

Fort Ord Operable Unit 1 Meeting Minutes
Groundwater Remediation, Well Destruction, and Treatment Plant Decommissioning
Marina, California
Base Closure Team Meeting
1:30 p.m., 24 July 2014
Prepared by HydroGeoLogic, Inc.

Attendees: (to be revised after meeting)

Individual	Attended?	Individual	Attended?
James Specht, USACE		Edward Walker, DTSC	X
Teresa Rodgers, USACE	X	Edward Ticken, AMEC	X
Chris Goddard, USACE		Jeff Fenton, AMEC	X
Alex Kan, USACE	X	Derek Lieberman, Ahtna	X
Bonnie McNeil, USACE		Peter Kelsall, CB&I	X
William Collins, BRAC	X	Steve Crane, Gilbane	X
Melissa Broadston, Chenega ¹	X	Erin Caruso, Gilbane	X
Caleb Schneider, Chenega ¹		Larry Friend, Gilbane	
Bart Kowalski, Chenega ¹	X	Kevin Ghalambor, Burleson	X
Lewis Mitani, EPA	X	Roy Evans, HGL	X
Martin Hausladen, EPA	X	Kevin Wierengo, HGL	X
Steve Sterling, DTSC	X	Cory Koger, USACE	X
Min Wu, Ph.D., DTSC	X	Cary Stiebel, Chenega ¹	X
Grant Himebaugh, RWQCB	X	Holly Dillon, Ahtna	X
X = attended in person or by telephone; blank indicates absent from the meeting			

USACE = U.S. Army Corps of Engineers
BRAC = Base Realignment and Closure Fort Ord Office
EPA = U.S. Environmental Protection Agency
DTSC = California Department of Toxic Substances Control
RWQCB = Regional Water Quality Control Board
Ahtna = Ahtna Engineering Services
HGL = HydroGeoLogic, Inc.
CB&I = Chicago Bridge & Iron, Inc.
OU-1 = Operable Unit 1

¹Chenega staff supporting the BRAC

OU-1 Treatment Plant Operations

HGL reported the Northwest Treatment System (NWTs) operated continuously from 2 June 2014 through 7 July 2014. Extraction wells EW-OU1-60-A and EW-OU1-66-A are operating and total pumping from those wells is approximately 14 gallons per minute. Extraction well at MW-OU1-87-A was temporarily restarted on 27 June 2014 and shut down on 27 June 2014 after a groundwater sample was collected. EW-OU1-71-A, MW-OU1-87-A, and IW-OU1-10-A remain operable and will be temporarily restarted to collect performance monitoring samples in September 2014.

Since system startup in 2006, the NWTs has pumped approximately 211 million gallons of groundwater and removed approximately 6.0 pounds of total volatile organic compounds, primarily trichloroethene (TCE). An estimated 0.1 pound of TCE has been removed since the NWTs 18 September 2013 sampling event.

OU-1 Groundwater Quality Data

In accordance with the Uniform Federal Policy (UFP)-Quality Assurance Project Plan (QAPP), HGL collected the following samples from monitoring wells and the NWTs on 27 June 2014:

MW-OU1-87-A	MW-OU1-88-A	NWTs Effluent
MW-OU1-61-A	NWTs Midpoint	

We received laboratory analytical results for the June samples and submitted them for validation. The unvalidated results showed that TCE concentrations were within ± 0.3 micrograms per liter ($\mu\text{g/L}$) of the March 2014 results. MW-OU1-61-A remains the only well exceeding the TCE 5.0 $\mu\text{g/L}$ Aquifer Cleanup Level (ACL) in OU-1 with a TCE concentration of 5.7 $\mu\text{g/L}$ (and 5.4 $\mu\text{g/L}$ in the duplicate sample from this location). The next planned sampling event is scheduled for September 2014.

The NWTs Midpoint sample showed unvalidated results for TCE at 0.39 $\mu\text{g/L}$, chloroform at 0.14 $\mu\text{g/L}$, and cis-1,2-dichloroethene at 0.43 $\mu\text{g/L}$. TCE was not detected in the NWTs effluent sample. Chloroform and cis-1,2-DCE were detected in the effluent at concentrations of 0.13 $\mu\text{g/L}$ and 0.17 $\mu\text{g/L}$, respectively. These concentrations are consistent with historic sample results and are less than the approved discharge limits.

HGL noted that the September effluent sample might show TCE at a concentration less than the Reporting Limit of 0.5 $\mu\text{g/L}$. The only OU-1 extraction wells that are still operated are EW-OU1-60-A and EW-OU1-66-A. TCE has not exceeded 0.38 $\mu\text{g/L}$ in either well since December 2011—thus the maximum expected TCE concentration in the NWTs effluent is expected to be less than the ACL of 0.5 $\mu\text{g/L}$. Consequently, HGL requested that NWTs operation continue without a carbon change as long as the TCE concentration in the NWTs effluent is less than the ACL. The EPA, DTSC, and RWQCB approved this request.

Reporting/Federal Facility Agreement Schedule

All scheduled submittals have been made for primary and secondary deliverables. The status of submitted and anticipated reports for 2014 is summarized in Table 2. HGL noted that the preliminary draft Well Destruction and Treatment Plant Decommissioning Report is in Army review. The draft version for regulatory agency review will be submitted between 08 – 11 August.

OU-1 Weed Control and Rare Plant Monitoring

The U.S. Fish and Wildlife Service required that the third year of rare plant monitoring be completed at the former well destruction sites and this survey was completed between 25 April 2014 and 02 May 2014. Additional monitoring was performed in June during the well destruction effort at well sites destroyed within the Fort Ord Natural Reserve.

Uniform Federal Policy-Quality Assurance Project Plan

The Final UFP-QAPP for OU-1 was submitted 29 May 2014.

Site Exit/Closure Strategy

TCE concentrations have met or are approaching the aquifer cleanup level at all OU-1 monitoring wells. The strategy is based on demonstrating that the cleanup objectives of the Record of Decision (ROD) regarding human health protectiveness have been met and, therefore, the ROD cleanup goals have been attained. A technical memorandum will be prepared to present the case for OU-1 closure based on cleanup progress to date. The human health risk corresponding to Chemical of Concern concentrations observed at the site have met the human health protectiveness objectives for several years. The technical memorandum will include recommendations for performing attainment monitoring that incorporates existing data to the maximum extent. The memorandum will be presented to the regulators for review and comment.

Well Destruction and Treatment Plant Demolition

As of 15 July 2014, 80 of the 81 wells have been destroyed. Test 4 was the only remaining well scheduled for destruction. After the inner 8-inch casing of Test 4 was successfully grouted and the top 5 feet of the inner and outer casings were removed we discovered that the annular grout seal apparently begins at a deeper interval. The annular space between the inner 8-inch grouted casing and the outer 16-inch casing was filled with sand pack. On 10 July 2014, HGL received approval from Monterey County Health Department to remove the annular material at Test 4 from 5 feet to approximately 7 feet below grade and fill that interval with 5% bentonite cement. The annular material was removed by vacuum excavation. This work was completed on 17 July 2014.

Two wells, MW-17-02-180 and PS-CT-IW, could not be located after numerous attempts were made with a magnetometer and a GPS unit. Consequently, these wells were not destroyed. In addition, the Right of Entry for the Armstrong Ranch property has not yet been obtained, so the timetable for destroying these 14 wells is uncertain. However, monitoring well MW-BW-61-A was added to the list of wells scheduled for destruction following approval at June BCT meeting. MW-BW-61-A was successfully destroyed on 27 June 2014.

Demolition of the two inactive treatment plants began on 27 June 2014 and was completed on 11 July 2014.

Action Items:

- The Army will obtain Right of Entry agreement for Armstrong Ranch.
- Complete well demolition project after Right of Entry is obtained.
- HGL will prepare a technical memorandum (TM) to present the case for OU-1 closure in accordance with the strategy described above. The deliverables schedule will be updated to include this TM.

- HGL will submit the draft report summarizing the well destruction and treatment plant decommissioning efforts.

Ongoing:

- Submit draft minutes for previous Base Closure Team (BCT) meeting(s)—the draft minutes complete through June.
- Submit approved final minutes for previous BCT meeting(s) — complete through June 2014.

**Fort Ord HTW BCT Meeting
24 July 2014**

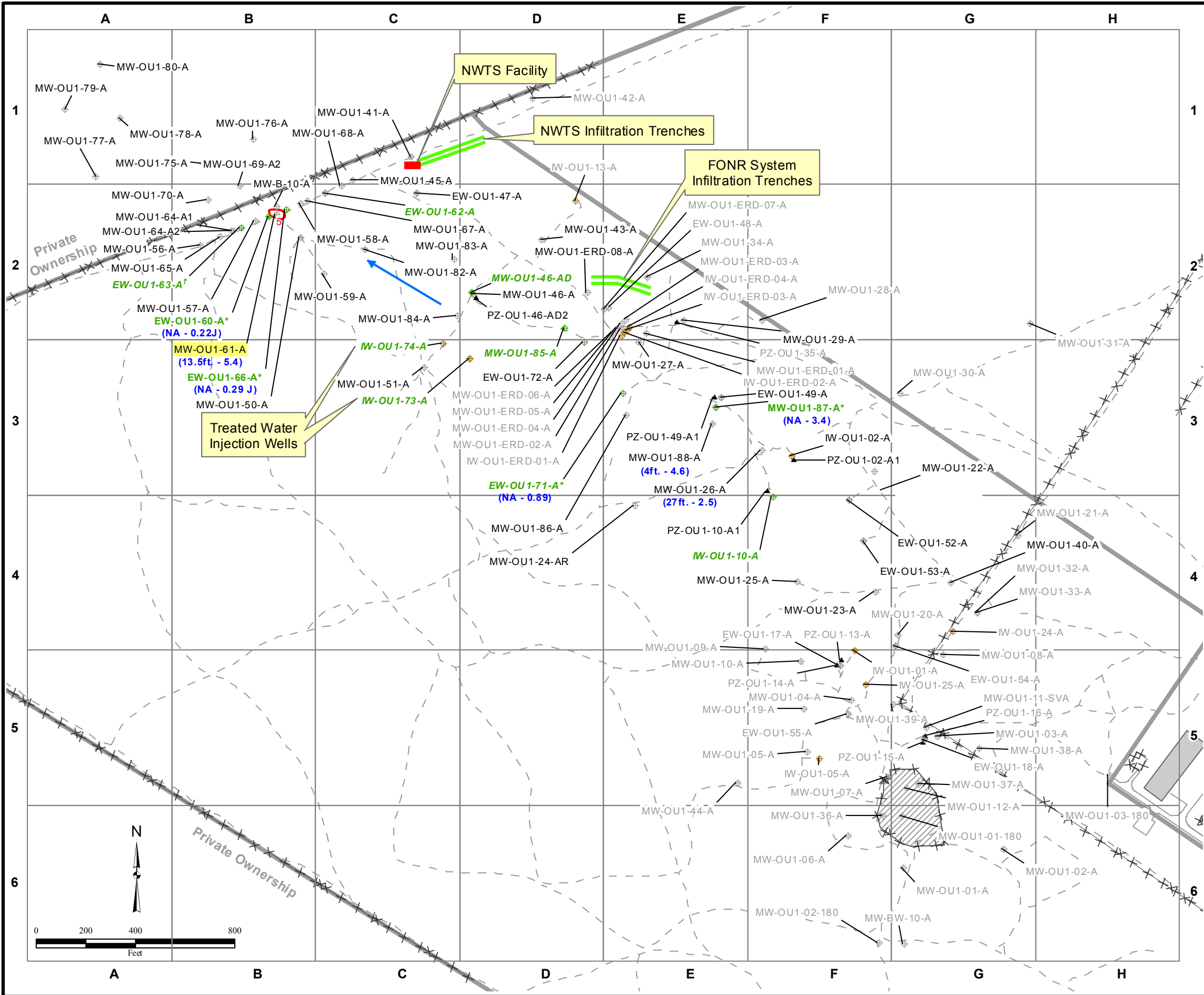
**Fort Ord Operable Unit 1
Groundwater Remediation, Well Destruction, and Treatment Plant Decommissioning**

ATTACHMENT 1

Table 2
Current Deliverable Schedule
Former Fort Ord, Marina, California – 24 July 2014

Deliverable Title	Submittal	Review Comments Due	Status/Remarks
<i>Primary Deliverables</i>			
Final UFP-QAPP	May 2014	Received	Submitted 29 May 2014
<i>Secondary Deliverables</i>			
Final 2014 Semiannual Groundwater Monitoring Report	June 2014	August 2014	Submitted 25 June 2014
Draft Well Destruction and Treatment Plant Demolition Completion Report	August 2014	September 2014	Preliminary draft in Army review.
Draft Health & Safety Plan – OU-1 O&M/LTM	May 2014	Received	Draft accepted as Final.
<i>Completed Recent Submittals</i>			
Final Memorandum for Record for Optimizing Remediation Pumping	March 2012	February 2012	Accepted as final during July 2012 BCT meeting.
Draft 2012 Annual and 3 rd Quarter Groundwater Monitoring Report	December 2012	NA	Submitted 31 December 2012. Waiting for agency comments.
Final 2012 Annual and 3 rd Quarter Groundwater Monitoring Report	March 2013	NA	Submitted 21 March 2013.
2013 First Quarter Groundwater Monitoring Report	June 2013	August 2013	Submitted 1 July 2013.
Preliminary Draft Work Plan for Well Destruction and Treatment Plant Demolition	5 November 2013	19 November 2013	Army comments addressed.
Preliminary Draft Health & Safety Plan – Well Destruction and Treatment Plant Demolition	5 November 2013	19 November 2013	Army comments addressed.
Preliminary Draft Health & Safety Plan – OU-1 O&M / LTM	5 November 2013	19 November 2013	Army comments addressed
Draft 2013 Annual and 3 rd Quarter Groundwater Monitoring Report	January 2014	March 2014	Submitted 17 January 2014.
Preliminary Draft UFP-QAPP	26 November 2013	10 December 2013	Army comments addressed.
Draft UFP-QAPP	March 2014	May 2014	Submitted 04 March 2014
Draft Work Plan for Well Destruction and Treatment Plant Demolition	February 2014	April 2014	Submitted 11 February 2014
Final 2013 Annual and 3 rd Quarter Groundwater Monitoring Report	April 2014	NA	Submitted 04 April 2014
Final Work Plan for Well Destruction and Treatment Plant Demolition	April 2014	NA	Submitted 04 April 2014

Figure 6
OU-1 FONR A-Aquifer
TCE Concentration in Groundwater
March 2014
Former Fort Ord, CA



Legend

- Well
- Extraction Well
- Injection Well
- Piezometer or 2-Inch Well
- Groundwater Flow Direction
- Well Destroyed
- Location with March 2013 TCE Concentrations at or above ACL (5 µg/L)
- March 2014 Latest TCE Result (µg/L)
- Sample Elevation (feet above mean sea level)
- TCE contour based on March 2014 Data
- Trail/Unimproved Road
- Fence
- Treated Water Infiltration Trench
- Property Boundary
- Building
- Former Fire Drill Area

Notes:
Units of TCE concentration are in micrograms per liter.
FONR = Fort Ord Natural Reserve
NWTS = Northwest Treatment System
ACL = Aquifer Cleanup Level
ND = nondetect
NA = Depth is not applicable - sample is from pumping well
µg/L = micrograms per liter
Wells shown with an asterisk were not used to develop contour boundaries.
Wells for which no data are posted were not sampled.
J = Estimated value
Green font indicates extraction or injection well.
Italicized font shows pumping suspended.
† = Disconnected extraction well. No longer operable.

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5/8/2014 PD
Source: HGL

