Fort Ord HTW BCT Meeting
1:00 PM, 19 February 2010
Monterey, California

MEETING MINUTES
(prepared by HydroGeoLogic, Inc.)

1. ***Groundwater Remediation System Update***

HGL reported that the Northwest Treatment System (NWTS) functioned as follows since the last BCT meeting:

- The NWTS operated without interruption from 25 July 2009 until the afternoon of 20 January 2010 (Wednesday). The severe storms in the area knocked out the electric power and the plant was off-line until the morning of 22 January (Friday), approximately 41.5 hours later. Poor road conditions from the heavy rains during the week preceding the power outage forced postponement of the carbon change-out scheduled on 18 January. On 08 February, the system was taken off-line for approximately 6 hours to perform the carbon change. In total, the NWTS was offline for nearly 48 hours between 13 January and 15 February 2010. Except for the power failure and the carbon change, the injection pump has operated normally since 24 August 2009.

- Pumping from boundary extraction wells EW-OU1-63-A and EW-OU1-62-A was suspended on 18 January 2010. Extraction well EW-OU1-60-A has been pumping at approximately 1.1 gallons per minute (gpm) since that time. Pumping from EW-OU1-60-A will continue so long as the well is able to do so and plume capture at the boundary is needed. Nearby monitoring well MW-OU1-57-A will replace EW-OU1-63-A during the scheduled performance sampling in March and monitoring well MW-OU1-58-A will replace EW-OU1-62-A.

- Under the current operating conditions, nearly all of the treated water is returned to the injection well and the FONR infiltration trenches. HGL will continue to periodically review groundwater elevations, system performance samples and LTM results and adjust operating characteristics as needed. Pumping may be resumed at EW-OU1-62-A if / when significant volumes of treated water are again routed to the NWTS trenches.

- The treatment system flow rate averaged approximately 50.9 gpm from 09 November 2009 through 04 January 2010. For 2010 through 28 February, the treatment system has averaged 51.8 gpm. The total volume pumped from startup in 2006 through 08 February 2010 is over 119,688,000 gallons. During that time the NWTS has removed approximately 4.1 pounds (0.34 gallons) of TCE and 0.37 pounds (0.03 gallons) of cis-1,2-dichloroethene. The next round of performance samples will be collected in March 2010. Thus far in 2010, approximately 0.05 pounds of TCE (0.004 gallons) and 0.002 pounds (0.0002 gallons) of cis-1,2-dichloroethene have been removed.

Validated laboratory analytical results from the December 2009 performance sampling effort have been received. All reported values were accepted without qualification so there were no changes to the preliminary data previously described. The validated analytical results are included in Table 1.

2. Long-term Monitoring Update

The next long-term monitoring (LTM) sample event will occur during the week of 22 – 26 March 2010. Figure 5.3b illustrates the extent of the OU-1 TCE plume based on the most recent groundwater monitoring report.

The replacement sample collection from well MW-OU1-19-A (to replace the failed September 2009 sample) was collected in December 2009 with the fourth quarter NWTS performance monitoring. The validated laboratory result showed TCE was present at a concentration of 1.7 µg/L (this value is unchanged from the preliminary value reported last month). TCE concentrations at this well have ranged between 2.4 µg/L and 1.5 µg/L since 2005.

A sample was also collected from well MW-OU1-61-A during the fourth quarter NWTS performance monitoring. The validated laboratory result confirmed TCE was present at a concentration of 12 µg/L. Consequently, pumping continued from the boundary extraction wells. TCE concentrations at MW-OU1-61-A well have ranged between 5 µg/L and 13 µg/L since January 2007.

3. Report Submittals

Table 2 summarizes the status of scheduled reports through 2010. The Final 2008 Annual and Fourth Quarter Groundwater Monitoring Report was submitted in December. The Draft 2009 Annual and Third Quarter Groundwater Monitoring Report was submitted during the second week in February.

4. Other

A) Boundary Well Operation

At the October BCT meeting it was agreed that continued operation of the four extraction wells on the northwest FONR boundary would be based on observed groundwater quality in those wells and in the nearby monitoring wells in accordance with the criteria below:

A. Pumping from the four OU-1 extraction wells on the former Fort Ord northwest boundary will be suspended
B. MW-OU1-61-A and the four other wells listed above will be added to the quarterly performance monitoring sample collection schedule.
C. Pumping from the OU-1 extraction wells on the former Fort Ord northwest boundary will be resumed if the results from the quarterly performance sample(s) from any of the wells of Item B above do not meet the ACLs.

It was agreed after discussion that acceptance of these BCT meeting minutes will serve as documentation of that decision.

The possibility of modifying the existing pump and treat system to include pumping from current monitor well IW-OU1-10-A was discussed in previous meetings. It was agreed during those discussions that submittal of a brief letter or Technical Memorandum describing such modifications will provide sufficient documentation for regulatory concurrence if this change is implemented. HGL will consult with the Army to determine if written concurrence with that approach is needed from the agencies or if acceptance of these meeting minutes will suffice. Use of the final meeting minutes for that purpose is acceptable to the regulatory agencies (USEPA, CARWQCB, and CADTSC).

B) EW-OU1-60-A Sampling
This well was not operating during the scheduled September 2009 sampling event or during the re-scheduled sample collection in December 2009. However, it has operated intermittently during October and November of last year and has pumped continually for the last three weeks. The possible causes for this situation were discussed and it was agreed that the most likely cause was low aquifer permeability in the vicinity of the well and declining water levels that trigger automatic shutdown. It was agreed that sample collection attempts would continue on a quarterly basis.

C) Proposed 2010 Sample Collection Frequency Modification
The Draft 2009 Annual and Third Quarter Groundwater Monitoring Report submitted earlier this month proposed changes to the sampling frequency at three wells. In each case, the change is from semi-annual to annual sampling. These wells (from south to north along the axis of plume migration) are:

MW-OU1-04-A MW-OU1-20-A MW-OU1-27-A

The first two wells listed above are located up-gradient from the trailing edge of the TCE plume and sample results have met the ACLs in recent years. Historic TCE concentrations at these wells were demonstrated on Figures 5.5a and 5.5b from the draft report (and attached to these minutes). Agency comments on the Draft Report are not due until after the next scheduled LTM sampling event in the latter part of March. HGL requested that the proposed sample change be approved before 10 March to allow incorporation into the next sampling round. After discussion, the agencies requested that HGL provide a map showing the well locations and agreed to respond to this request by the end of February.

D) Proposed IW-OU1-10-A Remediation System Expansion Design
HGL explained that connection of the IW-OU1-10-A expansion would use the existing flow control circuitry dedicated to extraction well EW-OU1-63-A. EW-OU1-63-A is the westernmost of the 4 extraction wells on the NW boundary. TCE concentrations reached a maximum of 2.7 µg/L approximately 3 weeks after startup in July 2006 but declined to less than 1 µg/L by November 2006. TCE has been non-detect since November 2007. The pumping rate from this well was reduced to approximately 1 gpm in October 2008 and was discontinued in mid-January 2010 in response to low TCE concentrations. HGL believes that well EW-OU1-63-A is no longer needed to complete the remediation. Accordingly, the remediation system expansion design will disconnect the flow control for EW-OU1-63-A at the NWTS and dedicate that circuitry to the new well IW-OU1-10-A. The pump and pipeline for EW-U1-63-A will remain in place until the cleanup targets are met and the entire remediation system is removed. In the highly unlikely event that pumping from EW-OU1-63-A is needed in the future, it would be necessary to re-connect EW-OU1-63-A to the flow control panel at the NWTS. The agencies requested time to consider this approach and agreed to respond quickly with any comments.

The agencies also requested that HGL send an email summarizing the above items C and D to facilitate a rapid response. HGL submitted the requested email on 19 February shortly after the meeting.

There were no other discussion items.

Table 1

TCE and Cis-1,2-DCE in OU-1 FONR Groundwater Remediation System - Performance Monitoring

BCT Meeting for Former Fort Ord, at Monterey CA - February 2010

Sample Date	FONR Extraction Well (listed from south to north) Began Operation October 2007				Boundary Extraction Well (listed from west to east) Began Operation July 2006				NWTS		
	MW-87	EW-71	MW-85	MW-46AD	EW-63	EW-60	EW-66	EW-62	INFLUENT	MIDPOINT	EFFLUENT
TCE (µg/L)											
11/9/2007	**16**	**13**	**19**	**14**	ND	ND	1.7	ND	**11**	ND	ND
1/18/2008	**11**	**11**	**8.9**	**8.2**	ND	ND	1.2	ND	**6.0**	ND	ND
3/18/2008	**11**	**14**	**6.7**	**5.8**	ND	0.29	1.5	ND	**5.6**	ND	ND
5/27/2008	**9.7**	**18**	2.5	**6.1**	ND	ND	1.8	ND	3.9	ND	ND
7/21/2008	**9.1**	**14**	4.4	3.4	ND	0.78	1.4	ND	3.6	ND	ND
9/29/2008	**9.3** J	**15** J	4.3 J	2.9 J	ND	0.90 J	1.7 J	ND	3.8 J	0.19 J	ND
12/1/2008	**5.8**	**11**	2.6	1.6	ND	0.82	0.91	ND	2.7	0.35 J	ND
1/26/2009	**5.9**	**10**	2.2	1.2	ND	0.48 J	0.78	ND	2.4	ND	ND
3/9/2009	**5.8**	**9.9**	2.1	1.2	ND	0.95	0.86	ND	2.7	ND	ND
6/11/2009	**6.9**	**11**	2.4	1.5	ND	0.88	1.7	ND	2.6	0.14 J	ND
9/15/2009	**6.8**	**9.4**	1.7	0.78	ND	inactive	1.1	0.036 J	2.3	0.35 J	ND
12/14/2009	**6.9**	**7.5**	0.84	not sampled	not sampled	inactive	0.94	not sampled	2.3	0.65 J	ND
cis-1,2-DCE (µg/L)											
11/9/2007	1.9	1.6	2.3	1.70	ND	ND	ND	ND	1.3	ND	ND
1/18/2008	1.20	1.40	1.00	1.20	ND	ND	0.11	ND	0.66	ND	ND
3/18/2008	1.20	1.50	0.74	0.63	ND	ND	ND	ND	0.59	0.11	ND
5/27/2008	0.88	2.10	0.26	0.74	ND	ND	ND	ND	0.36	0.21	ND
7/21/2008	0.80	1.50	0.52	0.37	ND	ND	ND	ND	0.41	0.34	ND
9/29/2008	0.99	1.60	0.54	0.30	ND	ND	0.13	ND	0.42	0.42	0.12
12/1/2008	0.67	1.30	0.33	0.21 J	ND	ND	ND	ND	0.27 J	0.37 J	0.19 J
1/26/2009	0.63	1.20	0.29 J	0.12 J	ND	ND	ND	ND	0.26 J	0.24 J	ND
3/9/2009	0.62	1.20	0.29 J	0.13 J	ND	ND	ND	ND	0.23 J	0.26 J	ND
6/11/2009	0.71	1.10	0.30 J	0.13 J	ND	ND	0.14 J	ND	0.24 J	0.28 J	ND
9/15/2009	0.80	1.00	0.22 J	0.08 J	ND	inactive	0.03 J	ND	0.22 J	0.37 J	0.03 J
12/14/2009	0.67	0.65	0.10 J	not sampled	not sampled	inactive	ND J	not sampled	0.21 J	0.30 J	0.11 J

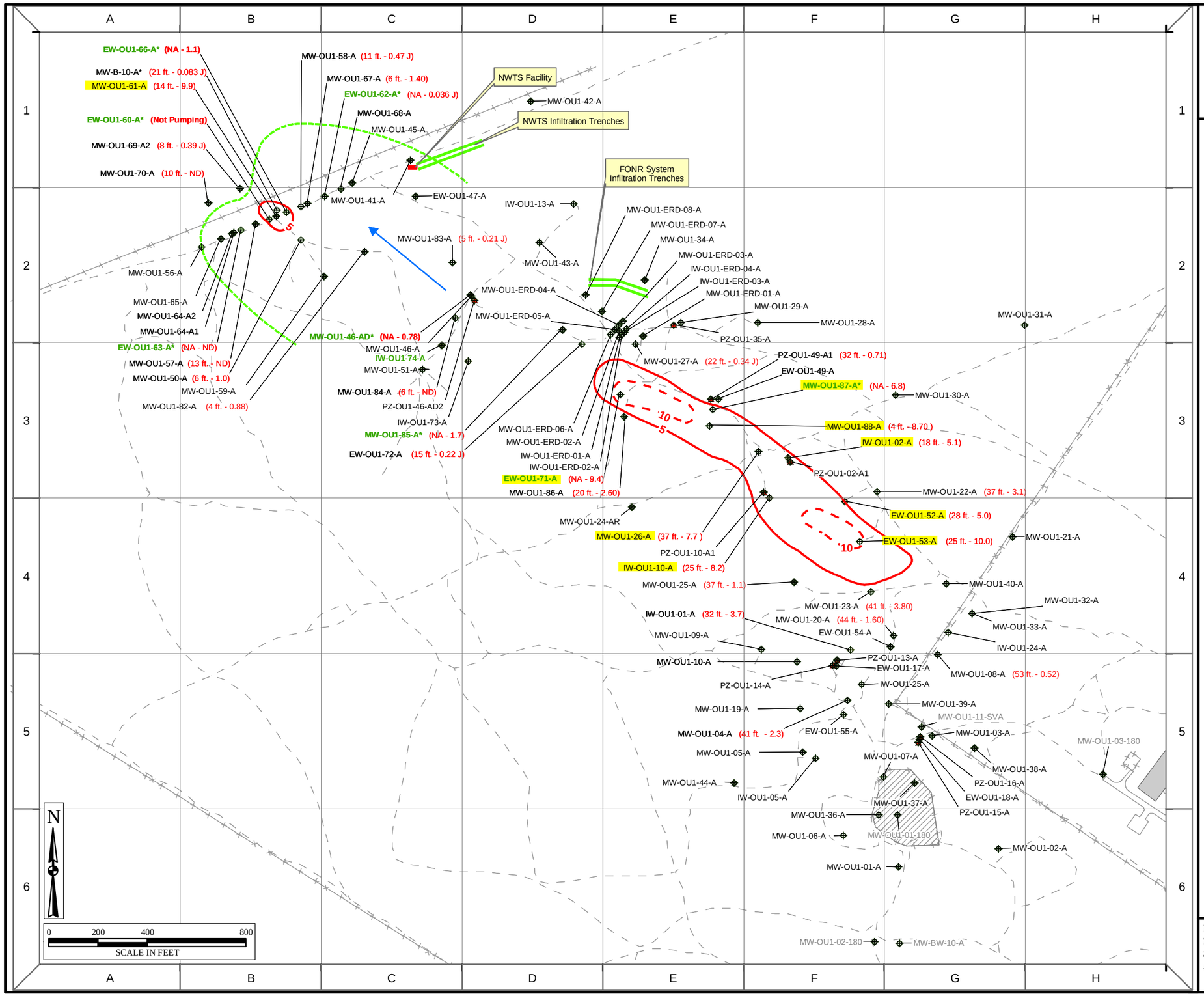
Italics (if used) indicate data not yet validated

Bold font indicates concentration > ACL

Table 2
Outstanding Deliverables Schedule (2010)
BCT Meeting for Former Fort Ord, Marina CA – January 2010

Deliverable	Scheduled Submittal	Status / Remarks (Bold font indicates submittal)
Primary Deliverables		
None scheduled		
Secondary Deliverables		
Draft 2007 Annual and Fourth Quarter Groundwater Monitoring Report	March-2010	In progress.
Agency Comments	May-2010	
Final 2007 Annual and Fourth Quarter Groundwater Monitoring Report	June-2010	Task not started.
Agency Comments	NA	
Draft 2008 Annual and Fourth Quarter Groundwater Monitoring Report	**May-2009**	**Comments received on 2nd through 4th Quarter reports**
Agency Comments	**Sept-2009**	**Received**
Final 2008 Annual and Fourth Quarter Groundwater Monitoring Report	**December-2009**	**Submitted 18 December 2009**
Agency Comments	NA	
Draft 2009 Annual and Third Quarter Groundwater Monitoring Report	**January-2010**	**Submitted 05 February 2010**
Agency Comments	April-2010	
Final 2009 Annual and Third Quarter Groundwater Monitoring Report	April-2010	Task not started – Agency review of Draft is underway.
Agency Comments	NA	
Final Rebound Evaluation Report	March-2010	Task not started.
Agency Comments	NA	
2010 First Quarter Groundwater Monitoring Report	May-2010	Task not started - Samples to be collected in March.
Agency Comments	July-2010	
Draft 2010 Annual and Third Quarter Groundwater Monitoring Report	October-2010	Task not started - Samples to be collected in September.
Agency Comments	December-2010	
Final 2010 Annual and Third Quarter Groundwater Monitoring Report	January-2011	Task not started.
Agency Comments	NA	

Figure 5.3b
OU-1 FONR
TCE Concentrations in Groundwater
September 2009



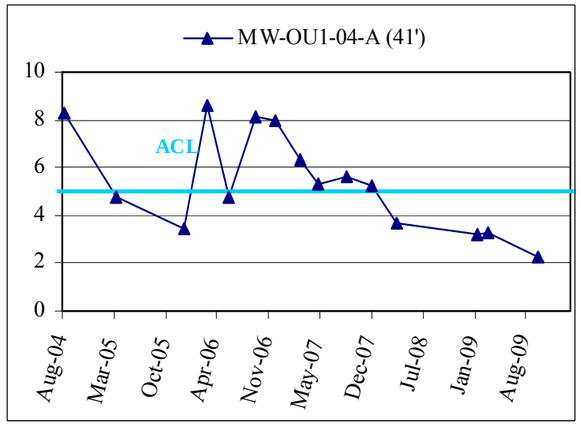
Legend

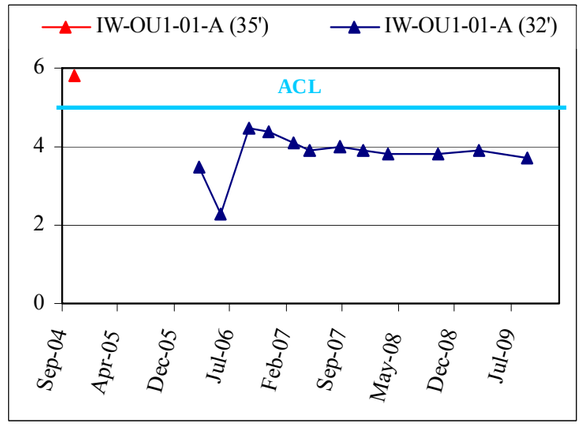
- Monitoring Well
- Extraction Well
  Bold green font indicates active well.
- Injection Well
  Bold green font indicates active well.
- Well Not Sampled
- Piezometer
- MW-OU1-87-A — Locations With September 2009 TCE Concentration At Or Above ACL (5 µg/L)
- —5— TCE Contour (µg/L) Based on September 2009 Data
- Inferred Extent – See Notes Below
- MW-OU1-87-A (42 ft. - 9.30) — Well ID; September 2009 TCE Result (µg/L); Sample Elevation (feet above mean sea level)
- Trail/Unimproved Road
- Fence
- Treated Water Infiltration Trench
- Estimated Northwest Treatment System Capture Zone
- Former Fire Drill Area
- General Direction of Groundwater Flow

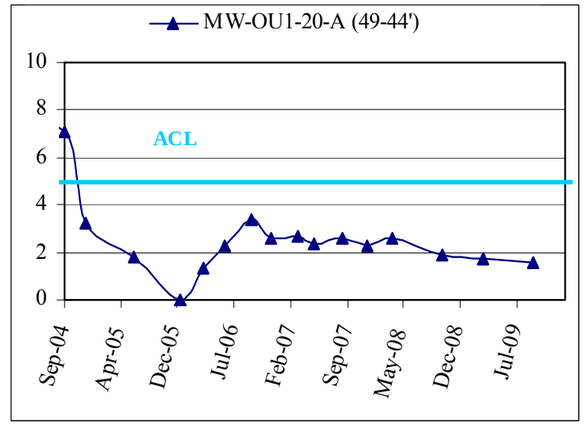
Notes:
Units of TCE concentrations are in ppb
ND = Non-detect
NA = Depth is not applicable - sample is from pumping well
J = Estimated Value
µg/L = Micrograms per liter
Wells shown with an asterisk were not used to develop contour boundaries. Active extraction wells were typically not included because the data is not location-specific. Data from extraction well EW-OU1-71-A was used to infer the 10 µg/L TCE contour (shown as dashed line) because the results at that well (9.4 µg/L) and at nearby wells suggest higher TCE concentrations in that vicinity. The TCE concentration at EW-OU1-53-A was 10 µg/L and nearby well data was less than 10 µg/L. Consequently, the 10 µg/L contour enclosing well EW-OU1-53-A was also dashed because the extent is inferred from recent results. Data from MW-B-10-A was excluded because the well does not fully penetrate the A-Aquifer.
Well names appearing in gray were not included in OU1-Groundwater Monitoring Program.
Wells for which no data are posted were not sampled.

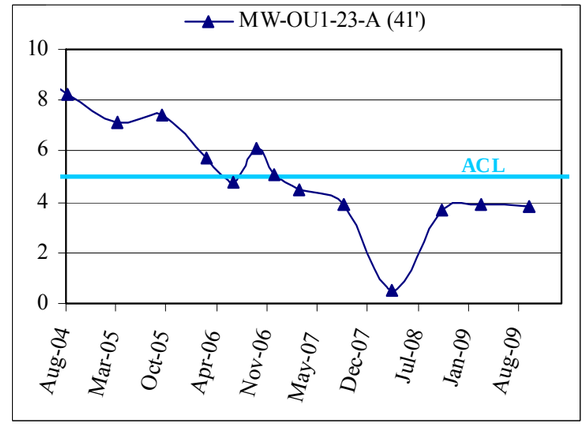
Y:/Fort_Ord/OM9/TO_201/GW_Monitoring_Y6Q3/TCE_in_GW_September_2009.mxd
Source: HGL
12/29/09 TB

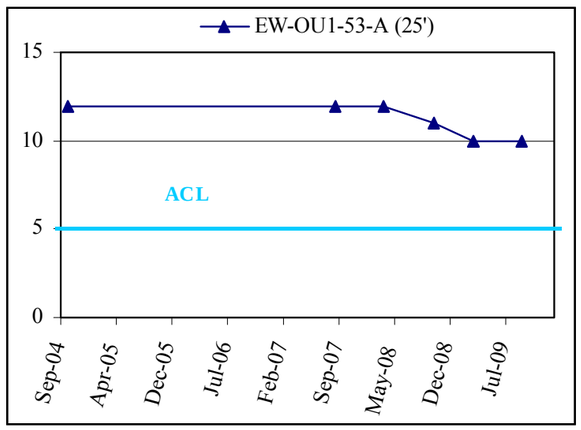
HydroGeoLogic, Inc

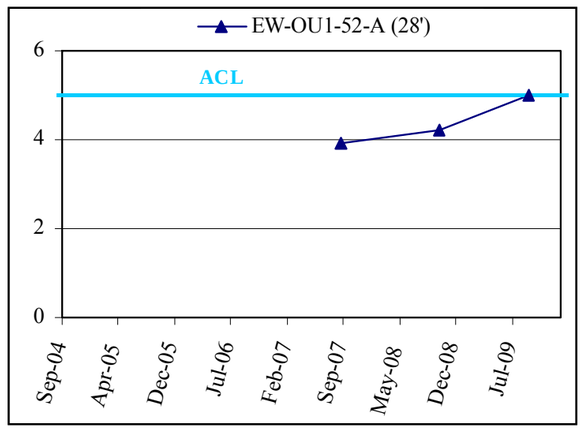


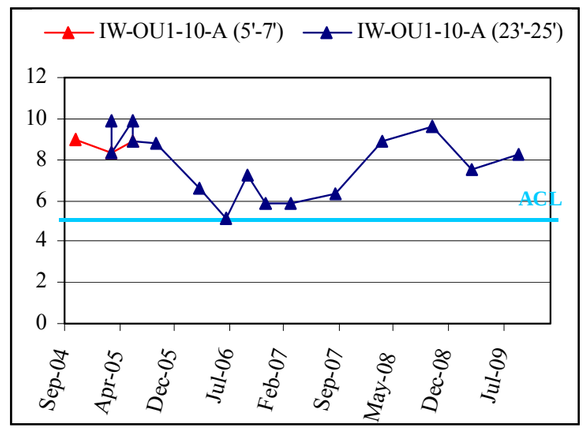


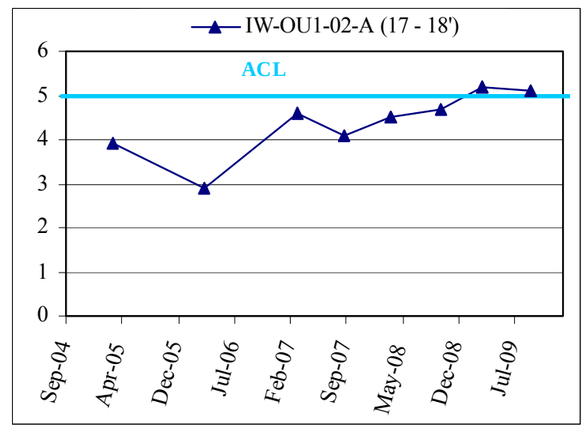


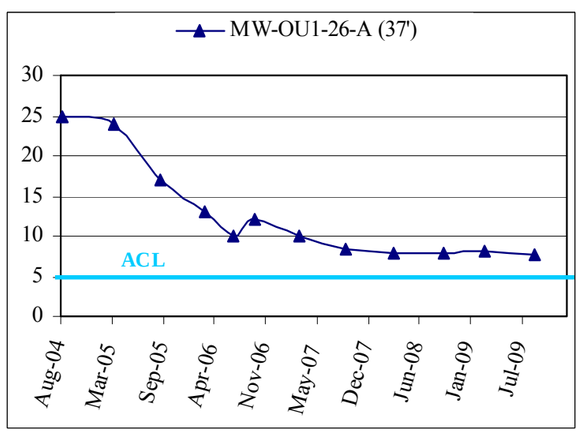


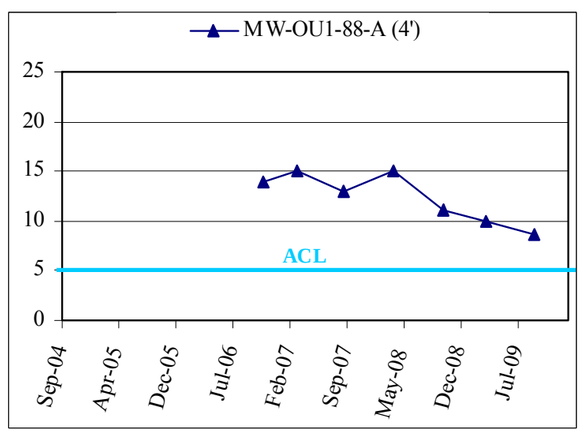










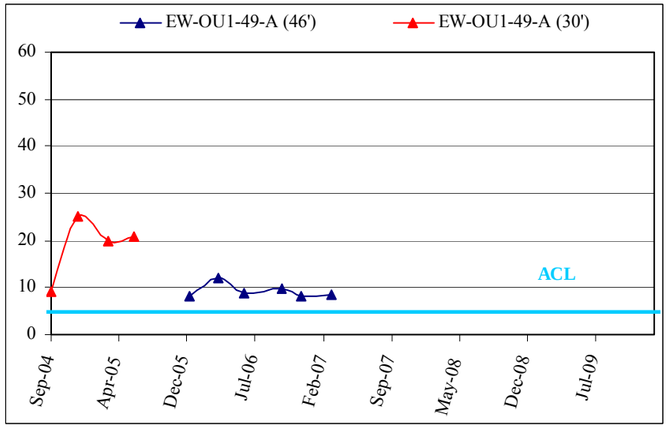


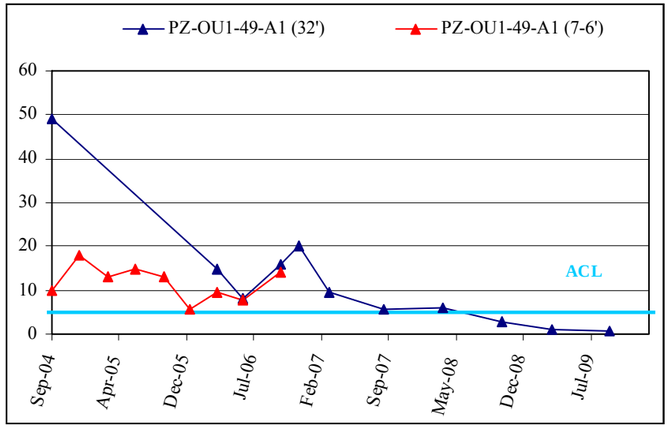
Notes:
Sample elevations are denoted as feet above mean sea level.
The number in parenthesis is the sample elevation.
TCE concentrations reported in µg/L.
ACL = Aquifer Cleanup Level (5.0 µg/L).

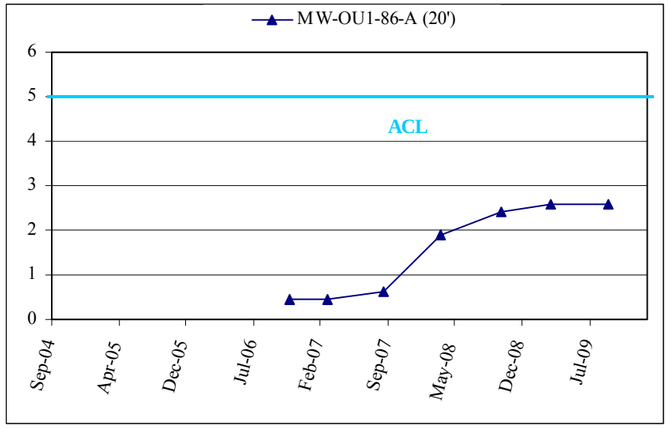
Figure 5.5a
OU-1 FONR TCE Concentrations Over Time for Wells Along Axis of Plume Migration
Former Fort Ord, CA

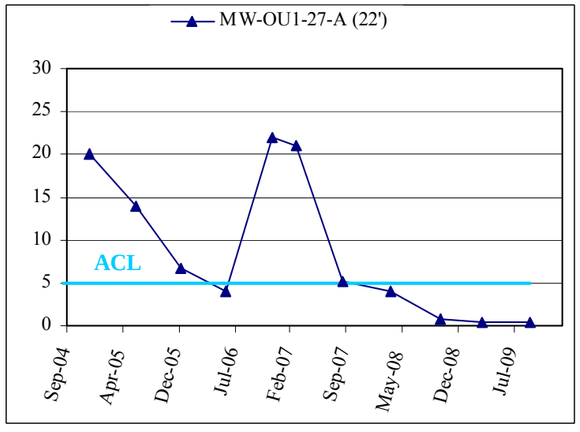
Y:/Fort_Ord/OM9/TO_201/GW_Monitoring_Y6Q3/5-05a.doc
Source: HydroGeoLogic, Inc.
12/30/09 TB

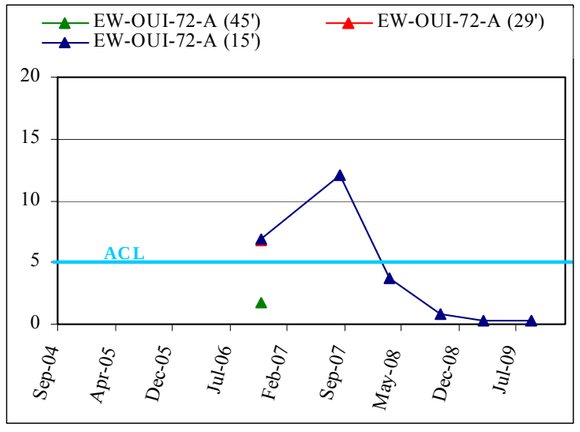
HGL HydroGeoLogic, Inc

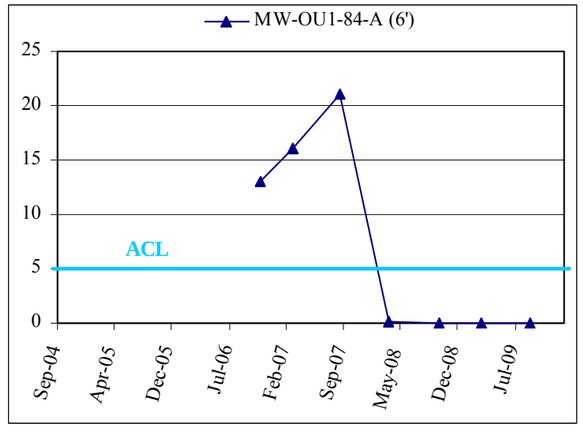


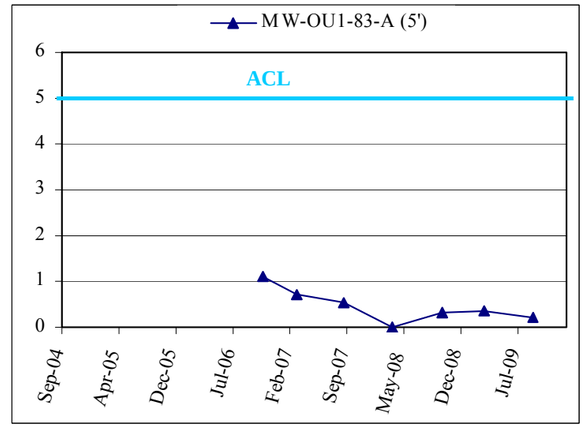


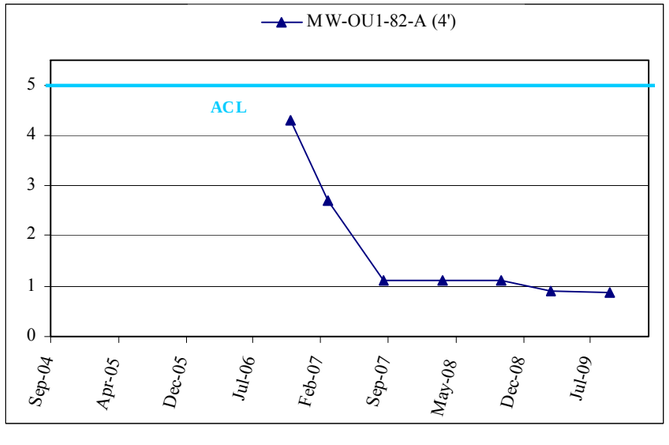












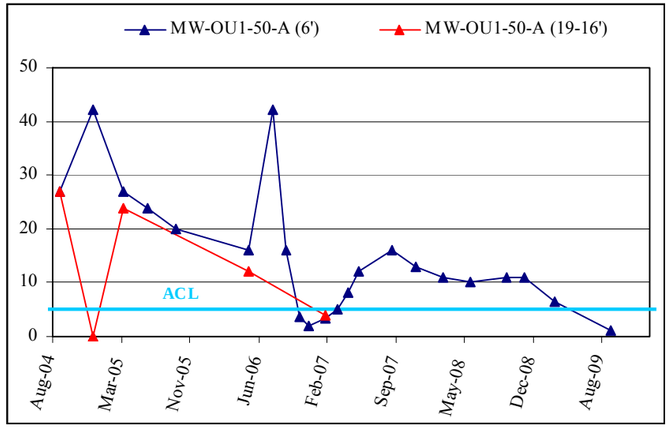


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Figure 5.5b
OU-1 TCE Concentrations Over Time for Wells Along Axis of Plume Migration Former Fort Ord, CA (continued)

Y:/Fort_Ord/OM9/TO_201/GW_Monitoring_Y6Q3/5-05b.doc
Source: HydroGeoLogic, Inc.
12/30/09 TB