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STRATUS
ENVIRONMENTAL, INC.

3330 Cameron Park Drive, Ste 550
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DH

April 15, 2003
Project No. 2007-0057-01

Alameda County
APR 18 2003
Environmental Health

~~Mr. Barney Chan~~
Alameda County Health Agency
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Re: Quarterly Groundwater Monitoring Report, First Quarter 2003, for USA Service Station No. 57, Located at 10700 MacArthur Boulevard, Oakland, California

Dear Mr. Chan:

Stratus Environmental, Inc. (Stratus) is submitting the attached report which presents the results of the first quarter 2003 quarterly monitoring and sampling program on behalf of USA Gasoline Corporation (USA) for the former USA Service Station No. 57, located at 10700 MacArthur Boulevard, Oakland, California. This report is in compliance with California Regional Water Quality Control Board requirements for underground storage tank investigations.

If you have any questions regarding this report, please contact Gowri Kowtha at (530) 676-6001.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

REGISTERED GEOLOGIST
STEPHEN J. CARTER
No. 5577
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
GOWRI SHANKAR KOWTHA
No. C 63413
Exp. 9/30/06
CIVIL
STATE OF CALIFORNIA

Stephen J. Carter, R.G.
Senior Project Supervisor

Gowri S. Kowtha, P.E.
Project Manager

Attachment: Quarterly Groundwater Monitoring Report, First Quarter 2003

cc: Mr. Charles Miller, USA Gasoline Corporation

Date April 15, 2003

USA GASOLINE QUARTERLY GROUNDWATER MONITORING REPORT

Facility No: 57 Address: 10700 MacArthur Blvd., Oakland, California

USA Gasoline Project Supervisor: Charles Miller

Consulting Co./Contact Person: Stratus Environmental, Inc./ Gowri Kowtha, P.E.

Consultant Project No: 2007-0057-01

Primary Agency/Regulatory ID No: Barney Chan, Alameda County Health Agency / 4490

WORK PERFORMED THIS QUARTER (First 2003):

1. Stratus measured groundwater elevations and collected groundwater samples from wells S-1, S-2, MW-4, MW-7, and MW-8 on January 9, 2003. Well MW-5 was damaged and could not be sampled.

2. Stratus compiled and evaluated groundwater monitoring data.

WORK PROPOSED FOR NEXT QUARTER (Second 2003):

1. The next sampling event is tentatively scheduled for April 2003. Groundwater samples will be collected for laboratory analysis from wells S-1, S-2, MW-4, MW-5, MW-7, and MW-8.

2. Groundwater samples will be analyzed for total petroleum hydrocarbons as gasoline (TPHG) and as diesel (TPHD) using U.S. Environmental Protection Agency Method (EPA) Method SW8015B/DHS Luft Manual, and for benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tertiary butyl ether (MTBE), tertiary butyl alcohol (TBA), ethyl tertiary butyl ether (ETBE), di-isopropyl ether (DIPE), and tertiary amyl methyl ether (TAME) using EPA Method SW8260B.

Current Phase of Project:	Monitoring
Frequency of Groundwater Sampling:	All Wells = Quarterly
Frequency of Groundwater Monitoring:	Quarterly
Groundwater Sampling Date:	January 9, 2003
Is Free Product (FP) Present on Site:	No
FP Recovered This Quarter:	No
Cumulative FP Recovered to Date:	NA
Approximate Depth to Groundwater:	11.00 to 20.37 feet below top of well casing
Groundwater Flow Direction:	Radial flow
Groundwater Gradient:	0.057 to 0.086 ft/ft

DISCUSSION:

At the time of the first quarter monitoring event, groundwater was encountered in the monitoring wells at depths ranging from 11.00 to 20.37 feet below ground surface (bgs). Groundwater elevations increased between 1.05 and 3.24 feet in the monitoring wells since the November 19, 2002, monitoring event. Depth-to-water measurements were corrected to mean sea level (MSL) and used to construct a groundwater elevation contour map (Figure 2). The groundwater flow direction on January 9, 2003, was calculated to be radial inward around the pump islands at average gradients of 0.057 to 0.086 ft/ft.

The highest concentrations of TPHG (16,000 µg/L), benzene (120 µg/L), and MTBE (270 µg/L) were detected in well S-2. TPHG was also detected in well S-1, and MTBE was also detected in wells S-1 and MW-7. The oxygenate compounds TAME, DIPE, ETBE, or TBA were not detected in any of the wells. Concentrations detected during the first quarter 2003 are generally consistent with historical analytical data. Analytical results of TPHG, benzene, and MTBE for groundwater samples collected on January 9, 2003, are presented in Figure 3.

ATTACHMENTS:

- Table 1 Groundwater Elevation and Analytical Summary
- Table 2 Groundwater Analytical Results for Oxygenates
- Figure 1 Site Location Map
- Figure 2 Groundwater Elevation Contour Map (First Quarter 2003)
- Figure 3 Groundwater Analytical Summary (First Quarter 2003)
- Appendix A Field Data Sheets
- Appendix B Sampling and Analysis Procedures
- Appendix C Certified Analytical Reports and Chain-of-Custody Documentation

TABLE 1

GROUNDWATER
ELEVATION AND ANALYTICAL SUMMARY

Former USA Station No. 57

10700 MacArthur Blvd., Oakland, California

Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	TPHG (µg/L)	TPHD (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
S-1	03/03/95	13.10	74.74	61.64	910	5,900	260	7.6	16	14	NA
	07/24/95	12.35		62.39	NA	NA	NA	NA	NA	NA	NA
	11/22/95	19.30	78.68	59.38	460	6100	13	0.69	0.99	1.1	460*
	12/06/95	19.59		59.09	NA	NA	NA	NA	NA	NA	NA
	01/04/96	19.52		59.16	NA	NA	NA	NA	NA	NA	NA
	01/31/97	15.07		63.61	1,100	200	11	6	3	6	200*
	10/10/97	18.90		59.78	530	2,000	<0.5	2.1	<0.5	<2	230*
	01/20/98	16.79		61.89	1,800	200	<0.5	<0.5	1.5	10	87*
	04/28/98	8.37		70.31	130	7,300	1.9	3.2	<0.5	<0.5	310*
	07/31/98	11.61		67.07	310	2,000	0.54	4.6	3.8	0.82	280*
	11/02/98	15.28		63.40	1,000	1,200	<0.5	9.5	1.6	9.1	100
	06/10/99	14.35		64.33	660	150	0.99	<0.5	<0.5	2.4	80*[1]
	10/18/00	17.56		61.12	<50	330	<0.5	0.93	<0.5	<0.5	44
	03/12/02	16.29		62.39	500	<50	2.8	4.8	0.79	4.4	63
	11/19/02	19.53		59.15	190	NA	<0.50	<0.50	<0.50	<0.50	190
	01/09/03	18.14		60.54	510	NA	1.1	<0.50	0.52	<0.50	11

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Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	TPHG (µg/L)	TPHD (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
S-2	03/03/95	15.39	76.86	61.47	24,000	6,000	1,900	440	600	2,500	NA
	07/24/95	14.47		62.39	NA	NA	NA	NA	NA	NA	NA
	11/22/95	21.52	80.93	59.41	NA	NA	NA	NA	NA	NA	NA
	12/06/95	21.78		59.15	NA	NA	NA	NA	NA	NA	NA
	01/04/96	21.75		59.18	NA	NA	NA	NA	NA	NA	NA
	01/31/97	17.25		63.68	NA	NA	NA	NA	NA	NA	NA
	10/10/97	21.21		59.72	13,000	<50	260	38	190	280	600*
	01/20/98	19.07		61.86	1,900	2300	4.6	6.3	<0.5	4.6	190*
	04/28/98	10.47		70.46	22,000	<100	980	160	320	680	570*
	07/31/98	13.71		67.22	160,000	<50	950	290	550	1,700	550*
	11/02/98	17.31		63.62	14,000	<500	170	70	170	230	490*
	06/10/99	16.48		64.45	17,000	<50	650	230	<25	750	490*[1]
	10/18/00	19.70		61.23	4,400	<50	2	64	5.1	12	270
	03/12/02	18.56		62.37	5,100	660	62	44	52	78	430
	11/19/02	21.70		59.23	26,000	NA	1,400	180	520	340	750
	01/09/03	20.37		60.56	16,000	NA	120	32	76	214	270

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ELEVATION AND ANALYTICAL SUMMARY

Former USA Station No. 57

10700 MacArthur Blvd., Oakland, California

Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	TPHG (µg/L)	TPHD (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-3	03/03/95	13.99	76.30	62.31	2,500	1,600	540	92	36	200	NA
	07/24/95	13.33		62.97	NA	NA	NA	NA	NA	NA	NA
	11/22/95	20.94	80.32	59.38	14,000	5,400	5,700	230	430	650	820*
	12/06/95	17.48		62.84	NA	NA	NA	NA	NA	NA	NA
	01/04/96	20.01		60.31	NA	NA	NA	NA	NA	NA	NA
	01/31/97	16.63		63.69	1,100	<50	130	8	5	5	NA
	10/10/97	20.62		59.70	3,400	1,100	830	4	100	<10	160*
	01/20/98	15.40		64.92	3,900	550	7.9	4.1	<0.5	3.7	<5.0*
	04/28/98	10.51		69.81	800	1,000	82	5.2	5.7	5.4	240*
	07/31/98	13.46		66.86	2,200	610	510	7.6	16	5.27	310*
	11/02/98	17.11		63.21	4,900	1,600	220	16	13	13.7	180*
	06/10/99	15.24		65.08	1,000	120	<0.5	<0.5	<0.5	1.1	120*[1]
	10/18/00	15.41		64.91	<50	<50	<0.5	<0.5	<0.5	<0.5	12

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Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	TPHG (µg/L)	TPHD (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-4	11/22/95	14.99	76.42	61.43	<50	200	<0.5	1.5	<0.5	1.7	6.4*
	12/06/95	11.21		65.21	NA	NA	NA	NA	NA	NA	NA
	01/04/96	14.62		61.80	NA	NA	NA	NA	NA	NA	NA
	01/31/97	8.18		68.24	<50	<50	<0.5	2	<0.5	2	11*
	10/10/97	14.14		62.28	<50	<50	<0.5	<0.5	<0.5	<2	<5.0*
	01/20/98	7.05		69.37	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	04/28/98	5.88		70.54	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	07/31/98	8.40		68.02	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	11/02/98	16.08		60.34	NA	NA	NA	NA	NA	NA	NA
	06/10/99	14.81		61.61	NA	NA	NA	NA	NA	NA	NA
	10/18/00	12.71		63.71	<50	<50	<0.5	0.59	0.82	0.53	<5.0*
	03/12/02	8.92		67.50	<50	<50	<0.5	0.61	0.72	2.5	1.8
	11/19/02	13.24		63.18	<50	NA	<0.50	<0.50	<0.50	<0.50	<0.50
	01/09/03	11.00		65.42	<50	NA	<0.50	<0.50	<0.50	<0.50	<0.50

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Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	TPHG (µg/L)	TPHD (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-5	11/22/95	19.56	80.52	60.96	<50	280	<0.5	1.8	<0.5	3	2.2*
	12/06/95	15.84		64.68	NA	NA	NA	NA	NA	NA	NA
	01/04/96	19.36		61.16	NA	NA	NA	NA	NA	NA	NA
	01/31/97	13.31		67.21	80	<50	<0.5	0.6	<0.5	2	6*
	10/10/97	17.80		62.72	<50	<50	<0.5	<0.5	<0.5	<2	<5*
	01/20/98	12.58		67.94	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	04/28/98	9.45		71.07	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	07/31/98	7.38		73.14	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	11/02/98	15.98		64.54	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0*
	06/10/99	14.60		65.92	NA	NA	NA	NA	NA	NA	NA
	10/18/00	17.77		62.75	<50	<50	<0.5	0.75	<0.5	0.79	28
	03/12/02	15.72		64.80	<50	<50	<0.5	<0.5	<0.5	<0.5	
	11/19/02	NM		NM				Well Damaged			
	01/09/03	NM		NM				Well Damaged			

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GROUNDWATER
ELEVATION AND ANALYTICAL SUMMARY
Former USA Station No. 57
10700 MacArthur Blvd., Oakland, California

Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	TPHG (µg/L)	TPHD (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-6	11/22/95	21.73	81.64	59.91	<50	140	<0.5	1.2	<0.5	1.5	5.3*
	12/06/95	18.03		63.61	NA	NA	NA	NA	NA	NA	NA
	01/04/96	21.67		59.97	NA	NA	NA	NA	NA	NA	NA
	01/31/97	16.01		65.63	70	<50	<0.5	2	<0.5	<1	5*
	10/10/97	20.55		61.09	80	<50	<0.5	<0.5	<0.5	<2	<5*
	01/20/98	15.74		65.90	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	04/28/98	10.78		70.86	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	07/31/98	13.97		67.67	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	11/02/98	17.97		63.67	NA	NA	NA	NA	NA	NA	NA
	06/10/99	16.92		64.72	NA	NA	NA	NA	NA	NA	NA
MW-7	11/22/95	19.38	78.86	59.48	<50	180	<0.5	0.57	<0.5	0.62	0.73*
	12/06/95	19.72		59.14	NA	NA	NA	NA	NA	NA	NA
	01/04/96	19.76		59.10	NA	NA	NA	NA	NA	NA	NA
	01/31/97	15.25		63.61	70	<50	0.7	1	<0.5	<1	8*
	10/10/97	19.03		59.83	<50	<50	<0.5	<0.5	<0.5	<2	15*
	01/20/98	17.11		61.75	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	04/28/98	8.22		70.64	<50	<50	<0.5	<0.5	<0.5	<0.5	9.3*
	07/31/98	11.53		67.33	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	11/02/98	15.15		63.71	NA	NA	NA	NA	NA	NA	NA
	06/10/99	14.23		64.63	NA	NA	NA	NA	NA	NA	NA
	10/18/00	17.59		61.27	NA	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	03/12/02	16.54		62.32	<50	<50	<0.5	<0.5	<0.5	<0.5	2.9
	11/19/02	19.59		59.27	<50	NA	<0.50	<0.50	<0.50	<0.50	3.8
	01/09/03	18.38		60.48	<50	NA	<0.50	<0.50	<0.50	<0.50	2.7

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ELEVATION AND ANALYTICAL SUMMARY

Former USA Station No. 57

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Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	TPHG (µg/L)	TPHD (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-8	11/22/95	33.33	79.55	46.22	<50	360	<0.5	1.3	<0.5	2.1	2.1*
	12/06/95	17.57		61.98	NA	NA	NA	NA	NA	NA	NA
	01/04/96	20.08		59.47	NA	NA	NA	NA	NA	NA	NA
	01/31/97	18.72		60.83	80	<50	0.6	1	<0.5	1	8*
	10/10/97	20.26		59.29	50	<50	<0.5	<0.5	<0.5	<2	<5*
	01/20/98	15.91		63.64	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	04/28/98	10.39		69.16	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	07/31/98	12.93		66.62	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0*
	11/02/98	16.90		62.65	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0*
	06/10/99	14.98		64.57	NA	NA	NA	NA	NA	NA	NA
	10/18/00	16.27		63.28	<50	<50	<0.5	<0.5	1.1	6.3	8.6*
	03/12/02	14.56		64.99	<50	<50	<0.5	0.63	0.55	1.7	0.94
	11/19/02	21.14		58.41	<50	NA	<0.50	<0.50	<0.50	<0.50	<0.50
	01/09/03	17.90		61.65	<50	NA	<0.50	<0.50	<0.50	<0.50	<0.50

Note:

* = MTBE analyzed using EPA Method 8020

[1] Laboratory indicates the chromatogram does not match the diesel hydrocarbon range pattern

MTBE = Methyl tert-butyl ether

TPHD = Total petroleum hydrocarbons as diesel

TPHG = Total petroleum hydrocarbons as gasoline

TPHG analyzed using EPA Method 8015B and the remaining analytes using EPA Method 8260B

Data prior to November 19, 2002 provided by GHH Engineering

msl = Mean sea level

µg/L = micrograms per liter

NA = Not analyzed

NM = Not measured

TABLE 2

GROUNDWATER
ANALYTICAL RESULTS FOR OXYGENATES
Former USA Station No. 57
10700 MacArthur Blvd., Oakland, California

Well Number	Date Collected	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	1,2-DCA (µg/L)	TAME (µg/L)	EDB (µg/L)
S-1	11/19/02	190	<10	<1.0	<1.0	NA	<1.0	NA
	01/09/03	11	<5.0	<1.0	<1.0	NA	<1.0	NA
S-2	11/19/02	750	<200[1]	<20[1]	<20[1]	NA	<20[1]	NA
	01/09/03	~~16,000~~ 270	<100[1]	<10[1]	<10[1]	NA	<10[1]	NA
MW-4	11/19/02	<0.50	<5.0	<1.0	<1.0	NA	<1.0	NA
	01/09/03	<0.50	<5.0	<1.0	<1.0	NA	<1.0	NA
MW-5	11/19/02				Well Damaged			
	01/09/03				Well Damaged			
MW-7	11/19/02	3.8	<5.0	<1.0	<1.0	NA	<1.0	NA
	01/09/03	2.7	<5.0	<1.0	<1.0	NA	<1.0	NA
MW-8	11/19/02	<0.50	<5.0	<1.0	<1.0	NA	<1.0	NA
	01/09/03	<0.50	<5.0	<1.0	<1.0	NA	<1.0	NA

Note:
Oxygenates analyzed using EPA Method 8260B
µg/L = micrograms per liter
NA = Not analyzed

[1] Reporting limits were increased due to high concentrations of target analytes

MTBE = Methyl tertiary butyl ether
TBA = Tertiary butyl alcohol
DIPE = Di-isopropyl ether
ETBE = Ethyl tertiary butyl ether
1,2-DCA = 1,2-dichloroethane
TAME = Tertiary amyl methyl ether
EDB = 1,2-Dibromoethane

GENERAL NOTES:
BASE MAP FROM U.S.G.S.
OAKLAND, CA
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1980

QUADRANGLE LOCATION

0 2000 FT

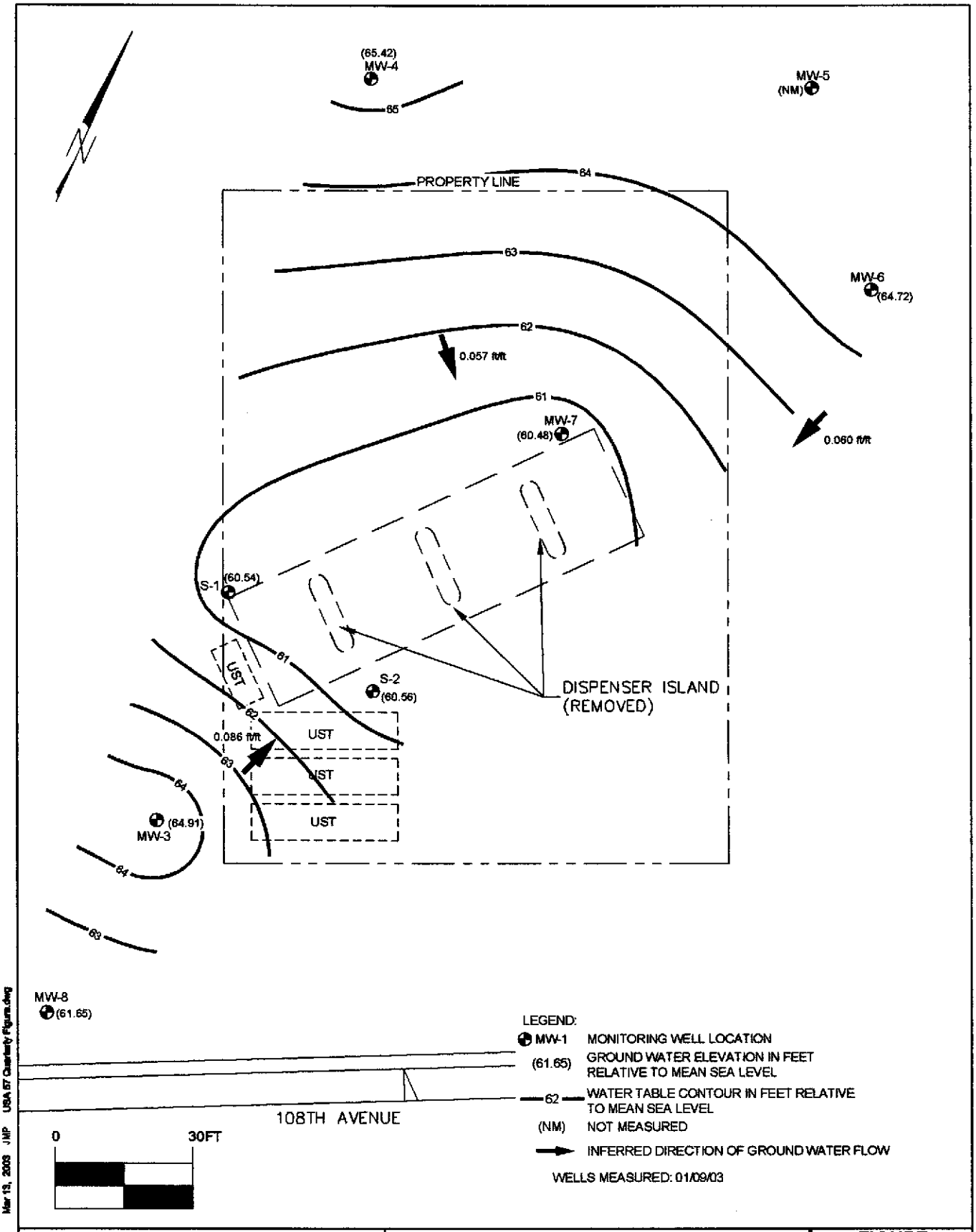
SCALE 1:24,000

STRATUS
ENVIRONMENTAL, INC.

USA SERVICE STATION NO. 57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA
SITE LOCATION MAP

FIGURE
1
PROJECT NO.
2007-0057-01

USA\67\Quarterly Figures Mar 18, 2003 JMP USA 67Site Location Map.dwg

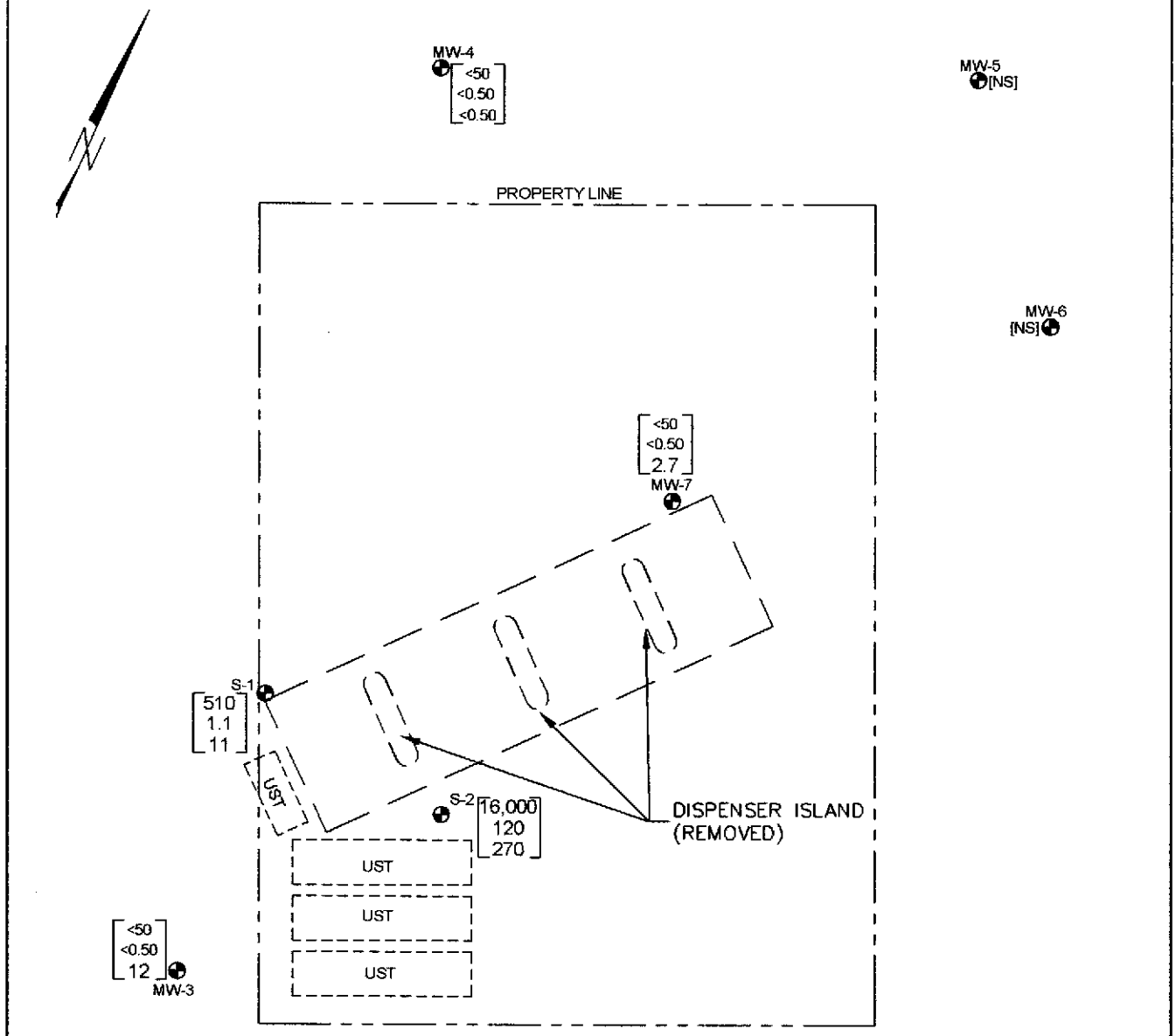


USA57\Quarterly Figures Mar 13, 2003 JWP USA 57 Quarterly Figure.dwg

STRATUS
ENVIRONMENTAL, INC.

USA GASOLINE STATION #57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA
GROUNDWATER ELEVATION CONTOUR MAP
1st QUARTER 2003

FIGURE
2
PROJECT NO.
2007-0057-01



Feb 19, 2003 JMP USA 57 Quarterly Figure.dwg

USA57\Quarterly Figures

STRATUS ENVIRONMENTAL, INC.

USA GASOLINE STATION #57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

GROUNDWATER ANALYTICAL SUMMARY
1st QUARTER 2003

FIGURE
3
PROJECT NO.
2007-0057-01

APPENDIX A

FIELD DATA SHEETS

STRATUS ENVIRONMENTAL, INC.

Site Address: ______ OAKLAND

Site Number: GSA 57

Project No.: 2007 · 0057

Project PM: Gowri

Site Contact & Phone Number: ______

Site Sampled By: MIKE

Date Sampled: 1/9/03

Water Level Data						Purge Volume Calculations					Sampling Analytes					Sample Record		
Well ID	Time	Depth to Water (feet)	Top of Screen Interval (feet)	Total Depth of Well (feet)	Check if Purge Not Required	Casing Water Column (A)	Well Diameter (inches)	Multiplier Value (B)	Three Casing Volumes (gallons)	Actual Water Purged (gallons)	BTEX (8020) VOA	TPH-g (8015M) VOA	MTBE (8020) VOA	Other	Dissolved Oxygen (mg/L)	DTW AT Sample	Sample I.D.	Sample Time
S-1	0532	18.14		40.80	☐	22.66	3	1	22	22	☐	☐	☐	☐	1.22		S-1	0939
S-2	0540	20.37		42.85	☐	22.48	3	1	22	22	☐	☐	☐	☐	1.08		S-2	0620
MW-4	0535	11.0		42.45	☐	31.45	4	2	63	63	☐	☐	☐	☐	1.37		MW-4	0725
MW5	WELL DAMAGED [illegible] Dumped on well				☐				—	—	☐	☐	☐	☐	—	—	MW-5	—
MW-7	0538	18.38		41.85	☐	23.47	4	2	46	46	☐	☐	☐	☐	0.92		MW-7	0656
MW-8	0530	17.90		37.70	☐	19.8	4	2	39	39	☐	☐	☐	☐			MW-8	0803
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
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					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				

(A)-Casing Water Column: Depth to Bottom - Depth to Water (B)-Multiplier Values: (2" Well: 0.5) (4" Well: 2.0) (6" Well: 4.4)

Sampling Sequence: Annual: Quarterly:

Sampling Notes: List depth of Sample on C.O.C. [i.e. MW-1(30)]. Make Sure to Note on C.O.C. "Provide Lowest Reporting Limit Available." Original Copies of Field Sampling Sheets are Located in Project File

If the water level is below the top of the screen, take a grab sample and check box for NO PURGE (NP). If the water level is above the screen, purge as normal.

STRATUS ENVIRONMENTAL, INC.

Site Address: OAKLAND

Project Manager:

Site Sampled By: MIKE

Site Contact & Phone Number:

Site Number: [illegible] 57

Project No.: 2007-0057

Project PM: GOWRI

Date Sampled: 1/9/02

Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons
						~~[illegible]~~	0605	16.6	6.92	778	0	MW	0[illegible] (0748)	19.1	6.67	1877	0
						S2	0616	17.1	7.31	777	22	8					20
						odor						odor	0757	19.4	6.84	1898	40
Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons
						MW	0650	18.6	6.90	898	0						
						7	18.91	19.4	7.16	874	20						
						odor	0649	18.7	7.13	893	[illegible]						
Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons
						MW	0705	19.6	7.81	256	0						
						4		20.5	8.03	247	30						
						odor	0720	19.8	7.96	261	63						
Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons
						~~[illegible]~~			~~[illegible]~~	~~[illegible]~~	~~0~~						
						S-1	0728	19.2	6.90	757	0						
						odor	0735	20.1	6.86	763	22						
Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons
Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons
Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons

Notes: NP = NO PURGE

Original Copies of Field Sampling Sheets are Located in Project File

Billing Information:
Name Stratus Env.
Address 3330 Cameron Park Dr
City, State, Zip Cameron Park
Phone Number (530) 676-6004 Fax (530) 676-6005

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21
Sparks, Nevada 89431-5778
Phone (775) 355-1044
Fax (775) 355-0406

Client Name	P.O. #	Job #
USA 57		
Address	PWS #	DWR #
City, State, Zip Oakland	Phone #	Fax #

Sampled by Mike
Report Attention Gowri

Analyses Required: TPH-G - Btex; 5 Oxys

REMARKS: EDF Standard TAT

Time Sampled	Date Sampled	Matrix* See Key Below	Office Use Only Lab ID Number	Sample Description	Total and type of containers ** See below	TPH-G - Btex	5 Oxys						REMARKS
0739	1/9/03	AQ		S-1	5.V	(	(						
0620	}	}		S-2	}	}	}						
0715	}	}		MW-4	}	}	}						
0656	}	}		MW-7	}	}	}						
0803	}	}		MW-8	}	}	}						

ADDITIONAL INSTRUCTIONS:

	Signature	Print Name	Company	Date	Time
Relinquished by	Richard Cornwell	Mike Cornwell	Stratus	1/9/03	0830
Received by	[signature]	Mike Gilliland	Alpha	1/10/03	0330
Relinquished by					
Received by					
Relinquished by					
Received by					

*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other **: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

APPENDIX B

SAMPLING AND ANALYSIS PROCEDURES

APPENDIX B

SAMPLING AND ANALYSIS PROCEDURES

The sampling and analysis procedures as well as the quality assurance plan are contained in this appendix. The procedures and adherence to the quality assurance plan will provide for consistent and reproducible sampling methods; proper application of analytical methods; accurate and precise analytical results; and finally, these procedures will provide guidelines so that the overall objectives of the monitoring program are achieved.

Ground Water and Liquid-Phase Petroleum Hydrocarbon Depth Assessment

A water/hydrocarbon interface probe is used to assess the liquid-phase petroleum hydrocarbon (LPH) thickness, if present, and a water level indicator is used to measure the ground water depth in monitoring wells that do not contain LPH. Depth to ground water or LPH is measured from a datum point at the top of each monitoring well casing. The datum point is typical a notch cut in the north side of the casing edge. If a water level indicator is used, the tip is subjectively analyzed for hydrocarbon sheen.

Subjective Analysis of Ground Water

Prior to purging, a water sample is collected from the monitoring well for subjective assessment. The sample is retrieved by gently lowering a clean, disposable bailer to approximately one-half the bailer length past the air/liquid interface. The bailer is then retrieved, and the sample contained within the bailer is examined for floating LPH and the appearance of a LPH sheen.

Monitoring Well Purging and Sampling

Monitoring wells are purged using a pump or bailer until pH, temperature, and conductivity of the purge water has stabilized and a minimum of three well volumes of water have been removed. If three well volumes can not be removed in one half hour's time the well is allowed to recharge to 80% of original level. After recharging, a ground water sample is then removed from each of the wells using a disposable bailer.

A Teflon bailer, electric submersible or bladder pump will be the only equipment used for well sampling. When samples for volatile organic analysis are being collected, the pump flow will be regulated at approximately 100 milliliters per minute to minimize pump effluent turbulence and aeration. Glass bottles of at least 40-milliliters volume and fitted with Teflon-lined septa will be used in sampling for volatile organics. These bottles will be filled completely to prevent air from remaining in the bottle. A positive meniscus forms when the bottle is completely full. A convex Teflon septum will be placed over the positive meniscus to eliminate air. After the bottle is capped, it is inverted and tapped to verify that it contains no air bubbles. The sample containers for other parameters will be filled, filtered as required, and capped.

The water sample is collected, labeled, and handled according to the Quality Assurance Plan. Water generated during the monitoring event is disposed of accruing to regulatory accepted method pertaining to the site.

QUALITY ASSURANCE PLAN

Procedures to provide data quality should be established and documented so that conditions adverse to quality, such as deficiencies, deviations, nonconforments, defective material, services, and/or equipment, can be promptly identified and corrected.

General Sample Collection and Handling Procedures

Proper collection and handling are essential to ensure the quality of a sample. Each sample is collected in a suitable container, preserved correctly for the intended analysis, and stored prior to analysis for no longer than the maximum allowable holding time. Details on the procedures for collection and handling of samples used on this project can be found in this section.

Soil and Water Sample Labeling and Preservation

Label information includes a unique sample identification number, job identification number, date, and time. After labeling all soil and water samples are placed in a Ziploc® type bag and placed in an ice chest cooled to approximately 4° Celsius. Upon arriving at Stratus' office the samples are transferred to a locked refrigerator cooled to approximately 4° Celsius. Chemical preservation is controlled by the required analysis and is noted on the chain-of-custody form. Trip blanks supplied by the laboratory accompany the groundwater sample containers and groundwater samples.

Upon recovery, the sample container is sealed to minimize the potential of volatilization and cross-contamination prior to chemical analysis. Soil sampling tubes are typically closed at each end with Teflon® sheeting and plastic caps. The sample is then placed in a Ziploc® type bag and sealed. The sample is labeled and refrigerated at approximately 4° Celsius for delivery, under strict chain-of-custody, to the analytical laboratory.

Sample Identification and Chain-of-Custody Procedures

Sample identification and chain-of-custody procedures document sample possession from the time of collection to ultimate disposal. Each sample container submitted for analysis has a label affixed to identify the job number, sampler, date and time of sample collection, and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations, is recorded on the borehole log or in the field records. The samples are analyzed by a California-certified laboratory.

A chain-of-custody form is used to record possession of the sample from time of collection to its arrival at the laboratory. When the samples are shipped, the person in custody of them relinquishes the samples by signing the chain-of-custody form and

noting the time. The sample-control officer at the laboratory verifies sample integrity and confirms that the samples are collected in the proper containers, preserved correctly, and contain adequate volumes for analysis. These conditions are noted on a Laboratory Sample Receipt Checklist that becomes part of the laboratory report upon request.

If these conditions are met, each sample is assigned a unique log number for identification throughout analysis and reporting. The log number is recorded on the chain-of-custody form and in the legally-required log book maintained by the laboratory. The sample description, date received, client's name, and other relevant information is also recorded.

Equipment Cleaning

Sample bottles, caps, and septa used in sampling for volatile and semivolatile organics will be triple rinsed with high-purity deionized water. After being rinsed, sample bottles will be dried overnight at a temperature of 200°C. Sample caps and septa will be dried overnight at a temperature of 60°C. Sample bottles, caps, and septa will be protected from solvent contact between drying and actual use at the sampling site. Sampling containers will be used only once and discarded after analysis is complete.

Plastic bottles and caps used in sampling for metals will be soaked overnight in a 1-percent nitric acid solution. Next, the bottles and caps will be triple rinsed with deionized water. Finally, the bottles and caps will be air dried before being used at the site. Plastic bottles and caps will be constructed of linear polyethylene or polypropylene. Sampling containers will be used only once and discarded after analysis is complete. Glass and plastic bottles used by Stratus to collect groundwater samples are supplied by the laboratory.

Before the sampling event is started, equipment that will be placed in the well or will come in contact with groundwater will be disassembled and cleaned thoroughly with detergent water, and then steam cleaned with deionized water. Any parts that may absorb contaminants, such as plastic pump valves, etc. will be cleaned as described above or replaced.

During field sampling, equipment surfaces that are placed in the well or contact groundwater will be steam cleaned with deionized water before the next well is purged or sampled. Equipment blanks will be collected and analyzed from non-disposable sampling equipment that is used for collecting groundwater samples at the rate of one blank per twenty samples collected.

Internal Quality Assurance Checks

Internal quality assurance procedures are designed to provide reliability of monitoring and measurement of data. Both field and laboratory quality assurance checks are necessary to evaluate the reliability of sampling and analysis results. Internal quality assurance procedures generally include:

- Laboratory Quality Assurance

- Documentation of instrument performance checks
- Documentation of instrument calibration
- Documentation of the traceability of instrument standards, samples, and data
- Documentation of analytical and QC methodology (QC methodology includes use of spiked samples, duplicate samples, split samples, use of reference blanks, and check standards to check method accuracy and precision)

- Field Quality Assurance

- Documentation of sample preservation and transportation
- Documentation of field instrument calibration and irregularities in performance

Internal laboratory quality assurance checks will be the responsibility of the contract laboratories. Data and reports submitted by field personnel and the contract laboratory will be reviewed and maintained in the project files.

Types of Quality Control Checks

Samples are analyzed using analytical methods outlined in EPA Manual SW 846 and approved by the California Regional Water Quality Control Board-Central Valley Region in the Leaking Underground Fuel Tanks (LUFT) manual and appendices. Standard contract laboratory quality control may include analysis or use of the following:

- Method blanks – reagent water used to prepare calibration standards, spike solutions, etc. is analyzed in the same manner as the sample to demonstrate that analytical interferences are under control.
- Matrix spiked samples – a known amount of spike solution containing selected constituents is added to the sample at concentrations at which the accuracy of the analytical method is to satisfactorily monitor and evaluate laboratory data quality.
- Split samples – a sample is split into two separate aliquots before analysis to assess the reproducibility of the analysis.
- Surrogate samples – samples are spiked with surrogate constituents at known concentrations to monitor both the performance of the analytical system and the effectiveness of the method in dealing with the sample matrix.
- Control charts – graphical presentation of spike or split sample results used to track the accuracy or precision of the analysis.
- Quality control check samples – when spiked sample analysis indicates atypical instrument performance, a quality check sample, which is prepared independently of the calibration standards and contains the constituents of interest, is analyzed to confirm that measurements were performed accurately.

- Calibration standards and devices – traceable standards or devices to set instrument response so that sample analysis results represent the absolute concentration of the constituent.

Field QA samples will be collected to assess sample handling procedures and conditions. Standard field quality control may include the use of the following, and will be collected and analyzed as outlined in EPA Manual SW 846.

- Field blanks – reagent water samples are prepared at the sampling location by the same procedure used to collect field groundwater samples and analyzed with the groundwater samples to assess the impact of sampling techniques on data quality. Typically, one field blank per twenty groundwater samples collected will be analyzed per sampling event.
- Field replicates – duplicate or triplicate samples are collected and analyzed to assess the reproducibility of the analytical data. One replicate groundwater sample per twenty samples collected will be analyzed per sampling event, unless otherwise specified. Triplicate samples will be collected only when specific conditions warrant and generally are sent to an alternate laboratory to confirm the accuracy of the routinely used laboratory.
- Trip blanks – reagent water samples are prepared before field work, transported and stored with the samples and analyzed to assess the impact of sample transport and storage for data quality. In the event that any analyte is detected in the field blank, a trip blank will be included in the subsequent groundwater sampling event.

Data reliability will be evaluated by the certified laboratory and reported on a cover sheet attached to the laboratory data report. Analytical data resulting from the testing of field or trip blanks will be included in the laboratory's report. Results from matrix spike, surrogate, and method blank testing will be reported, along with a statement of whether the samples were analyzed within the appropriate holding time.

Stratus will evaluate the laboratory's report on data reliability and note significant QC results that may make the data biased or unacceptable. Data viability will be performed as outlined in EPA Manual SW 846. If biased or unacceptable data is noted, corrective actions (including re-sample/re-analyze, etc.) will be evaluated on a site-specific basis.

APPENDIX C

CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

Alpha Analytical, Inc.

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COPY

ANALYTICAL REPORT

JAN 27 2003

Stratus Environmental
3330 Cameron Park Drive
Cameron Park, CA 956828861
Job#: USA 57

Attn: Gowri Kowtha
Phone: (530) 676-6001
Fax: (530) 676-6005

Total Petroleum Hydrocarbons - Purgeable (TPH-P) EPA Method SW8015B/DHS LUFT Manual
Volatile Organic Compounds (VOCs) EPA Method SW8260B

	Parameter	Concentration		Reporting Limit	Date Sampled	Date Analyzed
Client ID :	TPH Purgeable	510		50 µg/L	01/09/03	01/14/03
S-1	Tertiary Butyl Alcohol (TBA)	ND		5.0 µg/L	01/09/03	01/14/03
Lab ID :	Methyl tert-butyl ether (MTBE)	11		0.50 µg/L	01/09/03	01/14/03
STR03011322-01A	Di-isopropyl Ether (DIPE)	ND		1.0 µg/L	01/09/03	01/14/03
	Ethyl Tertiary Butyl Ether (ETBE)	ND		1.0 µg/L	01/09/03	01/14/03
	Benzene	1.1		0.50 µg/L	01/09/03	01/14/03
	Tertiary Amyl Methyl Ether (TAME)	ND		1.0 µg/L	01/09/03	01/14/03
	Toluene	ND		0.50 µg/L	01/09/03	01/14/03
	Ethylbenzene	0.52		0.50 µg/L	01/09/03	01/14/03
	m,p-Xylene	ND		0.50 µg/L	01/09/03	01/14/03
	o-Xylene	ND		0.50 µg/L	01/09/03	01/14/03
Client ID :	TPH Purgeable	16,000		1,000 µg/L	01/09/03	01/14/03
S-2	Tertiary Butyl Alcohol (TBA)	ND	V	100 µg/L	01/09/03	01/14/03
Lab ID :	Methyl tert-butyl ether (MTBE)	270		5.0 µg/L	01/09/03	01/14/03
STR03011322-02A	Di-isopropyl Ether (DIPE)	ND	V	10 µg/L	01/09/03	01/14/03
	Ethyl Tertiary Butyl Ether (ETBE)	ND	V	10 µg/L	01/09/03	01/14/03
	Benzene	120		5.0 µg/L	01/09/03	01/14/03
	Tertiary Amyl Methyl Ether (TAME)	ND	V	10 µg/L	01/09/03	01/14/03
	Toluene	32		5.0 µg/L	01/09/03	01/14/03
	Ethylbenzene	76		5.0 µg/L	01/09/03	01/14/03
	m,p-Xylene	200		5.0 µg/L	01/09/03	01/14/03
	o-Xylene	14		5.0 µg/L	01/09/03	01/14/03
Client ID :	TPH Purgeable	ND		50 µg/L	01/09/03	01/14/03
MW-4	Tertiary Butyl Alcohol (TBA)	ND		5.0 µg/L	01/09/03	01/14/03
Lab ID :	Methyl tert-butyl ether (MTBE)	ND		0.50 µg/L	01/09/03	01/14/03
STR03011322-03A	Di-isopropyl Ether (DIPE)	ND		1.0 µg/L	01/09/03	01/14/03
	Ethyl Tertiary Butyl Ether (ETBE)	ND		1.0 µg/L	01/09/03	01/14/03
	Benzene	ND		0.50 µg/L	01/09/03	01/14/03
	Tertiary Amyl Methyl Ether (TAME)	ND		1.0 µg/L	01/09/03	01/14/03
	Toluene	ND		0.50 µg/L	01/09/03	01/14/03
	Ethylbenzene	ND		0.50 µg/L	01/09/03	01/14/03
	m,p-Xylene	ND		0.50 µg/L	01/09/03	01/14/03
	o-Xylene	ND		0.50 µg/L	01/09/03	01/14/03

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Client ID :	TPH Purgeable	ND	50 µg/L	01/09/03	01/14/03
MW-7	Tertiary Butyl Alcohol (TBA)	ND	5.0 µg/L	01/09/03	01/14/03
Lab ID :	Methyl tert-butyl ether (MTBE)	2.7	0.50 µg/L	01/09/03	01/14/03
STR03011322-04A	Di-isopropyl Ether (DIPE)	ND	1.0 µg/L	01/09/03	01/14/03
	Ethyl Tertiary Butyl Ether (ETBE)	ND	1.0 µg/L	01/09/03	01/14/03
	Benzene	ND	0.50 µg/L	01/09/03	01/14/03
	Tertiary Amyl Methyl Ether (TAME)	ND	1.0 µg/L	01/09/03	01/14/03
	Toluene	ND	0.50 µg/L	01/09/03	01/14/03
	Ethylbenzene	ND	0.50 µg/L	01/09/03	01/14/03
	m,p-Xylene	ND	0.50 µg/L	01/09/03	01/14/03
	o-Xylene	ND	0.50 µg/L	01/09/03	01/14/03
Client ID :	TPH Purgeable	ND	50 µg/L	01/09/03	01/14/03
MW-8	Tertiary Butyl Alcohol (TBA)	ND	5.0 µg/L	01/09/03	01/14/03
Lab ID :	Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	01/09/03	01/14/03
STR03011322-05A	Di-isopropyl Ether (DIPE)	ND	1.0 µg/L	01/09/03	01/14/03
	Ethyl Tertiary Butyl Ether (ETBE)	ND	1.0 µg/L	01/09/03	01/14/03
	Benzene	ND	0.50 µg/L	01/09/03	01/14/03
	Tertiary Amyl Methyl Ether (TAME)	ND	1.0 µg/L	01/09/03	01/14/03
	Toluene	ND	0.50 µg/L	01/09/03	01/14/03
	Ethylbenzene	ND	0.50 µg/L	01/09/03	01/14/03
	m,p-Xylene	ND	0.50 µg/L	01/09/03	01/14/03
	o-Xylene	ND	0.50 µg/L	01/09/03	01/14/03

Reported in micrograms per liter, per client request.
V = Reporting Limits were increased due to high concentrations of target analytes.
ND = Not Detected

R Scholl Randy Gardner Walter Hinchman

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 281-4848 / Wichita, KS • (316) 722-5890 / info@alpha-analytical.com

1/20/03
Report Date

Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

VOC pH Report

Work Order: STR03011322 **Project:** USA 57

Alpha's Sample ID	Client's Sample ID	Matrix	pH
03011322-01A	S-1	Aqueous	2
03011322-02A	S-2	Aqueous	6
03011322-03A	MW-4	Aqueous	6
03011322-04A	MW-7	Aqueous	2
03011322-05A	MW-8	Aqueous	6

1/20/03

Report Date

Alpha Analytical, Inc.

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Date: *20-Jan-03*

QC Summary Report

Work Order: 03011322

Method Blank

Type **MBLK** Test Code: **EPA Method SW8015**

File ID: **D:\HPCHEM\MS08\DATA\030114\03011406.D** Batch ID: **MS8W0114B** Analysis Date: **01/14/2003 12:28**

Sample ID: **MBLK MS8W0114B** Units : **µg/L** Run ID: **GC/MSD_8_030114A** Prep Date: **01/14/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
TPH Purgeable	ND	50								
Surr: 1,2-Dichloroethane-d4	11.4		10		114	71	130			
Surr: Toluene-d8	10.1		10		101	69	127			
Surr: 4-Bromofluorobenzene	11		10		110	80	123			

Laboratory Control Spike

Type **LCS** Test Code: **EPA Method SW8015**

File ID: **D:\HPCHEM\MS08\DATA\030114\03011404.D** Batch ID: **MS8W0114B** Analysis Date: **01/14/2003 11:42**

Sample ID: **GLCS MS8W0114B** Units : **µg/L** Run ID: **GC/MSD_8_030114A** Prep Date: **01/14/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
TPH Purgeable	450	50	400		113	58	136			
Surr: 1,2-Dichloroethane-d4	10.8		10		108	71	130			
Surr: Toluene-d8	9.91		10		99	69	127			
Surr: 4-Bromofluorobenzene	10.9		10		109	80	123			

Sample Matrix Spike

Type **MS** Test Code: **EPA Method SW8015**

File ID: **D:\HPCHEM\MS08\DATA\030114\03011409.D** Batch ID: **MS8W0114B** Analysis Date: **01/14/2003 13:37**

Sample ID: **03011322-01AGS** Units : **µg/L** Run ID: **GC/MSD_8_030114A** Prep Date: **01/14/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
TPH Purgeable	2660	250	2000	514.5	107	58	136			
Surr: 1,2-Dichloroethane-d4	48.9		50		98	71	130			
Surr: Toluene-d8	50.2		50		100	69	127			
Surr: 4-Bromofluorobenzene	49		50		98	80	123			

Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method SW8015**

File ID: **D:\HPCHEM\MS08\DATA\030114\03011410.D** Batch ID: **MS8W0114B** Analysis Date: **01/14/2003 14:00**

Sample ID: **03011322-01AGSD** Units : **µg/L** Run ID: **GC/MSD_8_030114A** Prep Date: **01/14/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
TPH Purgeable	2740	250	2000	514.5	111	58	136	2662	3.48	
Surr: 1,2-Dichloroethane-d4	54.2		50		108	71	130			
Surr: Toluene-d8	49.7		50		99	69	127			
Surr: 4-Bromofluorobenzene	52.8		50		106	80	123			

Comments:
ND - Not Detected at the Reporting Limit.
S - Spike Recovery outside accepted recovery limits.
B - Analyte detected in the associated Method Blank.
Reported in micrograms per liter, per client request.
D - If the spiked value is <25% of the reference value, recovery should not be calculated.
M - Spike Recovery outside accepted recovery limits due to matrix.

Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: *20-Jan-03*

QC Summary Report

Work Order: 03011322

Method Blank

Type **MBLK** Test Code: **EPA Method SW8260B**

File ID: **D:\HPCHEM\MS08\DATA\030114\03011406.D** Batch ID: **MS8W0114A** Analysis Date: **01/14/2003 12:28**

Sample ID: **MBLK MS8W0114A** Units : **µg/L** Run ID: **GC/MSD_8_030114A** Prep Date: **01/14/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
Tertiary Butyl Alcohol (TBA)	ND	5								
Methyl tert-butyl ether (MTBE)	ND	0.5								
Di-isopropyl Ether (DIPE)	ND	1								
Ethyl Tertiary Butyl Ether (ETBE)	ND	1								
Benzene	ND	0.5								
Tertiary Amyl Methyl Ether (TAME)	ND	1								
Toluene	ND	0.5								
Ethylbenzene	ND	0.5								
m,p-Xylene	ND	0.5								
o-Xylene	ND	0.5								
Surr: 1,2-Dichloroethane-d4	11.4		10		114	71	130			
Surr: Toluene-d8	10.1		10		101	69	127			
Surr: 4-Bromofluorobenzene	11		10		110	80	123			

Laboratory Control Spike

Type **LCS** Test Code: **EPA Method SW8260B**

File ID: **D:\HPCHEM\MS08\DATA\030114\03011403.D** Batch ID: **MS8W0114A** Analysis Date: **01/14/2003 11:19**

Sample ID: **LCS MS8W0114A** Units : **µg/L** Run ID: **GC/MSD_8_030114A** Prep Date: **01/14/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
Benzene	9.28	0.5	10		93	80	120			
Toluene	9.22	0.5	10		92	80	120			
Ethylbenzene	9.65	0.5	10		97	80	120			
m,p-Xylene	19	0.5	20		95	73	129			
o-Xylene	9.59	0.5	10		96	73	127			
Surr: 1,2-Dichloroethane-d4	10.3		10		103	71	130			
Surr: Toluene-d8	10.1		10		101	69	127			
Surr: 4-Bromofluorobenzene	10.4		10		104	80	123			

Sample Matrix Spike

Type **MS** Test Code: **EPA Method SW8260B**

File ID: **D:\HPCHEM\MS08\DATA\030114\03011407.D** Batch ID: **MS8W0114A** Analysis Date: **01/14/2003 12:51**

Sample ID: **03011322-01AMS** Units : **µg/L** Run ID: **GC/MSD_8_030114A** Prep Date: **01/14/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
Benzene	48.7	1.3	50	1.12	95	80	120			
Toluene	44.9	1.3	50	0	90	80	120			
Ethylbenzene	46.1	1.3	50	0.52	91	80	120			
m,p-Xylene	87	1.3	100	0	87	73	129			
o-Xylene	42.6	1.3	50	0	85	73	127			
Surr: 1,2-Dichloroethane-d4	49.5		50		99	71	130			
Surr: Toluene-d8	47.4		50		95	69	127			
Surr: 4-Bromofluorobenzene	51.5		50		103	80	123			

Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **D:\HPCHEM\MS08\DATA\030114\03011408.D** Batch ID: **MS8W0114A** Analysis Date: **01/14/2003 13:14**

Sample ID: **03011322-01AMSD** Units : **µg/L** Run ID: **GC/MSD_8_030114A** Prep Date: **01/14/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
Benzene	48.2	1.3	50	1.12	94	80	120	48.74	1.18	
Toluene	46.9	1.3	50	0	94	80	120	44.86	4.4	
Ethylbenzene	48.7	1.3	50	0.52	96	80	120	46.09	5.53	
m,p-Xylene	98.6	1.3	100	0	99	73	129	86.99	12.5	
o-Xylene	48.4	1.3	50	0	97	73	127	42.6	12.8	
Surr: 1,2-Dichloroethane-d4	44.7		50		89	71	130			
Surr: Toluene-d8	49.5		50		99	69	127			
Surr: 4-Bromofluorobenzene	49.4		50		99	80	123			

Comments: ND - Not Detected at the Reporting Limit.

S - Spike Recovery outside accepted recovery limits.

B - Analyte detected in the associated Method Blank.

D - If the spiked value is <25% of the reference value, recovery should not be calculated.

M - Spike Recovery outside accepted recovery limits due to matrix.

Billing Information :

CHAIN-OF-CUSTODY RECORD

CA

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

WorkOrder : STR03011322

Report Due By : 5:00 PM On : 21-Jan-03

Client:
Stratus Environmental
3330 Cameron Park Drive
Suite 550
Cameron Park, CA 95682-8861

Report Attention : Gowri Kowtha
CC Report :

Gowri Kowtha
TEL : (530) 676-6002
FAX : (530) 676-6005

Job : USA 57
PO :

Client's COC # : none

EDD Required : Yes
Sampled by : Mike Cornwell
Cooler Temp : 4 °C

13-Jan-03

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles ORG	SUB	TAT	PWS #	Requested Tests TPH/P_W	VOC_W	Sample Remarks
STR03011322-01A	S-1	AQ	01/09/03 07:39	5	0	6		BTXE/GAS/ 5oxys	BTXE/GAS/ 5oxys	2voa for this site read S-2 with correct time of 7:39.
STR03011322-02A	S-2	AQ	01/09/03 06:20	5	0	6		BTXE/GAS/ 5oxys	BTXE/GAS/ 5oxys	
STR03011322-03A	MW-4	AQ	01/09/03 07:25	5	0	6		BTXE/GAS/ 5oxys	BTXE/GAS/ 5oxys	
STR03011322-04A	MW-7	AQ	01/09/03 06:56	5	0	6		BTXE/GAS/ 5oxys	BTXE/GAS/ 5oxys	
STR03011322-05A	MW-8	AQ	01/09/03 08:03	5	0	6		BTXE/GAS/ 5oxys	BTXE/GAS/ 5oxys	

Comments: Security seals intact, ice frozen. California samples. Send copy of receipt checklist with results. Saturday delivery. Samples kept at 4'C in a secured area until logged in on Monday. Lab received two voas for site #01 (S-1) with sample ID of S-2. :

	Signature	Print Name	Company	Date/Time
Received by:	Graciela Navarrete	G. Navarrete	Alpha Analytical, Inc.	1-13-03 11:25

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.
The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.
Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information:
Name STRATUS ENV.
Address 3330 Cameron Park DR
City, State, Zip Cameron Park
Phone Number (530) 676-6004 Fax (530) 676-6005

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21
Sparks, Nevada 89431-5778
Phone (775) 355-1044
Fax (775) 355-0406

Page # 1 of 1

Client Name USA 57
Address
City, State, Zip Oakland
P.O. #
PWS #
Phone #
Job #
DWR #
Fax #
Sampled by Mike
Report Attention Brown

Analyses Required: TPH-BTEX, 5 Oxys

EDF
STANDARD TAT
CA 6 day

Time Sampled	Date Sampled	Matrix* See Key Below	Office Use Only Lab ID Number	Sample Description	Total and type of containers ** See below	TPH-BTEX	5 Oxys						REMARKS
0739	1/9/03	AQ	03011322-01	S-1	5.V	}	}						2 voas read S-2 with time of 7:39
0620	}	}	2	S-2	}	}	}						
0725	}	}	3	MW-4	}	}	}						
0656	}	}	4	MW-7	}	}	}						
0803	}	}	5	MW-8	}	}	}						

ADDITIONAL INSTRUCTIONS:

	Signature	Print Name	Company	Date	Time
Relinquished by	[signature]	Mike Cornwell	Stratus	1/9/03	0830
Received by	[signature]	Mike [illegible]	Alpha	1/10/03	0830
Relinquished by					
Received by	Graciela Navarrete	G. Navarrete	Alpha	1-13-03	11:25
Relinquished by					
Received by					

*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other **: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

Alpha Analytical, Inc.

Phone : (775) 355-1044 FAX : (775) 355-0406

Sample Receipt Checklist

Date Report is due to Client : **1/21/03** Date of Notice : **1/13/03 11:23:52 AM**

Please take note of any NO check marks. If we receive no response concerning these items within 24 hours of the date of this notice, all of the samples will be analyzed as requested.

Client Name **Stratus Environmental** Project ID : **USA 57**

Project Manager : **Gowri Kowtha** Client's Phone **(530) 676-6002** Client's FAX **(530) 676-6005**

Work Order Number : **STR03011322** Date Received : **1/11/03** Received by: Graciela Navarrete

Chain of Custody (COC) Information

Carrier name: FedEx

Chain of custody present ?	Yes ☑	No ☐	
Custody seals intact on shippping container/cooler ?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles ?	Yes ☐	No ☐	Not Present ☑
Chain of custody signed when relinquished and received ?	Yes ☑	No ☐	
Chain of custody agrees with sample labels ?	Yes ☐	No ☑	
Internal Chain of Custody (COC) requested ?	Yes ☐	No ☑	
Sub Contract Lab Used :	None ☑	SEM ☐	Other (see comments) ☐

Sample Receipt Information

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	Cooler Temperature
Container/Temp Blank temperature in compliance (0-6°C)?	Yes ☑	No ☐	4 °C
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	No VOA vials submitted ☐
TOC Water - pH acceptable upon receipt ?	Yes ☐	No ☐	N/A ☑

TOC Samples should have a pH<2 (H2SO4)

Analytical Requirement Information

Are non-Standard or Modified methods requested ?	Yes ☐	No ☑	
Are there client specific Project requirements ?	Yes ☐	No ☑	If YES : see the Chain of Custody (COC)

Comments : Lab received two voas for site #01 (S-1) with sample ID of S-2. Saturday delivery. Samples kept at 4°C in a secured area until logged in on Monday.