AP. 59

# STAGE 1 & 2 REPORTS

DATE: 10 - 7 - 10

# R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuguerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

October 7, 2010

**Edward Hansen** 

NMOCD 1220 South St. Francis Drive Santa Fe, New Mexico 87505 **Via E-mail**  RECEIVED

OCT - 8 2010

Environmental Bureau
Oil Conservation Division

RE:

NMOCD Case #: AP-59

F-35 SWD & G-35 SWD, T17S, R35E Ground Water Monitoring Report

Mr. Hansen,

This letter presents a ground water monitoring report for the above referenced sites as requested by your May 12, 2010 Abatement Plan (AP-59) Amendment Approval. Since our January 2010 Abatement Plan Amendment was submitted, ground water monitoring events at the sites occurred in March, May and August of this year. Plate 1 presents a site vicinity map with well locations, along with chloride in ground water data from the most recent sampling event. Tables presenting all collected data for all wells associated with this site are attached.

# **Summary**

Our evaluation of data collected in 2010 gives additional confirmation of the following conclusions, presented previously:

- 1. Ground water beneath and down gradient from the former tanks exhibits chloride and TDS concentrations that are suitable for livestock.
- 2. Ground water quality does not yet meet ground water standards in two of three wells nearest the former tanks.
- 3. Ground water beneath and within about 100 feet of the former tanks exhibits Benzene concentrations above ground water standards, although the concentration has been trending down over the past eight sampling events. All of these wells have shown a benzene concentration below the standard at least once in the last two monitoring events.
- 4. A simple arithmetic forecast based on data collected in the last 2-4 years suggests that all wells will meet WQCC Standards for chloride by 2013 and for benzene by 2011.
- 5. Natural restoration is an effective abatement strategy for chloride, TDS and Benzene at this site.

# **Ground Water Chloride and TDS**

As shown in Figure 1, concentrations of TDS and chloride declined at the F-35 source area (MW-1) from 2002-2005 and then the rate of decline decreased from 2005-present day. MW-1 has been the pumping recovery well at the F-35 site.

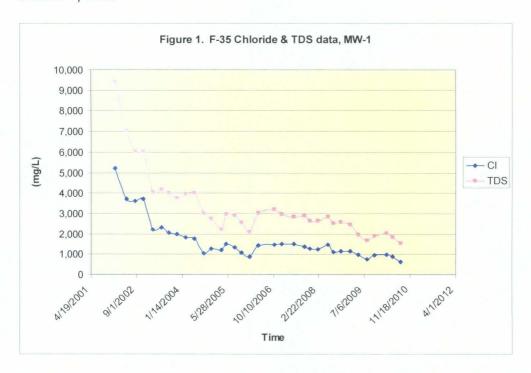


Figure 2 presents the chloride data from F-35 MW-3 (1,000 feet down gradient) and MW-2, about 400 feet cross-gradient. The observed fluctuations in ground water data for MW-3 shallow and deep would be consistent with episodic introduction of chloride during historic operations at the F-35 SWD facility up-gradient. Although the October 2009 sampling event showed an increase in chloride concentration in MW-3 Deep to 208 mg/L, the concentration dropped again to average 57 mg/L during the three subsequent sampling events in 2010.

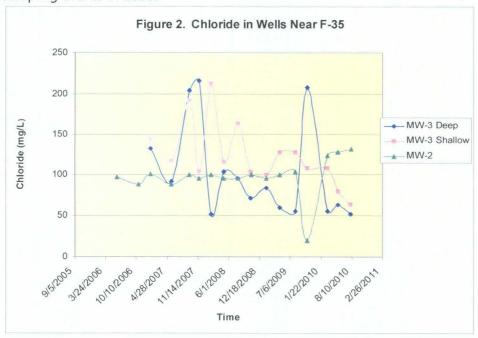


Figure 3 presents chloride and TDS concentrations over time in MW-1 at the G-35 site. Concentrations for Chloride and TDS were below WQCC standards and continuing to trend downward in the last three sampling events. In August, the most recent sampling event, chloride and TDS in MW-1 were 124 mg/L and 520 mg/L respectively.

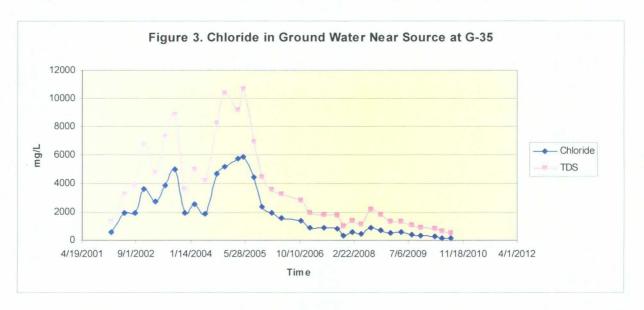
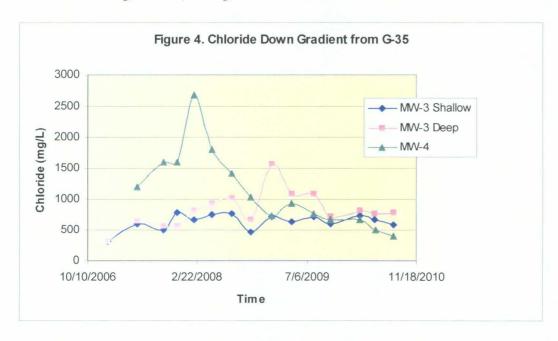
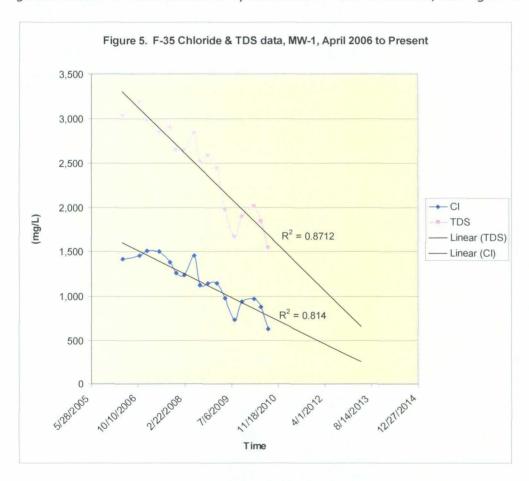


Figure 4 shows the chloride concentrations over time at the well approximately 50 feet down gradient from the excavation (MW-4) and the deep and shallow wells 300 feet down gradient (MW-3). TDS in these wells follows a similar trend. In the most recent sampling event, chloride and TDS in MW-4 were 396 mg/L and 1,010 mg/L respectively, down from 660mg/L and 1,420mg/L in October of 2009.

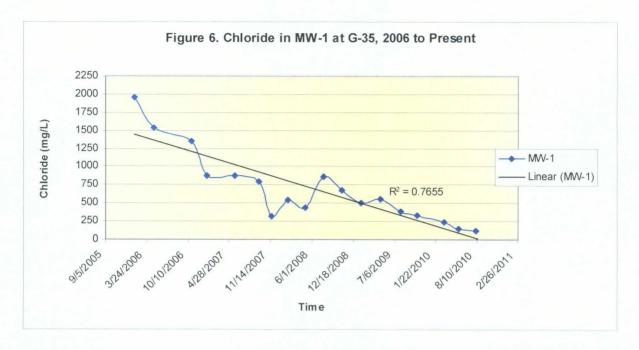


#### **Prediction of Benefit from the Vadose Zone Remedy**

Our Vadose Zone Remedy Report (October 2006) predicted that the vadose zone would drain (allow a continued flux of chloride and hydrocarbons to ground water) for 10-18 months after remedy installation (August 2007) if initial conditions were "wet" (this would make the remedy effective in June 2008 – February 2009). During the thirty-six months since the installation of the vadose zone remedy, ground water chloride concentrations have decreased from 1,500 mg/L in May of 2007 (before remedy installation) to 630 mg/L in August 2010 at F-35. All data from MW-1 at F-35 is presented in Figure 1 and shows concentrations have varied widely since sample collection began in 2002, as would be expected of episodic releases of chloride from the former site. Data over the last 4 years shows some variation with a visible downward trend. A linear trendline fit to chloride and TDS data over the last 17 quarters of data collected at this well indicates an ongoing decline in concentrations that suggests ground water will meet standards by sometime in 2013 at this site, see Figure 5.

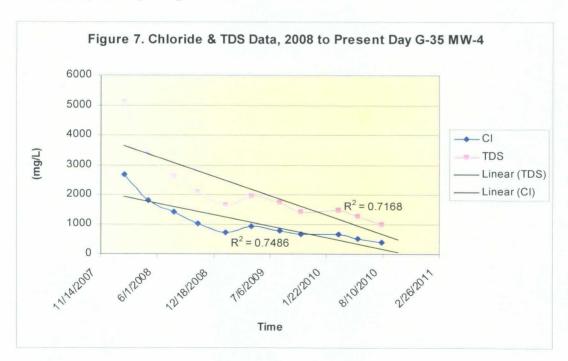


At G-35, chloride and TDS concentrations also fluctuated widely from 2002-2005 (see Figure 3). Chloride in MW-1 at G-35 declined from 873 mg/L in May 2007 to 124 mg/L in August 2010. Figure 6 shows chloride in ground water in the well at G-35 from January 2006 to August 2010 with an exponential trend line. TDS concentrations at this site have been below WQCC standards since October 2009. Chloride concentrations have been below WQCC standards in the last three sampling events, since March 2010.



This data shows a decline in chloride from July 2008 to the present day, over the course of 9 monitoring events. We believe this demonstrates that the infiltration barrier created a measurable benefit at the site.

Figure 7 shows Chloride and TDS data at MW-4 at G-35. This well is located 50 feet down gradient from the former site. Trendlines fit to ground water data from 2008 to the present day suggest TDS and Chloride concentrations at the site will meet WQCC standards by the beginning of 2011.



# **Ground Water Chemistry - Hydrocarbons**

The impact of the vadose zone remedy (the infiltration barrier and ventilation wells) along with natural degradation should result in decreases in hydrocarbon concentrations in the three wells with detectible concentrations of VOCs: MW-1 and MW-4 at G-35 and MW-1 at F-35. In these wells, Benzene has been the constituent with concentrations exceeding WQCC standards while concentrations for Toluene, Ethyl Benzene and Total Xylenes have generally met standards.

From 2001-2005, benzene concentrations were just above or below 1 mg/L and after 2005, benzene concentrations were generally below 0.5 mg/L. About 15 months after installation of the vadose zone remedy, the data show a steady decline in benzene concentrations. Figure 8 shows Benzene at G-35 in MW-1 and MW-4 since 2002.

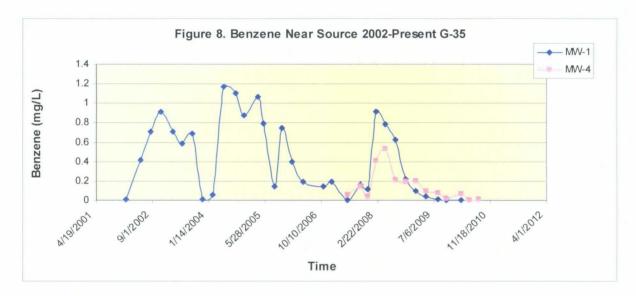
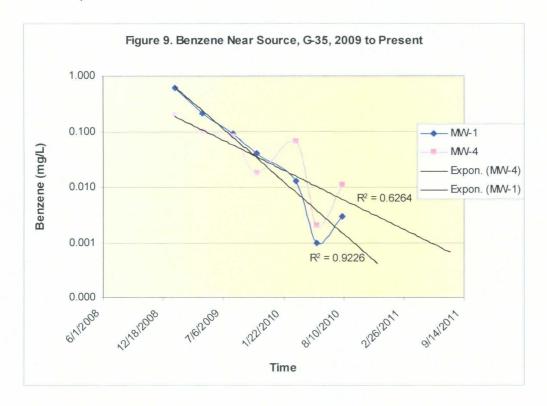
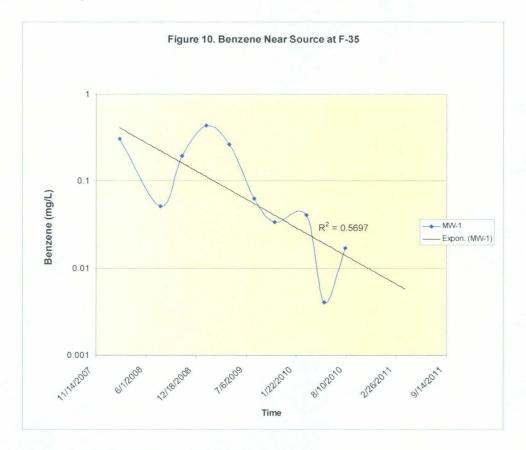


Figure 9 presents ground water data for Benzene at G-35 MW-1 and MW-4 as observed over the last 7 quarters of monitoring, from January 2009 through August of 2010. As the observed concentrations have been below or near 0.1 mg/L, this data is presented with a logarithmic scale and exponential trendlines. Trendlines suggest Benzene concentrations in MW-1 and MW-4 at G-35 will meet WQCC Standards by the end of 2011.



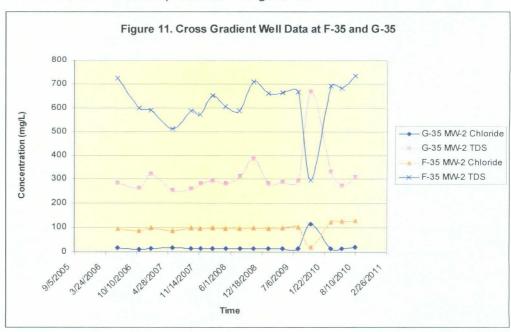
At the F-35 site, Benzene in MW-1 has remained over the standard with the exception of a "non-detect" in June of 2008. Figure 10 shows the last ten quarters of data for Benzene in MW-1, excluding the June 2008 data point as an anomaly. Given the overall downward trend in concentrations at this well and in others that showed benzene above the WQCC standard, we believe natural restoration and the vadose zone remedy are causing benzene in ground water to decrease with time at this site.



#### Cross Gradient Wells at F-35 and G-35

MW-2 at F-35 and MW-2 at G-35 are both wells located east and cross gradient from each respective site. Previous concern that the ground water gradient near the site was due east and that F-35 and G-35 were hydrologically connected has been laid to rest by ground water data for these wells. Collected ground water data for TDS and Chloride concentrations at F-35 MW-2 and G-35 MW-2 are presented in Figure 11.

Over the 17 quarters of data collected for these wells, no exceedance of WQCC Standards has been observed in either well. We have no evidence to suggest that these wells have been or will be adversely impacted by historic activities at the site and respectfully request permission to cease sampling and plug and abandon them both.



#### Conclusion

Per our approved Abatement Plan Amendment, the localized water treatment system at F-35 was shut off and we plan to forego a treatment system at G-35. We believe ground water monitoring data in 2010 confirms our conclusion that the vadose zone remedy, natural attenuation, and dilution and dispersion continue to decrease concentrations of constituents of concern and these corrective actions are protective of fresh water, public health, human safety, property and the environment. Collected data suggest ground water at the site will meet WQCC Standards in all wells by 2013.

With your approval of this proposed amendment to the Abatement Plan for F-35 and G-35, ROC will:

- a. Complete the forth quarter ground water monitoring for 2010 for all wells except MW-2 at F-35 and MW-2 at G-35
- b. Plug and abandon MW-2 at F-35 and MW-2 at G-35
- c. Prepare an annual report in early 2011
- d. Monitor this site on a semi-annual basis (two sampling events) in 2011
- e. Prepare an annual report in early 2012 with further recommendations

ROC is the service provider (agent) for the Vacuum Salt Water Disposal System and has no ownership of any portion of pipeline, well or facility. The Vacuum SWD System is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Thank you for your time and consideration.

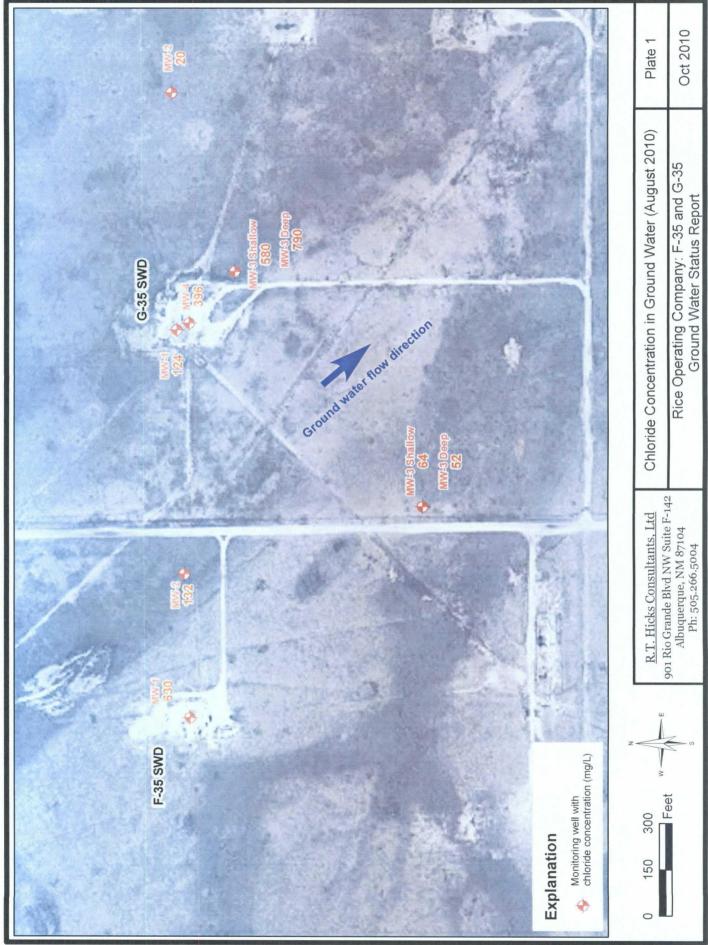
Sincerely,

R.T. Hicks Consultants, Ltd.

Katie Lee

**Project Scientist** 

Copy: Rice Operating Company



	Samuela Data	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate
MW	Sample Date				(1	mg/L)		
WQC	CC Standards	250	1000	0.01	0.75	0.75	0.62	600
1	1/10/2002	568	1284	0.011	0.022	0.034	0.055	23
1	5/15/2002	1950	3260	0.414	0.057	0.131	0.065	2.1
1	8/19/2002	1950	3850	0.705	0.598	0.209	0.253	7
1	11/11/2002	3630	6740	0.921	0.078	0.154	0.131	5.8
1	2/28/2003	2730	4770	0.713	0.01	0.018	0.027	24.6
1	5/22/2003	3860	7320	0.583	0.002	0.12	0.027	5.3
1	8/21/2003	5010	8850	0.689	0.004	0.307	0.032	3.5
1	11/19/2003	1930	3590	0.012	0.002	0.09	0.003	20.9
1	2/18/2004	2579	5000	0.059	<0.002	0.35	0.007	1.49
1	5/27/2004	1899	4188	1.17	0.308	0.357	0.319	2.15
1	9/7/2004	4700	8270	1.11	0.0525	0.346	0.1382	17.7
$\overline{1}$	11/24/2004	5200	10400	0.881	0.0226	0.133	0.0717	799
1_	3/21/2005	5750	9190	2.76	0.247	0.399	0.2862	136
1	5/11/2005	5890	10700	2490	466	672	693	9.75
1	8/15/2005	4430	6960	1.07	0.226	0.396	0.2417	126
1_	10/25/2005	2360	4420	0.799	0.0607	0.146	0.0839	166
$\Box_{1}$	1/23/2006	1960	3540	0.141	J[0.00537]	0.078	0.0229	80.5
1_	4/25/2006	1540	3280	0.749	0.0143	0.093	0.0282	67.4
1	10/25/2006	1350	2800	0.394	0.0204	0.0774	0.0438	45.2
1	1/9/2007	873	1950	0.188	<0.001	0.0883	0.00764	34.6
1	5/24/2007	873	1820	0.143	0.00735	0.0664	0.0227	41.2
1	9/20/2007	800	1738	0.189	0.004	0.082	0.029	22.2
_1_	11/20/2007	320	969_	0.003	<0.002	<0.002	<0.006	35.3
1_	2/4/2008	540	1380	0.159	0.061	0.087	0.058	23.1
1_1_	4/29/2008	440	1150	0.109	0.02	0.074	0.038	22.4
1_	7/29/2008	860	2160	0.915	0.261	0.74	0.649	<10
_1_	10/23/2008	680	1790	0.785	0.192	0.531	0.45	<10
1_1_	1/26/2009	500	1330	0.62	0.044	0.372	0.173	<10
1_1_	4/27/2009	550	1300	0.216	0.004	0.212	0.11	14.9
1_1_	8/6/2009	384	1090	0.091	0.016	0.086	0.109	14.8
1	10/23/2009	332	896	0.04	0.001	0.086	0.037	10.9
1	3/3/2010	232	795	0.013	0.004	0.075	0.041	22.6
1_1_	5/13/2010	152	599	0.001	0.001	0.016	0.005	29.9
_1_	8/3/2010	124	520	0.003	0.001	0.023	0.006	24.1

MW	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate			
14144	Sample Date	(mg/L)									
WQCC S	Standards	250	1000	0.01	0.75	0.75	0.62	600			
2	6/6/2006	17.4	286	<0.001	j[0.000839]	j[0.000385]	0.0044	24.7			
2	10/25/2006	13.4	264	<0.001	<0.001	<0.001	<0.001	22.8			
2	1/9/2007	13.7	322	<0.001	j[0.000540]	<0.001	< 0.001	21.7			
2	5/24/2007	17.2	254	<0.001	<0.001	<0.001	<0.001	20.1			
2	9/20/2007	16	262	<0.002	<0.002	<0.002	<0.006	25.6			
2	11/20/2007	16	283	<0.002	<0.002	<0.002	<0.006	25			
2	2/4/2008	16	296	<0.002	<0.002	<0.002	<0.006	23			
2	4/29/2008	16	283	<0.002	<0.002	<0.002	<0.006	23.8			
2	7/29/2008	16	312	<0.001	<0.001	<0.001	< 0.003	24			
2	10/23/2008	16	386	<0.001	<0.001	<0.001	< 0.003	24.6			
2	1/28/2009	16	282	XXX	XXX	XXX	XXX	24			
2	4/27/2009	16	288	XXX	XXX	XXX	XXX	21.6			
2	8/6/2009	16	296	XXX	XXX	XXX	XXX	21.2			
2	10/23/2009	116	666	XXX	XXX	XXX	XXX	71			
2	3/3/2010	16	333	XXX	XXX	XXX	XXX	26.2			
2	5/13/2010	16	273	XXX	XXX	XXX	XXX	22.6			
2	8/4/2010	20	311	XXX	XXX	XXX	XXX	19.3			

MW	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate			
IVIVV	Sample Date		(mg/L)								
WQCC Star	ndards	250	1000	0.01	0.75	0.75	0.62	600			
3 Deep	1/9/2007	313	830	<0.001	0.0136	<0.001	<0.001	46.5			
3 Deep	5/24/2007	648	1090	<0.001	j[0.000320]	<0.001	<0.001	34.7			
3 Deep	9/20/2007	570	1442	<0.002	<0.002	<0.002	<0.006	34			
3 Deep	11/20/2007	570	1312	<0.002	<0.002	<0.002	<0.006	42.5			
3 Deep	2/5/2008	820	1710	<0.002	<0.002	<0.002	<0.006	32.7			
3 Deep	4/29/2008	930	1920	<0.002	<0.002	<0.002	<0.006	36.7			
3 Deep	7/29/2008	1010	2110	<0.001	<0.001	<0.001	<0.003	40			
3 Deep	10/22/2008	670	1710	<0.001	<0.001	<0.001	< 0.003	<10			
3 Deep	1/28/2009	1560	3000	XXX	XXX	XXX	XXX	31			
3 Deep	4/27/2009	1080	2770	XXX	XXX	XXX	XXX	19.2			
3 Deep	8/6/2009	1090	2110	XXX	XXX	XXX	XXX	26.8			
3 Deep	10/23/2009	720	1930	XXX	XXX	XXX	XXX	14.4			
3 Deep	3/4/2010	810	1860	XXX	XXX	XXX	XXX	32.2			
3 Deep	5/12/2010	760	1940	XXX	XXX	XXX	XXX	28.2			
3 Deep	8/3/2010	790	1510	XXX	XXX	XXX	XXX	29.4			

B#\A/	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate			
MW	Sample Date		(mg/L)								
WQCC Star	ndards	250	1000	0.01	0.75	0.75 0.62 600					
3 Shallow	1/9/2007	311	804	<0.001	0.0191	<0.001	<0.001	48.9			
3 Shallow	5/24/2007	599	1070	<0.001	j[0.000380]	<0.001	< 0.001	34.5			
3 Shallow	9/20/2007	500	1373	<0.002	<0.002	<0.002	<0.006	39.1			
3 Shallow	11/20/2007	776	1670	<0.002	<0.002	<0.002	<0.006	40.4			
3 Shallow	2/5/2008	670	1590	<0.002	<0.002	<0.002	<0.006	34.3			
3 Shallow	4/29/2008	750	1790	<0.002	<0.002	<0.002	<0.006	31.8			
3 Shallow	7/29/2008	760	1870	<0.001	<0.001	<0.001	< 0.003	27			
3 Shallow	10/22/2008	464	1570	<0.001	<0.001	<0.001	< 0.003	68.6			
3 Shallow	1/28/2009	710	1690	XXX	XXX	XXX	XXX	24.3			
3 Shallow	4/27/2009	630	1790	XXX	XXX	XXX	XXX	18.8			
3 Shallow	8/6/2009	710	1680	XXX	XXX	XXX	XXX	16.5			
3 Shallow	10/23/2009	600	1320	XXX	XXX	XXX	XXX	17.3			
3 Shallow	3/4/2010	740	1950	XXX	XXX	XXX	XXX	26.9			
3 Shallow	5/12/2010	660	1620	XXX	XXX	XXX	XXX	25.8			
3 Shallow	8/3/2010	580	1470	XXX	XXX	XXX	XXX	21			

MW	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate
WQCC S	Standards	250	1000	0.01	0.75	0.75	0.62	600
4	5/24/2007	1200	2050	0.0521	0.0582	0.017	0.02819	43.2
4	9/20/2007	1600	3262	0.146	0.058	0.023	0.042	17.8
4	11/20/2007	1600	3256	0.036	0.034	0.01	0.017	26
4	2/4/2008	2680	5140	0.411	0.151	0.082	0.092	9.94
4	4/29/2008	1800	3370	0.529	0.222	0.15	0.176	11.2
4	7/29/2008	1420	2620	0.208	0.086	0.041	0.06	20
4	10/23/2008	1040	2110	0.189	0.137	0.078	0.109	21.5
4	1/26/2009	730	1650	0.196	0.16	0.048	0.059	21.9
4	4/27/2009	940	1970	0.097	0.033	0.037	0.032	20.9
4	8/6/2009	770	1750	0.079	0.055	0.046	0.069	16.9
4	10/23/2009	660	1420	0.018	0.012	0.012	0.01	13.6
4	3/3/2010	670	1490	0.066	0.064	0.025	0.047	20.2
4	5/13/2010	500	1270	0.002	0.005	0.002	0.005	26.4
4	8/3/2010	396	1010	0.011	0.008	0.003	0.005	23.3

Vacuum F-35 SWD

	IM F-35 SVVD	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate
MW	Sample Date				(mg/	L)	<u>.                                    </u>	
WQC	C Standards	250	1000	0.01	0.75	0.75	0.62	600
1	1/10/2002	5,200	9,425	0.05	0.053	0.05	0.09	5
1	5/15/2002	3,720	7,050	0.744	0.207	0.51	0.309	3.2
1	8/19/2002	3,630	6,040	0.705	0.172	0.112	0.076	10.7
1	11/11/2002	3,720	6,020	1.21	0.343	0.835	0.431	2.8
1	2/28/2003	2,200	4,040	0.909	0.84	0.321	0.124	26.2
1	6/5/2003	2,300	4,180	0.632	0.134	0.061	0.067	20.3
1	8/21/2003	2,060	4,000	0.617	0.36	0.202	0.192	4.9
1	11/19/2003	2,000	3,760	0.797	0.301	0.264	0.248	5.1
1	2/18/2004	1,819	3,932	0.349	0.038	0.121	0.027	0.19
1	5/27/2004	1,759	4,008	0.726	0.176	0.268	0.215	8.7
1	9/7/2004	1,040	3,000	0.429	0.221	0.143	0.2247	19.9
1	11/24/2004	1,260	2,740	0.0489	0.313	0.209	0.2507	51
1	3/21/2005	1,220	2,210	2.2	1.61	0.848	1.283	110
1	5/11/2005	1,490	2,970	686	451	374	176.2	24.6
1	8/15/2005	1,340	2,890	0.819	0.393	0.666	0.584	69.5
1	10/25/2005	1,080	2,540	0.779	0.243	0.394	0.3062	72.7
1	1/23/2006	886	2,080	0.447	0.222	0.28	0.3006	88.2
1	4/25/2006	1,420	3,040	0.227	0.0956	0.174	0.1614	62.5
1	10/24/2006	1,460	3,190	0.462	0.489	0.23	0.745	45.2
1	1/9/2007	1,510	2,980	0.486	0.577	0.185	0.333	67.2
1	5/23/2007	1,500	2,850	0.557	0.387	0.323	0.681	44.4
1	9/19/2007	1,380	2,902	0.902	0.706	0.582	1.14	23.2
1	11/19/2007	1,260	2,642	0.719	0.203	0.429	0.665	44.2
1	2/15/2008	1,240	2,650	0.305	0.099	0.218	0.563	49.7
1	6/3/2008	1,460	2,840	<0.002	<0.002	<0.002	<0.006	25.4
1	7/28/2008	1,120	2,510	0.051	0.023	0.066	0.172	35
1	10/23/2008	1,150		0.193	0.013	0.232	0.526	27
1_	1/28/2009	1,150	2,440	0.431	0.044	0.332	0.362	16.8
1	4/28/2009	980	1,970	0.26	0.038	0.234	0.282	15.2
1	8/5/2009	740	1,660	0.063	0.024	0.116	0.236	18.7
1	10/26/2009	940	1,890	0.034	0.019	0.136	0.177	15.6
1	3/3/2010	970	2,010	0.041	0.02	0.122	0.154	15.8
1	5/12/2010	880	1,840	0.004	0.011	0.05	0.08	22.1
1	8/4/2010	630	1,540	0.017	0.022	0.059	0.117	23.8

DAVA/	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate			
MW	Sample Date	(mg/L)									
WQC	C Standards	250	1000	0.01	0.75	0.75	0.62	600			
2	6/6/2006	97.6	724	<0.001	<0.001	<0.001	<0.001	63.3			
2	10/24/2006	89.1	598	<0.001	<0.001	<0.001	<0.001	67.2			
2	1/9/2007	101	590	<0.001	<0.001	<0.001	<0.001	69.4			
2	5/23/2007	88.3	512	<0.001	<0.001	<0.001	<0.001	61			
2	9/19/2007	100	587	< 0.002	<0.002	<0.002	<0.006	71.7			
2	11/18/2007	96	571	<0.002	<0.002	<0.002	<0.006	85.7			
2	2/4/2008	100	652	<0.002	<0.002	<0.002	<0.006	60.6			
2	4/28/2008	96	604	<0.002	<0.002	<0.002	<0.006	79.8			
2	7/28/2008	96	586	<0.001	<0.001	<0.001	<0.003	62			
2	10/23/2008	100	710	<0.001	<0.001	<0.001	< 0.003	77.7			
2	1/28/2009	96	660	XXX	XXX	XXX	XXX	73.2			
2	4/28/2009	100	663	XXX	XXX	XXX	XXX	73.6			
2	8/5/2009	104	666	XXX	XXX	XXX	XXX	76.2			
2	10/26/2009	20	296	XXX	XXX	XXX	XXX	21.3			
2	3/3/2010	124	689	XXX	XXX	XXX	XXX	84.8			
2	5/12/2010	128	680	XXX	XXX	XXX	XXX	99.8			
2	8/4/2010	132	733	XXX	XXX	XXX	XXX	91			

MW	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate			
141.4.4	Sample Date		(mg/L)								
WQCC Sta	ındards	250	1000	0.01	0.75	0.75	0.62	600			
3 Deep	1/9/2007	133	500	< 0.001	0.0103	<0.001	< 0.001	86.9			
3 Deep	5/23/2007	91.9	452	<0.001	0.00241	<0.001	< 0.001	47.5			
3 Deep	9/19/2007	204	772	<0.002	<0.002	<0.002	<0.006	72.8			
3 Deep	11/19/2007	216	735	<0.002	<0.002	<0.002	<0.006	64.6			
3 Deep	2/5/2008	52	393	<0.002	<0.002	<0.002	<0.006	59.8			
3 Deep	4/28/2008	104	485	<0.002	<0.002	<0.002	<0.006	65.2			
3 Deep	7/28/2008	96	510	<0.001	<0.001	<0.001	< 0.003	52			
3 Deep	10/22/2008	72	665 .	<0.001	<0.001	<0.001	< 0.003	160			
3 Deep	1/28/2009	84	477	XXX	XXX	XXX	XXX	65			
3 Deep	4/28/2009	60	416	XXX	XXX	XXX	XXX	61.9			
3 Deep	8/5/2009	56	397	XXX	XXX	XXX	XXX	58.4			
3 Deep	10/26/2009	208	542	XXX	_XXX	XXX	XXX	42			
3 Deep	3/4/2010	56	428	XXX	XXX	XXX	XXX	70.4			
3 Deep	5/12/2010	64	397	XXX	XXX	XXX	XXX	74.1			
3 Deep	8/3/2010	52	396	XXX	XXX	XXX	XXX	59.8			

MW	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate		
10100			(mg/L)							
WQCC Sta	ındards	250	1000	0.01	0.75	0.75	0.62	600		
3 Shallow	1/9/2007	144	512	<0.001	0.015	< 0.001	<0.001	99		
3 Shallow	5/23/2007	117	494	<0.001	0.0013	< 0.001	< 0.001	56.9		
3 Shallow	9/19/2007	192	789	<0.002	<0.002	<0.002	<0.006	73.5		
3 Shallow	11/19/2007	104	467	<0.002	<0.002	<0.002	<0.006	66.3		
3 Shallow	2/5/2008	212	821	<0.002	<0.002	<0.002	<0.006	60.6		
3 Shallow	4/28/2008	116	502	<0.002	<0.002	<0.002	<0.006	63.1		
3 Shallow	7/28/2008	164	650	<0.001	<0.001	<0.001	< 0.003	58		
3 Shallow	10/22/2008	104	690	<0.001	<0.001	<0.001	< 0.003	74.3		
3 Shallow	1/28/2009	100	445	XXX	XXX	XXX	XXX	65		
3 Shallow	4/28/2009	128	579	XXX	XXX	XXX	XXX	74		
3 Shallow	8/5/2009	128	560	XXX	XXX	XXX	XXX	70.6		
3 Shallow	10/26/2009	108	535	XXX	XXX	XXX	XXX	63.1		
3 Shallow	3/4/2010	108	541	XXX	XXX	XXX	XXX	77.4		
3 Shallow	5/12/2010	80	442	XXX	XXX	XXX	XXX	79.2		
3 Shallow	8/3/2010	64	430	XXX	XXX	XXX	XXX	63.6		