

MINUTES  
NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH  
RESTORATION ADVISORY BOARD (RAB)  
AND COMMUNITY MEETING  
November 13, 2002

Participants:

Bradley, John / U.S. Fish and Wildlife Service (USFWS)  
Carmody, Jack  
Clarke, Dean / Orange County Health Care Agency  
Garrison, Kirsten / CH2M HILL  
Hirbawi, Isaac / Department of Toxic Substances Control (DTSC)  
Le, Si / Southwest Division, Naval Facilities Engineering Command (SWDIV)  
Mirick, R.A. /U.S. Navy Captain, Commanding Officer, NAVWPNSTA Seal Beach  
Monroe, Bruce  
Schilling, Bob / Bechtel National, Inc.  
Smith, Gregg / NAVWPSNTA Seal Beach Public Affairs Officer (PAO)  
Voce, Mario

WELCOME

At 7:10 p.m., S. Le, Remedial Project Manager for the Installation Restoration (IR) Program, began the meeting by welcoming participants. S. Le indicated that he would be sitting in for Pei-Fen Tamashiro, the Navy Co-chair, for the evening. He also indicated that Lindi Willhite, the Community Co-Chair had indicated she would be attending, but had not yet arrived. G. Smith, the Public Affairs Officer (PAO) for NAVWPNSTA Seal Beach was introduced and S. Le indicated that the Commanding Officer for NAVWPNSTA Seal Beach, Captain Mirick, was scheduled to attend.

Participants were encouraged to direct any questions regarding the IR Program to P. Tamashiro, the Navy Co-Chair, who would be back in the office on Thursday, 14 November, or G. Smith, the PAO.

S. Le described that he would be presenting a status update on the ongoing IR Program followed by two presentations: (1) phase II pilot testing of bioaugmentation and co-metabolic oxidation to increase the effectiveness of enhanced lactate bioremediation at Site 40, and (2) the groundwater monitoring work plan at Sites 4, 5, 6, and 7.

PROJECT HIGHLIGHTS

S. Le provided the RAB with an overview of the progress at the NAVWPNSTA Seal Beach's IR Program sites. The following sites were discussed:

- Site 5- Fill Disposal Area, Removal Action
- Site 7 - Station Landfill, Engineering Evaluation and Cost Analysis (EE/CA) and Action Memorandum (AM)
- Site 73 - Water Tower Area, EE/CA and AM
- SWMU 24 - Demilitarization Facility, EE/CA, AM, and Removal Action

- Site 14 - Abandoned Leaking Gasoline Underground Storage Tank (UST), Baseline Groundwater Investigation
- Site 40 - Concrete/Pit Gravel Area and Site 70 - Research, Testing, and Evaluation (RT&E) Area, Groundwater Monitoring Program
- Site 40 and Site 70 Feasibility Study, Proposed Plan, and Record of Decision (ROD)
- Site 40 and Site 70 Pilot Testing
- Site 74 – Skeet Range, Tier II Ecological Risk Assessment
- Site 4 – Perimeter Road, Site 5 – Clean Fill Disposal Area, Site 6 – Explosives Burning Ground, and Site 7 – Station Landfill, Groundwater Monitoring Program

Copies of the Project Highlights slide presentation were made available as handouts at the meeting.

Questions and answers made during and after the Project Highlights presentation are summarized below:

**Slide 4**

**Question:** Will a monitor be onsite while the removal action is conducted at Site 73?

**Answer:** Yes. A Native American monitor and archeological monitor will be onsite during soil removal.

**Slide 6**

**Question:** Please repeat what you said regarding fueling activities at Site 14. Based on the data collected, what is the probable source of contamination?

**Answer:** Based upon the data collected during the baseline groundwater study in 2000 and subsequent groundwater investigation and monitoring requested by the Regional Water Quality Control Board (RWQCB) and conducted in the first three quarters of 2002, a decreasing trend in contaminant concentrations was observed. However, fourth quarter groundwater sampling conducted in September/October 2002 showed an increase in contaminant concentrations.

**Question:** Were the wells monitored during fourth quarter 2002 the same wells monitored in the previous groundwater sampling activities?

**Answer:** Yes, some of the wells monitored during fourth quarter sampling were located near the previous monitoring well locations. It is thought that the increase in contaminant concentrations is due to a release from fueling operations and not actively leaking gasoline tanks or pipes.

**Question:** Are the gasoline pipes located to the west of the actual fueling tanks?

**Answer:** I am not sure of the exact location. They are in the general direction of the harbor.



**Question:** So the increase in contaminant concentrations is not due to current fueling operations?

**Answer:** No, I should have clarified what the probable source of the increase in contaminant concentrations was in the beginning. It is thought that the source is from past bulk fueling operations, not current fueling operations.

The Navy has begun talks with the regulatory agencies about the possibility of introducing oxygen into the contaminated area to promote microbial consumption of the petroleum plume. Results would be monitored to determine if this activity is successful or if a Corrective Action Plan (CAP) is needed. However, prior to any decision, the source of the contamination spike will be determined and verified.

#### PRESENTATION – GROUNDWATER MONITORING WORK PLAN FOR IR SITES 4, 5, 6, AND 7

S. Le introduced B. Schilling, the Project Manager from Bechtel National, Inc., who presented the groundwater monitoring work plan for Site 4 – Perimeter Road, Site 5 – Clean Fill Disposal Area, Site 6 – Explosives Burning Ground, and Site 7 – Station Landfill.

Copies of the slide presentation were made available as a handout at the meeting. In addition, B. Schilling noted that a list of acronyms/abbreviations and a glossary of terms were available to further explain project terms and assist participant understanding during the technical presentations. The questions and answers posed during after the presentation are summarized below:

#### **Slides 7-9**

**Question:** With respect to the groundwater monitoring plan at Site 5, is monitoring proposed because of past contamination reported at the site or because of contaminants migrating to the site from an upgradient location?

**Answer:** Monitoring is proposed because of contamination reported in soil and groundwater at Site 5 during previous investigations.

**Question:** Did the grading activities conducted at Site 5 to convert it to salt marsh habitat allow any contamination to enter the National Wildlife Refuge (NWR)?

**Answer:** No, all contaminated soils at Site 5 were removed prior to grading activities.

**Question:** Isn't it more accurate to describe the materials removed from Site 5 as construction debris, unexploded ordnance, and clean fill?

**Answer:** Yes, that is true. Some low level contamination was detected in the clean fill soil at Site 5 during previous investigations. Although not biologically available in the soil, this contamination could leach into the groundwater and then migrate offsite with the groundwater until it

reaches the surface waters of the NWR. At that point, it would become biologically available. This soil/groundwater transport model, along with the contaminants reported in the groundwater at Site 5, provided the basis for recommending confirmatory groundwater monitoring.

**Question:** Has any testing of the railroad tracks (ballast) to the northwest of Site 5 been conducted?

**Answer:** No, not to my knowledge.

**Question:** Is it possible that there are contaminants in the soil that could leach into the groundwater and migrate offsite or into the NWR? Possibly the chemicals that were used to treat the railroad ties or chemicals from the trains that traveled along the tracks?

**Answer:** Several soil samples were collected along the western boundary of Site 5 as part of the Removal Site Evaluation (RSE). As I recall, the analytical results from those samples were similar to those from other soil samples collected throughout the site. Any contaminants particularly unique to the railroad tracks would have shown up in those samples and nothing of concern was found. There is nothing in the analytical data to suggest that the railroad tracks are a source of any soil or groundwater contamination at Site 5.

#### **Slide 15**

**Question:** Was groundwater at this site tested at least once?

**Answer:** Yes, and in some cases more than once.

**Question:** Is the contamination migrating? For instance, did samples taken at one well result in high concentrations during one sampling period and lower concentrations during the next sampling period?

**Answer:** Existing data is not sufficient to determine if contaminants are migrating. This will be determined as part of the groundwater monitoring program.

#### **Slide 17**

**Question:** Is installation of a groundwater monitoring well dependent on the timing of remediation activities conducted at these sites?

**Answer:** No. Remediation is not recommended at any of these sites, however, there is a removal action recommended for Site 7. No new wells are planned at Site 7.

**Question:** I thought there was also some cap improvement at Site 7 in addition to a removal action?

**Answer:** All the activities proposed at Site 7 (including the proposed supplementing of the existing soil cover) are characterized as removal

actions, not remediation activities.

**Slide 20**

**Comment by M.Voce:**

I would still feel more comfortable if some soil borings were conducted underneath the railroad that runs along the northwest portion of Site 5. Maybe at depths of 6 inches, 1 foot, 2 feet, and 4 feet below ground surface (bgs). If nothing else, this data could serve as a control group to make a determination as to whether there should be a concern over contamination in the soil or potential for contamination to leach into the groundwater and migrate offsite.

**Answer:**

Soil and groundwater sampling was conducted at Site 5 near this area during the RSE, and there was nothing in the analytical data to suggest that the railroad tracks are a source of soil or groundwater contamination at Site 5.

**Comment by G. Smith:**

I think it would be helpful to look at data collected from Site 1. The site involved cleaning up a wastewater settling pond, and an entire section of railroad track had to be removed and worked through to ensure that the contamination was cleaned up. We could use the data collected at Site 1 along the railroad tracks as a comparison site for concern over contamination along the railroad tracks adjacent to Site 5.

**Comment by J. Bradley:**

Is your concern that unknown contamination from train-related chemicals applied along the border of Site 5 is present in the soil beneath the railroad tracks and could leach into and contaminate the groundwater?

**Answer:**

If the contamination was present and leached into the groundwater, it would have been detected in groundwater samples collected downgradient during the RSE.

**Comment by the Navy:**

Your point is noted that consideration of the railroad track area adjacent to Site 5 as a potential source of contamination should be addressed. The Navy will discuss the previous site investigation conducted at Site 1 with Foster Wheeler (the Navy's remedial action contractor) and report back to the RAB at the January 2003 meeting. After discussions with Foster Wheeler concerning data collected at Site 1, the potential to compare data from both sites to address M. Voce's concerns will be determined.

**Slide 26**

**Question:**

So decision rules for Sites 4, 5, 6, and 7 are not based on drinking water standards?

**Answer:**

No, these sites are near the NWR, where the groundwater interfaces with the surface water body. Because of this, contamination becomes an aquatic ecological receptor issue and the decision rules are designed to

be protective of aquatic ecological receptors

**Question:** How will groundwater wells be abandoned once monitoring is completed? Will they be capped in place or removed entirely?

**Answer:** This type of well is removed entirely with a hollow-stem auger and grouted with a cement betonite mixture.

BREAK

S. Le announced that there would be a 10-minute break and indicated that the Site 40 Pilot Test Work Plan Addendum presentation would be given after the break.

PRESENTATION – PILOT TEST WORK PLAN ADDENDUM, SITE 40 - CONCRETE/PIT GRAVEL AREA

Copies of the slide presentation were made available as a handout at the meeting. The questions and answers posed during after the presentation are summarized below:

**Slide 14**

**Question:** What happens to the level of bioactivity at 30 feet bgs? I know that bioactivity decreases as depth increases and normally aerobic activity can only occur a few feet bgs?

**Answer:** The biological activity that was successfully stimulated during the pilot test was from anaerobic microorganisms. The anaerobic conditions were created by the addition of sodium lactate. The depth of the test cell was 35 feet bgs, and we produced significant biological activity at that depth. These organisms are frequently found at much greater depths.

**Question:** And tests have been conducted to verify the organism's existence at these depths?

**Answer:** Yes, these microorganisms are indigenous to the site.

**Question:** The lower end of the plume has been detected at 66 feet bgs? Are these microorganisms available below that depth?

**Answer:** Yes, we had to limit the size of the test cell to determine if the test itself was going to work, but there is no reason to believe that the organisms wouldn't be present at greater depths.

**Slide 15**

**Question:** For the co-metabolic oxidation technology, can conditions with methane and no added oxygen succeed in the complete oxidation of cis-1,2-dichloroethene (DCE)?

**Answer:** The reaction itself requires oxygen, but conditions in the test cell were fairly oxygen deprived. The test cell will become oxygenated again as new groundwater moves into the test cell over time.

**Slide 16**

**Question:** The slide states that complete dechlorination of chlorinated ethenes occur to form ethene. Should the slide say ethane?

**Answer:** No, the slide correctly states that the dechlorination process would form ethene.

**Slide 17**

**Question:** When you speak of the 10 successful field applications of KB-1™, were these applications associated with fresh water, brackish water, or salt marsh conditions?

**Answer:** Groundwater conditions varied for the various field applications across the United States.

**Slide 19**

**Question:** Can you clarify what this slide is saying?

**Answer:** The point of pathogen testing is to make sure that we don't introduce something into the aquifer that could be infectious to humans, animals, or plants. The test verifies that the culture is not infected with any of the pathogens listed in the table.

**Question:** What size is the culture? My concern is the larger the organism source, the greater the chance for cross-contamination.

**Answer:** A slide will be presented later in the presentation that addresses your question in terms of the bacteria source and culture size.

**Slide 29**

**Question:** Has it been determined that bioaugmentation is the most economic solution for Site 40?

**Answer:** There are not a lot of alternatives. Pump and treat was not considered viable and a more aggressive approach, such as chemical oxidation, doesn't compare cost-wise to bioaugmentation.

**Question:** I was more specifically speaking to promotion of complete reductive dechlorination using bioaugmentation as compared to co-metabolic oxidation. Which is the most economic solution?

**Answer:** Bioaugmentation is much less expensive.

**Question:** With respect to costs, I understand that this Phase II pilot test is required but it was not initially included in preliminary costs estimated for Phase I. How do the costs associated with this additional Phase II pilot test compare to the pilot test conducted in Phase I.

**Answer:** The largest cost was the initial Phase I pilot test. There were many costs associated with the injection of sodium lactate into the test cell. There is only a nominal cost associated with the injection of microbes in Phase II.

**Question:** With respect to Site 70, I understand that peroxide injected during pilot testing tends to sterilize the microbial environment. Would the bacterial environment at Site 70 need to be re-established or would the population recover after the effects of the peroxide have subsided?

**Answer:** Because I am not an expert in this area, I can only answer from my understanding of the groundwater conditions at the site. Once the chemical oxidation process is complete, the next step is to pump and treat throughout the plume. Pump and treat activities will cause groundwater migration into the area, introducing naturally occurring organisms. I will verify this response and talk to an expert on the topic



and provide a more complete response in the meeting minutes.

***The following statement is intended to provide a more complete response to the question:***

To chemically oxidize the chlorinated solvents present in groundwater within the presumed source area at Site 70, hydrogen peroxide and catalyst were injected into the test cell during pilot testing. This process produces oxidizing conditions within the aquifer that could inhibit natural biodegradation of the chlorinated solvents, which is most favorable under reducing conditions. The oxidizing conditions resulting from the injection of hydrogen peroxide and catalyst are expected to be temporary. As groundwater from the surrounding area infiltrates the test cell (due to natural groundwater flow or pumping and treating the aquifer), oxidation-reduction levels in the aquifer should eventually return to pre-test conditions, and biological activity should resume. Two of the wells used to monitor these conditions within the test cell during the pilot test, have been added to the groundwater monitoring program to monitor changes in the oxidation-reduction levels over time.

#### COMMUNITY FORUM

S. Le opened the Community Forum. The participants were asked if they had any additional comments or issues. No comments or issues were raised.

It was announced that no RAB meeting would be held in December due to the holidays and that the next RAB Meeting would be held in January 2003. A presentation on the groundwater monitoring results at Site 14 - Abandoned Leaking Gasoline Underground Storage Tank (UST) will be presented.

One question was raised with regard to the January 2003 RAB meeting:

**Question:** So we will definitely have a meeting in January?

**Answer:** Yes, that is the plan right now. The presentation on Site 14 is currently scheduled to be presented, however if the Navy cannot meet with the regulatory agencies to discuss the corrective action proposal, then the presentation may have to be delayed. Notification of the January 2003 RAB meeting and scheduled presentation will be provided by the Navy.

#### ADJOURNMENT

S. Le concluded the meeting by thanking everyone for attending and reminding the attendees to please return their badges and sign-in before leaving. The meeting was adjourned at 9:00 p.m.

Note: This is a meeting summary, not an actual transcript.

