FINAL
FORMER MARINE CORPS AIR STATION (MCAS) El Toro
110th Restoration Advisory Board (RAB) Meeting Summary

Meeting Location: Irvine City Hall, 1 Civic Center Plaza, Irvine, California
Meeting Date/Time: 23 April 2014/ 6:30 PM to 8:30 PM
Summary Prepared by: Fabiola A. Hatley, Accord MACTEC 8A Joint Venture (AM8AJV)

ATTACHMENTS:

Sign-In Sheets for the 23 April 2014 RAB Meeting

Presentation Slides:

- Installation Restoration Program Statutory Second Five-Year Review, Former MCAS El Toro, California
- Remedial Action Update, IRP Sites 1 and 2 Groundwater, Former MCAS El Toro
- Hangar 296 Radiological Site Inspection Update, Former Marine Corps Air Station El Toro, Irvine, CA

ATTENDEES: A total of 25 people attended the RAB meeting:

Navy: Jim Sullivan, Base Realignment and Closure (BRAC) Environmental Coordinator (BEC) and RAB Co-Chair; Content Arnold, Navy Lead Remedial Project Manager (RPM); Marc P. Smits, Navy RPM; and Morgan Rogers, Contracted Navy PM.

Regulatory Agencies: Viola Cooper, United States Environmental Protection Agency (U.S. EPA); Eileen Mananian, California Department of Toxic Substances Control (DTSC); Jennifer Rich, California DTSC; and Patricia Hannon, California Regional Water Quality Control Board, Santa Ana Region (RWQCB).

RAB Members: Bob Woodings, Community Co-chair; Mary Aileen Matheis; Marcia Rudolph, Technical Subcommittee Chair; Roy Herndon; and Chris Crompton.

Other Attendees: Crispin Wanyoike and Chris Cavers, AECOM; Tony Mason and Sree Akkenapally, Cabrera – Insight JV; Dhananjay Rawal, Enviro Compliance Solutions, Inc. (ECS); Robert Reitenour, Lowe Enterprises; Cliff Wallace, Orange County Great Park (OCGP); Jim Werkmeister, Five Point Communities; Kim Pierceall, Orange County Register and Irvine World News; Raymond Ouellete, resident; Harvey Liss, resident; Tony Guiang and Fabiola A. Hatley, AM8AJV.

WELCOME/PLEDGE/INTRODUCTIONS/AGENDA REVIEW:

Mr. Jim Sullivan, BEC and Navy RAB Co-Chair, introduced himself and welcomed everyone to the Former MCAS El Toro 110th RAB meeting. Mr. Sullivan asked everyone to sign in on the sign-in sheets and reminded RAB members unable to attend to please contact himself or Mr. Woodings, RAB Community Co-Chair. Mr. Woodings stated that Mr. Peter Hersh (RAB Member) expressed his regret for not being able to attend the meeting tonight. In addition, Mr. Guiang (AM8AJV) noted Ms. Desire' Chandler (RAB Member) informed both he and the Navy that she plans to attend the meeting, but would

be running late. Mr. Sullivan asked Ms. Marcia Rudolph, RAB member and Technical Subcommittee Chair, to lead the Pledge of Allegiance.

ANNOUNCEMENTS/ REVIEW OF ACTION ITEMS:

Mr. Sullivan went over the RAB Meeting Agenda and informed the RAB there would be three presentations this evening. He briefly went over the Navy, Agency and RAB points of contact, the Administrative Record File and Information Repository locations, Navy websites, and the process for reviewing RAB Meeting Summaries. He noted that the Final Meeting Summaries are made available on the Navy BRAC website www.bracpmo.navy.mil and that any questions on the website or the website content should be directed to him.

Mr. Sullivan noted the next RAB meeting date of August 20, 2014 might involve a RAB tour, as typically scheduled, but is dependent on the interest from the RAB Members. He also explained that the RAB Meeting scheduled for November 19, 2014 is an alternate date for the August 2014 meeting. Either way, a date will be determined before conclusion of the meeting.

As a follow up to an action item from the previous RAB meeting, Mr. Sullivan announced that the Former MCAS El Toro RAB Charter needed updating. This topic, he said, will be touched upon at the end of the tonight's meeting. He introduced Ms. Rudolph, RAB Sub-committee Chairman, who provided a Subcommittee Report update.

SUBCOMMITTEE MEETING REPORT: Ms. Rudolph welcomed the group to the 110th Former MCAS El Toro RAB Meeting and noted that there are some interesting topics to be presented this evening. Ms. Rudolph expressed a great deal of satisfaction for the progress accomplished by the RAB.

REGULATORY AGENCY UPDATE:

Ms. Eileen Mananian (DTSC)

Ms. Mananian stated that she is in the process of reviewing and approving several Long-Term Monitoring (LTM) and Operation and Maintenance (O&M) Reports and provided comments on the Hanger 296 Work Plan, which is part of tonight's meeting agenda. Ms. Mananian announced Ms. Jennifer Rich as the new in-coming Project Manager for DTSC. Ms. Mananian will remain involved for some time to ensure an easy transition. Ms. Rich introduced herself and shared her overall experience and qualifications.

Ms. Patricia Hannon (RWQCB)

Ms. Hannon announced that the RWQCB has engaged in numerous reviews of O&M/LTM Reports as well as data review. Currently, Ms. Hannon is in the middle of reviewing the Work Plan Addendum for O&M/LTM for Sites 2, 3, 5, 17, and Anomaly Area 3 (AA3).

Ms. Viola Cooper (U.S. EPA) Viola Cooper

Ms. Cooper announced that Ms. Aycock could not attend and that she would provide the U.S. EPA update in her place. Ms. Cooper began by expressing her gratitude toward the RAB for their involvement and continued effort over the years in the cleanup of sites. Ms. Cooper announced that in January 2014, the U.S. EPA released important news that 1,900 acres were delisted from the National Priority List (NPL). The delisted properties have been transferred and will be developed for various uses. Ms. Cooper briefly summarized some of the proposed uses of the delisted properties. Ms. Cooper directed technical questions to Ms. Aycock who is expected to return from leave in a week.

Mr. Sullivan introduced the first technical presentation speaker, Mr. Morgan Rogers, Contracted Navy PM.

PRESENTATIONS:

Installation Restoration Program Statutory Second Five – Year Review

Slide 1 - Title slide

Slide 2 - Presentation overview

Slide 3 – Purpose and Objective of Five-Year Review

Mr. Rogers described the purpose of the Five-Year Review as a review of the progress of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedies at federal installations where hazardous substances remain on the site at levels that do not allow for unlimited use and unrestricted exposure (UU/UE). The minimum review frequency is five years, but the review may be implemented more often if warranted. The objective is to ensure continued protectiveness of the remedies in-place.

Slide 4 – Background

Five-Year reviews are triggered by the initiation of the first remedial action that leaves hazardous substances, pollutants or contaminants on site at levels that do not allow for UU/UE (unlimited use and unrestricted exposure). At MCAS El Toro, that trigger was the initiation of remedial action at Installation Restoration Project (IRP) Site 16. After completion of the first statutory five-year review, the trigger for subsequent reviews is the signature date of the previous five-year review report.

Slide 5 – Background

The first Five-Year Review at MCAS El Toro was completed in September 2009 and included an evaluation of IRP Sites 2 and 17 (OU-2B), IRP Site 16 (OU-3B), IRP Site18 (OU-1), and IRP Site 24 (OU-2A). The evaluation concluded that the remedies "are being implemented in accordance with their respective decision documents and are protective of human health and the environment".

Slide 6 – Background

A second Five-Year review is currently underway that includes IRP Sites 2 and 17 (OU-2B), IRP Site 16 (OU-3B), IRP Site 18 (OU-1), IRP Site 24 (OU-2A), IRP Sites 3 and 5 (OU-2C), and Anomaly Area 3 (OU-2C). Mr. Rogers introduced Crispin Wanyoike, Project Manager with AECOM to present the remaining presentation slides. Mr. Wanyoike is the AECOM PM assigned to the second Five-Year Review at Former MCAS El Toro.

Slide 7 – Components of the Five-Year Review

This slide illustrates the six components of the Five-Year Review: Assess Protectiveness, Community Involvement and Notification, Document Review, Data Review and Analysis, Site Inspection, and Interviews.

Slide 8 – Components of the Five-Year Review (continued)

This slide lists the type of documents sought after and evaluated during execution of the Document Review step.

Slide 9 – Components of the Five-Year Review (continued)

This slide lists the type of data sought after and evaluated during execution of the Data Review and Analysis step.

Slide 10 - Components of the Five-Year Review (continued)

Mr. Wanyoike explained that site inspections were conducted in March 2014. In April 2014, interview forms were sent out to agency representatives, O&M contractor personnel, RAB representatives, and other stakeholders.

Slide 11 – Components of the Five-Year Review (continued)

Mr. Wanyoike explained that in order to assess protectiveness at a Site, the U.S. EPA recommends that the following three questions be addressed:

- Is the remedy functioning as intended by the decision documents?
- Are the exposure assumptions, toxicity data and remedial action objectives (RAOs) used at the time of remedy selection still valid?
- Has any other information come to light that could call into question the protectiveness of the remedy?

Slide 12 – Components of the Five-Year Review (continued)

The RAB meetings are the primary vehicle by which the community may get involved. Notification of the Five-Year Review and associated progress is done via RAB Meetings and the BRAC website. The public is encouraged to get involved in the documents review process. Mr. Wanyoike added that comments and or questions need to be submitted to the RAB Co-Chair for their incorporation into the document under preparation. At the completion of the Five-Year Review, a fact sheet or summary will be prepared and the entire report made available in the Information Repository (IR).

Slide 13 – Five-Year Review Sites

This slide is a map of Former MCAS El Toro that highlights the Five-Year Review project sites, IRP Sites 2, 17, 16, 18, 24, 3, 5, and Anomaly Area 3.

Slide 14 – Five-Year Review Sites

This slide summarizes key milestones for IRP Sites 2 and 17 since the ROD was signed in June 2003.

Slide 15 – Five-Year Review Sites

This slide summarizes key milestones IRP Sites 3 and 5 since the ROD was signed in February 2008.

Slide 16 – Five-Year Review Sites

This slide summarizes key milestones for Anomaly Area 3 since the ROD was signed in August 2010.

Slide 17 – Five-Year Review Sites

This slide summarizes key milestones for IRP Site 16 since the ROD was signed in July 2003.

Slide 18 – Five-Year Review Sites

This slide summarizes key milestones for IRP Sites 18 and 24 since the ROD was signed in July 2002.

Slide 19 – Five-Year Review Sites

This slide summarizes key milestones for IRP Sites 8 and 12 since the ROD was signed in March 2007. Mr. Wanyoike informed RAB attendees that UU/UE was attained at IRP Sites 8 and 12; therefore, no additional review is required for these sites. This slide also summarizes key milestones for IRP Sites 1 and 2 Groundwater Remedy. The ROD for IRP Sites 1 and 2 Groundwater Remedy was signed in January 2012 and the remedial action construction was initiated in March 2014; consequently, these sites will be included in the next Five-Year Review.

Slide 20 – Schedule

Mr. Wanyoike concluded by providing a list of upcoming milestones for the Five-Year Review.

Slide 21 – Questions. Mr. Wanyoike asked the RAB if they had any questions or comments.

Mr. Harvey Liss, resident, asked whether contaminants (solvents) detected in the Agua Chinon Wash would trigger additional investigation by the Navy. Mr. Sullivan replied that although this area may have been part of the original IRP Site 3 footprint, it is not part of the current landfill boundary and therefore the Navy is not directly involved. Further, he noted Five Point Communities, the developer conducting the work in that area, will work directly with DTSC with regard to providing the Agency with any reports.

Mr. Chris Crompton, RAB Member, stated that in the past, an acronym list has been included in the presentations. He continued by pointing out that one of the three presentations has an acronym list in the back and asked if the presenters could make that change in the future. Mr. Sullivan and Mr. Woodings concurred.

Mr. Sullivan re-introduced Mr. Rogers to present the next technical presentation.

Remedial Action Update IRP Sites 1 and 2 Groundwater

Slide 1 - Title slide.

Slide 2 - Presentation overview.

Slide 3 – Site Locations.

This slide shows a map of Former MCAS El Toro with IRP Sites 1 and 2 highlighted.

Slide 4 – Site Descriptions

Mr. Rogers provided brief descriptions of IRP Sites 1 and 2. He explained IRP Site 1 is a Former Explosive Ordnance Disposal (EOD) Training Range that operated from 1952 to 1999. The groundwater chemical of concern (COC) is perchlorate and the plume extends from IRP Site 1 to approximately the former station boundary.

Slide 5 – Site Descriptions (continued)

IRP Site 2 is the former Magazine Road Landfill from the 1950s until about 1980. Groundwater COCs for the Site include trichloroethene, tetrachloroethene, cis-1,2-dichloroethene, 1,1,2-trichloroethane, and 1,2-dichloroethane. These COCs are collectively referred to as volatile organic compounds (VOCs) throughout this presentation.

Slide 6 – Remedial Action Objectives

Mr. Rogers presented a summary of the RAOs for IRP Site1 perchlorate-impacted groundwater and IRP Site 2 VOC-impacted groundwater. Mr. Rogers re-introduced Mr. Wanyoike to present the remaining presentation slides.

Slide 7 – Selected Remedial and Remedial Design

Mr. Wanyoike explained that the final selected groundwater remedy for IRP Site 1 includes a combination of in-situ bioremediation (ISB) at the source area, ISB down gradient of the perchlorate source area between IRP Sites 1 and 2, ISB near the former station boundary, groundwater monitoring, institutional controls (ICs) and Five-Year Reviews. The final selected groundwater remedy for IRP Site 2 includes monitored natural attenuation (MNA), groundwater monitoring, ICs, and Five-Year Reviews.

Slide 8 – ISB Locations – IRP Site 1 Groundwater

This slide illustrates the areas where ISB will be implemented at IRP Site 1, which includes the Source Area, the Intermediate Area, and the Station Boundary. Mr. Wanyoike explained that food-grade high fructose corn syrup as well as a second substrate, will be injected into a series of injection wells. Mr. Wanyoike explained that substrate samples are available for a closer inspection. By injecting the food grade substrate to the groundwater, an environment where microorganisms consume the perchlorate will be formed. The ISB also creates conditions in groundwater that will enhance the biodegradation of VOCs at IRP Site 2. He continued by saying that in addition to ISB, the site will be subject to groundwater monitoring, ICs, and Fire-Year Reviews.

Slide 9 – Monitoring Well Network – IRP Site 2 Groundwater

This slide illustrates the well network that will be monitored during MNA. In addition to MNA and groundwater monitoring, IRP Site 2 will be subject to ICs and Five-Year Reviews. Mr. Wanyoike explained that the Final Remedial Design Work Plan (WP) submitted in January 2014 explains in detail MNA, groundwater monitoring, ICs, and Five-Year Reviews for IRP Site 2.

Slide 10 – Remedial Action Implementation Sequence

This slide summarizes the first three steps of the remedial action implementation sequence, which are well installation, baseline monitoring, and amendment injections.

Slide 11 – Remedial Action Implementation Sequence (continued)

This slide summarizes the last three steps of the remedial action implementation sequence, which are performance monitoring, IC implementation, and reporting.

Slide 12 – Status of Major Remedial Action Activities

Mr. Wanyoike explained that a construction kick-off meeting took place on March 6, 2014 followed by site preparation tasks (geophysical survey, land survey, biological survey, and munitions anomaly avoidance within IRP Site 1). He continued by saying that the injection/monitoring well installation is under way and that the baseline groundwater monitoring is expected to commence next week (April 28 to May 2).

Slide 13 – Well Installation Photographs

This slide contains an image of a limited access rig and a CME-95 rig as they are drilling 02-NEW40 and 01-EW09.

Slide 14 – Well Installation Photographs (continued)

This slide contains three images. The first is an image of field personnel setting conductor casing at 02-IW07. The second image shows a well with its surface structure completed. The third image shows soil samples for logging purposes.

Slide 15 – Next Steps

Mr. Wanyoike concluded his presentation by describing that the next steps at IRP Sites 1 and 2 are completion of the baseline monitoring, substrate injection, performance monitoring and reporting, and IC implementation. Also, planned for this year is the completion of the Interim Remedial Action Completion Report.

Slide 16 – Questions?

Mr. Wanyoike asked the RAB if they had any questions or comments.

Mr. Ray Ouellette, Resident, referred to the map on Slide 9. He asked if the circled wells were going to be used to monitor the efficiency of substrate injection at IRP Site 1. Mr. Wanyoike stated that these are wells within IRP Site 2 that will be used to assess the progress of natural attenuation of VOCs in groundwater. He continued by saying that assessment of perchlorate at IRP Site 1 will also be evaluated using these wells. Mr. Ouellette asked if there were any other wells for tracking the progress of IRP Site 1. Mr. Wanyoike confirmed that there are more wells in the network but they are outside of the range of the map on Slide 9. Mr. Ouellette asked about the frequency of monitoring and the factors that determine the length of time between monitoring events. Mr. Wanyoike stated that monitoring will performed monthly, then quarterly, then semiannual, and finally, annually. He continued by saying that the monitoring frequency is determined from evaluation of the data. Specifically, the frequency of monitoring events is adjusted if degradation of perchlorate, positive change in groundwater chemistry, and overall stabilization of the data is observed.

Ms. Rudolph referred to Slide 12 and specifically the Site Preparation Section, fourth bullet, Munitions Anomaly Avoidance within IRP Site 1. She asked if there are still unexploded ordnance in IRP Site 1 and if so, when will the RAB members know about the anomalies and how will they be handled. Mr. Wanyoike responded by saying that that there is a potential for encountering unexploded ordnance on site at IRP Site 1;however, the soil at IRP Site 1 is being addressed separately from the groundwater. IRP Site 1 soil is in the feasibility study (FS) stage. The IRP Site 1 soil FS includes a summary of previous investigations and the associated findings. He concluded by saying that if anomalies, which can be scrap or unexploded ordnance, are encountered during the groundwater remedial action implementation, then a plan is in-place to address these issues.

Ms. Content Arnold added that the Munitions Anomaly Avoidance task is a health and safety measure. This task is intended to protect workers and includes having UXO technical expert in front of the crew, clearing the site before the ground is disturbed.

Mr. Ouellette also expressed his concern adding that the RAB was under the impression that the majority of the site was clear of unexploded ordnance. He continued by saying that it is clear that the Munitions Anomaly Avoidance task is a health and safety measure for workers in the field, but that this in itself brings up a red flag. Based on the information provided today, it appears that there is a potential for encountering unexploded ordnance and the question at this point is, when will the issue of uncertainty be resolved? He asked when the documents addressing this issue will be prepared and made available?

Mr. Wanyoike reiterated that IRP Site 1 soil is in the FS stage of the CERCLA process. The Navy has not implemented a remedy at the site. Mr. Sullivan and Mr. Marc P. Smits (Navy RPM) noted there is currently a revised draft Feasibility Study for this Site and a draft final is being prepared and will be submitted in approximately 6 weeks.

Referring to an IRP Site Map, made available as a general RAB handout, Mr. Woodings asked for further clarification on the status of IRP Site 1. He asked whether IRP Site 1 was still owned by the Navy owing to studies currently occurring at the Site. He asked for confirmation from the Navy that the property has not yet undergone a federal-to-federal transfer to the FBI. The Navy confirmed that IRP Site 1 is still Navy property.

Mr. Roy Herndon, RAB Member, expressed appreciation towards the Navy for adding additional monitoring wells. He said that this was a comment he made during his review some time ago. A second issue, he recalled, has to do with the direction of groundwater flow at this site. He asked if as part of the baseline monitoring, a contour map would be generated to verify the direction of groundwater flow. Mr. Wanyoike replied that a groundwater contour map of the site will be generated.

Mr. Crompton referred to Slide 9. He asked if the three wells at the bottom of the map were off or on base, and if they are on or off the road. Mr. Wanyoike confirmed that the three wells are outside of the base and are located about 10 to 15 feet from the road.

Mr. Sullivan introduced the last presenter of the evening, Mr. Smits.

Hangar 296 Radiological Site Inspection Update

Slide 1 - Title slide

Slide 2 - Overview

Slide 3 – Hangar 296 Background

This slide presents a map of the site vicinity with Former MCAS El Toro highlighted.

Slide 4 – Hangar 296 Background

This slide presents a close up map with Hangar 296 and the Proposed Equipment Test Pad highlighted.

Slide 5 – Hangar 296 Background

According to Mr. Smits, a Historical Radiological Assessment (HRA) was issued in May 2000. Three areas within Hangar 296 were identified for further investigation. The first is a paint room used for aircraft refurbishment operations from April 1949 to December 1950, for a total of 19 months, The COC at the paint room is Radium-226. The second and third locations are two storage areas that contained helicopter safety equipment containing sealed strontium-90.

Slide 6 – Hangar 296 Background

Radiological surveys and sampling were conducted at the radium paint room, rooms adjacent to the radium paint room, above ground piping adjacent to the radium paint room, and exterior sanitary/industrial waste manholes. Results were used to support the historical assessment of limited use for radium materials, intact sealed sources, and a low potential for spread of contamination.

Slide 7 – Conceptual Site Model

The Conceptual Site Model was based on Radium-226 used for a short period of time and Strontium-90 sealed sources stored in two rooms on the first floor of Hangar 296.

Slide 8 – Project Objectives

The objectives of the Site Inspection (SI) are to determine what exterior pipeline is associated with the radium paint room and to determine if further or no further action is appropriate for Hangar 296 and the pipeline associated with radium paint room. Mr. Smits next introduced Tony Mason with Cabrera - Insight, JV to present Slides 9 through 18. Mr. Mason is the Cabrera - Insight, JV PM assigned to this project.

Slide 9 – Project Approach

The technical approach included completion of a comprehensive SI based on the conceptual site model and project objectives, and attainment of scientifically sound and defensible data to evaluate potentially impacted structures. Data was acquired via the use of field and laboratory measurement techniques in compliance with applicable regulations and the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). Mr. Mason explained that during the SI planning and preparation phase, an extensive review of historical documentation and data had to be performed. Mr. Mason and his staff referred to the HRA for their historical review. The HRA was very complete, served as a great source, and provided them with a strong foundation.

Slide 10 – Completed Field Activities

Four different MARSSIM surveys took place: Reference (Background), North Mezzanine Paint Room Area (2nd floor, elevator, stairs), Material Storage Area (helicopter storage area), and Remainder of Hanger 296. According to Mr. Mason, numerous reference (background) data needed to be collected and fortunately, Hangar 297 served as the perfect source as it was similar in construction to Hangar 296.

Slide 11 – Automated Floor Scanner

This slide shows an Automated Large Area Scanner (ALAS) with tripods in the background. According to Mr. Mason, for a project with such a large area to survey, the ALAS is the best choice. The tripods located throughout the room relay to the computer where the detectors are located within the room generating position-correlated data.

Slide 12 – Automated Wall Scanning

This slide shows an Automated Wall Scanner as it is being used.

Slide 13 – Completed Field Activities

A very thorough investigation of associated piping followed. The investigation included: smoke test of associated pipeline system, removal of interior above ground and below ground piping, removal of soil around below ground piping, survey and sampling of below ground trench, survey and sampling of soil removed from trench, sampling of material collected from inside the piping, and sampling of sediment from associated manholes.

Slide 14 – Screening Pad Radiological Survey

This slide shows an image of a technician performing a radiological survey of soil on the screening pad.

Slide 15 – Smoke Test of Interior/Exterior Piping

This slide shows four images of different phases of the interior/exterior piping smoke test.

Slide 16 – Scanning of Sanitary Sewer Manhole

This slide shows an image of a sanitary sewer manhole scanning in progress.

Slide 17 – Scanning Interior Pipeline

This slide shows an image of pipeline interior scanning in progress.

Slide 18 – Remaining Field Activities

Mr. Mason announced the last field activities remaining for this project are California Department of Public Health confirmation samples, backfilling of the trenches, final radiological surveys (equipment, materials and screening pad), disposal of interior and exterior piping, and shipping of equipment and materials offsite. He reintroduced Mr. Smits to present the remaining presentation slides.

Slide 19 – Next Steps

Mr. Smits explained that the next step is to conduct a statistical analysis of the data collected. The analysis and recommendations regarding unrestricted radiological release will be presented in a Final Status Survey Report (FSSR). The FSSR will be part of the SI Report for Hangar 296.

Slide 20 – Schedule

Mr. Smits concluded by announcing the reporting schedule.

Slide 21 – Acronyms

Mr. Mason asked if there were any questions or comments.

Mr. Woodings expressed some confusion with some of the terminology used in the presentation. He stated that at the beginning of the presentation, the terms “sanitary and industrial sewer” were commonly used and towards the end of the presentation, the term “industrial sewer” seemed to have disappeared. Mr. Smits stated that in the beginning it was uncertain whether the pipe from the radium paint room was

connected to the sanitary or industrial line, which is the reason why both terms were used. The smoke testing was added to the scope of work to hopefully solve the ambiguity. Once the smoke test was completed, he added, it was observed that, in fact, the pipe was connected to the sanitary line. He noted that "It was at this point that we ceased from using the term "industrial" pipeline in relation to the radium paint room."

MEETING EVALUATION AND CLOSING:

Mr. Sullivan announced what he considered the first action item for this meeting to be inclusion of acronyms lists in the back of the presentation slides. He then opened up the floor for comments and /or additional requests from the audience. A majority of the RAB Meeting attendees were pleased with the presentation materials and informative nature of the presentations.

The topic of the next scheduled RAB Meeting was discussed. Ms. Rudolph stated that based on the information received today much data will be acquired, evaluated, and possibly reported by the time the next RAB Meeting takes place and for that reason, she would like to see presentations during the next RAB Meeting instead of a tour. Mr. Sullivan added that potential topics for the next RAB Meeting would be the draft Five-Year Review and the draft Site Inspection for Hangar 296. He then announced that the next RAB Meeting would be on August 20, 2014. The RAB concurred.

Mr. Sullivan informed the RAB that RAB Co-Chair elections should be considered at the next scheduled RAB meeting on August 20, 2014. The Navy will initiate dialog about elections in advance of the August meeting.

With regard to updating the RAB Charter, Mr. Woodings stated that he has some ideas about how to update the Charter but he acknowledged that other RAB members may have comments, suggestions, changes or additions and would like offer the RAB the opportunity to provide their comments and voice their opinion. He recommended the time to do so could be coincident with the finalization of this Meeting Summary. Mr. Sullivan noted he would work with Mr. Woodings to get the Charter update moving forward. Mr. Crompton asked if the Charter is available on the website. Mr. Sullivan could not say with certainty whether it was, but since the current Charter is outdated, the plan is for Mr. Woodings and himself to work on updating it and then send it out along with the RAB Meeting Summary for review.

Mr. Sullivan concluded by saying that future discussion topic suggestions are welcome and may be sent to himself or Mr. Woodings. Mr. Woodings stated that past updates have included a general site status update. He continued by saying that it would be great if it also included a timeline and a future projection.

LIST OF HANDOUTS PROVIDED AT THE MEETING:

- Presentation Slides: Installation Restoration Program Statutory Second Five-Year Review Former MCAS El Toro
- Presentation Slides: Status Update - Remedial Design/Remedial Action IRP Sites 1 and 2 Groundwater Former MCAS El Toro
- Presentation Slides: Hangar 296 Radiological Site Inspection Update Former Marine Corps Air Station El Toro

- 23 April 2014 Former MCAS El Toro RAB Meeting Agenda
- Public Notice for the 23 April 2013 RAB Meeting
- Agenda Former MCAS El Toro Restoration Advisory Board (RAB)
- Final RAB Meeting Summary from the 21 August 2013 meeting
- Former MCAS El Toro Where To Get More Information
- Environmental Websites
- RAB Mission Statement
- RAB Mailing List and Application
- Former MCAS EL Toro Site Map

Final Meeting Summaries from previous RAB meetings can be found on the internet at the Navy BRAC Program Management Office (PMO) website: www.bracpmo.navy.mil.

INTERNET SITES:

Navy and Marine Corps Internet Access:

BRAC PMO Website (includes RAB meeting summaries): http://www.bracpmo.navy.mil/

Department of Defense – Environmental Cleanup Home Page Web Site:

Homepage: http://www.dtic.mil/envirodod/

U.S. EPA:

Homepage: www.epa.gov

Superfund information: www.epa.gov/superfund

National Center for Environmental Assessment: www.epa.gov/ncea

Federal Register Environmental Documents: www.epa.gov/federalregister

California Agencies:

California Environmental Protection Agency Homepage: www.calepa.ca.gov

DTSC: www.dtsc.ca.gov

Department of Health Services, reorganized into the Department of Health Care Services and the Department of Public Health: www.dhs.ca.gov

Santa Ana RWQCB: www.waterboards.ca.gov/santaana

Additional Websites: Reuse and Redevelopment

Orange County Great Park: www.ocgp.org

Great Park Conservancy: www.orangecountygreatpark.org

FORMER MCAS EL TORO
RESTORATION ADVISORY BOARD MEETING

NAVY SIGN-IN SHEET

April 23, 2014

Name	Signature
Jim Sullivan, BRAC Environmental Coordinator	present
Content Arnold, Lead Navy RPM	
[redacted]	
Marc P. Smits, Navy RPM	Marc P. Smits
Morgan Rogers, Contracted Navy RPM	

FORMER MCAS EL TORO
RESTORATION ADVISORY BOARD MEETING

AGENCY SIGN-IN SHEET
April 23, 2014

Please sign in on the appropriate line. If your address and/or phone number has recently changed, help us update our records by writing your new information on the back of the sign-in sheet. Thank you.

Name	Signature
Mary Aycock, U.S. EPA	
Viola Cooper, U.S. EPA	PRESENT
Patricia Hannon, RWQCB	Patricia Hannon
Eileen Mananian, DTSC	Eileen Mananian
~~Triss Chesney, DTSC~~	
Jennifer Rich, DTSC	Jennifer Rich
Crapin	

FORMER MCAS EL TORO
RESTORATION ADVISORY BOARD MEETING

RAB MEMBER SIGN-IN SHEET
April 23, 2014

Please sign in on the appropriate line. If your address and/or phone number has recently changed, help us update our records by writing your new information on the back of the sign-in sheet. Thank you.

Name	Signature	Name	Signature
Bob Woodings, Community Co-chair		Desire' Chandler	
Peter Hersh			
Mary Aileen Matheis		IRA	
Chris Crompton			
Marcia Rudolph, Subcommittee Chair			
Roy Herndon			
[redacted]			
Donald Zweifel			

GUEST SIGN IN

FORMER MCAS EL TORO

RAB MEETING- SIGN-IN SHEET

April 23, 2014

NAME ***PLEASE PRINT CLEARLY***	*AFFILIATION (community member/resident, elected official, agency official)*	*MAILING ADDRESS*	*PHONE EMAIL FAX*	*SHOULD WE ADD YOU TO THE MAILING LIST? (yes/no)*	*NEW TO MEETING? HOW DID YOU HEAR ABOUT THIS MEETING*
Cliff Wallace	City of Irvine				
Viola Cooper	US EPA	on file	on file		
HARVEY LISS	City of Irvine Planning Commissioner	on file			
Raymond Ouellette	Resident Laguna Woods, CA	on File			
SREE ARKENAPALLY	CABRERA - INSIGHT	ON FILE	ON FILE		
Tony Mason	Cabrera/Insight JV	on file	On file		

GUEST SIGN IN

FORMER MCAS EL TORO

RAB MEETING- SIGN-IN SHEET

April 23, 2014

NAME ***PLEASE PRINT CLEARLY***	*AFFILIATION (community member/resident, elected official, agency official)*	*MAILING ADDRESS*	*PHONE EMAIL FAX*	*SHOULD WE ADD YOU TO THE MAILING LIST? (yes/no)*	*NEW TO MEETING? HOW DID YOU HEAR ABOUT THIS MEETING*
KIM PIERCEALL	OC Register			yes	
Dhananjay Rawal	ECS	on file	on file		
CRISPIN WANYOIKE	AECOM	on file			
ROB REITENOUR	LOWE ENT.	on file			
Fabiola A. Hartley	Accord Eng.				

Installation Restoration Program Statutory Second Five –Year Review Former MCAS El Toro, California

Restoration Advisory Board (RAB) Meeting
Morgan Rogers, PE (Navy Project Manager)
Crispin Wanyoike, PE (AEJV Project Manager)

4/23/2014

Presentation Overview

- **Purpose and Objective**
- **Background**
- **Components**
- **Five-Year Review Sites**
  - –IRP Sites 2 and 17
  - –IRP Sites 3 and 5
  - –Anomaly Area 3
  - –IRP Site 16
  - –IRP Site 18 and 24
- **Schedule**

Purpose and Objective of Five-Year Review

Purpose

- Under CERCLA §121(c), the lead federal agency (the DON) is required to review the progress of CERCLA remedies at federal installations where hazardous substances remain on the site at levels that do not allow for unlimited use and unrestricted exposure (UU/UE). This must be done at a minimum frequency of five years but may be done more often if warranted.

Objective

- The fundamental objective of the five-year review is to ensure continuing protectiveness of the remedies.

Background

Trigger Date for Five-Year Reviews

- Under DON policy, the five-year review schedule is triggered by the initiation of the first remedial action that leaves hazardous substances, pollutants or contaminants on site at levels that do not allow for unlimited use and unrestricted exposure.
- For former MCAS El Toro, the first such initiation of a remedial action was at IRP 16.
- After completion of the first statutory five-year review, the trigger for subsequent reviews is the signature date of the previous five-year review report (September 2009).

Background

- **The Department of the Navy (DON) completed the first Five – Year Review at former Marine Corps Air Station (MCAS) El Toro in September 2009.**
  - The following sites were evaluated during this first Five-Year Review
    - –IRP Sites 2 and 17 (Operable Unit [OU] – 2B)
    - –IRP Site 16 (OU – 3B)
    - –IRP Sites 18 (OU – 1) and 24 (OU – 2A)
  - The First Five-Year Review concluded the following:

  "The remedies at IRP Sites 2, 16, 17, 18, and 24 are being implemented in accordance with their respective decision documents and are protective of human health and the environment."
- **The EPA concurred with this protectiveness determination.**

Background

- **The Navy is currently conducting it's second Five-Year Review. The following sites will be evaluated in the second Five-Year Review.**
  - IRP Sites 2 and 17 (Operable Unit [OU] – 2B)
  - IRP Site 16 (OU – 3B)
  - IRP Sites 18 (OU – 1) and 24 (OU – 2A)
  - IRP Sites 3 and 5 (OU – 2C)
  - Anomaly Area 3 (OU – 2C)
- **This RAB presentation notifies the public that the second Five-Year Review is being conducted. A notification will be included on the BRAC PMO Website.**

Components of Five-Year Review

Figure 1: Components of the Five-Year Review Process

Components of Five-Year Review (cont.)

Document Review

Types of documents that will be reviewed (as applicable):

- Records of Decision (RODs),
- Site investigation documents,
- Remedial Design (RD) /Remedial Action Work Plan (RAWP),
- Remedial Action Completion Report (RACR),
- Operation and Maintenance Plans (OMPs),
- First Five-Year Review Report for IRP Sites 2, 16, 17, 18, and 24,
- Annual Monitoring Reports,
- Land-Use Control (LUC) Compliance Documents.

Components of Five-Year Review (cont.)

Data Review and Analysis

The following types of data form the primary basis for the technical analysis and subsequent protectiveness determination:

- Sampling and monitoring data,
- Remedial system performance data,
- Risk assessment data,
- Land-Use Controls (LUC) compliance data.

Components of Five-Year Review (cont.)

Site Inspections

- The Navy conducted site inspections in March 2014 to gather information about each site's current status and to visually confirm and document the conditions of the remedy, the site, and the surrounding area.

Interviews

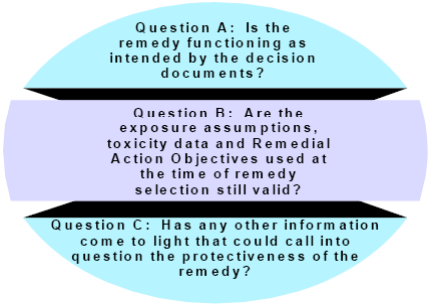
Interview forms were sent to the following stakeholders in April 2014:

- Agency Representatives
- O&M Contractor Personnel
- RAB Representatives
- Other Stakeholders

Components of Five-Year Review (cont.)

Assess Protectiveness

- The fundamental purpose of a five-year review is to determine whether the remedy at a site is, or upon remedy construction completion will be, protective of human health and the environment.
- A technical assessment is performed with the objective of answering the following three questions:

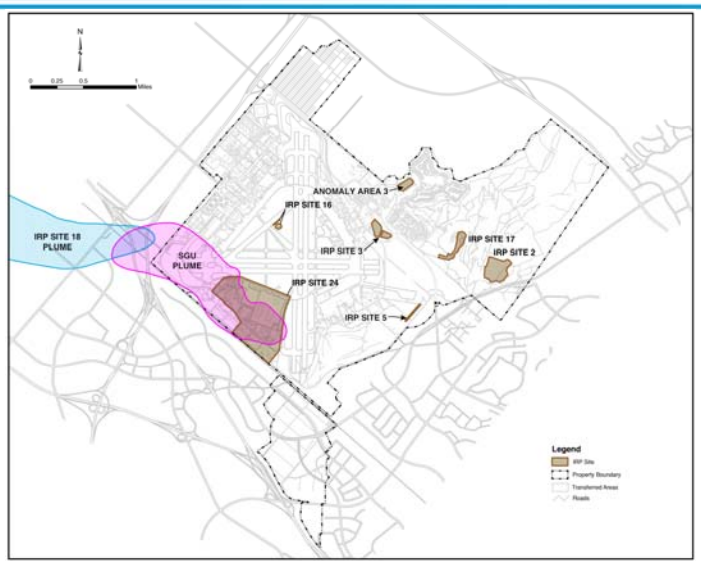


Components of Five-Year Review (cont.)

Community Involvement and Notification

- Per DON policy, the Restoration Advisory Board (RAB) is the primary vehicle for community involvement:
  - RAB Meetings
  - Notification in RAB Public Meeting Agenda
- BRAC website Public Notice
- Solicit input.
- Notify Public of completion of five-year review.
- Make the report available at the Information Repository.

Five-Year Review Sites



Five-Year Review Sites

- **IRP Sites 2 and 17**
  - **ROD signed in June 2003**
  - **Remedial design completed in November 2005**
  - **Remedial action construction activities initiated in November 2005**
  - **Site 2 construction completed in June 2007**
  - **Site 17 cover construction completed in July 2008**
  - **Final O&M Plan – February 2009**
  - **Final RACR issued – March 2009**
  - **Routine O&M/LTM ongoing**

Five-Year Review Sites

- **IRP Sites 3 and 5**
  - **ROD signed in February 2008**
  - **Remedial design completed in August 2009**
  - **Remedial action construction activities initiated in August 2009**
  - **Site 5 construction completed in December 2010**
  - **Site 3 construction completed in January 2012**
  - **Final O&M Plan – November 2010**
  - **Final RACR issued – August 2012**
  - **Routine O&M/LTM ongoing**

Five-Year Review Sites

- **Anomaly Area 3**
  - **ROD signed in August 2010**
  - **Remedial design completed in July 2011**
  - **Remedial action construction activities initiated in July 2011**
  - **Remedial action construction completed in February 2012**
  - **Final O&M Plan – September 2011**
  - **Final RACR issued – November 2012**
  - **Routine O&M/LTM ongoing**

Five-Year Review Sites

- **IRP Site 16**
  - **ROD signed in July 2003**
  - **Pre-Design Evaluation and Groundwater MNA Monitoring initiated in September 2004**
  - **Final Remedial Design issued in March 2006**
  - **OPS Concurrence received – 2007**
  - **First site at El Toro to trigger five year review**
  - **Routine O&M/LTM ongoing**

Five-Year Review Sites

- **IRP Sites 18 and 24**
  - **ROD signed in July 2002**
  - **Site 24 - SGU**
    - Remedial design completed –December 2004
    - Remedial action construction completed – September 2006
    - Final I-RACR issued – August 2007
    - Final OPS Report to issued in July 2010
    - Routine O&M/LTM ongoing
  - **Site 18 - Principal Aquifer**
    - Remedial design completed – April 2006
    - Remedial action construction completed – April 2006
    - Final I-RACR issued – November 2007
    - Routine O&M/LTM ongoing

Five-Year Review Sites

- **IRP Sites 8 and 12**
  - **ROD signed in March 2007**
    - Remedial design completed – December 2008
    - Remedial action construction activities initiated – January 2009
    - Remedial action construction completed – March 2009 for Site 12 and June 2010 for Site 8
    - Final RACR issued – April 2012
    - Unlimited Use/Unrestricted Exposure attained and no additional review is required
- **IRP Sites 1 and 2 Groundwater Remedy**
  - **ROD signed in January 2012**
    - Remedial Action Design/Work Plan completed – January 2014
    - Remedial action construction initiated – March 2014
    - Remedy evaluation will occur during the next five year review

Schedule

- **Site Inspections and Interviews – March-April 2014**
- **Issue Draft Five-Year Review – June 2014**
- **Regulatory Review – June – July 2014**
- **Issue Final Five-Year Review by September 30, 2014**

Questions?

Remedial Action Update
IRP Sites 1 and 2 Groundwater
Former MCAS El Toro

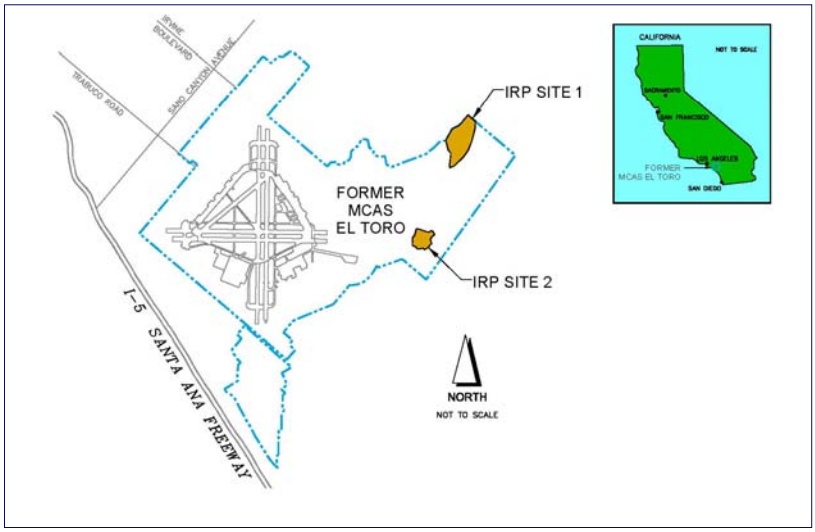
Restoration Advisory Board (RAB) Meeting
Morgan Rogers, PE (Navy Project Manager)
Crispin Wanyoike, PE (AEJV Project Manager)

04/23/2014

Presentation Overview

- Site Descriptions
- Remedial Action Objectives
- Selected Remedies and Remedial Design
- Remedial Action Implementation Sequence
- Status of Remedial Action Activities
- Well Installation
- Next Steps

Site Locations



Site Descriptions

- **IRP Site 1**
  - **Former Explosive Ordnance Disposal (EOD) Training Range**
  - **EOD training exercises were conducted from 1952 until Station closure in 1999**
  - **The groundwater chemical of concern (COC) is perchlorate**
  - **Perchlorate concentrations greater than the Cleanup Goal (CG) extend from the central portion of IRP Site 1 to approximately the former Station Boundary**

Site Descriptions (cont.)

- **IRP Site 2**
  - **Former landfill known as Magazine Road Landfill**
  - **IRP Site 2 was an operational landfill from the late 1950s until about 1980**
  - **The construction of a landfill cap was completed in February 2008. This soil remedial action (RA) also included consolidation of waste from adjacent areas**
  - **Groundwater COCs include the following VOCs: trichloroethene, tetracholorethene, cis-1,2-dichloroethene, 1,1,2-trichloroethane, and 1,2-dichloroethane**

Remedial Action Objectives

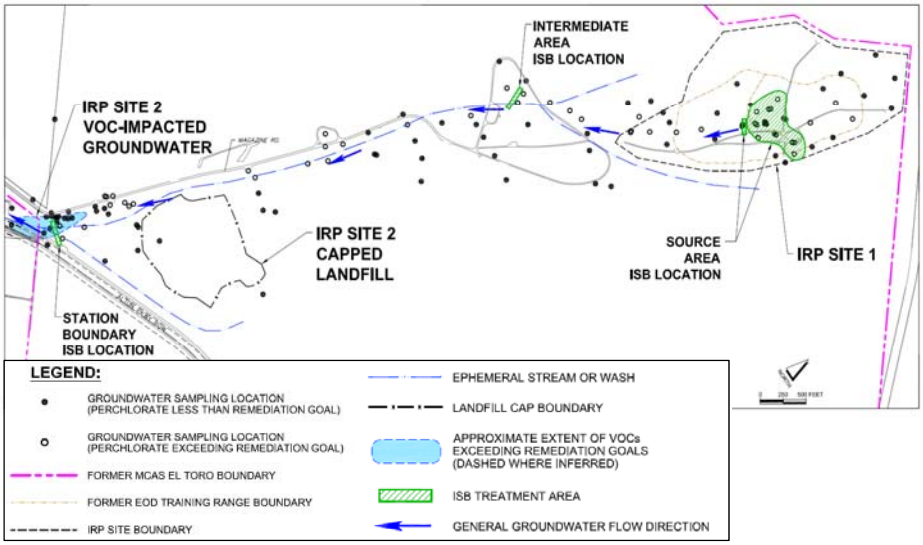
The remedies for IRP Site 1 perchlorate-impacted groundwater and IRP Site 2 VOC-impacted groundwater are being implemented to achieve the following remedial action objectives:

- **Minimize the potential for domestic use of groundwater impacted with chemicals of concern (COCs) at concentrations exceeding their respective remediation goals (RGs).**
- **Minimize off-Station migration of groundwater impacted with COCs at concentrations exceeding their respective RGs.**

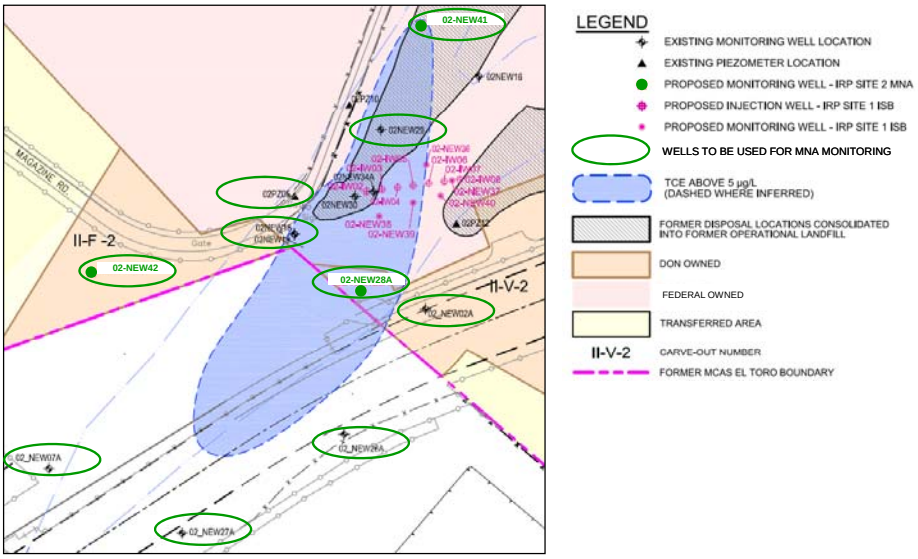
Selected Remedies and Remedial Design

- **Selected Remedy – IRP Site 1 Groundwater**
  - **In-Situ Bioremediation (ISB) at the Source Area;**
  - **ISB downgradient of the perchlorate Source Area between IRP Sites 1 and 2;**
  - **ISB near the former Station Boundary;**
  - **Groundwater monitoring;**
  - **Institutional Controls (ICs) and Five-Year Reviews.**
- **Selected Remedy – IRP Site 2 Groundwater**
  - **Monitored natural attenuation (MNA)**
  - **Groundwater monitoring;**
  - **ICs and Five-Year Reviews.**
- **Final Remedial Design/Remedial Action Work Plan (January 2014)**
- **Final Fact Sheet (February 2014)**

ISB Locations – IRP Site 1 Groundwater



Monitoring Well Network – IRP Site 2 Groundwater



Remedial Action Implementation Sequence

Well Installation

- Installation of groundwater monitoring and injection wells at locations within IRP Site 1, in the Intermediate Area downgradient from IRP Site 1, and near the Station Boundary for both IRP Site 1 and IRP Site 2.

Baseline Monitoring

- Groundwater sampling to establish baseline conditions prior to the implementation of the remedies (ISB and MNA).

Amendment Injections

- Injection of in-situ bioremediation amendments into the groundwater to stimulate biodegradation of perchlorate. These amendments include food-grade emulsified vegetable oil (EVO) and food-grade high-fructose corn syrup (HFCS).

Remedial Action Implementation Sequence

Performance Monitoring

- Routine groundwater monitoring will be conducted to evaluate the effectiveness of the remedies.

IC Implementation

- ICs will be implemented as part of the remedies to limit exposure of future landowner(s) and/or users to perchlorate- and VOC-impacted groundwater and to maintain the integrity of the remedial components such as monitoring wells.

Reporting

- Periodic reporting will be conducted during the implementation of the remedies. Once sufficient data are obtained, a long term monitoring plan will be developed and a formal determination will be made that remedies for IRP Sites 1 and 2 are operating properly and successfully. In addition, the protectiveness of the remedies will be evaluated and reported every five years.

Status of Major Remedial Action Activities

Activity	Status
Pre-Design Investigations	
Supplemental Groundwater Monitoring	Completed January 2013
Feasibility Evaluation for Direct Push Technology at the Intermediate Area	Completed January 2013
Remedial Action Activities	
Remedial Action Fact Sheet	Issued February 2014
Construction Kick-off Meeting	Held on March 06, 2014
Site Preparation • Geophysical Survey • Land Survey • Biological Survey • Munitions Anomaly Avoidance Within Site 1	Completed March 2014
Installation of Injection/Monitoring Wells	Planned completion – May 2014
Baseline Groundwater Monitoring	Planned in April/May 2014
Substrate Injection	Planned in May/June 2014
Performance Monitoring	Planned start date – June 2014

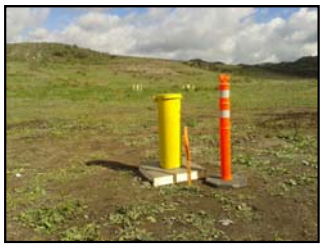
Well Installation Photographs

Drilling of 02-NEW40 with Limited Access Rig

Drilling of 01-EW09 with CME-95 Rig

Well Installation Photographs

Setting Conductor Casing at 02-IW07



Finished Aboveground Well Completion

Soil Samples

Next Steps

- **Complete Remedial Action Activities**
  - Baseline monitoring
  - Substrate injection
  - Performance monitoring and reporting
  - IC implementation
- **Interim Remedial Action Completion Report - 2014**

Questions?

Hangar 296 Radiological Site Inspection Update
Former Marine Corps Air Station El Toro, Irvine, CA

Marc P. Smits P.E., Navy Base Realignment and Closure (BRAC)
Remedial Project Manager

Tony Mason, Cabrera Insight, JV
Certified Health Physicist

23 April 2014

OVERVIEW

- HANGAR 296 BACKGROUND
- CONCEPTUAL SITE MODEL
- PROJECT OBJECTIVES
- PROJECT APPROACH
- COMPLETED FIELD ACTIVITIES
- REMAINING FIELD ACTIVITIES
- NEXT STEPS
- SCHEDULE

HANGAR 296 BACKGROUND

MCAS EL TORO
BASE LOCATION

HANGAR 296 BACKGROUND

HANGAR 296 LOCATION

HANGAR 296 BACKGROUND

- Built in late 1944 through early 1945
- Agency Concurred Historical Radiological Assessment (HRA) issued in May 2000
  - Radium Paint Room
    - Used for aircraft refurbishment operations
    - In operation from April 1949 to December 1950 (approximately 19 months)
    - Contaminant of Concern (COC): Radium-226 (^{226}Ra)
  - Two Additional Storage Areas
    - Contained helicopter safety equipment containing sealed strontium-90 (^{90}Sr)
    - COC: ^{90}Sr

HANGAR 296 BACKGROUND

- Radiological surveys and sampling were conducted of the:
  - radium paint room
  - rooms adjacent to the radium paint room
  - above-ground piping adjacent to the radium paint room
  - exterior sanitary/industrial waste manholes
- Results supported the historical assessment of limited use for radium materials (refurbishment activities), intact sealed sources, and a low potential for spread of contamination

CONCEPTUAL SITE MODEL

- ^{226}Ra used for short time on second floor of North Mezzanine
- ^{90}Sr sealed sources were stored in two rooms on first floor

PROJECT OBJECTIVES

- Determine if the Hangar 296 building structure requires further action or no further action (suitable for unrestricted radiological release)
- Determine what exterior pipeline is associated with the radium paint room (sanitary sewer pipeline/industrial waste pipeline)
- Determine if pipeline associated with radium paint room requires further action or no further action

PROJECT APPROACH

- Conduct a comprehensive Site Inspection (SI) based on the site conceptual model and project objectives
- Provide scientifically sound and defensible data to evaluate Hangar 296 and the associated piping for radiological contamination, if any.
- Utilize suitable field and laboratory measurement techniques in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)

COMPLETED FIELD ACTIVITIES

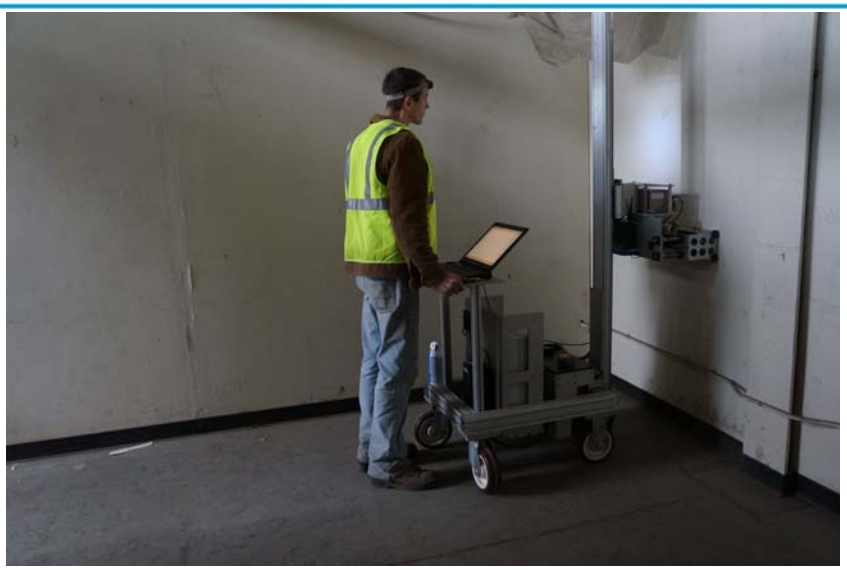
Building Survey and Sampling

MARSSIM Surveys:

- Reference (Background) Areas
- North Mezzanine Paint Room Area (2nd floor, elevator, stairs)
- Material Storage Area (helicopter safety equipment)
- Remainder of Hangar 296 (floor areas and offices)

Automated Floor Scanner

Automated Wall Scanning



COMPLETED FIELD ACTIVITIES

Investigation of Associated Piping

- Smoke test of associated pipeline system
- Removal of interior above-ground and below-ground piping
- Removal of soil around below-ground piping
- Survey and sampling of below-ground trench
- Survey and sampling of soil removed from trench
- Sampling of material collected from inside the piping
- Sampling of sediment from associated manholes

Screening Pad Radiological Survey

Smoke Test of Interior/Exterior Piping

Scanning of Sanitary Sewer Manhole

Scanning Interior Pipeline

REMAINING FIELD ACTIVITIES

- California Department of Public Health confirmation samples
- Backfill trenches
- Final radiological surveys (equipment, materials, screening pad)
- Disposal of interior and exterior piping
- Ship equipment and materials offsite

NEXT STEPS

- Perform MARSSIM final status statistical evaluations for the reference area, structure survey units, soil survey units, and all qualitative piping survey data
- Prepare SI Report which includes a Final Status Survey Report (FSSR) documenting survey results and providing recommendations regarding unrestricted radiological release

SCHEDULE

Site Inspection Report/FSS Report

– Draft Site Inspection Report/FSS Report	7 July 2014
– Draft Final Site Inspection Report/FSS Report	5 December 2014
– Final Site Inspection Report/FSS Report	5 February 2015

ACRONYMS

BRAC	**Base Realignment and Closure**
COC	**Contaminant of Concern**
FSSR	**Final Status Survey Report**
HRA	**Historical Radiological Assessment**
MARSSIM	**Multi-Agency Radiation Survey and Site Investigation Manual**
NAVFAC	**Naval Facilities Engineering Command**
^{226}Ra	**radium-226**
SI	**Site Inspection**
^{90}Sr	**strontium-90**
URR	**Unrestricted Radiological Release**