



Former MCAS Tustin Restoration Advisory Board (RAB) Email Update February 14, 2013

This is the third Email Update for Former Marine Corps Air Station (MCAS) Tustin, California; Restoration Advisory Board (RAB). This Update focuses primarily on ongoing long-term groundwater remediation and monitoring at Installation Restoration Program (IRP) sites; on the initiation of field work at Operable Unit (OU)-4B moderate concentration sites; and on the Draft Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Five-Year Review Report Addendum. You will find brief summaries of these items below.

You will also find attached an updated Environmental Program Status for all ongoing groundwater remediation and monitoring activities at MCAS Tustin, including brief project histories, a listing of upcoming documents, and next steps for each of the sites. You will recognize this as the Environmental Program Status that has been presented at previous RAB meetings.

NEW BUSINESS

Operation and Maintenance (O&M) and Long Term Monitoring (LTM)

Since the last RAB meeting in September 2012, the Navy has been actively conducting O&M and LTM activities for the groundwater remedies, hydraulic containment and institutional controls (ICs), installed at Installation Restoration Program (IRP) Sites 3, 12, and 13S. As you are aware, these Sites are characterized as having volatile organic compounds (VOCs) in groundwater at concentrations exceeding specified remediation goals. These activities include inspections and effluent sampling and groundwater monitoring. Since August 2012, we issued the Final 2011 Annual Groundwater Performance Evaluation Report (PER), the final 2012 Semiannual Groundwater Monitoring Data Summary (MDS), and the Final 2012 3rd Quarter Groundwater MDS. In general, these reports present data showing that the remedies are effective at hydraulically controlling the plumes, are lowering concentrations of contaminants in groundwater, and are preventing unauthorized exposure to impacted groundwater.

For IRP Site 1, Former Moffett Trenches Landfill, since September 2012 the Navy submitted the Final 2011 Annual Long Term Monitoring Report. The remedy for this Site, which is a landfill located under Jamboree Road, is Containment and ICs. Results presented in this report indicate that the remedy continues to be effective in restricting human exposure to landfill contents and is preventing contaminants from entering into surface water in Peters Canyon Cannel and from migrating downward into deeper water bearing zones at the Site. Annual inspections and groundwater and surface water monitoring and quarterly landfill gas monitoring are being conducted in support of the next Five-Year Review.

Remedial Action Initiated at OU-4B Moderate Concentration Sites – IRP-5S(a), -6, and the MPA

Since September 2012, the Navy finalized the Remedial Design/Remedial Action (RD/RA) Work Plan for three OU-4B moderate concentration sites: IRP-5S(a), IRP-6, and the Mingled Plumes Area (MPA); issued



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a Final Fact Sheet, and initiated field activities for the final Remedial Action. The remedy for these three Sites is in situ bioremediation (ISB), monitored natural attenuation (MNA), and ICs. Injections of emulsified vegetable oil (EVO) and bacteria that form the permeable reactive biobarriers began at the MPA during the week of January 14, 2012. You can find more information about the remedial action by accessing the Final Fact Sheet on our Navy BRAC website at:

<http://www.bracpmo.navy.mil/basepage.aspx?baseid=41&state=California&name=tustin>

Draft CERCLA Five-Year Review Report Addendum

In September 2012, the Navy transmitted a draft Five-Year Review Report Addendum for agency review. This Addendum presented updated technical assessments and re-evaluations of estimated vapor intrusion (VI) risks at OU-1A (IRP-13S) and OU-1B South (IRP-3) to account for updated toxicity criteria for trichloroethene (TCE), published in the United States Environmental Protection Agency's (U.S. EPA's) Integrated Risk Information System (IRIS) on September 28, 2011. Time did not allow for a rigorous evaluation of the updated criteria in the Final Five-Year Review Report, given the statutory requirement to finalize the Report prior to October 31, 2011. This Addendum also presents protectiveness determinations for three OU-4B low concentration Sites, IRP-11, -13W, and Miscellaneous Major Spill [MMS]-04). These OU-4B Sites were acknowledged in the Final CERCLA Five-Year Review Report, but protectiveness determinations were not completed. The selected remedy for the three Low Concentration OU-4B Sites is institutional controls (ICs). The Navy is working with the agencies to resolve comments and expects to issue the Final version of the Addendum by Early Spring, 2013.

Summary

The Navy appreciates your input on our environmental restoration program. Please plan to attend our next RAB meeting on Wednesday May 22, 2013. Should you have any questions on any information presented in this Email Update, or on any site in our environmental program, please do not hesitate to contact me or any of the regulatory agency personnel listed below.

Sincerely,
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NEXT RAB MEETING:

All Former MCAS Tustin RAB meetings are open to the public.

Time: 7:00 – 8:20 p.m.

Wednesday, May 22, 2012

Tustin Senior Center

200 South "C" Street, Tustin

(Margarete Thompson Boardroom)

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Operable Unit 1A (Installation Restoration Program [IRP] Site 13 South – 1,2,3-Trichloropropane [TCP] in Groundwater (GW)

Carve-Out: CO-5

Brief Project History:

- 2002: Time Critical Removal Action (hydraulic containment)
- 2004: Final Record of Decision (ROD): Selected remedy includes:
 - Hydraulic containment for 1,2,3-TCP-impacted GW;
 - Construction, operation, and maintenance of GW extraction and treatment system; and
 - Institutional controls (ICs).
 - Hot-spot soil excavation was also conducted to enhance GW remedy.
- 2007: Began Final Remedial Design (RD) and Remedial Action (RA)
- December 2007: Treatment system operational
- July 2008: 1st Quarter 2008 GW Monitoring Data Summary (MDS)
- October 2008: 2nd Quarter 2008 GW MDS
- December 2008: Final Interim-Remedial Action Completion Report (I-RACR); the main purpose of the I-RACR is to document that the remedy is constructed per the Final RD
- December 2008: 3rd Quarter 2008 GW MDS
- July 2009: 1st Quarter 2009 GW MDS
- September 2009: Final Long-Term Operation and Maintenance Plan (OMP)
- October 2009: 2nd Quarter 2009 GW MDS
- December 2009: 3rd Quarter 2009 GW MDS
- February 2010: Final 2008 Annual OU-1A/-1B Performance Evaluation Report (PER)
- February 2010: Final Operating Properly and Successfully (OPS) Report
 - Obtained U.S. EPA OPS determination in December 2009
- July 2010: 1st Quarter 2010 GW MDS
- September 2010: 2nd Quarter 2010 GW MDS
- November 2010: Final 2009 Annual OU-1A and -1B PER
- December 2010: 3rd Quarter 2010 GW MDS
- June 2011: Draft 2010 Annual PER
- September 2011: 2011 Semiannual GW MDS
- November 2011: Final 2010 Annual PER
- December 2011: 3rd Quarter 2011 GW MDS
- April 2012: 1st Quarter 2012 GW MDS
- August 2012: Draft 2011 Annual PER
- September 2012: Final 2012 Semiannual GW MDS
- December 2012: 3rd Quarter 2012 GW MDS
- December 2012: Final 2011 Annual PER

Next steps:

- On-going operation and maintenance (O&M) activities include: biweekly, monthly, & quarterly inspections & effluent sampling; semiannual GW monitoring & reporting; data used to track system performance & annually evaluate & optimize the system
- Annual system optimization evaluation included in Annual PERs
- June 2013: Draft 2012 Annual PER



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Operable Unit 1B (IRP Sites 3 and 12 – Trichloroethene [TCE] in GW)

Carve-Outs: CO-5 and CO-6

Brief Project History:

- 2004: Final ROD: Selected remedy includes:
 - Hydraulic containment of TCE-impacted GW;
 - Construction, operation, and maintenance of GW extraction and treatment systems; and
 - ICs
 - Hot-spot soil excavation also conducted to enhance the GW remedy
- 2007: Began implementing Final RD/RA
- January 2008: Treatment system became operational
- July 2008: 1st Quarter 2008 GW MDS
- October 2008: 2nd Quarter 2008 GW MDS
- December 2008: Final I-RACR.
- December 2008: 3rd Quarter 2008 GW MDS
- July 2009: 1st Quarter 2009 GW MDS
- September 2009: Final Long-Term OMP
- October 2009: 2nd Quarter 2009 GW MDS
- December 2009: 3rd Quarter 2009 GW MDS
- February 2010: Final 2008 Annual OU-1A/-1B PER
- February 2010: Final OPS Report
 - Obtained U.S. EPA OPS designation in December 2009
- Subsequent milestones same as for OU-1A Project History above

Next steps: Same as for OU-1A above

Operable Unit 3 (IRP Site 1– Moffett Trenches Landfill)

Carve-Out: CO-10 – PARCEL TRANSFERRED IN 2006

Brief Project History:

- December 2001: Final ROD
- May 2003: Final OMP
- November 2003: Final OPS Report
- March 2004: Obtained U.S. EPA OPS designation
- October 2006: Final First Five-Year Review
- January 2010: Final 2008 Annual GW Monitoring Report
- February 2011: Final 2009 Annual Long-Term Monitoring (LTM) Report
- July 2011: Final 2010 Annual LTM Report
- March 2012: Draft 2011 Annual LTM Report
- September 2012: Final 2011 Annual LTM Report

Next steps:

- Continue Annual Inspections and GW/Surface Water in Support of the Next Five-Year Review
- March 2013: Draft 2012 Annual LTM Report



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Operable Unit 4B

Moderate Concentration Sites (IRP-5S[a], IRP-6, and the Mingled Plumes Area [MPA]) and Low Concentration Sites (IRP-11, IRP-13W, and Miscellaneous Major Spill [MMS-04])

Carve-Outs: CO-2, CO-5, and CO-9.

Brief Project History:

- 2004: Final OU-4 Tech Memo for 2003 shallow GW investigation
- 2005-2006: GW Monitoring
- 2007: IRP-6 and MPA Supplemental Investigation field activities
- September 2008: Final Tech Memo Supplemental Investigation at IRP-6 and MPA
- October 2008: Final Feasibility Study Report
- February 2009: Proposed Plan. Public comment period: February 04-March 06, 2009
- May 2009: Final Work Plan for GW Monitoring at OU-4B Sites
- August 2009: Installed additional wells at the MPA, MMS-04, IRP-11, and IRP-13W in accordance with the June 2009 Final Work Plan
- January 2010: 3rd Quarter 2009 Data Summary Report
- January 2010: Final ROD
- April 2010: Replacement Pages for the Final ROD, including signature sheet
- July 2010: Final Pre-Design Pilot Study Work Plan
- July to October 2010: Implemented Pre-RD Pilot Study
- October 2010: Final 2009 Annual GW Monitoring Report
- October 2010: Final 1st Quarter 2010 Data Summary Report
- November 2010: Final 2nd Quarter 2010 Data Summary Report
- May 2011: Final Pre-RD Pilot Study Report
- May 2011: Final 2010 Annual GW Monitoring Report
- June 2011: Issue Final RACR for MMS-04
- August 2011: Draft Land Use Control (LUC) RD & Long-Term OMP (Low Conc. Sites: IRP-11 & -13W)
- September 2011: Final 1st and 2nd Quarter Data Summary Report
- October 2011: Draft RD/RA Work Plan for Moderate (Mod.) Conc. Sites
- October 2011: Draft Fact Sheet, OU-4B
- March 2012: Final 3rd and 4th Quarter 2011 Data Summary Report
- November 2012: Draft Final RD/RA Work Plan for Mod. Conc. Sites
- November 2012: Final LUC RD & Long-Term OMP (Low Conc. Sites: IRP-11 & -13W)
- December 2012: Final RD/RA Work Plan for Mod. Conc. Sites
- December 2012: Final Fact Sheet
- January 2013: Began implementing Remedial Actions at OU-4B Mod. Conc. Sites

Next steps:

- **Moderate Concentration Sites IRP-5S(a), -6, and the MPA:**
 - Complete in situ injections and Interim Progress Monitoring Reports
 - March 2013: Issue RTCs on Draft LUC RD
- **Low Concentration Sites IRP-11 and -13W:**
 - April 2013: Draft OPS Demonstration



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Final FOST Summary

FOST #1 signed August 29, 2001	Parcels 3, 21, 38, 39 and portions of 40
FOST #2 signed September 28, 2001	Parcels 4-8, 10-12, 14, 25, 26, 30-33, 37, 42 and portions of 40 and 41
FOST #3 signed April 22, 2002	Parcels 23, 29, 34, 35 and 36, and portions of 1, 16, 17, 24, 27, 28, 40 and 41
FOST #4 signed September 26, 2002	Portions of 24 (PS clean area in CO-5)
FOST #5 signed December 17, 2002	COs 8 and 11
FOST #6 signed September 29, 2004	CO-10 and a portion of CO-5
FOST #7 signed May 20, 2005	COs 3 and 7 and a portion of CO-5
FOST #8 signed February 2006	COs 1 and 4

Final FOSL Summary

FOSL #2 signed February 28, 2002	COs 1 thru 4
FOSL #3 signed April 26, 2002	COs 5 thru 11

Acronyms/Abbreviations

<p>AS/SVE – Air Sparge/Soil Vapor Extraction AST – Aboveground Storage Tank AOC – Area of Concern BCT – BRAC Cleanup Team (Navy, U.S. EPA, DTSC, and RWQCB) Cal/EPA – California Environmental Protection Agency CO – Carve-Out area Conc. - Concentration DCE - Dichloroethene FOSL – Finding of Suitability to Lease FOST – Finding of Suitability to Transfer GW - Groundwater ICs – Institutional Controls I-RACR – Interim Remedial Action Complete Report IRP – Installation Restoration Program LTM – Long-Term Monitoring LUC – Land Use Control MDS – Monitoring Data Summary MMS – Miscellaneous Major Spill MNA – Monitored Natural Attenuation MPA – Mingled Plumes Area MTBE – Methyl tert-butyl ether O&M – Operation and Maintenance</p>	<p>OCSD – Orange County Sanitation District OMP – Operation and Maintenance Plan OPS – Operating Properly and Successfully OU – Operable Unit PCAP – Petroleum Corrective Action Plan PER – Performance Evaluation Report PS – Public Sale Parcel RA – Remedial Action RAP – Remedial Action Plan RD – Remedial Design ROD – Record of Decision RWQCB – California Regional Water Quality Control Board, Santa Ana Region TCE – Trichloroethene TCP – Trichloropropane Ug/L – micrograms per liter U.S. EPA – United States Environmental Protection Agency UST – Underground Storage Tank VOC – Volatile Organic Compound WBZ – Water Bearing Zone</p>
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