Mr. Paresh Khatri Alameda County Environmental Health Care Services Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502

### **RECEIVED**

1:09 pm, Feb 21, 2012

Alameda County Environmental Health

Re: 6310 Houston Place, Dublin, California 94568 ACEHS Case No. RO0002862, GeoTracker ID T0600113164

Dear Mr. Khatri:

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,

Mr. Cary Grayson



February 17, 2012 Project No. 2094-6310-01

Mr. Paresh Khatri Alameda County Environmental Health Department 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502

Re: Quarterly Monitoring and Sampling Report – First Quarter 2012 6310 Houston Place, Dublin, California 94568
ACEHD Case No. RO0002862, GeoTracker ID T0600113164

Dear Mr. Khatri:

Stratus Environmental, Inc. (Stratus) is submitting the attached report, which presents an update of work performed during the first quarter 2012 on behalf of Mr. Cary Grayson for the facility located at 6310 Houston Place, Dublin, California. Stratus representatives, whose signatures appear below, declare under penalty of perjury, that the information contained in the attached report are true and correct to the best of our knowledge.

If you have any questions regarding this project, please contact Mr. Kasey Jones at (415) 576-0373.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

Kasey Jones Project Manager

Attachment:

Senior Geologist

Stephen J. Carter, P.G.

ment: Quarterly Monitoring and Sampling Report, First Quarter 2012

cc: Mr. Cary Grayson (via email carybgrayson@gmail.com)

TONAL GEO

Stephen J. Cartes

### QUARTERLY MONITORING AND SAMPLING REPORT

Facility Address: 6310 Houston Place, Dublin, California 94568

Consulting Co. / Contact Person: Stratus Environmental, Inc. / Kasey Jones

Consultant Project No: 2094-6310-01

Primary Agency/Regulatory ID No: Paresh Khatri, Alameda County Environmental Health Department

(ACEHD) Case No. RO0002862

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

1. On January 4, 2012, Stratus conducted the first quarter 2012 semi-annual groundwater monitoring sampling event. Prior to sampling, all wells were gauged for depth to water, temperature, pH, conductivity, dissolved oxygen (DO) and oxygen-reduction potential (ORP). Groundwater samples were collected and forwarded to a state-certified analytical laboratory for analysis. Field data sheets, sampling procedures and laboratory analytical reports are included as Appendices A, B, and C, respectively. Analytical results of 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.

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

 Based on the historical monitoring and analytical data for this site, Stratus recommends the site be considered for low-risk closure. Assuming concurrence from ACEHD with this recommendation, Stratus anticipates that the existing groundwater monitoring wells will be abandoned during the second guarter 2012.

Current Phase of Project:	Groundwater Monitoring
Frequency of Groundwater Monitoring and Sampling:	All Wells = Semi-annual (1 <sup>st</sup> and 3 <sup>rd</sup> )
Groundwater Sampling Date:	January 4, 2012
Is Free Product (FP) Present on Site:	No (Sheen noted in DW-3)
Approximate Depth to Groundwater:	7.72 to 9.17 feet below top of well casing.
Groundwater Flow Direction / Gradient:	West-northwest / 0.008 ft/ft

### **DISCUSSION:**

On January 4, 2012, Stratus conducted the first quarter 2012 semi-annual groundwater monitoring and sampling activities. Prior to sampling, all wells were gauged for depth to water, temperature, pH, conductivity, DO and ORP. A sheen was noted in onsite well DW-3. Groundwater samples were analyzed at a state-certified analytical laboratory for diesel range organics (DRO), with silica gel cleanup, by EPA Method SW8015B/DHS LUFT Manual, and for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl tert-butyl ether (MTBE), and naphthalene by EPA Method SW8260B. Groundwater elevation data and analytical results are summarized in Table 1.

At the time of the January 2012 groundwater monitoring event, depth to groundwater was measured between 7.72 and 9.17 feet below ground surface (bgs) in all monitoring wells. Groundwater elevations decreased between 1.46 and 1.68 feet in all wells since the last monitoring event (July 5, 2011). Groundwater monitoring data were converted to feet above mean sea level (MSL) and used to prepare a groundwater elevation contour map (Figure 2). Groundwater flow direction at the site was to the westnorthwest with a calculated gradient of 0.008 ft/ft. Historical groundwater flow has been toward the west, southwest and south-southwest.

Concentrations of BTEX or naphthalene were not reported in any of the sampled wells during first quarter 2012. DRO was reported in onsite wells DW-1 (390 micrograms per liter ( $\mu$ g/L)), DW-2 (1,600  $\mu$ g/L), DW-3 (9,000  $\mu$ g/L), DW-4 (88  $\mu$ g/L), and DW-5 (380  $\mu$ g/L). A very low concentration of MTBE was also reported in onsite well DW-4 (0.80  $\mu$ g/L). No concentrations of any sampled analytes were reported in offsite wells (DW-6 and DW-7) during first quarter 2012. Tabulated groundwater analytical data are summarized in Table 1. Certified Analytical results are presented in Appendix C. DRO, benzene, and MTBE concentrations for groundwater samples collected during the first quarter 2012 are presented in Figure 3. The pH for sample DW-4 was greater than 2.0, and the reporting limits for naphthalene in wells DW-5 and DW-7 were raised due to sample foaming. Petroleum hydrocarbon concentrations during the first quarter 2012 are generally consistent with historical data.

### **DISCUSSION OF SITE CONDITIONS:**

The current phase of environmental assessment at this site was initiated in April 2007, and during this time, twelve groundwater monitoring and sampling events have been performed. Groundwater flow during this period has been generally toward the west, southwest and south-southwest. Chemicals of concern during this phase of the investigation include DRO, BTEX, MTBE and naphthalene. BTEX and naphthalene have never been reported in the monitoring well network. MTBE is consistently reported in well DW-4, but the reported concentrations (0.67 to 0.94  $\mu$ g/L) are below both the primary and secondary Maximum Contaminant Levels (MCL).

DRO has consistently been reported in wells DW-1 through DW-5, but has never been reported in wells DW-6 or DW-7. The highest DRO concentrations were reported in July 2007, and since that time, the DRO concentrations have exhibited generally decreasing trends (DRO concentrations versus elapsed time are presented in Appendix E). Trend line regressions fitted to the DRO data indicate that in wells DW-1 through DW-3 and DW-5, DRO concentrations should fall below 100 µg/L in approximately 2.5 to 5 years (calculations are included in Appendix E). The trend line regression for DRO in Well DW-4 appears to indicate that concentrations exhibit a slightly rising trend, but the extremely low R² value (0.0006) indicates the trend line does not fit the data with any degree of confidence, and the trend line is essentially meaningless. DRO concentrations is this well are relatively low compared to the DRO concentrations in other wells, and are currently below 100 µg/L.

### **RECOMMENDATION:**

The site data indicates DRO and MTBE are the only chemicals of concern present in the groundwater. MTBE concentrations have historically been below MCLs. DRO concentrations generally exhibit decreasing trends, and based on these trends, the concentrations should drop below 100  $\mu$ g/L in 2.5 to 5 years. The hydrocarbon plume appears stable and does not appear to be moving. These conditions meet the closure consideration criteria previously discussed with ACEHD. We therefore recommend that the current monitoring and sampling program be discontinued, and that the site be considered for low-risk closure.

### **ATTACHMENTS:**

Table 1 Groundwater Elevation and Analytical Summary

• Figure 1 Site Location Map

Figure 2
 Figure 3
 Groundwater Elevation Contour Map, First Quarter 2012
 Groundwater Analytical Summary, First 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
- Appendix E Graphs of DRO Concentrations vs. Elapsed Time

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY

6310 Houston Place, Dublin, CA

Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	**DRO (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μg/L)	MTBE (μg/L)	Naphthalene (μg/L)
DW-1	04/10/07	7.44	334.23	326.79	8,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	07/12/07	7.72	334.23	326.51	30,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	10/11/07	7.88	334.23	326.35	18,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	01/25/08	6.16	334.23	328.07	13,000	< 0.5	< 0.5	< 0.5	< 0.5		
	04/23/08	6.96	334.23	327.27	15,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	07/23/08	7.55	334.23	326.68	5,200	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	10/30/08	8.02	334.23	326.21	11,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	01/11/10	7.58	334.23	326.65	5,600	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	
	08/03/10	7.43	334.23	326.80	540	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0
	01/13/11	6.81	334.23	327.42	1,700	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0
	07/05/11	6.47	334.23	327.76	380	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0
	01/04/12	8.05	334.23	326.18	390	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0
DW-2	04/10/07	7.09	334.00	326.91	8,200	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	07/12/07	7.40	334.00	326.60	34,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	10/11/07	7.55	334.00	326.45	14,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	01/25/08	5.89	334.00	328.11	17,000	< 0.5	< 0.5	< 0.5	< 0.5		
	04/23/08	6.63	334.00	327.37	27,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	~
	07/23/08	7.25	334.00	326.75	16,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	10/30/08	7.74	334.00	326.26	11,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	01/11/10	7.23	334.00	326.77	6,900	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	
	08/03/10	7.40	334.00	326.60	550	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
	01/13/11	6.27	334.00	327.73	7,500	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0
	07/05/11	6.12	334.00	327.88	210	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0
	01/04/12	7.77	334.00	326.23	1,600	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0
DW-3	04/10/07	7.90	334.56	326.66	27,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	07/12/07	8.19	334.56	326.37	210,000	< 0.5	<1.7	<1.7	<1.7	<1.7	
	10/11/07	8.29	334.56	326.27	71,000	<25	<25	<25	<25	< 0.5	
	01/25/08	6.63	334.56	327.93	66,000	< 0.5	< 0.5	< 0.5	< 0.5		
	04/23/08	7.38	334.56	327.18	58,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	07/23/08	7.94	334.56	326.62	38,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	10/30/08	8.41	334.56	326.15	29,000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	01/11/10	8.12	334.56	326.44	29,000	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	
	08/03/10	8.02	334.56	326.54	6,300	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0
	01/13/11	7.06	334.56	327.50	1,800	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0
	07/05/11	6.88	334.56	327.68	780	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0
	01/04/12	8.43	334.56	326.13	9,000	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0

Bay Counties\_Quarterly Data

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY

6310 Houston Place, Dublin, CA

Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	**DRO (µg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μg/L)	MTBE (μg/L)	Naphthalene (μg/L)
DW-4	04/10/07	7.99	334.49	326.50	65	< 0.5	< 0.5	< 0.5	< 0.5	0.67	
	07/12/07	8.22	334.49	326.27	300	< 0.5	< 0.5	< 0.5	< 0.5	0.87	
	10/11/07	8.33	334.49	326.16	640	< 0.5	< 0.5	< 0.5	< 0.5	0.80	
	01/25/08	6.62	334.49	327.87	240	< 0.5	< 0.5	< 0.5	< 0.5		
	04/23/08	7.39	334.49	327.10	340	< 0.5	< 0.5	< 0.5	< 0.5	0.94	***
	07/23/08	7.94	334.49	326.55	< 50	< 0.5	< 0.5	< 0.5	< 0.5	0.94	
	10/30/08	8.39	334.49	326.10	< 50	< 0.5	< 0.5	< 0.5	< 0.5	0.92	
	01/11/10	8.13	334.49	326.36	65	<1.0	<1.0	<1.0	<1.0	< 5.0	
	08/03/10	8.00	334.49	326.49	370	< 0.50	< 0.50	< 0.50	< 0.50	0.76	
	01/13/11	7.08	334.49	327.41	370	< 0.50	< 0.50	< 0.50	< 0.50	0.74	<4.0[3]
	07/05/11	6.91	334.49	327.58	300	< 0.50	< 0.50	< 0.50	< 0.50	0.96	<2.0
	01/04/12	8.38	334.49	326.11	88	< 0.50	< 0.50	< 0.50	< 0.50	0.80	<2.0
DW-5	04/10/07	7.00	333.91	326.91	800	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	07/12/07	7.36	333.91	326.55	990	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	10/11/07	7.52	333.91	326.39	880	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	01/25/08	5.93	333.91	327.98	730	< 0.5	< 0.5	< 0.5	< 0.5		
	04/23/08	6.52	333.91	327.39	780	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	07/23/08	7.24	333.91	326.67	340	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	10/30/08	7.68	333.91	326.23	1,200	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	01/11/10	7.47	333.91	326.44	130	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	
	08/03/10	7.32	333.91	326.59	490[1,2]	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0
	01/13/11	6.23	333.91	327.68	470	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0
	07/05/11	6.12	333.91	327.79	220	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0
	01/04/12	7.72	333.91	326.19	380	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<4.0[3]
DW-6	04/10/07	8.62	334.99	326.37	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	07/12/07	8.81	334.99	326.18	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	10/11/07	8.53	334.99	326.46	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	01/25/08	7.16	334.99	327.83	< 50	< 0.5	< 0.5	< 0.5	< 0.5		
	04/23/08	7.53	334.99	327.46	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	07/23/08	8.24	334.99	326.75	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	10/30/08	8.62	334.99	326.37	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	01/11/10	8.18	334.99	326.81	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	
	08/03/10	8.25	334.99	326.74	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
	01/13/11	7.69	334.99	327.30	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0
	07/05/11	7.06	334.99	327.93	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0
	01/04/12	8.52	334.99	326.47	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0

Bay Counties\_Quarterly Data

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY

6310 Houston Place, Dublin, CA

Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	**DRO (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μg/L)	MTBE (μg/L)	Naphthalene (μg/L)
DW-7	04/10/07	8.11	335.18	327.07	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	07/12/07	8.34	335.18	326.84	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	10/11/07	8.96	335.18	326.22	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	01/25/08	6.75	335.18	328.43	< 50	< 0.5	< 0.5	< 0.5	< 0.5		WW 900
	04/23/08	7.95	335.18	327.23	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
ļļ.	07/23/08	8.55	335.18	326.63	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	10/30/08	8.96	335.18	326.22	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	01/11/10	8.62	335.18	326.56	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	
	08/03/10	8.58	335.18	326.60	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0
	01/13/11	7.85	335.18	327.33	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0
	07/05/11	7.49	335.18	327.69	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0
	01/04/12	9.17	335.18	326.01	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<4.0[3]

#### Notes

\*Data through January 11, 2010, reported by AEI Contultants.

DRO = total petroleum hydrocarbons as diesel (C13-C-22)

MTBE = methyl-tertiary butyl ether

 $\mu g/L = micrograms per liter$ 

Bay Counties\_Quarterly Data

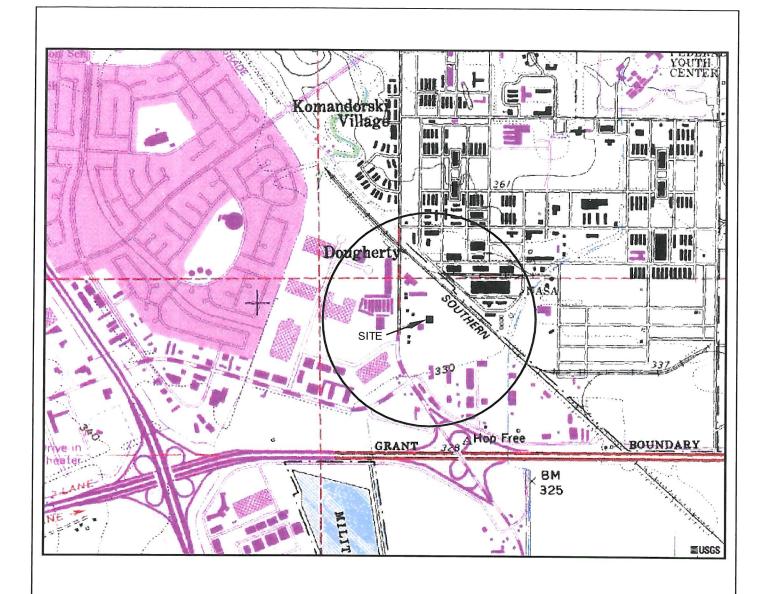
<sup>\*\*</sup>Prior to 8/3/10, reported as TPH-D

<sup>[1] =</sup> reported concentration includes additional compounds uncharacteristic of common fuels and lubricants.

<sup>[2] =</sup> DRO concentration may include contributions from heavier-end hydrocarbons that elute in the DRO range.

<sup>[3] =</sup> Reporting limits were increased due to sample foaming.

<sup>-- =</sup> Not analyzed



GENERAL NOTES: BASE MAP FROM U.S.G.S. DUBLIN, CA. 7.5 MINUTE TOPOGRAPHIC PHOTOREVISED 1989







APPROXIMATE SCALE



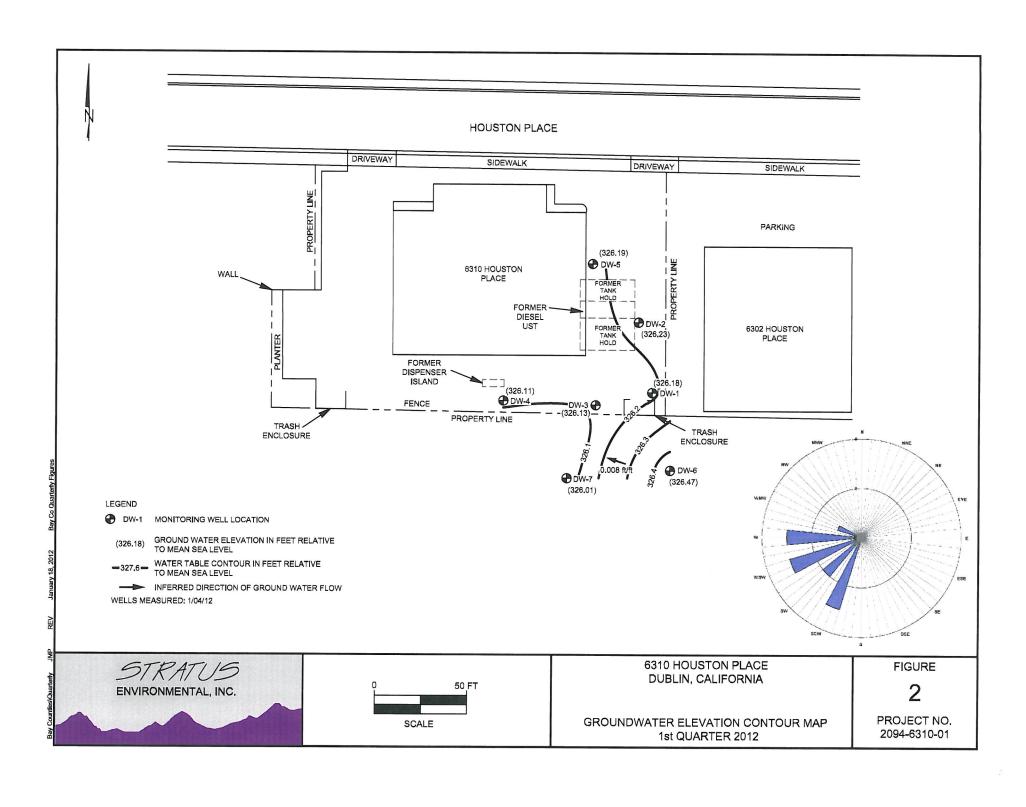
6310 HOUSTON PLACE DUBLIN, CALIFORNIA

SITE LOCATION MAP

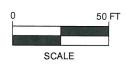
FIGURE

1

PROJECT NO. 2094-6310-01



STRATUS ENVIRONMENTAL, INC.



6310 HOUSTON PLACE DUBLIN, CALIFORNIA

GROUNDWATER ANALYTICAL SUMMARY
1st QUARTER 2012

**FIGURE** 

PROJECT NO. 2094-6310-01

# APPENDIX A FIELD DATA SHEETS



Site Address_	6310 Houston Place
City _	Dublin, CA
Sampled by:	Vince Zalutka
Signature	m/

Site Number	Bav Counties	
Project Number	2094-6310-01	
Project PM	Kasev Jones	
DATE	1-4-12	

	Wa	ater Level D	ata			Purge V	olume Calc	ulations			Purge	Metho	d	Sa	ample Reco	rd	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	Bailer	Pump	other	DTW at sample time (feet)	Sample I.D	Sample Time	DO (mg/L)	3
1-40	0620		8.05	16.50	8.45	る	15	4.23	4.25	Opening the State of the State	X	S CAPMA DOVEN SHARE	Low	The state of the s	DW-1	0901	1.61	1,
1.2	0603		7.77	16.60	8.83	1	7	4.42	4.50		X		Low	7.98	1 12			١,
1,3	0627	Sheen	8.43		3.27		(	4.14	4.00		X			8.82	4 .3	0733		
	0751		8.38	16.75	8.37		/	4.19	4.00		X		Low	8.40		0833	1.47	
1:3	0612		7.72	16.85	9.13			4.57	4.50		X			8.25	1.5		1.98	
506	0937		8.52	16.85				4.17	4.00		X			9.20	7.6		1.53	,
4.7	0932		9.17	16.70	7-53	4	od	3.77	3.75		X			9.27	4.7	0952	1.91	
					3													
																		1
	,				,													-
																		-
																		-
					#.) <i>68</i> .		. /	1	_									-
					Wall	ope	ned	15+	Min	•								
					Prio	75	ned gu	-54 g										
					-													-
																		۰
																		Į
						,												
																		The same of the sa
bereatter to the second second second	Control of the Contro		representation succession and the second	en e	THE RESIDENCE OF THE PARTY OF T		DOWNSON CONTRACTOR	Assessment to the second secon		CONTRACTOR OF THE PERSON NAMED AND ADDRESS OF THE PERSON NAMED		Account to the second				SAIDUN CONTRACTOR AND	i Santo control caringia de la como	4

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)

	CALIBR	ATION	DAT	Έ			
pH	V	2	1 -	_	4	-	12
Conductivity					5		
DO	d	$\overline{}$					



Site Address 6310 Houston Place

City Dublin

Sampled By: Vince Zalutka
Signature

Site Number Bay Counties Project Number 2094-6310-01 Project PM Kasey Jones

DATE PI-07-12

Well ID	A	1W-5			Well I	D	PW	-3	[m]	reen
Purge start time	064	4	Odor	YN	Purge	start time		16	Odor	Ø N
Bail	Temp C	рН	cond	gallons	j	Bail	Temp C	рН	cond	gallons
lime 0644	14.7	7.10	2.83 m	R	time ,	Misorial	15.3	7.35	1898	X
time 0653	17.5	7.21	2.83 m	2.25	time	0724	16.2	7.38	1839	2
time 0703	17.1	7.35	2.85m	4.5	time	0733	16.3	7.40	1751	4
time	<u> </u>				time					
purge stop time	0-	103	ORP	167	purge	stop time	87	33	ORP /	42
Well ID	D	W-4			Well I	D	D	W-2		
Purge start time	07	51	Odor	Y 🕖	Purge	start time	080	 >7	Odor	Y (N)
Bail	Temp C	pН	cond	gallons	E	ail	Temp C	рН	cond	gallons
time 0751	15.7	7-18	2-72m	8	time	0807	18.0	7.53	1376	<b>X</b>
time 080D	16.9	7.06	2.83 M	2	time	0812	19.4	7.61	1299	2.25
time 0805	4	on G	f	u	time	0817		ow	a -	-4.5
time 0833	16.5	7.18	2.91m	4.0	lime	0850	18.2	7.65	1157	4.5
purge stop time	08	305	ORP	113	purge	stop time	02	817	ORP	88
Well ID		N-1			Well II	)	Du	)_7	,	
Purge start time	08,	19	Odor	ΥN	Purge	start time	074	0	Odor	Y(N)
Bai/	Temp C	рН	cond	gallons		Bail	Temp C	pН	cond	gallons
time 08/9	16.5	7.78	3.59m	X	time	03.40	16.5	6.96	3.16m	0
time 8824	16.6	7.98	3.6/m	2.0		0946	18.1	6.93	3.12 M	2
time <b>6 829</b>	1	on	(d) -		time	0952	17.9	7.02	3.16 m	3.75
time 0901	1.6.3	7.74			time	-				
purge stop time	08		ORP .	4		stop time	09	62	ORP	102
Well ID	DW				Well ID	)				
Purge start time	095		Odor		Purge	start time			Odor	ΥN
Bail	Temp C	pH	cond	gallons			Temp C	рH	cond	gallons
time <b>5958</b>	17.7	1	3.29m	U( )	time					
time 1009	18.4	7.04	3.27 M		time					
	18.3	7.05	3.16 M	4	time					
time /012	1		.01	7					1	
time / 6 / 2 purge stop time		12	ORP	ы	time					



# 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<sup>®</sup> sheeting and plastic caps. The sample is then placed in a Ziploc<sup>®</sup> 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: Kasey Jones

Phone: (530) 676-6000 Fax: (530) 676-6005

Date Received: 01/05/12

Job:

**Bay Counties** 

Total Petroleum Hydrocarbons - Extractable (TPH-E) EPA Method SW8015B Volatile Organic Compounds (VOCs) EPA Method SW8260B

Client ID :         DW-1           Lab ID :         STR 12010508-01A         TPH-E (DRO), Silica Gel         390         50 μg/L         01/10/12         01/10/12           Date Sampled Sampled Value Sampled Sam			Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Lab ID :         STR 12010508-01A         TPH-E (DRO), Silica Gel         390         50 μg/L         01/10/12         01/10/12         01/10/12           Date Sampled Value Val	Client ID:	DW-1					
Date Sampled   01/04/12 09:01   Methyl tert-butyl ether (MTBE)   ND   0.50 μg/L   01/10/12   01/10/12     Benzene   ND   0.50 μg/L   01/10/12   01/10/12     Toluene   ND   0.50 μg/L   01/10/12   01/10/12     Ethylbenzene   ND   0.50 μg/L   01/10/12   01/10/12     m,p-Xylene   ND   0.50 μg/L   01/10/12   01/10/12     o-Xylene   ND   0.50 μg/L   0.50 μg/L   0.50 μg/L   0.50 μg/L     O-Xylene   ND   0.50 μg/L   0.5			TPH-E (DRO) Silica Gal	200	50 wa/I	01/10/13	01/10/12
$\begin{array}{cccccccccccccccccccccccccccccccccccc$					, 0		
Toluene ND 0.50 μg/L 01/10/12 01/10/12  Ethylbenzene ND 0.50 μg/L 01/10/12 01/10/12  m,p-Xylene ND 0.50 μg/L 01/10/12 01/10/12  ο-Xylene ND 0.50 μg/L 01/10/12 01/10/12	zanz oznapiou	0110 1112 07:01	, ,				
Ethylbenzene         ND         0.50 μg/L         01/10/12         01/10/12           m,p-Xylene         ND         0.50 μg/L         01/10/12         01/10/12           o-Xylene         ND         0.50 μg/L         01/10/12         01/10/12					, 5		
m,p-Xylene ND 0.50 μg/L 01/10/12 01/10/12 o-Xylene ND 0.50 μg/L 01/10/12 01/10/12			Ethylbenzene		, .		
o-Xylene ND $0.50 \mu\text{g/L}$ $01/10/12$ $01/10/12$			m,p-Xylene		, .		
Naphthalene ND 2.0 µg/L 01/10/12 01/10/12			Naphthalene	ND	2.0 μg/L	01/10/12	
Client ID: DW-2	Client ID:	DW-2					
Lab ID: STR12010508-02A TPH-E (DRO), Silica Gel 1,600 50 μg/L 01/10/12 01/10/12	Lab ID :		TPH-E (DRO) Silica Gel	1.600	50 ug/1	01/10/12	01/10/12
Date Sampled 01/04/12 08:50 Methyl tert-butyl ether (MTBE) ND 0.50 µg/L 01/06/12 01/06/12	Date Sampled	01/04/12 08:50	* **	,			
Benzene ND 0.50 µg/L 01/06/12 01/06/12	<b>P</b>	33.30					
Toluene ND $0.50 \mu\text{g/L}$ $01/06/12$ $01/06/12$			Toluene		, -		
Ethylbenzene ND 0.50 µg/L 01/06/12 01/06/12			Ethylbenzene		, 0		
m,p-Xylene ND 0.50 µg/L 01/06/12 01/06/12			m,p-Xylene	ND			
o-Xylene ND 0.50 µg/L 01/06/12 01/06/12			o-Xylene	ND	, 0	01/06/12	01/06/12
Naphthalene ND 2.0 µg/L 01/06/12 01/06/12			Naphthalene	ND	· •	01/06/12	01/06/12
Client ID: DW-3	Client ID:	DW-3					
Lab ID: STR12010508-03A TPH-E (DRO), Silica Gel 9,000 50 μg/L 01/10/12 01/10/12	Lab ID:	STR12010508-03A	TPH-E (DRO), Silica Gel	9 000	50 u g/ĭ .	01/10/12	01/10/12
Date Sampled 01/04/12 07:33 Methyl tert-butyl ether (MTBE) ND 0.50 µg/L 01/06/12 01/06/12	Date Sampled	01/04/12 07:33	` "	, , , , , , , , , , , , , , , , , , ,	, •		
Benzene ND 0.50 µg/L 01/06/12 01/06/12	•				, 0		
Toluene ND 0.50 µg/L 01/06/12 01/06/12			Toluene	ND	. •	01/06/12	
Ethylbenzene ND $0.50 \mu g/L$ $01/06/12$ $01/06/12$			Ethylbenzene	ND	0.50 μg/L	01/06/12	01/06/12
m,p-Xylene ND 0.50 μg/L 01/06/12 01/06/12			m,p-Xylene	ND	0.50 µg/L	01/06/12	01/06/12
o-Xylene ND $0.50 \mu g/L$ $01/06/12$ $01/06/12$			o-Xylene	ND	$0.50~\mu g/L$	01/06/12	01/06/12
Naphthalene ND 2.0 μg/L 01/06/12 01/06/12			Naphthalene	ND	2.0 μg/L	01/06/12	01/06/12
Client ID: DW-4	Client ID:	DW-4					
Lab ID: STR12010508-04A TPH-E (DRO), Silica Gel 88 50 μg/L 01/10/12 01/10/12	Lab ID:	STR12010508-04A	TPH-E (DRO), Silica Gel	88	50 ug/L	01/10/12	01/10/12
Date Sampled 01/04/12 08:33 Methyl tert-butyl ether (MTBE) 0.80 0.50 µg/L 01/06/12 01/06/12	Date Sampled	01/04/12 08:33					
Benzene ND 0.50 µg/L 01/06/12 01/06/12	•						
Toluene ND 0.50 µg/L 01/06/12 01/06/12			Toluene		' <del>-</del>		
Ethylbenzene ND 0.50 µg/L 01/06/12 01/06/12			Ethylbenzene	ND	, •		
m,p-Xylene ND 0.50 μg/L 01/06/12 01/06/12			m,p-Xylene	ND	0.50 μg/L	01/06/12	01/06/12
o-Xylene ND $0.50 \mu g/L$ $01/06/12$ $01/06/12$			o-Xylene	ND	0.50 μg/L	01/06/12	01/06/12
Naphthalene ND 2.0 μg/L 01/06/12 01/06/12			Naphthalene	ND	$2.0~\mu g/L$	01/06/12	01/06/12



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

Client ID:	DW-5						
Lab ID:	STR12010508-05A	TPH-E (DRO), Silica Gel	380		<b>50 μg/</b> L	01/10/12	01/10/12
Date Sampled	01/04/12 07:03	Methyl tert-butyl ether (MTBE)	ND		0.50 μg/L	01/06/12	01/06/12
-		Benzene	ND		0.50 μg/L	01/06/12	01/06/12
		Toluene	ND		0.50 μg/L	01/06/12	01/06/12
		Ethylbenzene	ND		0.50 μg/L	01/06/12	01/06/12
		m,p-Xylene	ND		0.50 μg/L	01/06/12	01/06/12
		o-Xylene	ND		0.50 µg/L	01/06/12	01/06/12
		Naphthalene	ND	О	4.0 μg/L	01/06/12	01/06/12
Client ID:	DW-6						
Lab ID:	STR12010508-06A	TPH-E (DRO), Silica Gel	ND		50 μg/L	01/10/12	01/10/12
Date Sampled	01/04/12 10:12	Methyl tert-butyl ether (MTBE)	ND		0.50 μg/L	01/06/12	01/06/12
		Benzene	ND		0.50 μg/L	01/06/12	01/06/12
		Toluene	ND		0.50 μg/L	01/06/12	01/06/12
		Ethylbenzene	ND		0.50 μg/L	01/06/12	01/06/12
		m,p-Xylene	ND		0.50 μg/L	01/06/12	01/06/12
		o-Xylene	ND		0.50 μg/L	01/06/12	01/06/12
		Naphthalene	ND		$2.0~\mu g/L$	01/06/12	01/06/12
Client ID:	DW-7						
Lab ID:	STR12010508-07A	TPH-E (DRO), Silica Gel	ND		50 µg/L	01/10/12	01/11/12
Date Sampled	01/04/12 09:52	Methyl tert-butyl ether (MTBE)	ND		0.50 μg/L	01/06/12	01/06/12
		Benzene	ND		0.50 μg/L	01/06/12	01/06/12
		Toluene	ND		0.50 µg/L	01/06/12	01/06/12
		Ethylbenzene	ND		0.50 µg/L	01/06/12	01/06/12
		m,p-Xylene	ND		0.50 μg/L	01/06/12	01/06/12
		o-Xylcne	ND		0.50 μg/L	01/06/12	01/06/12
		Naphthalene	ND	O	4.0 μg/L	01/06/12	01/06/12

Diesel Range Organics (DRO) C13-C22

O = Reporting Limits were increased due to sample foaming.

ND = Not Detected

Reported in micrograms per Liter, per client request.

Roger Scholl Kandy Soulner

Walter Hornham

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.

1/12/12

Report Date



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

## **VOC Sample Preservation Report**

Work Order: STR12010508

Job:

**Bay Counties** 

Work Order: STRIZO10500	Bay Counties			,
Alpha's Sample ID	Client's Sample ID	Matrix	рН	
12010508-01 A	DW-1	Aqueous	2	
12010508-02A	DW-2	Aqueous	2	
12010508-03A	DW-3	Aqueous	2	
12010508-04A	DW-4	Aqueous	5	
12010508-05A	DW-5	Aqueous	2	
12010508-06A	DW-6	Aqueous	2	
12010508-07A	DW-7	Aqueous	2	



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

Date: 12-Jan-12	(	QC St	ımmar	y Repor	t				<b>Work Orde</b> 12010508	
Method Blank File ID: 2A01101233.D Sample ID: MBLK-27994 Analyte	Units : <b>µg/L</b> Result	PQL	Ba Run ID: FII	est Code: <b>EF</b> atch ID: <b>2799</b> <b>D_2_120110</b> SpkRefVal	4SG B		Analysi Prep Da	s Date: ate:	01/11/2012 10:37 01/10/2012 13:55 /al %RPD(Limit)	Qual
TPH-E (DRO), Silica Gel Surr: Nonane, Silica Gel	ND 177	50	150		118	49	145			
Laboratory Control Spike File ID: 2A01101234.D Sample ID: LCS-27994	Units : µg/L	Type: L0	Ва	est Code: EF	4SG	thod SW80		s Date:	01/11/2012 11:01 01/10/2012 13:55	
Analyte	Result	PQL		<b>D_2_120110</b> SpkRefVal		LCL(ME)	•		/al %RPD(Limit)	Qual
TPH-E (DRO), Silica Gel Surr: Nonane, Silica Gel	2520 172	50	2500 150		101 115	70 49	130 145			
Sample Matrix Spike File ID: 2A01101242.D Sample ID: 12011040-07AMS	Units : µg/L		Ba Run ID: <b>FII</b>	est Code: <b>EF</b> atch ID: <b>279</b> 9 <b>D_2_120110</b>	4SG B		Analysi Prep Da	s Date: ate:	01/11/2012 14:21 01/10/2012 13:55	
Analyte TPH-E (DRO), Silica Gel Surr: Nonane, Silica Gel	Result 2860 159	PQL 50	SpkVal 2500 150	SpkRefVal 0	%REC 114 106	53 49	150 145	PDRef\	/al %RPD(Limit)	Qual
Sample Matrix Spike Duplicate File ID: 2A01101243.D Sample ID: 12011040-07AMSD Analyte	Units : µg/L Result	Type: M:	Ba Run ID: <b>FII</b>	est Code: EF atch ID: 2799 D_2_120110 SpkRefVal	4SG B		Analysi Prep Da	s Date: ate:	01/11/2012 14:46 01/10/2012 13:55 /al %RPD(Limit)	Qual
TPH-E (DRO), Silica Gel Surr: Nonane, Silica Gel	2540 179	50	2500 150	0	102 119	53 49	150 145	2861		

#### 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

Date: 12-Jan-12		(	QC St	ımmar	y Report	İ				Work Orde 12010508	
Method Blan	nk CHEM\MS10\DATA\120106\	12010604.D	Type: M		est Code: EP				sis Date:	01/06/2012 12:02	
Sample ID:	MBLK MS10W0106A	Units : µg/L					OUA	Prep E		01/06/2012 12:02	
Analyte	MOLK MOTOVO 100A				SD_10_1201			•			
		Result	PQL	Spkvai	SpkRervai	%KEC	LCL(ME)	UCL(ME)	RPDRen	/al %RPD(Limit)	Qual
	yl ether (MTBE)	ND	0.5								
Benzene		ND	0.5								
Toluene		ND	0.5								
Ethylbenzene m,p-Xylene		ND	0.5								
o-Xylene		ND ND	0.5								
Naphthalene		ND	0.5 2								
Surr: 1,2-Dichle	oroethane-d4	10.3	2	10		103	70	130			
Surr: Toluene-c		11.1		10		111	70	130			
Surr: 4-Bromof	-	9.98		10		99.8	70	130			
		9.90							·		
Laboratory	Control Spike		Type: LC	CS Te	est Code: EP	A Met	hod SW82	260B			
File ID: C:\HPC	CHEM\MS10\DATA\120106\1	12010602.D		Ba	atch ID: MS1	0W01	06A	Analys	is Date:	01/06/2012 11:18	
Sample ID:	LCS MS10W0106A	Units : µg/L		Run ID: MS	SD_10_1201	06A		Prep D	)ate:	01/06/2012 11:18	
Analyte		Result	PQL				· I CL (ME)	•		/al %RPD(Limit)	Qual
			***************************************		Spkreivai				Krukeit	Val MRPD(LIIIII)	Quai
	/I ether (MTBE)	10.5	0.5	10		105	65	140			
Benzene		10.1	0.5	10		101	70	130			
Toluene		10.2	0.5	10		102	80	120			
Ethylbenzene		9.13	0.5	10		91	80	120			
m,p-Xylene		9.28	0.5	10		93	70	130			
o-Xylene		9.26	0.5	10		93	70	130			
Surr: 1,2-Dichlo		11.5		10		115	70	130			
Surr: Toluene-c		11.6		10		116	70	130			
Surr: 4-Bromoff	luoropenzene	10.2		10		102	70	130		·····	
Sample Mati	rix Spike		Type: M	<b>S</b> Te	est Code: EP	A Met	hod SW82	60B			
File ID: C:\HPC	CHEM\MS10\DATA\120106\1	2010608.D		Ba	tch ID: MS1	างงาา	06A	Analys	is Date	01/06/2012 13:48	
Sample ID:	12010508-01AMS	Units: µg/L			SD_10_1201			Prep D		01/06/2012 13:48	
Analyte	12010000 0174110	. •					LOL(ME)	•			Ougl
		Result	PQL	Spkvai	SpkRervai	%REC	LUL(ME)	UCL(ME)	RPDReiv	/al %RPD(Limit)	Qual
Methyl tert-buty	d ether (MTBE)	50.9	1.3	50	0	102	47	150			
Benzene		46.8	1.3	50	0	94	59	138			
Toluene		47.7	1.3	50	0	95	68	130			
Ethylbenzene		41.2	1.3	50	0	82	68	130			
m,p-Xylene		41.3	1.3	50	0	83	68	131			
o-Xylene		40.8	1.3	50	0	82	70	130			
Surr: 1,2-Dichic		59		50		118	70	130			
Surr: Toluene-d		57.8		50		116	70	130			
Surr: 4-Bromofl	uorobenzene	54.5		50		109	70	130			-
Sample Mati	rix Spike Duplicate		Type: M	SD Te	st Code: EP	A Met	hod SW82	60B			
	HEM\MS10\DATA\120106\1	2010609.D	• ,		tch ID: MS1				is Date	01/06/2012 14:10	
Sample ID:	12010508-01AMSD						, , , , , , , , , , , , , , , , , , ,	•			
•	12010306-01AWSD	Units : µg/L			SD_10_1201			Prep D		01/06/2012 14:10	۰.
Analyte		Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefV	/al %RPD(Limit)	Qual
Methyl tert-buty	d ether (MTBE)	56.2	1.3	50	0	112	47	150	50.9	10.0(40)	
Benzene		52.3	1.3	50	0	105	59	138	46.81	11.0(21)	
Toluene		53.4	1.3	50	0	107	68	130	47.73	3 11.1(20)	
Ethylbenzene		46.5	1.3	50	0	93	68	130	41.2		
m,p-Xylene		46.4	1.3	50	0	93	68	131	41.27		
o-Xylene		46.5	1.3	50	0	93	70	130	40.84	13.0(20)	
Surr: 1,2-Dichlo		57.4		50		115	70	130			
Surr: Toluene-d		58.3		50		117	70	130			
Surr: 4-Bromofl	uorobenzene	53.5		50		107	70	130			



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

Date:	OC Summary Report	Work Order:
12-Jan-12	QC Summary Report	12010508

### 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** Kasey Jones (530) 676-6000 x kaseyjones@stratusinc.net

Page: 1 of 1

WorkOrder: STR12010508

Report Due By: 5:00 PM On: 12-Jan-12

EDD Required: Yes

Sampled by: Vince Z.

Cooler Temp

4°C

Samples Received 05-Jan-12

Date Printed 05-Jan-12

PO:

Client:

Client's COC #: 57561

Suite 550

Stratus Environmental

3330 Cameron Park Drive

Cameron Park, CA 95682-8861

Job: **Bay Counties** 

OC Level: S3 = Final Rnt MRIK LCS MS/MSD With Surrogates

Alpha	Client								Requested 1	Tests		
•	Client	Co	ollection	No. of	Bottles	•	TPH/E_SG_	VOC_W				
Sample ID	Sample ID	Matrix	Date	Alpha	Sub	TAT	W					Sample Remarks
STR12010508-01A	DW-1		1/04/12 09:01	8	0	5	Silica Gel (C)	BTXE/M/NA PH_C				**************************************
STR12010508-02A	DW-2		1/04/12 08:50	8	0	5	Silica Gel (C)	BTXE/M/NA PH_C				Annual Company of Comp
STR12010508-03A	DW-3		1/04/12 07:33	8	0	5	Silica Gel (C)	BTXE/M/NA PH_C				The state of the s
STR12010508-04A	DW-4	1 .	1/04/12 08:33	8	0	5	Silica Gel (C)	BTXE/M/NA PH_C				THE PROPERTY CONTRACTOR CONTRACTO
STR12010508-05A	DW-5	1	1/04/12 07:03	8	0	5	Silica Gel (C)	BTXE/M/NA PH_C				CONTRACTOR OF THE STATE OF THE
STR12010508-06A	DW-6		1/04/12 10:12	8	0	5	Silica Gel (C)	BTXE/M/NA PH_C				The state of the s
STR12010508-07A	DW-7		1/04/12 09:52	8	0	5	Silica Gel (C)	BTXE/M/NA PH_C				

Comments:

Security seals intact. Frozen Ice.:

Logged in by:

Signature

**Print Name** 

Company

Date/Time

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: Company Name Stratus ENV.  Attn: Kasey Address 3330 Cameron Park I City, State, Zip Cameron Park C.  Phone Number 530-676-600 YFax 530-676	255 GI Sparks Phone Fax (7	a Analytical, Inc. endale Avenue, Suite 21 5, Nevada 89431-5778 (775) 355-1044 (75) 355-0406	Samples Collected AZ CA _X ID OR	From Which State NV WA OTHER es Required	97 57 56 1  — <b>DOD Site</b> Page #   of
Consultant / Client Name  Bay Counties  Address  6310 Houston P/.  City, State, Zip Dublin (A  Time Date Matrix' P.O. #  Sampled Sampl	Job #  Report Attention / Pr Name: Kase J Jones  Email: Phone: Mol	bile:	Dieselsm Clesselsm BTEX BTE	Map 4 the Gio	Data Validation Level: III or IV  DD / EDF? YES X NOX
262 Below Lab ID Number (use Only)  0901 01 04 AB STR 12010 S08 - 01 A  0860 / -02A  0703 / -05A  1012 / -074	DW-1   -2   -3   -4   -5   -6   -7	TAT Field # Containers"  Stal 8v	X X X X X X X X X X X X X X X X X X X	X X	REMARKS
ADDITIONAL INSTRUCTIONS:  I, (field sampler), attest to the validity and authenticity of grounds for legal action. Sampled By:  Relinquished by: (Signature/Affiliation)  Relinquished by: (Signature/Affiliation)	Received by: (Signal Received	turo/Affikation)	sample location, date or time 8 Janu Alpha	Date:  Date:  Date:  Date:  Date:	Time:

\*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\_WELLSubmittal Title:GeoWell 1-4-12Facility Global ID:T0600113164

Facility Name: BAY COUNTIES PETROLEUM

File Name: GEO\_WELL.zip

Organization Name: Stratus Environmental, Inc.

<u>Username:</u> STRATUS NOCAL <u>IP Address:</u> 12.186.106.98

**Submittal Date/Time:** 1/18/2012 9:42:27 AM

Confirmation Number: 6229399919

Copyright © 2012 State of California

### 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!

<u>Submittal Type:</u> EDF - Monitoring Report - Quarterly

Submittal Title: Analytical 1-4-11
Facility Global ID: T0600113164

Facility Name: BAY COUNTIES PETROLEUM

File Name: 12010508\_EDF.zip

Organization Name: Stratus Environmental, Inc.

<u>Username:</u> STRATUS NOCAL <u>IP Address:</u> 12.186.106.98

**Submittal Date/Time:** 1/18/2012 9:38:40 AM

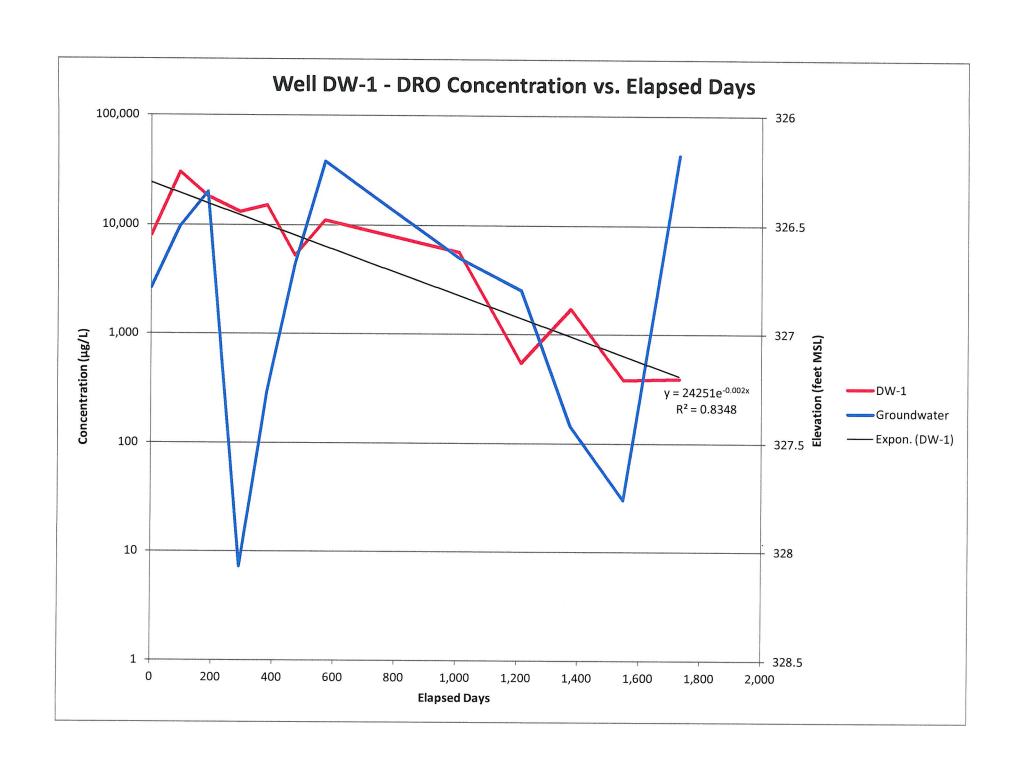
**Confirmation Number:** 4294736504

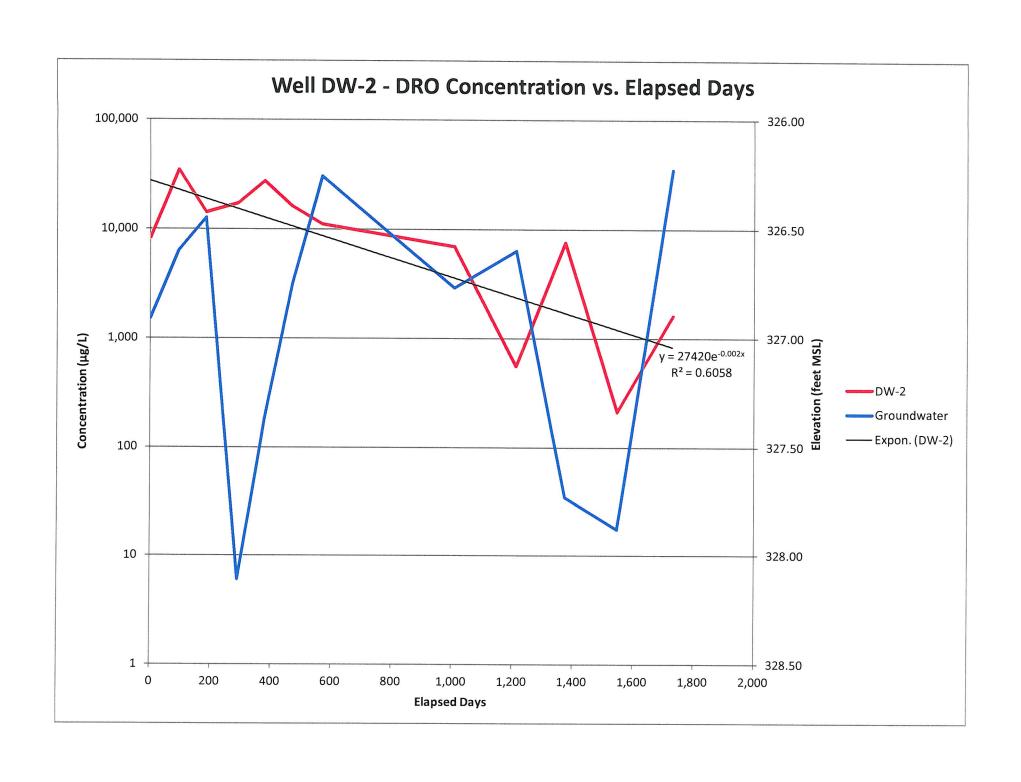
**VIEW QC REPORT** 

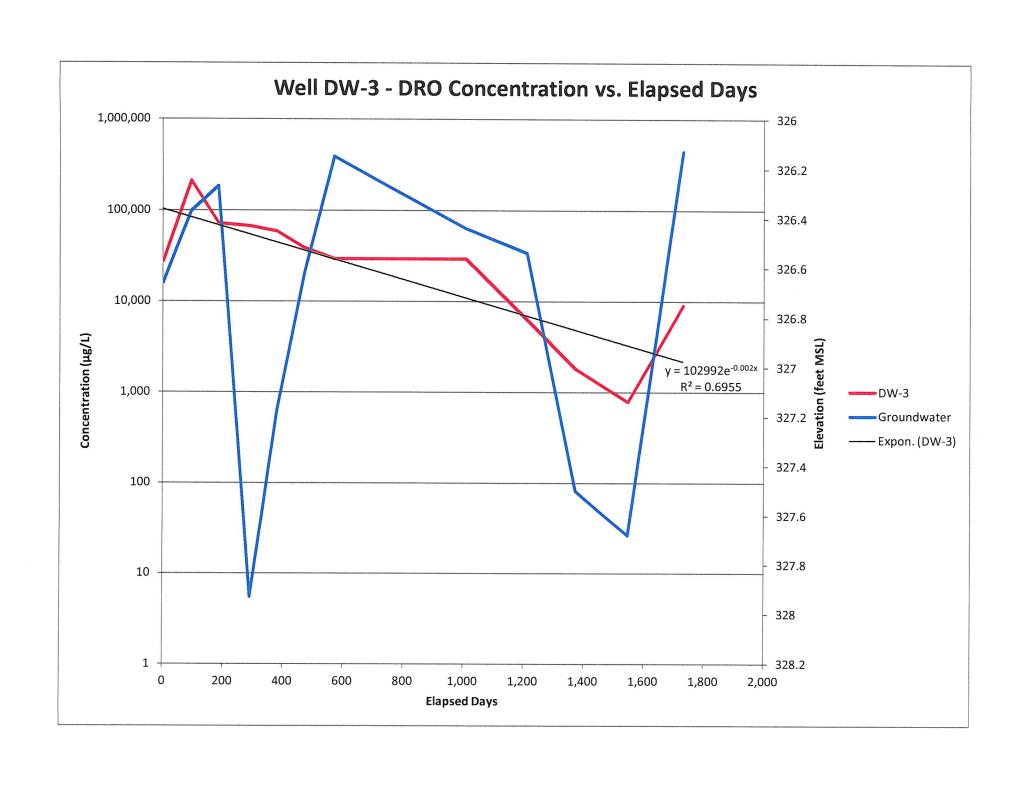
**VIEW DETECTIONS REPORT** 

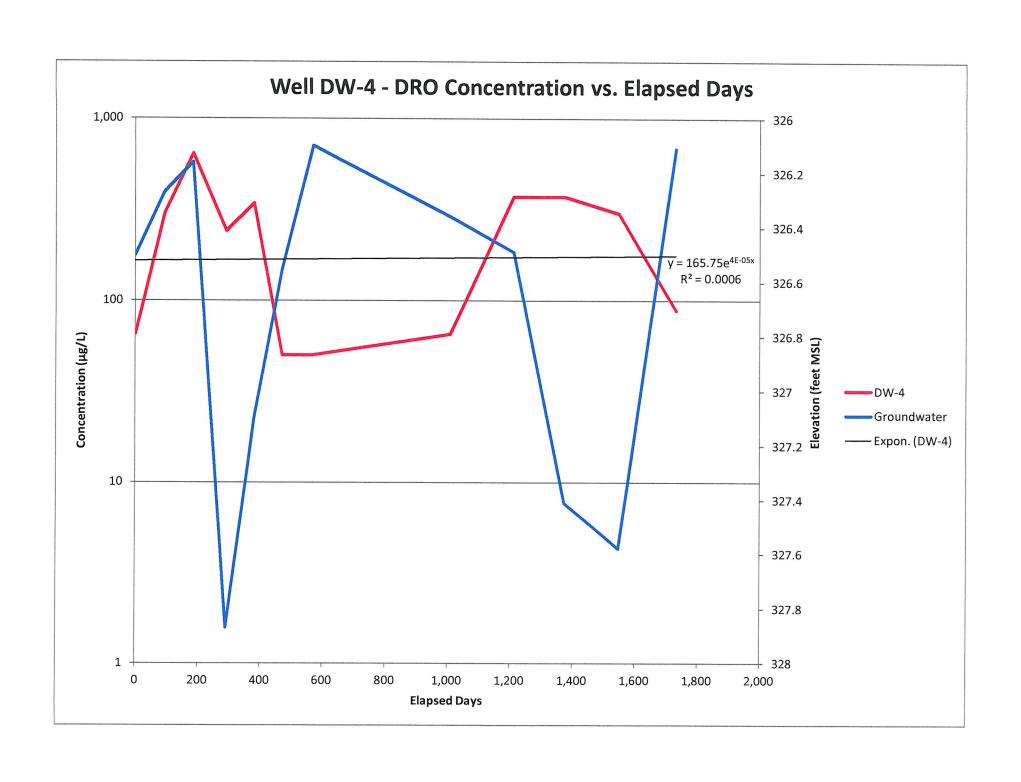
Copyright © 2012 State of California

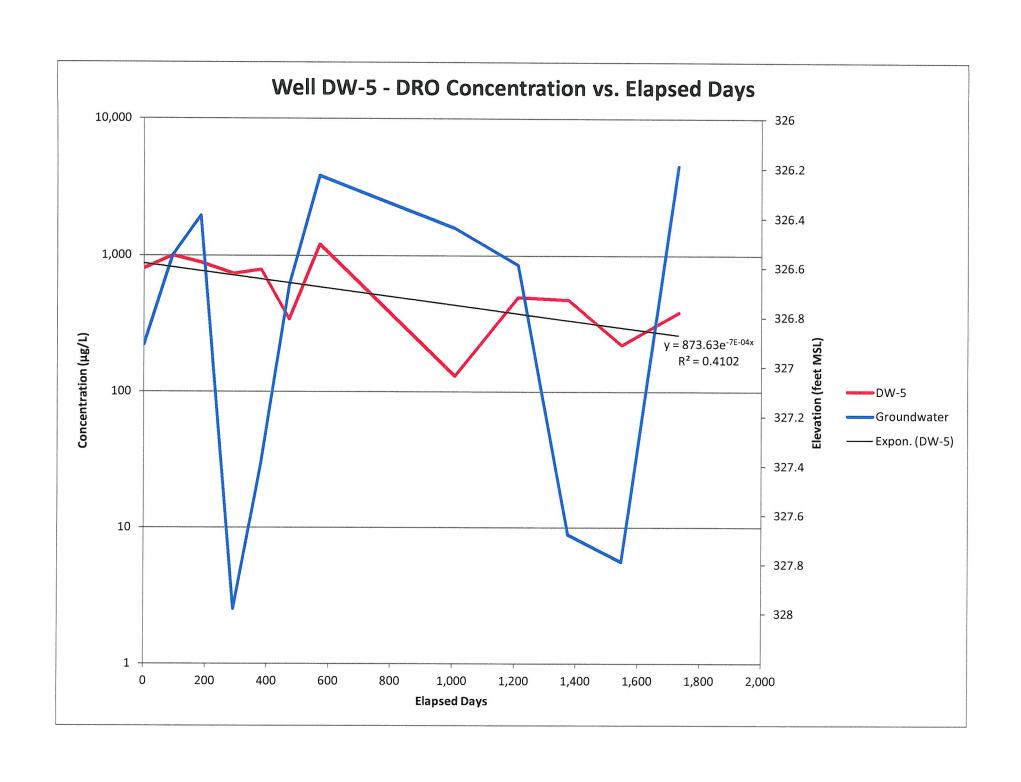
# APPENDIX E GRAPHS OF DRO CONCENTRATIONS VS. ELAPSED TIME











Bay Counties

Well DW-1

 $y = 24251e^{-0.002x}$   $\ln(y) = \ln(24251) + \ln(e^{-0.002x})$  = 10.10 - 0.002x

for assumed achon (evel of 100 eig/L ln (100) = 10.10 - 0.002x

4.61-10.10 = X = 2745. Hotal

As of last sampling event (1/4/12), a to til of 1,730 days had classed since start of sampling. Total days remaining to veach 100 pg/L:

> 2475 - 1730 = 963 days (from 1/4/12)or (+365) = 2.6 years (= 2014)

Well DW-Z

 $ln(y) = 27420 e^{-0.002x}$   $ln(y) = ln(27420) + ln(e^{-0.002x})$ = ln(27420) - 0.002x

assumed action level = 100 µg/L ln (100) = ln (27420) - 0.002 x

 $\frac{\ln(100) - \ln(27420)}{-0.002} = \times \approx 2807$  total Lays

As of last sampling event (1/4/12), a total of 1,730 days has elapsed 5 Mce.

Start of sampling. Total days remaining to reach 100 µg/L:

2807 - 1730 = 1077 days (from 1/4/12)

or (-365) \$\times 3.0 \text{ gears}\$

(\$\times 2015)

DW-3

$$y = 102992e^{-0.002x}$$

$$\ln(y) = \ln(102992) + \ln(e^{-0.002x})$$

$$= \ln(102992) - 0.002x$$
assumed action |evel = 100 µg/L
$$\ln(100) = \ln(102992) - 0.002x$$

$$\ln(100) - \ln(102992)$$

$$= x = 3469 days$$

of 1730 days has elapsed since start of Janyshing. Total days remaining to reach 100 mg/L:

$$3469 - 1738 = 1739$$
 days (from  $1/4/12$ )  
 $(+365) \approx 4.8$  years  
 $(\approx 2017)$ 

DW-4 - trend line indicates concentration trend is increasing

DW-5

 $y = 873.63e^{-0.0007x}$   $ln(g) = ln(873.63) + ln(e^{0.0007x})$  = ln(873.65) - 0.0007xassumed action level of 100 mg/L ln(100) = ln(873.65) - 0.0007x ln(100) - ln(873.65) = x = 3096 days

As of last sampling event (1/4/12), a total of 1730 days has elapsed since the start of Sampling. Total days remaining to reach 100 µg/6:

3096-1730=1366 (from 1/4/12) (7365) & 3.8 years (22016)

Hade PG