p-Xylene	ND	5		5	12/03/04 1:25	D_R	2557621
o-Xylene	ND	5		5	12/03/04 1:25	D_R	2557621
Xylenes, Total	ND	5		5	12/03/04 1:25	D_R	2557621
Surr: 1,4-Difluorobenzene	102	% 39-163		5	12/03/04 1:25	D_R	2557621
Surr: 4-Bromofluorobenzene	103	% 57-157		5	12/03/04 1:25	D_R	2557621

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

12/8/2004 2:15:21 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:097AGW03112304

Collected: 11/23/2004 12:45 SPL Sample ID: 04111183-03

Site: 13138 Interurban Ave

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			MCL	NWTPH-GX	Units: mg/L		
Gasoline Range Organics	ND	0.25	1		12/03/04 1:53	D_R	2557688
Surr: 1,4-Difluorobenzene	97.7	% 60-155	1		12/03/04 1:53	D_R	2557688
Surr: 4-Bromofluorobenzene	95.0	% 50-158	1		12/03/04 1:53	D_R	2557688
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		12/03/04 1:53	D_R	2557622
Toluene	ND	1	1		12/03/04 1:53	D_R	2557622
Ethylbenzene	ND	1	1		12/03/04 1:53	D_R	2557622
m,p-Xylene	ND	1	1		12/03/04 1:53	D_R	2557622
o-Xylene	ND	1	1		12/03/04 1:53	D_R	2557622
Xylenes, Total	ND	1	1		12/03/04 1:53	D_R	2557622
Surr: 1,4-Difluorobenzene	100	% 39-163	1		12/03/04 1:53	D_R	2557622
Surr: 4-Bromofluorobenzene	101	% 57-157	1		12/03/04 1:53	D_R	2557622

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

12/8/2004 2:15:22 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:097AGW04112304

Collected: 11/23/2004 13:00

SPL Sample ID: 04111183-04

Site: 13138 Interurban Ave

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			MCL	NWTPH-GX	Units: mg/L		
Gasoline Range Organics	37	12		50	12/03/04 3:43	D_R	2557690
Surr: 1,4-Difluorobenzene	109	% 60-155		50	12/03/04 3:43	D_R	2557690
Surr: 4-Bromofluorobenzene	110	% 50-158		50	12/03/04 3:43	D_R	2557690
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	13000	50		50	12/03/04 3:43	D_R	2557624
Toluene	810	50		50	12/03/04 3:43	D_R	2557624
Ethylbenzene	2100	50		50	12/03/04 3:43	D_R	2557624
m,p-Xylene	6400	50		50	12/03/04 3:43	D_R	2557624
o-Xylene	1000	50		50	12/03/04 3:43	D_R	2557624
Xylenes,Total	7400	50		50	12/03/04 3:43	D_R	2557624
Surr: 1,4-Difluorobenzene	116	% 39-163		50	12/03/04 3:43	D_R	2557624
Surr: 4-Bromofluorobenzene	108	% 57-157		50	12/03/04 3:43	D_R	2557624

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

12/8/2004 2:15:24 PM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Oil Products US

INC#95995044/SAP#120598

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 04111183
Lab Batch ID: R128641

Method Blank

RunID: VARE_041202C-2557612 Units: ug/L
Analysis Date: 12/02/2004 19:27 Analyst: D_R

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
04111183-01A	097AGW01112304
04111183-02A	097AGW02112304
04111183-03A	097AGW03112304
04111183-04A	097AGW04112304

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes, Total	ND	1.0
Surr: 1,4-Difluorobenzene	102.9	39-163
Surr: 4-Bromofluorobenzene	102.6	57-157

Laboratory Control Sample (LCS)

RunID: VARE_041202C-2557611 Units: ug/L
Analysis Date: 12/02/2004 18:32 Analyst: D_R

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	51.9	104	70	130
Ethylbenzene	50	50.4	101	70	130
Toluene	50	52.0	104	70	130
m,p-Xylene	100	102	102	70	130
o-Xylene	50	51.5	103	70	130
Xylenes, Total	150	153.5	102.2	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04120048-02
RunID: VARE_041202C-2557613 Units: ug/L
Analysis Date: 12/02/2004 19:55 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	22.5	112	20	22.4	112	0.285	26	40	165
Ethylbenzene	ND	20	21.4	107	20	21.0	105	1.97	34	51	156
Toluene	ND	20	21.9	109	20	21.8	109	0.569	25	58	153

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

12/8/2004 2:15:25 PM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Oil Products US

INC#95995044/SAP#120598

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 04111183
Lab Batch ID: R128641

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04120048-02
RunID: VARE_041202C-2557613 Units: ug/L
Analysis Date: 12/02/2004 19:55 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
m,p-Xylene	ND	40	42.9	106	40	42.5	105	0.912	27	51	155
o-Xylene	ND	20	21.2	106	20	21.1	106	0.335	25	58	151
Xylenes, Total	ND	60	64.1	106	60	63.6	105	0.721	27	51	155

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

12/8/2004 2:15:25 PM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Oil Products US

INC#95995044/SAP#120598

Analysis: Gasoline Range Organics
Method: NWTPH-Gx

WorkOrder: 04111183
Lab Batch ID: R128643

Method Blank

RunID: VARE_041202D-2557682 Units: mg/L
Analysis Date: 12/02/2004 19:27 Analyst: D_R

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
04111183-01A	097AGW01112304
04111183-02A	097AGW02112304
04111183-03A	097AGW03112304
04111183-04A	097AGW04112304

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.25
Surr: 1,4-Difluorobenzene	96.0	60-155
Surr: 4-Bromofluorobenzene	94.3	50-158

Laboratory Control Sample (LCS)

RunID: VARE_041202D-2557681 Units: mg/L
Analysis Date: 12/02/2004 19:00 Analyst: D_R

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1	0.728	72.8	64	131

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04120048-03
RunID: VARE_041202D-2557683 Units: mg/L
Analysis Date: 12/02/2004 20:50 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	0.9	1.01	112	0.9	1.03	115	2.01	36	36	140

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

12/8/2004 2:15:25 PM

*Sample Receipt Checklist
And
Chain of Custody*

12/8/2004 2:15:25 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder: 04111183

Received By: NB

Date and Time Received: 11/30/2004 9:30:00 AM

Carrier name: FedEx

Temperature: 3.0°C

Chilled by: Water Ice

- | | | | |
|--|---|-----------------------------|---|
| 1. Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Custody seals intact on shipping container/cooler? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 3. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 5. Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 6. Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 10. All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 11. Container/Temp Blank temperature in compliance? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 12. Water - VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |
| 13. Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

SPL Representative:

Contact Date & Time:

Client Name Contacted:

Non Conformance
Issues:

Client Instructions:

0411183

800-969-6775

CRMT-HOUSTON

1	2	0	5	9	8
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PAGE: 1 of 1

LAB USE ONLY

SPECIAL INSTRUCTIONS OR NOTES: TEMPERATURE ON RECEIPT C° 20

Time:	1600
Time:	0930
Time:	

VEN 3 00128700 10/23/01 Revision 49lbs 308

Historical Groundwater Data: Cumulative Summary of Groundwater Elevations
Texaco-Branded Station SAP No. 120598
13138 Interurban Avenue South, Tukwila, Washington

Well Number/ TOC Elevation	Date of Measurement	DTW (feet)	DTFP (feet)	FPT (feet)	SWL (feet)	Change in SWL (feet)
AGW-1 96.38	4/23/1997	9.63	0.00	0.00	86.75	--
	7/14/1997	12.20	0.00	0.00	84.18	-2.57
	10/22/1997	12.31	0.00	0.00	84.07	-0.11
	1/22/1998	10.30	0.00	0.00	86.08	2.01
	4/9/1998	12.04	0.00	0.00	84.34	-1.74
	7/14/1998	12.51	0.00	0.00	83.87	-0.47
	5/11/1999	13.17	0.00	0.00	83.21	-0.66
	11/3/1999	14.49	0.00	0.00	81.89	-1.32
	5/13/2000	11.90	0.00	0.00	84.48	2.59
	10/21/2000	12.55	0.00	0.00	83.83	-0.65
	4/12/2001	11.81	0.00	0.00	84.57	0.74
	10/9/2001	13.23	0.00	0.00	83.15	-1.42
	5/7/2002	11.63	0.00	0.00	84.75	1.60
AGW-2 95.47	4/23/1997	9.76	0.00	0.00	85.71	--
	7/14/1997	11.30	0.00	0.00	84.17	-1.54
	10/22/1997	11.36	0.00	0.00	84.11	-0.06
	1/22/1998	9.40	0.00	0.00	86.07	1.96
	4/9/1998	11.18	0.00	0.00	84.29	-1.78
	7/14/1998	11.67	0.00	0.00	83.80	-0.49
	5/11/1999	12.25	0.00	0.00	83.22	-0.58
	11/3/1999	13.53	0.00	0.00	81.94	-1.28
	5/13/2000	11.03	0.00	0.00	84.44	2.50
	10/21/2000	11.64	0.00	0.00	83.83	-0.61
	4/12/2001	10.92	0.00	0.00	84.55	0.72
	10/9/2001	12.35	0.00	0.00	83.12	-1.43
	5/7/2002	--	--	--	--	--
AGW-3 96.39	4/23/1997	9.50	0.00	0.00	86.89	--
	7/14/1997	12.28	0.00	0.00	84.11	-2.78
	10/22/1997	12.35	0.00	0.00	84.04	-0.07
	1/22/1998	10.25	0.00	0.00	86.14	2.10
	4/9/1998	12.02	0.00	0.00	84.37	-1.77
	7/14/1998	12.49	0.00	0.00	83.90	-0.47
	5/11/1999	13.18	0.00	0.00	83.21	-0.69
	11/3/1999	14.60	0.00	0.00	81.79	-1.42
	5/13/2000	9.01	0.00	0.00	87.38	5.59
	10/21/2000	12.51	0.00	0.00	83.88	-3.50
	4/12/2001	11.72	0.00	0.00	84.67	0.79
	10/9/2001	13.19	0.00	0.00	83.20	-1.47
	5/7/2002	11.66	0.00	0.00	84.73	1.53

Historical Groundwater Data: Cumulative Summary of Groundwater Elevations
Texaco-Branded Station SAP No. 120598
13138 Interurban Avenue South, Tukwila, Washington

Well Number/ TOC Elevation	Date of Measurement	DTW (feet)	DTFP (feet)	FPT (feet)	SWL (feet)	Change in SWL (feet)
AGW-4 97.61	4/23/1997	10.95	0.00	0.00	86.66	--
	7/14/1997	13.70	0.00	0.00	83.91	-2.75
	10/22/1997	13.43	0.00	0.00	84.18	0.27
	1/22/1998	11.53	0.00	0.00	86.08	1.90
	4/9/1998	13.58	0.00	0.00	84.03	-2.05
	7/14/1998	14.02	0.00	0.00	83.59	-0.44
	5/11/1999	14.46	0.00	0.00	83.15	-0.44
	11/3/1999	15.88	0.00	0.00	81.73	-1.42
	5/13/2000	13.14	0.00	0.00	84.47	2.74
	10/21/2000	13.81	0.00	0.00	83.80	-0.67
	4/12/2001	13.00	0.00	0.00	84.61	0.81
	10/9/2001	14.48	0.00	0.00	83.13	-1.48
	5/7/2002	12.87	0.00	0.00	84.74	1.61
AGW-5 97.35	4/23/1997	10.52	0.00	0.00	86.83	--
	7/14/1997	13.25	0.00	0.00	84.10	-2.73
	10/22/1997	13.35	0.00	0.00	84.00	-0.10
	1/22/1998	11.20	0.00	0.00	86.15	2.15
	4/9/1998	13.00	0.00	0.00	84.35	-1.80
	7/14/1998	13.48	0.00	0.00	83.87	-0.48
	5/11/1999	14.19	0.00	0.00	83.16	-0.71
	11/3/1999	15.56	0.00	0.00	81.79	-1.37
	5/13/2000	12.87	0.00	0.00	84.48	2.69
	10/21/2000	13.45	0.00	0.00	83.90	-0.58
	4/12/2001	12.71	0.00	0.00	84.64	0.74
	10/9/2001	14.17	0.00	0.00	83.18	-1.46
	5/7/2002	12.62	0.00	0.00	84.73	1.55

TOC = Top of casing.
DTW = Depth to water.
DTFP = Depth to free product
FPT = Free product thickness.
SWL = Static water level.
-- = Not monitored.

Historical Groundwater Data: Cumulative Summary of Groundwater Sample Analytical Results
Texaco-Branded Station SAP No. 120598
13138 Interurban Avenue South, Tukwila, Washington

Well Number	Sample Date	BTEX (µg/L)				TPH-G (µg/L)	MTBE (µg/L)
		Benzene	Toluene	Ethyl-benzene	Total Xylenes		
AGW-1	4/23/1997	728	113	0.65	47.5	439	--
	7/14/1997	425	53	ND	44.6	960	--
	10/22/1997	320	31.1	ND	13.9	ND	--
	1/22/1998	752	53.5	ND	28.1	ND	--
	4/9/1998	371	58.1	ND	ND	ND	--
	7/14/1998	309	16.8	ND	9.51	ND	--
	5/11/1999	429	8.75	<5.0	22.9	<500	<50
	11/3/1999	207	1.78	<0.5	7.86	75.1	--
	5/13/2000	262	0.96	0.87	8.15	<250	--
	10/21/2000	130	<2.50	<2.50	8.12	362	--
	4/12/2001	55.3	<0.500	<0.500	2.08	120	<1.00
	10/9/2001	1.91	<0.500	<0.500	6.34	96.0	<0.500
	5/7/2002	6.16	<0.500	0.706	15.1	116	--
AGW-2	4/23/1997	ND	ND	ND	ND	ND	--
	7/14/1997	ND	ND	ND	ND	ND	--
	10/22/1997	ND	ND	ND	ND	ND	--
	1/22/1998	ND	ND	ND	ND	ND	--
	4/9/1998	ND	ND	ND	ND	ND	--
	7/14/1998	ND	ND	ND	ND	ND	--
	5/11/1999	--	--	--	--	--	--
	11/3/1999	--	--	--	--	--	--
	5/13/2000	--	--	--	--	--	--
	10/21/2000	--	--	--	--	--	--
	4/12/2001	--	--	--	--	--	--
	10/9/2001	--	--	--	--	--	--
	5/7/2002	--	--	--	--	--	--
AGW-3	4/23/1997	12.8	0.591	ND	6.76	ND	--
	7/14/1997	38.9	1.6	0.504	18	363	--
	10/22/1997	6.35	1.14	ND	11.4	83.9	--
	1/22/1998	16.5	1.06	ND	5.68	65.9	--
	4/9/1998	12.2	ND	ND	12.4	ND	--
	7/14/1998	ND	1.24	ND	11.2	79.5	--
	5/11/1999	5.65	0.93	<0.5	10.4	<50	<25
	11/3/1999	<3.38	1.51	<0.5	3.79	72.1	--
	5/13/2000	14.6	1.69	0.70	9.3	92.1	--
	10/21/2000	<2.53	<0.660	<0.500	2.46	189	--
	4/12/2001	0.978	0.752	<0.500	3.58	83.9	<1.00
	10/9/2001	1.60	<0.500	<0.500	2.16	242	--
	5/7/2002	3.37	0.651	<0.500	4.28	258	--

Historical Groundwater Data: Cumulative Summary of Groundwater Sample Analytical Results
Texaco-Branded Station SAP No. 120598
13138 Interurban Avenue South, Tukwila, Washington

Well Number	Sample Date	BTEX (µg/L)				TPH-G (µg/L)	MTBE (µg/L)
		Benzene	Toluene	Ethylbenzene	Total Xylenes		
AGW-4	4/23/1997	--	--	--	--	--	--
	7/14/1997	--	--	--	--	--	--
	10/22/1997	--	--	--	--	--	--
	1/22/1998	--	--	--	--	--	--
	4/9/1998	--	--	--	--	--	--
	7/14/1998	--	--	--	--	--	--
	5/11/1999	9,830	10,500	3,440	22,200	129,000	<2,500
	11/3/1999	8,280	5,600	2,320	13,800	86,300	--
	5/13/2000	9,000	4,550	2,560	15,100	74,300	--
	10/21/2000	8,930	3,830	2,320	13,200	68,700	--
	4/12/2001	4,090	634	1,070	5,650	28,100	<1.00
	10/9/2001	9,570	4,200	3,520	20,900	100,000	<0.500
	5/7/2002	8,010	1,500	2,370	12,600	70,600	--
AGW-5	4/23/1997	ND	ND	ND	ND	ND	--
	7/14/1997	ND	ND	ND	ND	ND	--
	10/22/1997	ND	ND	ND	ND	ND	--
	1/22/1998	ND	ND	ND	ND	ND	--
	4/9/1998	ND	ND	ND	ND	ND	--
	7/14/1998	ND	ND	ND	ND	ND	--
	5/11/1999	--	--	--	--	--	--
	11/3/1999	--	--	--	--	--	--
	5/13/2000	--	--	--	--	--	--
	10/21/2000	--	--	--	--	--	--
	4/12/2001	--	--	--	--	--	--
	10/9/2001	--	--	--	--	--	--
	5/7/2002	--	--	--	--	--	--
Current Quarter Quality Assurance/Quality Control Samples							
AGW-4 (Duplicate)		9,410	1,760	2,820	14,800	74,300	--
Trip Blank		<0.500	<0.500	<0.500	<1.00	<50.0	--

µg/L = Micrograms per liter; approximate parts per billion.

-- = Not sampled or not analyzed.

TPH-G = Analytical Method changed to NW-TPH-Gx in 2000.

Benzene, toluene, ethylbenzene, and total xylene (BTEX) analysis by EPA 8021B.

ND = Not detected at a concentration above laboratory method reporting limit as previously reported by others.

The exact laboratory method reporting limits were not available to SECOR.

Historical Groundwater Data: Summary of Volatile Organic Compounds Analytical Results
Texaco Station SAP No. 120598
13138 Interurban Avenue, Tukwila, WA

Well Number	Sample Date	Ethanol (mg/L)	1,2-Dibromoethane (mg/L)	1,2-Dichloroethane (mg/L)	Diisopropyl Ether (mg/L)	Ethyl tert-butyl ether (mg/L)	Methyl tert-butyl ether (mg/L)	tert-Amyl Methyl Ether (mg/L)	tert-Butyl Alcohol (mg/L)
AGW-1	10/09/01	--	--	--	<1.00	<1.00	<0.500	2.21	<50.0
AGW-4	10/09/01	--	--	--	<1.00	<1.00	<0.500	<1.00	<50.0

µg/L = Micrograms per liter; approximate parts per billion.

-- = Not sampled or not analyzed.

WELLHEAD INSPECTION CHECKLIST AND REPAIR ORDER

Client Shell Inspection Date 11-23-04
 Site Address 13138 INTERURBAN AVES, TDKWILLA, WA. Inspected By BRIAN ANDERSON

1. Lid on box?	6. Casing secure?	12. Water standing in wellbox?	15. Well cap functional?
2. Lid broken?	7. Casing cut level?	12a. Standing above the top of casing?	16. Can cap be pulled loose?
3. Lid bolts missing?	8. Debris in wellbox?	12b. Standing below the top of casing?	17. Can cap seal out water?
4. Lid bolts stripped?	9. Wellbox is too far above grade?	12c. Water even with the top of casing?	18. Padlock present?
5. Lid seal intact?	10. Wellbox is too far below grade?	13. Well cap present?	19. Padlock functional?
	11. Wellbox is crushed/damaged?	14. Well cap found secure?	

☒ Check box if no deficiencies were found. Note below deficiencies you were able to correct.

Well I.D.	Deficiency	Corrective Action Taken

Note below all deficiencies that could not be corrected and still need to be corrected.

Well I.D.	Persisting Deficiency	BTS Office Assigns or Defers Correction to:	Date Assigned	Date Corrected