

Ms. Deborah Williams Alaska Department of Environmental Conservation 610 University Avenue Fairbanks, Alaska 99709

Subject:

First Semi-Annual 2007 Groundwater Monitoring Report Chevron 306443 (Former Unocal Bulk Plant 0207) Gate 28, West Ramp, Fairbanks International Airport Fairbanks, Alaska ADEC File No. 100.26.040

Dear Ms. Williams:

On behalf of Chevron Environmental Management Company (Chevron), ARCADIS U.S., Inc. (ARCADIS BBL, formerly known as Blasland, Bouck, & Lee, Inc.) is submitting the enclosed groundwater monitoring report for former Unocal Bulk Plant 0207 (the site) located at Gate 28, West Ramp at the Fairbanks International Airport in Fairbanks, Alaska (**Figure 1**). This report summarizes a groundwater sampling event conducted at the site by OASIS Environmental, Inc.

### Site Description

The site is a former Unocal Fuel Distribution Facility (Unocal #0207, Chevron #306443), located at Fairbanks International Airport (FIA), Gate 28, West Ramp, Fairbanks, Alaska. The former Unocal lease included Parcel A and Parcel B of FIA Block 1, Lot 8, located at 5245 Airport Road. The site is currently owned by the Alaska Department of Transportation and Public Facilities (ADOT&PF) which is leasing Block 1, Lot 8 to Frontier Flying. Frontier Flying has been leasing Lot 8 since April 2003; previously Frontier Flying subleased Lot 8 from Falcon Properties. Nearby properties include the ADOT&PF airport maintenance and Alaska Rescue Fire Fighting (ARFF) facility across Brumbaugh Avenue to the northeast, and Northern Air Cargo (NAC) adjacent to the southwest.

Unocal formerly subleased a portion (Parcels A and B) of Lot 8 from Trans-Arctic Airlines and operated a fuel distribution facility that provided aviation gasoline and Jet-A fuel to airplanes at FIA. Parcel A was a rectangular piece of land, 100 feet in length and 50 feet in width, running northwest to southeast approximately 20 feet

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Environmental

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June 28, 2007

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Our ref: B0045507



inside the northeastern lot boundary. Parcel B was a circular parcel of land adjacent to the southeasterly property line of Lot 8 and having a diameter of 200 feet (**Figure 2**). The former Unocal lease portion is presently being used only for periodic vehicle storage, with the exception of the northwest corner of Parcel A. Frontier maintains a 12,000-gallon Jet-A fuel aboveground storage tank (AST) within the asphalt cutout near the northwest corner of Parcel A. It is unclear if the AST is within the limits of former Parcel A; however, the AST is on the gravel that was exposed during the removal of Unocal's fuel distribution system.

In October 1991, Dames & Moore observed and monitored the removal of four 10,000-gallon underground storage tanks (USTs), two pump islands and associated piping, as reported in "Site Assessment Report for Underground Storage Tank Closure, CEM Leasing, Inc., Fairbanks, Alaska," dated December 17, 1991. The USTs were seated in sandy gravel, covered with 3 feet of silty sand, and capped with asphalt/concrete. Excavation and removal of the underground piping included two 5-foot deep-by-4-foot-wide trenches.

The UST excavation was approximately 65 feet by 40 feet and averaged 10 feet in depth. The four USTs were "free of dents and holes and appeared to be in good condition," according to Dames & Moore. Groundwater was encountered in the excavation; no free product was observed. Diesel-range organics (DRO) concentrations for the collected samples, and benzene, toluene, ethylbenzene and total xylenes (BTEX) and gasoline-range organics (GRO) for several samples, were greater than the Alaska Department of Environmental Conservation (ADEC) cleanup levels. Approximately 1,200 cubic yards of soil were excavated during UST and pipeline removal. The soil suspected of containing hydrocarbons greater than cleanup levels was placed back into the excavations. A visqueen separation layer was placed over the impacted soil, and clean imported fill was used to restore the excavation area to original grade. GeoEngineers installed nine groundwater monitoring wells in September 2003: GEI-1 through GEI-9.

### **Groundwater Sampling**

The first semi-annual groundwater sampling event was conducted on April 3, 2007, and included wells GEI-1, GEI-2, GEI-3, GEI-4, GEI-5, GEI-6, GEI-7, GEI-8 and GEI-9. Wells GEI-2 and GEI-6 were dry and were not gauged or sampled. Wells GEI-1, GEI-3 and GEI-5 contained light, non-aqueous phase liquid (LNAPL), and therefore only depth to water and depth to LNAPL readings were taken; and these wells were not sampled. Groundwater samples were collected from wells GEI-4, GEI-7, GEI-8



and GEI-9 submitted to Lancaster Laboratories, an Alaska-certified laboratory, for analysis of GRO by Alaska Method AK 101, DRO by Alaska Method 102, residual-range organic (RRO) compounds by Alaska Method 103 and BTEX by US EPA Method 8021B. The groundwater sample from well GEI-9 was also analyzed for volatile organic compounds (VOCs) by US EPA Method 8260, and lead by US EPA Method 200.8. Field work was conducted by OASIS Environmental, Inc. Proper chain-of-custody documentation was used throughout sample collection and delivery to the laboratory.

#### **Groundwater Flow**

The groundwater flow direction was generally to the west. Groundwater elevations and approximate contours based on the April 2007 gauging are included in **Table 1** and **Figure 2.** Measurable (LNAPL) was observed in wells GEI-1, GEI-3 and GEI-5 at thicknesses of 0.27 ft, 0.02 ft and 0.47 ft, respectively, during the April 2007 sampling event.

#### **Groundwater Analytical Results**

Groundwater sampled from GEI-8 did not exceed the applicable ADEC GCLs for any of the parameters sampled. Groundwater samples collected during the April 2007 groundwater monitoring event from GEI-4, GEI-7 and GEI-9 exceeded one or more applicable ADEC GCLs. Samples from wells GEI-7 (both the parent and the duplicate samples) and GEI-9 exceeded the ADEC GCL for GRO, DRO and benzene. Samples collected from GEI-4 exceeded the ADEC GCL for DRO and benzene.

### Laboratory Data Review Summary

As required by ADEC (Technical Memorandum 06-002, dated October 9, 2006), ARCADIS BBL completed one laboratory data review checklist for the Lancaster laboratory report (groundwater) from the first semi-annual groundwater monitoring event. The laboratory reports and the data review checklists are included as **Appendix B**. The following quality assurance (QA) summary describes six parameters, related to the quality and usability of the data presented in this report.

Precision - Based on the laboratory control sample (LCS), matrix spike
percent recovery, and laboratory control sample duplicate (LCSD) relative
percent differences (RPD), the Lancaster data meet precision objectives. A

groundwater field duplicate sample was collected from well GEI-7 and was within RPD limits.

- Accuracy The Lancaster data meet accuracy objectives as indicated by the laboratory quality control samples, which were within method/laboratory limits. A trip blank was also collected during groundwater monitoring; the trip blank results were less than the laboratory detection limits.
- Representativeness The data appear to be representative of site conditions and are generally consistent with historical groundwater monitoring results and expected impacts to groundwater.
- 4. Comparability Comparability is not applicable to these laboratory results.
- 5. Completeness The results appear to be valid and usable, and thus the laboratory results have 100% completeness.
- Sensitivity The sensitivity of the analyses was adequate for the samples as the detection limits were less than the ADEC GCLs.

#### Conclusions and Recommendations

Dissolved phase concentrations remain relatively stable at the site. RRO has not been detected in any of the site wells at concentrations exceeding the applicable ADEC standards. Accordingly, ARCADIS BBL recommends eliminating RRO analysis from the sampling program for this site. No other changes to the sampling program are recommended at this time. The next sampling event is scheduled for September 2007.

Sincerely,

ARCADIS U.S., Inc.

Vanessa R. Varbel

Project Engineer in Training

Rebecca K. Andresen, P.G.

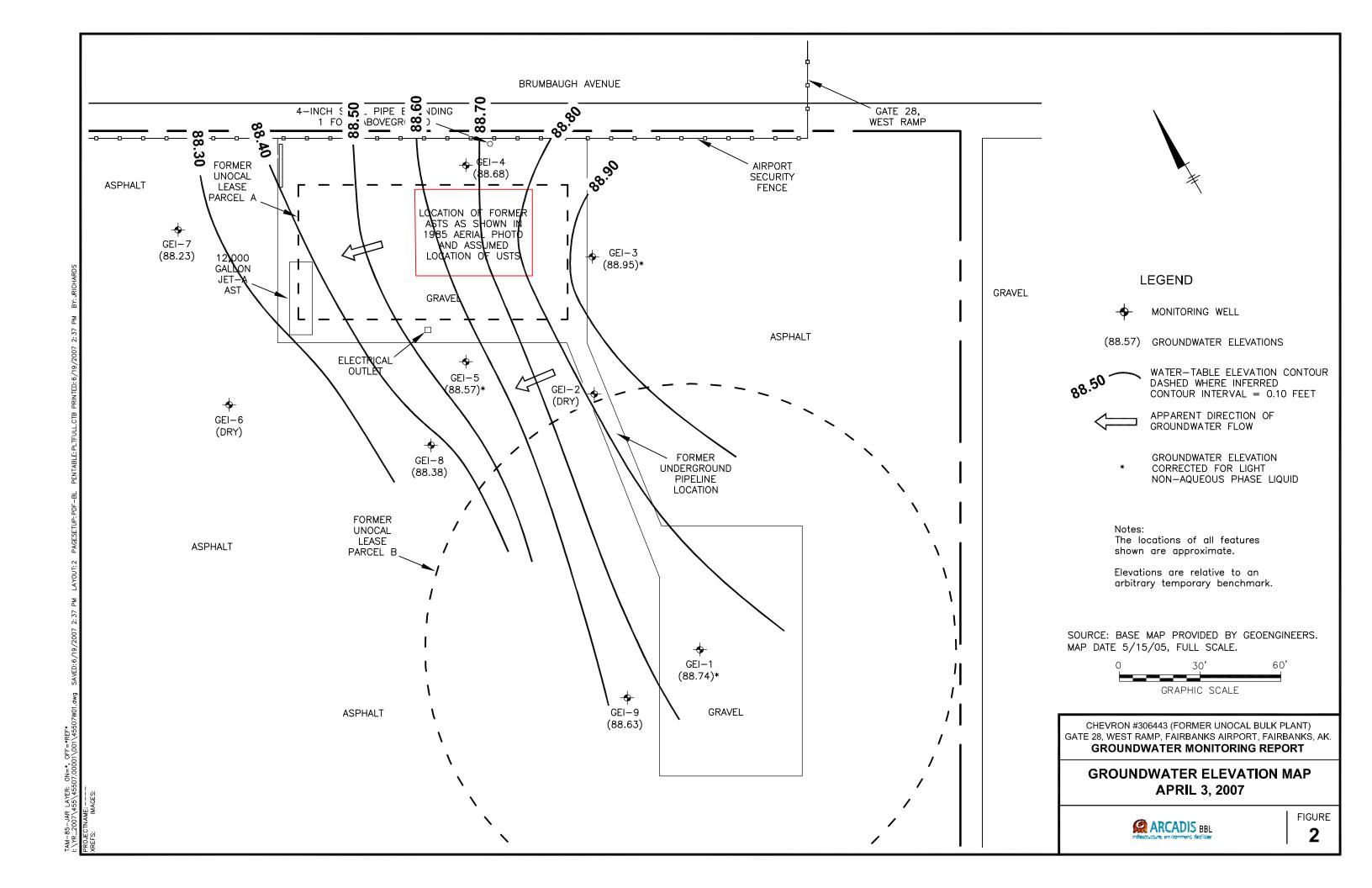
Senior Geologist I

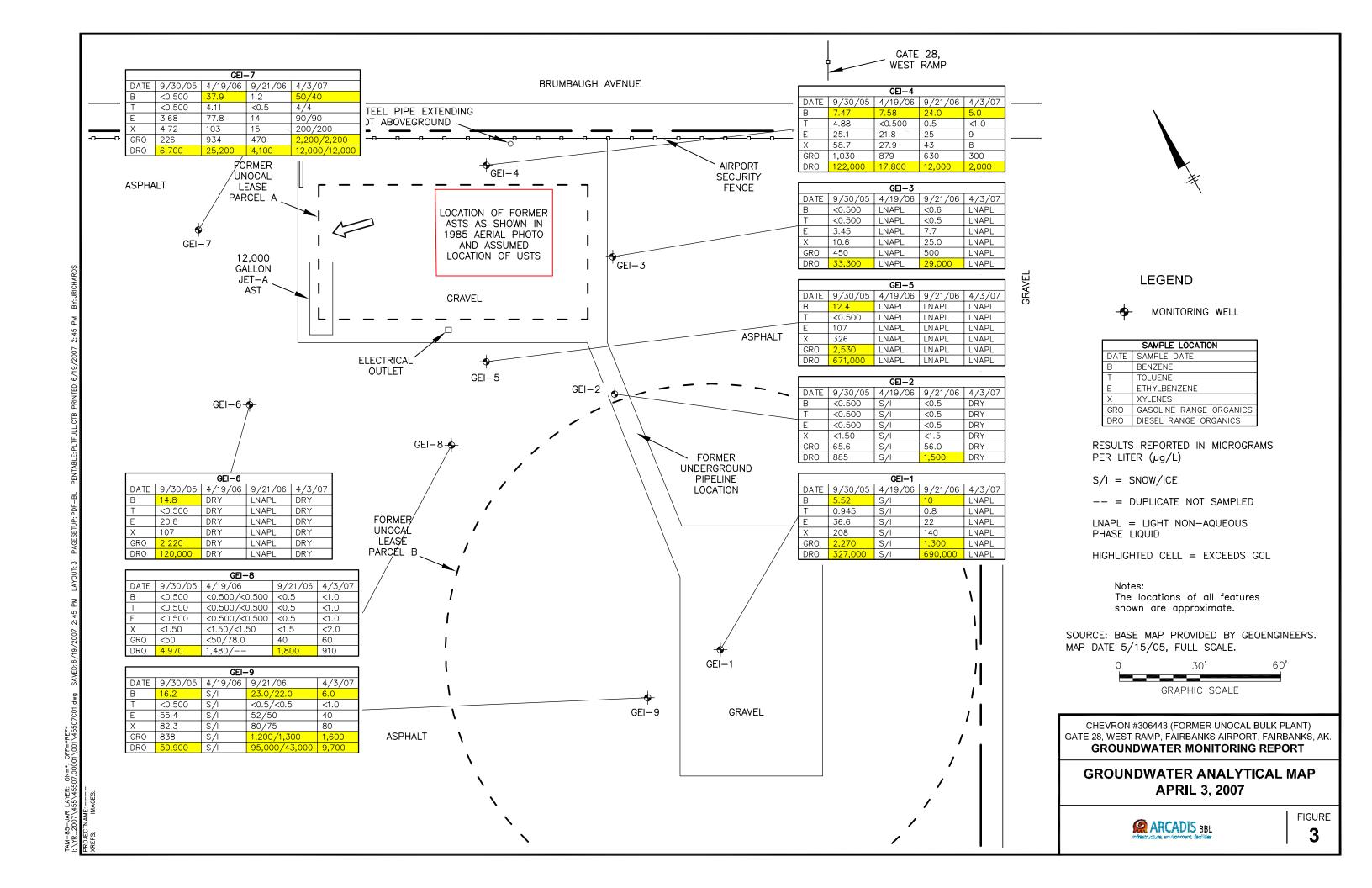
Copies:

Stacie Frerichs, Chevron EMC, San Ramon, California



**Figures** 







**Tables** 

Table 1

Groundwater Elevation Data Former Unocal Bulk Plant Gate 28, West Ramp Fairbanks International Airport Fairbanks, Alaska

	Top of					
Monitoring	Casing		Depth to Water	Depth to	LNAPL	Groundwater
Well	Elevation	Date	(top of casing)	LNAPL	Thickness	Elevation
Well	(feet)		(feet)	(feet)	(feet)	(feet)
GEI-1	99.87	09/04/03	6.32			93.55
		04/24/04	V	Vell buried ur	nder snow/ice	•
		09/16/04	8.56			91.31
		04/21/05	V	Vell buried ur	nder snow/ice	•
		09/30/05	8.17			91.70
		04/19/06	V	vell buried ur	nder snow/ice	•
		09/21/06	9.04			90.83
		04/03/07	11.35	11.08	0.27	88.74
GEI-2	99.79	09/04/03	6.19			93.60
		04/24/04	V	Vell buried ur	der snow/ice	
		09/16/04	8.47			91.32
		04/21/05	V	Vell buried ur	der snow/ice	
		09/30/05	7.76			92.03
		04/19/06	V	Vell buried ur	der snow/ice	
		09/21/06	9.01			90.78
		04/03/07		Well	Dry	
GEI-3	99.73	09/04/03	6.14			93.59
		04/24/04	9.49			90.24
		09/16/04	8.38			91.35
		04/21/05	9.84			89.89
		09/30/05	7.67			92.06
		04/19/06	11.28	10.75	0.53	88.88
		09/21/06	8.91			90.82
		04/03/07	10.80	10.78	0.02	88.95
GEI-4	99.66	09/04/03	6.12			93.54
		04/24/04	9.52			90.14
		09/16/04	8.41			91.25
		04/21/05	9.83			89.83
		09/30/05	7.69			91.97
		04/19/06	10.90			88.76
		09/21/06	8.91			90.75
		04/03/07	10.98			88.68
GEI-5	99.88	09/04/03	8.28	5.97	2.31	93.49
		04/24/04	10.11	9.71	0.40	90.09
		09/16/04	10.40	8.21	2.19	91.28
		04/21/05	10.49	10.06	0.43	89.74
		09/30/05	7.95			91.97
		04/19/06	11.75	11.01	0.74	88.74
		09/21/06	10.09	9.01	1.08	90.68
		04/03/07	11.70	11.23	0.47	88.57

Table 1

Groundwater Elevation Data Former Unocal Bulk Plant Gate 28, West Ramp Fairbanks International Airport Fairbanks, Alaska

	Top of	I	l	l	l .	1
Manitarina	-		Depth to Water	Depth to	LNAPL	Groundwater
Monitoring	Casing	Date	(top of casing)	LNAPL	Thickness	Elevation
Well	Elevation		(feet)	(feet)	(feet)	(feet)
	(feet)		` ,	(1000)	(1333)	` ,
GEI-6	99.95	09/04/03	6.47			93.48
		04/24/04	9.95			90.00
		09/16/04	8.83			91.12
		04/21/05	10.28			89.67
		09/30/05	8.24			91.71
		04/19/06	V	Vell buried ur	nder snow/ice	_
		09/21/06	9.30	9.30	<0.1	90.65
		04/03/07		Well	Dry	
GEI-7	99.44	09/04/03	5.92			93.52
		04/24/04	9.49			89.95
		09/16/04	8.36			91.08
		04/21/05	9.95			89.49
		09/30/05	7.74			91.70
		04/19/06	11.04			88.40
		09/21/06	9.06			90.38
		04/03/07	11.21			88.23
GEI-8	100.01	09/04/03	6.48			93.53
		04/24/04	9.94			90.07
		09/16/04	8.84			91.17
		04/21/05	10.31			89.70
		09/30/05	8.18			91.83
		04/19/06	11.47			88.54
		09/21/06	9.48			90.53
		04/03/07	11.63			88.38
GEI-9	100.02	09/04/03	6.42			93.60
		04/24/04	9.82			90.20
		09/16/04	8.21			91.81
		04/21/05	V	Vell buried ur	nder snow/ice	•
		09/30/05	8.14			91.88
		04/19/06	V	Vell buried ur	nder snow/ice	•
		09/21/06	9.31			90.71
		04/03/07	11.39			88.63

## Notes:

LNAPL = Light non-aqeous phase liquid

Groundwater elevations were corrected due to the presence of LNAPL in well. Specific gravity of 0.82 was used for the LNAPL (Jet-A Fuel).

Bold Type indicates most recent sampling event.

"--" = not applicable.

Summary of Groundwater Analytical Data Petroleum Hydrocarbons and Lead Former Unocal Bulk Plant Gate 28, West Ramp Fairbanks International Airport Fairbanks, Alaska

Monitoring	Date					BT	EX		
Well	Sampled	GRO	DRO	RRO		1	1		Lead
	•	4.000	4.500	4.400	В	T	E	Χ	45
GCL:	0.4/0.4/0.4	1,300	1,500	1,100	5	1,000	700	10,000	15
GEI-1	04/24/04 <sup>1</sup> 09/16/04	1,760	151,000	V' I	7.05	by snow/ice		251	
	09/16/04 09/16/04 <sup>D</sup>	1,760	151,000		5.40	2.02	47.9 42.2	251 233	
	09/10/04 04/21/05 <sup>1</sup>			I \		by snow/ice		233	
	04/21/05	2,270	327,000	<3,970	5.52	0.945	36.6	208	
	09/30/03 04/19/06 <sup>1</sup>	2,210	321,000			bv snow/ice		200	
	09/21/06	1,300	690,000	<9.800	10.0	0.8	22	140	
	04/03/07	1,000	000,000	-,		Well not sa		110	
GEI-2	04/24/04 <sup>1</sup>			V	l Vell buried l	by snow/ice	j		
02.2	09/16/04	76.6	1,430	· ·	2.53	0.547	<0.500	1.81	
	04/21/05 <sup>1</sup>	. 0.0	.,	V	1	by snow/ice			
	09/30/05	65.6	885	<391	<0.500	<0.500		<1.50	
	04/19/06 <sup>1</sup>					by snow/ice			
	09/21/06	56.0	1,500	430	<0.5	<0.5	<0.5	<1.5	
	04/03/07			W	/ell dry - N	ot sample	d		
GEI-3	04/24/04	1,330	21,000		<5.00	<5.00	13.9	59.8	
	09/16/04	310	18,300		1.26	<0.500	8.27	14.9	
	04/21/05	464	22,900		<0.500	<0.500	6.24	14.6	
	09/30/05	450	33,300	625	<0.500	<0.500	3.45	10.6	
	04/19/06 <sup>2</sup>		-	LNAPL	Present - \	Well not sa	mpled		
	09/21/06	500	29,000	<480	<0.6	<0.5	7.7	25.0	
	04/03/07		1	LNAPL	Present - \	Well not sa	ampled	i	ı
GEI-4	04/24/04	1,270	43,600		<5.00	<5.00	14.6	57.2	
	09/16/04	638	36,200		15.0	0.675	21.8	35.7	
	04/21/05	570	37,500		35.4	1.27	17.7	40.1	
	09/30/05	1,030	122,000	<4,100	7.47	4.88	25.1	58.7	
	04/19/06	879	17,800	<391	7.58	<0.500	21.8	27.9	<1.00
	09/21/06	630	12,000	<480	24.0	0.5	25	43	
	04/03/07	300	2,000	<40	5.0	<1.0	9	8	
GEI-5	04/24/04 <sup>2</sup>			LNAPL	. Present - \	Well not sa	mpled		
	09/16/04 <sup>2</sup>					Well not sa			
	04/21/05 <sup>2</sup>					Well not sa	mpled	•	
	09/30/05	2,530	671,000	<8,700	12.4	<0.500	107	326	
	04/19/06 <sup>2</sup>					Well not sa			
	09/21/06 <sup>2</sup>					Well not sa	•		
	04/03/07		]	LNAPL	Present - \	Well not sa	ampled I		
GEI-6	04/24/04	2,930	168,000		8.17	<5.00	59.6	145	
	09/16/04	1,880	39,600		7.80	1.57	23.8	75.0	
	04/21/05	1,290	25,300		15.7	<0.500	57.1	134	
	09/30/05	2,220	120,000	<4,770	14.8	<0.500	20.8	107	
	04/19/06 <sup>3</sup>				Dry				
	09/21/06 <sup>2</sup>					Well not sa			
	04/03/07		<u> </u>	W	reli Dry - N	ot sample	a <u>I</u>	<u> </u>	

Table 2

Summary of Groundwater Analytical Data Petroleum Hydrocarbons and Lead Former Unocal Bulk Plant Gate 28, West Ramp Fairbanks International Airport Fairbanks, Alaska

Monitoring	Date					BTI	EX		
Well	Sampled	GRO	DRO	RRO			ı		Lead
	_				В	Т	E	Х	
GCL:		1,300	1,500	1,100	5	1,000	700	10,000	15
GEI-7	04/24/04	2,440	43,200		6.97	<5.00	7.58	20.0	
	09/16/04	363	5,660		<0.500	1.34	8.89	14.2	
	04/21/05	1,080	13,600		32.6	2.52	64.6	92.0	
	09/30/05	226	6,700	<397	<0.500	<0.500	3.68	4.72	
	04/19/06	934	25,200	<856	37.9	4.11	77.8	103	<1.00
	09/21/06	470	4,100	<98	1.2	<0.5	14	15	
	04/03/07	2,200	12,000	<980	50	4	90	200	
	04/03/07 <sup>D</sup>	2,200	12,000	<980	40	4	90	200	
GEI-8	04/24/04	<500	7,390		<5.00	<5.00	11.7	30.4	
	09/16/04	82	8,690		< 0.500	<0.500	0.520	1.12	
	04/21/05	54.3	1,460		<0.500	<0.500	<0.500	<1.50	
	04/21/05 <sup>D</sup>	<50			< 0.500	<0.500	<0.500	<1.50	
	09/30/05	<50	4,970	<397	<0.500	<0.500	<0.500	<1.50	
	04/19/06	<50	1,480	<400	<0.500	<0.500	<0.500	<1.50	
	04/19/06 <sup>D</sup>	78.0			<0.500	<0.500	<0.500	<1.50	<1.00
	09/21/06	40.0	1,800	<160	<0.5	<0.5	<0.5	<1.5	
	04/03/07	60	910	360	<1.0	<1.0	<1.0	<2.0	-
GEI-9	04/24/04	8,370	33,700		9.53	<5.00	113	321	
	09/16/04	1,350	77,400		17.3	<0.500	58.3	57.5	
	04/21/05 <sup>1</sup>	ı			/ell buried b	. '			
	09/30/05	838	50,900	<443	16.2	<0.500	55.4	82.3	
	04/19/06 <sup>1</sup>			٧	/ell buried b	oy snow/ice	<u> </u>	_	
	09/21/06	1,200	95,000	<1,900	23.0	<0.5	52	80	36.5
	09/21/06 <sup>D</sup>	1,300	43,000	<980	22.0	<0.5	50	75	
	04/03/07	1,600	9,700	<400	6	<1.0	40	80	0.62
Trip Blank	09/21/06	<10			<0.5	<0.5	<0.5	<1.5	
,	04/03/07	<10			<0.5	<0.5	<0.5	<0.5	
Notes:		<u> </u>							

#### Notes:

All results are reported in micrograms per liter (ug/l)

GCL = ADEC 18 AAC 75 Groundwater Cleanup Level

Highlighted cell= exceeds GCL

Bold Type indicates most recent sampling event.

b - duplicate of preceding sample

Well was not sampled due to well being buried beneath piled snow/ice.

Well was not sampled due to the presence of LNAPL.

<sup>&</sup>lt;sup>3</sup>Well was not sampled - dry well.

<sup>-- =</sup> sample was not analyzed for this compound

<sup>&</sup>lt;25 = result did not exceed indicated method reporting limit; an elevated reporting limit indicates sample was diluted</p>

Table 3

Summary of Groundwater Analytical Data Volatile Organic Compounds Former Unocal Bulk Plant Gate 28, West Ramp Fairbanks International Airport Fairbanks, Alaska

EPA M	lethod:	8011								8260B								8021B
Well	Sample Date	1,2-dibromoethane <sup>1</sup>	1,2-dibromoethane	1,1-dichloroethane	1,3,5-Trimethylbenzene	1,1,1-trichloroethane	1,2,4-Trimethylbenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	p-Isopropyltoluene	Isopropylbenzene	n-Propylbenzene	tetrachloroethene	1,2-dichloroethane	trichloroethene	methyl tertiary butyl ether	methyl tertiary butyl ether
GC	CL:	0.05	0.05	3,650	1,850	200	1,850	NL	NL	NL	NL	3,650	NL	5	5	5	NL	NL
GEI-9	09/21/06	<0.0098	<0.5	<1	120	<0.8	540	36	17	1	17	25	59	<0.8	<0.5	<1	<0.5	<2.5
	04/03/07		<0.5	<1	100	<0.8	340	35	23	2	20	30	65	<0.8	<0.5	<1	<0.5	
Trip Blank	04/03/07		<0.5	<1	<1	<0.8	<1	<1	<1	<1	<1	<1	<1	<0.8	<0.5	<1	<0.5	

### Notes:

All results are reported in micrograms per liter (ug/l)

GCL = ADEC 18 AAC 75 Groundwater Cleanup Level

NL = No GCL available

-- = sample was not analyzed for this compound <25 = result did not exceed indicated method reporting limit; an elevated reporting limit indicates sample was diluted

# **ARCADIS** BBL

## Appendix A

Groundwater Sampling Data Sheets

			GROUNDWA	TER SAMPLE	DATA SH	EET			
Project Number:	45350			Sample Location	n (ie. MW-1	):	GEI-1		_
Project Name:	FIA West Ra	amp/Gate 28		Sample ID (ie. I	MW-1-W-yyı	mmdd):	N/A		
Client:	BBL			Date Sample C	ollected:		N/A		'
Sampler:	Julie Ahern			Time sampled:			N/A		
·			W	/ell Information					•
			Casing						
Groundwater:	X		Diameter (in):	2		a) Well Depth			
Other:	SPH detect	ed at 11.08 f	+ BTOC			<ul><li>b) Water Depth</li><li>c) Water Colur</li></ul>		11.35 0.74	
Other.	No sample		100			d) Calc. Purge		0.1	
			Calcul	ating Purge Vo	lume				
Well Casing Diameter	Multiply c) by: 0.16					Sand Pack Diameter	Multiply c) by:		
4	0.65				10	0.71	=		
6	1.47	J				12 Note: assuming sand	1.28 pack has 29% po	rosity	
Example 1- purging only 2-inch casing and 6-foot was provided to the control of		e				Example 2- purging 2-inch casing, 8-inch s			
One Purge Volume= 0.16		vater				One Purge Volume= (	0.16 X 6) + (0.71	X 6) = 5.22 gallons water	r
			FIELD	MEASUREME	NTS				
	Volume Conductivity Temperature								
Time	(gallons)	рН	(mS)	(F)	Color	Turbidity	Redox	Dissolved O <sub>2</sub>	Other
							1		
								†	
Total Volume Pur	and (Callona)		•		Free Produ	int () (/n):	Vaa		
Odor:		lydrocarbon-	Like Odor	-	Sheen (y/n		Yes	_	
Purge Method (di				pump, etc.)	Officer (y/fi	<i>)</i> .			
Sample Method (	disposable ba	iler, teflon ba	iler. submersibl	le pump. etc.)					
(		,	,	, , , , , , , , , , , , , , , , , , , ,					
Well Integrity (cor	ndition of casi	na flush mou	ınt sealing nron	erly cement sea	al intact etc	1			
Good	Tallion or Gaon	ng, ndon mod	int codining prop	ony, comon coc	ii iiitaot, oto.	,			
Remarks (well red	COVERY LINUSU	al conditions	(observations):						
itemarks (weil let	covery, unusu	ai conditions	observations).						
					_				
Duplicate Samp		None Colle			Analyses	Requested:		D/RRO by AK1	01/102/103
Split Sample ID	· <b>.</b>	None Colle	ectea		1		BTEX by	00215	
Signod:	Iulio Aborr	2			-	Date:	4/16/200	7	
Signed:	Julie Aherr	ı			-	Date:	4/16/2007	1	
Signed/reviewe	r:					Date:			

			GROUNDWA	TER SAMPLE	DATA SH	EET				
Project Number:	45350			Sample Location	on (ie. MW-1)	):	GEI-2			
Project Name:	FIA West Ra	amp/Gate 28		Sample ID (ie. I	MW-1-W-yyr	nmdd):	N/A			
Client:	BBL			Date Sample C	ollected:		N/A		_	
Sampler:	Julie Ahern			Time sampled:			N/A			
			W	ell Information					<u>.</u>	
			Casing							
Groundwater:	X		Diameter (in):	2		a) Well Depth (		10.50		
Other:	Well dry					<ul><li>b) Water Depth</li><li>c) Water Colum</li></ul>	. ,	0		
0.1.01.	No sample	taken	•			d) Calc. Purge		0.0		
			Calcul	ating Purge Vo	lume					
Well Casing Diameter	Multiply c) by: 0.16					Sand Pack Diameter	Multiply c) by: 0.71			
4	0.65					10	1	₫		
6	1.47					12 Note: assuming sand				
Example 1- purging only 2-inch casing and 6-foot was a contraction of the contraction of		e				Example 2- purging v 2-inch casing, 8-inch s	and pack, and 6-f	oot water column		
One Purge Volume= 0.16	X 6 = 0.96 gallons w	rater				One Purge Volume= (0	0.16 X 6) + (0.71 X	X 6) = 5.22 gallons wate	r	
				MEASUREME	NTS					
T:	Volume (gallons)	m1.1	Conductivity (mS)	Temperature (F)	Calar	To code i edito c	Daday	Disashuad O	Other	
Time	(galions)	pН	(1113)	(1)	Color	Turbidity	Redox	Dissolved O <sub>2</sub>	Other	
Total Volume Pur	ged (Gallons):	:			Free Produ	ct (y/n):				
Odor:	Faint Petrole	eum Hydroca	rbon-Like Odor		Sheen (y/n)			_		
Purge Method (dis	sposable baile	er, teflon baile	er, submersible	pump, etc.)						
Sample Method (	disposable ba	iler, teflon ba	iler, submersibl	e pump, etc.)						
Well Integrity (cor	ndition of casir	ng, flush mou	int sealing prop	erly, cement sea	al intact, etc.)	)				
Good										
Remarks (well red	covery, unusua	al conditions/	observations):							
`	,,		,							
					T					
Duplicate Samp Split Sample ID		None Colle			Analyses I	Requested:	BTEX by 8	D/RRO by AK1	01/102/103	
Opiit Gample ID	•	TAOLIG COILE	, CICU		1		DILA DY C	JUZ 1D		
Ciana a di	lulia Al-				•	Data	4/40/000	7		
Signed:	Julie Aherr	1			-	Date:	4/16/2007	1	•	
Signed/reviewe	r:					Date:				

GROUNDWATER SAMPLE DATA SHEET											
Project Number:	45350			Sample Location	on (ie. MW-1	):	GEI-3		_		
Project Name:	FIA West Ra	amp/Gate 28		Sample ID (ie. I	MW-1-W-yyı	mmdd):	N/A				
Client:	BBL			Date Sample C	ollected:		N/A		'		
Sampler:	Julie Ahern			Time sampled:			N/A		ı		
			W	ell Information					<u>'</u>		
			Casing								
Groundwater:	X		Diameter (in):	2		_a) Well Depth (		11.35			
Other:	SPH detect	ed at 10 78 f	t BTOC on 4/2	/07; no sample	taken	<ul><li>b) Water Depth</li><li>c) Water Colum</li></ul>		10.80 0.55			
Othor:			-	when bailed on		d) Calc. Purge		0.1			
			Calcul	ating Purge Vo	lume						
Well Casing Diameter	Multiply c) by: 0.16					Sand Pack Diameter 8	Multiply c) by: 0.71				
4 0.65 6 1.47 12 1.28											
		1				Note: assuming sand	pack has 29% po				
Example 1- purging only 2-inch casing and 6-foot was provided to the control of		e				Example 2- purging a 2-inch casing, 8-inch s					
One Purge Volume= 0.16											
			FIELD	MEASUREME	NTS						
	Volume Conductivity Temperature (gallons) pH (mS) (F) Color										
Time	(gallons)	pН	(mS)	(F)	Color	Turbidity	Redox	Dissolved O <sub>2</sub>	Other		
Total Volume Pur	ged (Gallons)	:			Free Produ	ıct (v/n):	Yes				
Odor:		Hydrocarbon-	Like Odor	-	Sheen (y/n			_			
Purge Method (di	sposable baile	er, teflon bail	er, submersible	pump, etc.)							
Sample Method (	disposable ba	iler, teflon ba	iler, submersibl	e pump, etc.)							
Well Integrity (cor	ndition of casi	ng, flush mou	ınt sealing prop	erly, cement sea	al intact, etc.	)					
Good											
Remarks (well red	covery, unusu	al conditions	observations):								
(	Remarks (well recovery, unusual conditions/observations):										
					_						
Duplicate Samp		None Colle			Analyses	Requested:		D/RRO by AK1	01/102/103		
Split Sample ID	·.	None Colle	ecieu		1		BTEX by	DUZ ID			
Cian e di	Lulia Al				•	Dets	4/40/000	7			
Signed:	Julie Aherr	1			-	Date:	4/16/2007	(			
Signed/reviewe	r:					Date:					

			GROUNDW/	ATER SAMPLE	DATA SH	EET			
Project Number:	45350			Sample Location	on (ie. MW-1):	:	GEI-4		
Project Name:	FIA West Ra	mp/Gate 2	8	Sample ID (ie. l	MW-1-W-yym	nmdd): G	EI-4-W-0704	103	•
, Client:	BBL	'		Date Sample C		,	4/3/2007		•
Sampler:	Julie Ahern			Time sampled:	0001.04.		1331		•
Campier.	Julie Allem						1001		
			Casing	Well Information	1				
Groundwater:	Χ		Diameter (in):	2		a) Well Depth	(ft):	12.44	
						b) Water Dept	h (ft):	10.98	
Other:			_			c) Water Colu	mn (ft):	5.75	
						d) Calc. Purge	Vol. (gal):	0.9	
			Calcu	ulating Burgo Vo	dumo				
Well Casing Diameter	Multiply c) by:		Calcu	llating Purge Vo	nume	Sand Pack Diameter	Multiply c) by:		
2 4	0.16 0.65					8 10	0.71	1	
6	6 1.47					12	1.28	<u> </u>	
Example 1- purging only	/ well casing volume	1				Note: assuming sand Example 2- purging			
2-inch casing and 6-foot v One Purge Volume= 0.16		ater				2-inch casing, 8-inch One Purge Volume=		oot water column (6) = 5.22 gallons wate	r
							(/ (-		
	1 \/ 1			D MEASUREME	NTS			<u> </u>	
Time	Volume (gallons)	рН	Conductivity (mS)	Temperature (F)	Color	Turbidity	Redox	Dissolved O <sub>2</sub>	Other
1310	0.25	6.38	0.97	3.2	dark gray	999	Not		very strong
1315	0.55	6.41	0.96	2.8	dark gray	999	Measured	Not Measured	
1320	0.8	6.62	0.96	2.7	gray	41			heavy sheer
	1.1	6.62	0.96		light gray	64	1		very sandy
					<u> </u>				
Total Volume Pur	• , ,		1.3	-	Free Produc	,	No	_	
Odor: Purge Method (di	Petroleum H			nump etc.)	Sheen (y/n):		Yes		
Peristaltic pump	sposable balle	i, leiloii ba	iler, Submersible	: pump, etc.)					
Sample Method ( Peristaltic pump	disposable bai	ler, teflon b	ailer, submersib	le pump, etc.)					
r enstattic pump									
Well Integrity (cor	ndition of casin	g, flush mo	ount sealing prop	erly, cement sea	al intact, etc.)				
Good									
Remarks (well red	coverv. unusua	al condition	s/observations):						
Good recovery	<i>,</i>		,						
D	I. ID.	Nana Oal	141		IA b	\ 4 d-	ODO/DD0	VDDO by AVA	04/400/400
Duplicate Samp Split Sample ID		None Col None Col			Analyses R	requestea:	BTEX by 8	)/RRO by AK1	01/102/103
opiit oampie ib	· .	INOTIC COL	iecteu		†		DILA DY C	JUZ 1D	
Signed:	Julie Ahern					Date:	4/16/2007	7	
					Date. 4/10/2007				
Signed/reviewe	r:				Date:				

			GROUNDWA	TER SAMPL	E DATA SH	IEET				
Project Number:	45350			Sample Locati	on (ie. MW-1	l):	GEI-5			
Project Name:	FIA West R	amp/Gate 28	3	Sample ID (ie.	MW-1-W-yy	mmdd):	N/A			
Client:	BBL			Date Sample (	Collected:		N/A			
Sampler:	Julie Ahern			Time sampled			N/A			
·			VA	/ell Informatio						
			Casing	ren imormatio	II.					
Groundwater:	Χ		_Diameter (in):	2		a) Well Depth		NM		
Other:	CDU dotoo	ted at 11.23	# PTOC			<ul><li>b) Water Depth</li><li>c) Water Colum</li></ul>		11.7		
Other.	No sample		<u>II BIOC</u>			d) Calc. Purge	. ,			
							(3)			
			Calcul	ating Purge Vo	olume					
Well Casing Diameter	Multiply c) by:	I		gg-		Sand Pack Diameter	Multiply c) by:	I		
2 4	0.16 0.65	1				10	0.71			
6	1.47	_				12 Note: assuming sand				
Example 1- purging only 2-inch casing and 6-foot v	water column					Example 2- purging v 2-inch casing, 8-inch s	sand pack, and 6-	foot water column		
One Purge Volume= 0.16	6 X 6 = 0.96 gallons	water				One Purge Volume= (	0.16 X 6) + (0.71	X 6) = 5.22 gallons water		
				MEASUREMI						
Time	Volume Conductivity Tempera (gallons) pH (mS) (F)				Color	Turbidity	Redox	Dissolved O <sub>2</sub>	Other	
Time	(94.101.10)	рп	(5)	(• )	00101	Turblaity	Redox	Dissolved O <sub>2</sub>	Other	
			1							
			<u></u>				<u> </u>			
Total Volume Pur				-	Free Produ		Yes	_		
Odor: Purge Method (di		Hydrocarbon		numn etc.)	Sheen (y/n	n):				
i dige Metilod (di	isposable ball	er, teriori bai	ier, submersible	parrip, etc.)						
On manufacture at 1	(-l'	ilan taflan b	- 9 9-	I						
Sample Method (	aisposable ba	aller, tetion b	aller, submersibl	ie pump, etc.)						
Well Integrity (co Good	ndition of casi	ing, flush mo	unt sealing prop	erly, cement se	eal intact, etc.	.)				
Remarks (well re	covery, unusi	ual conditions	s/observations):							
Duplicate Samp	ole ID:	None Coll	ected		Analyses	Requested:				
Split Sample ID		None Coll				1				
Signed:	Julie Aher	n				Date:	4/16/200	7		
					_					
Signed/reviewe	er:					Date:				

			GROUNDWA	TER SAMPL	E DATA SI	HEET			
Project Number:	45350			Sample Locati	on (ie. MW-	1):	GEI-6		ī
Project Name:	FIA West R	amp/Gate 28	3	Sample ID (ie.	MW-1-W-yy	/mmdd):	N/A		ī
Client:	BBL			Date Sample	Collected:		N/A		
Sampler:	Julie Ahern			Time sampled	:		N/A		
			W	/ell Informatio	n				
			Casing	_					
Groundwater:	X		_Diameter (in):	2		a) Well Depth (b) Water Depth		<u>11.01</u> 0	
Other:	Well dry					c) Water Colur	. ,	0	
	No sample	taken			_	0.0			
			Calcul	ating Purge V	olume				
Well Casing Diameter 2	Multiply c) by: 0.16	_				Sand Pack Diameter 8	Multiply c) by: 0.71	_	
4	0.64 1.47	1				10 12	1 1.28	1	
	•					Note: assuming sand	pack has 29% po		
Example 1- purging only 2-inch casing and 6-foot v		ne				Example 2- purging 2-inch casing, 8-inch			
One Purge Volume= 0.16	X 6 = 0.96 gallons	water				One Purge Volume= (	0.16 X 6) + (0.71	X 6) = 5.22 gallons water	
				MEASUREM Temperature					
Time	Volume Conductivity (gallons) pH (mS)					Troubidito	Daday	Discoulant	Other
Time	(galloris)	pН	(1113)	(F)	Color	Turbidity	Redox	Dissolved O <sub>2</sub>	Other
			+				1		
Total Volume Pur	rged (Gallons	):			Free Prod	uct (y/n):			
Odor:	Petroleum I	Hydrocarbon			Sheen (y/r			<b>-</b>	
Purge Method (di	isposable bail	er, teflon bai	ler, submersible	pump, etc.)					
Sample Method (	disposable ba	ailer, teflon b	ailer, submersib	le pump, etc.)					
Well Integrity (cor	ndition of casi	ing, flush mo	unt sealing prop	erly, cement se	al intact, etc	:.)			
Good				•		•			
Remarks (well re	COVERY LINUS	ial conditions	s/observations):						
remains (well re-	covery, and	aar corraitions	3/003C1 valion3).						
					1.				
Duplicate Samp		None Coll			Analyses	Requested:			
Split Sample ID	<i>)</i> .	None Coll	ecteu		+		-		
Cianada	- حام ماناد	n			•	Doto	4/46/000	7	
Signed:	Julie Aher	n			_	Date:	4/16/200	<u> </u>	
Signed/reviewe	ır.				Date:				

		(	GROUNDWA <sup>-</sup>	TER SAMPLE	DATA SH	EET			
Project Number:	45350			Sample Location	n (ie. MW-1)	:	GEI-7		
Project Name:	FIA West Ra	mp/Gate 28		Sample ID (ie. I			EI-7-W-0704	03	•
Client:	BBL			Date Sample C	• • •		4/3/2007		ī
	Julie Ahern			•	oncotoa.		1440		
Sampler:	Julie Alleiti			Time sampled:			1440		
				ell Information					
Groundwater:	Χ		Casing Diameter (in):	2		a) Well Depth (	ft):	13.10	
			. ,			b) Water Depth		11.21	
Other:						c) Water Colum	nn (ft):	1.89	
						d) Calc. Purge	Vol. (gal):	0.3	
			Calcula	ating Purge Vo	lume				
Well Casing Diameter	Multiply c) by:					Sand Pack Diameter	Multiply c) by:		
2 4	0.16 0.65					10	0.71		
6	1.47					12 Note: assuming sand	1.28 pack has 29% por	ositv	
Example 1- purging only 2-inch casing and 6-foot v		9				Example 2- purging v 2-inch casing, 8-inch s	well casing and sa	nd pack volume	
One Purge Volume= 0.16		ater						6) = 5.22 gallons water	r
			EIEI D	MEACUDEME	NTC				
	Volume		Conductivity	MEASUREME Temperature	NIS I			I	
Time	(gallons)	рН	(mS)	(F)	Color	Turbidity	Redox	Dissolved O <sub>2</sub>	Other
1425	0.3	6.72	1.13	3.0	olive	131	Not		strong odor
1428	0.6	6.67	1.12	2.9	olive	229	Measured	Not Measured	light sheen
1432	1	6.66	1.10	2.8	yellow	45			
Total Volume Pur	ged (Gallons):		1.3		Free Produ	ct (y/n):	No		
Odor:	Petroleum H				Sheen (y/n)		Yes	•	
Purge Method (di	sposable baile	r, teflon baile	er, submersible	pump, etc.)					
Peristaltic pump									
Sample Method (	disposable bai	ler, teflon ba	iler, submersibl	e pump, etc.)					
Peristaltic pump `	•	•	,	, , ,					
NA/ 11.1 / '/ /	197								
Well Integrity (cor Well cap very close		-	•	•	al intact, etc.)				
vveil cap very clo	se to monume	iii covei, wei	i silodid be cut	down					
Remarks (well re-	covery, unusua	al conditions/	observations):						
Good recovery									
D II ( 0		051 5 11/5	<del></del>		I		000/000	(DDC)   Al(4)	0.4.14.0.0.14.0.0
Duplicate Samp			070403 @ 15	05	Analyses I	Requested:		/RRO by AK1	01/102/103
Split Sample ID	·• .	None Colle	-CIGU		1		BTEX by 8	UL ID	
					1				
Signed:	Julie Ahern	l			-	Date:	4/16/2007		ī
Signed/reviewe	r:					Date:			

			GROUNDWA	TER SAMPLE	DATA SH	EET			
Project Number:	45350			Sample Location	n (ie. MW-1)	):	GEI-8		-
Project Name:	FIA West Ra	amp/Gate 28		Sample ID (ie.	MW-1-W-yyr	nmdd): G	EI-8-W-0704	103	_
Client:	BBL			Date Sample C	ollected:		4/3/2007		
Sampler:	Julie Ahern			Time sampled:			1540		•
·			14	•					
			Casing	lell Information					
Groundwater:	Χ		Diameter (in):	2		a) Well Depth	(ft):	12.88	
						b) Water Depth	ո (ft):	11.63	
Other:			_			c) Water Colur	` '	1.25	
						d) Calc. Purge	Vol. (gal):	0.2	
		T	Calcul	ating Purge Vo	lume	T	T	T	
Well Casing Diameter 2	Multiply c) by: 0.16					Sand Pack Diameter 8	Multiply c) by: 0.71	_	
4 6	0.65 1.47					10 12	1 1.28		
	•	1				Note: assuming sand	pack has 29% por		
Example 1- purging only 2-inch casing and 6-foot v		ie				Example 2- purging 2-inch casing, 8-inch			
One Purge Volume= 0.16	X 6 = 0.96 gallons v	vater				One Purge Volume= (	(0.16 X 6) + (0.71 X	(6) = 5.22 gallons water	er
			FIELD	MEASUREME	NTS				
	Volume		Conductivity	Temperature					
Time	(gallons)	рН	(mS)	(F)	Color	Turbidity	Redox	Dissolved O <sub>2</sub>	Other
1528	0.3	6.63	1.15	2.7	yellow	54	Not	Not	very strong
1531	0.65	6.67	1.13	2.6	yellow 	21	Measured	Measured	odor
1536	1.1	6.73	1.12	2.5	yellow	5			no sheen
				l				l	
Total Volume Pur			1.2	_	Free Produ	,	No	_	
Odor:		lydrocarbon-		numn ete \	Sheen (y/n)	):	No		
Purge Method (di Peristaltic pump	sposable balle	er, tellon ball	er, submersible	pump, etc.)					
Sample Method (	disposable ba	iler, teflon ba	iler, submersibl	le pump, etc.)					
Peristaltic pump									
Well Integrity (cor	ndition of casi	ng, flush mou	int sealing prop	erly, cement sea	al intact, etc.)	)			
Good				-					
Remarks (well red	COVERY LINUSU	al conditions	(observations):						
Good recovery	covery, unusu	ai conditions	observations).						
•									
Duplicate Samp	ole ID:	None Colle	ected		Analyses I	Requested:	GRO/DRC	/RRO by AK1	01/102/103
Split Sample ID	):	None Colle	ected				BTEX by 8		
Signed:	Julie Aherr	า				Date:	4/16/2007	,	
					-				•
Signed/reviewe	r:					Date:			

			GROUNDWA	TER SAMPLE	DATA SH	EET			
Project Number:	45350			_Sample Location (ie. MW-1):			GEI-9		_
Project Name:	FIA West Ra	amp/Gate 28	}	Sample ID (ie. MW-1-W-yymmdd):			GEI-9-W-070403		_
Client:	BBL			Date Sample C	ollected:		4/3/2007		-
Sampler:	Julie Ahern			Time sampled:			1630		_
,			14	/ell Information					
			Casing	reii information					
Groundwater:	Χ		Diameter (in):	2		_a) Well Depth		12.80	
						b) Water Deptl		11.39	
Other:			_			c) Water Colur		1.41	
						d) Calc. Purge	voi. (gai):	0.2	
			Calaul	ating Dunas Va	l				
Well Casing Diameter	Multiply c) by:		Calcul	ating Purge Vo	iume	Sand Pack Diameter	Multiply c) by:		
2 4	0.16					8	0.71	_	
6	1.47					12	1.28	<b>j</b>	
Example 1- purging only		e				Note: assuming sand Example 2- purging			
2-inch casing and 6-foot w One Purge Volume= 0.16		ater				2-inch casing, 8-inch One Purge Volume=		oot water column (6) = 5.22 gallons wate	r
				MEAGUDEME	NTC				
	Volume		Conductivity	Temperature	INIS	T			I
Time	(gallons)	рН	(mS)	(F)	Color	Turbidity	Redox	Dissolved O <sub>2</sub>	Other
1615	0.3	6.52	0.839	2.2	light gray	463	Not		very strong
1620	0.6	6.54	0.843	2.0	yell/olive	119	Measured	Not Measured	1
1625	1	6.55	0.841	1.9	yell/olive				heavy sheer
T . IV. I	1/0 " )		1.0			( ( ) )	<u> </u>		
Total Volume Pur Odor:	ged (Gallons) Petroleum F		1.2	-	Free Produ	,	No Yes	-	
Purge Method (di		,		pump, etc.)	Sheen (y/n)	).	162		
Peristaltic pump			·	, ,					
Sample Method (	disposable ha	iler teflon ha	ailar suhmarsihl	le numn etc )					
Peristaltic pump	disposable ba	iici, telloli be	anci, subinicisibi	ic pump, ctc.)					
Well Integrity (cor Good	ndition of casir	ng, flush mou	unt sealing prop	erly, cement sea	al intact, etc.)	)			
3004									
Remarks (well red	covery, unusu	al conditions	/observations):						
Good recovery									
Duplicate Samp	ole ID:	None Colle	ected		Analyses I	Requested:	GRO/DRO	/RRO by AK1	01/102/103
Split Sample ID		None Colle			7, 555 .		BTEX by 8		0.,.02,.00
								00.8; EDB by 8	3011
							VOCs by 8	3260B	
Signed:	Julie Aherr	1			_	Date:	4/16/2007	<b>,</b>	_
					-	Data	<del></del>		=
Signed/reviewe	r.					Date:			

# **ARCADIS** BBL

## Appendix B

Laboratory Reports and Data Checklists



2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 •717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

### ANALYTICAL RESULTS

Prepared for:

Chevron 6001 Bollinger Canyon Rd L4310 San Ramon CA 94583

925-842-8582

Prepared by:

Lancaster Laboratories 2425 New Holland Pike Lancaster, PA 17605-2425

## **SAMPLE GROUP**

The sample group for this submittal is 1032391. Samples arrived at the laboratory on Thursday, April 05, 2007. The PO# for this group is 0015014445 and the release number is HARTUNG-FRERICH.

Client Description	<u>Lancaster Labs Number</u>
GEI-4-W-070403 Grab Water Sample	5022234
GEI-7-W-070403 Grab Water Sample	5022235
GEI-7-WD-070403 Grab Water Sample	5022236
GEI-8-W-070403 Grab Water Sample	5022237
GEI-9-W-070403 Grab Water Sample	5022238
QA-T-070403 Water Sample	5022239
Wastewater-W-070403 Grab Water Sample	5022240

## **METHODOLOGY**

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

ELECTRONIC	Oasis Environmental, Inc.	Attn: Julie Ahern
COPY TO		
ELECTRONIC	Blasland, Bouck & Lee	Attn: Rebecca Andresen
COPY TO		
ELECTRONIC	BBL	Attn: Barbara Orchard
COPY TO		
1 COPY TO	Data Package Group	



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Questions? Contact your Client Services Representative Rebecca J Shettel at (717) 656-2300

Respectfully Submitted,

Robert Strocko Jr.

Manager



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Page 1 of 1

Lancaster Laboratories Sample No. WW 5022234

GEI-4-W-070403 Grab Water Sample Facility# Former Unocal 0207

FIA Gate 28/West Ramp - Fairbanks, AK

Collected: 04/03/2007 13:31 by JA Account Number: 11964

Submitted: 04/05/2007 09:20 Chevron

Reported: 05/07/2007 at 13:22 6001 Bollinger Canyon Rd L4310

Discard: 06/07/2007 San Ramon CA 94583

FIAG4 SDG#: ALK24-01

				As Received		
CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
01440	Alaska AK101 GRO (waters)					
01442	Alaska AK101 GRO (waters)	n.a.	0.3	0.01	mg/l	1
01588	BTEX					
01591	Benzene	71-43-2	0.005	0.001	mg/l	1
01592	Toluene	108-88-3	N.D.	0.001	mg/l	1
01593	Ethylbenzene	100-41-4	0.009	0.001	mg/l	1
01723	Total xylenes	1330-20-7	0.008	0.002	mg/l	1
02923	TPH-DRO/RRO (AK) water					
02943	C10- <c25 dro<="" td=""><td>n.a.</td><td>2.0</td><td>0.040</td><td>mg/l</td><td>2</td></c25>	n.a.	2.0	0.040	mg/l	2
02946	C25-C36 RRO	n.a.	N.D.	0.040	mg/l	2

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT		-		Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	a Analyst	Factor
01440	Alaska AK101 GRO (waters)	AK 101	1	04/10/2007 12:	:36 Linda C Pape	1
01588	BTEX	SW-846 8021B	1	04/10/2007 12:	:36 Linda C Pape	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	04/12/2007 19:	:41 Sarah M Snyde	er 2
01146	GC VOA Water Prep	SW-846 5030B	1	04/10/2007 12:	:36 Linda C Pape	1
02135	Extraction - DRO Water Special	AK 102/AK 103 04/08/0	2 1	04/10/2007 18:	:15 Elaine F Sto	ltzfus 1



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Page 1 of 1

Lancaster Laboratories Sample No. WW 5022235

GEI-7-W-070403 Grab Water Sample Facility# Former Unocal 0207

FIA Gate 28/West Ramp - Fairbanks, AK

Collected: 04/03/2007 14:40 by JA Account Number: 11964

Submitted: 04/05/2007 09:20 Chevron

Reported: 05/07/2007 at 13:22 6001 Bollinger Canyon Rd L4310

Discard: 06/07/2007 San Ramon CA 94583

FIAG7 SDG#: ALK24-02

				As Received		
CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
01440	Alaska AK101 GRO (waters)					
01442	Alaska AK101 GRO (waters)	n.a.	2.2	0.01	mg/l	1
01588	BTEX					
01591	Benzene	71-43-2	0.05	0.001	mg/l	1
01592	Toluene	108-88-3	0.004	0.001	mg/1	1
01593	Ethylbenzene	100-41-4	0.09	0.001	mg/l	1
01723	Total xylenes	1330-20-7	0.2	0.002	mg/l	1
02923	TPH-DRO/RRO (AK) water					
02943	C10- <c25 dro<="" td=""><td>n.a.</td><td>12.</td><td>0.98</td><td>mg/l</td><td>50</td></c25>	n.a.	12.	0.98	mg/l	50
02946	C25-C36 RRO	n.a.	N.D.	0.98	mg/l	50

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT		-		Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
01440	Alaska AK101 GRO (waters)	AK 101	1	04/10/2007 13:42	Linda C Pape	1
01588	BTEX	SW-846 8021B	1	04/10/2007 13:42	Linda C Pape	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	04/12/2007 20:05	Sarah M Snyder	50
01146	GC VOA Water Prep	SW-846 5030B	1	04/10/2007 13:42	Linda C Pape	1
02135	Extraction - DRO Water Special	AK 102/AK 103 04/08/0	2 1	04/10/2007 18:15	Elaine F Stoltzfus	1



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Page 1 of 1

Lancaster Laboratories Sample No. WW 5022236

GEI-7-WD-070403 Grab Water Sample Facility# Former Unocal 0207

FIA Gate 28/West Ramp - Fairbanks, AK

Collected: 04/03/2007 15:05 by JA Account Number: 11964

Submitted: 04/05/2007 09:20 Chevron

Reported: 05/07/2007 at 13:22 6001 Bollinger Canyon Rd L4310

Discard: 06/07/2007 San Ramon CA 94583

FIAFD SDG#: ALK24-03FD

				As Received		
CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
01440	Alaska AK101 GRO (waters)					
01442	Alaska AK101 GRO (waters)	n.a.	2.2	0.01	mg/l	1
01588	BTEX					
01591	Benzene	71-43-2	0.04	0.001	mg/l	1
01592	Toluene	108-88-3	0.004	0.001	mg/1	1
01593	Ethylbenzene	100-41-4	0.09	0.001	mg/l	1
01723	Total xylenes	1330-20-7	0.2	0.002	mg/l	1
02923	TPH-DRO/RRO (AK) water					
02943	C10- <c25 dro<="" td=""><td>n.a.</td><td>12.</td><td>0.98</td><td>mg/l</td><td>50</td></c25>	n.a.	12.	0.98	mg/l	50
02946	C25-C36 RRO	n.a.	N.D.	0.98	mg/l	50

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT		-		Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
01440	Alaska AK101 GRO (waters)	AK 101	1	04/10/2007 14:15	Linda C Pape	1
01588	BTEX	SW-846 8021B	1	04/10/2007 14:15	Linda C Pape	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	04/12/2007 20:30	Sarah M Snyder	50
01146	GC VOA Water Prep	SW-846 5030B	1	04/10/2007 14:15	Linda C Pape	1
02135	Extraction - DRO Water Special	AK 102/AK 103 04/08/0	2 1	04/10/2007 18:15	Elaine F Stoltzfus	1



Account Number: 11964

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Page 1 of 1

Lancaster Laboratories Sample No. WW 5022237

GEI-8-W-070403 Grab Water Sample Facility# Former Unocal 0207

FIA Gate 28/West Ramp - Fairbanks, AK Collected:04/03/2007 15:40 by JA

Submitted: 04/05/2007 09:20 Chevron

Reported: 05/07/2007 at 13:22 6001 Bollinger Canyon Rd L4310

Discard: 06/07/2007 San Ramon CA 94583

FIAG8 SDG#: ALK24-04

				As Received		
CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
01440	Alaska AK101 GRO (waters)					
01442	Alaska AK101 GRO (waters)	n.a.	0.06	0.01	mg/l	1
01588	BTEX					
01591	Benzene	71-43-2	N.D.	0.001	mg/l	1
01592	Toluene	108-88-3	N.D.	0.001	mg/l	1
01593	Ethylbenzene	100-41-4	N.D.	0.001	mg/l	1
01723	Total xylenes	1330-20-7	N.D.	0.002	mg/l	1
02923	TPH-DRO/RRO (AK) water					
02943	C10- <c25 dro<="" td=""><td>n.a.</td><td>0.91</td><td>0.020</td><td>mg/l</td><td>1</td></c25>	n.a.	0.91	0.020	mg/l	1
02946	C25-C36 RRO	n.a.	0.36	0.020	mg/l	1

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT		-		Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
01440	Alaska AK101 GRO (waters)	AK 101	1	04/10/2007 12:03	2 Linda C Pape	1
01588	BTEX	SW-846 8021B	1	04/10/2007 12:03	2 Linda C Pape	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	04/11/2007 20:5	2 Sarah M Snyder	1
01146	GC VOA Water Prep	SW-846 5030B	1	04/10/2007 12:03	2 Linda C Pape	1
02135	Extraction - DRO Water Special	AK 102/AK 103 04/08/0	2 1	04/10/2007 18:1	Elaine F Stoltzfus	1



Account Number: 11964

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Page 1 of 3

Lancaster Laboratories Sample No. WW 5022238

GEI-9-W-070403 Grab Water Sample Facility# Former Unocal 0207

FIA Gate 28/West Ramp - Fairbanks, AK Collected:04/03/2007 16:30 by JA

Submitted: 04/05/2007 09:20 Chevron

Reported: 05/07/2007 at 13:22 6001 Bollinger Canyon Rd L4310

Discard: 06/07/2007 San Ramon CA 94583

FIAG9 SDG#: ALK24-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection	Units	Dilution Factor
06035	Lead	7439-92-1	0.00062	<b>Limit</b> 0.000047	mg/l	1
01440	Alaska AK101 GRO (waters)					
01442	Alaska AK101 GRO (waters)	n.a.	1.6	0.01	mg/l	1
01588	BTEX					
01591	Benzene	71-43-2	0.006	0.001	mg/l	1
01592	Toluene	108-88-3	N.D.	0.001	mg/l	1
01593	Ethylbenzene	100-41-4	0.04	0.001	mg/l	1
01723	Total xylenes	1330-20-7	0.08	0.002	mg/l	1
02923	TPH-DRO/RRO (AK) water					
02943	C10- <c25 dro<="" td=""><td>n.a.</td><td>9.7</td><td>0.40</td><td>mg/l</td><td>20</td></c25>	n.a.	9.7	0.40	mg/l	20
02946	C25-C36 RRO	n.a.	N.D.	0.40	mg/l	20
05382	EPA SW846/8260 (water)					
05384	Dichlorodifluoromethane	75-71-8	N.D.	2.	ug/l	1
05385	Chloromethane	74-87-3	N.D.	1.	ug/l	1
05386	Vinyl Chloride	75-01-4	N.D.	1.	ug/l	1
05387	Bromomethane	74-83-9	N.D.	1.	ug/l	1
05388	Chloroethane	75-00-3	N.D.	1.	ug/l	1
05389	Trichlorofluoromethane	75-69-4	N.D.	2.	ug/l	1
05390	1,1-Dichloroethene	75-35-4	N.D.	0.8	ug/l	1
05391	Methylene Chloride	75-09-2	N.D.	2.	ug/l	1
05392	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	ug/l	1
05393	1,1-Dichloroethane	75-34-3	N.D.	1.	ug/l	1
05394	2,2-Dichloropropane	594-20-7	N.D.	1.	ug/l	1
05395	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	ug/l	1
05396	Chloroform	67-66-3	N.D.	0.8	ug/l	1
05397	Bromochloromethane	74-97-5	N.D.	1.	ug/l	1
05398	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	ug/l	1
05399	Carbon Tetrachloride	56-23-5	N.D.	1.	ug/l	1
05400	1,1-Dichloropropene	563-58-6	N.D.	1.	ug/l	1
05401	Benzene	71-43-2	12.	0.5	ug/l	1
05402	1,2-Dichloroethane	107-06-2	N.D.	0.5	ug/l	1
05403	Trichloroethene	79-01-6	N.D.	1.	ug/l	1
05404	1,2-Dichloropropane	78-87-5	N.D.	1.	ug/l	1



Account Number: 11964

As Received

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Page 2 of 3

Lancaster Laboratories Sample No. WW 5022238

GEI-9-W-070403 Grab Water Sample Facility# Former Unocal 0207

FIA Gate 28/West Ramp - Fairbanks, AK Collected: 04/03/2007 16:30 by JA

Submitted: 04/05/2007 09:20 Chevron

Reported: 05/07/2007 at 13:22 6001 Bollinger Canyon Rd L4310

Discard: 06/07/2007 San Ramon CA 94583

FIAG9 SDG#: ALK24-05

CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
05405	Dibromomethane	74-95-3	N.D.	1.	ug/l	1
05406	Bromodichloromethane	75-27-4	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05408	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	ug/l	1
05409	Tetrachloroethene	127-18-4	N.D.	0.8	ug/l	1
05410	1,3-Dichloropropane	142-28-9	N.D.	1.	ug/l	1
05411	Dibromochloromethane	124-48-1	N.D.	1.	ug/l	1
05412	1,2-Dibromoethane	106-93-4	N.D.	0.5	ug/l	1
05413	Chlorobenzene	108-90-7	N.D.	0.8	ug/l	1
05414	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	1.	ug/l	1
05415	Ethylbenzene	100-41-4	46.	0.5	ug/l	1
05416	m+p-Xylene	1330-20-7	75.	0.5	ug/l	1
05417	o-Xylene	95-47-6	29.	0.5	ug/l	1
05418	Styrene	100-42-5	N.D.	1.	ug/l	1
05419	Bromoform	75-25-2	N.D.	1.	ug/l	1
05420	Isopropylbenzene	98-82-8	30.	1.	ug/l	1
05421	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1.	ug/l	1
05422	Bromobenzene	108-86-1	N.D.	1.	ug/l	1
05423	1,2,3-Trichloropropane	96-18-4	N.D.	1.	ug/l	1
05424	n-Propylbenzene	103-65-1	65.	1.	ug/l	1
05425	2-Chlorotoluene	95-49-8	N.D.	1.	ug/l	1
05426	1,3,5-Trimethylbenzene	108-67-8	100.	1.	ug/l	1
05427	4-Chlorotoluene	106-43-4	N.D.	1.	ug/l	1
05428	tert-Butylbenzene	98-06-6	2.	1.	ug/l	1
05429	1,2,4-Trimethylbenzene	95-63-6	340.	2.	ug/l	2
05430	sec-Butylbenzene	135-98-8	23.	1.	ug/l	1
05431	p-Isopropyltoluene	99-87-6	20.	1.	ug/l	1
05432	1,3-Dichlorobenzene	541-73-1	N.D.	1.	ug/l	1
05433	1,4-Dichlorobenzene	106-46-7	N.D.	1.	ug/l	1
05434	n-Butylbenzene	104-51-8	35.	1.	ug/l	1
05435	1,2-Dichlorobenzene	95-50-1	N.D.	1.	ug/l	1
05436	1,2-Dibromo-3-chloropropane	96-12-8	4.	2.	ug/l	1
05437	1,2,4-Trichlorobenzene	120-82-1	N.D.	1.	ug/l	1
05438	Hexachlorobutadiene	87-68-3	N.D.	2.	ug/l	1
05439	Naphthalene	91-20-3	83.	1.	ug/l	1
05440	1,2,3-Trichlorobenzene	87-61-6	N.D.	1.	ug/l	1
08202	EPA SW 846/8260 - Water					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
02011	di-Isopropyl ether	108-20-3	N.D.	0.5	ug/l	1



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Page 3 of 3

Lancaster Laboratories Sample No. WW 5022238

GEI-9-W-070403 Grab Water Sample Facility# Former Unocal 0207

FIA Gate 28/West Ramp - Fairbanks, AK Collected:04/03/2007 16:30 by JA

Collected: 04/03/2007 16:30 by JA Account Number: 11964

Submitted: 04/05/2007 09:20 Chevron

Reported: 05/07/2007 at 13:22 6001 Bollinger Canyon Rd L4310

Discard: 06/07/2007 San Ramon CA 94583

FIAG9 SDG#: ALK24-05

1 11100	DDG  : IIERZI 03					
				As Received		
CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
02013	Ethyl t-butyl ether	637-92-3	N.D.	0.5	ug/l	1
02014	t-Amyl methyl ether	994-05-8	N.D.	0.5	ug/l	1
02015	t-Butyl alcohol	75-65-0	N.D.	5.	ug/l	1
06302	Acetone	67-64-1	N.D.	6.	ug/l	1
06303	Carbon Disulfide	75-15-0	N.D.	1.	ug/l	1
06305	2-Butanone	78-93-3	N.D.	3.	ug/l	1
06306	trans-1,3-Dichloropropene	10061-02-6	N.D.	1.	ug/l	1
06307	cis-1,3-Dichloropropene	10061-01-5	N.D.	1.	ug/l	1
06308	4-Methyl-2-pentanone	108-10-1	N.D.	3.	ug/l	1
06309	2-Hexanone	591-78-6	N.D.	3.	ug/l	1
07583	2-Chloroethyl Vinyl Ether	110-75-8	N.D.	2.	ug/l	1
	2-Chloroethyl vinyl ether is an recovered in an acid preserved		ompound and may	not be		
08203	Freon 113	76-13-1	N.D.	2.	ug/l	1

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT		_		Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
06035	Lead	EPA 200.8	1	04/11/2007 10:45	Jayme E Curet	1
01440	Alaska AK101 GRO (waters)	AK 101	1	04/10/2007 14:48	Linda C Pape	1
01588	BTEX	SW-846 8021B	1	04/10/2007 14:48	Linda C Pape	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	04/12/2007 20:54	Sarah M Snyder	20
05382	EPA SW846/8260 (water)	SW-846 8260B	1	04/12/2007 13:00	Holly Berry	2
05382	EPA SW846/8260 (water)	SW-846 8260B	1	04/17/2007 05:01	Lauren C Marzario	1
08202	EPA SW 846/8260 - Water	SW-846 8260B	1	04/17/2007 05:01	Lauren C Marzario	1
01146	GC VOA Water Prep	SW-846 5030B	1	04/10/2007 14:48	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/17/2007 05:01	Lauren C Marzario	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	04/12/2007 13:00	Holly Berry	2
02135	Extraction - DRO Water Special	AK 102/AK 103 04/08/0	2 1	04/10/2007 18:15	Elaine F Stoltzfus	1
07050	ICP/MS EPA-600 Digest	EPA 200.8	1	04/09/2007 19:15	James L Mertz	1



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Page 1 of 3

Lancaster Laboratories Sample No. WW 5022239

QA-T-070403 Water Sample Facility# Former Unocal 0207 FIA Gate 28/West Ramp - Fairbanks, AK

Collected: 04/03/2007 08:00 Account Number: 11964

Submitted: 04/05/2007 09:20 Chevron

Reported: 05/07/2007 at 13:22 6001 Bollinger Canyon Rd L4310

Discard: 06/07/2007 San Ramon CA 94583

FIATB SDG#: ALK24-06TB

				As Received		
CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
01438	Alaska AK101 GRO (waters)	n.a.	N.D.	0.01	mg/l	1
05382	EPA SW846/8260 (water)					
05384	Dichlorodifluoromethane	75-71-8	N.D.	2.	ug/l	1
05385	Chloromethane	74-87-3	N.D.	1.	ug/l	1
05386	Vinyl Chloride	75-01-4	N.D.	1.	ug/l	1
05387	Bromomethane	74-83-9	N.D.	1.	ug/l	1
05388	Chloroethane	75-00-3	N.D.	1.	ug/l	1
05389	Trichlorofluoromethane	75-69-4	N.D.	2.	ug/l	1
05390	1,1-Dichloroethene	75-35-4	N.D.	0.8	ug/l	1
05391	Methylene Chloride	75-09-2	N.D.	2.	ug/l	1
05392	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	ug/l	1
05393	1,1-Dichloroethane	75-34-3	N.D.	1.	ug/l	1
05394	2,2-Dichloropropane	594-20-7	N.D.	1.	ug/l	1
05395	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	ug/l	1
05396	Chloroform	67-66-3	N.D.	0.8	ug/l	1
05397	Bromochloromethane	74-97-5	N.D.	1.	ug/l	1
05398	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	ug/l	1
05399	Carbon Tetrachloride	56-23-5	N.D.	1.	ug/l	1
05400	1,1-Dichloropropene	563-58-6	N.D.	1.	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05402	1,2-Dichloroethane	107-06-2	N.D.	0.5	ug/l	1
05403	Trichloroethene	79-01-6	N.D.	1.	ug/l	1
05404	1,2-Dichloropropane	78-87-5	N.D.	1.	ug/l	1
05405	Dibromomethane	74-95-3	N.D.	1.	ug/l	1
05406	Bromodichloromethane	75-27-4	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05408	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	ug/l	1
05409	Tetrachloroethene	127-18-4	N.D.	0.8	ug/l	1
05410	1,3-Dichloropropane	142-28-9	N.D.	1.	ug/l	1
05411	Dibromochloromethane	124-48-1	N.D.	1.	ug/l	1
05412	1,2-Dibromoethane	106-93-4	N.D.	0.5	ug/l	1
05413	Chlorobenzene	108-90-7	N.D.	0.8	uq/l	1
05414	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	1.	uq/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
05416	m+p-Xylene	1330-20-7	N.D.	0.5	ug/l	1
05417	o-Xylene	95-47-6	N.D.	0.5	ug/l	1
05418	Styrene	100-42-5	N.D.	1.	ug/l	1
05419	Bromoform	75-25-2	N.D.	1.	ug/l	1
05420	Isopropylbenzene	98-82-8	N.D.	1.	ug/l	1



As Received

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Page 2 of 3

Lancaster Laboratories Sample No. WW 5022239

QA-T-070403 Water Sample Facility# Former Unocal 0207 FIA Gate 28/West Ramp - Fairbanks, AK

Collected: 04/03/2007 08:00 Account Number: 11964

Submitted: 04/05/2007 09:20 Chevron

Reported: 05/07/2007 at 13:22 6001 Bollinger Canyon Rd L4310

Discard: 06/07/2007 San Ramon CA 94583

FIATB SDG#: ALK24-06TB

				As Received		
CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
05421	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1.	ug/l	1
05422	Bromobenzene	108-86-1	N.D.	1.	ug/l	1
05423	1,2,3-Trichloropropane	96-18-4	N.D.	1.	ug/l	1
05424	n-Propylbenzene	103-65-1	N.D.	1.	ug/l	1
05425	2-Chlorotoluene	95-49-8	N.D.	1.	ug/l	1
05426	1,3,5-Trimethylbenzene	108-67-8	N.D.	1.	ug/l	1
05427	4-Chlorotoluene	106-43-4	N.D.	1.	ug/l	1
05428	tert-Butylbenzene	98-06-6	N.D.	1.	ug/l	1
05429	1,2,4-Trimethylbenzene	95-63-6	N.D.	1.	ug/l	1
05430	sec-Butylbenzene	135-98-8	N.D.	1.	ug/l	1
05431	p-Isopropyltoluene	99-87-6	N.D.	1.	ug/l	1
05432	1,3-Dichlorobenzene	541-73-1	N.D.	1.	ug/l	1
05433	1,4-Dichlorobenzene	106-46-7	N.D.	1.	ug/l	1
05434	n-Butylbenzene	104-51-8	N.D.	1.	ug/l	1
05435	1,2-Dichlorobenzene	95-50-1	N.D.	1.	ug/l	1
05436	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2.	ug/l	1
05437	1,2,4-Trichlorobenzene	120-82-1	N.D.	1.	ug/l	1
05438	Hexachlorobutadiene	87-68-3	N.D.	2.	ug/l	1
05439	Naphthalene	91-20-3	N.D.	1.	ug/l	1
05440	1,2,3-Trichlorobenzene	87-61-6	N.D.	1.	ug/l	1
08202	EPA SW 846/8260 - Water					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
02011	di-Isopropyl ether	108-20-3	N.D.	0.5	ug/l	1
02013	Ethyl t-butyl ether	637-92-3	N.D.	0.5	ug/l	1
02014	t-Amyl methyl ether	994-05-8	N.D.	0.5	ug/l	1
02015	t-Butyl alcohol	75-65-0	N.D.	5.	ug/l	1
06302	Acetone	67-64-1	N.D.	6.	ug/l	1
06303	Carbon Disulfide	75-15-0	N.D.	1.	ug/l	1
06305	2-Butanone	78-93-3	N.D.	3.	ug/l	1
06306	trans-1,3-Dichloropropene	10061-02-6	N.D.	1.	ug/l	1
06307	cis-1,3-Dichloropropene	10061-01-5	N.D.	1.	ug/l	1
06308	4-Methyl-2-pentanone	108-10-1	N.D.	3.	ug/l	1
06309	2-Hexanone	591-78-6	N.D.	3.	ug/l	1
07583	2-Chloroethyl Vinyl Ether	110-75-8	N.D.	2.	ug/l	1
08203	2-Chloroethyl vinyl ether is an recovered in an acid preserved Freon 113		compound and may	not be	ug/l	1
					٥.	



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Page 3 of 3

Lancaster Laboratories Sample No. WW 5022239

QA-T-070403 Water Sample Facility# Former Unocal 0207 FIA Gate 28/West Ramp - Fairbanks, AK

Collected: 04/03/2007 08:00 Account Number: 11964

Submitted: 04/05/2007 09:20 Chevron

Reported: 05/07/2007 at 13:22 6001 Bollinger Canyon Rd L4310

Discard: 06/07/2007 San Ramon CA 94583

FIATB SDG#: ALK24-06TB

As Received

CAT As Received Method Dilution
No. Analysis Name CAS Number Result Detection Units Factor
Limit

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

#### Laboratory Chronicle

CAT				Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
01438	Alaska AK101 GRO (waters)	AK 101	1	04/10/2007 11:29	Linda C Pape	1
05382	EPA SW846/8260 (water)	SW-846 8260B	1	04/12/2007 13:48	Holly Berry	1
08202	EPA SW 846/8260 - Water	SW-846 8260B	1	04/12/2007 13:48	Holly Berry	1
01146	GC VOA Water Prep	SW-846 5030B	1	04/10/2007 11:29	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/12/2007 13:48	Holly Berry	1



Account Number: 11964

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Page 1 of 1

Lancaster Laboratories Sample No. WW 5022240

Wastewater-W-070403 Grab Water Sample Facility# Former Unocal 0207

FIA Gate 28/West Ramp - Fairbanks, AK Collected:04/03/2007 17:00 by JA

Submitted: 04/05/2007 09:20 Chevron

Reported: 05/07/2007 at 13:22 6001 Bollinger Canyon Rd L4310

Discard: 06/07/2007 San Ramon CA 94583

FIAWW SDG#: ALK24-07\*

				As Received		
CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
00430	Flash Point for Liquids	n.a.	No Flash Observed		Degrees F	1
	No flash observed below 169F.					
	Test flame extinguished at 149F.					
	Flash point was determined using	Pensky Marter	s closed cup appa	aratus.		
08079	HEM (oil & grease)	n.a.	9.2	1.4	mg/l	1
01588	BTEX					
01591	Benzene	71-43-2	0.01	0.001	mg/l	1
01592	Toluene	108-88-3	0.001	0.001	mg/1	1
01593	Ethylbenzene	100-41-4	0.03	0.001	mg/1	1
01723	Total xylenes	1330-20-7	0.06	0.002	mg/l	1

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

#### Laboratory Chronicle

CAT			2	Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
00430	Flash Point for Liquids	ASTM D93-90	1	04/12/2007 10:15	Susan A Engle	1
08079	HEM (oil & grease)	EPA 1664A	1	04/13/2007 06:59	Valerie J Trout	1
01588	BTEX	SW-846 8021B	1	04/10/2007 13:09	Linda C Pape	1
01146	GC VOA Water Prep	SW-846 5030B	1	04/10/2007 13:09	Linda C Pape	1



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Page 1 of 8

# Quality Control Summary

Client Name: Chevron Group Number: 1032391

Reported: 05/07/07 at 01:22 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method

### Laboratory Compliance Quality Control

Analysis Name	Blank <u>Result</u>	Blank <u>MDL</u>	Report <u>Units</u>	LCS <u>%REC</u>	LCSD %REC	LCS/LCSD <u>Limits</u>	RPD	RPD Max
Batch number: 070967050001A Lead	Sample N.D.	number(s): 0.00004 7		99		85-115		
Batch number: 071000002A	Sample	number(s):	5022234-50	22238				
C10- <c25 dro<="" td=""><td>N.D.</td><td>0.020</td><td>mg/l</td><td>76</td><td>76</td><td>75-125</td><td>0</td><td>20</td></c25>	N.D.	0.020	mg/l	76	76	75-125	0	20
C25-C36 RRO	N.D.	0.020	mg/l	82	82	60-120	0	20
Batch number: 07100A51A	Sample	number(s):	5022234-50	22240				
Alaska AK101 GRO (waters)	N.D.	0.01	mg/l	88	91	60-120	3	20
Alaska AK101 GRO (waters)	N.D.	0.01	mg/l	88	91	60-120	3	20
Benzene	N.D.	0.001	mg/l	96	108	86-119	12	30
Toluene	N.D.	0.001	mg/l	95	100	82-119	5	30
Ethylbenzene	N.D.	0.001	mg/l	97	101	81-119	4	30
Total xylenes	N.D.	0.002	mg/l	98	101	82-120	4	30
Batch number: 07102043001A	Sample	number(s):	5022240					
Flash Point for Liquids				100	101	97-103	1	4
Batch number: 07103807901A	Sample	number(s):	5022240					
HEM (oil & grease)	3.8	1.4	mg/l	96	91	78-114	5	20
Batch number: W071021AA	Sample	number(s):	5022238-50	22239				
Ethanol	N.D.	50.	ug/l	103		39-161		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	103		73-119		
di-Isopropyl ether	N.D.	0.5	ug/l	108		70-123		
Ethyl t-butyl ether	N.D.	0.5	ug/l	106		74-120		
t-Amyl methyl ether	N.D.	0.5	ug/l	102		79-113		
t-Butyl alcohol	N.D.	5.	ug/l	107		69-127		
Dichlorodifluoromethane	N.D.	2.	ug/l	100		26-157		
Chloromethane	N.D.	1.	ug/l	103		47-132		
Vinyl Chloride	N.D.	1.	ug/l	101		54-123		
Bromomethane	N.D.	1.	ug/l	89		47-129		
Chloroethane	N.D.	1.	ug/l	88		57-125		
Trichlorofluoromethane	N.D.	2.	ug/l	101		57-141		
1,1-Dichloroethene	N.D.	0.8	ug/l	110		76-122		
Methylene Chloride	N.D.	2.	ug/l	107		85-120		
trans-1,2-Dichloroethene	N.D.	0.8	ug/l	106		83-117		
1,1-Dichloroethane	N.D.	1.	ug/l	109		83-127		
2,2-Dichloropropane	N.D.	1.	ug/l	105		74-130		
cis-1,2-Dichloroethene	N.D.	0.8	ug/l	103		84-117		
Chloroform	N.D.	0.8	ug/l	105		86-124		
Bromochloromethane	N.D.	1.	ug/l	104		83-121		
1,1,1-Trichloroethane	N.D.	0.8	ug/l	106		83-127		
Carbon Tetrachloride	N.D.	1.	ug/l	103		77-130		
1,1-Dichloropropene	N.D.	1.	ug/l	104		84-116 78-119		
Benzene	N.D.	0.5	ug/l	105		78-119		

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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Page 2 of 8

# Quality Control Summary

Client Name: Chevron Group Number: 1032391

Reported: 05/07/07 at 01:22 PM

### Laboratory Compliance Quality Control

	Blank	Blank	Report	LCS	LCSD	LCS/LCSD		
Analysis Name	Result	MDL	Units	%REC	%REC	Limits	RPD	RPD Max
1,2-Dichloroethane	N.D.	0.5	ug/l	111	<u> </u>	77-132		
Trichloroethene	N.D.	1.	ug/l	104		87-117		
1,2-Dichloropropane	N.D.	1.	ug/l	105		80-117		
Dibromomethane	N.D.	1.	ug/l	101		87-117		
Bromodichloromethane	N.D.	1.	ug/l	106		83-121		
Toluene	N.D.	0.5	uq/l	104		85-115		
1,1,2-Trichloroethane	N.D.	0.8	ug/l	103		86-113		
Tetrachloroethene	N.D.	0.8	uq/l	100		74-125		
1,3-Dichloropropane	N.D.	1.	ug/l	102		84-119		
Dibromochloromethane	N.D.	1.	ug/l	106		78-119		
1,2-Dibromoethane	N.D.	0.5	ug/1	103		81-114		
Chlorobenzene	N.D.	0.8	ug/1	102		85-115		
1,1,1,2-Tetrachloroethane	N.D.	1.	ug/1	101		83-114		
		0.5				82-119		
Ethylbenzene	N.D.		ug/l	103				
m+p-Xylene	N.D.	0.5	ug/l	103		83-113		
o-Xylene	N.D.	0.5	ug/l	103		83-113		
Styrene	N.D.	1.	ug/l	97		82-111		
Bromoform	N.D.	1.	ug/l	94		69-118		
Isopropylbenzene	N.D.	1.	ug/l	101		80-120		
1,1,2,2-Tetrachloroethane	N.D.	1.	ug/l	102		72-119		
Bromobenzene	N.D.	1.	ug/l	102		82-110		
1,2,3-Trichloropropane	N.D.	1.	ug/l	103		78-117		
n-Propylbenzene	N.D.	1.	ug/l	105		78-119		
2-Chlorotoluene	N.D.	1.	ug/l	102		78-115		
1,3,5-Trimethylbenzene	N.D.	1.	ug/l	104		78-116		
4-Chlorotoluene	N.D.	1.	ug/l	105		80-112		
tert-Butylbenzene	N.D.	1.	ug/l	101		74-114		
1,2,4-Trimethylbenzene	N.D.	1.	uq/l	103		78-117		
sec-Butylbenzene	N.D.	1.	ug/l	105		72-120		
p-Isopropyltoluene	N.D.	1.	ug/l	105		72-118		
1,3-Dichlorobenzene	N.D.	1.	uq/l	103		81-114		
1,4-Dichlorobenzene	N.D.	1.	ug/l	102		84-116		
n-Butylbenzene	N.D.	1.	ug/l	104		75-120		
1,2-Dichlorobenzene	N.D.	1.	ug/l	103		81-112		
1,2-Dibromo-3-chloropropane	N.D.	2.	ug/l	96		62-128		
1,2,4-Trichlorobenzene	N.D.	1.	ug/l	102		65-114		
Hexachlorobutadiene	N.D.	2.	ug/l	100		62-119		
Naphthalene	N.D.	1.	ug/l	101		61-116		
1,2,3-Trichlorobenzene	N.D.	1.	ug/l	103		67-114		
Acetone	N.D.	6.	uq/l	134		32-200		
Carbon Disulfide	N.D.	1.	uq/l	109		69-119		
2-Butanone	N.D.	3.	ug/l	122		52-163		
trans-1,3-Dichloropropene	N.D.	1.	ug/l	96		79-114		
cis-1,3-Dichloropropene	N.D.	1.	uq/l	102		78-114		
4-Methyl-2-pentanone	N.D.	3.	uq/l	102		70-130		
2-Hexanone	N.D.	3.	ug/l	112		61-140		
2-Chloroethyl Vinyl Ether	N.D.	2.	ug/1	105		66-125		
Freon 113	N.D.	2.	ug/l	100		66-125		
110011 113	11.12.	2.	49/ 1	100		00 123		
Batch number: W071062AA	Sample nu	mber(s).	5022238					
Ethanol	N.D.	50.	uq/1	100		39-161		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	101		73-119		
di-Isopropyl ether	N.D.	0.5	ug/l	102		70-123		
Ethyl t-butyl ether	N.D.	0.5	ug/l	99		74-120		
t-Amyl methyl ether	N.D.	0.5	ug/l	99		79-113		
o imi i meenji eenei		3.5	49/ 1	,,				

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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Page 3 of 8

# Quality Control Summary

Client Name: Chevron Group Number: 1032391

Reported: 05/07/07 at 01:22 PM

### Laboratory Compliance Quality Control

	Blank	Blank	Report	LCS	LCSD	LCS/LCSD		
Analysis Name	Result	MDL —	<u>Units</u>	%REC	%REC	<u>Limits</u>	RPD	RPD Max
t-Butyl alcohol	N.D.	5.	ug/l	99		69-127		
Dichlorodifluoromethane	N.D.	2.	ug/l	59		26-157		
Chloromethane	N.D.	1.	ug/l	62		47-132		
Vinyl Chloride	N.D.	1.	ug/l	72		54-123		
Bromomethane	N.D.	1.	ug/l	72		47-129		
Chloroethane	N.D.	1.	ug/l	74		57-125		
Trichlorofluoromethane	N.D.	2.	ug/l	91		57-141		
1,1-Dichloroethene	N.D.	0.8	ug/l	109		76-122		
Methylene Chloride	N.D.	2.	ug/l	105		85-120		
trans-1,2-Dichloroethene	N.D.	0.8	ug/l	107		83-117		
1,1-Dichloroethane	N.D.	1.	ug/l	107		83-127		
2,2-Dichloropropane	N.D.	1.	ug/l	103		74-130		
cis-1,2-Dichloroethene	N.D.	0.8	ug/l	104		84-117		
Chloroform	N.D.	0.8	ug/l	107		86-124		
Bromochloromethane	N.D.	1.	ug/l	105		83-121		
1,1,1-Trichloroethane	N.D.	0.8	ug/l	108		83-127		
Carbon Tetrachloride	N.D.	1.	ug/l	107		77-130		
1,1-Dichloropropene	N.D.	1.	ug/l	107		84-116		
Benzene	N.D.	0.5	ug/l	105		78-119		
1,2-Dichloroethane	N.D.	0.5	ug/l	108		77-132		
Trichloroethene	N.D.	1.	ug/l	106		87-117		
1,2-Dichloropropane	N.D.	1.	ug/l	105		80-117		
Dibromomethane	N.D.	1.	ug/l	103		87-117		
Bromodichloromethane	N.D.	1.	ug/l	110		83-121		
Toluene	N.D.	0.5	ug/l	102		85-115		
1,1,2-Trichloroethane	N.D.	0.8	ug/l	100		86-113		
Tetrachloroethene	N.D.	0.8	ug/l	105		74-125		
1,3-Dichloropropane	N.D.	1.	ug/l	98		84-119		
Dibromochloromethane	N.D.	1.	ug/l	104		78-119		
1,2-Dibromoethane	N.D.	0.5	ug/l	100		81-114		
Chlorobenzene	N.D.	0.8	ug/l	100		85-115		
1,1,1,2-Tetrachloroethane	N.D.	1.	ug/l	99		83-114		
Ethylbenzene	N.D.	0.5	ug/l	100		82-119		
m+p-Xylene	N.D.	0.5	ug/l	101		83-113		
o-Xylene	N.D.	0.5	ug/l	101		83-113		
Styrene	N.D.	1.	ug/l	94		82-111		
Bromoform	N.D.	1.	ug/l	93		69-118		
Isopropylbenzene	N.D.	1.	ug/l	100		80-120		
1,1,2,2-Tetrachloroethane	N.D.	1.	ug/l	96		72-119		
Bromobenzene	N.D.	1.	ug/l	97		82-110		
1,2,3-Trichloropropane	N.D.	1.	ug/l	100		78-117		
n-Propylbenzene	N.D.	1.	ug/l	101		78-119		
2-Chlorotoluene	N.D.	1.	ug/l	96		78-115		
1,3,5-Trimethylbenzene	N.D.	1.	ug/l	99		78-116		
4-Chlorotoluene	N.D.	1.	ug/l	101		80-112		
tert-Butylbenzene	N.D.	1.	ug/l	97		74-114		
sec-Butylbenzene	N.D.	1.	ug/l	101		72-120		
p-Isopropyltoluene	N.D.	1.	ug/l	99		72-118		
1,3-Dichlorobenzene	N.D.	1.	ug/l	95		81-114		
1,4-Dichlorobenzene	N.D.	1.	ug/l	96		84-116		
n-Butylbenzene	N.D.	1.	ug/l	99		75-120		
1,2-Dichlorobenzene	N.D.	1.	ug/l	95		81-112		
1,2-Dibromo-3-chloropropane	N.D.	2.	ug/l	94		62-128		
1,2,4-Trichlorobenzene	N.D.	1.	ug/l	95		65-114		
Hexachlorobutadiene	N.D.	2.	ug/l	93		62-119		

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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Page 4 of 8

# Quality Control Summary

Group Number: 1032391 Client Name: Chevron

Reported: 05/07/07 at 01:22 PM

### Laboratory Compliance Quality Control

	Blank	Blank	Report	LCS	LCSD	LCS/LCSD		
<u>Analysis Name</u>	Result	MDL	<u>Units</u>	%REC	%REC	<u>Limits</u>	RPD	RPD Max
Naphthalene	N.D.	1.	ug/l	95		61-116		
1,2,3-Trichlorobenzene	N.D.	1.	ug/l	99		67-114		
Acetone	N.D.	6.	ug/l	168		32-200		
Carbon Disulfide	N.D.	1.	ug/l	100		69-119		
2-Butanone	N.D.	3.	ug/l	128		52-163		
trans-1,3-Dichloropropene	N.D.	1.	ug/l	94		79-114		
cis-1,3-Dichloropropene	N.D.	1.	ug/l	100		78-114		
4-Methyl-2-pentanone	N.D.	3.	ug/l	100		70-130		
2-Hexanone	N.D.	3.	ug/l	109		61-140		
2-Chloroethyl Vinyl Ether	N.D.	2.	ug/l	105		66-125		
Freon 113	N.D.	2.	uq/l	98		66-125		

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD <u>Limits</u>	RPD	RPD <u>MAX</u>	BKG Conc	DUP Conc	DUP RPD	Dup RPD <u>Max</u>
Batch number: 070967050001A Lead	Sample 100	number	(s): 5022238 70-130	UNSPK	: 50222	38 BKG: 502 0.00062	2238 0.00062	1 (1)	20
Batch number: 07100A51A Alaska AK101 GRO (waters) Alaska AK101 GRO (waters) Benzene Toluene Ethylbenzene Total xylenes	Sample 101 101 99 103 105 107	number	(s): 5022234 60-120 60-120 78-131 78-129 75-133 84-131	-502224	10 UNSP	K: 5022234,	5022237		
Batch number: 07102043001A Flash Point for Liquids	Sample	number	(s): 5022240	BKG:	P02386	0 147.	147.	0 (1)	20
Batch number: W071021AA Ethanol Methyl Tertiary Butyl Ether di-Isopropyl ether Ethyl t-butyl ether t-Amyl methyl ether t-Butyl alcohol Dichlorodifluoromethane Chloromethane Vinyl Chloride Bromomethane Trichlorofluoromethane 1,1-Dichloroethene Methylene Chloride trans-1,2-Dichloroethene 1,1-Dichloroethane 2,2-Dichloropropane cis-1,2-Dichloroethene	107 110 111 111 107 106 118 112 114 91 92 118 132 118 132 118	99 106 106 103 102 112 109 109 108 89 90 110 125 113 116 111	(s): 5022238 41-159 69-127 68-129 78-119 72-125 64-130 31-185 46-149 54-143 52-141 56-140 64-165 87-145 79-133 82-133 85-135 79-146	7 4 5 7 4 5 7 3 5 1 3 7 5 5 5 4 6 6 3 6 6 3 6 6 6 6 6 6 6 6 6 6 6 6 6	30 30 30 30 30 30 30 30 30 30 30 30 30 3	K: P020845			
cis-1,2-Dichloroethene Chloroform	116 114	109 109	83-126 83-139	6 4	30 30				

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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Page 5 of 8

# Quality Control Summary

Client Name: Chevron Group Number: 1032391

Reported: 05/07/07 at 01:22 PM

### Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike Background (BKG) = the sample used in conjunction with the duplicate

	MS	MSD	MS/MSD		RPD	BKG	DUP	DUP	Dup RPD
Analysis Name	%REC	%REC	Limits	RPD	MAX	Conc	Conc	RPD	Max
Bromochloromethane	116	110	82-129	5	30	·			
1,1,1-Trichloroethane	120	115	81-142	4	30				
Carbon Tetrachloride	122	115	82-149	5	30				
1,1-Dichloropropene	119	115	86-134	4	30				
Benzene	116	110	83-128	5	30				
1,2-Dichloroethane	113	108	70-143	5	30				
Trichloroethene	115	111	83-136	4	30				
1,2-Dichloropropane	112	109	83-129	3	30				
Dibromomethane	110	105	82-128	5	30				
Bromodichloromethane	116	109	80-129	7	30				
Toluene	115	111	83-127	4	30				
1,1,2-Trichloroethane	111	105	77-125	5	30				
Tetrachloroethene	114	107	78-133	6	30				
1,3-Dichloropropane	106	103	82-121	3	30				
Dibromochloromethane	115	110	82-119	4	30				
1,2-Dibromoethane	111	106	78-120	4	30				
Chlorobenzene	113	108	83-120	4	30				
1,1,1,2-Tetrachloroethane	112	106	83-119	5	30				
Ethylbenzene	115	110	82-129	4	30				
m+p-Xylene	115	110	82-130	5	30				
o-Xylene	115	110	82-130	4	30				
Styrene	109	103	69-131	5	30				
Bromoform	102	97	64-119	5	30				
Isopropylbenzene	115	110	81-130	4	30				
1,1,2,2-Tetrachloroethane	110	104	73-121	5	30				
Bromobenzene	116	108	83-121	7	30				
1,2,3-Trichloropropane	112	105	73-125	6	30				
n-Propylbenzene	118	113	74-138	5	30				
2-Chlorotoluene	115	108	78-121	6	30				
1,3,5-Trimethylbenzene	117	110	77-124	6	30				
4-Chlorotoluene	118	108	81-123	8	30				
tert-Butylbenzene	119	111	76-128	7	30				
1,2,4-Trimethylbenzene	115	109	80-125	5	30				
sec-Butylbenzene	121	112	73-137	8	30				
p-Isopropyltoluene	120	112	72-128	7	30				
1,3-Dichlorobenzene	115	107	79-123	7	30				
1,4-Dichlorobenzene	113	106	81-122	7	30				
n-Butylbenzene	118	111	73-134	6	30				
1,2-Dichlorobenzene	113	108	82-117	4	30				
1,2-Dibromo-3-chloropropane	105	100	52-137	5	30				
1,2,4-Trichlorobenzene	114	108	60-121	5	30				
Hexachlorobutadiene	114	106	51-135	7	30				
Naphthalene	112	105	50-124	6	30				
1,2,3-Trichlorobenzene	113	107	65-127	6	30				
Acetone	107	93	48-143	14	30				
Carbon Disulfide	128	121	74-135	6	30				
2-Butanone	103	100	57-137	3	30				
trans-1,3-Dichloropropene	104	100	77-123	4	30				
cis-1,3-Dichloropropene	107	102	80-126	5	30				
4-Methyl-2-pentanone	103	100	68-133	3	30				
2-Hexanone	103	101	60-135	3	30				
2-Chloroethyl Vinyl Ether	0*	0*	1-156	0	30				
Freon 113	123	114	78-146	8	30				
110011 113	147	114	10-T40	U	20				

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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Page 6 of 8

Dup RPD

DUP

# Quality Control Summary

Client Name: Chevron Group Number: 1032391

MSD

MS/MSD

Reported: 05/07/07 at 01:22 PM

### Sample Matrix Quality Control

BKG

DUP

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike Background (BKG) = the sample used in conjunction with the duplicate

MS

Analysis Name	MS %REC	%REC	MS/MSD <u>Limits</u>	RPD	MAX	<u>Conc</u>	Conc	RPD	Max
Batch number: W071062AA	Sample	number	(s): 502223	8 UNSPK	: P029	052			
Ethanol	105	106	41-159	1	30				
Methyl Tertiary Butyl Ether	100	100	69-127	1	30				
di-Isopropyl ether	103	105	68-129	2	30				
Ethyl t-butyl ether	98	100	78-119	2	30				
t-Amyl methyl ether	99	100	72-125	1	30				
t-Butyl alcohol	104	106	64-130	2	30				
Dichlorodifluoromethane	61	62	31-185	1	30				
Chloromethane	65	66	46-149	1	30				
Vinyl Chloride	75	75	54-143	0	30				
Bromomethane	72	74	52-141	3	30				
Chloroethane	76	77	56-140	1	30				
Trichlorofluoromethane	95	96	64-165	1	30				
1,1-Dichloroethene	113	116	87-145	2	30				
Methylene Chloride	106	107	79-133	1	30				
trans-1,2-Dichloroethene	111	111	82-133	1	30				
1,1-Dichloroethane	110	111	85-135	1	30				
2,2-Dichloropropane	108	109	79-146	1	30				
cis-1,2-Dichloroethene	105	107	83-126	2	30				
Chloroform	112	112	83-139	0	30				
Bromochloromethane	107	109	82-129	1	30				
				1					
1,1,1-Trichloroethane Carbon Tetrachloride	112 115	113	81-142	2	30 30				
		116	82-149	0					
1,1-Dichloropropene	111	111	86-134	-	30				
Benzene	107	109	83-128	2	30				
1,2-Dichloroethane	110	111	70-143	1	30				
Trichloroethene	107	108	83-136	1	30				
1,2-Dichloropropane	107	108	83-129	2	30				
Dibromomethane	102	106	82-128	3	30				
Bromodichloromethane	109	112	80-129	3	30				
Toluene	109	112	83-127	3	30				
1,1,2-Trichloroethane	105	108	77-125	3	30				
Tetrachloroethene	105	107	78-133	1	30				
1,3-Dichloropropane	103	107	82-121	4	30				
Dibromochloromethane	111	114	82-119	2	30				
1,2-Dibromoethane	105	105	78-120	0	30				
Chlorobenzene	107	110	83-120	3	30				
1,1,1,2-Tetrachloroethane	106	109	83-119	2	30				
Ethylbenzene	107	110	82-129	3	30				
m+p-Xylene	109	110	82-130	1	30				
o-Xylene	107	109	82-130	2	30				
Styrene	96	99	69-131	3	30				
Bromoform	95	100	64-119	5	30				
Isopropylbenzene	106	108	81-130	1	30				
1,1,2,2-Tetrachloroethane	103	104	73-121	1	30				
Bromobenzene	104	105	83-121	1	30				
1,2,3-Trichloropropane	105	104	73-125	1	30				
n-Propylbenzene	109	110	74-138	1	30				
2-Chlorotoluene	104	106	78-121	1	30				
1,3,5-Trimethylbenzene	105	107	77-124	2	30				
4-Chlorotoluene	109	110	81-123	1	30				
tert-Butylbenzene	106	105	76-128	0	30				
CCIC DUCYIDONZONO	100	100	, 0 120	U	50				

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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Page 7 of 8

### Quality Control Summary

Client Name: Chevron Group Number: 1032391

Reported: 05/07/07 at 01:22 PM

#### Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike Background (BKG) = the sample used in conjunction with the duplicate

	MS	MSD	MS/MSD		RPD	BKG	DUP	DUP	Dup RPD
<u>Analysis Name</u>	%REC	%REC	<u>Limits</u>	RPD	MAX	Conc	Conc	RPD	<u>Max</u>
sec-Butylbenzene	106	107	73-137	1	30				
p-Isopropyltoluene	105	107	72-128	2	30				
1,3-Dichlorobenzene	102	104	79-123	2	30				
1,4-Dichlorobenzene	103	105	81-122	3	30				
n-Butylbenzene	104	104	73-134	0	30				
1,2-Dichlorobenzene	101	103	82-117	2	30				
1,2-Dibromo-3-chloropropane	98	99	52-137	1	30				
1,2,4-Trichlorobenzene	98	98	60-121	0	30				
Hexachlorobutadiene	78	78	51-135	0	30				
Naphthalene	100	101	50-124	1	30				
1,2,3-Trichlorobenzene	100	101	65-127	1	30				
Acetone	94	84	48-143	12	30				
Carbon Disulfide	103	107	74-135	4	30				
2-Butanone	101	101	57-137	0	30				
trans-1,3-Dichloropropene	100	101	77-123	1	30				
cis-1,3-Dichloropropene	99	101	80-126	1	30				
4-Methyl-2-pentanone	99	102	68-133	2	30				
2-Hexanone	103	103	60-135	0	30				
2-Chloroethyl Vinyl Ether	0*	0*	1-156	0	30				
Freon 113	104	107	78-146	2	30				

### Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TPH-DRO/RRO (AK) water Batch number: 071000002A Orthoterphenvl

Datell Hulli	DEI: 0/1000002A	
	Orthoterphenyl	n-Triacontane-d62
5022234	81	83
5022235	131	98
5022236	80	93
5022237	83	79
5022238	102	97
Blank	94	83
LCS	86	87
LCSD	88	92
Limits:	50-150	50-150
Analysis N		
Batch numb	per: 07100A51A	
	Trifluorotoluene-F	Trifluorotoluene-P
5022234	104	95
5022235	134*	113
5022236	140*	108
5022237	106	99
5022238	105	79

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



78-113

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77-113

Page 8 of 8

# Quality Control Summary

	me: Chevron 05/07/07 at 01:22 PM		mber: 1032391	
nopologa.	00,00,00 00 01022 11		ality Control	
5022239	106		-	
5022240		94		
Blank	107	98		
LCS	115	99		
LCSD	114	100		
MS	116	98		
Limits:	60-120	69-129		
Analysis Nam Batch number				
	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5022239	86	87	86	82
Blank	86	87	89	83
LCS	87	86	89	86
MS	89	89	87	85
MSD	88	89	88	85
Limits:	80-116	77-113	80-113	78-113
Analysis Nam Batch number	ne: EPA SW846/8260 (water)			
	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5022238	92	90	88	89
Blank	89	90	87	85
LCS	91	88	89	89
MS	89	87	91	87
MSD	89	91	92	86

80-113

Limits:

80-116

<sup>\*-</sup> Outside of specification

<sup>(1)</sup> The result for one or both determinations was less than five times the LOQ.

<sup>(2)</sup> The background result was more than four times the spike added.

# Chevron Generic Analysis Request/Chain of Custody

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Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300 Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

Temperature Upon Receipt 6-3-1

Other.

Disk --



TO:

**Our Valued Clients** 

SUBJECT: Method Update Rule

Background:

On March 12, 2007, the USEPA published a revision to the Code of Federal Regulations at 40 CFR 136 and 40 CFR 141 in the Federal Register. This Method Update Rule (MUR) contains revised approved methods tables and revised sample collection, preservation and holding time requirements, affecting the testing requirement for both non-potable and drinking water. This Method Update Rule is a final ruling and became effective on April 11, 2007.

A copy of the Method Update Rule is available online: http://www.epa.gov/fedrgstr/EPA-WATER/2007/March/Day-12/w1073.pdf.

#### Action:

Lancaster Laboratories, Inc. has performed a thorough review of the MUR and has systems in place to analyze samples by the compliant method. In most cases, these methods are being replaced by equivalent methods using the same testing techniques. It is important that you review all of your NPDES Permits and other regulatory mandates to determine if you are required to use one of the outdated (removed) methods. You may continue to use these methods ONLY if you provide a copy of the permit/regulatory mandate to the laboratory to be kept on file. If the requested documentation has not been submitted to Lancaster Laboratories by June 1, 2007, your samples will be analyzed and reported by a method that is listed in the current MUR.

Please contact your Client Service Representative to request a change to the approved methods prior to June 1, 2007.

Please contact your Client Service Representative if you need assistance.

Thank you.

Lancaster Laboratories, Inc. **Environmental Client Services** 

**April 2007** 

# Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	BMQL	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	MPN	Most Probable Number
IU	International Units	CP Units	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	NTU	nephelometric turbidity units
С	degrees Celsius	F	degrees Fahrenheit
Cal	(diet) calories	lb.	pound(s)
meq	milliequivalents	kg	kilogram(s)
g	gram(s)	mg	milligram(s)
ug	microgram(s)	I	liter(s)
ml	milliliter(s)	ul	microliter(s)
m3	cubic meter(s)	fib >5 um/ml	fibers greater than 5 microns in length per ml

- < less than The number following the sign is the <u>limit of quantitation</u>, the smallest amount of analyte which can be reliably determined using this specific test.
- > greater than
- ppm parts per million One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

**Inorganic Qualifiers** 

- ppb parts per billion
- **Dry weight**Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

•	lifier	(uu	9	 u	, ı ç	٠,

A B C D E	TIC is a possible aldol-condensation product Analyte was also detected in the blank Pesticide result confirmed by GC/MS Compound quatitated on a diluted sample Concentration exceeds the calibration range of the instrument	B E M N S	Value is <crdl, (msa)="" additions="" amount="" but="" calculation<="" control="" due="" duplicate="" estimated="" for="" injection="" interference="" limits="" met="" method="" not="" of="" precision="" spike="" standard="" th="" to="" used="" within="" ≥idl=""></crdl,>
J	Estimated value	U	Compound was not detected
N	Presumptive evidence of a compound (TICs only)	W	Post digestion spike out of control limits
Р	Concentration difference between primary and	*	Duplicate analysis not within control limits
	confirmation columns >25%	+	Correlation coefficient for MSA < 0.995
U	Compound was not detected		
X,Y,Z	Defined in case narrative		

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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# **Laboratory Data Review Checklist**

# 1. <u>Laboratory</u> a. Did an ADEC CS approved laboratory receive and <u>perform</u> all of the submitted sample analyses? Yes O No Comments: b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved? Comments: O Yes $\bigcirc$ No NA 2. Chain of Custody (COC) a. COC information completed, signed, and dated (including released/received by)? Comments: Yes O No b. Correct analyses requested? Yes Comments: O No 3. <u>Laboratory Sample Receipt Documentation</u> a. Sample/cooler temperature documented and within range at receipt $(4^{\circ} \pm 2^{\circ} \text{ C})$ ? Comments: Yes O No b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)? Yes Comments: $\bigcirc$ No c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)? Yes Comments: O No

NA  Case Narrative  a. Present and  Yes	understandable?  O No  es, errors or QC failure  O No	Comments:
NA  Case Narrative  a. Present and  Yes  b. Discrepanci	understandable?  ○ No  es, errors or QC failure	Comments:
a. Present and  Yes  b. Discrepanci	○ No es, errors or QC failure	Comments:
Case Narrative  a. Present and  Yes  b. Discrepanci	○ No es, errors or QC failure	
a. Present and  Yes  b. Discrepanci	○ No es, errors or QC failure	
• Yes b. Discrepanci	○ No es, errors or QC failure	
b. Discrepanci	es, errors or QC failure	
-	· ·	es identified by the lab?
		Comments:
No Discrepancies	1	
c. Were all con	rective actions docume  O No	ented? Comments:
NA		
d. What is the	effect on data quality/u	usability according to the case narrative?  Comments:
NA		
Samples Results		
a. Correct anal	yses performed/reporte	ed as requested on COC?
• Yes	○ No	Comments:
b. All applicat  • Yes	ole holding times met?	Comments:
c. All soils rep O Yes	orted on a dry weight b	basis? Comments:

4.

5.

	• Yes	○ No	Comments:
e. ]	Data quality	y or usability affect	<u> </u>
			Comments:
NA			
C Sam	<u>iples</u>		
a. N	Method Bla	ınk	
	i. One me	thod blank reported	d per matrix, analysis and 20 samples?
	Yes	O No	Comments:
		thod blank results l	
	• Yes	O No	Comments:
	iii. If abov	e POL, what samp	oles are affected?
	iii. If abov	e PQL, what samp	oles are affected?  Comments:
NA	iii. If abov	e PQL, what samp	
NA			Comments:
NA	iv. Do the	affected sample(s)	Comments:  have data flags? If so, are the data flags clearly defined?
			Comments:
NA NA	iv. Do the	affected sample(s)	Comments:  have data flags? If so, are the data flags clearly defined?
	iv. Do the	affected sample(s)	Comments:  have data flags? If so, are the data flags clearly defined?  Comments:
	iv. Do the	affected sample(s)	Comments:  have data flags? If so, are the data flags clearly defined?  Comments:
	iv. Do the	affected sample(s)	Comments:  have data flags? If so, are the data flags clearly defined?  Comments:  ffected? Explain.
NA NA	iv. Do the O Yes v. Data qu	affected sample(s)  O No  nality or usability a	Comments:  have data flags? If so, are the data flags clearly defined?  Comments:  ffected? Explain.
NA NA	iv. Do the C Yes v. Data qu	affected sample(s)  O No  nality or usability at Control Sample/D	Comments:  have data flags? If so, are the data flags clearly defined?  Comments:  ffected? Explain.  Comments:
NA NA	iv. Do the C Yes v. Data qu	affected sample(s)  O No  nality or usability at Control Sample/D	Comments:  have data flags? If so, are the data flags clearly defined? Comments:  ffected? Explain. Comments:
NA NA	iv. Do the O Yes  v. Data qu  Laboratory i. Organic	affected sample(s)  O No  nality or usability at the control Sample/D s - One LCS/LCSI	Comments:  have data flags? If so, are the data flags clearly defined? Comments:  ffected? Explain. Comments:  cuplicate (LCS/LCSD)  D reported per matrix, analysis and 20 samples?
NA NA	iv. Do the O Yes  v. Data qu  Laboratory i. Organic • Yes	affected sample(s)  O No  nality or usability at the control Sample/D s - One LCS/LCSE O No	Comments:  have data flags? If so, are the data flags clearly defined? Comments:  ffected? Explain. Comments:  cuplicate (LCS/LCSD)  D reported per matrix, analysis and 20 samples?

	<ul><li>Yes</li></ul>	O No	%; all other analyses see the laboratory QC pages)  Comments:
			Comments.
	limits? And	•	cent differences (RPD) reported and less than method or laboratory DQOs, if applicable. (AK Petroleum methods 20%; all other analyses Comments:
	v. If %R or	RPD is outside of	acceptable limits, what samples are affected?  Comments:
NA			
	vi. Do the a	affected samples(s)  O No	have data flags? If so, are the data flags clearly defined?  Comments:
NA			
	vii. Data qu	nality or usability a	ffected? Explain. Comments:
NA			
	. Surrogates -	Organics Only	
		Organics Only gate recoveries rep  O No	ported for organic analyses - field, QC and laboratory samples?  Comments:
	i. Are surro	gate recoveries rep	
	i. Are surro Yes  ii. Accurac project spec	egate recoveries rep	
c.	i. Are surro Yes  ii. Accurac project specthe laborate Yes	y - All percent recordified DQOs, if approxy report pages)	Comments:  overies (%R) reported and within method or laboratory limits? And plicable. (AK Petroleum methods 50-150 %R; all other analyses see  Comments:
c.	i. Are surro Yes  ii. Accuracy project specthe laborate  Yes  ch 07100A51A	egate recoveries rep  O No  y - All percent reco cified DQOs, if app ory report pages)  No  A (BTEX Analysis) sample results with	Comments:  overies (%R) reported and within method or laboratory limits? And plicable. (AK Petroleum methods 50-150 %R; all other analyses see  Comments:

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And

iv. Data quality or usability affected? Explain. Comments: Quality/Usability not affected d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil i. One trip blank reported per matrix, analysis and cooler? Yes Comments: O No ii. All results less than PQL? Comments: • Yes O No iii. If above PQL, what samples are affected? Comments: NA iv. Data quality or usability affected? Explain. Comments: NA e. Field Duplicate i. One field duplicate submitted per matrix, analysis and 10 project samples? Yes Comments:  $\bigcirc$  No ii. Submitted blind to lab? O Yes Comments: No iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil) RPD (%) = Absolute Value of:  $(R_1 - R_2)_{x = 100}$  $((R_{1+} R_2)/2)$ Where  $R_1$  = Sample Concentration

 $R_2$  = Field Duplicate Concentration

O No

• Yes

Comments:

	-	ality or usabilit	•			
	O Yes	O No	(	Comments:		
NA						
f. I	Decontamina	ation or Equipn	nent Blank (if a	pplicable)		
(	O Yes	○No •	Not Applicable	e		
	i. All result	ts less than PQI	2.?			
	O Yes	O No		Comments:		
NA						
	ii. If above	PQL, what san				
NT A				Comments:		
NA						
	iii. Data qu	ality or usabilit	y affected? Ex	olain.		
		•	(	Comments:		
NA						
Other D	ata Flags/Q	ualifiers (ACOI	E, AFCEE, Lab	Specific, etc.)		
a. I	Defined and	appropriate?				
	O Yes	O No		Comments:		
NA						
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ele: Pro	ject Engine	er in Training			Date:	May 23, 2007
Report N	Name:				Re	eport Date:
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boratory 1	Name: Lanc	aster Laborator	ries	Laboratory Repor	rt Number: 1	032391-306443
EC File	Number: 10	00.26.040	ADEC	RecKey Number:		

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