# RECEIVED

By Alameda County Environmental Health at 4:00 pm, Oct 28, 2013

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 Jaber 1989 Family Trust

Philip Jaber, Trostee



October 28, 2013 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: Semi-Annual Groundwater Monitoring Report - Third Quarter 2013

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

Dear Mr. Detterman:

On behalf of Mr. Philip Jaber and the George and Frida Jaber 1989 Family Trust, Stratus Environmental, Inc. (Stratus) 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 Gowri Kowtha at gkowtha@stratusinc.net or (530) 676-6001.

Sincerely,

STRATUS ENVIRONMENTAL, INC

Gowri S. Kowtha, P.E.

Project Manager

Scott G. Bittinger, P.G.

Project Geologist

Attachment: Semi Annual Groundwater Monitoring Report, Third Quarter 2013

No. C 63413

cc: Mr. Philip Jaber

Ms. Cherie McCaulou, RWQCB

# FORMER OLYMPIC STATION SEMI-ANNUAL GROUNDWATER MONITORING AND SAMPLING REPORT

Facility Address: 1436 Grant Avenue, San Lorenzo, CA

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

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 PERIOD (Second and Third Quarters 2013):

- 1. On April 19, 2013, revisions to a Draft Corrective Action Plan (CAP) were submitted for agency review.
- 2. In May 2013, Stratus met with PG&E personnel onsite to discuss natural gas and temporary power possibilities and viable locations.
- 3. On May 23, 2013, a Path to Closure schedule was prepared and submitted for agency review.
- 4. On June 18, 2013, public notices were mailed to nearby property owners regarding the proposed corrective action measures at the site.
- 5. Based on site reconnaissance and information provided by PG&E, Stratus submitted an application to PG&E for temporary gas and electric service on July 3, 2013. In August 2013, Stratus further coordinated with PG&E to determine the utility design based on the existing site conditions and service constraints. PG&E has since been finalizing the electric and gas service contracts and drawings.
- 6. An Authority to Construct (ATC) and Permit to Operate (PTO) application was submitted to Bay Area Air Quality Management District (BAAQMD) for the proposed DPE system on August 2, 2013 (Application No. 25619; Plant No. 21776). BAAQMD is processing the request and completing the required notification process, due to the vicinity of the project site and closest school location.
- 7. A groundwater discharge permit application was submitted to Oro Loma Sanitary District (OLSD) on August 8, 2013. On August 15, 2013 via email correspondence OLSD has approved the request pending submittal of the required permit fee.
- 8. On August 26, 2013, Stratus conducted semi-annual groundwater monitoring and sampling activities. During this event, wells MW-1 through MW-4, EX-2, and EX-3 were gauged for depth to water and evaluated for the presence of free product. Following gauging, these wells were purged and groundwater samples were collected. MW-4 purged dry before three casing volumes were removed. All groundwater samples were forwarded to a state-certified analytical laboratory for chemical analysis. Well EX-1 was inaccessible on August 26, 2013 and therefore was not gauged or sampled.

### WORK PROPOSED FOR NEXT PERIOD (Fourth Quarter 2013 and First Quarter 2014):

- 1. In accordance with the ACEHD letter of January 28, 2011, routine groundwater monitoring and sampling activities are not scheduled for this site during the fourth quarter 2013. The next monitoring and sampling event is tentatively scheduled for the first quarter 2014.
- 2. During the fourth quarter 2013 and first quarter 2014, Stratus will continue to implement the CAP to install the proposed DPE remediation system at the site. Stratus will aim to complete the public notification process as required by BAAQMD, finalize the electric and gas contracts with PG&E, and prepare and submit construction design drawings to City of San Lorenzo. Once construction drawings are approved Stratus will continue to install the temporary power pole, electric panel, gas line and any necessary coordination required to finalize construction with the City of San Lorenzo and PG&E to install the proposed gas and electric meters.
- 3. ACEHD has conditionally approved mitigating the site using dual phase extraction (DPE) technology and has also approved installing additional groundwater monitoring wells to enable further lateral and vertical delineation of fuel contaminant distribution in the subsurface. Installation of extraction wells needed to implement DPE and also installation of the groundwater monitoring wells will be completed in conjunction with construction and system installation.

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 26, 2013
Is Free Product (FP) Present on Site:	No
Approximate Depth to Groundwater:	7.41 to 8.05 ft bgs
Groundwater Flow Direction:	West-Southwest
Groundwater Gradient:	0.006 ft/ft

#### **DISCUSSION:**

Groundwater samples were analyzed at a state-certified analytical laboratory for gasoline range organics (GRO) by EPA Method SW8015B/SW8260B 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. Field data sheets documenting measurements and observations obtained by Stratus personnel, a description of sampling and analyses procedures utilized, and laboratory analytical reports with chain of custody records are included in Appendix A, B, and C, respectively. Depth to groundwater measurements and sample analytical results have been uploaded to the State of California's GeoTracker database, and documentation of this data uploading is provided in Appendix D.

At the time of the third quarter 2013 monitoring event, depth-to-water was measured between 7.41 and 8.05 feet below ground surface. Groundwater elevations decreased approximately 0.70 and 0.84 feet since the previous well gauging event in February 2013. 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 on August 26, 2013 was to the west-southwest with a calculated gradient of 0.006 ft/ft. Historically, groundwater flow beneath the site has been toward the west-southwest and southwest.

The highest levels of GRO (4,900 micrograms per liter [ $\mu$ g/L]), benzene (220  $\mu$ g/L), and MTBE (2,400  $\mu$ g/L) were detected in a sample collected from well MW-4. Benzene was not detected in any other well samples. GRO was also detected in the samples collected from wells MW-1, EX-2, and EX-3, at

concentrations ranging from 120  $\mu$ g/L to 470  $\mu$ g/L, and MTBE was reported in each of the additional well samples, at levels ranging from 6.2  $\mu$ g/L to 590  $\mu$ g/L. Figure 3 summarizes GRO, benzene and MTBE analytical results from the third quarter 2013 sampling event.

## Future Work and Remedial Efforts

Given the current Underground Storage Tank Clean-up Fund (USTCF) budget constraints, design and construction of the remediation system is being completed in phases. Based on the approved USTCF 2013-2014 budget in the amount of \$70,000, Stratus continued the permitting process for construction, during the second and third quarter 2013. Permit requests included submittals to the BAAQMD for an air permit, PG&E for electric and gas services, and Oro Loma Sanitary District for sewer discharge approval.

During fourth quarter 2013 and first quarter 2014, Stratus will complete and submit a final set of construction drawings to the City of San Lorenzo Building Department for building permit approval. Once all permits and utility contracts are obtained from the various agencies, Stratus will aim to complete all necessary construction and begin full-time operation of the proposed DPE system.

#### **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 2013)
Figure 3	Groundwater Analytical Summary (Third Quarter 2013)
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 2 Figure 1 Figure 2 Figure 3 Appendix A Appendix B Appendix C

TABLE 1 WELL CONSTRUCTION DETAILS

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

Boring/Well I.D.	Date	Boring Depth	_	Well Diameter	Well Depth	Screen Interval	Slot Size	Drilling Method	Consultant
1.D.		(feet)	(inches)	(inches)	(feet)	(feet bgs)			
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

STRATUS Page 1 of 1

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

Well ID	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	Oil & Grease (µg/L)	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)			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							
1	01/13/00	7.90		7.10			<50	<1,300	18	<13	<13	<13	1,700							
1	04/12/00	7.08		7.92			56***	<1,000	66	<10	<10	<10	1,600							
1	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							
	02/16/07	6.32		8.68																
1	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
l	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
	11/01/07	7.71		8.00			<50	<50	<12	<12	<12	<12	460	<12	<12	<12	<120	<1,200	<12	<12
1	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
ł	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
	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
l	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							
1	05/18/10	7.09		8.62																
1	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							
1	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							
	02/27/13	7.32		11.28				61	< 0.50	< 0.50	< 0.50	< 0.50	69							
	08/26/13	8.05		10.55				470	<0.50	<0.50	<0.50	<0.50	590							

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Well ID	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	Oil & Grease (µg/L)	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)				EDB (µg/L)	1,2-DCA (μg/L)
MW-2	10/06/99	7.87	14.46	6.59	<1,000	500[3]	<50	70*	<0.5	<0.5	<0.5	<0.5	11							
	01/13/00	7.46		7.00	<1,000	500[3]	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	6.2							
	04/12/00	6.67		7.79	1,100	< 500	< 50	<50	< 0.5	< 0.5	< 0.5	< 0.5	39							
	07/19/00	7.23		7.23	1,300	<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
4	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
	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
n Ni	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
	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
1	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
1	02/03/10	5.75		9.42				<50	< 0.5	< 0.5	< 0.5	< 0.5	0.86							
ij	05/18/10	6.67		8.50																
1	08/05/10	7.25		7.92				<50	< 0.5	< 0.5	< 0.5	< 0.5	57							
1	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							[
1	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							
	02/27/13	6.91		11.09				< 50	< 0.50	< 0.50	< 0.50	< 0.50	12							
	08/26/13	7.61		10.39				<50	<0.50	<0.50	<0.50	<0.50	6.2							

# TABLE 2 GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY

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Well ID	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	Oil & Grease (µg/L)	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)				Ethanol (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
c	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							
	02/27/13	6.90		11.05				<50	< 0.50	< 0.50	< 0.50	< 0.50	18							
	08/26/13	7.72		10.23				<50	< 0.50	<0.50	<0.50	<0.50	34							
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							
	02/27/13	6.85		11.14				2,400	160	2.5	8.2	<2.0[2]	1,400							
	08/26/13	7.69		10.30				4,900	220	<2.5[2]	5.7	<2.5[2]	2,400							

# TABLE 2 GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY

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

Well ID	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)				Ethanol (µg/L)	1,2-DCA (μg/L)
EX-1	06/03/11	6.96	18.14	11.18	 		76	8.3	<0.50	< 0.50	0.99	37						 
	08/02/11	7.20		10.94	 		420	37	0.65	3.5	2.9	32						 ]
	09/29/11	7.53		10.61	 		150	13	< 0.50	3.2	1.1	23	<1.0	1.2	<1.0	<10		 <1.0
	10/12/11	6.63		11.51	 		180	23	0.51	2.8	0.97	27	<1.0	1.0	<1.0	<10		 <1.0
	11/09/11	7.28		10.86	 		<50	4.3	< 0.50	< 0.50	< 0.50	34	<1.0	<1.0	<1.0	<10		 <1.0
	12/12/11	7.50		10.64	 		520	32	1.3	13	5.58	20						 
	03/15/12	6.19		11.95	 		< 50	2.6	< 0.50	< 0.50	< 0.50	8.4						 
į	08/28/12	7.53		10.61	 		410	88	1.2	36	1.4	42						 
1	02/27/13	7.02		11.12	 		<50	0.75	< 0.50	< 0.50	< 0.50	14						 
	08/26/13	NM		NM					Well C	covered by Ca	ar - No Sam	ple Collect	ed					
EX-2	06/03/11	6.81	18.14	11.33	 		760	<1.5[2]	<1.5[2]	<1.5[2]	<1.5[2]	1,100						 
1	08/02/11	7.03		11.11	 		920	8.7	<1.0[2]	<1.0[2]	<1.0[2]	920						 
1	09/29/11	7.37		10.77	 													 
ł	10/12/11	6.65		11.49	 													 
	11/09/11	7.08		11.06	 													 
l l	12/12/11	7.35		10.79	 		590	5.6	<1.0[2]	<1.0[2]	<1.0[2]	920						 
ŀ	03/15/12	6.58		11.56	 		100	< 0.50	< 0.50	< 0.50	< 0.50	130						 
	08/28/12	7.35		10.79	 		<300[2]	2.5	<1.5[2]	<1.5[2]	<1.5[2]	540						 
1	02/27/13	6.82		11.32	 		320	0.51	< 0.50	< 0.50	< 0.50	420						 
	08/26/13	7.56		10.58	 		270	< 0.50	< 0.50	<0.50	< 0.50	340						 
EX-3	06/03/11	6.55	17.63	11.08	 		95	0.93	< 0.50	< 0.50	< 0.50	78						 
H	08/02/11	6.82		10.81	 		130	1.5	< 0.50	< 0.50	< 0.50	150						 
	09/29/11	7.15		10.48	 													 
l	10/12/11	6.37		11.26	 													 
	11/19/11	6.89		10.74	 													 
	12/12/11	7.12		10.51	 		100	2.4	< 0.50	< 0.50	< 0.50	84						 
	03/15/12	5.70		11.93	 		<50	< 0.50	< 0.50	< 0.50	< 0.50	30						 
	08/28/12	7.15		10.48	 		100	< 0.50	< 0.50	< 0.50	< 0.50	190						 
	02/27/13	6.63		11.00	 		84	< 0.50	< 0.50	< 0.50	< 0.50	93						 
	08/26/13	7.41		10.22	 		120	< 0.50	< 0.50	< 0.50	< 0.50	120						 

#### Legend/Key:

ft msl = feet above mean sea level µg/L = micrograms per liter

TPH - mo = total petroleum hydrocarbons as motor oil TPHd = total petroleum hydrocarbons as diesel

GRO = gasoline range organics C6-C12

MTBE - methyl tertiary butyl ether

DIPE = di isopropyl ether ETBE = ethyl tertiary butyl ether

TAME = tert amyl methyl ether TBA = tert butyl ether

EDB = 1,2-dibromoethane 1,2-DCA = 1,2-dichloroethane

#### Analytical Methods:

GRO analyzed by EPA Method SW8015B/SW8260B, all other analytes analyzed by SW8260B.

Analytical methods prior to February 2011, are available in various reports on the Alameda County Environmental Health Department files.

\* = Hydrocarbon reported in the gasoline range does not match the gasoline standard.

NM = Not measured

Analytical data for samples collected prior to 2011 are obtained from documents available in the Alameda County Environmental Health

**STRATUS** 

<sup>\*\* =</sup> Hydrocarbon reported is in the early diesel range and does not match the diesel standard.

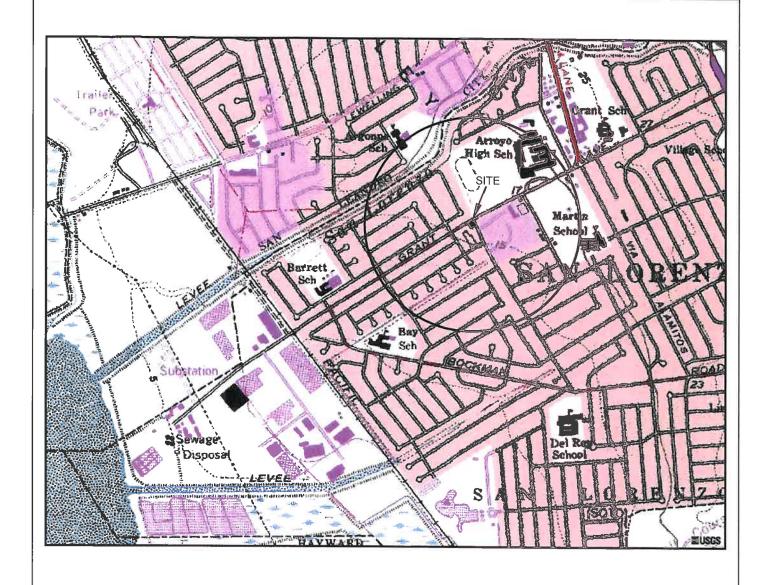
<sup>\*\*\* =</sup> Hydrocarbon reported does not match the pattern of the diesel standard.

<sup>-- =</sup> No sample collected

<sup>[1]</sup> Weakly modified or unmodified gasoline is significant.

<sup>[2] =</sup> Reporting limits were increased due to high concentrations of target analytes.
[3] = Sample also analyzed for halogenated volatile organic compounds (EPA Method 8010) and semivolatile organic compounds (EPA Method 8270A); analytes reported as none detected,

<sup>\*</sup>Well elevations and locations surveyed by Morrow Surveying on June 15,



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



0 1800 FT

APPROXIMATE SCALE

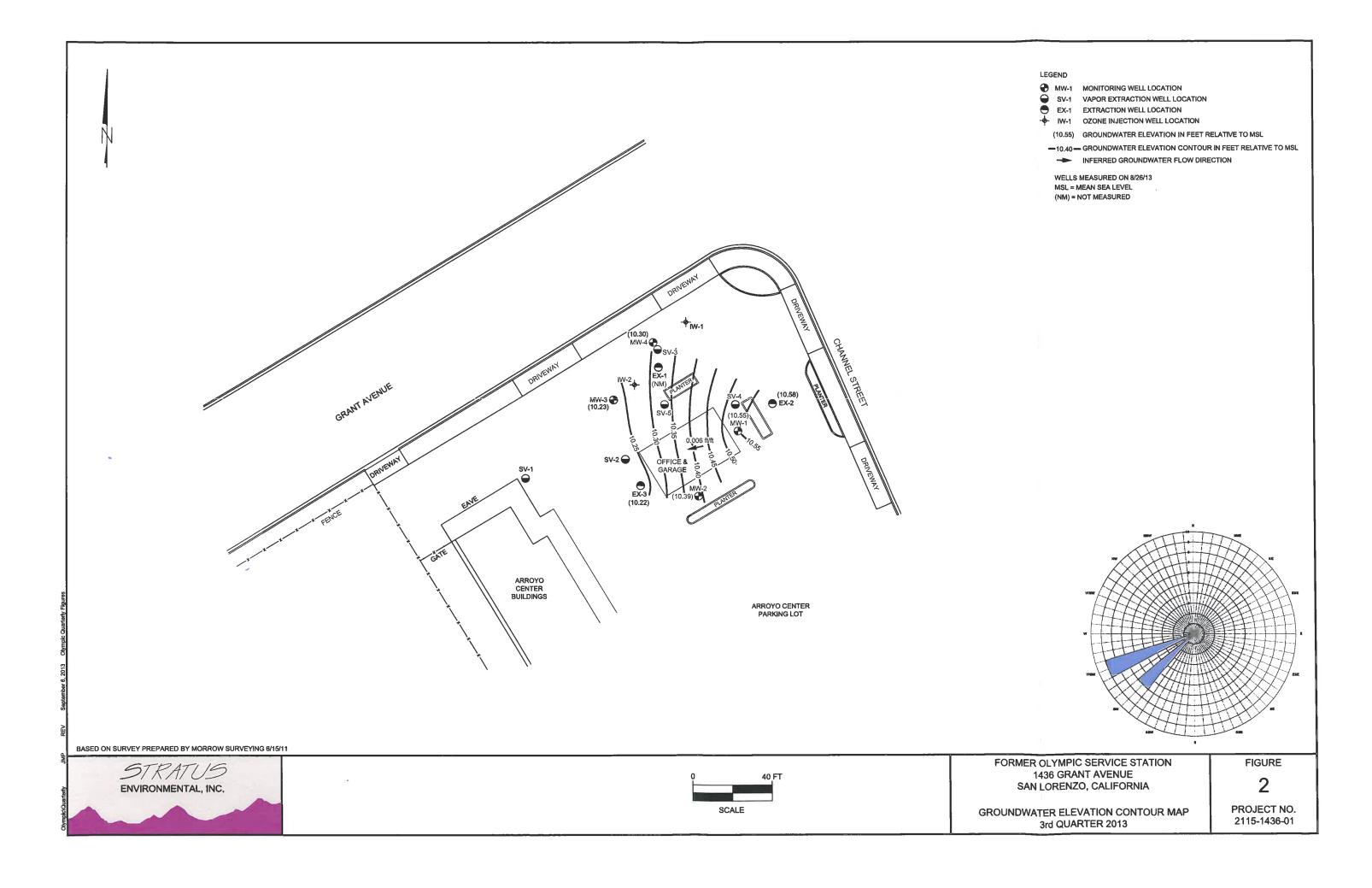
QUADRANGLE LOCATION

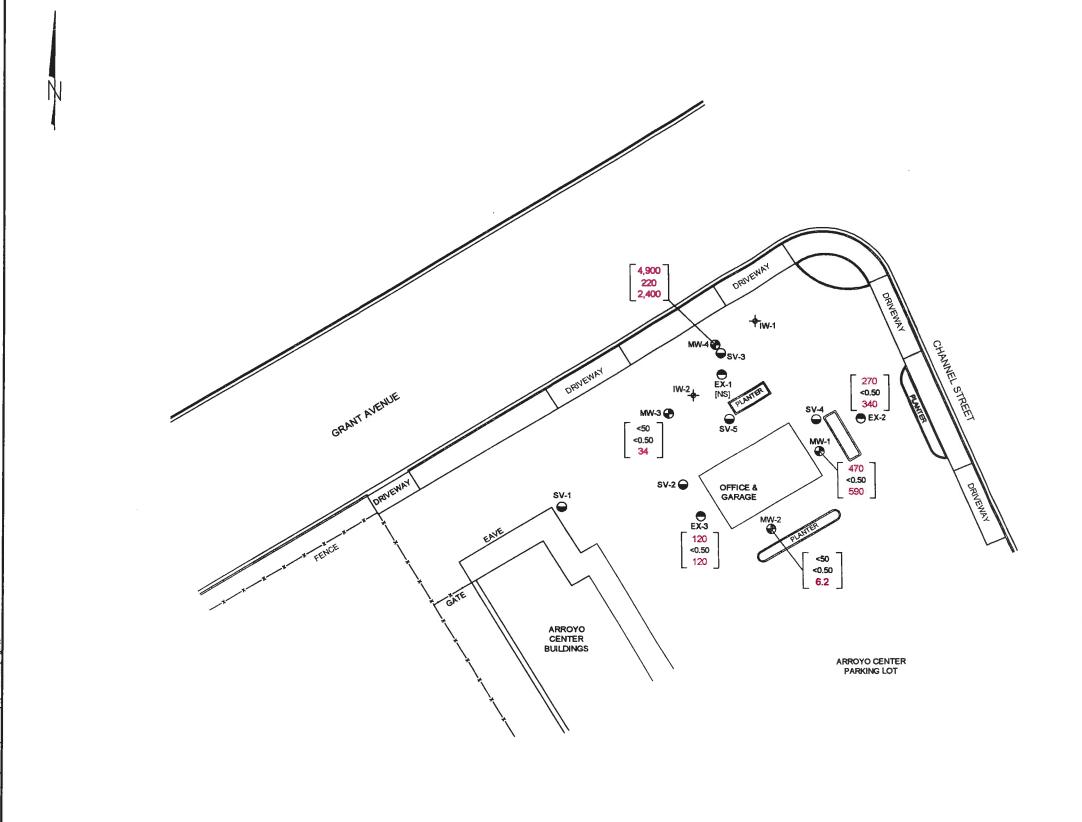
STRATUS ENVIRONMENTAL, INC. FORMER OLYMPIC SERVICE STATION 1436 GRANT AVENUE SAN LORENZO, CALIFORNIA

SITE LOCATION MAP

**FIGURE** 

PROJECT NO. 2115-1436-01





LEGEND

<0.50 BENZEN
590 METHYL

GASOLINE RANGE ORGANICS (GRO) CONCENTRATION IN µg/L BENZENE CONCENTRATION IN µg/L METHYL TERTIARY BUTYL ETHER (MTBE) IN µg/L

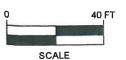
WELLS SAMPLED ON 8/26/13

GRO ANALYZED BY EPA METHOD SW8015B/SW8260B
MTBE & BENZENE ANALYZED BY EPA METHOD SW8260B

[NS] = NOT SAMPLED

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 2013

FIGURE

3

PROJECT NO. 2115-1436-01

# APPENDIX A FIELD DATA SHEETS



Site Address_	1436 Grant Avenue	Site Number	Olympic Jaber
City_	San Lorenzo	Project Number	2115-1436-01
Sampled by: _	Carl Schuler	Project PM	Steve Carter
Signature		DATE	08/26/13
	J. J.	·	

	Wa	ater Level D	ata			Purge V	olume Calc	ulations			Purae	Metho	d	Sample Record			Field Data
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 (feet)	Sample I.D	Sample Time	DO (mg/L)
MU-1	1258		₹.७≤	24.20	16.15	2"	0.5	80.8	8		¥			8.08	MU-1	1453	4.20
MU-43	1251		7.72	18.85	11.13	2"	۶،۶	5.57	\$.5		У			1.75	ML #3	1336	3.84
MW-62	1255		7.61	18.19	10.58	Z۳	5.5	5.29	5.5		γ			7.62	ML-\$2	1401	4.26
MW - 4	1248		7.69	9.31	1.62	તથ	2	3.24	. 2		Y		dry	7.84	MW-4	1506	3.80
EX-(	Cove	red by	car	busines	s close	d on 1	Monday!	•							EX-1		
Ex-Z	1200		7.56	19.30	11.74	4"	2	23.4\$	24		×			7.95	EX-2	1424	3.67
EX-3	1253		7.41	19.80	12.39	4 *	2	24.78	zS		Y			7.52	EX-3	1534	3.99
																	3
	Ì																
						_											
						Ī							$\Box$				
							1										
,											Î						

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	08/23/i3	
Conductivity		
DO	1	_



Site Address 1436 Grant Ave

City San Lorenzo

Sampled By: Carl Shoulze

Signature

 Site Number
 Olympic Jaber

 Project Number
 2115-1436-01

 Project PM
 S. Carter

 DATE
 08/24/i-3

Well ID nw-4					Well ID ML. 7				•
Purge start time			Odor	Y 🚯	Purge start time				. 0
	Temp C	рН	cond	gallons	roige start time			Odor	Y (8)
time (31)						Temp C	рН	cond	gallons
	23.5	6.17	904	6	time 1321	23.3	6.75	942	٥
	22.7	6.30	820	1.5	time 1325	21.4	6.86	929	7
time 1506	22.1	7.30	795	2 dry	time 1328	21.1	6.90	915	4
time					tlme 1336	22.0	7.27	934	5.5
purge stop time	90:	3.80	ORP -	79	purge stop time	20.3.8	4	ORP	-61
Well ID .ฯ พ ๅ	<u> </u>				Well ID デバース				
Purge start time	, ——.		Odor	Y 0	Purge start time			Odor	Y (A)
	Temp C	рН	cond	gallons		Temp C	рН	cond	gallons
time 1347	22.3	7,27	868	0	time 1409	23.5	7.19	876	0
time 1356	21.5	7.18	886	ζ	time (413	22.\	7.13	880	8
time 1353	21.2	7.17	884	4	time 1416	21.7	1.13	878	16
time (40)	21.1	7.46	876	5.5	lime 1424	2).8	7.53	874	24
purge stop time	00.	1.26	ORP .	70	purge stop time	Do 13.	67	ORP	- 6
Well ID パレー/		•			Veil ID EX-3	<del></del>			<u></u>
Purge start time			Odor	Y	Purge start time			Odor	A 40
	Temp C	рH	cond	gallons		Temp C	рН	cond	gallons
time 1436	21.4	7.39	914	0	time  5 4	22.8	7.55	829 }	0
time 1440	203	7.35	916	3	time 1519	21.2	7.5 7	877	8
time /443	20.2	7.27	927	5	time 1523	21.0	7.47	878	16
time 1453	20.5	7.50	917	8	time 1534	21.6	7.58	888	25
purge stop time	90: 4.	20	ORP	Ö	purge stop time	Do: 3.90		ORP	15
Well ID					Well ID				
Purge start time			Odor	YN	Purge start time			Odor	Y N
	Temp C	pН	cond	gallons		Temp C	pН	cond	galions
time					time	,		30110	94110113
time					time				
time					time				
time					time				
purge stop time			ORP		purge stop time	L		ORP	
					80 oroh muo			UKP	

# 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 California-certified laboratory.

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

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

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

### **Equipment Cleaning**

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

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

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

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

### **Internal Quality Assurance Checks**

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

## - Laboratory Quality Assurance

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

### - Field Quality Assurance

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

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

# **Types of Quality Control Checks**

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

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

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

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

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

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

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

# **APPENDIX C**

# 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: 08/28/13

Job:

2115-1436-01/Olympic

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

		Parameter	Concentration	Reporting	Date	Date
Client ID:	MW-1			Limit	Extracted	Analyzed
Lab ID :	STR13082844-01A	TPH-P (GRO)	470	100	00/04/12	09/04/13
Date Sampled	08/26/13 14:53	Methyl text-butyl ether (MTBE)	590	100 μg/L 0.50 μg/L	09/04/13 09/04/13	09/04/13
		Benzene	ND	, ,		
		Toluene	ND ND	0.50 μg/L	09/04/13	09/04/13
	*	Ethylbenzene	ND	0.50 μg/L	09/04/13 09/04/13	09/04/13
		m,p-Xylene	ND ND	0.50 μg/L		09/04/13
		o-Xylene	ND	0.50 μg/L	09/04/13	09/04/13
Client ID:	MW-3	o rigidale	U	0.50 μg/L	09/04/13	09/04/13
Lab IID :	STR13082844-02A	TPH-P (GRO)	ND	50 μg/L	09/04/13	09/04/13
Date Sampled	08/26/13 13:36	Methyl tert-butyl ether (MTBE)	34	0.50 µg/L	09/04/13	09/04/13
•		Benzene	ND	0.50 μg/L	09/04/13	09/04/13
		Toluene	ND	0.50 μg/L	09/04/13	09/04/13
		Ethylbenzene	ND	0.50 μg/L	09/04/13	09/04/13
		m,p-Xylene	ND	0.50 μg/L	09/04/13	09/04/13
		o-Xylene	ND	0.50 μg/L	09/04/13	09/04/13
Client ID:	MW-2	•	142	0.50 pg 2	V3/V-4/13	0)/04/13
Lab ID:	STR13082844-03A	TPH-P (GRO)	ND	50 μg/L	09/04/13	09/04/13
Date Sampled	08/26/13 14:01	Methyl tert-butyl ether (MTBE)	6.2	0.50 μg/L	09/04/13	09/04/13
		Benzene	ND	0.50 μg/L	09/04/13	09/04/13
		Toluene	ND	0.50 μg/L	09/04/13	09/04/13
		Ethylbenzene	ND	0.50 μg/L	09/04/13	09/04/13
		m,p-Xylene	ND	0.50 µg/L	09/04/13	09/04/13
		o-Xylene	ND	0.50 μg/L	09/04/13	09/04/13
Client ID:	MW-4	•			,	· · · · · · · ·
Lab ID :	STR13082844-04A	TPH-P (GRO)	4,900	500 μg/L	09/04/13	09/04/13
Date Sampled	08/26/13 15:06	Methyl tert-butyl ether (MTBE)	2,400	2.5 μg/L	09/04/13	09/04/13
		Benzene	220	2.5 μg/L	09/04/13	09/04/13
		Toluene	ND V	V 2.5 μg/L	09/04/13	09/04/13
		Ethylbenzene	5.7	2.5 μg/L	09/04/13	09/04/13
		m,p-Xylene	ND Y	V 2.5 μg/L	09/04/13	09/04/13
		o-Xylene	ND 1	V 2.5 μg/L	09/04/13	09/04/13
Client ID:	EX-2					
Lab ID:	STR13082844-05A	TPH-P (GRO)	270	50 μg/L	09/04/13	09/04/13
Date Sampled	08/26/13 14:24	Methyl tert-butyl ether (MTBE)	340	0.50 µg/L	09/04/13	09/04/13
		Benzene	ND	0.50 μg/L	09/04/13	09/04/13
		Toluene	ND	0.50 μg/L	09/04/13	09/04/13
		Ethylbenzene	ND	0.50 μg/L	09/04/13	09/04/13
		m,p-Xylene	ND	0.50 μg/L	09/04/13	09/04/13
		o-Xylene	ND	0.50 μg/L	09/04/13	09/04/13



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Client ID:

Lab ID:

EX-3

STR13082844-06A

Date Sampled 08/26/13 15:34

TPH-P (GRO)	120	50 μg/L	09/04/13	09/04/13
Methyl tert-butyl ether (MTBE)	120	0.50 μg/L	09/04/13	09/04/13
Benzene	ND	<b>0.50 μg/L</b>	09/04/13	09/04/13
Toluene	ND	0.50 μg/L	09/04/13	09/04/13
Ethylbenzene	ND	0.50 μg/L	09/04/13	09/04/13
m,p-Xylene	ND	0.50 µg/L	09/04/13	09/04/13
o-Xylene	ND	0.50 μg/L	09/04/13	09/04/13

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.

ACLASS NO EAST Roger Scholl

KandysSoulur

Walter Striken

choll, Ph.D., Laboratory Director • • Randy Osrdner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer ato, CA • (916) 366-9089 / Las Vegas, NV • (702) 281-4848 / Carson, CA • (714) 386-2901 / infa@aipha-maihtical.com

Alpha Analytical, Inc. certifies that the test results usect 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 halds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported sumply

*D* 9/5/13

Report Date



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# **VOC Sample Preservation Report**

Work Order: STR13082844

Job:

2115-1436-01/Olympic

Alpha's Sample ID	Client's Sample ID	Matrix	рН	
13082844-01A	MW-1	Aqueous	2	
13082844-02A	MW-3	Aqueous	2	
13082844-03A	MW-2	Aqueous	2	
13082844-04A	MW-4	Aqueous	2	
13082844-05A	EX-2	Aqueous	6	
13082844-06A	EX-3	Aqueous	2	

9/5/13



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Date: 05-Sep-13		Work Orde 13082844											
Method Blank File ID: 13090407,D		Туре М	15B/C / SW8260B Analysis Date:	09/04/2013 12:23									
Sample ID: MBLK MS09W0904B	Units : µg/L	1	Run ID: M	SD_09_1309	04A		Prep Date:	09/04/2013 12:23					
Analyte	Result	PQL				LCL(ME)	UCL(ME) RPDRef	Val %RPD(Limit)	Qual				
TPH-P (GRO)	ND	50			-								
Surr: 1,2-Dichloroethane-d4	10.9		10		109	70	130						
Surr: Toluene-d8	10.6		10		106	70	130						
Surr: 4-Bromofluorobenzene	11		10		110	70	130						
Laboratory Control Spike		Type LCS Test Code: EPA Method SW8015B/C / SW8260B											
File ID: 13090403.D			Ba	atch ID: MS0:	<b>PW09</b>	04B	Analysis Date	09/04/2013 10:46					
Sample ID: GLCS MS09W0904B	Units : աց/L	1	Run ID: M	SD_09_130 <del>9</del>	04A		Prep Date:	09/04/2013 10:46					
Analyte	Result	PQL	SpkVal	SpkRefVal 5	%REC	LCL(ME)	UCL(ME) RPDRef	Val %RPD(Limit)	Qua				
TPH-P (GRO)	457	50	400		114	70	130						
Suπ: 1,2-Dichloroethane-d4	11.1		10		111	. 70	130						
Surr: Toluene-d8	10.2		10		102	70	130	•					
Surr: 4-Bromofluorobenzene	10.3		10		103	70	130						
Sample Matrix Spike	Type MS Test Code: EPA Method SW8015B/C / SW8260B												
File ID: 13090413.D		Batch ID: MS09W0904B Analysis Date											
Sample ID: 13082924-01AGS	Units : µg/L	1	Run ID: M	SD_09_1309	04A		Prep Date:	09/04/2013 14:38					
Analyte	Result	PQL	SpkVal	SpkRefVal 9	%REC	LCL(ME)	UCL(ME) RPDRe	Val %RPD(Limit)	Qua				
TPH-P (GRO)	2740	250	2000	0	137	54	143						
Surr: 1,2-Dichloroethane-d4	53.7		50		107	70	130						
Sun: Toluene-d8	51.9		50		104	70	130						
Surr: 4-Bromofluorobenzene	51.4		50		103	70	130						
Sample Matrix Spike Duplicate		Type M					15B/C / SW8260E						
File ID: 13090414.D				atch ID: MS0		04B	,	: 09/04/2013 15:00					
Sample ID: 13082924-01AGSD	Units : µg/L		Run ID: M	SD_09_1309	04A		Prep Date:	09/04/2013 15:00					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDRe	Nal %RPD(Limit)	Qua				
TPH-P (GRO)	2840	250	2000	0	142	- 54	143 273	3.8(23)					
Surr: 1,2-Dichloroethane-d4	53.8		50		108	70	130						
Surr: Toluene-d8	51.8		50		104	70	130						
Surr: 4-Bromofluorobenzene	51.7		50		103	70	130						

#### 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.



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Date: 05-Sep-13	(	)C Su	mmary	Report			-		Work Order: 13082844					
Method Blank File ID: 13090407.D		Туре МЕ		st Code: EP				Date:	09/04/2013 12:23	_				
Sample ID: MBLK MS09W0904A	Units : µg/L	F	Run ID: MS	SD_09_1309	04A		Prep Dat	ė:	09/04/2013 12:23					
Analyte	Result	PQL	SpkVal	SpkRefVal 1	%REC	LCL(ME)	UCL(ME) RP	DRefV	/al %RPD(Limit)	Qual				
Methyl tert-butyl ether (MTBE)	ND	0.5		<del>-</del>										
Benzene	ND	0.5												
Toluene	ND	0.5												
Ethylbenzene m.p-Xylene	ND	0.5												
o-Xylene	ND ND	0.5 0.5												
Surr: 1,2-Dichloroethane-d4	10.9	U.S	10		109	70	130							
Surr: Toluene-d8	10.6		10		108	70	130							
Surr: 4-Bromofluorobenzene	11		10		110	70	130							
Laboratory Control Spike		Type LC	S Te	est Code: EP	A Mat	had SW82	enr							
File ID: 13090404.D		.,,,,		itch ID: MS0				Date:	09/04/2013 11:09					
Sample ID: LCS MS09W0904A	Units : µg/L					~~~	-							
Analyte	Result			3D_09_1309 SakBaA/al I		LOLARY	Prep Dat		09/04/2013 11:09	Orral				
		PQL		Spkretval	-			UKOIV	/al %RPD(Limit)	Qual				
Methyl tert-butyl ether (MTBE) Benzene	9.04	0.5	10		90	63	137							
Toluene	8.24 8.87	0.5	10		82	70	130							
Ethylbenzene	8.49	0.5 0.5	10 10		89 85	80 80	120 120							
m,p-Xylene	9.61	0.5	10		96	65	139							
o-Xylene	8.89	0.5	10		89	70	130							
Surr: 1,2-Dichloroethane-d4	11.7		10		117	70	130							
Surr: Toluene-d8	9.78		10		98	70	130							
Sur: 4-Bromofluorobenzene	9.34		10		93	70	130		·_·					
Sample Matrix Spike		Type MS	5 Te	est Code: EF	'A Met	hod SW82	260B							
File ID: 13090411.D			Ba	atch ID: MS0	<b>9</b> 1709(	)4A	Analysis	Date:	09/04/2013 13:53					
Sample ID: 13082924-01AMS	Units : µg/L		Run ID: M	SD_09_1309	104A		Prep Dat	te:	09/04/2013 13:53					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RF	DRef\	/al %RPD(Limit)	Qual				
Methyl tert-butyl ether (MTBE)	50.7	1.3	50	0	101	56	140		***					
Benzene	50	1.3	50	0	100	67	134							
Toluene	52.8	1.3	50	0	106	38	130							
Ethylbenzene	51.4	1.3	50	0	103	70	130							
m,p-Xylene o-Xylene	54,7 53,2	1.3	50	0	109	65	139							
Surr: 1,2-Dichloroethane-d4	53.2 60	1.3	50 50	U	106 120	69 70	130 130							
Surr: Toluene-d8	47.5		50		95	70	130							
Surr: 4-Bromofluorobenzene	48.6		50		97	70	130							
Sample Matrix Spike Duplicate		Type M:	SD Te	est Code: EF	A Mat	hod SW82	260B			_				
File ID: 13090412.0		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		atch ID: MS0				Date:	09/04/2013 14:15					
Sample ID: 13082924-01AMSD	Units : µg/L			SD_09_1309			Preo Dai		09/04/2013 14:15					
Analyte	Result	PQL				LCL(ME)	•		/al %RPD(Limit)	Qual				
Methyl tert-butyl ether (MTBE)	48.1	1.3	50	0	96	56	140	50.66						
Benzene	46.6	1.3	50 50	0	93	67	134	50.02						
Toluene	50.3	1.3	50	Ō	101	38	130	52.75						
Ethylbenzene	48.4	1.3	50	Ö	97	70	130	51.44						
m,p-Xylene	53.5	1.3	50	0	107	65	139	54.65						
o-Xylene	50.9	1.3	50	0	102	69	130	53.17	7 4.3(20)					
Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8	57.5		60		115	70	130							
Sur: 4-Bromofluorobenzene	48.9		50		98	70 70	130		•					
Sun. Teluniumorostizene	47.9		50		96	70	130							



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	I	Date:		
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QC Summary Report

Work Order: 13082844

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:

# **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 EMail Address

Steve Carter (530) 676-6008 x scarter@stratusinc.net

CA

Page: 1 of 1

WorkOrder: STR13082844

Report Due By: 5:00 PM On: 05-Sep-13

EDD Required: Yes

Sampled by: Carl Schulze

PO:

Client:

Client's COC #: 16125

Suite 550

Stratus Environmental

3330 Cameron Park Orive

Cameron Park, CA 95682-8861

Job: 2115-1436-01/Olympic

Cooler Temp 2 °C Samples Received 28-Aug-13 Date Printed 28-Aug-13

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

_	3			Requested Tests									
Alpha	Client	Collectio	n No. of	Bottles	•	TPH/P_W	AOC-M			$\top$		T	
Sample ID	Sample ID	Matrix Date	Alpha	Sub	TAT	L .							Sample Remarks
STR13082844-01A	MW-1	AQ 08/26/13 14:53	4	0	5	GAS-C	BTXE/M_C						
STR13082844-02A	MW-3	AQ 08/26/13 13:36	4	0	5	GAS-C	BTXE/M_C						
STR13082844-03A	MW-2	AQ 08/26/13 14:01	4	0	5	GAS-C	BTXE/M_C						
STR13082844-04A	MW-4	AQ 08/26/13 15:06	4	0	5	GAS-C	BTXE/M_C						
STR13082844-05A	EX-2	AQ 08/26/13 14:24	4	0	5	GAS-C	BTXE/M_C						
STR13082844-06A	EX-3	AQ 08/26/13 15:34	4	0	5	GAS-C	BTXE/M_C						

Comments:	Security seals intact. Frozen ice.:			
	Signature	Print Name	Company	Date/Time
Logged in by		Sarah Neu	Alpha Analytical, Inc.	8 28 13 1120
Loggett III by		3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		

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 Info	mation:			
Strotus	s Eni	PHARET	ental	
1330 C	MERN	Bark	Dr. Sv.te	. 55
Comeron	Park	CA	95187	
		Fax:		
	3380 C	1330 Comeron	3330 Comeron Park Comeron Park, CA	3380 Comeon Park Or. Sister Comeon Park, CA 95682



Main Laboratory: 255 Glandale Ave, Suite 21 Sparks, NV 89431

#### Satellite Service Centers:

Northern CA: 8891 Horn Road, Suite C, Rencho Cordova, CA 95827 Southern CA: 1007 E. Dominguez St., Suite O, Carson, CA 90746 Northern NV: 1250 Lambille Hey., #310, Elko, NV 89801 Southern NV: 8256 McLeod Ave, Suite 24, Le Phone: 775-355-1044 Fex: 775-356-0406

Phone: 916-386-9089

Phone: 714-386-2901

Phone: 775-388-7043

16125

Page #	 of	

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			"Key: AQ - Aqueous	WA-	Waste	OT .	- Other	So-	Soil **	L - Liter	. ,	V-VOA	s-	Soil Ja	r	O - Orbo	• T	- Tedlar	B - 1	Grass	P - Plas	tic (	Other				$\dashv$
			says after sample receipt unless of						will be returne	d to offend	or die	posed of at	ckent e	opense.	The	report for	the analy	sis of the	above sa	mples is a	pplicable o	nly to thos	samples				$\neg$

# 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: 3Q13 geowell 8-26-13

Facility Global ID: T0600102256

Facility Name: OLYMPIC STATION File Name: GEO\_WELL.zip

Organization Name: Stratus Environmental, Inc.

<u>Username:</u> STRATUS NOCAL <u>IP Address:</u> 50.192.223.97

Submittal Date/Time: 10/2/2013 12:52:28 PM

**Confirmation Number:** 9110872387

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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: 3Q13 Analytical 8-26-13

Report Type: Monitoring Report - Semi-Annually

Facility Global ID: T0600102256

Facility Name: OLYMPIC STATION
File Name: 13082844\_EDF.zip

Organization Name: Stratus Environmental, Inc.

<u>Username:</u> STRATUS NOCAL IP Address: 50.192.223.97

Submittal Date/Time: 10/2/2013 12:54:44 PM

Confirmation Number: 3144184172

**VIEW QC REPORT** 

**VIEW DETECTIONS REPORT** 

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