

**TREATED GROUNDWATER EFFLUENT  
RESULTS - DECEMBER 15, 2004  
TIME OIL PROPERTY No. 01-070  
100 EAST WINE COUNTRY ROAD  
GRANDVIEW, WASHINGTON**

**FEBRUARY 11, 2005**

**FOR  
TIME OIL Co.**

**Treated Groundwater Effluent Results –  
December 15, 2004  
Time Oil Property No. 01-070  
100 East Wine Country Road  
Grandview, Washington  
File No. 1957-068-01**

**February 11, 2005**

**Prepared for:**

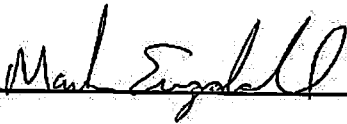
**Time Oil Co.  
2737 W. Commodore Way  
Seattle, WA 98199-1257**

**Attention: Mark Chandler**

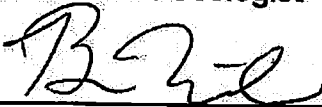
**Cc: Cus Arteaga, City of Grandview  
Rick Frye, Central Region, Washington State Department of Ecology**

**Prepared by:**

**GeoEngineers, Inc.  
523 East Second Avenue  
Spokane, Washington 99202**



**Mark B. Engdahl, LG  
Environmental Geologist**



**Bruce D. Williams  
Principal**

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**TREATED GROUNDWATER EFFLUENT RESULTS -  
DECEMBER 15, 2004  
TIME OIL PROPERTY NO. 01-070  
100 EAST WINE COUNTRY ROAD  
GRANDVIEW, WASHINGTON  
FILE NO. 1957-068-01**

GeoEngineers is pleased to present the analytical testing data for the treated groundwater effluent from the remedial system operating at Time Oil Co. Property No. 01-070 located in Grandview, Washington. The remedial system began full time operation on February 18, 2002.

The water discharge permit associated with the remedial system requires for daily discharge monitoring for the first five days of system operation, weekly for the first month, and monthly thereafter. This letter presents the monthly monitoring results for December 2004.

Results of the December 15, 2004 sampling event indicate compliance with permit requirements. Sample collection dates, total cumulative flow, and analytical results are presented on Table 1. The average recovery rate from the shallow aquifer was calculated at 1.21 gallons per minute (GPM) from November 19 to December 15, 2004. About 2,069,439 gallons of groundwater have been recovered and treated by the remedial system since initiation of remedial activities. The water discharge permit allows for a maximum discharge of 4,900 gallons per day (147,000 gallons per month). About 45,487 gallons of treated groundwater was discharged between November 19 and December 15, 2004. Daily discharge averaged 1,750 gallons during the operating days in this reporting period, which is in compliance with the daily discharge allowance. The system has operated for a total of approximately 786 days. A historical system run time log is presented as Table 2. Analytical test certificates for the December 15, 2004 monitoring event are included in Appendix A.

This letter report has been prepared on behalf of Time Oil Co. Should you have any questions regarding the sample results or other aspects of this project, please do not hesitate to call us at your earliest convenience.

**List of Tables**

Table 1. Historical Treated Groundwater Discharge Data  
Table 2. Average Recovery Rate Estimation

**APPENDICES**

Appendix A – Analytical Test Certificates -12/15/04  
Appendix B – Ecology Letter of Transmittal

TABLE 1

HISTORICAL TREATED GROUNDWATER DISCHARGE DATA<sup>1</sup>  
 TIME OIL PROPERTY #01-070  
 GRANDVIEW, WASHINGTON

Date	Cumulative Discharge(gal) <sup>2</sup>	pH <sup>3</sup> (pH units)	Benzene <sup>4</sup> (µg/l)	Toluene <sup>4</sup> (µg/l)	Ethylbenzene <sup>4</sup> (µg/l)	Total Xylenes <sup>4</sup> (µg/l)	GRPH <sup>5</sup> (µg/l)	DRPH <sup>6</sup> (µg/l)	Total Lead <sup>7</sup> (µg/l)
2/18/2002	System Start (8802)	7.52	<0.500	<2.00	<1.00	<1.50	<100	<250	3.31
2/19/2002	12,615	7.65	<0.500	<2.00	<1.00	<1.50	<100	<250	1.35
2/20/2002	16,975	7.46	<0.500	<2.00	<1.00	<1.50	<100	<250	1.08
2/21/2002	18,845	7.75	<0.500	<2.00	<1.00	<1.50	<100	<250	1.11
2/22/2002	23,000	7.50	<0.500	<2.00	<1.00	<1.50	<100	<250	<1.00
2/26/2002	26,798	7.65	<0.500	<2.00	<1.00	<1.50	<100	310	1.36
3/5/2002	39,388	7.90	<0.500	<2.00	<1.00	<1.50	<100	323	1.40
3/12/2002	53,775	7.92	<0.500	<2.00	<1.00	<1.50	<100	<250	<1.00
3/18/2002	66,846	7.95	<0.500	<2.00	<1.00	<1.50	<100	<250	1.12
4/19/2002	114,032	7.46	<0.500	<0.500	<0.500	<1.00	<50.0	<250	1.72
5/13/2002	145,505	7.60	<0.500	<2.00	<1.00	<1.50	<100	333	1.72
8/26/2002	~162,342	8.00	<0.500	<2.00	<1.00	<1.50	<100	340	3.18
9/11/2002	173,198	8.09	<0.500	<2.00	<1.00	<1.50	<100	729	2.29
10/16/2002	182,705	8.14	<0.500	<0.500	<0.500	<1.00	<50.0	504	1.25
11/15/2002	297,162	8.25	<0.500	<0.500	<0.500	<1.00	<50.0	544	<1.00
12/12/2002	373,735	8.27	<0.500	<0.500	<0.500	<1.00	<50.0	367	<1.00
1/24/2003	469,652	8.25	<0.500	<0.500	<0.500	<1.00	<50.0	1,820	2.01
2/26/2003	551,392	8.18	<0.500	<0.500	<0.500	<1.00	<50.0	<250	2.98
3/12/2003	597,811	8.26	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
4/23/2003	708,132	8.31	<0.500	<0.500	<0.500	<1.00	<50.0	<250	1.55
5/19/2003	815,698	8.33	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
6/9/2003	815,698	8.36	<0.500	<0.500	<0.500	<1.00	<50.0	438	2.75
7/10/2003	859,827	8.24	<0.500	<0.500	<0.500	<1.00	<50.0	351	3.24
8/7/2003	872,319	8.37	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
9/25/2003	1,060,622	7.68	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
10/22/2003	1,171,711	8.36	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
11/20/2003	1,283,532	8.29	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
12/18/2003	1,372,287	8.39	<0.500	<0.500	<0.500	<1.00	<50.0	<250	1.64
1/14/2004	1,409,924	8.27	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00

TABLE 1

Date	Cumulative Discharge (gal) <sup>2</sup>	pH <sup>3</sup> (pH units)	Benzene <sup>4</sup> (µg/l)	Toluene <sup>4</sup> (µg/l)	Ethylbenzene <sup>4</sup> (µg/l)	Total Xylenes <sup>4</sup> (µg/l)	GRPH <sup>5</sup> (µg/l)	DRPH <sup>6</sup> (µg/l)	Total Lead <sup>7</sup> (µg/l)
2/5/2004	1,494,058	8.32	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
3/11/2004	1,612,477	8.40	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
4/27/2004	1,715,620	8.41	<0.500	<0.500	<0.500	<1.00	<50.0	<250	1.51
5/21/2004	1,738,558	8.27	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
6/2/2004	1,786,082	8.18	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
7/13/2004	1,852,133	8.28	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
8/17/2004	1,865,964	System Down, No Samples Collected.							
9/22/2004	1,927,356	8.42	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
10/15/2004	1,978,011	8.39	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
11/19/2004	2,023,952	8.29	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
12/15/2004	2,069,439	8.22	<0.500	<0.500	<0.500	<1.00	<50.0	<250	<1.00
Discharge Permit Levels <sup>8</sup>		6.0 - 9.0	5.0	40	30	20	1,000	10,000	5.0

Notes:

- Analytical data provided to North Creek Analytical.
- Based on site water meter readings.
- pH analyzed by EPA Method 150.1.
- Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8021B.
- Gasoline-range petroleum hydrocarbons (GRPH) analyzed by Northwest Method NWTPH-G.
- Diesel-range petroleum hydrocarbons (DRPH) analyzed by Northwest Method NWTPH-Dx with Acid/Silica Cleanup.
- Total lead analyzed by EPA 6000/7000 Series Methods.
- Discharge permit levels established in City of Grandview permit.

**TABLE 2**  
**AVERAGE RECOVERY RATE ESTIMATION**  
**TIME OIL PROPERTY #01-070**  
**GRANDVIEW, WASHINGTON**

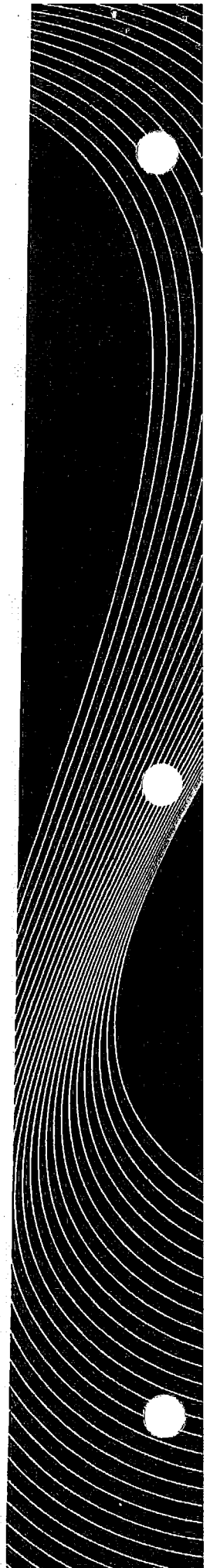
Date	Total Days Operated	Recorded Gallons Discharged	Actual Gallons Discharged	Gallons Discharged Per Day Since Previous Monitoring Period
02/18/02	0.58	8802	System Startup	
02/19/02	2	12615	3813	3,813
02/20/02	3	16975	8173	4,360
02/21/02	4	18845	10043	1,870
02/22/02	5	23000	14198	4,155
02/26/02	9	35600	26798	3,150
03/05/02	16	48190	39388	1,799
03/12/02	23	62577	53775	2,055
03/18/02	29	75648	66846	2,179
03/26/02	37	90270	81468	1,828
04/19/02	61	128874	114032	1,357
05/13/02	85	31473	145505	1,311
08/21/02	85	31473	System Restart	
08/26/02	90	48310	162342	160
09/11/02	106	59165	173198	678
10/16/02	133	68673	182705	272
11/15/02	163	183130	297162	3,815
12/12/02	190	259703	373735	2,836
01/24/03	218	355620	469652	2,231
02/26/03	240	437360	551392	2,477
03/12/03	254	483779	597811	3,316
04/23/03	288	594100	708132	3,265
05/19/03	314	701666	815698	4,137
06/09/03	320	721087	835119	2,988
07/10/03	328	745795	859827	3,089
08/07/03	333	758287	872319	2,498
09/25/03	375	946590	1060622	4,537
10/22/03	405	1057679	1171711	4,187
11/20/03	434	1169500	1283532	3,856
12/18/03	462	1258254	1372287	3,170
01/14/04	489	1295891	1409924	1,394
02/05/04	511	1380026	1494058	3,824
03/11/04	546	1498445	1612477	3,383
04/27/04	593	1601588	1715620	2,195
05/21/04	617	1624526	1738558	956
06/02/04	629	1672049	1786082	3,960
07/13/04	670	1738101	1852133	1,611
08/17/04	680	1751932	1865964	1,383
09/22/04	705	1813324	1927356	2,408
10/15/04	725	1863978	1978011	2,533
11/19/04	760	45941	2023952	1,313
12/15/04	786	91428	2069439	1,750

## TABLE 2

System started with 8,802.0 gallons on the flow meter.		
* Groundwater recovery system shut down upon arrival.		
3/26/2002 Performed O&M, no samples collected. Discharge flow meter not working properly - replaced with stripper flow meter - gallons =96,310		
4/19/2002 Discharge flow meter not working properly - replaced with new flow meter - gallons = 0.0		
5/13/2002 Groundwater recovery system shut down for equipment maintenance.		
10/3/2002 System Down 10-3-02 through 10-11-02 - Replaced wells RW-3, RW-4, MW-5, and MW-6		
4/21/2003 System Down 4-18-03 through 4-23-03 - Replaced batch tank pump.		
8/17/2004 System Down 7-23-04 through 8-27-04 - Replaced air compressor motor.		
10/15/2004 New flow meter installed.		
45,487.0      Gallons Discharged Since Previous Monitoring Event		
	Hours	Minutes
Total	624.00	37440
1.21 GPM (Average)		



**APPENDIX A**  
**ANALYTICAL TEST CERTIFICATES – 12/15/04**







Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
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Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119  
907.563.9200 fax 907.563.9210

21 December 2004

Gary D. Panther  
Geo Engineers - Spokane  
523 East 2nd  
Spokane, WA/USA 99202  
RE: Time Oil-Grandview

Enclosed are the results of analyses for samples received by the laboratory on 12/16/04 06:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amar Gill  
Project Manager



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Geo Engineers - Spokane 523 East 2nd Spokane, WA/USA 99202	Project: Time Oil-Grandview	Reported:
	Project Number: 1957-068-01	12/21/04 13:52
	Project Manager: Gary D. Panther	

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BATCH 121504	B4L0380-01	Water	12/15/04 09:00	12/16/04 06:35
DISCHARGE121504	B4L0380-02	Water	12/15/04 09:15	12/16/04 06:35

North Creek Analytical - Bothell

Amar Gill, Project Manager

*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.*



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Geo Engineers - Spokane  
 523 East 2nd  
 Spokane, WA/USA 99202

Project: Time Oil-Grandview  
 Project Number: 1957-068-01  
 Project Manager: Gary D. Panther

Reported:  
 12/21/04 13:52

**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

**BATCH 121504 (B4L0380-01) Water** Sampled: 12/15/04 09:00 Received: 12/16/04 06:35

Gasoline Range Hydrocarbons	ND	50.0		ug/l	1	4L16023	12/16/04	12/17/04	NWTPH-Gx/8021B	
Benzene	ND	0.500		"	"	"	"	"	"	
Toluene	ND	0.500		"	"	"	"	"	"	
Ethylbenzene	ND	0.500		"	"	"	"	"	"	
Xylenes (total)	ND	1.00		"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	88.3 %	58-144				"	"	"	"	
Surrogate: 4-BFB (PID)	89.2 %	68-140				"	"	"	"	

**DISCHARGE 121504 (B4L0380-02) Water** Sampled: 12/15/04 09:15 Received: 12/16/04 06:35

Gasoline Range Hydrocarbons	ND	50.0		ug/l	1	4L16023	12/16/04	12/17/04	NWTPH-Gx/8021B	
Benzene	ND	0.500		"	"	"	"	"	"	
Toluene	ND	0.500		"	"	"	"	"	"	
Ethylbenzene	ND	0.500		"	"	"	"	"	"	
Xylenes (total)	ND	1.00		"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	86.2 %	58-144				"	"	"	"	
Surrogate: 4-BFB (PID)	89.8 %	68-140				"	"	"	"	

North Creek Analytical - Bothell

Amar Gill, Project Manager

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North Creek Analytical, Inc.  
 Environmental Laboratory Network



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Geo Engineers - Spokane  
 523 East 2nd  
 Spokane, WA/USA 99202

Project: Time Oil-Grandview  
 Project Number: 1957-068-01  
 Project Manager: Gary D. Panther

Reported:  
 12/21/04 13:52

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

**BATCH 121504 (B4L0380-01) Water** Sampled: 12/15/04 09:00 Received: 12/16/04 06:35

Diesel Range Hydrocarbons	ND	0.250		mg/l	1	4L18002	12/18/04	12/20/04	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.500		"	"	"	"	"	"	
Surrogate: 2-FBP	86.0 %	50-150				"	"	"	"	
Surrogate: Octacosane	102 %	50-150				"	"	"	"	

**DISCHARGE 121504 (B4L0380-02) Water** Sampled: 12/15/04 09:15 Received: 12/16/04 06:35

Diesel Range Hydrocarbons	ND	0.250		mg/l	1	4L18002	12/18/04	12/20/04	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.500		"	"	"	"	"	"	
Surrogate: 2-FBP	76.3 %	50-150				"	"	"	"	
Surrogate: Octacosane	94.7 %	50-150				"	"	"	"	

North Creek Analytical - Bothell

Amar Gill, Project Manager

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Geo Engineers - Spokane  
 523 East 2nd  
 Spokane, WA/USA 99202

Project: Time Oil-Grandview  
 Project Number: 1957-068-01  
 Project Manager: Gary D. Panther

Reported:  
 12/21/04 13:52

**Total Metals by EPA 6000/7000 Series Methods**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>BATCH 121504 (B4L0380-01) Water</b> Sampled: 12/15/04 09:00 Received: 12/16/04 06:35									
Lead	ND	0.00100	mg/l	1	4L16025	12/16/04	12/17/04	EPA 6020	
<b>DISCHARGE 121504 (B4L0380-02) Water</b> Sampled: 12/15/04 09:15 Received: 12/16/04 06:35									
Lead	ND	0.00100	mg/l	1	4L16025	12/16/04	12/17/04	EPA 6020	

North Creek Analytical - Bothell

Amar Gill, Project Manager

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North Creek Analytical, Inc.  
 Environmental Laboratory Network



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Geo Engineers - Spokane 523 East 2nd Spokane, WA/USA 99202	Project: Time Oil-Grandview Project Number: 1957-068-01 Project Manager: Gary D. Panther	Reported: 12/21/04 13:52
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**Conventional Chemistry Parameters by APHA/EPA Methods**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>BATCH 121504 (B4L0380-01) Water</b> Sampled: 12/15/04 09:00 Received: 12/16/04 06:35									
pH	7.47		pH Units	1	4L16032	12/16/04	12/16/04	EPA 150.1	
<b>DISCHARGE 121504 (B4L0380-02) Water</b> Sampled: 12/15/04 09:15 Received: 12/16/04 06:35									
pH	8.22		pH Units	1	4L16032	12/16/04	12/16/04	EPA 150.1	

North Creek Analytical - Bothell

Amar Gill, Project Manager

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Environmental Laboratory Network



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Geo Engineers - Spokane 523 East 2nd Spokane, WA/USA 99202	Project: Time Oil-Grandview Project Number: 1957-068-01 Project Manager: Gary D. Panther	Reported: 12/21/04 13:52
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**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4L16023: Prepared 12/16/04 Using EPA 5030B (P/T)**

**Blank (4L16023-BLK1)**

Gasoline Range Hydrocarbons	ND	50.0	ug/l							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Surrogate: 4-BFB (FID)	42.2		"	48.0		87.9	58-144			
Surrogate: 4-BFB (PID)	43.0		"	48.0		89.6	68-140			

**LCS (4L16023-BS1)**

Gasoline Range Hydrocarbons	524	50.0	ug/l	502		104	80-120			
Benzene	6.17	0.500	"	6.21		99.4	80-120			
Toluene	32.9	0.500	"	34.9		94.3	80-120			
Ethylbenzene	8.79	0.500	"	8.38		105	80-120			
Xylenes (total)	41.5	1.00	"	40.6		102	80-120			
Surrogate: 4-BFB (FID)	46.1		"	48.0		96.0	58-144			
Surrogate: 4-BFB (PID)	41.2		"	48.0		85.8	68-140			

**LCS Dup (4L16023-BSD1)**

Gasoline Range Hydrocarbons	566	50.0	ug/l	502		113	80-120	7.71	25	
Benzene	6.30	0.500	"	6.21		101	80-120	2.09	25	
Toluene	34.3	0.500	"	34.9		98.3	80-120	4.17	25	
Ethylbenzene	9.06	0.500	"	8.38		108	80-120	3.03	25	
Xylenes (total)	43.3	1.00	"	40.6		107	80-120	4.25	25	
Surrogate: 4-BFB (FID)	48.4		"	48.0		101	58-144			
Surrogate: 4-BFB (PID)	41.8		"	48.0		87.1	68-140			

**Matrix Spike (4L16023-MS1)**

**Source: B4L0378-02**

Gasoline Range Hydrocarbons	498	50.0	ug/l	502	ND	99.2	58-129			
Benzene	6.58	0.500	"	6.21	0.346	100	46-130			
Toluene	36.2	0.500	"	34.9	0.175	103	60-124			
Ethylbenzene	9.43	0.500	"	8.38	ND	113	56-141			
Xylenes (total)	45.7	1.00	"	40.6	ND	113	66-132			

North Creek Analytical - Bothell

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Geo Engineers - Spokane 523 East 2nd Spokane, WA/USA 99202	Project: Time Oil-Grandview Project Number: 1957-068-01 Project Manager: Gary D. Panther	Reported: 12/21/04 13:52
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**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4L16023: Prepared 12/16/04 Using EPA 5030B (P/T)**

**Matrix Spike (4L16023-MS1) Source: B4L0378-02**

Surrogate: 4-BFB (FID)	48.0		ug/l	48.0		100	58-144			
Surrogate: 4-BFB (PID)	42.4		"	48.0		88.3	68-140			

**Matrix Spike Dup (4L16023-MSD1) Source: B4L0378-02**

Gasoline Range Hydrocarbons	449	50.0	ug/l	502	ND	89.4	58-129	10.3	25	
Benzene	6.26	0.500	"	6.21	0.346	95.2	46-130	4.98	40	
Toluene	35.2	0.500	"	34.9	0.175	100	60-124	2.80	40	
Ethylbenzene	9.09	0.500	"	8.38	ND	108	56-141	3.67	40	
Xylenes (total)	44.5	1.00	"	40.6	ND	110	66-132	2.66	40	
Surrogate: 4-BFB (FID)	41.7		"	48.0		86.9	58-144			
Surrogate: 4-BFB (PID)	42.8		"	48.0		89.2	68-140			

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Geo Engineers - Spokane 523 East 2nd Spokane, WA/USA 99202	Project: Time Oil-Grandview Project Number: 1957-068-01 Project Manager: Gary D. Panther	Reported: 12/21/04 13:52
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**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4L18002: Prepared 12/18/04 Using EPA 3520C**

**Blank (4L18002-BLK1)**

Diesel Range Hydrocarbons	ND	0.500	mg/l							
Lube Oil Range Hydrocarbons	ND	0.500	"							
Surrogate: 2-FBP	0.232		"	0.250		92.8	50-150			
Surrogate: Octacosane	0.241		"	0.240		100	50-150			

**LCS (4L18002-BS1)**

Diesel Range Hydrocarbons	1.54	0.500	mg/l	2.00		77.0	45-105			
Surrogate: 2-FBP	0.212		"	0.250		84.8	50-150			

**LCS Dup (4L18002-BSD1)**

Diesel Range Hydrocarbons	1.56	0.500	mg/l	2.00		78.0	45-105	1.29	50	
Surrogate: 2-FBP	0.216		"	0.250		86.4	50-150			

**Matrix Spike (4L18002-MS1)**

**Source: B4L0319-07**

Diesel Range Hydrocarbons	1.68	0.500	mg/l	1.96	0.0839	81.4	50-150			
Surrogate: 2-FBP	0.206		"	0.245		84.1	50-150			

**Matrix Spike Dup (4L18002-MSD1)**

**Source: B4L0319-07**

Diesel Range Hydrocarbons	1.70	0.500	mg/l	1.90	0.0839	85.1	50-150	1.18	50	
Surrogate: 2-FBP	0.217		"	0.238		91.2	50-150			

North Creek Analytical - Bothell

Amar Gill, Project Manager

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Geo Engineers - Spokane  
 523 East 2nd  
 Spokane, WA/USA 99202

Project: Time Oil-Grandview  
 Project Number: 1957-068-01  
 Project Manager: Gary D. Panther

Reported:  
 12/21/04 13:52

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4L16025: Prepared 12/16/04 Using EPA 3020A</b>										
<b>Blank (4L16025-BLK1)</b>										
Lead	ND	0.00100	mg/l							
<b>Blank (4L16025-BLK2)</b>										
Lead	ND	0.00100	mg/l							
<b>LCS (4L16025-BS1)</b>										
Lead	0.0717	0.00100	mg/l	0.0800		89.6	80-120			
<b>LCS (4L16025-BS2)</b>										
Lead	0.0812	0.00100	mg/l	0.0800		102	80-120			
<b>LCS Dup (4L16025-BSD1)</b>										
Lead	0.0735	0.00100	mg/l	0.0800		91.9	80-120	2.48	20	
<b>LCS Dup (4L16025-BSD2)</b>										
Lead	0.0806	0.00100	mg/l	0.0800		101	80-120	0.742	20	
<b>Matrix Spike (4L16025-MS1)</b>										
										<b>Source: B4L0319-05</b>
Lead	0.0733	0.00100	mg/l	0.0800	0.000410	91.1	78-125			
<b>Matrix Spike (4L16025-MS2)</b>										
										<b>Source: B4L0319-07</b>
Lead	0.0818	0.00100	mg/l	0.0800	0.000170	102	78-125			
<b>Matrix Spike Dup (4L16025-MSD1)</b>										
										<b>Source: B4L0319-05</b>
Lead	0.0756	0.00100	mg/l	0.0800	0.000410	94.0	78-125	3.09	20	
<b>Matrix Spike Dup (4L16025-MSD2)</b>										
										<b>Source: B4L0319-07</b>
Lead	0.0834	0.00100	mg/l	0.0800	0.000170	104	78-125	1.94	20	

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**Total Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4L16025: Prepared 12/16/04 Using EPA 3020A**

**Post Spike (4L16025-PS1)**

**Source: B4L0319-05**

Lead	0.0986	0.00100	mg/l	0.0995	0.000410	98.7	75-125			
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Geo Engineers - Spokane 523 East 2nd Spokane, WA/USA 99202	Project: Time Oil-Grandview Project Number: 1957-068-01 Project Manager: Gary D. Panther	Reported: 12/21/04 13:52
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**Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4L16032: Prepared 12/16/04 Using General Preparation**

**Duplicate (4L16032-DUP1)**

**Source: B4L0380-01**

pH	7.44		pH Units		7.47			0.402	10	
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Geo Engineers - Spokane  
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 Spokane, WA/USA 99202

Project: Time Oil-Grandview  
 Project Number: 1957-068-01  
 Project Manager: Gary D. Panther

Reported:  
 12/21/04 13:52

**Notes and Definitions**

- 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

North Creek Analytical - Bothell

Amar Gill, Project Manager

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# CHAIN OF CUSTODY RECORD

**GEOENGINEERS, INC.**  
**8410 154TH AVENUE N.E.**  
**REDMOND, WASHINGTON 98052**  
**(425) 861-6000**



DATE 12-16-04  
 PAGE 1 OF 1  
 LAB NCA  
 LAB NO.

PROJECT NAME/LOCATION TOC GRANDBAY

PROJECT NUMBER 1457-065-01

PROJECT MANAGER MARK ENDRICK

SAMPLED BY G. OVERDICK

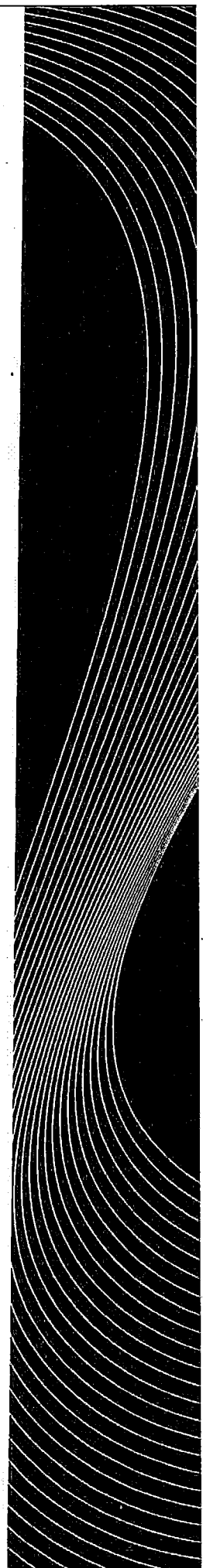
LAB	GEOENGINEERS	DATE	SAMPLE COLLECTION		# OF JARS	ANALYSIS REQUIRED							NOTES/COMMENTS (Preserved, filtered, etc.)
			DATE	TIME		MATRIX	<u>MS/STX</u>	<u>MS/STX</u>	<u>MS/STX</u>	<u>MS/STX</u>	<u>MS/STX</u>	<u>MS/STX</u>	
C01	BATHEN 121504	12-15-04	09:00	W	6	X	X	X	X	X	X	X	
C02	DISCHARGE 121504	12-15-04	09:15	W	6	X	X	X	X	X	X	X	NECMAC TAT

RELINQUISHED BY SIGNATURE	RELINQUISHED BY PRINTED NAME	DATE	TIME	FIRM	RELINQUISHED BY SIGNATURE	RELINQUISHED BY PRINTED NAME	DATE	TIME	FIRM
[Signature]	[Printed Name]	12-16-04	06:35	NCA	[Signature]	[Printed Name]			
[Signature]	[Printed Name]				[Signature]	[Printed Name]			

ADDITIONAL COMMENTS:  
 3.4c v10



**APPENDIX B**  
**ECOLOGY LETTER OF TRANSMITTAL**





LETTER OF TRANSMITTAL

523 E. SECOND AVENUE, SPOKANE, WA 99202, TELEPHONE: (509) 363-3125, FAX: (509) 363-3126

www.geoengineers.com

To: Rick Frye
Washington State Department of Ecology
Central Region
15 West Yakima Avenue, Suite 200
Yakima, Washington 98902-3401

Date: February 14, 2005

File: 1957-068-01

Regarding: Time Oil Property 01-070 - Grandview, Washington

We are sending: [X] Attached [ ] Under Separate Cover

Table with 3 columns: Copies, Date, Description. Row 1: 1, 2/11/05, Treated Grundwater Effluent Results - December 15, 2004

These are transmitted as checked below:

- [X] For Your Use [ ] As Requested [ ] Returned
[ ] For Review and Comment [ ] Other (see remarks)

We are sending via:

- [X] US Mail [ ] Overnight [ ] Courier

Remarks:

Copy To: Time Oil Co. (Mark Chandler)
City of Grandview (CusArteaga)

Signed: [Signature]
Mark B. Engdahl/Bruce D. Williams

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