



3330 Cameron Park Drive, Ste 550
Cameron Park, California 95682
(530) 676-6004 ~ Fax: (530) 676-6005

Alameda County

February 4, 2003

FEB 07 2003

Project No. 2007-0057-01

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, Fourth Quarter 2002, for USA Service Station No. 57, Located at 10700 MacArthur Boulevard, Oakland, California 94605

Dear Mr. Chan:

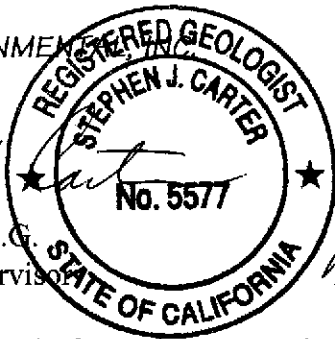
Stratus Environmental, Inc. (Stratus) is submitting the attached report which presents the results of the fourth quarter 2002 quarterly monitoring and sampling program on behalf of USA Gasoline Corporation (USA) for the former USA Service Station No. 57, located at 10700 MacArthur Boulevard, Oakland, 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.

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



Gowri S. Kowtha RG for
Gowri S. Kowtha, P.E.
Project Manager

Attachment: Quarterly Groundwater Monitoring Report, Fourth Quarter 2002

cc: Mr. Charles Miller, USA Gasoline Corporation

Date February 4, 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

WORK PERFORMED THIS QUARTER (Fourth 2002):

1. Stratus collected groundwater samples from wells S-1, S-2, MW-4, MW-7, and MW-8 on November 19, 2002. Well MW-5 was damaged and could not be sampled.
2. Stratus compiled and evaluated groundwater monitoring data.

WORK PROPOSED FOR NEXT QUARTER (First 2003):

1. The next sampling event is tentatively scheduled for February 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 8015B, and for benzene, toluene, ethylbenzene, and 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 8260B.

Current Phase of Project:	<u>Monitoring</u>
Frequency of Groundwater Sampling:	<u>All Wells = Quarterly</u>
Frequency of Groundwater Monitoring:	<u>Quarterly</u>
Groundwater Sampling Date:	<u>November 19, 2002</u>
Is Free Product (FP) Present on Site:	<u>Sheen (well S-2)</u>
FP Recovered This Quarter:	<u>No</u>
Cumulative FP Recovered to Date:	<u>NA</u>
Approximate Depth to Groundwater:	<u>13.24 to 21.70 feet below top of well casing</u>
Groundwater Flow Direction:	<u>Southeast</u>
Groundwater Gradient:	<u>0.48 ft/ft</u>

DISCUSSION:

At the time of the fourth quarter monitoring event, groundwater was encountered in the monitoring wells at depths ranging from 13.24 to 21.70 feet bgs. Groundwater elevations decreased between 3.05 and 6.58 feet in the monitoring wells since the March 12, 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 November 19, 2002, was calculated to be towards the southeast at an average gradient of 0.48 ft/ft.

The highest concentrations of TPHG (26,000 µg/L), benzene (1,400 µg/L), and MTBE (750 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 fourth quarter 2002 are generally consistent with historical analytical data except in well MW-3, where concentrations have dropped significantly. Analytical results of TPHG, benzene, and MTBE for groundwater samples collected on November 19, 2002, 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 (Fourth Quarter 2002)
- Figure 3 Groundwater Analytical Summary (Fourth Quarter 2002)
- 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	

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		TPHG (µg/L)	TPHD (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
				Elevation (ft msl)								
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		
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	

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)	
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	NA
	06/10/99	14.81		61.61	NA	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			
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	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					

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			Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
				Elevation (ft msl)	TPHG (µg/L)	TPHD (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		

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)
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

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
S-2	11/19/02	750	<200[1]	<20[1]	<20[1]	NA	<20[1]	NA
MW-4	11/19/02	<0.50	<5.0	<1.0	<1.0	NA	<1.0	NA
MW-5	11/19/02	Well Damaged						
MW-7	11/19/02	3.8	<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

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

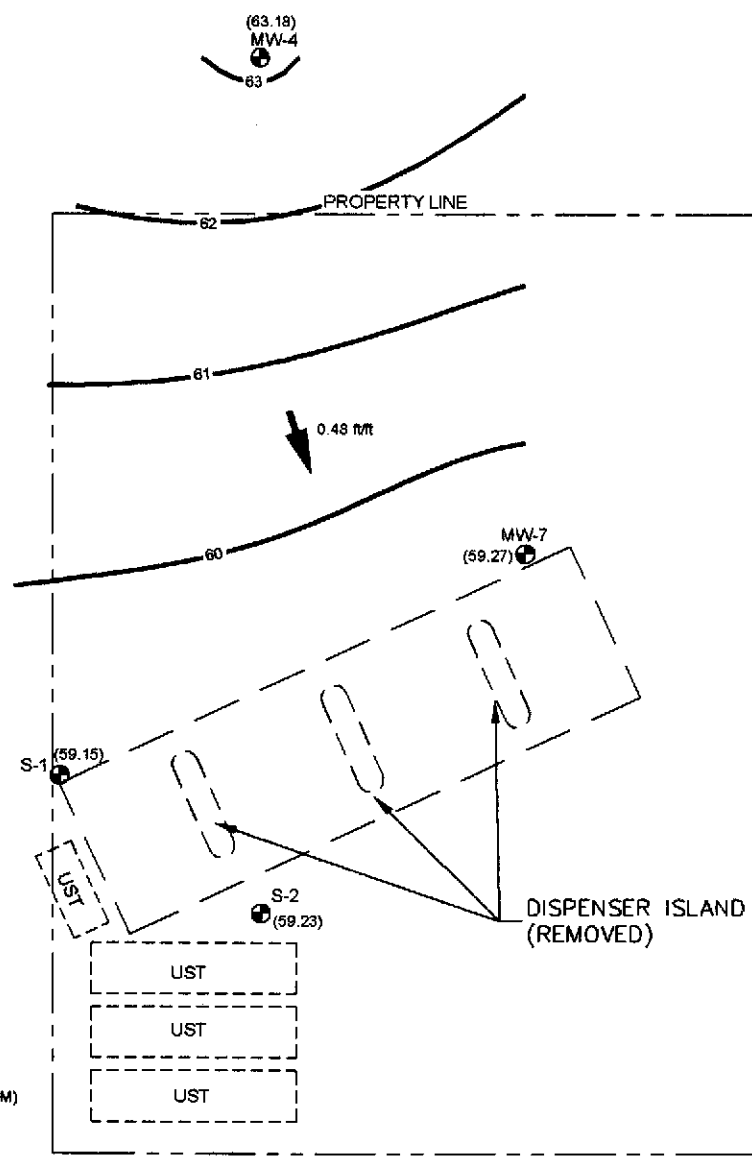


QUADRANGLE LOCATION

STRATUS
 ENVIRONMENTAL, INC.

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

FIGURE
1
 PROJECT NO.
 2007-0057-01



MW-8
● (58.41)



108TH AVENUE

- LEGEND:
- MW-1 MONITORING WELL LOCATION
 - (59.27) GROUND WATER ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
 - 60— WATER TABLE CONTOUR IN FEET RELATIVE TO MEAN SEA LEVEL
 - (NM) NOT MEASURED
 - ➔ INFERRED DIRECTION OF GROUND WATER FLOW
- WELLS MEASURED: 11/19/02

STRATUS
ENVIRONMENTAL, INC.

USA GASOLINE STATION #57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA
 GROUNDWATER ELEVATION CONTOUR MAP
 4th QUARTER 2002

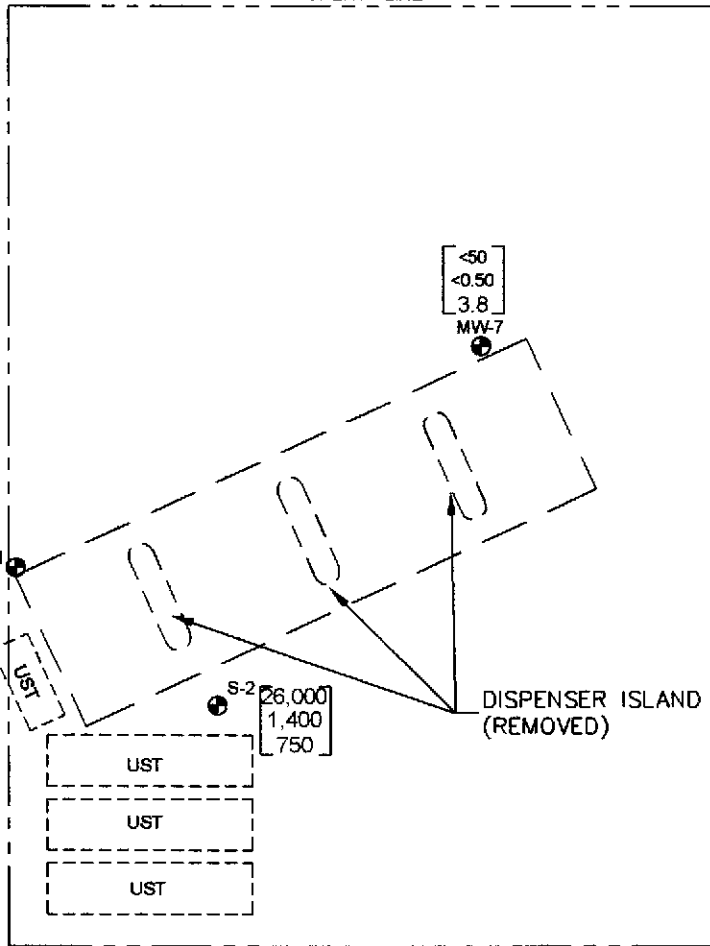
FIGURE
2
PROJECT NO.
2007-0057-01



MW-4
 <50
 <0.50
 <0.50

MW-5
 [NS]

PROPERTY LINE



[NS]
 MW-3

MW-8
 <50
 <0.50
 <0.50

LEGEND:

- ⊕ MW-1 MONITORING WELL LOCATION
- [NS] NOT SAMPLED

- <50 TOTAL PETROLEUM HYDROCARBONS AS GASOLINE IN $\mu\text{g/L}$
- <0.50 BENZENE CONCENTRATION IN $\mu\text{g/L}$
- <0.50 METHYL TERTIARY BUTYL ETHER CONCENTRATION IN $\mu\text{g/L}$

SAMPLES COLLECTED ON 11/19/02
 TPHG ANALYZED BY EPA METHOD 8015
 BENZENE & MTBE ANALYZED BY EPA METHOD 8260B



108TH AVENUE

STRATUS
 ENVIRONMENTAL, INC.

USA GASOLINE STATION #57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA
GROUNDWATER ANALYTICAL SUMMARY
4th QUARTER 2002

FIGURE

3

PROJECT NO.
2007-0057-01

APPENDIX A
FIELD DATA SHEETS

Site Address: WSH 57

Site Number: _____

Project No.: _____

Project PM: Govri

Site Sampled By: Mulla

Date Sampled: 11/19/12

Site Contact & Phone Number: _____

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
MW-1	0609	19.53		40.80	<input type="checkbox"/>	21.27	3	1	21		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.90	23.09	S-1	0759
S-2	0616	4.70		47.85	<input type="checkbox"/>	21.2	3	1	21		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.53	23.41	S-2	0710
MW-4	0612	13.24		42.45	<input type="checkbox"/>	29.21	4	2	58		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.75	15.01	MW4	0826
MW5	Well Damaged.				<input type="checkbox"/>	RUBBLE Dumped out of casing / Bent casing					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	-	MW5	-
MW-7	0618	19.59		41.85	<input type="checkbox"/>	22.26	4	2	44		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.527	24.23	MW7	0746
MW-8	0602	21.14		37.70	<input type="checkbox"/>	16.56	4	2	33		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.527	23.47	MW-8	0940
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Billing Information:

Name Stratus and
 Address 3330 Cameron Park Dr
 City, State, Zip Cameron Park CA
 Phone Number 530 676 6004 Fax _____



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

Client Name		P.O. #		Job #		Analyses Required										REMARKS			
Address		PWS #		DWR #															
City, State, Zip		Phone #		Fax #												EDF STANDARD TAT			
Time Sampled	Date Sampled	Matrix* See Key Below	Office Use Only	Sampled by	Report Attention	Total and type of containers ** See below													
			Lab ID Number	Sample Description															
0759	11/10/02	SO		MILK	FOUR	5.0													
0770						5.0													
0826						5.0													
0746						5.0													
0740						5.0													

ADDITIONAL INSTRUCTIONS:

Signature	Print Name	Company	Date	Time
<i>Michael Cornwell</i>	Michael Cornwell	Stratus	11/10/02	1145
<i>Mike Hilborn</i>	Mike Hilborn	Alpha	11/19/02	1145
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 typically 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 according 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, nonconformants, 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

**CERTIFIED ANALYTICAL REPORTS AND
CHAIN-OF-CUSTODY DOCUMENTATION**



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DEC 10 2002

ANALYTICAL REPORT

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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 : S-1 Lab ID : STR02112042-01A	TPH Purgeable Tertiary Butyl Alcohol (TBA) Methyl tert-butyl ether (MTBE) Di-isopropyl Ether (DIPE) Ethyl Tertiary Butyl Ether (ETBE) Benzene Tertiary Amyl Methyl Ether (TAME) Toluene Ethylbenzene m,p-Xylene o-Xylene	190 ND 190 ND ND ND ND ND ND ND ND ND	100 µg/L 10 µg/L 0.50 µg/L 1.0 µg/L 1.0 µg/L 0.50 µg/L 1.0 µg/L 0.50 µg/L 0.50 µg/L 0.50 µg/L 0.50 µg/L	11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02	11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02
Client ID : S-2 Lab ID : STR02112042-02A	TPH Purgeable Tertiary Butyl Alcohol (TBA) Methyl tert-butyl ether (MTBE) Di-isopropyl Ether (DIPE) Ethyl Tertiary Butyl Ether (ETBE) Benzene Tertiary Amyl Methyl Ether (TAME) Toluene Ethylbenzene m,p-Xylene o-Xylene	26,000 ND 750 ND ND 1,400 ND 180 520 310 30	2,000 µg/L 200 µg/L 10 µg/L 20 µg/L 20 µg/L 10 µg/L 20 µg/L 10 µg/L 10 µg/L 10 µg/L 10 µg/L	11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02	11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02
Client ID : MW-4 Lab ID : STR02112042-03A	TPH Purgeable Tertiary Butyl Alcohol (TBA) Methyl tert-butyl ether (MTBE) Di-isopropyl Ether (DIPE) Ethyl Tertiary Butyl Ether (ETBE) Benzene Tertiary Amyl Methyl Ether (TAME) Toluene Ethylbenzene m,p-Xylene o-Xylene	ND ND ND ND ND ND ND ND ND 0.53 ND	50 µg/L 5.0 µg/L 0.50 µg/L 1.0 µg/L 1.0 µg/L 0.50 µg/L 1.0 µg/L 0.50 µg/L 0.50 µg/L 0.50 µg/L 0.50 µg/L	11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02 11/19/02	11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02 11/21/02



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Client ID :	TPH Purgeable	ND	50 µg/L	11/19/02	11/21/02
MW-7	Tertiary Butyl Alcohol (TBA)	ND	5.0 µg/L	11/19/02	11/21/02
Lab ID :	Methyl tert-butyl ether (MTBE)	3.8	0.50 µg/L	11/19/02	11/21/02
STR02112042-04A	Di-isopropyl Ether (DIPE)	ND	1.0 µg/L	11/19/02	11/21/02
	Ethyl Tertiary Butyl Ether (ETBE)	ND	1.0 µg/L	11/19/02	11/21/02
	Benzene	ND	0.50 µg/L	11/19/02	11/21/02
	Tertiary Amyl Methyl Ether (TAME)	ND	1.0 µg/L	11/19/02	11/21/02
	Toluene	ND	0.50 µg/L	11/19/02	11/21/02
	Ethylbenzene	ND	0.50 µg/L	11/19/02	11/21/02
	m,p-Xylene	ND	0.50 µg/L	11/19/02	11/21/02
	o-Xylene	ND	0.50 µg/L	11/19/02	11/21/02
Client ID :	TPH Purgeable	ND	50 µg/L	11/19/02	11/21/02
MW-8	Tertiary Butyl Alcohol (TBA)	ND	5.0 µg/L	11/19/02	11/21/02
Lab ID :	Methyl tert-butyl ether (MTBE)	ND	0.50 µg/L	11/19/02	11/21/02
STR02112042-05A	Di-isopropyl Ether (DIPE)	ND	1.0 µg/L	11/19/02	11/21/02
	Ethyl Tertiary Butyl Ether (ETBE)	ND	1.0 µg/L	11/19/02	11/21/02
	Benzene	ND	0.50 µg/L	11/19/02	11/21/02
	Tertiary Amyl Methyl Ether (TAME)	ND	1.0 µg/L	11/19/02	11/21/02
	Toluene	ND	0.50 µg/L	11/19/02	11/21/02
	Ethylbenzene	ND	0.50 µg/L	11/19/02	11/21/02
	m,p-Xylene	ND	0.50 µg/L	11/19/02	11/21/02
	o-Xylene	ND	0.50 µg/L	11/19/02	11/21/02

Reported in micrograms per liter, per client request.

V = Reporting Limits were increased due to high concentrations of target analytes.

ND = Not Detected

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

11/27/02

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: STR02112042

Project: USA 57

Alpha's Sample ID	Client's Sample ID	Matrix	pH
02112042-01A	S-1	Aqueous	2
02112042-02A	S-2	Aqueous	2
02112042-03A	MW-4	Aqueous	2
02112042-04A	MW-7	Aqueous	2
02112042-05A	MW-8	Aqueous	2

11/27/02

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:
02-Dec-02

QC Summary Report

Work Order:
02112042

Method Blank

Type: MBLK Test Code: SW8015

Batch ID: MS09W1121B

File ID: D:\HPCHEM\MS09\DATA\021121\02112105.D

Analysis Date: 11/21/2002 10:03

Sample ID: MBLK MS09W1121A

Units: µg/L

Run ID: GC/MSD_9_021121A

Prep Date: 11/21/2002

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD	Ref Val	%RPD	Qual
TPH Purgeable	ND	50									
Surr: 1,2-Dichloroethane-d4	10.5		10		105	71	130				
Surr: Toluene-d8	9.94		10		99	69	127				
Surr: 4-Bromofluorobenzene	9.9		10		99	80	123				

Laboratory Control Spike

Type: LCS Test Code: SW8015

Batch ID: MS09W1121B

File ID: D:\HPCHEM\MS09\DATA\021121\02112104.D

Analysis Date: 11/21/2002 09:40

Sample ID: GLCS MS09W1121A

Units: µg/L

Run ID: GC/MSD_9_021121A

Prep Date: 11/21/2002

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD	Ref Val	%RPD	Qual
TPH Purgeable	433	50	400		108	58	136				
Surr: 1,2-Dichloroethane-d4	10.4		10		104	71	130				
Surr: Toluene-d8	10.1		10		101	69	127				
Surr: 4-Bromofluorobenzene	10		10		100	80	123				

Sample Matrix Spike

Type: MS Test Code: SW8015

Batch ID: MS09W1121B

File ID: D:\HPCHEM\MS09\DATA\021121\02112111.D

Analysis Date: 11/21/2002 12:22

Sample ID: 02112042-03AGS

Units: µg/L

Run ID: GC/MSD_9_021121A

Prep Date: 11/21/2002

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD	Ref Val	%RPD	Qual
TPH Purgeable	2460	250	2000		0	123	58	136			
Surr: 1,2-Dichloroethane-d4	54.1		50		108	71	130				
Surr: Toluene-d8	49.7		50		99	69	127				
Surr: 4-Bromofluorobenzene	48.5		50		97	80	123				

Sample Matrix Spike Duplicate

Type: MSD Test Code: SW8015

Batch ID: MS09W1121B

File ID: D:\HPCHEM\MS09\DATA\021121\02112112.D

Analysis Date: 11/21/2002 12:45

Sample ID: 02112042-03AGSD

Units: µg/L

Run ID: GC/MSD_9_021121A

Prep Date: 11/21/2002

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD	Ref Val	%RPD	Qual
TPH Purgeable	2430	250	2000		0	122	58	136	2456	0.914	
Surr: 1,2-Dichloroethane-d4	56.7		50		113	71	130				
Surr: Toluene-d8	48.8		50		98	69	127				
Surr: 4-Bromofluorobenzene	48.1		50		96	80	123				

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



Alpha Analytical, Inc.

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

Date:
02-Dec-02

QC Summary Report

Work Order:
02112042

Method Blank

Type: MBLK Test Code: SW8260B

Batch ID: MS09W1121A

File ID: D:\HPCHEM\MS09\DATA\021121\02112105.D

Analysis Date: 11/21/2002 10:03

Sample ID: MBLK MS09W1121A

Units: µg/L

Run ID: GC/MSD_9_021121A

Prep Date: 11/21/2002

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	10.5		10		105	71	130				
Surr: Toluene-d8	9.94		10		99	69	127				
Surr: 4-Bromofluorobenzene	9.9		10		99	80	123				

Laboratory Control Spike

Type: LCS Test Code: SW8260B

Batch ID: MS09W1121A

File ID: D:\HPCHEM\MS09\DATA\021121\02112103.D

Analysis Date: 11/21/2002 09:17

Sample ID: LCS MS09W1121A

Units: µg/L

Run ID: GC/MSD_9_021121A

Prep Date: 11/21/2002

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD	Ref Val	%RPD	Qual
Benzene	10.6	0.5	10		106	80	120				
Toluene	10.2	0.5	10		102	80	120				
Ethylbenzene	10.6	0.5	10		106	80	120				
m,p-Xylene	20.5	0.5	20		103	73	129				
o-Xylene	10.5	0.5	10		105	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: SW8260B

Batch ID: MS09W1121A

File ID: D:\HPCHEM\MS09\DATA\021121\02112109.D

Analysis Date: 11/21/2002 11:35

Sample ID: 02112042-03AMS

Units: µg/L

Run ID: GC/MSD_9_021121A

Prep Date: 11/21/2002

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD	Ref Val	%RPD	Qual
Benzene	53.2	1.3	50		0 106	80	120				
Toluene	50.3	1.3	50		0 101	80	120				
Ethylbenzene	52.2	1.3	50		0 104	80	120				
m,p-Xylene	101	1.3	100	0.53	100	73	129				
o-Xylene	51.5	1.3	50		0 103	73	127				
Surr: 1,2-Dichloroethane-d4	52.5		50		105	71	130				
Surr: Toluene-d8	50.2		50		100	69	127				
Surr: 4-Bromofluorobenzene	50.7		50		101	80	123				

Sample Matrix Spike Duplicate

Type: MSD Test Code: SW8260B

Batch ID: MS09W1121A

File ID: D:\HPCHEM\MS09\DATA\021121\02112110.D

Analysis Date: 11/21/2002 11:58

Sample ID: 02112042-03AMSD

Units: µg/L

Run ID: GC/MSD_9_021121A

Prep Date: 11/21/2002

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LowLimit	HighLimit	RPD	Ref Val	%RPD	Qual
Benzene	53.2	1.3	50		0 106	80	120		53.21	0.0376	
Toluene	49.2	1.3	50		0 98	80	120		50.29	2.15	
Ethylbenzene	51.1	1.3	50		0 102	80	120		52.24	2.27	
m,p-Xylene	99.4	1.3	100	0.53	99	73	129		101	1.61	
o-Xylene	51	1.3	50		0 102	73	127		51.51	0.995	
Surr: 1,2-Dichloroethane-d4	53.5		50		107	71	130				
Surr: Toluene-d8	49.6		50		99	69	127				
Surr: 4-Bromofluorobenzene	48.9		50		98	80	123				

Comments: ND - Not Detected at the Reporting Limit.

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

S - Spike Recovery outside accepted recovery limits.

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

B - Analyte detected in the associated Method Blank.

Alpha Analytical, Inc.

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

Sample Receipt Checklist

Date Report is due to Client : 11/29/02

Date of Notice : 11/20/02 9:53:35 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 : **STR02112042**

Date Received : **11/20/02**

Received by: **Dolly S. Baker**

Chain of Custody (COC) Information

Carrier name: FedEx

Chain of custody present ?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/> No	
Custody seals intact on shipping container/cooler ?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/> No	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles ?	Yes <input type="checkbox"/>	<input type="checkbox"/> No	Not Present <input checked="" type="checkbox"/>
Chain of custody signed when relinquished and received ?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/> No	
Chain of custody agrees with sample labels ?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/> No	
Internal Chain of Custody (COC) requested ?	Yes <input type="checkbox"/>	<input checked="" type="checkbox"/> No	
Sub Contract Lab Used :	None <input checked="" type="checkbox"/>	<input type="checkbox"/> SEM	Other (see comments) <input type="checkbox"/>

Sample Receipt Information

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/> No	Not Present <input type="checkbox"/>
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/> No	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/> No	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/> No	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/> No	
Container/Temp Blank temperature in compliance (0-6°C)?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/> No	Cooler Temperature 4°C
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	<input type="checkbox"/> No	No VOA vials submitted <input type="checkbox"/>
TOC Water - pH acceptable upon receipt ?	Yes <input type="checkbox"/>	<input type="checkbox"/> No	N/A <input checked="" type="checkbox"/>
TOC Samples should have a pH<2 (H2SO4)			

Analytical Requirement Information

Are non-Standard or Modified methods requested ?	Yes <input type="checkbox"/>	<input checked="" type="checkbox"/> No	
Are there client specific Project requirements ?	Yes <input type="checkbox"/>	<input checked="" type="checkbox"/> 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 : STR02112042

Report Due By : 5:00 PM On : 29-Nov-02

Client:

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

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

EDD Required : Yes

Sampled by : Mike

Report Attention : Gowri Kowtha

Job : USA 57

Client's COC # : none

Cooler Temp : 4°C

20-Nov-02

CC Report :

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

Alpha Sample ID	Client Sample ID	Collection Matrix	Collection Date	No. of Bottles				Requested Tests						Sample Remarks		
				ORG	SUB	TAT	PWS #	TPHP_W	VOC_W							
STR02112042-01A	S-1	AQ	11/19/02 08:59	5	0	6		BTXE/GAS/ Soxys	BTXE/GAS/5 oxys							
STR02112042-02A	S-2	AQ	11/19/02 07:10	5	0	6		BTXE/GAS/ Soxys	BTXE/GAS/5 oxys							
STR02112042-03A	MW-4	AQ	11/19/02 08:26	5	0	6		BTXE/GAS/ Soxys	BTXE/GAS/5 oxys							
STR02112042-04A	MW-7	AQ	11/19/02 07:46	5	0	6		BTXE/GAS/ Soxys	BTXE/GAS/5 oxys							
STR02112042-05A	MW-8	AQ	11/19/02 09:40	5	0	6		BTXE/GAS/ Soxys	BTXE/GAS/5 oxys							

Comments: Custody seal. Frozen ice. CA samples. EDF. :

Received by:	Signature	Print Name	Company	Date/Time
	<i>DS Baker</i>	DS Baker	Alpha Analytical, Inc.	11/20/02 9:15

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 Sparks and
 Address 330 Cameron Park Dr
 City, State, Zip Cameron Park CA
 Phone Number (530) 276-6001 Fax _____



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 #		Analyses Required										REMARKS
USA 57																
Address		PWS #		DWR #												
City, State, Zip		Phone #		Fax #												
Time Sampled	Date Sampled	Matrix* See Key Below	Office Use Only	Lab ID Number	Sampled by	Report Attention	Total and type of containers** See below									
0829	11/19/02	SLUR		STRO2112042-01	MILL	Exuri	5.0 U	5 ORLS								
070				-02			5.0 U									
0826				-03			5.0 U									
0746				-04			5.0 U									
0940				-05			5.0 U									

ADDITIONAL INSTRUCTIONS:

Signature	Print Name	Company	Date	Time
<i>Michael Cornwell</i>	Michael Cornwell	Sparks	11/10/02	1145
<i>M. Baker</i>	Mike Hilborn	Alpha	11/19/02	1145
<i>D. Baker</i>	D. Baker	Alpha	11/30/02	945
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.