STRATUS
ENVIRONMENTAL, INC.

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July 22, 2003
Project No. 2007-0057-01

Mr. Don Hwang
Alameda County Health Agency
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

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

Dear Mr. Hwang:

Stratus Environmental, Inc. (Stratus) is submitting the attached report which presents the results of the second 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 (Figure 1). This report is in compliance with California Regional Water Quality Control Board requirements for underground storage tank (UST) investigations.

If you have any questions regarding this report, please contact Steve Carter at (530) 676-6008.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

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

Matthew R. Goolsby
Staff Geologist

Stephen J. Carter, R.G.
Project Manager

Attachment: Quarterly Groundwater Monitoring Report, Second Quarter 2003

cc: Mr. Charles Miller, USA Gasoline Corporation

Date July 22, 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./ Steve Carter, R.G.

Consultant Project No: 2007-0057-01

Primary Agency/Regulatory ID No: Don Hwang, Alameda County Health Agency / 4490

WORK PERFORMED THIS QUARTER (Second 2003):

1. Stratus measured groundwater elevations and collected groundwater samples from wells S-1, S-2, MW-4, MW-7, and MW-8 on April 14, 2003. Well MW-5 was damaged and could not be sampled. Wells MW-3 and MW-6 are not part of the current monitoring well network.

2. Stratus compiled and evaluated groundwater monitoring data.

WORK PROPOSED FOR NEXT QUARTER (Third 2003):

1. Stratus will attempt to repair well MW-5.

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

3. 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: April 14, 2003

Is Free Product (FP) Present on Site: No

FP Recovered This Quarter: No

Cumulative FP Recovered to Date: NA

Approximate Depth to Groundwater: 11.03 to 19.93 feet below top of well casing

Groundwater Flow Direction: Possible radial flow toward wells S-1 and MW-7

Groundwater Gradient: 0.007 to 0.042 ft/ft

DISCUSSION:

At the time of the second quarter monitoring event, groundwater was encountered in the monitoring wells at depths ranging from 11.03 to 19.93 feet below ground surface (bgs). Groundwater elevations increased between 0.06 and 1.05 feet in the monitoring wells except for well MW-4, which decreased 0.03 feet since the January 9, 2003, 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 April 14, 2003, appears to be radial inward toward wells S-1 and MW-7 at average gradients of 0.007 to 0.042 ft/ft. This flow pattern does not appear to be consistent with historical flow at the site, which appears to have fluctuated from southeast and south to north.

The highest concentrations of TPHG (16,000 µg/L), benzene (160 µg/L), and MTBE (400 µg/L) were detected in well S-2. TPHG and MTBE were also detected in well S-1. TBA (95 µg/L) was detected in the sample collected from the well S-2. The oxygenate compounds TAME, DIPE, or ETBE were not detected in any of the wells. Concentrations detected during the second quarter 2003 are generally consistent with historical analytical data. Analytical results of TPHG, benzene, and MTBE for groundwater samples collected on April 14, 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 (Second Quarter 2003)
- Figure 3 Groundwater Analytical Summary (Second 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
	04/14/03	18.04		60.64	300	NA	<1.0[2]	<1.0[2]	<1.0[2]	<1.0[2]	27

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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
	04/14/03	19.93		61.00	16,000	NA	160	76	210	290	400

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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
	04/14/03	11.03		65.39	<50	NA	<0.50	<0.50	<0.50	<0.50	<0.50

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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	<5.0*
	11/19/02	NM		NM				Well Damaged			
	01/09/03	NM		NM				Well Damaged			
	04/14/03	NM		NM				Well Damaged			

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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

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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-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
	04/14/03	18.17		60.69	<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-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
	04/14/03	17.84		61.71	<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)

Note:

* = MTBE analyzed using EPA Method 8020/8021B

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

[2] Reporting limits were increased due to sample foaming

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

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)	TAME (µg/L)
S-1	11/19/02	190	<10	<1.0	<1.0	<1.0
	01/09/03	11	<5.0	<1.0	<1.0	<1.0
	04/14/03	27	<20[2]	<2.0[2]	<2.0[2]	<2.0[2]
S-2	11/19/02	750	<200[1]	<20[1]	<20[1]	<20[1]
	01/09/03	270	<100[1]	<10[1]	<10[1]	<10[1]
	04/14/03	400	95	<5.0[1]	<5.0[1]	<5.0[1]
MW-4	11/19/02	<0.50	<5.0	<1.0	<1.0	<1.0
	01/09/03	<0.50	<5.0	<1.0	<1.0	<1.0
	04/14/03	<0.50	<5.0	<1.0	<1.0	<1.0
MW-5	11/19/02			Well Damaged		
	01/09/03			Well Damaged		
	04/14/03			Well Damaged		
MW-7	11/19/02	3.8	<5.0	<1.0	<1.0	<1.0
	01/09/03	2.7	<5.0	<1.0	<1.0	<1.0
	04/14/03	<0.50	<5.0	<1.0	<1.0	<1.0
MW-8	11/19/02	<0.50	<5.0	<1.0	<1.0	<1.0
	01/09/03	<0.50	<5.0	<1.0	<1.0	<1.0
	04/14/03	<0.50	<5.0	<1.0	<1.0	<1.0

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)	TAME (µg/L)

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

[2] Reporting limits were increased due to sample foaming

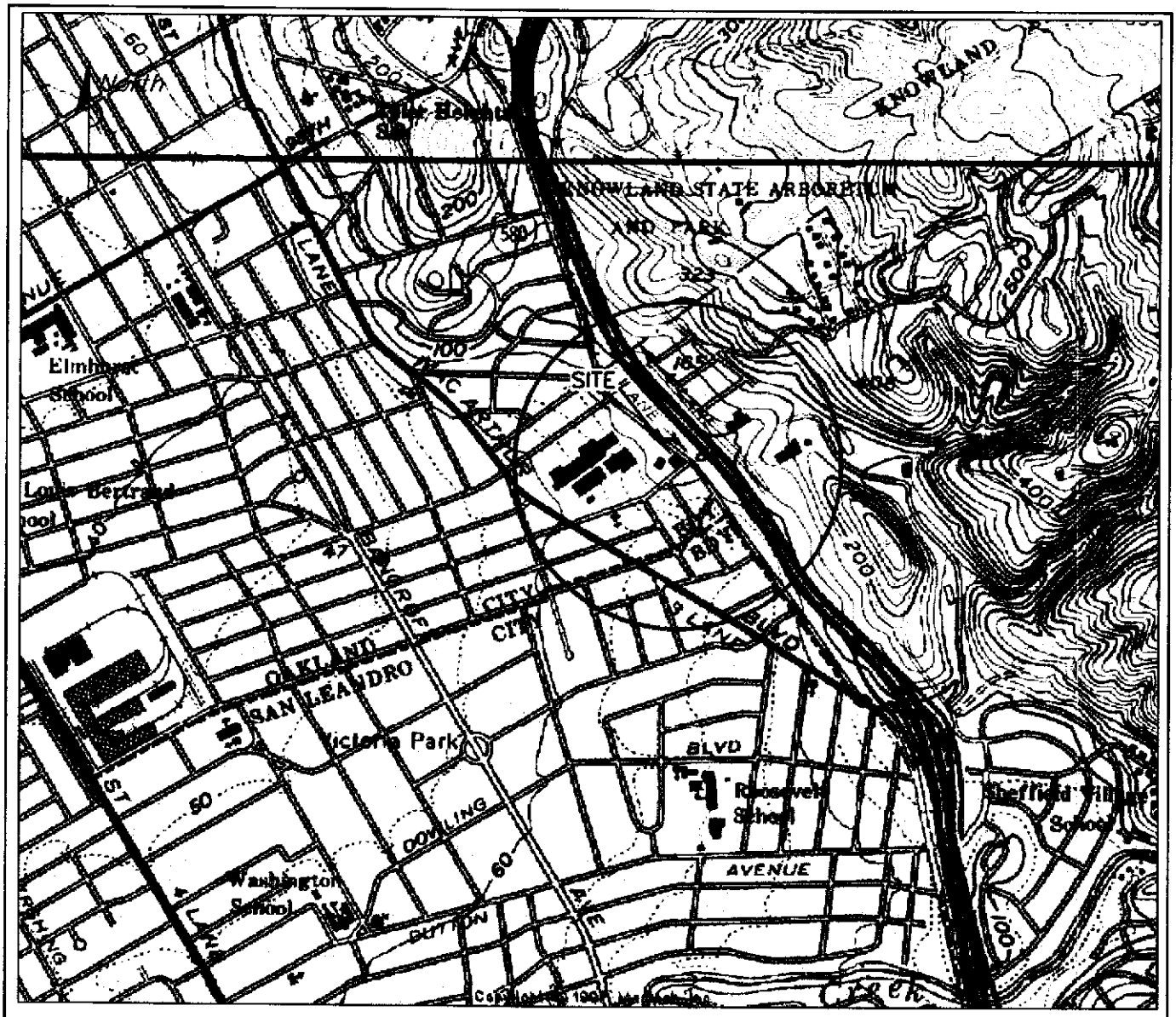
MTBE = Methyl tertiary butyl ether

TBA = Tertiary butyl alcohol

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether

TAME = Tertiary amyl methyl ether



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

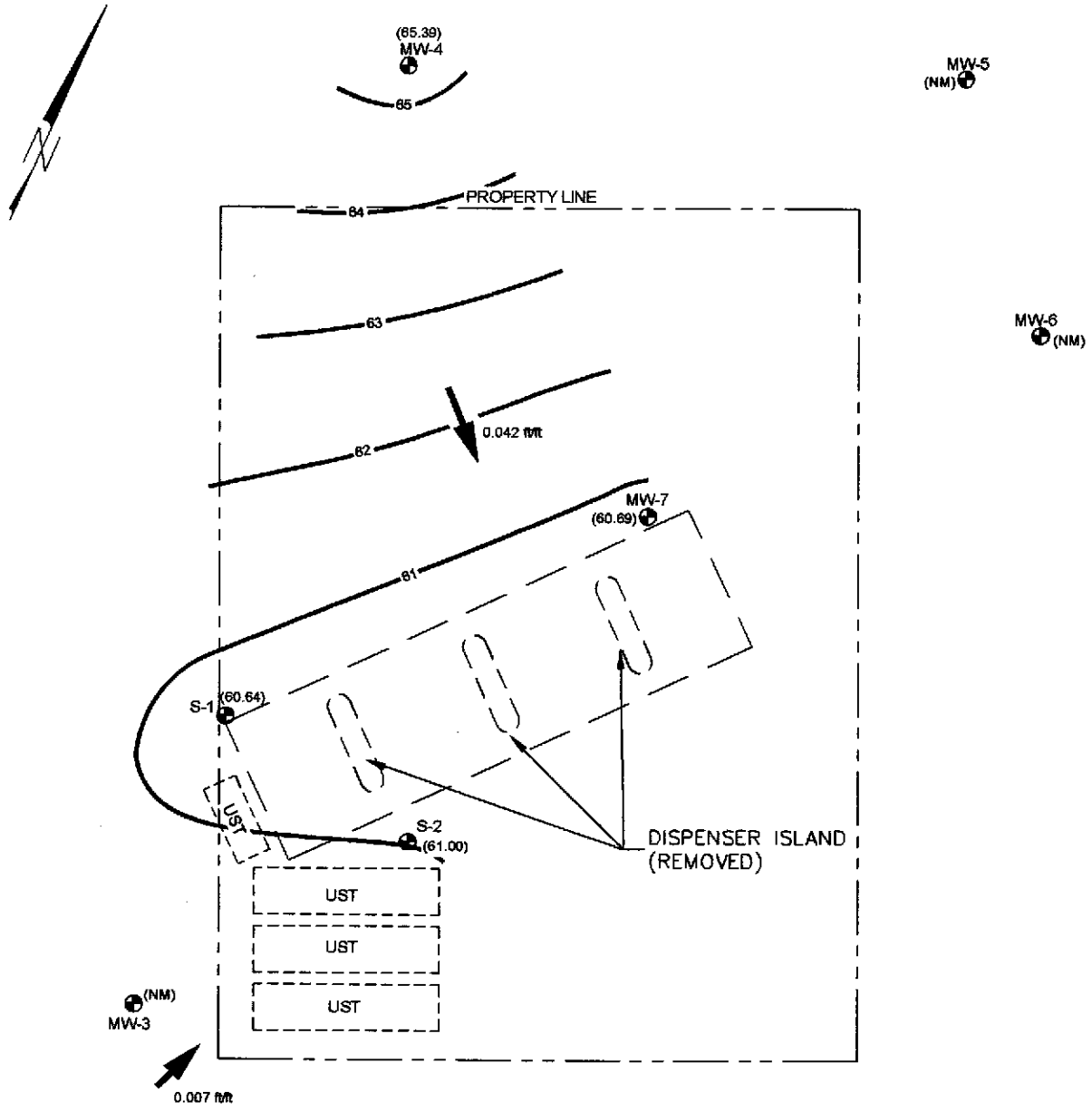
SITE LOCATION MAP

FIGURE
1

PROJECT NO.
2007-0057-01

Jul 21, 2003 JMP USA 57Site Location Map.dwg

USA\57\Quarterly Figures



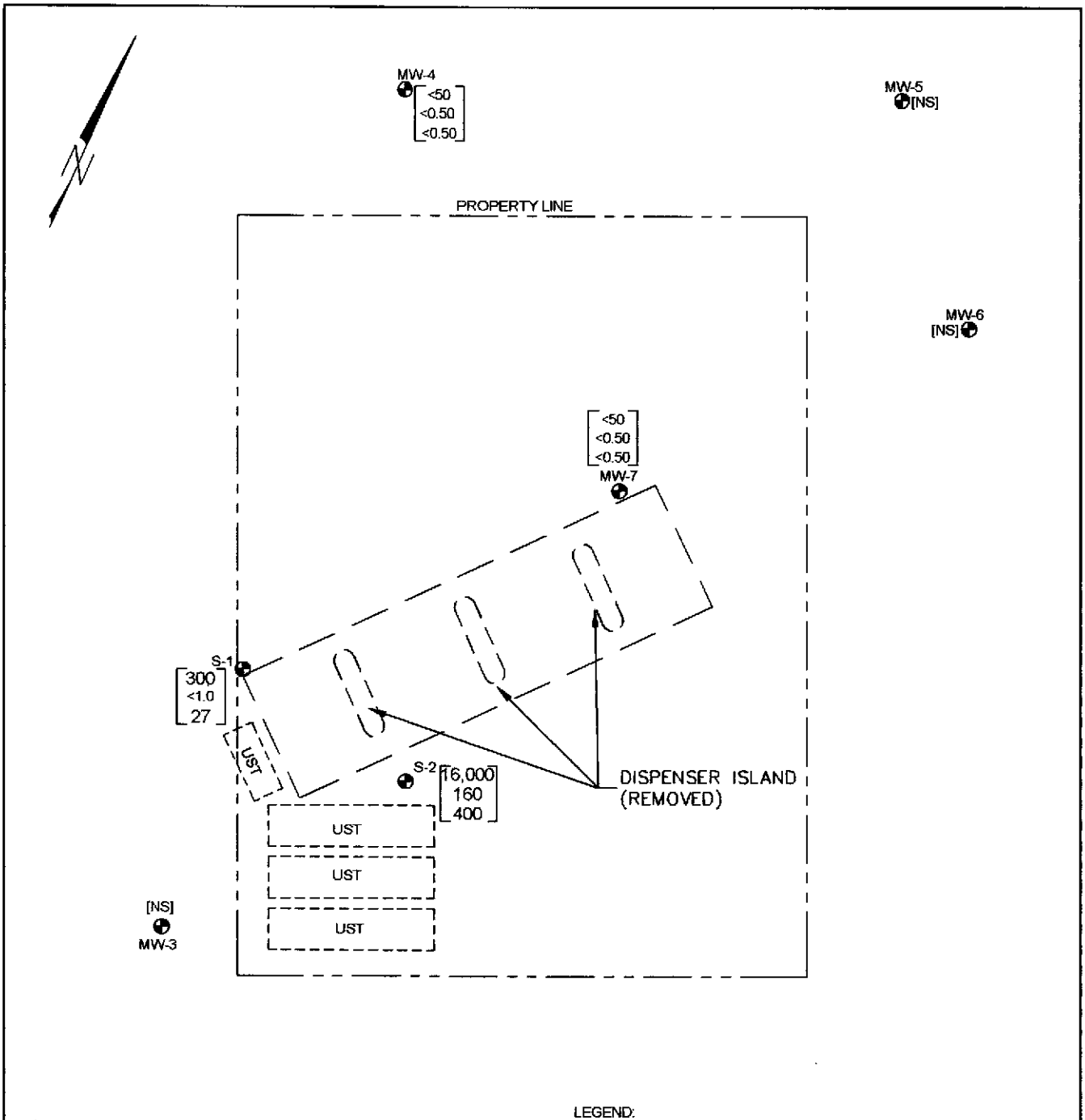
SOURCE: MAP RECEIVED FROM GHH ENGINEERING, INC.

STRATUS ENVIRONMENTAL, INC.

USA GASOLINE STATION #57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA
GROUNDWATER ELEVATION CONTOUR MAP
2nd QUARTER 2003

FIGURE
2
PROJECT NO.
2007-0057-01

Jul 21, 2003 JMP USA 57 Quarterly Figure.dwg
USA\57\Quarterly Figures



LEGEND:

MW-3 MONITORING WELL LOCATION

[NS] NOT SAMPLED

[<50 / <0.50 / <0.50] TOTAL PETROLEUM HYDROCARBONS AS GASOLINE IN µg/L; BENZENE CONCENTRATION IN µg/L; METHYL TERTIARY BUTYL ETHER CONCENTRATION IN µg/L

SAMPLES COLLECTED ON 04/14/03

TPHG ANALYZED BY EPA METHOD 8015B

BENZENE & MTBE ANALYZED BY EPA METHOD 8260B

SOURCE: MAP RECEIVED FROM GHH ENGINEERING, INC.

STRATUS ENVIRONMENTAL, INC.

USA GASOLINE STATION #57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

GROUNDWATER ANALYTICAL SUMMARY
2nd QUARTER 2003

FIGURE

3

PROJECT NO.
2007-0057-01

Jun 04, 2003 JMP USA 57 Quarterly Figure.dwg

USA57\Quarterly Figures

APPENDIX A

FIELD DATA SHEETS

STRATUS ENVIRONMENTAL, INC.

Site Address: Oakland
Project Manager
Sampled By Mike

Site Number: USA 57
Project No. 2007-0057
Project PM Crowley
Date Sampled 4/14/03

Site Contact Phone No.

Water Level Data					Purge Volume Calculations					Well Purge Method				Sample Record			Field Data
Well ID	Time	Depth to water feet	Top of Screen feet	Total Depth of Well feet	Casing Water Column (A)	Well Diameter (inches)	Multiplier Value (B)	Three Casing Volumes (gallons)	Actual Water Purged (gallons)	No Purge	Bailer	Pump	Other	DTW At Sample Time	Sample I.D.	Sample Time	Dissolved Oxygen (mg/L)
S-1	1556	18.04		40.80	22.76	3	1	22	22			✓			S-1	0718	1.36
S-2	1553	19.93		42.85	22.92	3	1	22	22			✓			S-2	0747	1.21
MW-4	0548	11.03		42.45	31.42	4	2	62	62			✓			MW-4	0809	1.30
MW-5	Well DAMAGED				Rubble	in	Pipe	—	—					—	MW-5	—	—
MW-7	0551	18.17		41.85	23.68	4	2	47	47			✓			MW-7	0826	1.06
MW-8	0559	17.84		37.70	19.86	4	2	39	39			✓			MW-8	0647	.91

(A) Casing water Column
Depth wtr. Depth to Bottom

Multiplier Values
2"=0.5 4"=2.0 6"=4.4

STRATUS ENVIRONMENTAL, INC.

Site Address_____
Project Manager_____
Site Sampled by_____

Site Number 66457
Project No. 2007-0007
Project PM Hoopi
Date Sampled 4/14/03

Well ID MW-8				
purge start time 0610				
	Temp C	pH	cond	gallons
time	17.4	6.53	1823	0
time		6.67	1856	20
time	18.4	6.70	1887	39
time				
purge stop time 0641				

Well ID S-1				
purge start time 0651				
	Temp C	pH	cond	gallons
time	17.2	6.98	810	0
time	18.8	7.12	790	22
time				
time				
pugre stop time 0714				

Well ID J-2				
purge start time 0722				
	Temp C	pH	cond	gallons
time	17.4	6.89	860	0
time	18.6	7.21	814	22
time				
time				
purge stop time 0745				

Well ID MW-7 0750				
purge start time				
	Temp C	pH	cond	gallons
time	17.5	6.81	908	0
time	195	6.99	892	20
time	18.3	7.17	863	47
time				
purge stop time 0822				

Well ID MW-4				
purge start time 0730				
	Temp C	pH	cond	gallons
time	17.4	7.21	310	0
time	19.8	7.77	296	30
time	18.9	7.79	284	62
time				
purge stop time 0809				

Well ID				
purge start time				
	Temp C	pH	cond	gallons
time				
time				
time				
time				
purge stop time				

Well ID				
purge start time				
	Temp C	pH	cond	gallons
time				
time				
time				
time				
purge stop time				

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.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

COPY

MAY - 6 2003

ANALYTICAL REPORT

Stratus Environmental
3330 Cameron Park Drive
Cameron Park, CA 956828861

Attn: Gowri Kowtha
Phone: (530) 676-6002
Fax: (530) 676-6005
Date Received 04/17/03

Job#: 2007-0056/USA 57

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	300		200 µg/L	04/14/03	04/18/03
S-1	Tertiary Butyl Alcohol (TBA)	ND	O	20 µg/L	04/14/03	04/18/03
Lab ID :	Methyl tert-butyl ether (MTBE)	27		1.0 µg/L	04/14/03	04/18/03
STR03041747-01A	Di-isopropyl Ether (DIPE)	ND	O	2.0 µg/L	04/14/03	04/18/03
	Ethyl Tertiary Butyl Ether (ETBE)	ND	O	2.0 µg/L	04/14/03	04/18/03
	Benzene	ND	O	1.0 µg/L	04/14/03	04/18/03
	Tertiary Amyl Methyl Ether (TAME)	ND	O	2.0 µg/L	04/14/03	04/18/03
	Toluene	ND	O	1.0 µg/L	04/14/03	04/18/03
	Ethylbenzene	ND	O	1.0 µg/L	04/14/03	04/18/03
	m,p-Xylene	ND	O	1.0 µg/L	04/14/03	04/18/03
	o-Xylene	ND	O	1.0 µg/L	04/14/03	04/18/03
Client ID :	TPH Purgeable	16,000		500 µg/L	04/14/03	04/18/03
S-2	Tertiary Butyl Alcohol (TBA)	95		50 µg/L	04/14/03	04/18/03
Lab ID :	Methyl tert-butyl ether (MTBE)	400		2.5 µg/L	04/14/03	04/18/03
STR03041747-02A	Di-isopropyl Ether (DIPE)	ND	V	5.0 µg/L	04/14/03	04/18/03
	Ethyl Tertiary Butyl Ether (ETBE)	ND	V	5.0 µg/L	04/14/03	04/18/03
	Benzene	160		2.5 µg/L	04/14/03	04/18/03
	Tertiary Amyl Methyl Ether (TAME)	ND	V	5.0 µg/L	04/14/03	04/18/03
	Toluene	76		2.5 µg/L	04/14/03	04/18/03
	Ethylbenzene	210		2.5 µg/L	04/14/03	04/18/03
	m,p-Xylene	270		2.5 µg/L	04/14/03	04/18/03
	o-Xylene	20		2.5 µg/L	04/14/03	04/18/03
Client ID :	TPH Purgeable	ND		50 µg/L	04/14/03	04/18/03
MW-4	Tertiary Butyl Alcohol (TBA)	ND		5.0 µg/L	04/14/03	04/18/03
Lab ID :	Methyl tert-butyl ether (MTBE)	ND		0.50 µg/L	04/14/03	04/18/03
STR03041747-03A	Di-isopropyl Ether (DIPE)	ND		1.0 µg/L	04/14/03	04/18/03
	Ethyl Tertiary Butyl Ether (ETBE)	ND		1.0 µg/L	04/14/03	04/18/03
	Benzene	ND		0.50 µg/L	04/14/03	04/18/03
	Tertiary Amyl Methyl Ether (TAME)	ND		1.0 µg/L	04/14/03	04/18/03
	Toluene	ND		0.50 µg/L	04/14/03	04/18/03
	Ethylbenzene	ND		0.50 µg/L	04/14/03	04/18/03
	m,p-Xylene	ND		0.50 µg/L	04/14/03	04/18/03
	o-Xylene	ND		0.50 µg/L	04/14/03	04/18/03

Alpha Analytical, Inc.

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

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

Client ID :	TPH Purgeable	ND	50 µg/L	04/14/03	04/18/03
MW-7	Tertiary Butyl Alcohol (TBA)	ND	5.0 µg/L	04/14/03	04/18/03
Lab ID :	Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	04/14/03	04/18/03
STR03041747-04A	Di-isopropyl Ether (DIPE)	ND	1.0 µg/L	04/14/03	04/18/03
	Ethyl Tertiary Butyl Ether (ETBE)	ND	1.0 µg/L	04/14/03	04/18/03
	Benzene	ND	0.50 µg/L	04/14/03	04/18/03
	Tertiary Amyl Methyl Ether (TAME)	ND	1.0 µg/L	04/14/03	04/18/03
	Toluene	ND	0.50 µg/L	04/14/03	04/18/03
	Ethylbenzene	ND	0.50 µg/L	04/14/03	04/18/03
	m,p-Xylene	ND	0.50 µg/L	04/14/03	04/18/03
	o-Xylene	ND	0.50 µg/L	04/14/03	04/18/03
Client ID :	TPH Purgeable	ND	50 µg/L	04/14/03	04/18/03
MW-8	Tertiary Butyl Alcohol (TBA)	ND	5.0 µg/L	04/14/03	04/18/03
Lab ID :	Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	04/14/03	04/18/03
STR03041747-05A	Di-isopropyl Ether (DIPE)	ND	1.0 µg/L	04/14/03	04/18/03
	Ethyl Tertiary Butyl Ether (ETBE)	ND	1.0 µg/L	04/14/03	04/18/03
	Benzene	ND	0.50 µg/L	04/14/03	04/18/03
	Tertiary Amyl Methyl Ether (TAME)	ND	1.0 µg/L	04/14/03	04/18/03
	Toluene	ND	0.50 µg/L	04/14/03	04/18/03
	Ethylbenzene	ND	0.50 µg/L	04/14/03	04/18/03
	m,p-Xylene	ND	0.50 µg/L	04/14/03	04/18/03
	o-Xylene	ND	0.50 µg/L	04/14/03	04/18/03

O = Reporting Limits were increased due to sample foaming.

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

4/24/03

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: STR03041747 **Project:** 2007-0056/USA 57

Alpha's Sample ID	Client's Sample ID	Matrix	pH
03041747-01A	S-1	Aqueous	2
03041747-02A	S-2	Aqueous	2
03041747-03A	MW-4	Aqueous	2
03041747-04A	MW-7	Aqueous	2
03041747-05A	MW-8	Aqueous	2

4/24/03
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

Date: 29-Apr-03

QC Summary Report

Work Order: 03041747

Method Blank

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

File ID: **D:\HPCHEM\MS08\DATA\030418\03041807.D** Batch ID: **MS8W0418A** Analysis Date: **04/18/2003 14:01**

Sample ID: **MBLK MS8W0418A** Units : **µg/L** Run ID: **GC/MSD_8_030418A** Prep Date: **04/18/2003**

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	12		10		120	72	126			
Surr: Toluene-d8	9.33		10		93	71	128			
Surr: 4-Bromofluorobenzene	11		10		110	76	121			

Laboratory Control Spike

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

File ID: **D:\HPCHEM\MS08\DATA\030418\03041806.D** Batch ID: **MS8W0418A** Analysis Date: **04/18/2003 13:38**

Sample ID: **LCS MS8W0418A** Units : **µg/L** Run ID: **GC/MSD_8_030418A** Prep Date: **04/18/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
Benzene	10.1	0.5	10		101	83	119			
Toluene	9.21	0.5	10		92	80	120			
Ethylbenzene	9.9	0.5	10		99	80	120			
m,p-Xylene	18.3	0.5	20		92	77	124			
o-Xylene	9.88	0.5	10		99	77	125			
Surr: 1,2-Dichloroethane-d4	9.71		10		97	72	126			
Surr: Toluene-d8	9.5		10		95	71	128			
Surr: 4-Bromofluorobenzene	10.4		10		104	76	121			

Sample Matrix Spike

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

File ID: **D:\HPCHEM\MS08\DATA\030418\03041808.D** Batch ID: **MS8W0418A** Analysis Date: **04/18/2003 14:25**

Sample ID: **03041747-01AMS** Units : **µg/L** Run ID: **GC/MSD_8_030418A** Prep Date: **04/18/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
Benzene	53.4	1.3	50	0	107	83	119			
Toluene	46	1.3	50	0	92	80	120			
Ethylbenzene	50	1.3	50	0	100	80	120			
m,p-Xylene	90.8	1.3	100	1.18	90	77	124			
o-Xylene	49.2	1.3	50	0	98	77	125			
Surr: 1,2-Dichloroethane-d4	49.4		50		99	72	126			
Surr: Toluene-d8	46.2		50		92	71	128			
Surr: 4-Bromofluorobenzene	51.8		50		104	76	121			

Sample Matrix Spike Duplicate

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

File ID: **D:\HPCHEM\MS08\DATA\030418\03041809.D** Batch ID: **MS8W0418A** Analysis Date: **04/18/2003 14:48**

Sample ID: **03041747-01AMSD** Units : **µg/L** Run ID: **GC/MSD_8_030418A** Prep Date: **04/18/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
Benzene	51.5	1.3	50	0	103	83	119	53.36	3.57	
Toluene	43.7	1.3	50	0	87	80	120	46.03	5.31	
Ethylbenzene	48.1	1.3	50	0	96	80	120	50.01	3.98	
m,p-Xylene	88.5	1.3	100	1.18	87	77	124	90.78	2.53	
o-Xylene	48.1	1.3	50	0	96	77	125	49.15	2.2	
Surr: 1,2-Dichloroethane-d4	50.9		50		102	72	126			
Surr: Toluene-d8	45.6		50		91	71	128			
Surr: 4-Bromofluorobenzene	51		50		102	76	121			

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.

Alpha Analytical, Inc.

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

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

Date: 29-Apr-03

QC Summary Report

Work Order: 03041747

Method Blank

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

File ID: **D:\HPCHEM\MS08\DATA\030418\03041807.D** Batch ID: **MS8W0418B** Analysis Date: **04/18/2003 14:01**

Sample ID: **MBLK MS8W0418A** Units : **µg/L** Run ID: **GC/MSD_8_030418A** Prep Date: **04/18/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
TPH Purgeable	ND	50								
Surr: 1,2-Dichloroethane-d4	12		10		120	71	130			
Surr: Toluene-d8	9.33		10		93	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\030418\03041803.D** Batch ID: **MS8W0418B** Analysis Date: **04/18/2003 12:12**

Sample ID: **GLCS MS8W0418B** Units : **µg/L** Run ID: **GC/MSD_8_030418A** Prep Date: **04/18/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
TPH Purgeable	440	50	400		110	58	136			
Surr: 1,2-Dichloroethane-d4	10.8		10		108	71	130			
Surr: Toluene-d8	9.26		10		93	69	127			
Surr: 4-Bromofluorobenzene	10.1		10		101	80	123			

Sample Matrix Spike

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

File ID: **D:\HPCHEM\MS08\DATA\030418\03041810.D** Batch ID: **MS8W0418B** Analysis Date: **04/18/2003 15:11**

Sample ID: **03041747-01AGS** Units : **µg/L** Run ID: **GC/MSD_8_030418A** Prep Date: **04/18/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
TPH Purgeable	2410	250	2000	296.2	106	58	136			
Surr: 1,2-Dichloroethane-d4	54.8		50		110	71	130			
Surr: Toluene-d8	47.1		50		94	69	127			
Surr: 4-Bromofluorobenzene	50.1		50		100	80	123			

Sample Matrix Spike Duplicate

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

File ID: **D:\HPCHEM\MS08\DATA\030418\03041811.D** Batch ID: **MS8W0418B** Analysis Date: **04/18/2003 15:34**

Sample ID: **03041747-01AGSD** Units : **µg/L** Run ID: **GC/MSD_8_030418A** Prep Date: **04/18/2003**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	Qual
TPH Purgeable	2830	250	2000	296.2	127	58	136	2406	18.1	
Surr: 1,2-Dichloroethane-d4	54.3		50		109	71	130			
Surr: Toluene-d8	46.9		50		94	69	127			
Surr: 4-Bromofluorobenzene	49.2		50		98	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.

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

Sample Receipt Checklist

Date Report is due to Client : **4/25/2003** Date of Notice : **4/17/2003 2:14:42 P**

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 : **2007-0056/USA 57**

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

Work Order Number : **STR03041747** Date Received : **4/17/2003** Received by: Dolly S. Baker

Chain of Custody (COC) Information

Carrier name Golden State Overnight

Chain of custody present ?	Yes ☑	No ☐	
Custody seals intact on shippping container/cooler ?	Yes ☑	No ☐	Not Presen ☐
Custody seals intact on sample bottles ?	Yes ☐	No ☐	Not Presen ☑
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 Presen ☐
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 (H_2SO_4)

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 :

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 : STR03041747

Report Due By : 5:00 PM On : 25-Apr-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 : 2007-0056/USA 57
PO :

Client's COC # : none

EDD Required : **Yes**

Sampled by : Mike

Cooler Temp : 4 °C **17-Apr-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
STR03041747-01A	S-1	AQ	04/14/03 07:18	5	0	6		BTXE/GAS/ 5oxys	BTXE/GAS/ 5oxys	
STR03041747-02A	S-2	AQ	04/14/03 07:47	5	0	6		BTXE/GAS/ 5oxys	BTXE/GAS/ 5oxys	
STR03041747-03A	MW-4	AQ	04/14/03 09:08	5	0	6		BTXE/GAS/ 5oxys	BTXE/GAS/ 5oxys	
STR03041747-04A	MW-7	AQ	04/14/03 08:26	5	0	6		BTXE/GAS/ 5oxys	BTXE/GAS/ 5oxys	
STR03041747-05A	MW-8	AQ	04/14/03 06:47	5	0	6		BTXE/GAS/ 5oxys	BTXE/GAS/ 5oxys	

Comments: Custody seal. Frozen ice. CA samples. EDF. ALWAYS send copy of receipt checklist with final report. ;

	Signature	Print Name	Company	Date/Time
Received by:	D-S Baker	D-S Baker	**Alpha Analytical, Inc.**	4/17/03 900

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 CA
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

QA

Client Name USA 57
Address
City, State, Zip Oakland.
P.O. #
PWS #
Phone #
Job # 2007-0056
DWR #
Fax #

Analyses Required: TPH-G BTEX; 5 oxy's

EDF
STANDARD TAT

Time Sampled	Date Sampled	Matrix* See Key Below	Office Use Only Lab ID Number	Sample Description (Sampled by Mike; Report Attention Gowri)	Total and type of containers ** See below	TPH-G BTEX	5 oxy's							REMARKS
0718	4/14/03	AQ	STR03041747-01	S-1	5.V	X	X							
0747	〃	〃	-02	S-2	〃	〃	〃							
0908	〃	〃	-03	MW-4	〃	〃	〃							
0826	〃	〃	-04	MW-7	〃	〃	〃							
0647	〃	〃	-05	MW-8	〃	〃	〃							

ADDITIONAL INSTRUCTIONS:

	Signature	Print Name	Company	Date	Time
Relinquished by	Jeffrey Cornwell	Mike Cornwell	STRATUS ENV.	4/16/03	0800
Received by	M. Gitblanco	Mike Gitblanco	Alpha	4/16/03	0800
Relinquished by					
Received by	DSBaker	DSBaker	Alpha	4/17/03	0900
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.