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Rec'd 3/15/01

January 31, 2001

BROWN AND CALDWELL
Environmental Consulting

Mr. Scott Sloan
Time Oil Company
2737 West Commodore Way
Seattle, Washington 98199-1233

Re: Operation & Maintenance Report
Time Oil Co. Property No. 01-068
107 West Lincoln Avenue
Sunnyside, Washington 15-19046/006

Mr. Sloan:

Brown and Caldwell is pleased to present the Operation and Maintenance (O&M) results of the bioslurp remediation system operating at the above referenced site. The bioslurp remediation system was tested for operation on July 10, 2000 and began continuous operation on August 8, 2000. The most recent monitoring event occurred on January 3, 2001 and the next monitoring event is scheduled in February 2001.

1.0 SITE DESCRIPTION AND CONDITIONS

Time Oil Company Property No. 01-068 is located at 107 West Lincoln Avenue in Sunnyside, Washington (Figure 1 - Site Vicinity Map and Figure 2 - Site Map). Two underground storage tanks (USTs) and product dispensers are located in the northern portion of the property. A convenience store and associated paved parking occupy the remainder of the site. The ground surface at the site is paved with asphalt except in the UST area, which is covered with concrete.

Soils impacted by petroleum hydrocarbons were detected at the site in September 1996. Subsurface investigations completed in February, March and July of 1997 confirmed that soil and groundwater had been impacted at the site. Between February and March 1997, site assessment activities were performed, including a drivepoint assessment consisting of a total of 16 borings both on-site and off-site (in First Street located east of the site). Based on the drivepoint assessment results, eight monitoring wells (MW-1 through MW-8) were installed. Wells MW-1 through MW-5 were installed on site and MW-6 through MW-8 were installed on the east side of First Street. Based on the presence of Liquid Petroleum Hydrocarbons (LPH) encountered during the drivepoint assessment, monitoring wells MW-3, MW-4, and MW-5 were constructed as four-inch diameter wells. All other wells were constructed as two-inch wells.

In July and August 1998, additional site assessment activities were performed which included drilling several soil borings (B-1 through B-11) and installing four monitoring wells (MW-9 through MW-12) on the Washington Hills Cellars (WHC) property (located east of the subject site across First Street, see Figure 2, Site Map). Monitoring well MW-9 was constructed as a four-inch diameter well, and the remaining wells were constructed as two-inch diameter wells. On April 13 and 14, 1999 five additional two-inch monitoring wells were installed, MW-13, MW-14, and MW-15 located on the WHC property, and MW-16 and SW-1 located on the subject site. On May 1 and 2, 2000, two additional two-inch monitoring wells (MW-17 and MW-18) and four, four-inch recovery wells (RW-2 through RW-5) were installed on the WHC property. In addition, two four-inch recovery wells (RW-6 and RW-7) were installed in First Street and one four-inch recovery well (RW-1) was installed on the subject property.

2.0 REMEDIATION SYSTEM DESCRIPTION

In May 2000 a bioslurp remedial system was installed at the site. The remediation system is located on the WHC property within a locked remediation shed and fenced enclosure. The bioslurp remedial system is designed to remove LPH, groundwater, and subsurface vapors from the extraction wells by direct vacuum from a liquid ring pump. Entrained liquid and air emanating from the remedial wells is separated at the air-water separator located within the remedial shed on the WHC property. Separated water and LPH is then pumped through an oil water separator where the LPH is removed and dispersed into an explosion proof holding tank located outside of the shed in the fenced compound. From the oil water separator, water is allowed to gravity feed into a batch tank for holding prior to being pumped into a tray air stripper. The air stripper is designed to remove volatiles from the groundwater by pulling air up through a column of water causing turbulence in which the volatile gasoline constituents are removed from the water. The treated groundwater is currently being pumped through granular activated carbon for additional treatment prior to discharge to the city sewer system.

Vapor generated from the LRP is combined with the vapor from the air stripper, merged into one stream with a "Y" connection and subsequently routed into a catalytic oxidizer for destruction. From the catalytic oxidizer, treated air is vented to ambient air through a 14 foot tall exhaust stack. Sampling ports are located on the exhaust stack for air sampling and monitoring. System flow chart and compound layout are presented as respective Figures 4 and 5.

3.0 SYSTEM MONITORING RESULTS

The bioslurp remedial system began initial operation on July 10, 2000 for a six day trial operation and shakedown period. The system began continuous operation on August 8, 2000 and has operated for approximately 129 cumulative days since the initial startup. A system run-time log is provided in Table 1.

Brown and Caldwell has performed 14 site visits for operation and maintenance since continuous

operation began on August 8, 2000. During each site visit, the system was inspected and restarted if a shut down had occurred. Pretreated air samples were collected on multiple occasions for the purpose of calculating pounds of hydrocarbons removed from subsurface soil and groundwater. Table 2 presents the sample dates and concentrations of pretreated air. Table 3 shows removal rate calculations for benzene, total petroleum hydrocarbons as gasoline (TPH-G), and total BTEX over time. Petroleum hydrocarbons emitted through the stack were measured during each site visit with a Photo Ionization Detector (PID) in parts per million (ppm). The most recent analytical results collected on January 3, 2001 indicate the removal rate for benzene and TPH-G is currently 0.378 and 7.96 pounds per day, respectively. Analytical test certificates for the off-gas samples are presented in Attachment A. Operation and maintenance field forms completed by Brown and Caldwell field representatives during field activities are presented in Attachment B.

Since the bioslurp remedial system has been in operation, the total removed amount of benzene and TPH has been calculated based on flow rate, laboratory analysis and total time the remedial system operated. An estimated 197.07 pounds of benzene and 2255.84 pounds or approximately 366 gallons of petroleum hydrocarbons (based on the average weight of gasoline at 6.17 pounds/gallon) have been removed from the soil and groundwater in vapor form as of January 11, 2001. Total quantities of benzene, TPH, and total BTEX removed over time are presented in Table 3 and Figure 3. Analysis of Figure 3 shows improved performance along with increased concentrations of benzene and TPH-G since system startup.

4.0 EQUIPMENT OPERATION AND MAINTENANCE

During the last site visit conducted on January 3, 2001, all equipment was operating properly. H_2Oil, under subcontract to Time Oil Company, performs monthly system maintenance on all remedial equipment. H_2Oil monthly maintenance reports are submitted directly to Time Oil Company.

5.0 SYSTEM EVALUATION

The remedial system located at the subject site is operating at optimum conditions for removal of petroleum hydrocarbons from the soil and groundwater. To date, the estimated vapor extraction removal rates are currently 7.96 pounds per day of TPH with approximately 2256 pounds of hydrocarbons removed from the subsurface soil and groundwater to date. No system modifications or adjustments were made during our latest site visit.

6.0 CONCLUSIONS

Petroleum hydrocarbons that have impacted soil and groundwater at the Valley View Market and WHC property are being removed by bioslurp remediation technologies. The bioslurp system began continuous operation at the site on August 8, 2000. Soil vapors extracted from the

recovery wells are treated by a thermal oxidizer and discharged to the ambient air through an exhaust stack. Since the system began operating on July 10, 2000, 16 off-gas samples have been collected prior to treatment. Most recent sample results, collected on January 3, 2001, indicate that the average removal rate for benzene and TPH is 0.378 and 7.96 pounds per day, respectively. An estimated 2255 pounds of gasoline has been removed from the subsurface soil and groundwater as of January 11, 2001. During the reporting period August 8, 2000 through January 3, 2001, the remedial system has operated within permit criteria.

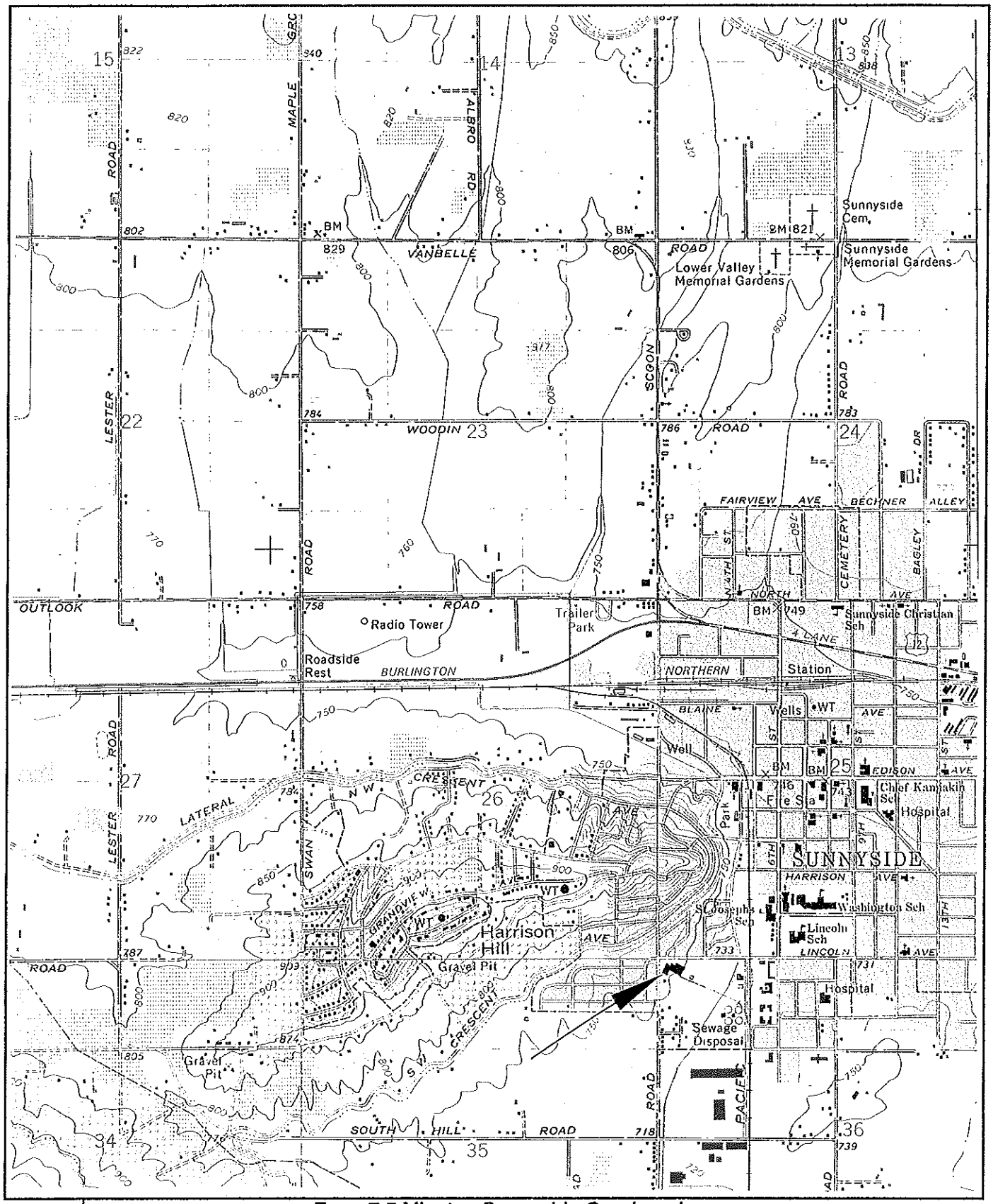
This report has been prepared for Time Oil Company. Should you have any questions regarding this letter or other aspects of this project, please do not hesitate to call us at your earliest convenience.

Very truly yours,
BROWN AND CALDWELL

Mark Engdahl
Environmental Geologist

Eugene N.J. St.Godard, P.G., C.HG.
Senior Hydrogeologist / Office Manager

Enclosures:	Figure 1:	Site Vicinity Map
	Figure 2:	Site Plan
	Figure 3:	Total Pounds of Benzene and TPH Removed Vs Time
	Table 1:	SVE Run-Time Log
	Table 2:	Off-Gas Analytical Summary
	Table 3:	Total Pounds Benzene and TPH Removed
	Attachment A:	Laboratory Certificates
		10/11/00 - North Creek Analytical
		11/6/00 - North Creek Analytical
		12/4/00 - North Creek Analytical
		1/3/01 - North Creek Analytical
	Attachment B:	O & M Field Forms



From 7.5 Minute - Sunnyside Quadrangle

0 1" = 2000' 2000

BROWN AND CALDWELL

Site Vicinity Map
Time Oil Facility 01-068
Sunnyside, Washington
FIGURE 1

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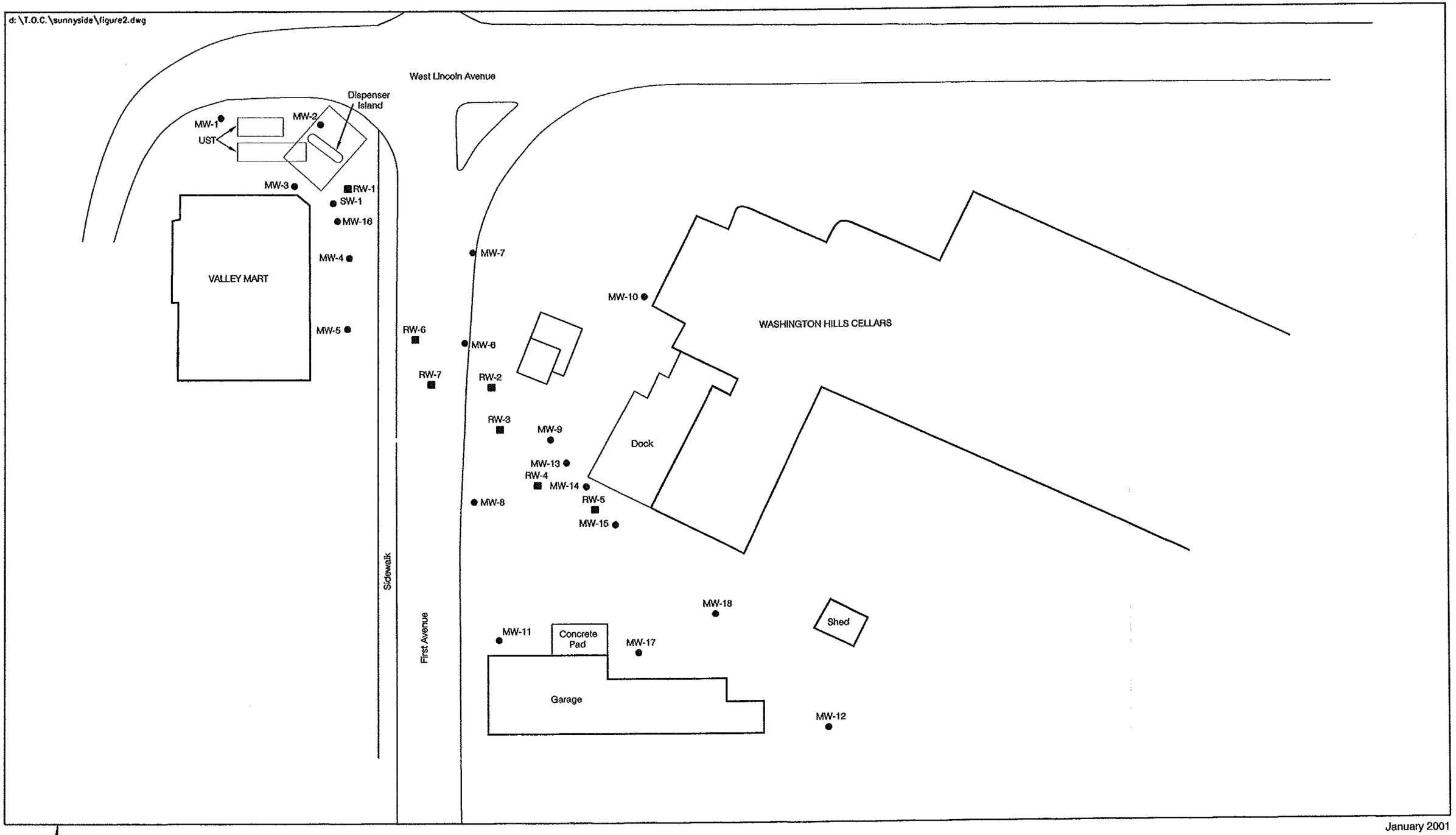

January 2001

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- Monitoring Well (MW)
- Recovery Well (RW)

Site Plan
Time Oil Facility 01-068
Sunnyside, Washington
FIGURE 2

FIGRUE 3
CUMULATIVE BENZENE AND TPH-G REMOVAL VS TIME
TIME OIL FACILITY 01-068

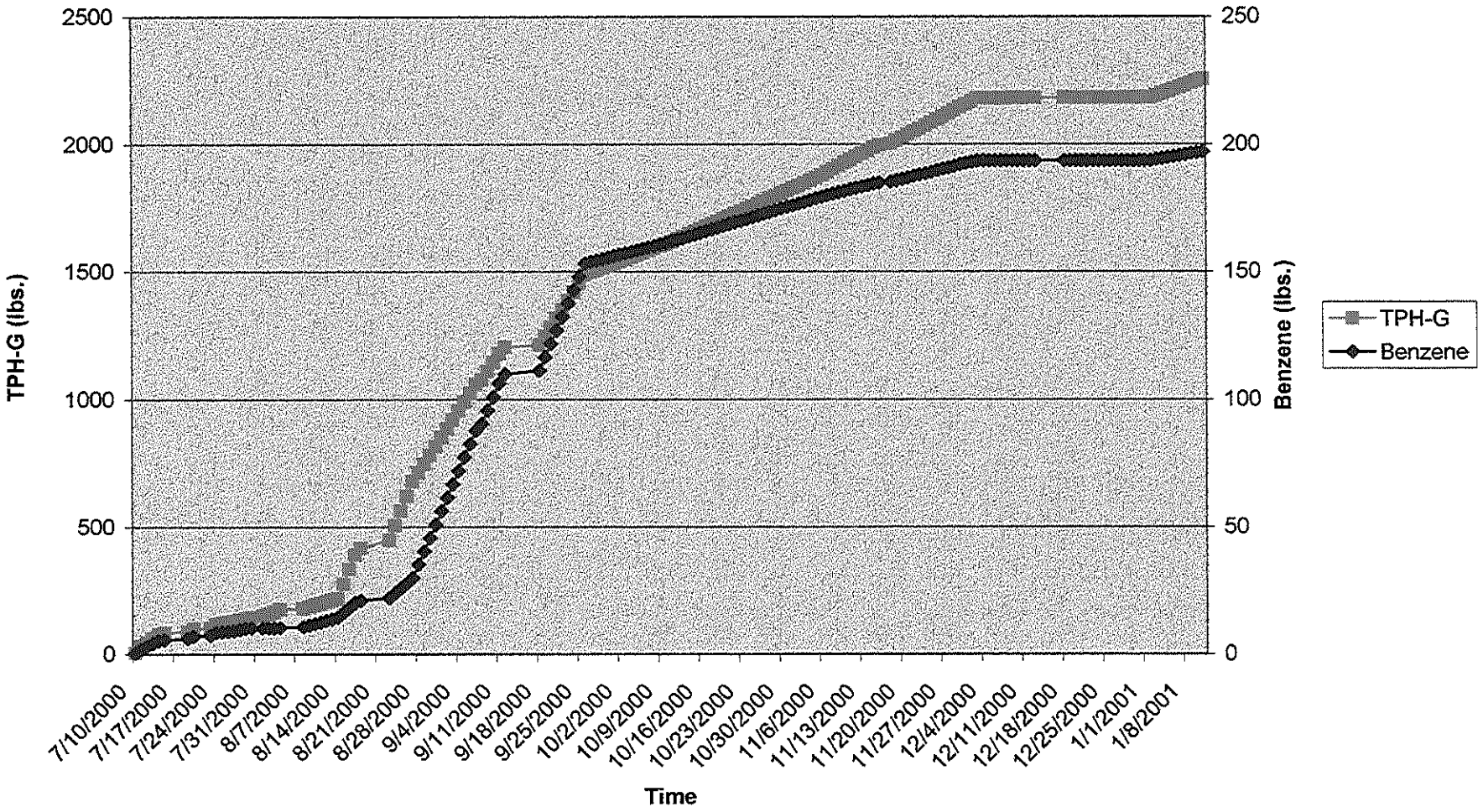

TABLE 1
RUN TIME LOG
Time Oil Property # 01-068
Sunnyside, Wa

Date	Time Start	Time Stop	Total Hours Operated*	Total Days Operated	Cumulative Gallons Discharged
7/10/2000	1900		5	0.21	start 420
7/15/2000		900	110	4.58	18,936.6
7/19/2000	1500		119	4.96	18,936.6
7/20/2000		1825	137.25	5.72	
7/23/2000	1925		142	5.92	20,385.5
7/30/2000		700	293	12.21	
8/1/2000	1030		306.5	12.77	45,440.5
8/2/2000		900	315.5	13.15	
8/3/2000	1000		329.5	13.73	***
8/4/2000		1518	344.75	14.36	
8/8/2000	905		359.75	14.99	50,095.2
8/18/2000		1030	586.25	24.43	
8/23/2000	1030		599.75	24.99	83,877.5
9/8/2000		945	969.5	40.48	
9/8/2000	2200		971.5	40.48	136,133.6
9/12/2000		1700	1060.5	44.19	
9/18/2000	1800		1064.5	44.44	***
10/4/2000			1454.5	60.44	174,386.0
11/16/2000		2000	2482.5	103.27	
11/18/2000	1330		2493.0	103.71	293,505.2
12/4/2000			2853.0	120.71	321,794.6
12/11/2000		800	3005.0	126.04	***
12/12/2000	1500		3014.0	126.42	
12/13/2000		2200	3045.0	127.33	
12/18/2000	1530		3053.5	127.69	334,641.3
1/3/2001			3437.5	143.69	375,736.2

*** No reading collected, system restarted by H2Oil.
End of Shake down period.

* Total hours operated at the end of the referenced day.

375,736.2	Gallons Discharged		
-420.0	Initial Flow Reading		
376,156.20	Hours	Minutes	
Total	3437.5	206250	
1.82 GPM			

TABLE 2: SYSTEM INFLUENT VAPOR CONCENTRATIONS

Time Oil Property 01-068
Sunnyside, Washington

Sample: Influent Air	Date: 07/11/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	65.1	260	8.98E-05	1.519955
Toluene	119	260	8.98E-05	2.778412
Ethylbenzene	19.1	260	8.98E-05	0.445947
Xylenes	110	260	8.98E-05	2.568280
Total BTEX (Lbs/Day)				7.312594
Total Petroleum Hydrocarbons	1140	260	8.98E-05	26.616720

Sample: Influent 7-12-00	Date: 07/12/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	54.3	240	8.98E-05	1.170274
Toluene	78.6	240	8.98E-05	1.693987
Ethylbenzene	10.0	240	8.98E-05	0.215520
Xylenes	54.8	240	8.98E-05	1.181050
Total BTEX (Lbs/Day)				4.2608
Total Petroleum Hydrocarbons	601	240	8.98E-05	12.952752

Sample: Influent 7-13-00	Date: 07/13/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	54.5	232	8.98E-05	1.135431
Toluene	90.6	232	8.98E-05	1.887524
Ethylbenzene	14.5	232	8.98E-05	0.302087
Xylenes	81.6	232	8.98E-05	1.700022
Total BTEX (Lbs/Day)				5.025064
Total Petroleum Hydrocarbons	838	232	8.98E-05	17.458557

TABLE 2: SYSTEM INFLUENT VAPOR CONCENTRATIONS

Time Oil Property 01-068
Sunnyside, Washington

Sample: Influent 7-14-00	Date: 07/14/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	48.9	230	8.98E-05	1.009981
Toluene	74.5	230	8.98E-05	1.538723
Ethylbenzene	11.7	230	8.98E-05	0.241652
Xylenes	63.7	230	8.98E-05	1.315660
Total BTEX (Lbs/Day)				4.1060
Total Petroleum Hydrocarbons	790	230	8.98E-05	16.316660

Sample: Influent Air 7-15-00	Date: 07/15/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	60.3	230	8.98E-05	1.245436
Toluene	84.6	230	8.98E-05	1.747328
Ethylbenzene	12.2	230	8.98E-05	0.251979
Xylenes	63.9	230	8.98E-05	1.319791
Total BTEX (Lbs/Day)				4.564534
Total Petroleum Hydrocarbons	691	230	8.98E-05	14.271914

Sample: Influent Air 7-25-00	Date: 07/25/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	9.23	235	8.98E-05	0.194781
Toluene	12.3	235	8.98E-05	0.259567
Ethylbenzene	1.85	235	8.98E-05	0.039041
Xylenes	10.8	235	8.98E-05	0.227912
Total BTEX (Lbs/Day)				0.721301
Total Petroleum Hydrocarbons	175	235	8.98E-05	3.693025

TABLE 2: SYSTEM INFLUENT VAPOR CONCENTRATIONS

Time Oil Property 01-068
Sunnyside, Washington

Sample: Influent Air 7-28-00	Date: 07/28/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	22	235	8.98E-05	0.464266
Toluene	32.1	235	8.98E-05	0.677406
Ethylbenzene	4.37	235	8.98E-05	0.092220
Xylenes	26.7	235	8.98E-05	0.563450
Total BTEX (Lbs/Day)				1.797343
Total Petroleum Hydrocarbons	313	235	8.98E-05	6.605239

Sample: Influent Air 8-1-00	Date: 08/1/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	64.8	153.2	8.98E-05	0.891477
Toluene	83.0	153.2	8.98E-05	1.141861
Ethylbenzene	9.72	153.2	8.98E-05	0.133722
Xylenes	58.0	153.2	8.98E-05	0.797927
Total BTEX (Lbs/Day)				2.9650
Total Petroleum Hydrocarbons	1070	153.2	8.98E-05	14.720375

Sample: Influent Air 8-8-00	Date: 08/08/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	31.1	217	8.98E-05	0.606033
Toluene	37.9	217	8.98E-05	0.738542
Ethylbenzene	4.31	217	8.98E-05	0.083987
Xylenes	27.8	217	8.98E-05	0.541727
Total BTEX (Lbs/Day)				1.970290
Total Petroleum Hydrocarbons	333	217	8.98E-05	6.489038

TABLE 2: SYSTEM INFLUENT VAPOR CONCENTRATIONS

Time Oil Property 01-068
Sunnyside, Washington

Sample: Influent Air 8-15-00	Date: 08/15/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	75.3	286	8.98E-05	1.933915
Toluene	145	286	8.98E-05	3.724006
Ethylbenzene	30.9	286	8.98E-05	0.793599
Xylenes	189	286	8.98E-05	4.854049
Total BTEX (Lbs/Day)				11.3056
Total Petroleum Hydrocarbons	2230	286	8.98E-05	57.272644

Sample: Influent Air 8-28-00	Date: 08/28/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	196	299	8.98E-05	5.262639
Toluene	246	299	8.98E-05	6.605149
Ethylbenzene	27.3	299	8.98E-05	0.733010
Xylenes	163	299	8.98E-05	4.376583
Total BTEX (Lbs/Day)				16.977381
Total Petroleum Hydrocarbons	1290	299	8.98E-05	34.636758

Sample: Influent Air 9-27-00	Date: 09/27/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	26.4	238	8.98E-05	0.564231
Toluene	44.1	238	8.98E-05	0.942523
Ethylbenzene	4.21	238	8.98E-05	0.089978
Xylenes	27.8	238	8.98E-05	0.594153
Total BTEX (Lbs/Day)				2.190885
Total Petroleum Hydrocarbons	397	238	8.98E-05	8.484843

TABLE 2: SYSTEM INFLUENT VAPOR CONCENTRATIONS

Time Oil Property 01-068
Sunnyside, Washington

Sample: Influent Air 10-11-00	Date: 10/11/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	32.0	236	8.98E-05	0.678170
Toluene	57.5	236	8.98E-05	1.218586
Ethylbenzene	6.92	236	8.98E-05	0.146654
Xylenes	50.8	236	8.98E-05	1.076594
Total BTEX (Lbs/Day)				3.120004
Total Petroleum Hydrocarbons	471	236	8.98E-05	9.981809

Sample: Influent Air 11-6-00	Date: 11/6/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	20.9	301	8.98E-05	0.564923
Toluene	39.6	301	8.98E-05	1.070380
Ethylbenzene	5.80	301	8.98E-05	0.156773
Xylenes	41.2	301	8.98E-05	1.113628
Total BTEX (Lbs/Day)				2.905704
Total Petroleum Hydrocarbons	443	301	8.98E-05	11.974201

Sample: Influent Air 12-4-00	Date: 12/4/00			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	0.05	232	8.98E-05	0.001042
Toluene	0.05	232	8.98E-05	0.001042
Ethylbenzene	0.19	232	8.98E-05	0.004000
Xylenes	0.05	232	8.98E-05	0.001042
Total BTEX (Lbs/Day)				0.007125
Total Petroleum Hydrocarbons	5.0	232	8.98E-05	0.104168

TABLE 2: SYSTEM INFLUENT VAPOR CONCENTRATIONS

Time Oil Property 01-068
Sunnyside, Washington

Sample: Influent Air 1-3-01	Date: 1/3/01			
Compound	**System Influent Air (mg/m3)**	**Flow (cfm)**	**Constant**	**Lbs/Day**
Benzene	17.9	235	8.98E-05	0.377744
Toluene	33.7	235	8.98E-05	0.711171
Ethylbenzene	4.42	235	8.98E-05	0.093275
Xylenes	39.8	235	8.98E-05	0.839899
Total BTEX (Lbs/Day)				2.022089
Total Petroleum Hydrocarbons	377.0	235	8.98E-05	7.955831

Compound reported as non-detect, used 1/2 detection limit.

TABLE 3: Benzene and TPH Removal Calculations

Time Oil Property 01-068
Sunnyside, Washington

Date	Days Operated	Offgas - Benzene lbs/day	Cumul. Benzene - lbs	Offgas - BTEX lbs/day	Cumul. BTEX - lbs	Offgas - TPH - lbs/day	Cumul. TPH - lbs	Cumul. Days Operated
7/10/00	0.208	0.3162	0.3162	7.3130	1.5211	5.5363	5.5363	0.21
**7/11/00	1	1.5200	1.8362	7.3130	8.8341	26.6170	32.1533	1.21
**7/12/00	1	1.1700	3.0062	4.2610	13.0951	12.9520	45.1053	2.21
**7/13/00	1	1.1400	4.1462	5.0250	18.1201	17.4590	62.5643	3.21
**7/14/00	1	1.0100	5.1562	4.1060	22.2261	16.3170	78.8813	4.21
**7/15/00	0.375	0.4688	5.6249	4.5640	23.9376	5.3520	84.2333	4.58
7/19/00	0.375	0.4688	6.0937	4.5640	25.6491	5.3520	89.5853	4.96
7/20/00	0.760	0.9500	7.0437	4.5640	29.1177	10.8467	100.4321	5.72
7/23/00	0.198	0.2475	7.2912	4.5640	30.0214	2.8259	103.2579	5.92
**7/24/00	1	1.2500	8.5412	4.5640	34.5854	14.2720	117.5299	6.92
**7/25/00	1	0.1950	8.7362	4.5640	39.1494	3.6930	121.2229	7.92
**7/26/00	1	0.1950	8.9312	4.5640	43.7134	3.6930	124.9159	8.92
**7/27/00	1	0.1950	9.1262	4.5640	48.2774	3.6930	128.6089	9.92
**7/28/00	1	0.4640	9.5902	4.5640	52.8414	6.6050	135.2139	10.92
7/29/00	1	0.4640	10.0542	4.5640	57.4054	6.6050	141.8189	11.92
7/30/00	0.292	0.1355	10.1896	4.5640	58.7381	1.9287	143.7476	12.21
***8/1/00	0.563	0.0502	10.2398	2.9650	60.4074	8.2874	152.0349	12.77
8/2/00	0.375	0.0334	10.2732	2.9650	61.5193	5.5200	157.5549	13.15
8/3/00	0.583	0.0519	10.3252	2.9650	63.2479	8.5818	166.1367	13.73
8/4/00	0.635	0.0566	10.3817	2.9650	65.1306	9.3472	175.4839	14.36
***8/8/00	0.625	0.3788	10.7605	1.9700	66.3619	4.0556	179.5395	14.99
8/9/00	1	0.6060	11.3665	1.9700	68.3319	6.4890	186.0285	15.99
8/10/00	1	0.6060	11.9725	1.9700	70.3019	6.4890	192.5175	16.99
8/11/00	1	0.6060	12.5785	1.9700	72.2719	6.4890	199.0065	17.99
8/12/00	1	0.6060	13.1845	1.9700	74.2419	6.4890	205.4955	18.99
8/13/00	1	0.6060	13.7905	1.9700	76.2119	6.4890	211.9845	19.99
8/14/00	1	0.6060	14.3965	1.9700	78.1819	6.4890	218.4735	20.99
**8/15/00	1	1.9340	16.3305	11.3060	89.4879	57.2730	275.7465	21.99
8/16/00	1	1.9340	18.2645	11.3060	100.7939	57.2730	333.0195	22.99
8/17/00	1	1.9340	20.1985	11.3060	112.0999	57.2730	390.2925	23.99
8/18/00	0.4375	0.8461	21.0446	11.3060	117.0463	25.0569	415.3495	24.43
8/23/00	0.563	1.0888	22.1335	11.3060	123.4115	32.2447	447.5942	24.99
8/24/00	1	1.9340	24.0675	11.3060	134.7175	57.2730	504.8672	25.99
8/25/00	1	1.9340	26.0015	11.3060	146.0235	57.2730	562.1402	26.99
8/26/00	1	1.9340	27.9355	11.3060	157.3295	57.2730	619.4132	27.99
8/27/00	1	1.9340	29.8695	11.3060	168.6355	57.2730	676.6862	28.99
**8/28/00	1	5.2630	35.1325	16.9770	185.6125	34.6370	711.3232	29.99
8/29/00	1	5.2630	40.3955	16.9770	202.5895	34.6370	745.9602	30.99
8/30/00	1	5.2630	45.6585	16.9770	219.5665	34.6370	780.5972	31.99
8/31/00	1	5.2630	50.9215	16.9770	236.5435	34.6370	815.2342	32.99
9/1/00	1	5.2630	56.1845	16.9770	253.5205	34.6370	849.8712	33.99
9/2/00	1	5.2630	61.4475	16.9770	270.4975	34.6370	884.5082	34.99
9/3/00	1	5.2630	66.7105	16.9770	287.4745	34.6370	919.1452	35.99
9/4/00	1	5.2630	71.9735	16.9770	304.4515	34.6370	953.7822	36.99
9/5/00	1	5.2630	77.2365	16.9770	321.4285	34.6370	988.4192	37.99
9/6/00	1	5.2630	82.4995	16.9770	338.4055	34.6370	1023.0562	38.99
9/7/00	1	5.2630	87.7625	16.9770	355.3825	34.6370	1057.6932	39.99
9/8/00	0.49	2.5789	90.3413	16.9770	363.7013	16.9721	1074.6653	40.48

TABLE 3: Benzene and TPH Removal Calculations

Time Oil Property 01-068
Sunnyside, Washington

Date	Days Operated	Offgas - Benzene lbs/day	Cumul. Benzene - lbs	Offgas - BTEX lbs/day	Cumul. BTEX - lbs	Offgas - TPH - lbs/day	Cumul. TPH - lbs	Cumul. Days Operated
9/9/00	1	5.2630	95.6043	16.9770	380.6783	34.6370	1109.3023	41.48
9/10/00	1	5.2630	100.8673	16.9770	397.6553	34.6370	1143.9393	42.48
9/11/00	1	5.2630	106.1303	16.9770	414.6323	34.6370	1178.5763	43.48
9/12/00	0.708	3.7262	109.8565	16.9770	426.6520	24.5230	1203.0993	44.19
9/18/00	0.250	1.3158	111.1723	16.9770	430.8962	8.6593	1211.7585	44.44
9/19/00	1	5.2630	116.4353	16.9770	447.8732	34.6370	1246.3955	45.44
9/20/00	1	5.2630	121.6983	16.9770	464.8502	34.6370	1281.0325	46.44
9/21/00	1	5.2630	126.9613	16.9770	481.8272	34.6370	1315.6695	47.44
9/22/00	1	5.2630	132.2243	16.9770	498.8042	34.6370	1350.3065	48.44
9/23/00	1	5.2630	137.4873	16.9770	515.7812	34.6370	1384.9435	49.44
9/24/00	1	5.2630	142.7503	16.9770	532.7582	34.6370	1419.5805	50.44
9/25/00	1	5.2630	148.0133	16.9770	549.7352	34.6370	1454.2175	51.44
9/26/00	1	5.2630	153.2763	16.9770	566.7122	34.6370	1488.8545	52.44
**9/27/00	1	0.5642	153.8405	2.1909	568.9031	8.4848	1497.3394	53.44
9/28/00	1	0.5642	154.4047	2.1909	571.0940	8.4848	1505.8242	54.44
9/29/00	1	0.5642	154.9689	2.1909	573.2849	8.4848	1514.3091	55.44
9/30/00	1	0.5642	155.5331	2.1909	575.4758	8.4848	1522.7939	56.44
10/1/00	1	0.5642	156.0973	2.1909	577.6667	8.4848	1531.2787	57.44
10/2/00	1	0.5642	156.6615	2.1909	579.8576	8.4848	1539.7636	58.44
10/3/00	1	0.5642	157.2257	2.1909	582.0484	8.4848	1548.2484	59.44
10/4/00	1	0.5642	157.7899	2.1909	584.2393	8.4848	1556.7333	60.44
10/5/00	1	0.5642	158.3541	2.1909	586.4302	8.4848	1565.2181	61.44
10/6/00	1	0.5642	158.9183	2.1909	588.6211	8.4848	1573.7030	62.44
10/7/00	1	0.5642	159.4825	2.1909	590.8120	8.4848	1582.1878	63.44
10/8/00	1	0.5642	160.0467	2.1909	593.0029	8.4848	1590.6726	64.44
10/9/00	1	0.5642	160.6109	2.1909	595.1937	8.4848	1599.1575	65.44
*10/10/00	1	0.5642	161.1751	2.1909	597.3846	8.4848	1607.6423	66.44
10/11/00	1	0.6782	161.8533	3.1200	600.5046	9.9818	1617.6241	67.44
10/12/00	1	0.6782	162.5315	3.1200	603.6246	9.9818	1627.6059	68.44
10/13/00	1	0.6782	163.2097	3.1200	606.7446	9.9818	1637.5878	69.44
10/14/00	1	0.6782	163.8879	3.1200	609.8646	9.9818	1647.5696	70.44
10/15/00	1	0.6782	164.5661	3.1200	612.9846	9.9818	1657.5514	71.44
10/16/00	1	0.6782	165.2443	3.1200	616.1047	9.9818	1667.5332	72.44
10/17/00	1	0.6782	165.9225	3.1200	619.2247	9.9818	1677.5150	73.44
10/18/00	1	0.6782	166.6007	3.1200	622.3447	9.9818	1687.4968	74.44
10/19/00	1	0.6782	167.2789	3.1200	625.4647	9.9818	1697.4786	75.44
10/20/00	1	0.6782	167.9571	3.1200	628.5847	9.9818	1707.4604	76.44
10/21/00	1	0.6782	168.6353	3.1200	631.7047	9.9818	1717.4422	77.44
10/22/00	1	0.6782	169.3135	3.1200	634.8247	9.9818	1727.4240	78.44
10/23/00	1	0.6782	169.9917	3.1200	637.9447	9.9818	1737.4058	79.44
10/24/00	1	0.6782	170.6699	3.1200	641.0647	9.9818	1747.3877	80.44
10/25/00	1	0.6782	171.3481	3.1200	644.1847	9.9818	1757.3695	81.44
10/26/00	1	0.6782	172.0263	3.1200	647.3047	9.9818	1767.3513	82.44
10/27/00	1	0.6782	172.7045	3.1200	650.4247	9.9818	1777.3331	83.44
10/28/00	1	0.6782	173.3827	3.1200	653.5447	9.9818	1787.3149	84.44
10/29/00	1	0.6782	174.0609	3.1200	656.6647	9.9818	1797.2967	85.44
10/30/00	1	0.6782	174.7391	3.1200	659.7847	9.9818	1807.2785	86.44
10/31/00	1	0.6782	175.4173	3.1200	662.9047	9.9818	1817.2603	87.44

TABLE 3: Benzene and TPH Removal Calculations

Time Oil Property 01-068
Sunnyside, Washington

Date	Days Operated	Offgas - Benzene lbs/day	Cumul. Benzene - lbs	Offgas - BTEX lbs/day	Cumul. BTEX - lbs	Offgas - TPH - lbs/day	Cumul. TPH - lbs	Cumul. Days Operated
11/1/00	1	0.6782	176.0955	3.1200	666.0247	9.9818	1827.2421	88.44
11/2/00	1	0.6782	176.7737	3.1200	669.1447	9.9818	1837.2239	89.44
11/3/00	1	0.6782	177.4519	3.1200	672.2647	9.9818	1847.2057	90.44
11/4/00	1	0.6782	178.1301	3.1200	675.3847	9.9818	1857.1875	91.44
11/5/00	1	0.6782	178.8083	3.1200	678.5047	9.9818	1867.1694	92.44
**11/6/00	1	0.5649	179.3732	2.9057	681.4104	11.9742	1879.1436	93.44
11/7/00	1	0.5649	179.9381	2.9057	684.3161	11.9742	1891.1178	94.44
11/8/00	1	0.5649	180.5030	2.9057	687.2218	11.9742	1903.0920	95.44
11/9/00	1	0.5649	181.0679	2.9057	690.1275	11.9742	1915.0662	96.44
11/10/00	1	0.5649	181.6328	2.9057	693.0333	11.9742	1927.0404	97.44
11/11/00	1	0.5649	182.1977	2.9057	695.9390	11.9742	1939.0146	98.44
11/12/00	1	0.5649	182.7626	2.9057	698.8447	11.9742	1950.9888	99.44
11/13/00	1	0.5649	183.3275	2.9057	701.7504	11.9742	1962.9630	100.44
11/14/00	1	0.5649	183.8924	2.9057	704.6561	11.9742	1974.9372	101.44
11/15/00	1	0.5649	184.4573	2.9057	707.5618	11.9742	1986.9114	102.44
11/16/00	0.8333	0.4707	184.9280	2.9057	709.9831	11.9742	1996.8895	103.27
11/18/00	0.4375	0.2471	185.1752	2.9057	711.2543	11.9742	2002.1282	103.71
11/19/00	1	0.5649	185.7401	2.9057	714.1600	11.9742	2014.1024	104.71
11/20/00	1	0.5649	186.3050	2.9057	717.0657	11.9742	2026.0766	105.71
11/21/00	1	0.5649	186.8699	2.9057	719.9714	11.9742	2038.0508	106.71
11/22/00	1	0.5649	187.4348	2.9057	722.8772	11.9742	2050.0250	107.71
11/23/00	1	0.5649	187.9997	2.9057	725.7829	11.9742	2061.9992	108.71
11/24/00	1	0.5649	188.5646	2.9057	728.6886	11.9742	2073.9734	109.71
11/25/00	1	0.5649	189.1295	2.9057	731.5943	11.9742	2085.9476	110.71
11/26/00	1	0.5649	189.6944	2.9057	734.5000	11.9742	2097.9218	111.71
11/27/00	1	0.5649	190.2593	2.9057	737.4057	11.9742	2109.8960	112.71
11/28/00	1	0.5649	190.8242	2.9057	740.3114	11.9742	2121.8702	113.71
11/29/00	1	0.5649	191.3891	2.9057	743.2171	11.9742	2133.8444	114.71
11/30/00	1	0.5649	191.9540	2.9057	746.1228	11.9742	2145.8186	115.71
12/1/00	1	0.5649	192.5189	2.9057	749.0285	11.9742	2157.7928	116.71
12/2/00	1	0.5649	193.0838	2.9057	751.9342	11.9742	2169.7670	117.71
12/3/00	1	0.5649	193.6487	2.9057	754.8399	11.9742	2181.7412	118.71
**12/4/00	1	0.0010	193.6497	0.0071	754.8470	0.1042	2181.8454	119.71
12/5/00	1	0.0010	193.6507	0.0071	754.8541	0.1042	2181.9495	120.71
12/6/00	1	0.0010	193.6518	0.0071	754.8613	0.1042	2182.0537	121.71
12/7/00	1	0.0010	193.6528	0.0071	754.8684	0.1042	2182.1579	122.71
12/8/00	1	0.0010	193.6539	0.0071	754.8755	0.1042	2182.2620	123.71
12/9/00	1	0.0010	193.6549	0.0071	754.8826	0.1042	2182.3662	124.71
12/10/00	1	0.0010	193.6560	0.0071	754.8898	0.1042	2182.4704	125.71
12/11/00	0.3333	0.0003	193.6563	0.0071	754.8921	0.1042	2182.5051	126.04
12/12/00	0.375	0.0004	193.6567	0.0071	754.8948	0.1042	2182.5442	126.42
12/13/00	0.9167	0.0010	193.6577	0.0071	754.9013	0.1042	2182.6397	127.33
12/18/00	0.3542	0.0004	193.6580	0.0071	754.9039	0.1042	2182.6766	127.69
12/19/00	1	0.0010	193.6591	0.0071	754.9110	0.1042	2182.7807	128.69
12/20/00	1	0.0010	193.6601	0.0071	754.9181	0.1042	2182.8849	129.69
12/21/00	1	0.0010	193.6611	0.0071	754.9252	0.1042	2182.9891	130.69
12/22/00	1	0.0010	193.6622	0.0071	754.9324	0.1042	2183.0932	131.69
12/23/00	1	0.0010	193.6632	0.0071	754.9395	0.1042	2183.1974	132.69

TABLE 3: Benzene and TPH Removal Calculations

Time Oil Property 01-068
Sunnyside, Washington

Date	Days Operated	Offgas - Benzene lbs/day	Cumul. Benzene - lbs	Offgas - BTEX lbs/day	Cumul. BTEX - lbs	Offgas - TPH - lbs/day	Cumul. TPH - lbs	Cumul. Days Operated
12/24/00	1	0.0010	193.6643	0.0071	754.9466	0.1042	2183.3016	133.69
12/25/00	1	0.0010	193.6653	0.0071	754.9537	0.1042	2183.4057	134.69
12/26/00	1	0.0010	193.6664	0.0071	754.9609	0.1042	2183.5099	135.69
12/27/00	1	0.0010	193.6674	0.0071	754.9680	0.1042	2183.6141	136.69
12/28/00	1	0.0010	193.6684	0.0071	754.9751	0.1042	2183.7182	137.69
12/29/00	1	0.0010	193.6695	0.0071	754.9822	0.1042	2183.8224	138.69
12/30/00	1	0.0010	193.6705	0.0071	754.9894	0.1042	2183.9266	139.69
12/31/00	1	0.0010	193.6716	0.0071	754.9965	0.1042	2184.0307	140.69
1/1/01	1	0.0010	193.6726	0.0071	755.0036	0.1042	2184.1349	141.69
1/2/01	1	0.0010	193.6736	0.0071	755.0107	0.1042	2184.2391	142.69
***1/3/01	1	0.3777	194.0513	2.0221	757.0328	7.9558	2192.1949	143.69
1/4/01	1	0.3777	194.4290	2.0221	759.0549	7.9558	2200.1507	144.69
1/5/01	1	0.3777	194.8067	2.0221	761.0770	7.9558	2208.1066	145.69
1/6/01	1	0.3777	195.1844	2.0221	763.0991	7.9558	2216.0624	146.69
1/7/01	1	0.3777	195.5621	2.0221	765.1212	7.9558	2224.0182	147.69
1/8/01	1	0.3777	195.9398	2.0221	767.1433	7.9558	2231.9741	148.69
1/9/01	1	0.3777	196.3175	2.0221	769.1654	7.9558	2239.9299	149.69
1/10/01	1	0.3777	196.6952	2.0221	771.1875	7.9558	2247.8857	150.69
1/11/01	1	0.3777	197.0729	2.0221	773.2095	7.9558	2255.8416	151.69

*** Sample collection date.

ATTACHMENT A
LABORATORY CERTIFICATES

www.ncalabs.com

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8223
425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

10 January, 2001

Gene St. Godard
Brown & Caldwell - Spokane
10015 N Division St Suite 100
Spokane, WA 99218

RE: Time Oil-Sunnyside

Enclosed are the results of analyses for samples received by the laboratory on 01/05/01 09:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amar Gill
Project Manager

www.ncalabs.com

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	01/10/01 14:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Batch 1-3-01	B1A0063-01	Water	01/03/01 08:45	01/05/01 09:30
Pre Carbon 1-3-01	B1A0063-02	Water	01/03/01 09:00	01/05/01 09:30
Influent Air 1-3-01	B1A0063-03	Air	01/03/01 08:35	01/05/01 09:30

North Creek Analytical - Bothell

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.

Amar Gill, Project Manager

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	01/10/01 14:17

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Batch 1-3-01 (B1A0063-01) Water	**Sampled: 01/03/01 08:45**		**Received: 01/05/01 09:30**						
Gasoline Range Hydrocarbons	**2140**	250	ug/l	5	1A06007	01/06/01	01/07/01	WTPH-G/8021B	
Benzene	**115**	2.50	"	"	"	"	"	"	
Toluene	**234**	2.50	"	"	"	"	"	"	
Ethylbenzene	**14.0**	2.50	"	"	"	"	"	"	
Xylenes (total)	**331**	5.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	*98.3 %*	*50-150*			"	"	"	"	
Surrogate: 4-BFB (PID)	*113 %*	*50-150*			"	"	"	"	
Pre Carbon 1-3-01 (B1A0063-02) Water	**Sampled: 01/03/01 09:00**		**Received: 01/05/01 09:30**						
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	1A06007	01/06/01	01/07/01	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	**0.646**	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	**1.31**	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	*85.2 %*	*50-150*			"	"	"	"	
Surrogate: 4-BFB (PID)	*90.8 %*	*50-150*			"	"	"	"	

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503.906.9200 fax 503.906.9210
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541.383.9310 fax 541.382.7588

Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	01/10/01 14:17

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-G and EPA 8021B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Influent Air 1-3-01 (B1A0063-03) Air	**Sampled: 01/03/01 08:35**		**Received: 01/05/01 09:30**						
Gasoline Range Hydrocarbons	**377**	50.0	mg/m³ Air	5	1A05006	01/05/01	01/05/01	WTPH-G/8021B	
Benzene	**17.9**	0.500	"	"	"	"	"	"	
Toluene	**33.7**	0.500	"	"	"	"	"	"	
Ethylbenzene	**4.42**	0.500	"	"	"	"	"	"	
Xylenes (total)	**39.8**	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	*96.8 %*	*50-150*			"	"	"	"	
Surrogate: 4-BFB (PID)	*90.8 %*	*50-150*			"	"	"	"	
Gasoline Range Hydrocarbons (v/v)	**88.9**	11.8	ppmv	5	"	"	"	"	
Benzene (v/v)	**5.53**	0.154	"	"	"	"	"	"	
Toluene (v/v)	**8.81**	0.131	"	"	"	"	"	"	
Ethylbenzene (v/v)	**1.00**	0.114	"	"	"	"	"	"	
Xylenes, total (v/v)	**9.03**	0.227	"	"	"	"	"	"	

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	01/10/01 14:17

Diesel Hydrocarbons (C12-C24) by WTPH-D

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Batch 1-3-01 (B1A0063-01) Water	**Sampled: 01/03/01 08:45**		**Received: 01/05/01 09:30**						
Diesel Range Hydrocarbons	**0.340**	0.250	mg/l	1	1A07001	01/07/01	01/08/01	WTPH-D	
Surrogate: 2-FBP	*93.4 %*	*50-150*			"	"	"	"	
Pre Carbon 1-3-01 (B1A0063-02) Water	**Sampled: 01/03/01 09:00**		**Received: 01/05/01 09:30**						
Diesel Range Hydrocarbons	**0.402**	0.250	mg/l	1	1A07001	01/07/01	01/08/01	WTPH-D	
Surrogate: 2-FBP	*89.0 %*	*50-150*			"	"	"	"	

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	01/10/01 14:17

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-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
Batch 1A06007: Prepared 01/06/01 Using EPA 5030B (P/T)										
Blank (1A06007-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)	*39.1*		"	*48.0*		*81.5*	*50-150*			
Surrogate: 4-BFB (PID)	*42.9*		"	*48.0*		*89.4*	*50-150*			
Blank (1A06007-BLK2)										
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)	*39.7*		"	*48.0*		*82.7*	*50-150*			
Surrogate: 4-BFB (PID)	*43.2*		"	*48.0*		*90.0*	*50-150*			
LCS (1A06007-BS1)										
Gasoline Range Hydrocarbons	492	50.0	ug/l	500		98.4	70-130			
Surrogate: 4-BFB (FID)	*50.5*		"	*48.0*		*105*	*50-150*			
LCS (1A06007-BS3)										
Gasoline Range Hydrocarbons	524	50.0	ug/l	500		105	70-130			
Surrogate: 4-BFB (FID)	*51.6*		"	*48.0*		*107*	*50-150*			
Duplicate (1A06007-DUP1)					**Source: B0L0608-04**					
Gasoline Range Hydrocarbons	2960	50.0	ug/l		2970			0.337	25	
Surrogate: 4-BFB (FID)	*0*		"	*48.0*			*50-150*			*S-02*

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	01/10/01 14:17

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-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
Batch 1A06007: Prepared 01/06/01 Using EPA 5030B (P/T)										
Duplicate (1A06007-DUP2)					**Source: B0L0608-02**					
Gasoline Range Hydrocarbons	ND	50.0	ug/l		ND			5.13	25	
Surrogate: 4-BFB (FID)	*39.1*		"	*48.0*		*81.5*	*50-150*			
Matrix Spike (1A06007-MS1)					**Source: B0L0608-07**					
Benzene	10.5	0.500	ug/l	10.0	ND	104	70-130			
Toluene	10.5	0.500	"	10.0	ND	103	70-130			
Ethylbenzene	10.9	0.500	"	10.0	ND	108	70-130			
Xylenes (total)	31.9	1.00	"	30.0	ND	106	70-130			
Surrogate: 4-BFB (PID)	*53.7*		"	*48.0*		*112*	*50-150*			
Matrix Spike Dup (1A06007-MSD1)					**Source: B0L0608-07**					
Benzene	10.7	0.500	ug/l	10.0	ND	106	70-130	1.89	15	
Toluene	10.6	0.500	"	10.0	ND	104	70-130	0.948	15	
Ethylbenzene	10.8	0.500	"	10.0	ND	107	70-130	0.922	15	
Xylenes (total)	31.5	1.00	"	30.0	ND	104	70-130	1.26	15	
Surrogate: 4-BFB (PID)	*50.0*		"	*48.0*		*104*	*50-150*			

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	01/10/01 14:17

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-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
Batch 1A05006: Prepared 01/05/01 Using EPA 5030B (P/T)										
Blank (1A05006-BLK1)										
Gasoline Range Hydrocarbons	ND	10.0	mg/m³ Air							
Benzene	ND	0.100	"							
Toluene	ND	0.100	"							
Ethylbenzene	ND	0.100	"							
Xylenes (total)	ND	0.200	"							
Gasoline Range Hydrocarbons (v/v)	ND	2.36	ppmv							
Benzene (v/v)	ND	0.0308	"							
Toluene (v/v)	ND	0.0261	"							
Ethylbenzene (v/v)	ND	0.0227	"							
Xylenes, total (v/v)	ND	0.0454	"							
Surrogate: 4-BFB (FID)	*9.53*		*mg/m³ Air*	*9.60*		*99.3*	*50-150*			
Surrogate: 4-BFB (PID)	*9.69*		*"*	*9.60*		*101*	*50-150*			
LCS (1A05006-BS1)										
Benzene	1.85	0.100	mg/m³ Air	2.00		92.5	50-150			
Toluene	1.87	0.100	"	2.00		93.5	50-150			
Ethylbenzene	1.96	0.100	"	2.00		98.0	50-150			
Xylenes (total)	5.86	0.200	"	6.00		97.7	50-150			
Surrogate: 4-BFB (PID)	*9.65*		*"*	*9.60*		*101*	*50-150*			
LCS (1A05006-BS2)										
Gasoline Range Hydrocarbons	71.7	10.0	mg/m³ Air	100		71.7	50-150			
Surrogate: 4-BFB (FID)	*9.58*		*"*	*9.60*		*99.8*	*50-150*			
LCS Dup (1A05006-BSD1)										
Benzene	1.58	0.100	mg/m³ Air	2.00		79.0	50-150	15.7	50	
Toluene	1.54	0.100	"	2.00		77.0	50-150	19.4	50	
Ethylbenzene	1.67	0.100	"	2.00		83.5	50-150	16.0	50	
Xylenes (total)	5.06	0.200	"	6.00		84.3	50-150	14.7	50	
Surrogate: 4-BFB (PID)	*10.0*		*"*	*9.60*		*104*	*50-150*			

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	01/10/01 14:17

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-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
Batch 1A05006: Prepared 01/05/01 Using EPA 5030B (P/T)										
Duplicate (1A05006-DUP1)					**Source: B1A0063-03**					
Gasoline Range Hydrocarbons	372	10.0	mg/m³ Air		377			1.34	30	
Surrogate: 4-BFB (FID)	*11.2*		*"*	*9.60*		*117*	*50-150*			

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	01/10/01 14:17

Diesel Hydrocarbons (C12-C24) by WTPH-D - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1A07001: Prepared 01/07/01 Using EPA 3520C/600 Series										
Blank (1A07001-BLK1)										
Diesel Range Hydrocarbons	ND	0.250	mg/l							
Surrogate: 2-FBP	*0.283*		"	*0.320*		*88.4*	*50-150*			
LCS (1A07001-BS1)										
Diesel Range Hydrocarbons	1.64	0.250	mg/l	2.00		82.0	60-140			
Surrogate: 2-FBP	*0.276*		"	*0.320*		*86.2*	*50-150*			
Duplicate (1A07001-DUP1)					**Source: B1A0063-02**					
Diesel Range Hydrocarbons	0.465	0.250	mg/l		0.402			14.5	44	
Surrogate: 2-FBP	*0.716*		"	*0.757*		*94.6*	*50-150*			

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	01/10/01 14:17

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
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

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.

Amar Gill, Project Manager

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CHAIN OF CUSTODY REPORT

Work Order #: B1A0063

CLIENT: Brown & Caldwell
REPORT TO: Gene St. Godard
ADDRESS: 10015 N. Division St Ste 100 Spokane, WA 99218
PHONE: 509-777-1126 FAX: 777-1133

INVOICE TO: Time Oil Co
Attn: Scott Sloan

P.O. NUMBER:

PROJECT NAME: Sunnyside
PROJECT NUMBER: 19046.005
SAMPLED BY: Mark Engdahl

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: 10 | 7 | 5 | 4 | 3 | 2 | 1 | <1
STD.
Petroleum Hydrocarbon Analyses: X | 4 | X | 2 | 1 | <1
STD.
OTHER Please Specify

*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	REQUESTED ANALYSES: WTPH-G	WTPH-D	BTEX	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1. Batch 1-3-01	1/3/01 0845	X	X	X	W	3		-01
2. Pre Carbon 1-3-01	0900	X	X	X	W	3		-02
3. Influent Air 1-3-01	0835	X		X	Air	1		-03
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								

RELINQUISHED BY: Mark Engdahl
PRINT NAME: Mark Engdahl FIRM: B&C DATE: 1/4/01 TIME: 1600
RECEIVED BY: Mona Dellos
PRINT NAME: Mona Dellos FIRM: NCA DATE: 1/5/01 TIME: 9:30

RELINQUISHED BY:
PRINT NAME: FIRM: DATE: TIME:
RECEIVED BY:
PRINT NAME: FIRM: DATE: TIME:

ADDITIONAL REMARKS:
w/o

TEMP: 2.0

COC REV 3/99

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046,005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	12/12/00 17:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Batch 12-4-00	B0L0079-01	Water	12/04/00 11:05	12/05/00 09:00
Precarbon 12-4-00	B0L0079-02	Water	12/04/00 11:10	12/05/00 09:00

North Creek Analytical - Bothell

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Brown & Caldwell - Spokane 10015 N Division St Suite 100 Spokane WA, 99218	Project: Time Oil-Sunnyside Project Number: 19046.005 Project Manager: Gene St. Godard	**Reported:** 12/12/00 17:52

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Batch 12-4-00 (B0L0079-01) Water	**Sampled: 12/04/00 11:05**		**Received: 12/05/00 09:00**						
Gasoline Range Hydrocarbons	**7420**	500	ug/l	10	0L07041	12/07/00	12/08/00	WTPH-G/8021B	
Benzene	**111**	5.00	"	"	"	"	"	"	
Toluene	**338**	5.00	"	"	"	"	"	"	
Ethylbenzene	**40.4**	5.00	"	"	"	"	"	"	
Xylenes (total)	**656**	10.0	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	*99.4 %*	*50-150*			"	"	"	"	
Surrogate: 4-BFB (PID)	*101 %*	*50-150*			"	"	"	"	
Precarbon 12-4-00 (B0L0079-02) Water	**Sampled: 12/04/00 11:10**		**Received: 12/05/00 09:00**						
Gasoline Range Hydrocarbons	**135**	50.0	ug/l	1	0L07041	12/07/00	12/08/00	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	**1.34**	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	*98.8 %*	*50-150*			"	"	"	"	
Surrogate: 4-BFB (PID)	*103 %*	*50-150*			"	"	"	"	

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Brown & Caldwell - Spokane 10015 N Division St Suite 100 Spokane WA, 99218	Project: Time Oil-Sunnyside Project Number: 19046,005 Project Manager: Gene St. Godard	**Reported:** 12/12/00 17:52

Diesel Hydrocarbons (C12-C24) by WTPH-D
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Batch 12-4-00 (B0L0079-01) Water Sampled: 12/04/00 11:05 Received: 12/05/00 09:00									
Diesel Range Hydrocarbons	**0.534**	0.250	mg/l	1	0L10001	12/10/00	12/11/00	WTPH-D	
Surrogate: 2-FBP	*92.0 %*	*50-150*			"	"	"	"	
Precarbon 12-4-00 (B0L0079-02) Water Sampled: 12/04/00 11:10 Received: 12/05/00 09:00									
Diesel Range Hydrocarbons	**0.362**	0.248	mg/l	1	0L10001	12/10/00	12/11/00	WTPH-D	
Surrogate: 2-FBP	*85.6 %*	*50-150*			"	"	"	"	

North Creek Analytical - Bothell

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	12/12/00 17:52

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-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
Batch 0L07041: Prepared 12/07/00 Using EPA 5030B (P/T)										
Blank (0L07041-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)	*48.4*		"	*48.0*		*101*	*50-150*			
Surrogate: 4-BFB (PID)	*48.8*		"	*48.0*		*102*	*50-150*			
Blank (0L07041-BLK2)										
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)	*48.3*		"	*48.0*		*101*	*50-150*			
Surrogate: 4-BFB (PID)	*49.4*		"	*48.0*		*103*	*50-150*			
LCS (0L07041-BS1)										
Gasoline Range Hydrocarbons	482	50.0	ug/l	500		96.4	70-130			
Surrogate: 4-BFB (FID)	*49.6*		"	*48.0*		*103*	*50-150*			
LCS (0L07041-BS3)										
Gasoline Range Hydrocarbons	447	50.0	ug/l	500		89.4	70-130			
Surrogate: 4-BFB (FID)	*47.9*		"	*48.0*		*99.8*	*50-150*			
Duplicate (0L07041-DUP1)					**Source: B0L0079-01**					
Gasoline Range Hydrocarbons	6640	100	ug/l		7420			11.1	25	
Surrogate: 4-BFB (FID)	*45.9*		"	*48.0*		*95.6*	*50-150*			

Amar Gill, Project Manager

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Brown & Caldwell - Spokane 10015 N Division St Suite 100 Spokane WA, 99218	Project: Time Oil-Sunnyside Project Number: 19046.005 Project Manager: Gene St. Godard	**Reported:** 12/12/00 17:52

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-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
Batch 0L07041: Prepared 12/07/00 Using EPA 5030B (P/T)										
Duplicate (0L07041-DUP2)					**Source: B0K0678-01**					
Gasoline Range Hydrocarbons	679	50.0	ug/l		619			9.24	25	
Surrogate: 4-BFB (FID)	*48.4*		"	*48.0*		*101*	*50-150*			
Matrix Spike (0L07041-MS1)					**Source: B0L0067-01**					
Benzene	8.82	0.500	ug/l	10.0	ND	88.2	70-130			
Toluene	9.78	0.500	"	10.0	ND	97.8	70-130			
Ethylbenzene	9.99	0.500	"	10.0	ND	99.9	70-130			
Xylenes (total)	29.8	1.00	"	30.0	ND	98.4	70-130			
Surrogate: 4-BFB (PID)	*49.3*		"	*48.0*		*103*	*50-150*			
Matrix Spike Dup (0L07041-MSD1)					**Source: B0L0067-01**					
Benzene	8.99	0.500	ug/l	10.0	ND	89.9	70-130	1.91	15	
Toluene	10.2	0.500	"	10.0	ND	102	70-130	4.20	15	
Ethylbenzene	10.4	0.500	"	10.0	ND	104	70-130	4.02	15	
Xylenes (total)	30.9	1.00	"	30.0	ND	102	70-130	3.62	15	
Surrogate: 4-BFB (PID)	*49.7*		"	*48.0*		*104*	*50-150*			

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Brown & Caldwell - Spokane 10015 N Division St Suite 100 Spokane WA, 99218	Project: Time Oil-Sunnyside Project Number: 19046,005 Project Manager: Gene St. Godard	**Reported:** 12/12/00 17:52

Diesel Hydrocarbons (C12-C24) by WTPH-D - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0L10001: Prepared 12/10/00 Using EPA 3520C/600 Series										
Blank (0L10001-BLK1)										
Diesel Range Hydrocarbons	ND	0.250	mg/l							
Surrogate: 2-FBP	*0.269*		"	*0.320*		*84.1*	*50-150*			
LCS (0L10001-BS1)										
Diesel Range Hydrocarbons	1.88	0.250	mg/l	2.00		94.0	60-140			
Surrogate: 2-FBP	*0.277*		"	*0.320*		*86.6*	*50-150*			
Duplicate (0L10001-DUP1)					**Source: B0L0079-02**					
Diesel Range Hydrocarbons	ND	0.461	mg/l		ND			10.8	44	
Surrogate: 2-FBP	*0.501*		"	*0.590*		*84.9*	*50-150*			
Duplicate (0L10001-DUP2)					**Source: B0L0193-10**					
Diesel Range Hydrocarbons	ND	0.446	mg/l		ND			5.13	44	
Surrogate: 2-FBP	*0.430*		"	*0.571*		*75.3*	*50-150*			

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	12/12/00 17:52

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

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CHAIN OF CUSTODY REPORT

Work Order #: BOL0079

CLIENT: Brown & Caldwell
REPORT TO: Gene St. Godard
ADDRESS: 10015 N. Division St. Ste 100
Spokane, WA 99218
PHONE: 509-777-1126 FAX: 777-1133

INVOICE TO: Time Oil Co
Attn: Scott Sloan
P.O. NUMBER:

PROJECT NAME:
PROJECT NUMBER: 19046.005
SAMPLED BY:

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: 10 | 7 | 5 | 4 | 3 | 2 | 1 | <1 (STD.)
Petroleum Hydrocarbon Analyses: ~~5~~ | 4 | 3 | 2 | 1 | <1 (STD.)
OTHER Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	REQUESTED ANALYSES: WTPH-G	WTPH-D	BTEX	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1. Batch 12-4-00	12/4/00 1105	X	X	X	W	4		-01
2. PreCarbon 12-4-00	12/4/00 1110	X	X	X	W	4		-02
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								

RELINQUISHED BY: Mark Engdahl
PRINT NAME: Mark Engdahl FIRM: B&C DATE: 12/4/00 TIME: 1700

RECEIVED BY: Brany Tonty
PRINT NAME: BRANY TONTY FIRM: NCA DATE: 12/5/00 TIME: 0900

RELINQUISHED BY:
PRINT NAME: FIRM: DATE: TIME:

RECEIVED BY:
PRINT NAME: FIRM: DATE: TIME:

ADDITIONAL REMARKS: SAMPLES WERE NOT @ 2-6C UPON RECEIPT

TEMP: 1.0

COC REV 3/99

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	12/08/00 15:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Influent Air 12-4-00	B0L0074-01	Air	12/04/00 12:00	12/05/00 09:00

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	12/08/00 15:09

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-G and EPA 8021B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Influent Air 12-4-00 (B0L0074-01) Air	**Sampled: 12/04/00 12:00**		**Received: 12/05/00 09:00**						
Gasoline Range Hydrocarbons	ND	10.0	mg/m³ Air	1	0L07014	12/07/00	12/07/00	WTPH-G/8021B	
Benzene	ND	0.100	"	"	"	"	"	"	
Toluene	**0.192**	0.100	"	"	"	"	"	"	
Ethylbenzene	ND	0.100	"	"	"	"	"	"	
Xylenes (total)	**0.323**	0.200	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	*70.9 %*	*50-150*			"	"	"	"	
Surrogate: 4-BFB (PID)	*111 %*	*50-150*			"	"	"	"	
Gasoline Range Hydrocarbons (v/v)	ND	2.36	ppmv	"	"	"	"	"	
Benzene (v/v)	ND	0.0308	"	"	"	"	"	"	
Toluene (v/v)	**0.0502**	0.0261	"	"	"	"	"	"	
Ethylbenzene (v/v)	ND	0.0227	"	"	"	"	"	"	
Xylenes, total (v/v)	**0.0732**	0.0454	"	"	"	"	"	"	

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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.

Amar Gill, Project Manager

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	12/08/00 15:09

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-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
Batch 0L07014: Prepared 12/07/00 Using EPA 5030B (P/T)										
Blank (0L07014-BLK1)										
Gasoline Range Hydrocarbons	ND	10.0	mg/m³ Air							
Benzene	ND	0.100	"							
Toluene	ND	0.100	"							
Ethylbenzene	ND	0.100	"							
Xylenes (total)	ND	0.200	"							
Gasoline Range Hydrocarbons (v/v)	ND	2.36	ppmv							
Benzene (v/v)	ND	0.0308	"							
Toluene (v/v)	ND	0.0261	"							
Ethylbenzene (v/v)	ND	0.0227	"							
Xylenes, total (v/v)	ND	0.0454	"							
urrogate: 4-BFB (FID)	*10.3*		*mg/m³ Air*	*9.60*		*107*	*50-150*			
Surrogate: 4-BFB (PID)	*10.7*		*"*	*9.60*		*111*	*50-150*			
LCS (0L07014-BS1)										
Benzene	1.70	0.100	mg/m³ Air	2.00		85.0	50-150			
Toluene	1.80	0.100	"	2.00		90.0	50-150			
Ethylbenzene	1.91	0.100	"	2.00		95.5	50-150			
Xylenes (total)	5.70	0.200	"	6.00		95.0	50-150			
Surrogate: 4-BFB (PID)	*10.5*		*"*	*9.60*		*109*	*50-150*			
LCS (0L07014-BS2)										
Gasoline Range Hydrocarbons	76.0	10.0	mg/m³ Air	100		76.0	50-150			
Surrogate: 4-BFB (FID)	*11.0*		*"*	*9.60*		*115*	*50-150*			
LCS Dup (0L07014-BSD1)										
Benzene	1.63	0.100	mg/m³ Air	2.00		81.5	50-150	4.20	50	
Toluene	1.78	0.100	"	2.00		89.0	50-150	1.12	50	
Ethylbenzene	1.94	0.100	"	2.00		97.0	50-150	1.56	50	
Xylenes (total)	5.87	0.200	"	6.00		97.8	50-150	2.94	50	
Surrogate: 4-BFB (PID)	*11.0*		*"*	*9.60*		*115*	*50-150*			

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	12/08/00 15:09

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-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
Batch 0L07014: Prepared 12/07/00 Using EPA 5030B (P/T)										
Duplicate (0L07014-DUP1)					**Source: B0L0105-02**					
Gasoline Range Hydrocarbons	ND	10.0	mg/m³ Air		ND			8.71	30	
Surrogate: 4-BFB (FID)	*10.2*		"	*9.60*		*106*	*50-150*			

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	12/08/00 15:09

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

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CHAIN OF CUSTODY REPORT

Work Order #: B0L0074

CLIENT: Brown & Caldwell
REPORT TO: Gene St. Godard
ADDRESS: 10015 N. Division St Ste 100, Spokane, WA 99218
PHONE: 509-777-7126 FAX: 777-1133

INVOICE TO: Time Oil Co. Attn: Scott Sloan
P.O. NUMBER:

PROJECT NAME: Sunnyside
PROJECT NUMBER: 19046.005
SAMPLED BY: Mark Ensdahl

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: 10 (STD.) 7 5 4 3 2 1 <1
Petroleum Hydrocarbon Analyses: 5 (STD.) 4 3 2 1 <1
OTHER Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	REQUESTED ANALYSES: 8-BTEX													MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1. Influent Air 12-4-00	12/4/00 1200	X													Air	1		-01
2.																		
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		
11.																		
12.																		
13.																		
14.																		
15.																		

RELINQUISHED BY: Mark Ensdahl
PRINT NAME: Mark Ensdahl FIRM: BC DATE: 12/4/00 TIME: 1700
RECEIVED BY: [illegible]
PRINT NAME: [illegible] FIRM: NCA DATE: 12/5/00 TIME: 0900

RELINQUISHED BY:
PRINT NAME: FIRM: DATE: TIME:
RECEIVED BY:
PRINT NAME: FIRM: DATE: TIME:

ADDITIONAL REMARKS:
SAMPLES WERE NOT @ 2-6C UPON RECEIPT
TEMP: 10° w/[illegible] PAGE OF

COC REV 3/99

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside O+M	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	11/14/00 18:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Batch 11-6-00	B0K0142-01	Water	11/06/00 10:25	11/07/00 09:00
Pre Carbon 11-6-00	B0K0142-02	Water	11/06/00 10:35	11/07/00 09:00
Influent Air 11-6-00	B0K0142-03	Air	11/06/00 10:30	11/07/00 09:00

North Creek Analytical - Bothell

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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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside O+M	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	11/14/00 18:01

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Batch 11-6-00 (B0K0142-01) Water	**Sampled: 11/06/00 10:25**		**Received: 11/07/00 09:00**						
Gasoline Range Hydrocarbons	**1850**	250	ug/l	5	0K08042	11/08/00	11/09/00	WTPH-G/8021B	
Benzene	**73.8**	2.50	"	"	"	"	"	"	
Toluene	**139**	2.50	"	"	"	"	"	"	
Ethylbenzene	**8.81**	2.50	"	"	"	"	"	"	
Xylenes (total)	**301**	5.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	*96.0 %*	*50-150*			"	"	"	"	
Surrogate: 4-BFB (PID)	*114 %*	*50-150*			"	"	"	"	
Pre Carbon 11-6-00 (B0K0142-02) Water	**Sampled: 11/06/00 10:35**		**Received: 11/07/00 09:00**						
Gasoline Range Hydrocarbons	**144**	50.0	ug/l	1	0K08042	11/08/00	11/09/00	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	1.28	"	"	"	"	"	"	R-03
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.25	"	"	"	"	"	"	R-03
Surrogate: 4-BFB (FID)	*94.4 %*	*50-150*			"	"	"	"	
Surrogate: 4-BFB (PID)	*93.3 %*	*50-150*			"	"	"	"	

North Creek Analytical - Bothell

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.

Amar Gill, Project Manager

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside O+M	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	11/14/00 18:01

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-G and EPA 8021B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Influent Air 11-6-00 (B0K0142-03) Air	**Sampled: 11/06/00 10:30**		**Received: 11/07/00 09:00**						
Gasoline Range Hydrocarbons	**443**	50.0	mg/m³ Air	5	0K08011	11/08/00	11/08/00	WTPH-G/8021B	
Benzene	**20.9**	0.500	"	"	"	"	"	"	
Toluene	**39.6**	0.500	"	"	"	"	"	"	
Ethylbenzene	**5.80**	0.500	"	"	"	"	"	"	
Xylenes (total)	**41.2**	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	*123 %*	*50-150*			"	"	"	"	
Surrogate: 4-BFB (PID)	*100 %*	*50-150*			"	"	"	"	
Gasoline Range Hydrocarbons (v/v)	**104**	11.8	ppmv	5	"	"	"	"	
Benzene (v/v)	**6.44**	0.154	"	"	"	"	"	"	
Toluene (v/v)	**10.3**	0.131	"	"	"	"	"	"	
Ethylbenzene (v/v)	**1.32**	0.114	"	"	"	"	"	"	
Xylenes, total (v/v)	**9.35**	0.227	"	"	"	"	"	"	

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside O+M	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	11/14/00 18:01

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-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
Batch 0K08042: Prepared 11/08/00 Using EPA 5030B (P/T)										
Blank (0K08042-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)	*39.3*		"	*48.0*		*81.9*	*50-150*			
Surrogate: 4-BFB (PID)	*41.6*		"	*48.0*		*86.7*	*50-150*			
Blank (0K08042-BLK2)										
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)	*39.4*		"	*48.0*		*82.1*	*50-150*			
Surrogate: 4-BFB (PID)	*41.8*		"	*48.0*		*87.1*	*50-150*			
LCS (0K08042-BS1)										
Gasoline Range Hydrocarbons	497	50.0	ug/l	500		99.4	70-130			
Surrogate: 4-BFB (FID)	*49.4*		"	*48.0*		*103*	*50-150*			
LCS (0K08042-BS2)										
Gasoline Range Hydrocarbons	527	50.0	ug/l	500		105	70-130			
Surrogate: 4-BFB (FID)	*50.6*		"	*48.0*		*105*	*50-150*			
Duplicate (0K08042-DUP1)					**Source: B0K0142-01**					
Gasoline Range Hydrocarbons	1860	50.0	ug/l		1850			0.539	25	
Surrogate: 4-BFB (FID)	*55.2*		"	*48.0*		*115*	*50-150*			

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside O+M	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	11/14/00 18:01

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-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
Batch 0K08042: Prepared 11/08/00 Using EPA 5030B (P/T)										
Duplicate (0K08042-DUP2)					**Source: B0K0192-01**					
Gasoline Range Hydrocarbons	444	50.0	ug/l		441			0.678	25	
Surrogate: 4-BFB (FID)	*45.5*		"	*48.0*		*94.8*	*50-150*			
Matrix Spike (0K08042-MS1)					**Source: B0K0146-01**					
Benzene	9.58	0.500	ug/l	10.0	ND	95.2	70-130			
Toluene	9.57	0.500	"	10.0	ND	92.3	70-130			
Ethylbenzene	9.98	0.500	"	10.0	ND	98.0	70-130			
Xylenes (total)	29.8	1.00	"	30.0	ND	96.7	70-130			
Surrogate: 4-BFB (PID)	*46.4*		"	*48.0*		*96.7*	*50-150*			
Matrix Spike Dup (0K08042-MSD1)					**Source: B0K0146-01**					
Benzene	10.2	0.500	ug/l	10.0	ND	101	70-130	6.27	15	
Toluene	10.6	0.500	"	10.0	ND	103	70-130	10.2	15	
Ethylbenzene	10.6	0.500	"	10.0	ND	104	70-130	6.03	15	
Xylenes (total)	32.0	1.00	"	30.0	ND	104	70-130	7.12	15	
Surrogate: 4-BFB (PID)	*48.3*		"	*48.0*		*101*	*50-150*			

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside O+M	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	11/14/00 18:01

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-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
Batch 0K08011: Prepared 11/08/00 Using EPA 5030B (P/T)										
Blank (0K08011-BLK1)										
Gasoline Range Hydrocarbons	ND	10.0	mg/m³ Air							
Benzene	ND	0.100	"							
Toluene	ND	0.100	"							
Ethylbenzene	ND	0.100	"							
Xylenes (total)	ND	0.200	"							
Gasoline Range Hydrocarbons (v/v)	ND	2.36	ppmv							
Benzene (v/v)	ND	0.0308	"							
Toluene (v/v)	ND	0.0261	"							
Ethylbenzene (v/v)	ND	0.0227	"							
Xylenes, total (v/v)	ND	0.0454	"							
rrogate: 4-BFB (FID)	*11.2*		*mg/m³ Air*	*9.60*		*117*	*50-150*			
Surrogate: 4-BFB (PID)	*10.3*		*"*	*9.60*		*107*	*50-150*			
LCS (0K08011-BS1)										
Benzene	2.75	0.100	mg/m³ Air	2.00		138	50-150			
Toluene	2.86	0.100	"	2.00		143	50-150			
Ethylbenzene	2.92	0.100	"	2.00		146	50-150			
Xylenes (total)	8.63	0.200	"	6.00		144	50-150			
Surrogate: 4-BFB (PID)	*10.7*		*"*	*9.60*		*111*	*50-150*			
LCS (0K08011-BS2)										
Gasoline Range Hydrocarbons	79.1	10.0	mg/m³ Air	100		79.1	50-150			
Surrogate: 4-BFB (FID)	*11.3*		*"*	*9.60*		*118*	*50-150*			
LCS Dup (0K08011-BSD1)										
Benzene	2.24	0.100	mg/m³ Air	2.00		112	50-150	20.4	50	
Toluene	2.34	0.100	"	2.00		117	50-150	20.0	50	
Ethylbenzene	2.38	0.100	"	2.00		119	50-150	20.4	50	
Xylenes (total)	7.16	0.200	"	6.00		119	50-150	18.6	50	
Surrogate: 4-BFB (PID)	*10.9*		*"*	*9.60*		*114*	*50-150*			

Amar Gill, Project Manager

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside O+M	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	11/14/00 18:01

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-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
Batch 0K08011: Prepared 11/08/00 Using EPA 5030B (P/T)										
Duplicate (0K08011-DUP1)					**Source: B0K0142-03**					
Gasoline Range Hydrocarbons	451	50.0	mg/m³ Air		443			1.79	30	
Surrogate: 4-BFB (FID)	*11.3*		"	*9.60*		*118*	*50-150*			

Amar Gill, Project Manager

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside O+M	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	11/14/00 18:01

Notes and Definitions

R-03	The reporting limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
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

Amar Gill, Project Manager

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CHAIN OF CUSTODY REPORT

Work Order #: BOK0142

CLIENT: Broward Caldwell
REPORT TO: Eric St. Gerard
ADDRESS: 1001 N. Division St Ste 100
Spokane, WA 99201
PHONE: 509-327-1136 FAX: 327-1133

INVOICE TO: Time Oil Co
Attn: Scott Sloan
P.O. NUMBER:

PROJECT NAME: Sunny Slope
PROJECT NUMBER: 19216.005
SAMPLED BY: Mark Engdahl

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: 10 | 7 | 5 | 4 | 3 | 2 | 1 | <1
STD. Petroleum Hydrocarbon Analyses: ~~5~~ STD. | 4 | ~~3~~ | 2 | 1 | <1
Please Specify
OTHER
*Turnaround Requests less than standard may incur Rush Charges.

REQUESTED ANALYSES

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	WTPH-G	BTEX	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1	Excel 11-6-00	11/6/00 1025	X	X	W	3	BOK0142	-01
2	Pre Carbon 11-6-00	11/6/00 1035	X	X	W	3		-02
3	Effluent Mid 11-6-00	11/6/00 1030	X	X	Air	1		-03
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

RELINQUISHED BY: Mark Engdahl
PRINT NAME: Mark Engdahl FIRM: B+C DATE: 11/6/00 TIME: 1630

RECEIVED BY: Karla Kaczorowski
PRINT NAME: Karla Kaczorowski FIRM: NCA DATE: 11/07/00 TIME: 9:00

RELINQUISHED BY: PRINT NAME: FIRM: DATE: TIME:

RECEIVED BY: PRINT NAME: FIRM: DATE: TIME:

ADDITIONAL REMARKS:
COC REV 3.01

W/O
TEMP: 1.0
PAGE OF

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: N/A	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	10/18/00 11:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Influent Air 10-11-00	B0J0312-01	Air	10/11/00 17:10	10/13/00 09:00

North Creek Analytical - Bothell

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: N/A	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	10/18/00 11:39

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-G and EPA 8021B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Influent Air 10-11-00 (B0J0312-01) Air	**Sampled: 10/11/00 17:10**		**Received: 10/13/00 09:00**						
Gasoline Range Hydrocarbons	**471**	100	mg/m³ Air	10	0J14003	10/14/00	10/14/00	WTPH-G/8021B	
Benzene	**32.0**	1.00	"	"	"	"	"	"	
Toluene	**57.5**	1.00	"	"	"	"	"	"	
Ethylbenzene	**6.92**	1.00	"	"	"	"	"	"	
Xylenes (total)	**50.8**	2.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	*102 %*	*50-150*			"	"	"	"	
Surrogate: 4-BFB (PID)	*99.3 %*	*50-150*			"	"	"	"	
Gasoline Range Hydrocarbons (v/v)	**111**	23.6	ppmv	10	"	"	"	"	
Benzene (v/v)	**9.87**	0.308	"	"	"	"	"	"	
Toluene (v/v)	**15.0**	0.261	"	"	"	"	"	"	
Ethylbenzene (v/v)	**1.57**	0.227	"	"	"	"	"	"	
Xylenes, total (v/v)	**11.5**	0.454	"	"	"	"	"	"	

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: N/A	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	10/18/00 11:39

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-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
Batch 0J14003: Prepared 10/14/00 Using EPA 5030B (P/T)										
Blank (0J14003-BLK1)										
Gasoline Range Hydrocarbons	ND	10.0	mg/m³ Air							
Benzene	ND	0.100	"							
Toluene	ND	0.100	"							
Ethylbenzene	ND	0.100	"							
Xylenes (total)	ND	0.200	"							
Gasoline Range Hydrocarbons (v/v)	ND	2.36	ppmv							
Benzene (v/v)	ND	0.0308	"							
Toluene (v/v)	ND	0.0261	"							
Ethylbenzene (v/v)	ND	0.0227	"							
Xylenes, total (v/v)	ND	0.0454	"							
Surrogate: 4-BFB (FID)	*9.47*		*mg/m³ Air*	*9.60*		*98.6*	*50-150*			
Surrogate: 4-BFB (PID)	*10.2*		*"*	*9.60*		*106*	*50-150*			
LCS (0J14003-BS1)										
Benzene	2.31	0.100	mg/m³ Air	2.00		115	50-150			
Toluene	2.39	0.100	"	2.00		120	50-150			
Ethylbenzene	2.48	0.100	"	2.00		124	50-150			
Xylenes (total)	7.81	0.200	"	6.00		130	50-150			
Surrogate: 4-BFB (PID)	*11.1*		*"*	*9.60*		*116*	*50-150*			
LCS (0J14003-BS2)										
Gasoline Range Hydrocarbons	72.3	10.0	mg/m³ Air	100		72.3	50-150			
Surrogate: 4-BFB (FID)	*9.27*		*"*	*9.60*		*96.6*	*50-150*			
LCS Dup (0J14003-BSD1)										
Benzene	2.24	0.100	mg/m³ Air	2.00		112	50-150	3.08	50	
Toluene	2.32	0.100	"	2.00		116	50-150	2.97	50	
Ethylbenzene	2.39	0.100	"	2.00		120	50-150	3.70	50	
Xylenes (total)	7.54	0.200	"	6.00		126	50-150	3.52	50	
Surrogate: 4-BFB (PID)	*11.2*		*"*	*9.60*		*117*	*50-150*			

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside	
10015 N Division St Suite 100	Project Number: N/A	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	10/18/00 11:39

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX in Air by WTPH-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
Batch 0J14003: Prepared 10/14/00 Using EPA 5030B (P/T)										
Duplicate (0J14003-DUP1)					**Source: B0J0312-01**					
Gasoline Range Hydrocarbons	442	250	mg/m³ Air		471			6.35	30	
Surrogate: 4-BFB (FID)	*9.63*		"	*9.60*		*100*	*50-150*			

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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

Brown & Caldwell - Spokane 10015 N Division St Suite 100 Spokane WA, 99218	Project: Time Oil-Sunnyside Project Number: N/A Project Manager: Gene St. Godard	**Reported:** 10/18/00 11:39

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

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CHAIN OF CUSTODY REPORT

Work Order #: B0J0312

CLIENT: Brown & Caldwell
REPORT TO: Gene St. Godard
ADDRESS: 10015 N. Division St Ste 100, Spokane, WA
PHONE: 509-777-1126 FAX: 777-1133
PROJECT NAME:
PROJECT NUMBER:
SAMPLED BY:

INVOICE TO: Time Oil Co, Attn: Scott Sloan
P.O. NUMBER:

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: 10 | 7 | 5 | 4 | 3 | 2 | 1 | <1 (STD.)
Petroleum Hydrocarbon Analyses: 5 | 4 | 3 [X] | 2 | 1 | <1 (STD.)
OTHER — Please Specify
*Turnaround Requests less than standard may incur Rush Charges

REQUESTED ANALYSES

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	WTPH-G	BTEX												MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1.	Influent Air 10-11-00	10/11/00 1710	X	X												Air	1		B0J0312-01
2.																			
3.																			
4.																			
5.																			
6.																			
7.																			
8.																			
9.																			
10.																			
11.																			
12.																			
13.																			
14.																			
15.																			

RELINQUISHED BY: Mark Engdahl
PRINT NAME: Mark Engdahl FIRM: B&C DATE: 10/12/00 TIME: 1400
RECEIVED BY: Cathy Nichols
PRINT NAME: C. Nichols FIRM: NCA DATE: 10/13/00 TIME: 9:20

RELINQUISHED BY:
PRINT NAME: FIRM: DATE: TIME:
RECEIVED BY:
PRINT NAME: FIRM: DATE: TIME:

ADDITIONAL REMARKS:

TEMP: 22.1° PAGE of

COC REV 3/99

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Brown & Caldwell - Spokane 10015 N Division St Suite 100 Spokane WA, 99218	Project: Time Oil-Sunnyside O+M Project Number: 19046.005 Project Manager: Gene St. Godard	**Reported:** 10/19/00 17:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Batch 10-11-00	B0J0350-01	Water	10/11/00 16:55	10/13/00 09:00
Precarbon 10-11-00	B0J0350-02	Water	10/11/00 17:00	10/13/00 09:00

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside O+M	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	10/19/00 17:02

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Batch 10-11-00 (B0J0350-01) Water	**Sampled: 10/11/00 16:55**		**Received: 10/13/00 09:00**						
Gasoline Range Hydrocarbons	**16800**	1000	ug/l	20	0J15001	10/15/00	10/16/00	WTPH-G/8021B	
Benzene	**177**	10.0	"	"	"	"	"	"	
Toluene	**575**	10.0	"	"	"	"	"	"	
Ethylbenzene	**140**	10.0	"	"	"	"	"	"	
Xylenes (total)	**1730**	20.0	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	*82.9 %*	*50-150*			"	"	"	"	
Surrogate: 4-BFB (PID)	*86.9 %*	*50-150*			"	"	"	"	
Precarbon 10-11-00 (B0J0350-02) Water	**Sampled: 10/11/00 17:00**		**Received: 10/13/00 09:00**						
Gasoline Range Hydrocarbons	**477**	50.0	ug/l	1	0J15001	10/15/00	10/15/00	WTPH-G/8021B	
Benzene	ND	0.928	"	"	"	"	"	"	R-03
Toluene	ND	3.02	"	"	"	"	"	"	R-03
Ethylbenzene	ND	1.57	"	"	"	"	"	"	R-03
Xylenes (total)	ND	2.83	"	"	"	"	"	"	R-03
Surrogate: 4-BFB (FID)	*89.4 %*	*50-150*			"	"	"	"	
Surrogate: 4-BFB (PID)	*81.0 %*	*50-150*			"	"	"	"	

Amar Gill, Project Manager

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Brown & Caldwell - Spokane 10015 N Division St Suite 100 Spokane WA, 99218	Project: Time Oil-Sunnyside O+M Project Number: 19046.005 Project Manager: Gene St. Godard	**Reported:** 10/19/00 17:02

Diesel Hydrocarbons (C12-C24) by WTPH-D

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Batch 10-11-00 (B0J0350-01) Water	**Sampled: 10/11/00 16:55**		**Received: 10/13/00 09:00**						
Diesel Range Hydrocarbons	0.904	0.431	mg/l	1	0J15003	10/15/00	10/16/00	WTPH-D	
Surrogate: 2-FBP	*64.1 %*	*50-150*			"	"	"	"	
Precarbon 10-11-00 (B0J0350-02) Water	**Sampled: 10/11/00 17:00**		**Received: 10/13/00 09:00**						
Diesel Range Hydrocarbons	0.309	0.250	mg/l	1	0J15003	10/15/00	10/16/00	WTPH-D	
Surrogate: 2-FBP	*71.1 %*	*50-150*			"	"	"	"	

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Brown & Caldwell - Spokane 10015 N Division St Suite 100 Spokane WA, 99218	Project: Time Oil-Sunnyside O+M Project Number: 19046.005 Project Manager: Gene St. Godard	**Reported:** 10/19/00 17:02

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-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
Batch 0J15001: Prepared 10/15/00 Using EPA 5030B (P/T)										
Blank (0J15001-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)	*33.0*		"	*48.0*		*68.8*	*50-150*			
Surrogate: 4-BFB (PID)	*36.9*		"	*48.0*		*76.9*	*50-150*			
LCS (0J15001-BS1)										
Gasoline Range Hydrocarbons	503	50.0	ug/l	500		101	70-130			
Surrogate: 4-BFB (FID)	*37.9*		"	*48.0*		*79.0*	*50-150*			
Duplicate (0J15001-DUP1)					**Source: B0J0130-07**					
Gasoline Range Hydrocarbons	2260	50.0	ug/l		1960			14.2	25	
Surrogate: 4-BFB (FID)	*119*		"	*48.0*		*248*	*50-150*			*S-02*
Duplicate (0J15001-DUP2)					**Source: B0J0350-01**					
Gasoline Range Hydrocarbons	18200	250	ug/l		16800			8.00	25	
Surrogate: 4-BFB (FID)	*50.3*		"	*48.0*		*105*	*50-150*			
Matrix Spike (0J15001-MS1)					**Source: B0J0130-03**					
Benzene	9.69	0.500	ug/l	10.0	ND	95.8	70-130			
Toluene	9.88	0.500	"	10.0	ND	97.4	70-130			
Ethylbenzene	9.44	0.500	"	10.0	ND	93.0	70-130			
Xylenes (total)	28.3	1.00	"	30.0	ND	93.5	70-130			
Surrogate: 4-BFB (PID)	*39.4*		"	*48.0*		*82.1*	*50-150*			
Matrix Spike Dup (0J15001-MSD1)					**Source: B0J0130-03**					
Benzene	9.77	0.500	ug/l	10.0	ND	96.6	70-130	0.822	15	
Toluene	9.99	0.500	"	10.0	ND	98.5	70-130	1.11	15	
Ethylbenzene	9.47	0.500	"	10.0	ND	93.3	70-130	0.317	15	
Xylenes (total)	28.6	1.00	"	30.0	ND	94.5	70-130	1.05	15	
Surrogate: 4-BFB (PID)	*39.2*		"	*48.0*		*81.7*	*50-150*			

Amar Gill, Project Manager

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Brown & Caldwell - Spokane 10015 N Division St Suite 100 Spokane WA, 99218	Project: Time Oil-Sunnyside O+M Project Number: 19046.005 Project Manager: Gene St. Godard	**Reported:** 10/19/00 17:02

Diesel Hydrocarbons (C12-C24) by WTPH-D - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0J15003: Prepared 10/15/00 Using EPA 3510C/600 Series										
Blank (0J15003-BLK1)										
Diesel Range Hydrocarbons	ND	0.250	mg/l							
Surrogate: 2-FBP	*0.215*		"	*0.320*		*67.2*	*50-150*			
LCS (0J15003-BS1)										
Diesel Range Hydrocarbons	1.34	0.250	mg/l	2.00		67.0	60-140			
Surrogate: 2-FBP	*0.211*		"	*0.320*		*65.9*	*50-150*			
Duplicate (0J15003-DUP1)					**Source: B0J0350-01**					
Diesel Range Hydrocarbons	0.949	0.605	mg/l		0.904			4.86	44	
Surrogate: 2-FBP	*0.530*		"	*0.775*		*68.4*	*50-150*			

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Brown & Caldwell - Spokane	Project: Time Oil-Sunnyside O+M	
10015 N Division St Suite 100	Project Number: 19046.005	**Reported:**
Spokane WA, 99218	Project Manager: Gene St. Godard	10/19/00 17:02

Notes and Definitions

R-03	The reporting limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
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

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CHAIN OF CUSTODY REPORT

Work Order #: BOJ0350

CLIENT: Brown & Caldwell
REPORT TO: Gene St. Godard
ADDRESS: 10015 N. Division st Ste 100 Spokane WA
PHONE: 509-777-1126 FAX: 777-1133

INVOICE TO: Time Oil Co.
Attn: Scott Sloan
P.O. NUMBER:

PROJECT NAME: Sunnyside ODM
PROJECT NUMBER: 19046.095
SAMPLED BY: Mark Englehart

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: 10 | 7 | 5 | 4 | 3 | 2 | 1 | <1
STD. Petroleum Hydrocarbon Analyses: X | 4 | 3 | 2 | 1 | <1
STD. OTHER Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	REQUESTED ANALYSES: WTPH-G	WTPH-D	BTEX	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1. Batch 10-11-00	10/11/00 1655	X	X	X	W			01
2. Pre Carbon 10-11-00	10/11/00 1700	X	X	X	W			02
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								

RELINQUISHED BY: Mark Englehart
PRINT NAME: Mark Englehart FIRM: BTC DATE: 10/12/00 TIME: 1400
RECEIVED BY: Cathy Whitlatch
PRINT NAME: C Whitlatch FIRM: NCA DATE: 10/13/00 TIME: 900

RELINQUISHED BY:
PRINT NAME: FIRM: DATE: TIME:
RECEIVED BY:
PRINT NAME: FIRM: DATE: TIME:

ADDITIONAL REMARKS: w/o

TEMP: 2.1°

PAGE: 1 OF 1

COC REV 3/99

ATTACHMENT B
O&M FIELD FORMS

REMEDIATION SYSTEM OPERATION AND MAINTENANCE FORM

Time Oil Facility ID Number 01-068
107 West Lincolin Avenue
Sunnyside Washington, 98944

Name:	Mark Engdahl
Date:	1/3/01
Arrival Time:	0800
Departure Time:	1900

Utility Meter Readings

Electric Meter	149247 kWh
Gas Meter	7203

Water Flow Meter Readings (gallons)

GW Discharge Meter	741237.0
Stripper Meter	375736

Groundwater Extraction Flow Rate (gpm)

gallons divided by time inteval (time between AWS pump stop and start)	Arrival	Departure

VAPOR MEASUREMENTS

	PID (ppm)	Temp (F)
Liquid Ring Pump (LRP):	~~200~~	106
Stripper Blower:	0.1	102
Ox Stack:	106	95

VAPOR AND WATER SAMPLE COLLECTION DATA

Sample Type & ID	Time(military)	Turbidity
(Water) IN-	0845	—
(Water) EFF-	0850	—
(Air) EFF-OX Stack	0835	

Program Requirements:

- Collect water influent and effluent lab samples monthly
- Collect vapor influnet and effluent lab samples quarterly
- Collect water flow meter reading monthly
- Collect LRP blower and stripper vaccuum meter reading monthly
- Adjust extraction hose depths as necessary

Problems????

Contact: Scott Sloan (206) 288-8457
Troy @ H2Oil (541) 382-7070

System Type: Bioslurpsystem

System Operational Status (summarize if off)

Arrival:	(ON)	OFF	
Departure:	(ON)	OFF	

EXTRACTION MANIFOLD VALVE SETTINGS % OPEN

	Vacuum	Arrival	Departure
RW-1		10.5	17
RW-2	9.0	~~11.5~~	11.5
RW-3		~~7.5~~	10.5
RW-4		13	14
RW-5		closed	—
RW-6		~~9.5~~	15.5
RW-7		~~9.5~~	10.5
MW-4		~~7.0~~	11.5
MW-5		~~7.5~~	9.5
MW-9	~~48~~	9.5	12
Stripper K-Tank			59.5" H_2O
LRP			25" Hg

VAPOR FLOW READINGS (fpm)

	Arrival	Departure	Flow Volume (cfm)
LRP:	1958		43,34
Stripper:	3872		190,07
Total @ CatOx:	2680		234,57

CATALYTIC OXIDIZER TEMPERATURES

Arrival: Pre-Catalyst Temp. (F)	Post-Catalyst Temp. (F)
654	1667
Departure: Pre-Catalyst Temp. (F)	**Post-Catalyst Temp. (F)**
651	671

NOTES: 7.86 pH on discharge Sample

Additional Remarks: Well RW-1 was not functioning properly, Valve was corroded shut & was not flowing. Opened valve & returned flow through well. Cleaned y-Strainer after plugging. ~~$0.04'$~~ of LPH was observed in well RW-1.

REMEDIATION SYSTEM OPERATION AND MAINTENANCE FORM

Time Oil Facility ID Number 01-068
107 West Lincolin Avenue
Sunnyside Washington, 98944

Name:	Mark Engdahl
Date:	12/18/00
Arrival Time:	1115
Departure Time:	

Utility Meter Readings

Electric Meter 14 80554 kw/hr
Gas Meter 7025

Water Flow Meter Readings (gallons)

GW Discharge Meter 3346413 1206Pm
Stripper Meter 6975764 10,06Pm

Groundwater Extraction Flow Rate (gpm)

gallons divided by time inteval (time between AWS pump stop and start)	Arrival	Departure

VAPOR MEASUREMENTS

	PID (ppm)	Temp (F)
Liquid Ring Pump (LRP):	122	108
Stripper Blower:	1,2	102
Ox Stack:	105	

VAPOR AND WATER SAMPLE COLLECTION DATA

Sample Type & ID	Time(military)	Turbidity
(Water) IN-	NS	
(Water) EFF-	NS	
(Air) EFF-OX Stack	NS	

Program Requirements:

Collect water influent and effluent lab samples monthly
Collect vapor influnet and effluent lab samples quarterly
Collect water flow meter reading monthly
Collect LRP blower and stripper vaccuum meter reading monthly
Adjust extraction hose depths as necessary

Problems????

Contact: Scott Sloan (206) 288-8457
Troy @ H2Oil (541) 382-7070

System Type: Bioslurpsystem

System Operational Status (summarize if off)

Arrival:	ON	OFF	
Departure	ON	OFF	

EXTRACTION MANIFOLD VALVE SETTINGS % OPEN

	Vacuum	Arrival	Departure
RW-1			13,5
RW-2			14,5
RW-3			10
RW-4			12
RW-5		closed	
RW-6			8,5
RW-7			8,5
MW-4			9
MW-5			7,5
MW-9			10
Stripper K-Tank			56" H_2O
LRP			26,5

VAPOR FLOW READINGS (fpm)

	Arrival	Departure	Flow Volume (cfm)
LRP:		NM	
Stripper:		NM	
Total @ CatOx:		NM	

CATALYTIC OXIDIZER TEMPERATURES

Arrival: Pre-Catalyst Temp. (F)	Post-Catalyst Temp. (F)
—	—
Departure: Pre-Catalyst Temp. (F)	Post-Catalyst Temp. (F)
647	666

NOTES: off due to high flow into stripper. Adjusted Flow
Cleaned Carbon scrub Unit - resealed and let system run overnight w/out going through carbon, in order to let silicon seal dry.
Replaced check vale & Gate Valve on transfer pump to Stripper discharge

Additional Remarks:

REMEDIATION SYSTEM OPERATION AND MAINTENANCE FORM

Time Oil Facility ID Number 01-068

107 West Lincolin Avenue

Sunnyside Washington, 98944

Name:	Mark Engdahl
Date:	12/4/00
Arrival Time:	1045
Departure Time:	1245

Utility Meter Readings

Electric Meter 1475425 kw/hr

Gas Meter 6940

Water Flow Meter Readings (gallons) 4.5

GW Discharge Meter 321,794.6

Stripper Meter 683,555.0 5.3 GPM

Groundwater Extraction Flow Rate (gpm)

gallons divided by time inteval (time between AWS pump stop and start)	Arrival	Departure

VAPOR MEASUREMENTS

	PID (ppm)	Temp (F)
Liquid Ring Pump (LRP):	624	107
Stripper Blower:	6.9	105
Ox Stack:	95.7	93

VAPOR AND WATER SAMPLE COLLECTION DATA

Sample Type & ID	Time(military)	Turbidity
(Water) IN-	1105	—
(Water) EFF-	1100	—
(Air) EFF-OX Stack	1200	

Program Requirements:

Collect water influent and effluent lab samples monthly

Collect vapor influnet and effluent lab samples quarterly

Collect water flow meter reading monthly

Collect LRP blower and stripper vaccuum meter reading monthly

Adjust extraction hose depths as necessary

Problems????

Contact: Scott Sloan (206) 288-8457

Troy @ H2Oil (541) 382-7070

System Type: Bioslurpsystem

System Operational Status (summarize if off)

Arrival:	(ON)	OFF	
Departure:	(ON)	OFF	

EXTRACTION MANIFOLD VALVE SETTINGS % OPEN

	Vacuum	Arrival	Departure
RW-1		5.0	↑
RW-2		10.5	
RW-3		9.5	
RW-4		10.5	
RW-5		Closed	Closed
RW-6		9.5	
RW-7		8.5	
MW-4		2.0	
MW-5		5.0	
MW-9		9.5	
Stripper K-Tank		58" H_2O	
LRP		26.5	↓

VAPOR FLOW READINGS (fpm)

	Arrival	Departure	Flow Volume (cfm)
LRP:	1900 fpm	same	41.45
Stripper:	3850		185.99
Total @ CatOx:	2655		231.69

CATALYTIC OXIDIZER TEMPERATURES

Arrival: Pre-Catalyst Temp. (F)	Post-Catalyst Temp. (F)
650	659
Departure: Pre-Catalyst Temp. (F)	Post-Catalyst Temp. (F)
650	662

NOTES: pH = 7.57

Water Levels

MW-6 21.71 Product 22.25 water

MW-14 - Dry

MW-13 - 24.42

MW-11 - 22.08

MW-10 - 20.98

MW-8 - 23.50

MW-15 - 23.71

Additional Remarks:

REMEDIATION SYSTEM OPERATION AND MAINTENANCE FORM

Time Oil Facility ID Number 01-068
107 West Lincolin Avenue
Sunnysjde Washington, 98944

Name:	Mark Engdahl
Date:	11/18/00
Arrival Time:	1130
Departure Time:	1530

Utility Meter Readings

Electric Meter: Not Measured
Gas Meter: Not Measured

Water Flow Meter Readings (gallons)

GW Discharge Meter: 293,505.2
Stripper Meter: 653,185.8

Groundwater Extraction Flow Rate (gpm)

gallons divided by time inteval (time between AWS pump stop and start)	Arrival	Departure
	~1,996/m	

VAPOR MEASUREMENTS

	PID (ppm)	Temp (F)
Liquid Ring Pump (LRP):	693	
Stripper Blower:	3.2	
Ox Stack:	107	656

VAPOR AND WATER SAMPLE COLLECTION DATA

Sample Type & ID	Time(military)	Turbidity
(Water) IN-	None	
(Water) EFF-	↓	
(Air) EFF-OX Stack	↓	

Program Requirements:
Collect water influent and effluent lab samples monthly
Collect vapor influnet and effluent lab samples quarterly
Collect water flow meter reading monthly
Collect LRP blower and stripper vaccuum meter reading monthly
Adjust extraction hose depths as necessary
Problems????
Contact: Scott Sloan (206) 288-8457
Troy @ H2Oil (541) 382-7070

System Type: Bioslurpsystem

System Operational Status (summarize if off)

Arrival:	ON	OFF	
Departure:	ON	OFF	

EXTRACTION MANIFOLD VALVE SETTINGS % OPEN

	Vacuum	Arrival	Departure
RW-1	8.0		
RW-2	10.5		
RW-3	9.5		
RW-4	12		
RW-5	closed		
RW-6	10.0	0	5
RW-7	11.0	f	f
MW-4	4.5	f	E
MW-5	5.0		
MW-9	10		
Stripper K-Tank	57-58"H2O		
LRP	26.5	↓	

VAPOR FLOW READINGS (fpm)

	Arrival	Departure	Flow Volume (cfm)
LRP:	2065		
Stripper:	9100		
Total @ CatOx:	4098		

CATALYTIC OXIDIZER TEMPERATURES

Arrival: Pre-Catalyst Temp. (F)	Post-Catalyst Temp. (F)
off	off
Departure: Pre-Catalyst Temp. (F)	**Post-Catalyst Temp. (F)**
650	656

NOTES: System off due to HL in Batch Tank - Flow into stripper set @ 2.0 GPM adjusted to 5.5 GPM & Discharge adjusted to 8.0 GPM

Additional Remarks:

Guaged all Remedial wells for product - None measured

RW-4 - 23.17
MW-9 - 24.58
RW-3 - 24.03
RW-2 - 22.60
MW-5 - 18.13
MW-4 - 17.24
RW-1 - 15.78
MW-6 - 21.25

Raised suction hoses in MW-4, MW-5, approximately 3 feet.

Pressure @ GAC = 8.0 GPM

REMEDIATION SYSTEM OPERATION AND MAINTENANCE FORM

Time Oil Facility ID Number 01-068
107 West Lincolin Avenue
Sunnyside Washington, 98944

Name:	Mark English
Date:	11/6/00
Arrival Time:	1015
Departure Time:	1215

Utility Meter Readings

Electric Meter Not Read
Gas Meter Not Read

Water Flow Meter Readings (gallons)

GW Discharge Meter 270,864.7
Stripper Meter 677,649.1

Groundwater Extraction Flow Rate (gpm)

gallons divided by time inteval (time between AWS pump stop and start)	Arrival	Departure
	~2.06 gpm	

VAPOR MEASUREMENTS

	PID (ppm)	Temp (F)
Liquid Ring Pump (LRP):	734	
Stripper Blower:	0.3	
Ox Stack:	142	673

VAPOR AND WATER SAMPLE COLLECTION DATA

Sample Type & ID	Time(military)	Turbidity
(Water) IN- Batch	1025	
(Water) EFF-	1040	
~~(Air) EFF~~-OX ~~Stack~~ Influent	1030	
Pre Carbon	1035	

Program Requirements:
Collect water influent and effluent lab samples monthly
Collect vapor influnet and effluent lab samples quarterly
Collect water flow meter reading monthly
Collect LRP blower and stripper vaccuum meter reading monthly
Adjust extraction hose depths as necessary
Problems????
Contact: Scott Sloan (206) 288-8457
Troy @ H2Oil (541) 382-7070

System Type: Bioslurpsystem

System Operational Status (summarize if off)

Arrival:	(ON)	OFF	
Departure:	(ON)	OFF	

EXTRACTION MANIFOLD VALVE SETTINGS % OPEN

	Vacuum	Arrival	Departure
RW-1	3.0		
RW-2	6.2		
RW-3	6.0		
RW-4	7.5	Sump	
RW-5	closed		
RW-6	4.5		
RW-7	5.0		
MW-4	closed		
MW-5	3.5		
MW-9	7.5		
Stripper K-Tank	65" H2O		
LRP	25.5" Hg		

VAPOR FLOW READINGS (fpm)

	Arrival	Departure	Flow Volume (cfm)
LRP:	2350		
Stripper:	3700		
Total @ CatOx:	3450		

CATALYTIC OXIDIZER TEMPERATURES

Arrival: Pre-Catalyst Temp. (F)	Post-Catalyst Temp. (F)
651	673
Departure: Pre-Catalyst Temp. (F)	Post-Catalyst Temp. (F)

NOTES:
GAC Pressure = 8.8 PSI
~~Discharge~~ Flow = 8.0 G/m
Stripper " = 3.8 adjusted to 5.0

Additional Remarks:

pH = 7.70 on discharge sample

MW-14 Dry
MW-6 21.96 DTP
22.65 DTW
MW-8 23.56
MW-11 21.95
MW-10 21.00

REMEDIATION SYSTEM OPERATION AND MAINTENANCE FORM

Time Oil Facility ID Number 01-068
107 West Lincolin Avenue
Sunnyside Washington, 98944

Name:	Mark Fugedahl
Date:	10/11/00
Arrival Time:	0730 left for Wenatchee
Departure Time:	1630 onsite 1815 left

Utility Meter Readings

Electric Meter 41396 kw/h
Gas Meter 6470 cu/ft

Water Flow Meter Readings (gallons)

GW Discharge Meter 209,787.5
Stripper Meter 560,305.0

Groundwater Extraction Flow Rate (gpm)

gallons divided by time inteval (time between AWS pump stop and start)	Arrival	Departure
	~2.06gpm	

VAPOR MEASUREMENTS

	PID (ppm)	Temp (F)
Liquid Ring Pump (LRP):		
Stripper Blower:		
Ox Stack:	154	685

VAPOR AND WATER SAMPLE COLLECTION DATA

Sample Type & ID	Time(military)	Turbidity
(Water) IN- Batch	1655	
(Water) EFF-	1705	
(Air) EFF-OX ~~Stack~~ Influent	1710	
(Water) Pre Carbon	1700	

Program Requirements:

Collect water influent and effluent lab samples monthly
Collect vapor influnet and effluent lab samples quarterly
Collect water flow meter reading monthly
Collect LRP blower and stripper vaccuum meter reading monthly
Adjust extraction hose depths as necessary

Problems????

Contact: Scott Sloan (206) 288-8457
Troy @ H2Oil (541) 382-7070

System Type: Bioslurpsystem

System Operational Status (summarize if off)

Arrival:	ON	OFF	
Departure:	ON	OFF	

EXTRACTION MANIFOLD VALVE SETTINGS % OPEN

	Vacuum	Arrival	Departure
RW-1		4	
RW-2		8	
RW-3		7	
RW-4		10	
RW-5		5	
RW-6		14	
RW-7		9	
MW-4		closed	
MW-5		5	
MW-9		10	
Stripper K-Tank		55"H2O	
LRP		25"Hg	

VAPOR FLOW READINGS (fpm)

	Arrival	Departure	Flow Volume (cfm)
LRP:	2200 ~~25"Hg~~	~~25"Hg~~	
Stripper:	4050 ~~55"H2O~~	~~55"H2O~~	
Total @ CatOx:	2700	~~2700~~	

CATALYTIC OXIDIZER TEMPERATURES

Arrival: Pre-Catalyst Temp. (F)	Post-Catalyst Temp. (F)
650	685
Departure: Pre-Catalyst Temp. (F)	**Post-Catalyst Temp. (F)**
652	694

NOTES: Did not clean system. Only adjusted flow into stripper & discharge
Flow into stripper = 5.5GPM
" from stripper = 8.0 GPM

Additional Remarks:

PH = 7.78 on discharge Sample