#### **RECEIVED**

2:45 pm, Nov 01, 2012

Alameda County Environmental Health

Mr. Mark Detterman Alameda County Environmental Health Care Services Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502

Re: Former Olympic Service Station

1436 Grant Avenue San Lorenzo, California

ACEHD Case No. RO0000373, GeoTacker No. T0600102256

Dear Mr. Detterman:

I declare, under penalty of perjury, that the information and or recommendations contained in the attached document are true and correct to the best of my knowledge.

Sincerely.

George and Frida Jaher 1989 Family Trust

Philip Jaber, Trustee



October 15, 2012 Project No. 2115-1436-01

Mr. Mark Detterman Alameda County Health Care Services Agency Environmental Health Department 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577

Re: Quarterly Groundwater Monitoring Report - Third Quarter 2012

Former Olympic Station 1436 Grant Avenue San Lorenzo, California ACEHD Case No. RO0000373, GeoTracker No. T0600102256

Dear Mr. Detterman:

Stratus Environmental, Inc. (Stratus), on behalf of Mr. Philip Jaber and the George and Frida Jaber 1989 Family Trust, is submitting the attached report, for the former Olympic Station located at 1436 Grant Avenue in San Lorenzo, California (Figure 1). If you have any questions or comments concerning this report, please contact Steve Carter at <a href="mailto:scarter@stratusinc.net">scarter@stratusinc.net</a> or (530) 676-6008.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

Stephen J. Carter, P.G.

Project Manager

NO SE

No. 5577

Stenben J. Carter

Scott G. Bittinger, P.G.

Project Geologist

Attachment: Quarterly Groundwater Monitoring Report, Third Quarter 2012

cc: Mr. Philip Jaber

Ms. Cherie McCaulou, RWQCB

## FORMER OLYMPIC STATION QUARTERLY GROUNDWATER MONITORING REPORT

Facility Address: 1436 Grant Avenue, San Lorenzo, CA

Consulting Co. / Contact Person: Stratus Environmental, Inc. / Steve Carter, P.G.

Consultant Project No: 2115-1436-01

Primary Agency/Regulatory ID No: Mark Detterman, Alameda County Environmental Health Department

(ACEHD) / Case No. RO0000373

#### **WORK PERFORMED THIS QUARTER (Third Quarter 2012):**

- On August 28, 2012, Stratus conducted quarterly groundwater monitoring and sampling activities. During this event, all wells (MW-1 through MW-4 and EX-1 through EX-3) were gauged for depth to water, evaluated for the presence of free product, purged and sampled. Following gauging, all wells were purged, and groundwater samples were collected. Field data sheets, sampling procedures and laboratory analytical reports are included as Appendices A, B and C, respectively. Analytical results for sampled wells and depth to groundwater measurements have been uploaded to the State of California's GeoTracker database. Documentation of these data uploads is attached in Appendix D.
- 2. On September 30, 2012, Stratus prepared and submitted to ACEHD a Corrective Action Plan (CAP) that presents a conceptual site model and proposes to implement dual phase extraction (DPE) remedial measures.

#### WORK PROPOSED FOR NEXT QUARTER (Fourth Quarter 2012):

- 1. In accordance with the ACEHD letter of January 28, 2011, no groundwater monitoring or sampling activities will be conducted at the site during fourth quarter 2012.
- 2. Upon approval of the CAP, Stratus will initiate DPE system design and permitting activities and submit a USTCF budget Change Order Request.

Current Phase of Project:	CAP/REM (Start-up)
Frequency of Groundwater Monitoring:	All Wells = Semi-Annual (1st & 3rd)
Frequency of Groundwater Monitoring and Sampling:	All Wells = (Semi-Annual 1 <sup>st</sup> and 3 <sup>rd</sup> )
Groundwater Sampling Date:	August 28, 2012
Is Free Product (FP) Present on Site:	No
Approximate Depth to Groundwater:	7.15 to 7.81 ft bgs
Groundwater Flow Direction:	Southwest
Groundwater Gradient:	0.005 ft/ft

#### DISCUSSION:

On August 28, 2012, third quarter 2012 groundwater monitoring and sampling activities were conducted at the site. During this event, all wells were gauged for depth to water and evaluated for the presence of free product. Following gauging, all wells were purged and groundwater samples were collected. Well MW-4

purged dry before three casing volumes could be removed. Groundwater samples were analyzed at a state-certified analytical laboratory for gasoline range organics (GRO) by EPA Method SW/8015B and for benzene, toluene, ethylbenzene, total xylenes (BTEX) and methyl tert-butyl ether (MTBE) by EPA Method SW8260B. Well construction details are summarized in Table 1, and historical groundwater elevation and analytical data are summarized in Table 2.

At the time of the third quarter 2012 monitoring event, depth-to-water was measured between 7.15 and 7.81 feet below ground surface. Groundwater elevations decreased between 0.77 and 1.45 feet in all monitoring wells since the previous monitoring event (March 15, 2012). Depth-to-water measurements were converted to feet above mean sea level (MSL) and used to construct a groundwater elevation contour map (Figure 2). Groundwater flow beneath the site was to the southwest with a calculated gradient of 0.005 ft/ft. Historically, groundwater flow beneath the site has been toward the west-southwest and southwest. Groundwater flow during the third quarter 2012 event was generally consistent with historical data.

Concentrations of GRO were reported in four of the seven sampled wells with a concentration range between 100 and 2,400 micrograms per liter ( $\mu$ g/L). Benzene was also reported in four wells with a maximum concentration reported in well MW-4 (250  $\mu$ g/L). MTBE concentrations increased in all wells, with the exception of MW-4. Concentrations of MTBE reported during third quarter 2012 are 240  $\mu$ g/L (MW-1), 35  $\mu$ g/L (MW-2), 24  $\mu$ g/L (MW-3), 1,400  $\mu$ g/L (MW-4), 42  $\mu$ g/L (EX-1), 540  $\mu$ g/L (EX-2), and 190  $\mu$ g/L (EX-3). Maximum GRO, benzene, and MTBE concentrations continue to be reported in well MW-4. The concentrations in well MW-4 dropped significantly from the first quarter 2012 sampling event, but are within the range of historical analytical data for this well. Figure 3 presents GRO, benzene and MTBE analytical results from the third quarter 2012 sampling event.

#### ATTACHMENTS:

•	Table 1	Well Construction Details
•	Table 2	Groundwater Elevation and Analytical Summary
•	Figure 1	Site Location Map
•	Figure 2	Groundwater Elevation Contour Map (Third Quarter 2012)
•	Figure 3	Groundwater Analytical Summary (Third Quarter 2012)
•	Appendix A	Field Data Sheets
•	Appendix B	Sampling and Analyses Procedures
•	Appendix C	Laboratory Analytical Reports and Chain-of-Custody Documentation
•	Appendix D	GeoTracker Electronic Submittal Confirmations

TABLE 1
WELL CONSTRUCTION DETAILS

Former Olympic Service Station, 1436 Grant Avenue, San Lorenzo, CA

	Date	Boring Depth	0	Well Diameter	Well Depth	Screen Interval	Slot Size	Drilling Method	Consultant
Boring/Well I.D.		(feet)	(inches)	(inches)	(feet)	(feet bgs)	(inches)		
Groundwater .	Monitorin	g Wells		-					
MW-1	09/24/99	26.5	8	2	26.5	5 - 26.5	0.020	HSA	Conestoga-Rovers & Associates
MW-2	09/24/99	20.0	8	2	20	5-20	0.020	HSA	Conestoga-Rovers & Associates
MW-3	09/24/99	21.5	8	2	21	5-21	0.020	HSA	Conestoga-Rovers & Associates
MW-4	02/09/10	10.0	10	4	10	5-10	0.020	Air Knife	Conestoga-Rovers & Associates
Extraction We	ells								
EX-1	05/19/11	20.0	10	4	20	5-20	0.020	HSA	Stratus Environmental
EX-2	05/19/11	20.0	10	4	20	5-20	0.020	HSA	Stratus Environmental
EX-3	05/19/11	20.0	10	4	20	5-20	0.020	HSA	Stratus Environmental

HSA = Hollow Stem Auger

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY
Former Olympic Service Station, 1436 Grant Avenue, San Lorenzo, CA

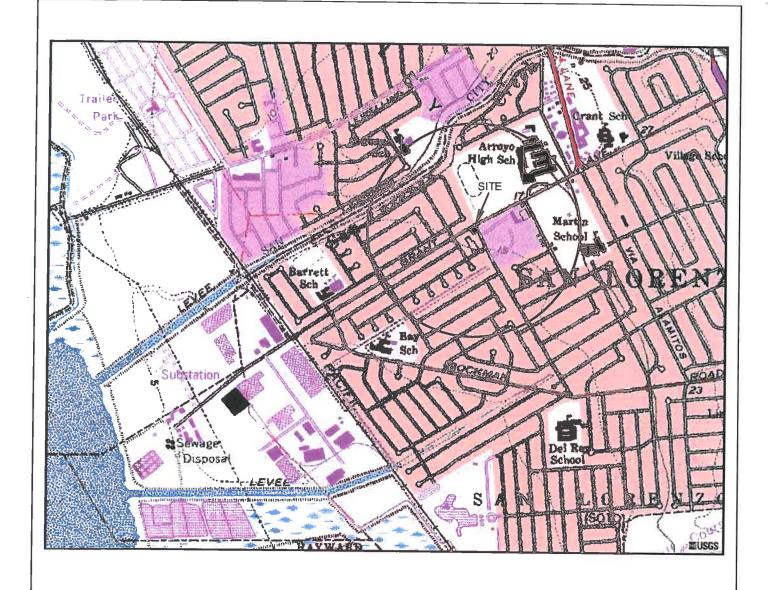
Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)*	Grouwater Elevation (ft msl)	TPHmo (µg/L)	TPHd (µg/L)	GRO (μg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (μg/L)	DIPE (µg/L)	TAME (µg/L)	ETBE (µg/L)	TBA (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (μg/L)
MW-1	10/06/99	8.35	15.00	6.65		84	3,900	<25	<25	<25	<25	3,500							
	01/13/00	7.90		7.10		< 50	<1,300	18	<13	<13	<13	1,700							
ì	04/12/00	7.08		7.92		56	<1,000	66	<10	<10	<10	1,600							
	07/19/00	7.66		7.34		52	<1,000	<10	<10	<10	<10	1,200							
	10/25/00	7.91		7.09		76	4,100	120	<25	<25	<25	6,100							
1	02/16/07	6.32		8.68						**									
li .	03/01/07	5.88		9.12	<250	<50	<50	<1.2	<1.2	<1.2	<1.2	78	<1.2	<1.2	<1.2	<12	<120	<1.2	<1.2
	05/01/07	7.24	15.71	8.47	<250	<50	< 50	<5.0	<5.0	<5.0	<5.0	250	< 5.0	< 5.0	< 5.0	<50	< 500	<5.0	< 5.0
	08/01/07	7.77		7.94		<50	<50	<25	<25	<25	<25	520	<25	<25	<25	<250	<2,500	<25	<25
li .	11/01/07	7.71		8.00		<50	<50	<12	<12	<12	<12	460	<12	<12	<12	<120	<1,200	<12	<12
	02/01/08	5.71		10.00		<50	<50	<2.5	<2.5	<2.5	<2.5	110	<2.5	<2.5	<2.5	<10	<250	<2.5	<2.5
ŀ	05/02/08	7.52		8.19	<250	<50	<50	<5.0	<5.0	< 5.0	<5.0	240	< 5.0	<5.0	< 5.0	<20	<500	< 5.0	<5.0
i	08/01/08	8.02		7.69		<50	<50	<10	<10	<10	<10	500	<10	<10	<10	<40	<1,000	<10	<10
	11/04/08	7.28		8.43		<50	<50	<5.0	< 5.0	<5.0	<5.0	260	< 5.0	< 5.0	< 5.0	26	< 500	< 5.0	<5.0
	08/11/09	8.08		7.63		<50	<50	<5.0	<5.0	<5.0	<5.0	270	<5.0	<5.0	<5.0	<20	<500	< 5.0	<5.0
	02/03/10	6.14		9.57			<50	< 0.5	< 0.5	< 0.5	< 0.5	39							
	05/18/10	7.09		8.62															
	08/05/10	7.65		8.06			< 50	< 0.5	< 0.5	< 0.5	< 0.5	350							
	02/04/11	7.20		8.51			<50	0.90	< 0.5	< 0.5	< 0.5	62					**		
	06/03/11	7.28	18.60	11.32															
	08/02/11	7.47		11.13			120	< 0.50	< 0.50	< 0.50	< 0.50	160							
	09/29/11	7.83		10.77															
	10/12/11	7.03		11.57															
	11/09/11	7.55		11.05															
	12/12/11	7.81		10.79															
	03/15/12	6.45		12.15			55	< 0.50	< 0.50	< 0.50	< 0.50	71							
	08/28/12	7.81		10.79			120	<0.50	<0.50	<0.50	<0.50	240							

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY
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Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)*	Grouwater Elevation (ft msl)	TPHmo (µg/L)	TPHd (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (μg/L)	DIPE (µg/L)	TAME (μg/L)	ETBE (µg/L)	TBA (µg/L)	Ethanol (µg/L)	EDB (μg/L)	1,2-DCA (μg/L)
MW-2	10/06/99	7.87	14.46	6.59	<500	<50	70	<0.5	<0.5	<0.5	<0.5	11							
1	01/13/00	7.46		7.00	<500	<50	<50	< 0.5	< 0.5	< 0.5	< 0.5	6.2							
	04/12/00	6.67		7.79	< 500	< 50	<50	< 0.5	< 0.5	< 0.5	< 0.5	39					••		
	07/19/00	7.23		7.23	<500	<50	<1,000	<10	<10	<10	<10	990							
	10/25/00	7.52		6.94	<500	< 50	370	<2.5	<2.5	<2.5	<2.5	690							
1	02/16/07	5.89		8.57															
	03/01/07	5.45		9.01	<250	<50	<50	< 0.5	< 0.5	< 0.5	< 0.5	9.8	< 0.5	< 0.5	< 0.5	<5.0	<50	< 0.5	< 0.5
	05/01/07	6.83	15.17	8.34	<250	< 50	< 50	< 5.0	<5.0	<5.0	<5.0	120	< 5.0	<5.0	< 5.0	<50	<500	<5.0	< 5.0
	08/01/07	7.35		7.82		<50	<50	<5.0	<5.0	<5.0	< 5.0	130	<5.0	<5.0	<5.0	<50	<500	<5.0	<5.0
	11/01/07	7.27		7.90		< 50	<50	< 0.5	< 0.5	< 0.5	< 0.5	19	< 0.5	< 0.5	< 0.5	<5.0	<50	< 0.5	<0.5
i	02/01/08	5.25		9.92		<50	<50	< 0.5	< 0.5	< 0.5	< 0.5	3.3	< 0.5	< 0.5	< 0.5	<2.0	<50	< 0.5	< 0.5
	05/02/08	7.12		8.05		<50	<50	<2.5	<2.5	<2.5	<2.5	83	<2.5	<2.5	<2.5	<10	<250	<2.5	<2.5
1	08/01/08	7.59		7.58		<50	< 50	<1.0	<1.0	<1.0	<1.0	52	<1.0	<1.0	<1.0	<4.0	<100	<1.0	<1.0
	11/04/08	6.84		8.33		80	<50	< 0.5	< 0.5	< 0.5	< 0.5	5.9	< 0.5	< 0.5	< 0.5	<2.0	<50	< 0.5	< 0.5
	08/11/09	7.65		7.52		< 50	<50	< 0.5	< 0.5	< 0.5	< 0.5	9.4	< 0.5	< 0.5	< 0.5	<2.0	<50	< 0.5	<0.5
	02/03/10	5.75		9.42			<50	< 0.5	< 0.5	< 0.5	< 0.5	0.86					**		
	05/18/10	6.67		8.50															
	08/05/10	7.25		7.92			<50	< 0.5	< 0.5	< 0.5	< 0.5	57							
	02/04/11	6.79		8.38			<50	< 0.50	< 0.50	< 0.50	< 0.50	4.4							
	06/03/11	6.82	18.00	11.18															
	08/02/11	7.06		10.94			<50	< 0.50	< 0.50	< 0.50	< 0.50	46							
	09/29/11	7.39		10.61			<50	< 0.50	< 0.50	< 0.50	< 0.50	41	<1.0	<1.0	<1.0	<10			<1.0
	10/12/11	6.62		11.38			<50	< 0.50	< 0.50	< 0.50	< 0.50	37	<1.0	<1.0	<1.0	<10		_	<1.0
	11/09/11	7.11		10.89			<50	< 0.50	< 0.50	< 0.50	< 0.50	33	<1.0	<1.0	<1.0	<10			<1.0
	12/12/11	7.35		10.65					••										
	03/15/12	5.98		12.02			<50	< 0.50	< 0.50	< 0.50	< 0.50	4.3							
	08/28/12	7.39		10.61			<50	< 0.50	<0.50	<0.50	< 0.50	35							

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Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)*	Grouwater Elevation (ft msl)	TPHmo (µg/L)	TPHd (μg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DIPE (µg/L)	TAME (μg/L)	ETBE (µg/L)	TBA (μg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (μg/L)
MW-3	10/06/99	7.90	14.41	6.51		300	3,900	900	89	160	560	790	-						
	01/13/00	7.50		6.91		210	740	110	4.8	35	18	290			_				
	04/12/00	6.61		7.80		640	2,200	650	9.7	180	24	140							
	07/19/00	7.24		7.17		270	2,700	420	<2.5	160	<2.5	99							
	10/25/00	7.52		6.89		150	710	180	<2.5	24	<2.5	71							
	02/16/07	5.90		8.51															
	03/01/07	5.44		8.97	<250	<50	82	20	<1.7	<1.7	<1.7	100	<1.7	<1.7	<1.7	<17	<170	<1.7	<1.7
	05/01/07	6.87	15.13	8.26	<250	<50	<50	<5.0	<5.0	<5.0	<5.0	88	< 5.0	< 5.0	< 5.0	<50	<500	<5.0	<5.0
	08/01/07	7.40		7.73		<50	130	12	<2.5	<2.5	<2.5	98	<2.5	<2.5	<2.5	<25	<250	<2.5	<2.5
	11/01/07	7.35		7.78		< 50	77	<2.5	<2.5	<2.5	<2.5	68	< 2.5	<2.5	<2.5	<25	<250	<2.5	<2.5
	02/01/08	5.28		9.85		<50	<50	<2.5	<2.5	<2.5	<2.5	97	<2.5	<2.5	<2.5	<10	<250	<2.5	<2.5
	05/02/08	7.15		7.98		<50	68	2.3	<1.7	<1.7	<1.7	86	<1.7	<1.7	<1.7	7.2	<170	<1.7	<1.7
	08/01/08	7.66		7.47		<50	85	3.5	<1.0	<1.0	<1.0	66	<1.0	<1.0	<1.0	7.2	<100	<1.0	<1.0
	11/04/08	6.96		8.17		<50	<50	<1.0	<1.0	<1.0	<1.0	40	<1.0	<1.0	<1.0	<4.0	<100	<1.0	<1.0
	08/11/09	7.72		7.41		<50	110	33	< 0.50	< 0.50	< 0.50	28	< 0.50	< 0.50	< 0.50	< 2.0	<50	< 0.50	< 0.50
	02/03/10	5.72		9.41			< 50	0.55	< 0.50	< 0.50	< 0.50	25							
	05/18/10	6.73		8.40															
	08/05/10	7.31		7.82			450	110	2.2	0.76	0.64	32							
	02/04/11	6.80		8.33			220[1]	64	1.6	< 0.5	< 0.5	36							
	06/03/11	6.87	17.95	11.08		-	200	26	< 0.50	< 0.50	< 0.50	34							
	08/02/11	7.07		10.88			<50	2.5	< 0.50	< 0.50	< 0.50	36							
	09/29/11	7.43		10.52			<50	< 0.50	< 0.50	< 0.50	< 0.50	28	<1.0	<1.0	<1.0	<10			<1.0
	10/12/11	6.67		11.28			<50	0.91	< 0.50	< 0.50	< 0.50	32	<1.0	<1.0	<1.0	<10			<1.0
	11/09/11	7.16		10.79			<50	1.8	< 0.50	< 0.50	< 0.50	31	<1.0	<1.0	<1.0	<10			<1.0
	12/12/11	7.42		10.53															
	03/15/12	6.21		11.74			<50	< 0.50	< 0.50	< 0.50	< 0.50	24							
	08/28/12	7.44		10.51			<50	6.5	<0.50	<0.50	<0.50	24							
MW-4	05/18/10	6.68	15.15	8.47			13,000	620	36	170	12	1,200							
	08/05/10	7.25		7.90			9,200	780	13	230	4.3	1,800							
	02/04/11	6.71		8.44			4,800[1]	350	7.1	23	<2.5	440							
	06/03/11	6.78	17.99	11.21			4,700	350	2.6	19	<2.5[2]	670							
	08/02/11	7.01		10.98			4,700	290	<2.5[2]	12	<2.5[2]	970					~~		
	09/29/11	7.37		10.62			8,700	590	<5.0[2]	34	<5.0[2]	1,500	<10[2]	28	<10[2]	<100[2]		-	<10[2]
	10/12/11	6.61		11.38			1,500	160	<1.0[2]	1.8	<1.0[2]	1,300	<2.0[2]	8.6	<2.0[2]	42		_	<2.0[2]
	11/09/11	7.18		10.81			2,800	190	1.4	9.6	1.3	720	<2.0[2]	3.6	<2.0[2]	270			<2.0[2]
	12/12/11	7.36		10.63			3,800	300	2.4	11	2.5	1,200				_			
	03/15/12	6.15		11.84			8,300	530	<5.0[2]	120	72	3,700	••						
	08/28/12	7.40		10.59			2,400	250	<4.0[2]	14	<4.0[2]	1,400							



GENERAL NOTES: BASE MAP FROM U.S.G.S. SAN LORENZO, CA. 7.5 MINUTE TOPOGRAPHIC PHOTOREVISED 1978





APPROXIMATE SCALE

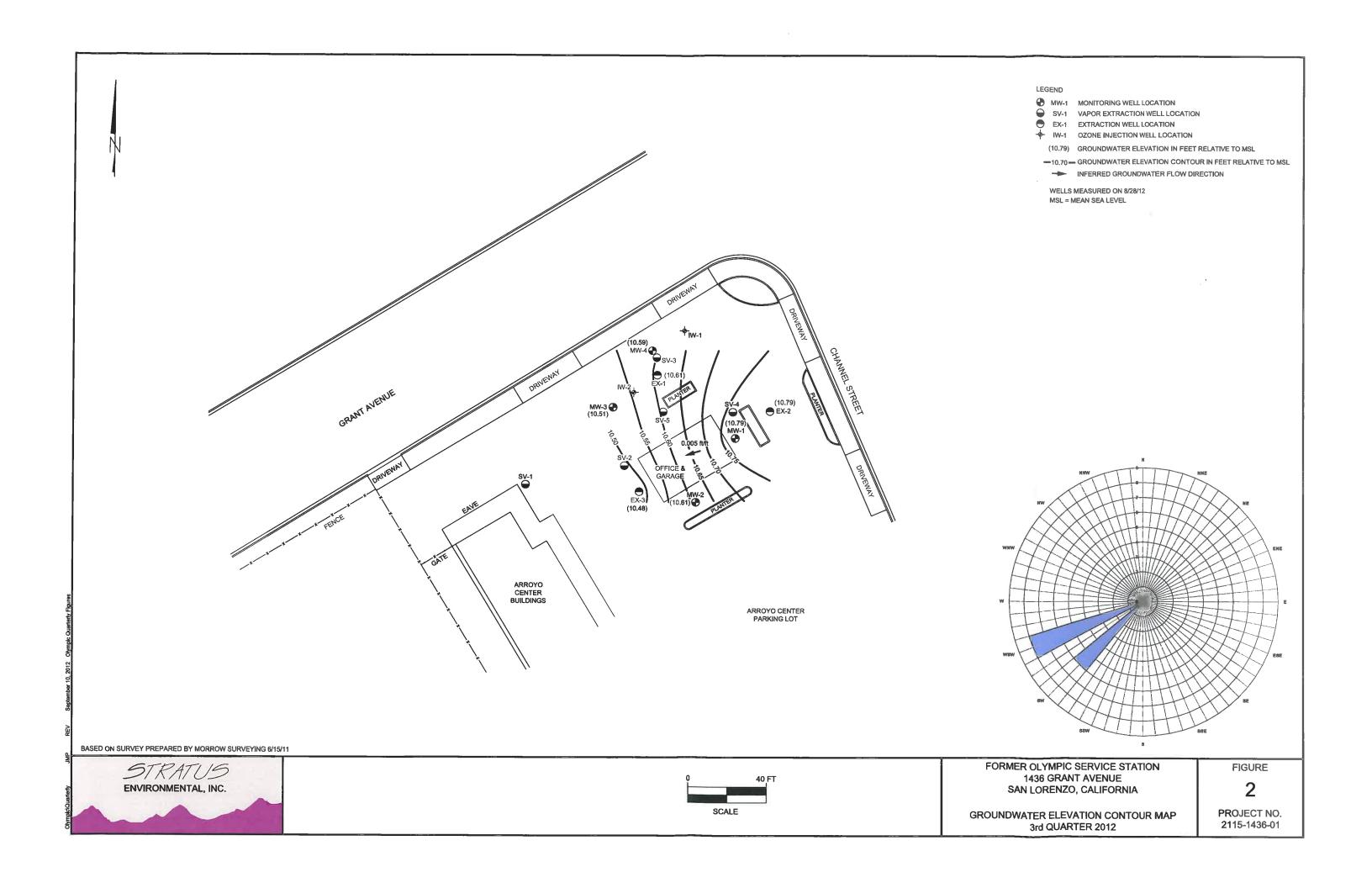


FORMER OLYMPIC SERVICE STATION 1436 GRANT AVENUE SAN LORENZO, CALIFORNIA

SITE LOCATION MAP

FIGURE

1
PROJECT NO. 2115-1436-01



2,400 250 1,400 <300 2.5 540 <50 6.5 24 OFFICE & GARAGE EX-3 100 <0.50 190 ARROYO CENTER BUILDINGS ARROYO CENTER PARKING LOT LEGEND

♦ MW-1 MONITORING WELL LOCATION
 ♦ SV-1 VAPOR EXTRACTION WELL LOCATION
 ♦ EX-1 EXTRACTION WELL LOCATION
 • IW-1 OZONE INJECTION WELL LOCATION

120 GASOL
 <0.50 BENZE</li>
 240 METHY

GASOLINE RANGE ORGANICS (GRO) CONCENTRATION IN µg/L BENZENE CONCENTRATION IN µg/L

METHYL TERTIARY BUTYL ETHER (MTBE) IN μg/L

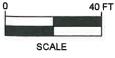
WELLS SAMPLED ON 8/28/12

GRO ANALYZED BY EPA METHOD 8015B

MTBE & BENZENE ANALYZED BY EPA METHOD 8260B

BASED ON SURVEY PREPARED BY MORROW SURVEYING 6/15/11

STRATUS ENVIRONMENTAL, INC.



FORMER OLYMPIC SERVICE STATION 1436 GRANT AVENUE SAN LORENZO, CALIFORNIA

GROUNDWATER ANALYTICAL SUMMARY
3rd QUARTER 2012

FIGURE

PROJECT NO. 2115-1436-01

# APPENDIX A FIELD DATA SHEETS



Site Address 1436 Grant Avenue	Site Number Olympic Jaber	
City San Lorenzo	Project Number	
Sampled by:	Project DM	
SignatureCMUC	DATE S-Z8-1	

	Wa	ater Level D	ata			Purge V	olume Calc	ulations			Purae	Metho	d	S	ample Reco	ord	ITIALI D.C.
Well ID	Time	Depth to Product (feet)	Depth to Water (feet)	Total Depth (feet)	Water column (feet)	Diameter (inches)	Multiplier	3 casing volumes (gallons)	Actual water purged (gallons)	No Purge		Pump		DTW at sample time	Sample I.D	Sample Time	Pield Data DO (mg/L)
MWI			7.81	23.20	18.39	2	.5	8	8		X			(feet) 7.82	1/11/4 - (	0703	1 (1/2
mw 2	050V		7.39	1836	10-97	2 .	,5	8	2	1	X			7.40	1 2		1.00
MW3	050h	7:44	7.99	18.84	NHE	2	15	6	6		X			7-47	) =	0602	1-20
Mh 4	0523		7.40	9.32		4	2.0	4	2 004		X			7.42	106 4	0730	0.50
EXI	0904		7.53	19.80		4	2.0	24	24		Ý		$\dashv$	7.54	PX-1	0543	121
BRUZ	0439		7.35	19,31	11.96	4	2,0	24	24		Ź				EX.Z		7150
EX13	0501		7-15	19.80	12/15	4	2.0	25	25		上			7.16	とブース	01777	
															27- 2	40 L	1.10
																	<del></del>
													$\Box$				
+															,		
												$\perp$					
		<del></del>		+													
	-									-	_	$\rightarrow$					
			-	-+						-	$-\!$	$\dashv$	$-\downarrow$				
				-+													
									94								

Multiplier 2" = 0.5 3" = 1.0 4" = 2.0 6" = 4.4

Please refer to groundwater sampling field procedures
pH/Conductivity/temperature Meter - Oakton Model PC-10
DO Meter - Oakton 300 Series (DO is always measured before purge)

	CALIBRATION DATE	
рН	8-26-12	
Conductivity	)	
DO		



Sampled By:

Site Address 1436 Grant Ave Site Number Olympic Jaber
City San Lorenzo Project Number 2115-1436-01 Project PM S. Carter
DATE 8-2012

Well ID Mu	14				Well ID EX.	7			•
Purge start time	•		Odor	Ø N	Purge start time		<del></del>	Oda	<u> </u>
	Temp C	pН	cond	gallons		Temp C	рН	Odor	O N
time 0518	19.3	695	795	8	time 0528		1	cond	gallons
time 9 527	19.8	6.86	812		time 0572		6.86	844	<del></del>
time		000		714	time 9538	19.0	644	871	12
lime					time	17.0	692	868	24
purge stop time	8,80	00	ORP T	358	purge stop time	1-71 De			
Well ID MW				4	<del> </del>		<u> </u>	ORP	356
Purge start time			Odor	(Y) N	Purge start time	/			73
	Temp C	рH	cond	gallons	urge start time	T -	<del></del>	Odor	Ø N
ime 0549	261	6.92			time ()60 %	Temp C	pH	cond	gallons
me 0543	20.7	7.02	803	3	0000	20.2	6.90	871	8
me 9557	20.4	6.94	867	6	time 0617	19.4	7.04	881	12
me	1201	0.11	007		time 9620	1902	7.03	889	25
urge stop lime	1.20	70	ORP	343	lime				
Vell ID MW			0111		purge stop time		7	ORP 3	39
urge start time			Odor	<u> </u>	Well ID Mu				8
	Temp C	рН	cond		Purge start time			Odor	Y
me <i>0630</i>	19.8	6.76		gallons		Temp C	pΗ	cond	gallons
ne 0634	19.4	6-79	821	<del></del>	time 9647	18,8	6.85	986	82
ne 9437	19.4	6.79	839	-	time 0652	19.0		906	4
ne	11.5	6.1	831		time 0057	189	6.89	909	8
irge slop time	1.8/	70	ORP 3		time 				
ell ID EX. Z			URP	R	ourge stop time /	6500	2	ORP 3	47
erge start time	_				Well ID				
inge statt time	T 0		Odor		Ourge start time			Odor	Y N
1715	7emp C 24 0	pH	cond	gallons		Temp C	рН	cond	gallons
ne 0705		122	839	8	ime				
0710		6.27	829		ime				
	20.0	678	826	24	me				
e	( -, -				me				
ge stop time	.70 00		ORP 3	59	urge slop time			ORP	

# APPENDIX B SAMPLING AND ANALYSES PROCEDURES

## 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<sup>®</sup> 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 Califomia-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

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

# LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION



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

#### **ANALYTICAL REPORT**

Stratus Environmental 3330 Cameron Park Drive Cameron Park, CA 956828861

Attn: Steve Carter Phone: (530) 676-6008 Fax: (530) 676-6005

Date Received: 08/29/12

Job: Olympic

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

		Parameter	Concentrat	ion	Reporting	Date	Date
Client ID:	MW-1				Limit	Extracted	Analyzed
Lab ID:	STR12082942-01A	TPH-P (GRO)	120		100 μg/L	08/30/12	08/30/12
Date Sampled	08/28/12 07:03	Methyl tert-butyl ether (MTBE)	240		0.50 μg/L	08/30/12	08/30/12
•		Benzene	ND		0.50 μg/L	08/30/12	08/30/12
		Toluene	ND		0.50 μg/L	08/30/12	08/30/12
		Ethylbenzene	ND		0.50 μg/L	08/30/12	08/30/12
		m,p-Xylene	ND		0.50 μg/L	08/30/12	08/30/12
		o-Xylene	ND		0.50 μg/L	08/30/12	08/30/12
Client ID:	MW-2		112		0.50 kB E	00/30/12	00/30/12
Lab ID:	STR12082942-02A	TPH-P (GRO)	ND		50 μg/L	08/30/12	08/30/12
Date Sampled	08/28/12 06:44	Methyl tert-butyl ether (MTBE)	35		0.50 μg/L	08/30/12	08/30/12
-		Benzene	ND		0.50 μg/L	08/30/12	08/30/12
		Toluene	ND		0.50 μg/L	08/30/12	08/30/12
	·	Ethylbenzene	ND		0.50 μg/L	08/30/12	08/30/12
		m,p-Xylene	ND		0.50 μg/L	08/30/12	08/30/12
		o-Xylene	ND		0.50 μg/L	08/30/12	08/30/12
Client ID:	MW-3					, , , , , , , , , , , , , , , , , , , ,	00,00,12
Lab ID:	STR12082942-03A	TPH-P (GRO)	ND		50 μg/L	08/30/12	08/30/12
Date Sampled	08/28/12 06:03	Methyl tert-butyl ether (MTBE)	24		0.50 μg/L	08/30/12	08/30/12
		Benzene	6.5		0.50 μg/L	08/30/12	08/30/12
		Toluene	ND		0.50 μg/L	08/30/12	08/30/12
		Ethylbenzene	ND		0.50 μg/L	08/30/12	08/30/12
		m,p-Xylene	ND		0.50 μg/L	08/30/12	08/30/12
		o-Xylene	ND		0.50 μg/L	08/30/12	08/30/12
Client ID:	MW-4						
Lab ID:	STR12082942-04A	TPH-P (GRO)	2,400		800 μg/L	08/30/12	08/30/12
Date Sampled	08/28/12 07:30	Methyl tert-butyl ether (MTBE)	1,400		4.0 μg/L	08/30/12	08/30/12
		Benzene	250		4.0 μg/L	08/30/12	08/30/12
		Toluene	ND	V	4.0 μg/L	08/30/12	08/30/12
		Ethylbenzene .	14		4.0 μg/T.	08/30/12	08/30/12
		m,p-Xylene	ND	V	4.0 μg/L	08/30/12	08/30/12
		o-Xylene	ND	V	4.0 μg/L	08/30/12	08/30/12
Client ID:	EX-1						
Lab ID:	STR12082942-05A	TPH-P (GRO)	410		200 μg/L	08/30/12	08/30/12
Date Sampled	08/28/12 05:45	Methyl tert-butyl ether (MTBE)	42		1.0 µg/L	08/30/12	08/30/12
		Benzene	88		1.0 μg/L	08/30/12	08/30/12
		Toluene	1.2		1.0 µg/L	08/30/12	08/30/12
		Ethylbenzene	36		1.0 μg/L	08/30/12	08/30/12
		m,p-Xylene	1.4		1.0 μg/L	08/30/12	08/30/12
		o-Xylene	ND	V	1.0 μg/L	08/30/12	08/30/12



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Lab ID :         STR12082942-06A         TPH-P (GRO)         ND         V         300 μg/L         08/30/12         <
Benzene 2.5 1.5 μg/L 08/30/12 08/30/12  Toluene ND V 1.5 μg/L 08/30/12 08/30/12  Ethylbenzene ND V 1.5 μg/L 08/30/12 08/30/12  m,p-Xylene ND V 1.5 μg/L 08/30/12 08/30/12  σ-Xylene ND V 1.5 μg/L 08/30/12 08/30/12  Client ID: EX-3
Toluene ND V 1.5 μg/L 08/30/12 08/30/12 Ethylbenzene ND V 1.5 μg/L 08/30/12 08/30/12 m,p-Xylene ND V 1.5 μg/L 08/30/12 08/30/12 ο-Xylene ND V 1.5 μg/L 08/30/12 08/30/12 Client ID: EX-3
Ethylbenzene ND V 1.5 μg/L 08/30/12 08/30/12 m,p-Xylene ND V 1.5 μg/L 08/30/12 08/30/12 o-Xylene ND V 1.5 μg/L 08/30/12 08/30/12 Client ID: EX-3
m,p-Xylene ND V 1.5 μg/L 08/30/12 08/30/12 o-Xylene ND V 1.5 μg/L 08/30/12 08/30/12 Client ID: EX-3
o-Xylene ND V 1.5 μg/L 08/30/12 08/30/12
Client ID: EX-3
LA ID
Lab ID: STR12082942-07A TPH-P (GRO) 100 100 μg/L 08/30/12 08/30/12
Date Sampled 08/28/12 06:25 Methyl tert-butyl ether (MTBE) 190 0.50 µg/L 08/30/12 08/30/12
Benzene ND 0.50 µg/L 08/30/12 08/30/12
Toluene ND 0.50 μg/L 08/30/12 08/30/12
Ethylbenzene ND 0.50 μg/L : 08/30/12 08/30/12
m,p-Xylene ND 0.50 μg/L 08/30/12 08/30/12
o-Xylene ND 0.50 μg/L 08/30/12 08/30/12

Gasoline Range Organics (GRO) C4-C13

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

ND = Not Detected

Reported in micrograms per Liter, per client request.

Roger Scholl Kundgestoulen Walter Ain

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 / Carson, CA • (714) 386-2901 / info@alpha-analytical.com

Alpha Analytical, Inc. certifies that the test results meet all requirements of NELAC unless footnoted otherwise

Statement of Data Authenticity: Alpha Analytical, Inc. attests that the data reported has not been altered an any way.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples

Report Date



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#### **VOC Sample Preservation Report**

Work Order: STR12082942

Job: Olympic

Alpha's Sample ID	Client's Sample ID	Matrix	рН
12082942-01A	MW-1	Aqueous	2
12082942-02A	MW-2	Aqueous	2
12082942-03/A	MW-3	Aqueous	2
12082942-04 A	MW-4	Aqueous	2
1 <b>208294</b> 2-65A	EX-1	Aqueous	2
12082942-06A	EX-2	Aqueous	2
12082942-07A	EX-3	Aqueous	2

9/6/12



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<b>Date:</b> 06-Sep-12	QC Summary Report							Work Order: 12082942	
Method Blank File ID: 12083005.D Sample ID: MBLK MS12W08 Analyte	330B Units : μg/L Result	Type: M	Ba Run ID: <b>M</b> :	est Code: EF atch ID: MS1 SD_12_1208 SokRef(/al	2W08: 30A	30B	Analysis Dat Prep Date:	e: 08/30/2012 11:31 08/30/2012 11:31 ¢fVal %RPD(Limit)	—— Qual
TPH-P (GRO) Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8 Surr: 4-Bromofluorobenzene	ND 9.92 10.6 9.66	50		Орисси чи	99 106 97	70 70 70 70	130 130 130 130	e var bitt b(Limit)	Quai
Laboratory Control Spike File ID: 12083002.D Sample ID: GLCS MS12W08 Analyte	30B Units : μg/L Result	Type: LO	Ba Run ID: <b>M</b> \$	est Code: EP atch ID: MS1: SD_12_1208	2W083 30A	30B	Analysis Date:	9: 08/30/2012 10:23 08/30/2012 10:23	
TPH-P (GRO) Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8 Surr: 4-Bromofluorobenzene	348 9.51 10.4 9.29	50	400 10 10 10	opkneivai -	87 95 104 93	70 70 70 70 70	130 130 130 130 130	fVal %RPD(Limit)	Qual
Sample Matrix Spike File ID: 12083016.D Sample ID: 12082721-07AGS Analyte	Units : µg/L Result	Type: M:	Ba Run ID: MS	est Code: EP tch ID: MS1: SD_12_1208: SpkRefVal. 9	2W083 30A	0В	Analysis Date:	9: 08/30/2012 15:42 08/30/2012 15:42 P(Val %RPD(Limit)	Qual
TPH-P (GRO) Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8 Surr: 4-Bromofluorobenzene	1440 44.7 52.5 46.6	250	2000 50 50 50	0	72 89 105 93	51 70 70 70	144 130 130 130	ervar zort D(Limit)	Qual
Sample Matrix Spike Duplic File ID: 12083017.D Sample ID: 12082721-07AGS Analyte		Type: MS	Ba Run ID: <b>MS</b>	st Code: EP/ tch ID: MS12 D_12_12083	W083	0B	Analysis Date Prep Date:	e: 08/30/2012 16:05 08/30/2012 16:05 efVal %RPD(Limit)	Qual
TPH-P (GRO) Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8 Surr: 4-Bromofluorobenzene	1520 44.1 52.6 46.8	250	2000 50 50 50	0	76 88 105 94	51 70 70 70 70	144 14 130 130 130		Qual
Comments:									_

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Reported in micrograms per Liter, per client request.



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

Method Blank	ate: ep-12	Work Order: 12082942
Analyte		Date: 08/30/2012 11:31
Methyl tert-butyl ether (MTBE)   ND   0.5	ie ID: MBLK MS12W0830A	08/30/2012 11:31
Methyl ter-butyl ether (MTBE)   ND	e	
Benzene	I tert-butyl ether (MTBE)	21.1.1.2 (21.1.1.6)
Toluene	ne	
m.p-Xylene		i
0-Xylene ND 0.5 Surr: 1,2-Dichloroethane-d4 9.9.2		
Surr: 12-Dichloroethane-d4	•	
Surr: Toluene-d8		
Surr: 4-Bromofluorobenzene   9.66		
Laboratory Control Spike   File ID: 12083003.D   Units: µg/L   Result   File ID: MSD_12_1208300A   Result   Polt   Polt		
File ID: 12083003.D   Sample ID: LCS MS12W0830A   CRESSING   CRE	-Bromotiuorobenzene	
Sample   D:   LCS MS12W0830A   Units : µg/L   Run   D:   MSD   12   12830A   Prep   Date:   08/30/2012 10:46		
Analyte         Result         PQL         SpkVal         SpkRefVal         REC         LCL(ME)         UCL(ME) RPDRefVal         %RPD(Limit)           Methyl tert-butyl ether (MTBE)         11.2         0.5         10         112         65         140           Benzane         11.1         0.5         10         111         70         130           Toluene         11.8         0.5         10         118         80         120           Ethylbenzene         9.94         0.5         10         99         80         120           m,p-Xylene         9.34         0.5         10         93         70         130           Surr: 1,2-Dichloroethane-d4         9.05         10         91         70         130           Surr: 4-Bromofluorobenzene         9.24         10         92         70         130           Surr: 4-Bromofluorobenzene         9.24         Type: MS         Test Code: EPA Method SW8260B           File ID: 12083014.D         Batch ID: MSD 122 120830A         Analysis Date: 08/30/2012 14:56           Analyte         Result         PQL         SpkVal         SpkRefVal         %REC LCL(ME)         UCL(ME) RPDRefVal         %RPD(Limit)           Methyl tert-butyl ether (		)ate: 08/30/2012 10:46
Analyste	e ID: LCS MS12W0830A	: 08/30/2012 10:46
Methyl tert-butyl ether (MTBE)	e	
Benzene	tert-butyl ether (MTBE)	
Toluene	ne	1
Ethylbenzene 9.94 0.5 10 99 80 120   m.p-Xylene 9.34 0.5 10 93 70 130   o-Xylene 9.94 0.5 10 93 70 130   Surr: 1,2-Dichloroethane-d4 9.05 10 91 70 130   Surr: Toluene-d8 10.7 10 10 107 70 130   Surr: Toluene-d8 10.7 10 10 107 70 130   Surr: 4-Bromofluorobenzene 9.24 10 92 70 130   Sample Matrix Spike	e	
m,p-Xylene	enzene	
Surr: 1,2-Dichloroethane-d4 9,05 10 91 70 130 Surr: Toluene-d8 10.7 10 107 70 130 Surr: Toluene-d8 10.7 10 107 70 130 Surr: 4-Bromofluorobenzene 9.24 10 92 70 130 Sample Matrix Spike Type: MS Test Code: EPA Method SW8260B File ID: 12083014.D Batch ID: MS12W0830A Analysis Date: 08/30/2012 14:56 Sample ID: 12082721-07AMS Units: µg/L Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Methyl tert-butyl ether (MTBE) 52.6 1.3 50 0 105 47 150 Benzene 52.6 1.3 50 0 105 59 138 Toluene 66.8 1.3 50 0 105 59 138 Toluene 66.8 1.3 50 0 114 68 130 Ethylbenzene 46.7 1.3 50 0 93 68 130 m,p-Xylene 44.5 1.3 50 0 93 68 131 O-Xylene 44.5 1.3 50 0 91 70 130 Surr: 1,2-Dichloroethane-d4 42.9 50 86 70 130 Surr: 1,2-Dichloroethane-d4 42.9 50 86 70 130 Surr: 1,2-Dichloroethane-d4 42.9 50 86 70 130 Surr: 1,2-Dichloroethane-d4 45.4 50 91 70 130 Surr: 4-Bromofluorobenzene 45.4 50 91 70 130 Surr: 4-Bromofluorobenzene 45.4 50 91 70 130 Sample Matrix Spike Duplicate File ID: 12083015.D Test Code: EPA Method SW8260B File ID: 12083015.D Test Code: EPA Method SW8260B File ID: 12083015.D Test Code: EPA Method SW8260B File ID: MSD_12_1208301 Analysis Date: 08/30/2012 15:19 Sample ID: 12082721-07AMSD Units: µg/L Run ID: MSD_12_120830A Prep Date: 08/30/2012 15:19		
Surr: Toluene-d8 Surr: 4-Bromofluorobenzene         10.7 9.24         10 10 92 70 130           Sample Matrix Spike File ID: 12083014.D         Type: MS         Test Code: EPA Method SW8260B           Sample ID: 12082721-07AMS         Units: µg/L Result         Run ID: MSD_12_120830A         Prep Date: 08/30/2012 14:56           Analyte         Result         PQL         SpkVal         SpkRefVal         %REC LCL(ME) UCL(ME) RPDRefVal         %RPD(Limit)           Methyl tert-butyl ether (MTBE)         52.6         1.3         50         0 105         47         150           Benzene         52.6         1.3         50         0 105         59         138           Toluene         56.8         1.3         50         0 114         68         130           Ethylbenzene         46.7         1.3         50         0 114         68         130           m.p-Xylene         44.5         1.3         50         0 89         68         131           O-Xylene         45.5         1.3         50         91         70         130           Surr: 1,2-Dichloroethane-d4         42.9         50         86         70         130           Surr: 4-Bromofluorobenzene         45.4         50         91         70 <td></td> <td></td>		
Surr: 4-Bromofluorobenzene         9.24         10         92         70         130           Sample Matrix Spike         File ID: 12083014.D         File ID: 12082721-07AMS         Units: μg/L         Run ID: MSD_12_120830A         Analysis Date: 08/30/2012 14:56           Analyte         Result         PQL         SpkVal         SpkRefVal         REC LCL(ME) UCL(ME) RPDRefVal         %RPD(Limit)           Methyl tert-butyl ether (MTBE)         52.6         1.3         50         0         105         59         138           Benzene         52.6         1.3         50         0         105         59         138           Toluene         56.8         1.3         50         0         105         59         138           Ethylbenzene         46.7         1.3         50         0         93         68         130           Ethylbenzene         45.5         1.3         50         0         93         68         131           O-Xylene         44.5         1.3         50         91         70         130           Surr: 1,2-Dichloroethane-d8         55.1         50         110<		
Sample Matrix Spike         Type: MS         Test Code: EPA Method SW8260B           File ID: 12083014.D         Batch ID: MS12W0830A         Analysis Date: 08/30/2012 14:56           Sample ID: 12082721-07AMS         Units: μg/L         Run ID: MSD_12_120830A         Prep Date: 08/30/2012 14:56           Analyte         Result         PQL         SpkVal         SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit)           Methyl tert-butyl ether (MTBE)         52.6         1.3         50         0 105         47         150           Benzene         52.6         1.3         50         0 105         47         150           Benzene         52.6         1.3         50         0 105         47         150           Benzene         56.8         1.3         50         0 105         47         150           Benzene         56.8         1.3         50         0 105         47         150           Benzene         46.7         1.3         50         0 93         68         130           Ethylbenzene         45.5         1.3         50         0 91         70         130           Surr: 1,2-Dichlorosthan		
Batch   D: MS12W0830A   Analysis Date:   08/30/2012 14:56	-Bromotluorobenzene	i
Sample ID:         12082721-07AMS         Units : μg/L         Run ID: MSD_12_120830A         Prep Date:         08/30/2012 14:56           Analyte         Result         PQL         SpkVal         SpkRefVal         %REC LCL(ME) UCL(ME) RPDRefVal         %RPD(Limit)           Methyl tert-butyl ether (MTBE)         52.6         1.3         50         0 105         47         150           Benzene         52.6         1.3         50         0 105         59         138           Toluene         56.8         1.3         50         0 114         68         130           Ethylbenzene         46.7         1.3         50         0 93         68         130           m,p-Xylene         44.5         1.3         50         0 89         68         131           o-Xylene         45.5         1.3         50         0 91         70         130           Surr: 1,2-Dichloroethane-d4         42.9         50         86         70         130           Surr: Toluene-d8         55.1         50         110         70         130           Surr: 4-Bromofluorobenzene         45.4         50         91         70         130           Sample Matrix Spike Duplicate         T	le Matrix Spike	
Sample ID:         12082721-07AMS         Units : μg/L         Run ID: MSD_12_120830A         Prep Date:         08/30/2012 14:56           Analyte         Result         PQL         SpkVal         SpkRefVal         %REC LCL(ME) UCL(ME) RPDRefVal         %RPD(Limit)           Methyl tert-butyl ether (MTBE)         52.6         1.3         50         0 105         47         150           Benzene         52.6         1.3         50         0 105         59         138           Toluene         56.8         1.3         50         0 114         68         130           Ethylbenzene         46.7         1.3         50         0 93         68         130           m,p-Xylene         44.5         1.3         50         0 89         68         131           o-Xylene         45.5         1.3         50         0 91         70         130           Surr: 1,2-Dichloroethane-d4         42.9         50         86         70         130           Surr: 4-Bromofluorobenzene         45.4         50         91         70         130           Sample Matrix Spike Duplicate         Type: MSD         Test Code: EPA Method SW8260B           File ID: 12083015.D         Batch ID: MSD_12_120830A <td>: 12083014.D</td> <td>Pate: 08/30/2012 14:56</td>	: 12083014.D	Pate: 08/30/2012 14:56
Analyte   Result   PQL   SpkVal   SpkRefVal   %REC   LCL(ME)   UCL(ME)   RPDRefVal   %RPD(Limit)	e ID: 12082721-07AMS	·
Methyl tert-butyl ether (MTBE) 52.6 1.3 50 0 105 47 150 Benzene 52.6 1.3 50 0 105 59 138 Toluene 56.8 1.3 50 0 114 68 130 Ethylbenzene 46.7 1.3 50 0 93 68 130 m,p-Xylene 44.5 1.3 50 0 89 68 131 o-Xylene 45.5 1.3 50 0 91 70 130 Surr: 1,2-Dichloroethane-d4 42.9 50 86 70 130 Surr: Toluene-d8 55.1 50 110 70 130 Surr: 4-Bromofluorobenzene 45.4 50 91 70 130  Sample Matrix Spike Duplicate File ID: 12083015.D  Sample ID: 12082721-07AMSD Units: µg/L Run ID: MSD_12_120830A Prep Date: 08/30/2012 15:19	<del>3</del>	ORefVal %RPD(Limit) Qual
Benzene   52.6   1.3   50   0   105   59   138	tert-butyl ether (MTBE)	
Toluene 56.8 1.3 50 0 114 68 130 Ethylbenzene 46.7 1.3 50 0 93 68 130 m,p-Xylene 44.5 1.3 50 0 89 68 131 o-Xylene 45.5 1.3 50 0 91 70 130 Surr: 1,2-Dichloroethane-d4 42.9 50 86 70 130 Surr: Toluene-d8 55.1 50 110 70 130 Surr: 4-Bromofluorobenzene 45.4 50 91 70 130  Sample Matrix Spike Duplicate Type: MSD Test Code: EPA Method SW8260B File ID: 12083015.D Sample ID: 12082721-07AMSD Units: µg/L Run ID: MSD_12_120830A Prep Date: 08/30/2012 15:19	ne	
Ethylbenzene	e	
m,p-Xylene		
Surr: 1,2-Dichloroethane-d4 42.9 50 86 70 130 Surr: Toluene-d8 55.1 50 110 70 130 Surr: 4-Bromofluorobenzene 45.4 50 91 70 130  Sample Matrix Spike Duplicate Type: MSD Test Code: EPA Method SW8260B File ID: 12083015.D Batch ID: MS12W0830A Analysis Date: 08/30/2012 15:19 Sample ID: 12082721-07AMSD Units: µg/L Run ID: MSD_12_120830A Prep Date: 08/30/2012 15:19		
Surr: Toluene-d8 55.1 50 110 70 130 Surr: 4-Bromofluorobenzene 45.4 50 91 70 130  Sample Matrix Spike Duplicate Type: MSD Test Code: EPA Method SW8260B File ID: 12083015.D Batch ID: MS12W0830A Analysis Date: 08/30/2012 15:19  Sample ID: 12082721-07AMSD Units: µg/L Run ID: MSD_12_120830A Prep Date: 08/30/2012 15:19		1
Surr: 4-Bromofluorobenzene         45.4         50         91         70         130           Sample Matrix Spike Duplicate         Type: MSD         Test Code: EPA Method SW8260B           File ID: 12083015.D         Batch ID: MS12W0830A         Analysis Date: 08/30/2012 15:19           Sample ID:         12082721-07AMSD         Units: µg/L         Run ID: MSD_12_120830A         Prep Date: 08/30/2012 15:19		4
Sample Matrix Spike Duplicate         Type: MSD         Test Code: EPA Method SW8260B           File ID: 12083015.D         Batch ID: MS12W0830A         Analysis Date: 08/30/2012 15:19           Sample ID: 12082721-07AMSD         Units: µg/L         Run ID: MSD_12_120830A         Prep Date: 08/30/2012 15:19		
File ID: 12083015.D Batch ID: MS12W0830A Analysis Date: 08/30/2012 15:19 Sample ID: 12082721-07AMSD Units: µg/L Run ID: MSD_12_120830A Prep Date: 08/30/2012 15:19	Bromonuorobenzene	
Sample ID: 12082721-07AMSD Units: µg/L Run ID: MSD_12_120830A Prep Date: 08/30/2012 15:19		
Sample ID: 12082721-07AMSD Units: µg/L Run ID: MSD_12_120830A Prep Date: 08/30/2012 15:19	: 12083015.D	ate: 08/30/2012 15:19
	D: 12082721-07AMSD	· ·
	<u> </u>	
Methyl tert-butyl ether (MTBE) 52.2 1.3 50 0 104 47 150 52.57 0.6(40)		
Benzene 50 1.3 50 0 99.9 59 138 52.57 5.1(21)	ne	
Toluene 53.8 1.3 50 0 108 68 130 56.82 5.5(20)		
Ethylbenzene 44.7 1.3 50 0 89 68 130 46,69 4.3(20)		
m,p-Xylene 42.5 1.3 50 0 85 68 131 44.51 4.6(20)		
9-Xylene 43.2 1.3 50 0 86 70 130 45.45 5.0(20)		
Surr. 1,2-Dichloroethane-d4 43.6 50 87 70 130		et e
Surr: Toluene-d8 54.6 50 109 70 130		
Surr: 4-Bromofluorobenzene 45.3 50 91 70 130	DIOMORUUODANZAUG	

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

	Billing	Information	:
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#### **CHAIN-OF-CUSTODY RECORD**

#### Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778

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

Report Attention **Phone Number** Steve Carter (530) 676-6008 x

**EMail Address** scarter@stratusinc.net

EDD Required: Yes

Cooler Temp

0°C

WorkOrder: STR12082942

Report Due By: 5:00 PM On: 06-Sep-12

29-Aug-12

Samples Received **Date Printed** 29-Aug-12

Page: 1 of 1

Sampled by : C. Hill

PO:

Client:

Client's COC #: 59481

Suite 550

Stratus Environmental

3330 Cameron Park Drive

Cameron Park, CA 95682-8861

Job: Olympic

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

•							Requested Tests				
Alpha	Client	Collecti	on No.	of Bottle	S	TPH/P_W	VOC_W				
Sample ID	Sample ID	Matrix Date	Alpha	Sub	TAT						Sample Remarks
STR12082942-01A	MW-1	AQ 08/28/1 07:03	2 3	0	5	GAS-C	BTXE/M_C		T		<u></u>
STR12082942-02A	MW-2	AQ 08/28/1 06:44		0	5	GAS-C	BTXE/M_C		T -		
STR12082942-03A	MW-3	AQ 08/28/1 06:03		0	5	GAS-C	BTXE/M_C				
STR12082942-04A	MW-4	AQ 08/28/1 07:30		0	5	GAS-C	BTXE/M_C				
STR12082942-05A	EX-1	AQ 08/28/1 05:45		0	5	GAS-C	BTXE/M_C				
STR12082942-06A	EX-2	AQ 08/28/1 07:25	2 3	0	5	GAS-C	BTXE/M_C				
STR12082942-07A	EX-3	AQ 08/28/1 06:25	2 3	0	5	GAS-C	BTXE/M_C		T		

Comments:

Security seals intact, Frozen ice. :

Signature **Print Name** Company Date/Time Summ Logged in by: Alpha Analytical, Inc.

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: (4.1)		3740   Samples Collect∉d From Which State?
Billing Information: Company Name Stantus Attn: Stew	Alpha Analytical, Inc. 255 Glendale Avenue, Suite 21	AZ CA NV WA DOD Site ID OR OTHER Page # of
Attn: Steve	Sparks, Nevada 89431-5778	ID OR OTHER Page # of
Address 3330 Cameron Ph DR	Phone (775) 355-1044 Fax (775) 355-0406	
City, State, Zip Chusevan Ptr. Phone Number 556 676 6894 Fax 536 676 6005	(10) (10)	Analyses Required
Phone Number W W Fax 9 V V V V V		D-4-1/4/14-1/4
Consultant / Client Name Jym DIC Job #	Job Name	Data Validation Level: III or IV
Address	Report Attention / Project Manager	
	Terre	-   1   15.1
Matrix <sup>t</sup> PO #	Mobile:	- S S NO _ EDD/EDF? YES NO _
See Key		Global ID#
Below Lab ID Number (Use Only)	Sample Description TAT Field Filtered # Containers**	REMARKS
070383° AC STR2082042-014 MW-		X   X   X   X   X   X   X   X   X   X
our ann-	2 \ 3.1	
2603 Mr -	3 ) 3-1	
0730 / / OHA MN-1	4 / 3-1	
075 / CEA EX-1	3-1	
0725 OWA EX. Z		<del>                                     </del>
CALEX -	3 3.0	
••		
		<del></del>
ADDITIONAL INSTRUCTIONS:		
I. (field sampler), attest to the validity and authoriticity of this sample	am aware that tampering with or intentionally mislabeling the	sample location, data artimo of collection is considered from
	——————————————————————————————————————	sample location, date or time of collection is considered fraud and may be
Relinquished by: (Signature/Affiliation)	Received by: (Signature/Affiliation)	Schin Date: 28-12 Time: 1:45
Relinquished by: (Signature/Affiliation)	Received by: (Signature/Artification)	Date:  29 12 Time: 0956
Relinquished by: (Signature/Affiliation)	Received by: (Signature/Affiliation)	Date: Time:
*Kov. AO Agusous SO Soil WA Mosto OT (	Other AD Air **- I Liter VV CO-II I I I	

\*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air \*\*: 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 D

## GEOTRACKER ELECTRONIC SUBMITTAL CONFIRMATIONS

#### STATE WATER RESOURCES CONTROL BOARD

## **GEOTRACKER ESI**

**UPLOADING A GEO\_WELL FILE** 

#### **SUCCESS**

Processing is complete. No errors were found! Your file has been successfully submitted!

Submittal Type:

GEO\_WELL

**Report Title:** 

**3Q12 QMR - GEOWELL 8-28-12** 

Facility Global ID:

T0600102256

Facility Name:

**OLYMPIC STATION** 

File Name:

GEO\_WELL.zip

Organization Name:

Stratus Environmental, Inc.

Username:

STRATUS NOCAL

IP Address:
Submittal Date/Time:

9/11/2012 8:27:21 AM

**Confirmation Number:** 

3754749357

12.186.106.98

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#### STATE WATER RESOURCES CONTROL BOARD

## **GEOTRACKER ESI**

**UPLOADING A EDF FILE** 

#### **SUCCESS**

Processing is complete. No errors were found! Your file has been successfully submitted!

Submittal Type:

EDF

Report Title:

**3Q12 QMR - ANALTYICAL 8-28-12** 

Report Type:

**Monitoring Report - Quarterly** 

Facility Global ID:

T0600102256

Facility Name:
File Name:

OLYMPIC STATION 12082942 EDF.zip

Organization Name:

Stratus Environmental, Inc.

Username:

STRATUS NOCAL

IP Address:

12.186.106.98

Submittal Date/Time:

9/11/2012 8:28:35 AM

**Confirmation Number:** 

1395841479

**VIEW QC REPORT** 

**VIEW DETECTIONS REPORT** 

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