FINAL
NAVAL AIR STATION ALAMEDA
Restoration Advisory Board (RAB) Meeting Minutes

www.bracpmo.navy.mil
Building 1, Suite 140, Community Conference Center
Alameda Point
Alameda, California

September 2, 2010

The following participants attended the meeting:

Co-Chairs:

Derek Robinson	Base Realignment and Closure (BRAC) Program Management Office (PMO) West, BRAC Environmental Coordinator (BEC), Navy Co-chair
Dale Smith	Restoration Advisory Board (RAB) Community Co-chair

Attendees:

RAB Members

George Humphreys	Joan Konrad	James Leach
Jean Sweeney	Jim Sweeney	Michael John Torrey

Community Members

Susan Galleymore	Gretchen Lipow

Navy Members

Bill McGinnis	Navy Lead Remedial Project Manager (LRPM)
Curtis Moss	Navy Project Manager (PM)

City of Alameda Representatives

Peter Russell	Alameda Reuse and Redevelopment Authority (ARRA)

Regulatory Agencies

Anna-Marie Cook	U.S. Environmental Protection Agency (EPA)
James Fyfe	California Environmental Protection Agency Department of Toxic Substances Control (DTSC)
Marcus Simpson	DTSC
Karen Toth	DTSC
John West	San Francisco Bay Regional Water Quality Control Board (Regional Water Board)

Contractors

John McGuire	Shaw Environmental, Inc. (Shaw)
John McMillan	Shaw
Radhika Sreenivasan	ChaduxTt
Tommie Jean Valmassy	ChaduxTt

The meeting agenda is provided as Attachment A.

MEETING SUMMARY

Derek Robinson (Navy Co-chair) called the September 2010 former Naval Air Station Alameda (Alameda Point) Restoration Advisory Board (RAB) meeting to order at 6:30 p.m.

I. Approval of August 2010 RAB Meeting Minutes

Dale Smith (RAB Co-chair) asked for comments on the August 2010 RAB meeting minutes. RAB members provided comments, which will be incorporated into the final set of minutes for August 2010.

George Humphreys (RAB member) noted that the RAB comments on the draft final feasibility study (FS) for operable unit (OU)-2A had been distributed separately from the meeting minutes package and need to be included. Ms. Smith asked Mr. Robinson to provide the copies of the signed RAB final comment letters for OU-2A and OU-2B at the next meeting and include these letters in the final minutes package for August. Mr. Robinson agreed.

The August 2010 RAB meeting minutes were approved with the requested modifications.

II. Co-Chair Announcements

Ms. Smith noted that she had received the City's *comments on the OU-2A draft final FS* (Attachment B-1). She requested that the City provide hard copies or electronic copies of its comment letters to all RAB members in the future.

III. OU-2B Treatability Study

Mr. Robinson introduced Curtis Moss (Navy PM) to begin the presentation on the *OU-2B Treatability Study* (Attachment B-2).

Mr. Humphreys asked why Building 360 is not a part of OU-2B on the map provided in the handout. Mr. Moss said that Building 360 is a part of OU-2B but the focus of the treatability study within OU-2B is Building 162, further west toward Seaplane Lagoon.

During the review of slide 3, Jean Sweeney (RAB member) asked if the Navy believes that contamination was carried by the sewer lines. Mr. Moss said that the industrial waste lines were connected to the sewer lines in the 1950s. Ms. Smith asked if Mr. Moss was referring to storm sewer lines or sanitary sewer lines. Mr. Moss said that the industrial waste lines were connected to the storm sewer lines. Ms. Smith asked why the Navy is reducing the total volatile organic compound (VOC) concentration exceeding 10 milligrams per liter (mg/L) to 1 mg/L. She added that at Building 5, the Navy is reducing the VOCs exceeding 10,000 micrograms per liter. Mr. Moss said that the concentrations are the same, and the difference is in the units expressed. He added that the Navy is targeting a 90-percent reduction in concentration at the hot spots.

During the review of slide 5, Ms. Sweeney said that when high heat is applied to brackish soil, salty soil will be left behind. Mr. Moss agreed and said that during the treatability study, the Navy would examine this technology, evaluating the change in electrical resistivity with salt concentration.

During the review of slide 6, Mr. Moss explained that the Navy and its contractors are planning to set up a system in the shape of two hexagons adjacent to each other to cover the hotspot. He added that the electrodes will go down to a 30-foot depth. Ms. Sweeney asked if the plume depth is 30 feet. Mr. Moss said yes. Ms. Sweeney asked if the Navy will use sheet piles. Mr. Moss said that sheet piles will be used but not along the entire length of the hexagon. Each electrode will have a 10-foot sheet pile for efficient subsurface heating. Mr. Moss added that the treatability study design is similar to the design used to address plumes 5-1 and 5-3 at Building 5. Anna Marie Cook (EPA) asked if the equipment at Building 5 will be reused at Building 162. Mr. Moss said yes.

Mr. Humphreys asked about a possibility of generating chlorine gas from sodium chloride (salt water) due to passing of electric current. Mr. Moss said that he would find out about the possibility of generating chlorine gas. James Leach (RAB member) asked for the predicted

energy requirement for the study. Mr. Moss said that the energy requirement will be approximately one million kilowatt hours per month for about 3 to 5 months. He added that this prediction is based on the energy data from Building 5. Mr. Humphreys said that the electrical current requirement of this plume should be higher because of the increased electrical conductivity and lower resistance due to salt. Energy requirements also should be higher because the heat capacity of the salt will require more heat to raise the soil temperature. Mr. Leach asked about the capacity of the generator. Mr. Moss stated he did not know but would find out the capacity. Marcus Simpson (DTSC) asked about the distance between the electrodes. Mr. Moss answered that the distance from node to node will be 20 feet.

Ms. Cook noted that the carbon footprint for the overall life of the six-phase heating project for Site 5 is low compared to a number of remedies that run for 15 to 30 years. Ms. Cook said that she was asked if cycling in off-peak hours had been considered. Ms. Cook stated that she did not know whether this would be possible but wanted the Navy to consider running the system in off-peak energy consumption hours if possible. Mr. Moss agreed to look into this suggestion. Ms. Cook said that OU-2B has presented problems affecting utility corridors and the power center of Alameda Point. Mr. Moss said that no electrical or water lines run through that utility corridor, only a storm sewer line. He added that this technology would be examined in areas of OU-2B unaffected by the utility corridors.

During the review of slide 7, Ms. Smith noted that the handout was missing the blowup of the slide. Mr. Moss said that he would email the presentation to the RAB. Ms. Smith asked if the building is occupied. Mr. Moss said that the building is occupied by the Alameda Municipal Power Company. Mr. Humphreys asked if the Navy had tested under the building to define the plume as shown on the figure. Mr. Moss said that during the remedial investigation, hydro-punch groundwater sampling had occurred inside the building. He added that the plume is well defined by the multi-level monitoring wells in the alley immediately south of Building 162.

Mr. Simpson asked about a chance that the vapor extraction wells would not capture the contaminant vapors. Mr. Moss explained that a vacuum test to calculate the radius of influence would occur before heating, and the Navy would ensure that the radius of influence overlaps each vacuum's vapor extraction wells. He added that in the field, the Navy would ensure adequate capture of all vapors by the extraction wells.

Mr. Humphreys asked how the Navy would prevent people from stealing the copper wires. Mr. Moss said that a laser-activated alarm and a 10-foot fence with barbed wire would be in place. He added that security lights would be present as well.

During the review of slide 8, Mr. Moss noted that the draft work plan (WP) is scheduled for October 1, and a 60-day review period would follow. Mr. Robinson encouraged the RAB and community to review and comment on the document.

IV. Fieldwork Update

Mr. Robinson introduced Bill McGinnis (Navy LRPM) to begin the presentation on the *Fieldwork Update* (Attachment B-3). Mr. McGinnis began the presentation and noted that he would be talking about current field activities at six sites.

Site 14 Groundwater Monitoring [slide 3]: Mr. McGinnis noted that the chemicals of concern at Site 27 are VOCs (slide 6). James Fyfe (DTSC) asked which oxidant had been used for the in-situ chemical oxidation (ISCO). Mr. McGinnis said that he believed persulfate had been used.

Site 26 ISCO to in-situ bioremediation (ISB) [slide 5]: Mr. McGinnis noted that the chemicals of concern at Site 26 are VOCs. Ms. Smith asked if post ISCO monitoring had been conducted quarterly. Mr. McGinnis said yes. He added that a higher frequency of sampling post-ISCO is conducted for a year to watch for rebound; then the frequency of sampling is semi-annually. Ms. Cook said that the monitoring had been more frequent than quarterly in the beginning, given that three rounds of sampling had been performed prior to July. Mr. McGinnis agreed that the initial post-ISCO monitoring had been more frequent than quarterly.

Mr. Humphreys asked what had happened to the hydrocarbons mixed in the plume that had caused a problem with the Fenton's reagent. Mr. McGinnis said that low amounts of hydrocarbons had interfered with the ISCO treatments at the site. He added that the ISCO would treat some petroleum, although this is not a target for the ISCO. Mr. McGinnis stated that he would obtain more information on the fate of hydrocarbons at the site from the RPM.

Mr. McGinnis said that the Navy would be transitioning from ISCO to ISB in accordance with the record of decision (ROD). Ms. Smith asked what would be done in ISB. Mr. McGinnis said that a bio-augmentation culture and emulsified vegetable oil would be injected to stimulate bacterial growth and remediate the VOCs.

Site 28 [slide 8]: Mr. McGinnis noted that the chemicals of concern at Site 28 are metals, especially copper. The goal of the remediation at this site is to prevent metals from entering the Oakland Inner Harbor by injecting a metal remediation compound (MRC). Mr. Leach said that ozone is very effective in precipitating metals. Ninety-five percent of ozone injected goes into the ground and the byproduct is oxygen. He added that ozone is less toxic and readily available. Mr. Leach asked why ozone is not being used instead of MRC. Mr. McGinnis said that using ozone is another treatment technology that could have been evaluated in the FS as an alternative. Mr. Robinson acknowledged Mr. Leach's comment and said that evaluating the use of ozone cannot be done at this stage for Site 28, but he would ask the contractors to consider it at other sites where applicable.

Ms. Smith asked if the Navy is sampling for arsenic. Mr. McGinnis said yes. He added that the MRC will help precipitate all metals and is not limited to copper. Ms. Cook said that the MRC compound is not being introduced into a channel all along the shoreline, which would treat any metals going out into the Bay. She added that MRC is being targeted for areas with high copper

contamination. Because arsenic is a contaminant inland, EPA had a concern that the arsenic would escape to the Bay. She added that the Navy has agreed to install four wells along the shoreline to look for arsenic, in addition to the standard monitoring for the MRC.

Site 1 Remedial Design/Characterization [slide 10]: Joan Konrad (RAB member) said that covering the contamination at Site 1 is a questionable solution from a public standpoint. Ms. Konrad asked why contamination is not being removed from the site, and was concerned that the contamination would leak out to the Bay. Mr. Robinson said that the Site 1 remedy had been selected because it meets all of the cleanup criteria, and that the regulatory agencies agree and had signed off on the remedy. He added that the Navy will take all measures to ensure that the contamination does not leak out into the Bay. Mr. Robinson noted that the groundwater at Site 1 is being treated. He said that the cost for excavating the soil with radiological waste had been estimated at $800 million in the FS. The current alternative (capping) is suitable for open space recreational use. Ms. Konrad stated that although money is an important factor, capping is not an appropriate solution. Mr. McGinnis said that the remedy had been selected in the ROD and had been accepted by the Base Closure Team (BCT). He noted that the City had requested that the landfill be excavated in its entirety, and that alternative had been evaluated but not selected. He noted that covering landfills is not uncommon.

Mr. Humphreys said that according to the City's letter to the Navy, the Navy had drilled into a line of barges, and the burn area extends farther south than anticipated. He asked if this was true and, if so, what the Navy was planning to do. Mr. Robinson said that the information is true and the Navy is conversing with the BCT to determine the plan for addressing this finding. He said that the plan is at a primitive stage and the Navy will make changes to the remedial design as appropriate. He added that the contractor will analyze the sampling results and estimate a revised remediation cost. Ms. Sweeney asked if the burn area extended south of Area 1B. Mr. McGinnis said yes.

Ms. Konrad asked about the City's current position on capping at Site 1. Peter Russell (ARRA) said the City's position is that the landfill should be excavated instead of covered. Mr. McGinnis said that the Navy is aware of the City's preference. He added that the remedy selected is protective of human health and the environment.

Ms. Smith asked if the Navy had determined the southern limit of the burn area. Mr. McGinnis said he did not know the answer.

Building 346 [slide 12]: Mr. McGinnis noted that Building 346 had posed a radiological concern and is being deconstructed. He added that this building is west of Building 5. Ms. Sweeney asked if the Navy would test underneath the concrete pad. Mr. McGinnis said the Navy is not planning to screen for radiological waste under the concrete pad because contamination is not anticipated according to the conceptual model. Ms. Sweeney asked if there are any holes in the slab through which the contamination could percolate. Mr. Robinson said he did not know for certain, but that if any holes had been found, they would have been evaluated. Mr. Humphreys

asked if radiological screening would be necessary if the slab was removed. Mr. McGinnis said no screening would be required.

V. Community and RAB Comment Period

Ms. Smith asked for any RAB comments. Ms. Sweeney said that all the debris piles on the apron near the Seaplane Lagoon had been picked up and the area looks clean. She asked whether the service station building at Site 7 had been demolished to get to the burn area. Mr. Robinson said that a contracting issue has caused a delay in that work.

Ms. Sweeney asked Ms. Cook if she had an update on Building 5. Ms. Cook said that EPA is close to finalizing the report. She added that the project is complicated and a number of unknowns are involved in the calculation. The EPA contractor is performing a "back of the envelope" cost and carbon footprint estimate. Ms. Cook said that demolishing and refurbishing the building are equally expensive. The report will include costs for demolition, lead encapsulation, lead abatement, and steel recycling. The appendix of the report will include examples of a refurbished building similar to Building 5. Ms. Cook said that the report would be available by the end of September, and she would prefer to furnish electronic copies of the report to the RAB but could provide hard copies if needed. Mr. Humphreys said that in Alexandria, Virginia, a mile-long torpedo factory active during World War I had been refurbished into an artist studio and retail shops. Ms. Cook said she would look into this building.

Ms. Konrad asked if the Navy knew about the Veteran Administration's (VA) new site plan. Mr. Robinson said he could find out and provide an update at the next meeting.

Mr. Humphreys asked about the area along the estuary called "Department of Interior – Public Benefit Conveyance" near where SunCal had shown recreational facilities. Mr. Humphreys asked why the area is being transferred to the Department of Interior (DOI). Mr. Robinson noted that the area had already been transferred to the DOI but will eventually be given to the City with intent that it will be an open space; standard procedure is to transfer to the DOI first. Dr. Russell asked if the transfer had been made to the DOI. Mr. Robinson said yes. Mr. Humphreys referred to another similar area on Site 30 called "Department of Education – Public Benefit Conveyance." Mr. Robinson said that the area would be transferred to the Department of Education, and eventually given to the Alameda School District. Mr. Humphreys asked if the transfer had occurred. Mr. Robinson said no.

Mr. Humphreys noted a 60 Minutes episode about a failed retention dam at a coal-fired power plant in Tennessee. The retention basin was holding coal ash from the power plant, and failed, impacting the river. He said the residue from the coal gasification plant near the estuary at Alameda Point would have the same constituents and mineral residue as the coal ash in Tennessee. The constituents of the coal ash were determined to be elevated levels of arsenic, lead, mercury, and thallium. He added that these constituents have appeared at Alameda Point. The EPA is preparing regulations for ash in coal-fired power plants as a hazardous waste. Mr. Humphreys expressed belief that a number of these compounds termed as background at

Alameda Point are not naturally occurring and result from past human activities. Ms. Smith said that she agrees with Mr. Humphreys' concern regarding inaccurate background concentration determination at Alameda Point. Mr. Robinson said that the Navy had undertaken background studies to calculate the background levels for each of the compounds. He added that the Navy looks at cumulative risk in the risk assessments, which is inclusive of the background levels. He added that the risk assessment is conducted to be protective of human health and environment.

Mr. Humphreys noted that a few years ago the RAB had strongly urged that short-term remedies be selected, because the RAB does not want to wait 60 years for the contaminants to naturally attenuate or be cleaned up at Site 26. The RAB also previously had stated that the Navy's assumption for determining present value was skewed because high interest rates were used. He said that high interest rates diminish future cost, and thus the present value approach is invalid because the Government does not receive interest on the money in the future. Mr. Humphreys said that the RAB had offered comments to clean up the groundwater fully to remediation goals, not just address hot spots on a number of sites. He added that the RAB prefers that the Navy not conduct monitored natural attenuation (MNA) for more than 10 years. He asked about the intent of the presentation on groundwater technologies during the August RAB meeting. Mr. Robinson said that the purpose of the presentation on groundwater technologies had been to show where different technologies are more applicable. He added that the presentation had targeted treatment zones and applying aggressive treatments to highly contaminated plumes while using less aggressive treatment at less contaminated areas. Mr. Humphreys said that the plume at OU-2 is in the potential zone of drinking water supply. He asked if this would be cleaned up to drinking water standards and how many years would be required. Mr. Robinson said that the groundwater would be cleaned up to drinking water standards but did not know what the time frame would be because OU-2A and -2B are in the FS stage. Ms. Cook explained that the regulators had always chosen the most aggressive remedy wherever needed, and would not accept remedies that require 60 years to attain remedial goals in a medium concentration plume. She added that 80 percent of the remedies chosen at Alameda Point are aimed to achieve unrestricted use in less than 5 years. She said that the Navy is cleaning up sites to achieve unrestricted use wherever possible regardless of the reuse plan. Ms. Cook said that the Navy's or the regulator's interest is not to extend the remediation for a long time.

Susan Galleymore (community member) introduced herself as a writer. She indicated that her knowledge of the sites and the base had developed through reading the documents and attending public meetings. She claimed a lack of transparency in the documents about what actually happens in the neighborhoods once the sites have been transferred and the responsible party has moved out. Regarding the Site 1 remedy, Ms. Galleymore said that she is happy to see that the RAB consistently brings up the issue of not keeping the contamination in place. She said that she understands that the site is at the remedial design stage but thinks it important to consider health issues at other areas such as Midway Village have been covered up similarly. She added that people living in such an area may fall sick after 10 years. Ms. Galleymore shared her concern with the RAB members and said that leaving the contamination in place is an emotional issue for the community. She does not think the remedy at Site 1 is protective of people living in that area. Mr. Robinson said that Site 1 is designated to be open space, and residences will not be built on it. He agreed that covering the contaminant is not always protective in every landfill

at every site, but reiterated that he does feel, and the BCT agrees, this remedy at Site 1 is protective of human health and the environment, which is the priority of the Navy and the regulatory agencies.

Gretchen Lipow (community member) said that she works with the Alameda Public Affairs Forum, which is planning a forum on "*Parks for the People of Alameda*" on September 11, 2010. She added that one of the park ideas for the Northwest Territories came from Richard Bangert, a community member who sometimes attends RAB meetings. Ms. Lipow distributed the flyers for the forum and invited the RAB members to attend (Attachment B-4).

Mr. Humphreys asked how much money the Navy expects to spend in fiscal year 2010. Mr. McGinnis said the Navy has obligated $38 million for the current fiscal year.

VI. Meeting Adjournment

The meeting was adjourned at 8:45 p.m. The next RAB meeting will occur on October 7, 2010, at 6:30 p.m. at 950 W. Mall Square, Alameda.

Action Items

Action Items:	**Previous Item #/ Action Item Status/ Action Item Due Date:**	**Initiated by:**	**Responsible Person:**
1. Request for Presentations: **a.** Bayport sewer systems and change in the plumes over time. **b.** Site 26 cleanup.	1./ Pending/ To Be Determined	RAB	Mr. Robinson
2. Provide as-built specifications on the Site 5 and 10 storm drain replacement to Mr. Matarrese.	2./ Pending/ October 7, 2010	Mr. Matarrese	Mr. Robinson
3. Find out information about the Veteran Administration's (VA) new site plan, and provide an update.	0./ New/ October 7, 2010	Ms. Konrad	Mr. Robinson
4. Provide the RAB with signed copies of the RAB comment letters on OU-2A and OU-2B.	0./ New/ October 7, 2010	Ms. Smith	Mr. Robinson
5. Email the OU-2B Treatability Study presentation to the RAB members.	0./ New/ October 7, 2010	Ms. Smith	Mr. Moss
6. Provide information on the capacity of the generator to be used for the OU-2B Treatability Study.	0./ New/ October 7, 2010	Mr. Leach	Mr. Moss
7. Mr. Robinson will tell the team to ask contractors to evaluate the use of ozone to treat other sites, where applicable.	0./ New/ October 7, 2010	Mr. Leach	Mr. Robinson
8. Provide information on cleanup of the hydrocarbons at Site 26.	0./ New/ October 7, 2010	Mr. Humphreys	Mr. McGinnis

ATTACHMENT A

NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD MEETING AGENDA

September 2, 2010

(1 page)

RESTORATION ADVISORY BOARD

NAVAL AIR STATION, ALAMEDA

AGENDA

SEPTEMBER 2, 2010, 6:30 PM

ALAMEDA POINT – BUILDING 1 – SUITE 140
COMMUNITY CONFERENCE ROOM
(FROM PARKING LOT ON W MIDWAY AVE, ENTER THROUGH MIDDLE WING)

TIME	SUBJECT	PRESENTER
6:30 – 6:45	Approval of Minutes	Dale Smith
6:45 – 7:00	Co-Chair Announcements	Co-Chairs
7:00 – 7:40	OU-2B Treatability Study	Curtis Moss
7:40 – 8:10	Fieldwork Update	Bill McGinnis
8:10– 8:30	Community & RAB Comment Period	Community & RAB
8:30	RAB Meeting Adjournment	

ATTACHMENT B

NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD MEETING HANDOUT MATERIALS

B-1 City's comment letter on the OU-2A Draft Final FS. Distributed by Peter Russell, ARRA (8 pages)

B-2 OU-2B Treatability Study Presentation Handout. Distributed by Curtis Moss, Navy RPM (4 pages)

B-3 Fieldwork Update Presentation Handout. Distributed by Bill McGinnis, Navy LRPM (7 pages)

B-4 Parks for the People of Alameda, Alameda Public Affair Forum. Distributed by Gretchen Lipow, Community member (1 page)

ATTACHMENT B-1

CITY'S COMMENT LETTER ON THE OU-2A DRAFT FINAL FS

(8 pages)

Alameda Reuse and Redevelopment Authority

City Hall
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Alameda, CA 94501

(510) 747-4800
Fax: (510) 747-4805

August 23, 2010

Derek Robinson
BRAC Environmental Coordinator
BRAC PMO West
1455 Frazee Road, Suite 900
San Diego, CA 92108-4310

Re: Comments on July 7, 2010 *Draft Final Feasibility Study Report, Operable Unit-2A, Sites 9, 13, 19, 22, and 23, Alameda Point, Alameda, California*

Dear Mr. Robinson:

The Alameda Reuse and Redevelopment Authority (ARRA) appreciates the opportunity to comment on the Navy's July 7, 2010 *Draft Final Feasibility Study Report, Operable Unit-2A, Sites 9, 13, 19, 22, and 23, Alameda Point, Alameda, California* (*FS*). On February 2, 2010, Dr. Russell commented on several aspects of the revised draft version of the *FS*. Those comments did not reiterate many comments being made by the EPA, DTSC, and Water Board; however some of the Navy's responses to those agencies' comments are discussed below.

The ARRA has 10 specific comments. The specific comments are summarized briefly as follows:

1. Characterization of the nature and extent of contamination must be sufficient to estimate the costs of remedial action alternatives within a confidence interval of +50% to -30%.
2. Brady's 2008 SCAPS report does not conclude that the contamination by benzene and petroleum-related constituents east of the TRW is from a recent petroleum release.
3. *FS* referrals to the Petroleum Program for evaluation and remediation of petroleum-related constituents should identify the CAA or other component of the Petroleum Program addresses the contamination.
4. Revise the lead risk assessment assumptions to be consistent with those the BCT traditionally agrees are applicable to Alameda Point: 7% homegrown produce consumption and child blood lead 99th percentile limit.

5. More sampling and analysis does not increase the conservatism of risk assessment estimates, only their accuracy.
6. Revise homegrown produce intake assumptions to be consistent with those the BCT traditionally agrees are applicable to Alameda Point.
7. Revise the treatment criterion rating to "Poor" unless the alternative's technology includes treatment as a principal element, to be consistent with CERCLA.
8. Clarify how to know whether the *FS* is referring to an exact number or an approximate number when a value is given, for example, 10^{-6}.
9. Show the extent of TRW on *FS* figures.
10. Shortening the name of the treatment criterion for readability does not change the statutory preference for the alternative to include treatment as a principal element.

Specific Comments

1. Navy response to EPA General Comments 1 and 4.

The Navy's response focuses on whether the current delineation of the nature and extent of contamination at OU-2A is sufficient to develop and evaluate soil and groundwater remedial action alternatives. Regardless of whether appropriate remedial action alternatives can be developed and evaluated, the *FS* also must estimate the cost of each alternative within an accuracy of +50% to -30%. The extents of soil and groundwater contamination at OU-2A are not known well enough to estimate remedial costs with this level of accuracy. Specifically, if the extent of contamination in soil or groundwater is 15% greater in each direction from that shown on the *FS*'s figures, then the resulting volume needing remediation increases by more than 50% ($1.15^3 = 1.52$). In most cases, when the volume is more than 50% greater, the remedial cost will be more than 50% greater, too. Areas of OU-2A where the extent of contamination needs further delineation before estimating the costs of remedial action alternatives include:

- PAHs in soil at IR Site 9 (around C3S009B012)
- lead in soil at IR Site 22 (around MW547-5)
- PAHs in soil at IR Site 23 (around C3S023B016 and C3S023B026)
- VOCs in FWBZ groundwater at IR Site 9 (around F9SMW03), at IR Site 13 (around S13-HP02), and at IR Site 19 (around MWD13-4)
- VOCs in SWBZ groundwater (15-20 ft bgs, 20-30 ft bgs, 30-40 ft bgs, and 40-50 ft bgs) at IR Site 9

A timely example of the importance of reasonably accurate cost estimating at the FS stage is the current situation at IR Site 1. In this case, cost estimating and remedial contracting occurred before remedy selection and before adequate characterization of the site. At the August 2010 BCT meeting, the Navy explained there is a multimillion dollar budgetary shortfall for cleanup of IR Site 1, largely due to faulty understanding of the extent of contamination to be remediated at the time the FS was prepared: Area 1b burn residue

extends further south than recognized when the FS cost estimates were prepared, Area 1b burn residue extends beneath the riprap, a probable barge is present in a portion of Area 1b to be excavated, etc. The Navy explained to the BCT that its budgeting for IR Site 1 remediation (and elsewhere at Alameda Point) has a three-year lead time and was built upon the (faulty) assumptions about the extent of remediation at the time IR Site 1's FS was prepared. This underestimation should not be repeated at OU-2A. The *FS* should not be finalized until further characterization is completed so the costs of remedial action alternatives can be estimated with the required accuracy.

2. **Navy responses to EPA General Comment 2, DTSC (Dalrymple) General Comment B, DTSC (Dalrymple) Specific Comment 1c, Water Board Comment 1, and ARRA General Comment 5.**

The Navy's response to EPA General Comment 2 states "[Richard Brady & Associates 2008] conclusions included that the VOCs and TPH reported in groundwater at IR Site 13 contain compounds associated with fuel releases, not the 105 year old refinery waste." The responses to the other cited comments are similar. These statements in the responses are broader than the conclusion the Brady SCAPS report actually makes: "...the TRW contains very low volatile or semi-volatile fraction as expected from a refinery waste that has been in-place for over 100 years." Brady is simply saying that the low levels of VOCs and SVOCs observed are expected given the age and type of waste. Brady does not say whether the "relatively high levels of benzene and other petroleum related constituents...identified in the eastern area of OU-2A" are from a recent petroleum release or from an unexpected refinery waste source. Please quote the Brady report accurately.

3. **Navy response to EPA General Comment 7.**

EPA's comment asks that specific Petroleum Program CAAs be identified for petroleum contamination in OU-2A that is not addressed in the *FS*. However, neither the Navy's response nor the *FS* provides this information. For many of the *FS*'s references to the Petroleum Program, it is unclear which, if any, effort of the Petroleum Program addresses the contamination. Some of this contamination appears not to be part of any CAA. Example passages in the *FS* that do not provide this cross-reference are:

- ES.3.1.2, page vi, 2nd primary bullet, 2nd from the last sentence: "The [IR Site 13] petroleum soil and groundwater plume [east of the TRW boundary] are being addressed under the Petroleum Program." The Navy has already published its *Final Petroleum Corrective Action Summary Report, Corrective Action Area 13, Defueling Area* (*CAA 13 Summary Report,* November 14, 2008), and it does not address the contamination to which this sentence refers. (Sentence repeated at 3.2.2.2, page 3-8, 2nd primary bullet, second from the last sentence)
- ES.3.1.2, page vi, 3rd primary bullet: Although the *FS* here doesn't refer to the Petroleum Program explicitly, it notes the presence of TPH-d in TRW at 6,000 mg/kg, 14 times the Petroleum Program residential PRC applicable to this area. The inference is that although the TRW is not subject to CERCLA remediation, it will be

addressed by the Petroleum Program. The *CAA 13 Summary Report* addresses neither TRW nor the TPH-d associated with it.

- ES.3.2, page ix, 3rd bullet: "The [IR Site 9] free-phase fuel hydrocarbons and TPH-d will be addressed as part of Petroleum Program...." IR Site 9 is not part of any CAA according to *FS* Figure 2-2.
- ES3.2.1, page x, 1st full paragraph, last sentence: "This area [IR Site 9]...will be addressed further as part of the Petroleum Program." IR Site 9 is not part of any CAA according to *FS* Figure 2-2.
- 2.1.2.2, page 2-4, 2nd paragraph, 2nd sentence: "Additional investigations and remediation are being performed at IR Site 13 under the Petroleum Program [CAA-13]." However, the 2008 final *CAA 13 Summary Report* has been issued with no recommendations for additional investigations and remediation.
- 3.2.4.1, page 3-12, 2nd paragraph, last sentence: "Currently IR Site 23 is being addressed under the Petroleum Program." *FS* Figure 2-2 shows IR Site 23 to be part of CAA-13. However, the *CAA 13 Summary Report* addresses neither TRW nor other contamination that may be related to the former oil refinery activities.
- 3.3.1.2, page 3-14, last full paragraph, last sentence: "The free-phase fuel hydrocarbons and TPH-d [at IR Site 9] appear to be unrelated to the TRW identified at IR Site 13 and will be addressed as part of the Petroleum Program...." However, the *CAA 13 Summary Report* does not address fuel hydrocarbons and TPH-d at IR Site 9.
- 3.3.2.2, page 3-17, 2nd paragraph, last sentence: "The [IR Site 13] TTPH plume will be handled as part of the Petroleum Program...." However, the *CAA 13 Summary Report* does not address the IR Site 13 TTPH plume shown on *FS* Figure 3-14.
- 5.1.2.1, page 5-3, last paragraph, last sentence: "1,2,4-trimethylbenzene was generally reported in the vicinity of dual vapor extraction (DVE) wells east of Building 410 (see Figure 3-9) and will be addressed as part of Petroleum Program." However, IR Site 9 is not part of any CAA according to *FS* Figure 2-2.

The Navy's response refers the reader to *FS* Figure 3-9 for "petroleum releases not addressed under CERCLA". However this Figure does not note much of the contamination discussed in the above bullets.

4. Navy response to EPA General Comment 8.

The response states that the target clean-up goal for lead in soil of 315 mg/kg "is based on site-specific conditions [and] is more representative of the site conditions for a residential use scenario." This target clean-up goal is inappropriate for the Alameda Point residential use scenario for <u>two reasons</u> that are illustrated in the *FS*'s Lead Risk Assessment Spreadsheet (Attachment A of Appendix B), which appears for the first time in this version of the *FS* and was not provided in the draft or revised draft FSs for OU-2A.

1. DTSC's HERD recommends that a default "percent home-grown produce" value of <u>7%</u> be used in its Lead Risk Assessment Spreadsheet (LeadSpread). In contrast, the *FS* uses a less conservative value of <u>6%</u> to be "consistent with the value used for

calculating the lead cleanup level for the petroleum strategy at Alameda Point." (*FS* Appendix B, page 14) This reason for using 6% is invalid, because the current Alameda Point petroleum strategy does not have a residential lead cleanup level. The September 2009 final *Technical Memorandum, Update to Preliminary Remediation Criteria and Closure Strategy for Petroleum-Contaminated Sites, Petroleum Program at Alameda Point, Alameda, California* contains the following passage on page 5.

> "For the residential PRC, a tech memo was issued by the Navy in December 2008, which describes the process that was applied in developing a lead screening value of 319 mg/kg. ... This screening level was derived using LeadSpread 7 and includes the homegrown produce exposure pathway and incorporates site-specific characteristics of Alameda Point. However, the regulatory agencies have expressed some concern regarding potential inconsistencies that could be created with residential soil remedial goals for lead that have been applied on CERCLA remedial actions at Alameda Point. ...the California DTSC suggests the use of a residential soil lead PRC of 150 mg/kg, but also indicates that they are conducting additional evaluations. The Navy has decided to leave the residential soil lead PRC as "TBD" until additional information is available from DTSC's review, and a consensus can be reached with the regulatory agencies."

Thus, no petroleum strategy lead cleanup level exists with which the *FS*'s LeadSpread input of 6% homegrown produce should be consistent. On the contrary, the BCT traditionally has uses 7% homegrown produce.[1] [2] [3] Please use 7% homegrown produce in the *FS*'s HRA.

2. Second, the *FS*'s HRA bases its calculation of the soil lead concentration that is protective of a residential child exposure scenario on the 95th percentile limit. Traditionally, the BCT uses the more conservative 99th percentile limit. (see all of the citations contained in immediately preceding paragraph). Please use the child blood lead 99th percentile limit in the *FS*'s HRA.

5. Navy responses to EPA General Comment 10, DTSC General Comment B, and Water Board Comment 1.

The Navy's responses to the EPA and DTSC comments contain the sentence "There is a high level of confidence that the risk assessment results are representative or more conservative than potential reasonable maximum exposure with regard to site conditions based on the large number of samples collected and analyzed...." The response to the Water Board comment is similar. A high number of samples does not make risk assessment results more

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[1] *Final Remedial Investigation/Feasibility Study Report, IR Site 35, Areas of Concern in Transfer Parcel EDC-5, Alameda Point, Alameda, California,* Appendix J, Attachment J2. April 25, 2007.
[2] *Final Remedial Investigation Report for Operable Unit 2C, Alameda Point, Alameda, California,* Appendix M, Attachment M2. September 18, 2008.
[3] *Final Feasibility Study for Installation Restoration Site 34, Alameda Point, Alameda, California. April 18, 2010. p. 3-6.*

conservative. On the contrary, the more samples, the more accurate the risk assessment results tend to become, not more conservative. Improvements in risk assessment accuracy have little to do with making the assessment more conservative. This questionable inference appears twice in the response to EPA's comment.

6. Navy response to EPA General Comment 11.

The *FS*'s text's global change from the revised draft FS that homegrown produce is included as an exposure route in Exposure Group 2 prompts closer examination of the HRA's assumption regarding homegrown produce. The *FS* says "The exposure frequency for ingestion of homegrown produce was calculated using 20% of the total days of exposure for the residential scenario (resulting in 70 days per year)." (Appendix B, 3.3.2, page 9, last paragraph, 1st sentence) In contrast, U.S. EPA guidance recommends using an exposure frequency of 40 percent.[4] (Appendix F, Section 5.4.2, *Pathway-Specific Intake Considerations*, p. F-20, 1st full paragraph) The HRA's reasonable maximum exposure approach should recognize that Alameda's mild climate allows harvesting and consumption of homegrown produce virtually year-round: many more than 70 days per year. Please change the HRA's exposure frequency for ingestion of homegrown produce from 20% of the total days of exposure to 40%.

7. Navy responses to EPA General Comment 19, EPA Specific Comment 9, EPA Specific Comment 39.b, DTSC (Dalrymple) Specific Comment 12, and ARRA General Comment 4.

The Navy's response to EPA General Comment 19 notes "Therefore, for Alternative S-2 for IR Sites 9 and 22, reduction in the toxicity and volume of contaminants is achieved by removal." This is true, but it is not germane to the CERCLA treatment criterion: whether Alternative S-2 reduces the toxicity and volume through treatment. The complete statement of the CERCLA statutory preference that this criterion reflects is:

> "Remedial actions in which treatment which permanently and significantly reduces the volume, toxicity or mobility of the hazardous substances, pollutants, and contaminants as a principal element, are to be preferred over remedial actions not involving such treatment." (CERLCA § 121(b)(1), emphasis added)

Although it may be permissible to shorten the criterion's name for readability, one cannot ignore the statutory preference that the technology must have treatment as its principal element. It is immaterial to the rating for this criterion that the alternative reduces toxicity, mobility, or volume by other means. Even if the excavated soil were to be incidentally treated at an off-site landfill prior to landfilling, such treatment would not be the principal element of the technology. It appears inconsistent with legislative intent to give the treatment criterion a rating higher than "poor" for an alternative consisting of excavation followed by off-site disposal, even if the waste might undergo incidental pre-landfilling treatment. Please rate Alternative S-2 "Poor" for the treatment criterion.

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[4] *Soil Screening Guidance: Technical Background Document*, EPA/540/R-95/128, EPA OSWER, May 1996, p. G-4.

The Navy's responses to DTSC (Dalrymple) Specific Comment 12 and ARRA General Comment 4 take the misinterpretation of the CERCLA statutory preference for treatment one step further: "under Alternative G-2, natural processes such as dilution, dispersion, and biodegradation would lead to treatment of COCs to reduce their concentrations/toxicity and mobility." It is difficult for an objective reading of CERCLA § 121(b)(1) to conclude that groundwater MNA includes treatment as a principal element.

With other Alameda Point FSs, the Navy has rated the treatability criterion "poor" or "low" when no treatment is involved, for example:

- IR Site 1: S1-4a, removal of waste in Area 1b, soil cover, and ICs—low
- IR Site 1: S1-4b, removal of waste in Area 1b, engineered alternative cap, and ICs—low
- IR Site 1: S3-4, Tier 2 ERA, hot spot relocation, and ICs—low
- IR Site 1: S4-2, removal, screening, and relocation—low
- IR Site 1: S5-4, confirmation sampling, hot spot relocation, and ICs—low
- IR Site 1: S5-5, confirmation sampling, hot spot relocation, shoreline debris relocation, and ICs—low
- IR Site 6: 2 (groundwater), monitoring and LUCs--low
- IR Site 14: 2 (groundwater), land use controls and long-term monitoring—low
- IR Site 16: 2 (groundwater), monitoring and LUCs--low
- IR Site 26: 3, MNA/ICs—low
- IR Site 27: 3, MNA and ICs—low
- IR Site 28: GW2, monitoring and ICs/monitoring and ICs—low
- IR Site 32: 2 (groundwater), ICs—low
- IR Site 32: 3 (groundwater), MNA and ICs—low
- IR Site 34: 2, ICs, excavation, and disposal—low
- IR Site 34: 3, excavation and disposal—low
- IR Site 35: PAH-3a, excavation in unpaved areas to 2 feet bgs and ICs—low
- IR Site 35: PAH-3b, excavation to 2 feet bgs and ICs—low
- IR Site 35: PAH-4a, excavation in unpaved areas to 4 feet bgs and ICs—low
- IR Site 35: PAH-4b, excavation to 4 feet bgs—low
- OU-2C: S3, excavation, engineered cap, off-site disposal, ICs, and monitoring—low
- OU-2C: GD2, ICs and monitoring—low
- OU5/IR Site 2: 2, MNA with institutional controls--low

8. Navy response to EPA Specific Comment 5.

The Navy's response seems to mean that when a Navy document says "10^{-6}" it may mean precisely 10^{-6} and or it may mean "around 10^{-6}". This ambiguity can result in potentially important misunderstandings when reading Navy documents. Does this ambiguous meaning apply to any number? Does it apply only to the boundaries of the risk management range?

Does it apply only to the point of departure? Consider explicitly stating "around 10^{-6}" when the Navy does not mean precisely 10^{-6}.

9. Navy response to EPA Specific Comment 52.

The Navy response states "The refined extend [of the TRW] is presented on Figures 3-4 and 3-5 of this FS...." However, the extent of TRW is not shown on either of these figures. Please include this information of *FS* figures.

10. Navy response to ARRA General Comment 3.

The Navy's response misunderstands the basis of the comment. The thrust of the comment is to underscore CERCLA's explicitly stated preference for treatment as a principal element of the alternative's technology. The role of the comment is not to prevent shortening the name of the CERCLA treatability criterion for purposes of readability, as is done with EPA's implementing regulations and guidance. Of course, the regulations' and guidances' shortening of the name for the treatment criterion do not suggest an EPA intent to eliminate CERCLA's statutory preference that the treatment be a principal element of the alternative's technology. Nevertheless, the *FS* rates alternatives higher than "Poor" even when no treatment is a principal element of the technology, for example, Alternatives S-2 and G-2.

Thank you for considering the ARRA's comments on the *FS*.

Sincerely,

Jennifer Ott
Deputy Executive Director

cc: ARRA Board Members
RAB Members
Anna-Marie Cook, U.S. EPA
Xuan-Mai Tran, U.S. EPA
Jim Fyfe, DTSC
John West, Water Board
Peter Russell, Russell Resources, Inc.

ATTACHMENT B-2

OU-2B TREATABILITY STUDY PRESENTATION HANDOUT

(4 pages)

RAB Meeting

BRAC PMO

Treatability Study of In Situ Thermal Treatment on Chlorinated Solvents in Groundwater at Operable Unit 2-B

Alameda Point
Alameda, California

Curtis Moss, P.G.
Navy Project Manager
BRAC Program Management Office

September 2, 2010

RAB Meeting

BRAC PMO

Study Objectives

Evaluate the effectiveness of In Situ Thermal Treatment using Six Phase Heating to reduce chlorinated solvents

Reduce total VOCs exceeding 10 milligrams per liter to 1 milligram per liter

Site Location

BRAC PMO

Photos of Site Location

BRAC PMO

(Facing West)

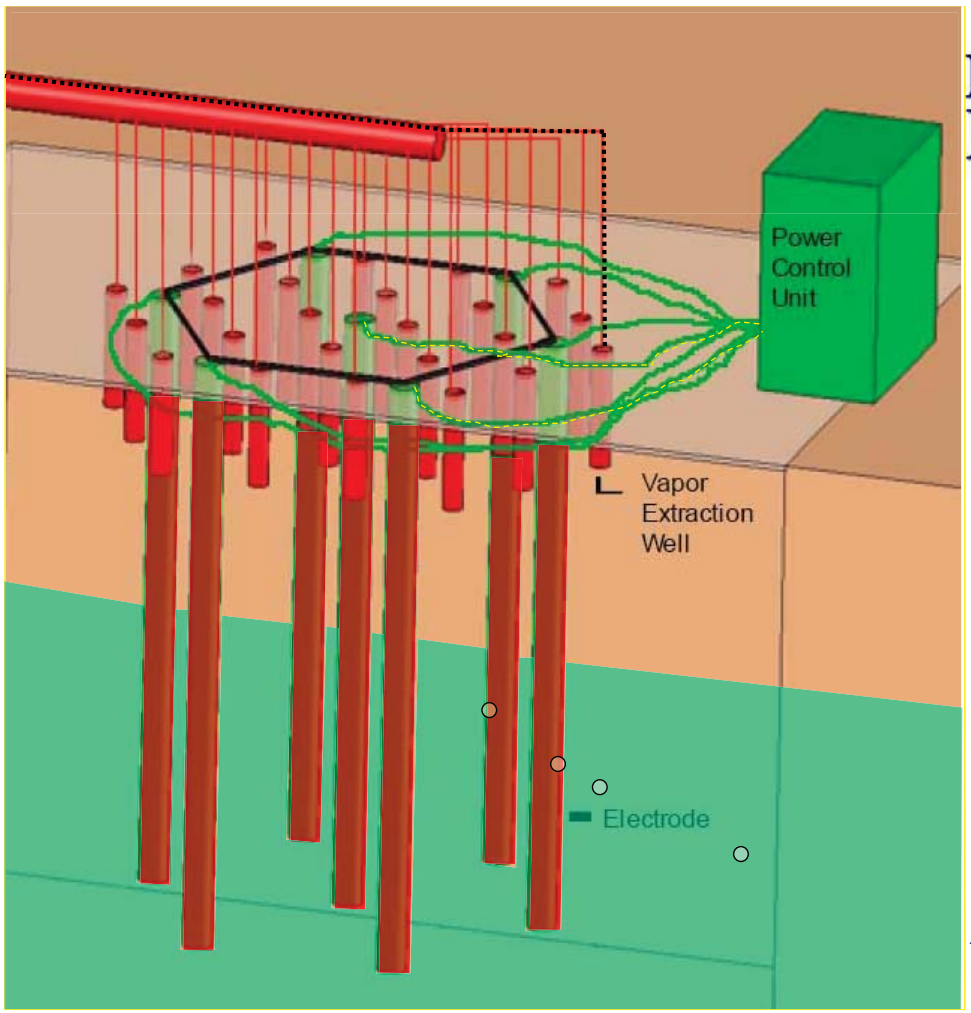
(Facing East)

Introduction/SPH Technology

BRAC PMO

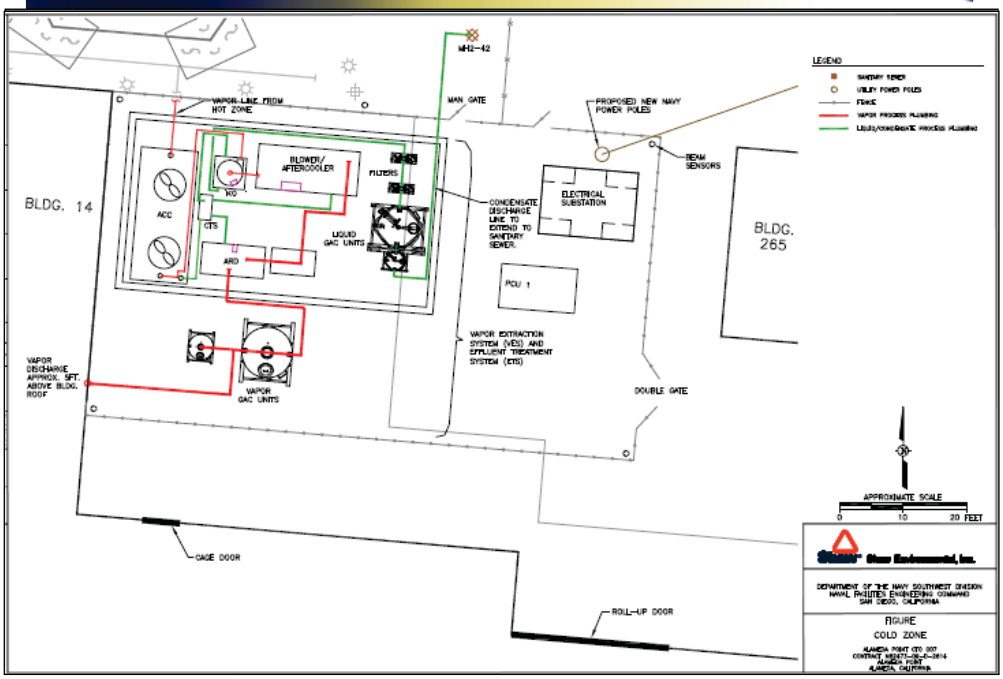
- Power Dissipation in the subsurface through vertically installed electrodes
- Resistivity of soil/water results in heating
- Heat volatilizes VOCs and generates steam
- Heated gases and vapors recovered by vacuum extraction
- Separation and collection with GAC

BRAC PMO



Alameda Point RAB Meeting

SPH System Layout



Schedule

Draft Work Plan in October 2010

Field work expected to begin 1st Quarter 2011

ATTACHMENT B-3

FIELDWORK UPDATE PRESENTATION HANDOUT

(7 pages)

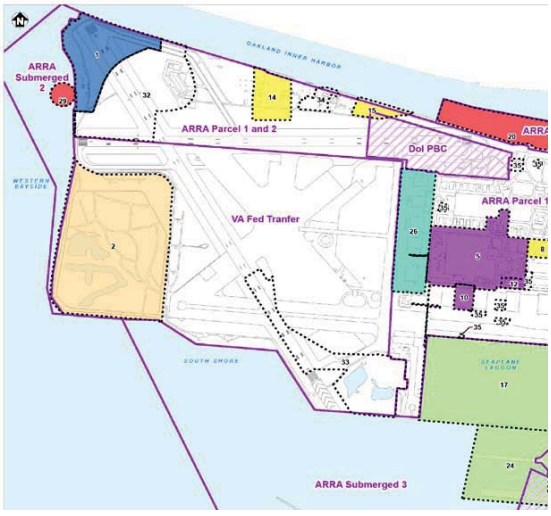
Field Work Update: Sites 14, 26, 27, 28, 1, and Building 346

Alameda Point
Alameda, California

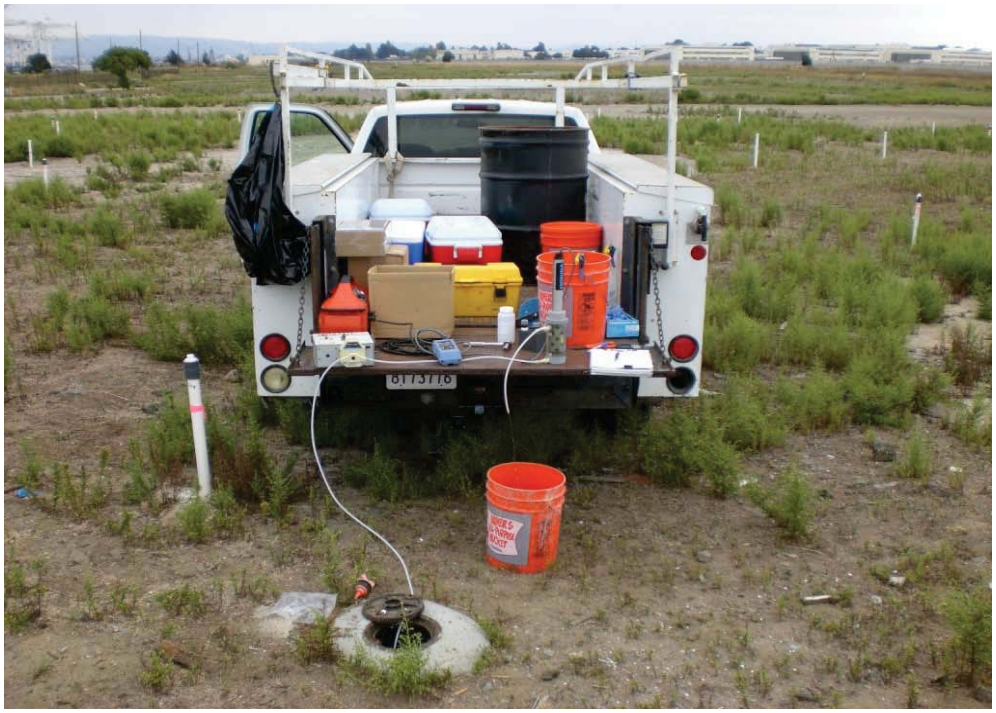
William McGinnis, P.E.
Navy Lead Project Manager
BRAC Program Management Office

September 2, 2010

Site Locations



Site 14 Groundwater Monitoring



Site 14 Groundwater Monitoring

4th Quarter Groundwater Monitoring (7/2010) - 11 months after last round of in-situ chemical oxidation (ISCO)

- 90% reduction of contaminants in some wells
- Remedial Goal (15 ug/L) exceeded in 6 of 25 wells
- Technical Memo presenting most recent data to agencies (11/2/10)
- Interim Institutional Control's (IC's) in place

Transition to Monitored Natural Attenuation (MNA) (11/2010)

- Semi-annual monitoring until 4 consecutive events achieve RGs

SITE 26 ISCO to ISB

Two full scale In-situ chemical oxidation(ISCO) events

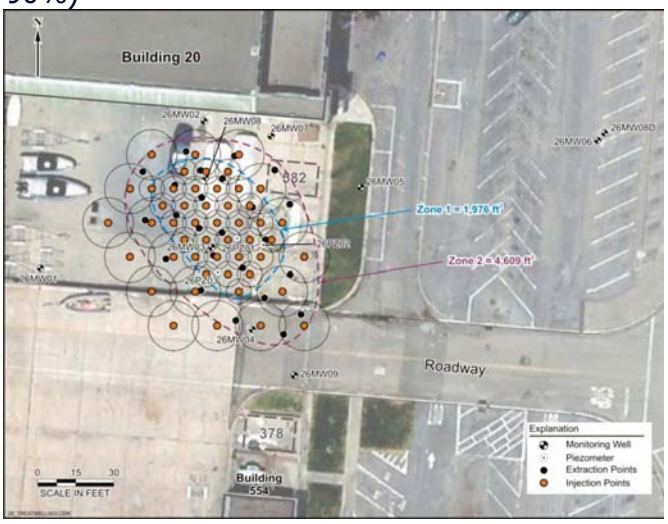
- •Most recent round February 2010
- •Three post-ISCO monitoring events, the most recent of which was performed July 2010

Significant reduction in contaminants (up to 90%)

Transitioning to In-Situ Bioremediation (ISB) (9/2010)

- •Semi-annual monitoring until 4 events achieve RGs

Technical Memo presenting most recent data to agencies (11/2010)



Installation Restoration Site 27

Injection/Extraction setup

Injection filter, pump, and persulfate

Cell M17 in operation

Extraction pump skid

Installation Restoration Site 27
Field Work Schedule

Schedule

Site Setup and Preparatory Activities June 2009

Remedial Action Activities June 2009 to June 2010

- •Three Phases of ISCO application, extraction, and progress sampling
- •Phases 2 and 3 targeted specific cells indicated by progress sampling*
- •Injection and extraction wells in clean cells decommissioned
- •All cells being monitored for 6 quarters looking for rebound

*Groundwater monitoring data from phases 1, 2, and 3 will be published in a Tech Memo. Results indicate favorable treatment results, with most but not all cells below remedial goals.

Installation Restoration Site 28

Soil Excavation

MRC™ Direct Injection

Backfill and Grading

Groundwater Sampling

Installation Restoration Site 28
Field Work Schedule

Schedule

Site Setup and Preparatory Activities May 2010

Remedial Action Construction Activities June-Sept. 2010

- •Excavation and Post-excavation Soil Sampling
- •Excavation Backfilling
- •MRC Injection
- •Site Restoration and Demobilization

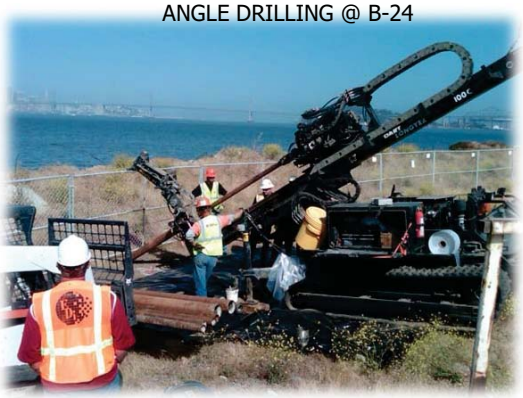
Remedial Action Groundwater Monitoring Activities August 2010 – February 2011*

*Preliminary groundwater monitoring data are available for baseline and first post-MRC injection monitoring events, and indicate favorable treatment results.

Site 1 Remedial Design/Characterization

ANGLE DRILLING @ B-24

ANGLE DRILLING @ B-24



TRENCH T-10 SALTS & BURN RESIDUE

TRENCH T-10 BOTTLE IN BURN RESIDUE

Site 1 Remedial Design/Characterization

Pre-Design Fieldwork completed **August 2010**:

- waste characterization trenches
- geotechnical soil borings
- soil samples
- soil gas samples

Fieldwork **in progress**:

- treatment pilot study in the groundwater plume area. Results - **Nov. 2010**

<u>Look ahead</u>

Final Remedial Design - **Spring 2011**

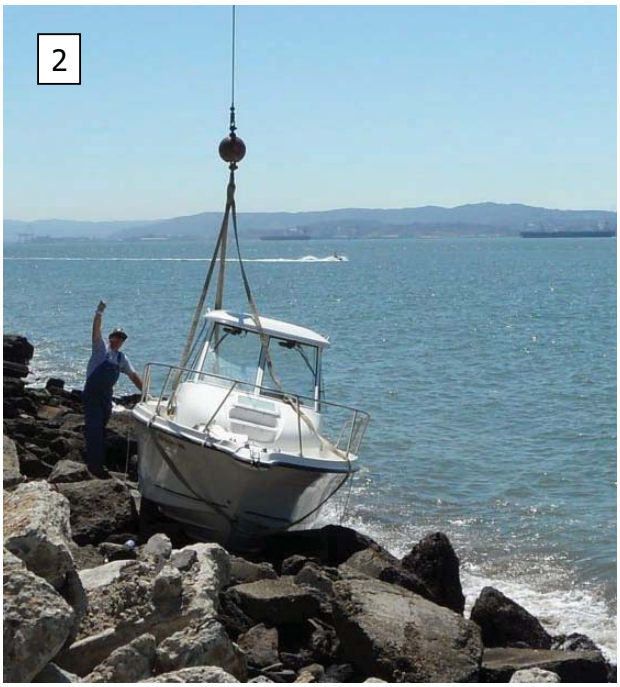
Remedial Action Constr. - **Summer 2011**

Building 346 Scanning and Demolition

Fieldwork began: August 24, 2010

Expected completion: Sept. 10, 2010

8/14 - Boat stuck on rocks at Site 2



8/23 – Crane on-site

Boat removed without incident. Gas tank was not breached.

ATTACHMENT B-4

PARKS FOR THE PEOPLE OF ALAMEDA, ALAMEDA PUBLIC AFFAIR FORUM

(1 page)

ALAMEDA PUBLIC AFFAIRS FORUM

a continuing project of the Center for Global Peace and Democracy

Alameda Public Affairs Forum: September 11, 2010

Parks for the People of Alameda

A panel discussion with

Jean Sweeney – The Beltline Park

Dorothy Freeman – Estuary Park

Richard Bangert – Parks in the "Northwest Territory" of Alameda Point

Now that SunCal/DE Shaw has at last been kicked out, it's time for Alamedans to think positively about the future of their wonderful community. Parks are needed – not only on Alameda Point but throughout the city. Beltline Park is a major achievement for the people of Alameda. Jean Sweeney, who, with Jim Sweeney, helped to establish it, will talk about it. The struggle for Estuary Park has been led by Joe Woodard and Dorothy Freeman. Dorothy will describe the plans and what needs to be done. Richard Bangert, along with Irene Dieter, has been working on plans for a park on the Point the "Northwest Territories".

Starts at 6 in the Alameda Free Library. From 6 to 7 come for a light bite – bring your favorite finger food, juice, fruit, dessert, etc. to share with your friends and neighbors at the Forum. Forum will be from 7 to 8, followed by an hour of questions and discussion. It's an opportunity for positive input from the citizens of Alameda about the kind of city WE want and need to serve the quality of life in our community – not what the greedy developers from Wall Street and their servants want.

Joe Woodard will be taping this program and a disk of this will be available for purchase either e-mail a request to Alamedapublicaffairs@comcast.net or purchase one at our next Forum on October 9th, speaker to be announced. Our November 13th Forum will be Bob Scheer on his new book, *The Great American Stick-Up*

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