FINAL
NAVAL AIR STATION ALAMEDA RESTORATION ADVISORY BOARD
MEETING SUMMARY

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

January 8, 2009

The following participants attended the meeting:

Co-Chairs:	
Patrick Brooks	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:	
Jim Barse	Community Member
Doug Biggs	Alameda Point Collaborative
Anna-Marie Cook	U.S. Environmental Protection Agency (EPA)
Tommie Jean Damrel	Tetra Tech EM Inc.
Doug Delong	Navy
Pete Everds	Tetra Tech EC Inc.
Fred Hoffman	RAB
George Humphreys	RAB
John Kaiser	San Francisco Regional Water Quality Control Board (Water Board)
Joan Konrad	RAB
James Leach	RAB
Gretchen Lipow	Community member
Dot Lofstrom	California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC)
Frank Matarrese	Alameda City Council
John McMillan	Shaw Environmental, Inc.
Curtis Moss	Navy

Mary Parker	Navy
Peter Russell	Russell Resources/Alameda Reuse and Redevelopment Authority (ARRA)
Jean Sweeney	RAB
Jim Sweeney	RAB
Michael John Torrey	RAB
John West	Water Board

The meeting agenda is provided in Attachment A.

MEETING SUMMARY

I. Approval of Previous RAB Meeting Minutes

Dale Smith (RAB Community Co-Chair) called the meeting to order at 6:34 p.m. Ms. Smith asked for comments on the December 2008 RAB meeting minutes.

The following comments were provided by John West (Water Board):

- Page 5 of 9, fourth paragraph, eighth line, strike the sentence, "Mr. West asked if the Navy planned to remove 50,000 pounds of petroleum."

- Page 7 of 9, first paragraph under BCT Update, third sentence, "He noted that there are a number of sites that are currently low priorities, which will be prioritized in the upcoming year" will be revised to, "He noted that there are over 300 sites that are currently low priority, that will be given more attention in the upcoming year."

- Page 7 of 9, first paragraph under BCT Update, fourth sentence "Mr. West said that there are 15 aboveground storage tanks (AST) throughout the base…. Similarly, there are also 15 sites with underground storage tanks (UST). Mr. West noted that cleanup work on ASTs and USTs will start in 2009" will be revised to, "Mr. West said that the Water Board is currently reviewing a proposal for 15 aboveground storage tanks (AST) throughout the base…. Similarly, the Water Board is also reviewing 15 sites with underground storage tanks (UST). Mr. West noted that increased cleanup and investigation work on ASTs and USTs will start in 2009."

George Humphreys (RAB) provided the following comments:

- Page 3 of 9, item number 1, "The bay sediment with continuous layers at the first and second water-bearing zone should not be considered as separate items as they are mixed together" will be revised to, "The bay sediment unit is not continuous. The first and second water-bearing zones should not be considered as being separate because they are mixed together."

- Page 3 of 9, second paragraph from the bottom, second line, "…the Navy is holding a public meeting on December 15, 2008" will be changed to, "…the VA is holding a public meeting on December 18, 2008."

Ms. Smith provided the following comments:

- Page 7 of 9, first paragraph, second-to-last sentence line, "Ms. Smith asked if the Navy scanned for radiation" will be changed to, "Ms. Smith asked if the Navy scanned the roof drains for radiation."

- Page 7 of 9, second paragraph, third line from the bottom, "Ms. Smith said that she had seen oily substances under vaults in that area…" will be changed to, "Ms. Smith said that she had seen oily substances in vaults in that area…."

The December minutes were approved as modified.

Ms. Smith informed Peter Russell (ARRA) that the approval of the October 2008 minutes was delayed pending his review. Mr. Russell said he had a copy of the October minutes, including already-incorporated RAB changes, and his additional changes, which were formatted in the red-line/strike-out text. Mr. Russell distributed a copy of his changes and proposed to read them aloud for the record (see Attachment B-1 for Mr. Russell's changes to the October 2008 RAB minutes). Mr. Humphreys made one correction to Mr. Russell's revised minutes, noting that when a letter identifier has been assigned for a site, such as 1a, the letter should be lower case.

The October minutes were approved as modified.

II. Co-Chair Announcements

Patrick Brooks (Navy RAB Community Co-Chair) gave a brief update on the Navy's progress at several sites. Mr. Brooks said that there has been progress at Seaplane Lagoon, with approximately 18,000 cubic yards (cy) of soil removed. He noted that debris pile 1 is almost completely removed, with about 1,000 cy of soil still to be excavated. When debris pile 1 is complete, the Navy will work on debris pile 2, which is much smaller than debris pile 1.

Mr. Brooks stated the Navy petroleum team has been making progress, with excellent support from Mr. West, at Corrective Action Area (CAA) C. More than 90,000 pounds of petroleum have now been removed, and the Navy installed five additional extraction wells in the previous month. Mr. Brooks stated he expects the levels of petroleum removed to increase significantly in the next month now that the new wells have been installed. Mr. Brooks noted that, at CAA 3, the petroleum site near the "plane on a stick" location, more than 80,000 pounds of petroleum have been removed.

Mr. Brooks added that the Navy is preparing a data package for Site 26 and plans to deliver it at the February 2009 RAB meeting. Fred Hoffman (RAB member) asked whether the Navy might give a presentation about Site 26 at either a regular RAB meeting or at a RAB Technical

Subcommittee meeting. Mr. Brooks responded the Navy would likely give an update at a RAB Technical Subcommittee meeting.

Mr. Brooks also said the Navy is also continuing its work at Site 14 and is currently reviewing the data.

Mr. Brooks continued that the Navy and Department of Veterans Affairs (VA) held a public meeting on board the U.S.S Hornet to address the Navy to VA federal-to-federal parcel transfer. The presentation from that meeting is posted on the Navy's website at www.bracpmo.navy.mil. Mr. Brooks reminded the RAB that the public comment period closes January 20, 2009. Mr. Humphreys asked if the comment period had been extended because he recalled that the City of Alameda had requested an extension. Frank Matarrese (City of Alameda) said the city requested an extension on the comment period but had received no response.

Mr. Brooks reviewed the action items:

Action Item 2: Approval of the October meeting minutes is completed.

Action Item 3: A status report for Site 26 is still pending. Mr. Brooks noted this item will be completed at the February 2009 RAB meeting.

Action Item 4: A map of the Site 1 sampling plan was distributed at this meeting (see Attachment B-2); item completed.

Action Item 5: Two of the requested presentations are being provided during this RAB meeting; the other two will be presented at another time. Mr. Humphreys noted that, in the Site Management Plan, a Proposed Plan (PP) is being prepared for Site 2. Mr. Humphreys asked if the PP had been released yet. Mr. Brooks replied the Site 2 PP had not yet been issued, and noted that the Navy would provide the RAB a presentation of the PP before it is presented at the public meeting.

III. Update on the Operable Unit 5/IR-02 Groundwater Remediation System Installation

Mr. Brooks introduced Mary Parker (Navy) to begin the presentation (Attachment B-3). Ms. Parker provided a brief introduction on the groundwater remediation system (GRS) installation topics being discussed (Slide 2). Ms. Parker reviewed Slide 3, noting that Operable Unit (OU) 5 also includes part of Fleet Industrial Supply Center Oakland/Alameda Annex (FISCA) Site IR-02. She said shallow groundwater at OU-5/IR-02 is contaminated with benzene and naphthalene. Ms. Parker said the pre-design field work in 2007 refined the plume boundary and provided data for the biosparge zones that were used in the remediation design. She said the OU-5/IR-02 groundwater remedial design/remedial action work plan (RD/RAWP) was finalized in September 2008, and the field team began mobilizations to install the GRS on October 6, 2008. Ms. Parker reviewed the areas of the OU-5/IR-02 remediation, including maps of the site location and the plume boundary as defined based on the new pre-design boundary wells, existing wells, and subsequent sampling data (Slides 4 and 5). Ms. Parker explained that the plume boundary hydropunch and new wells installed during the pre-design field effort provide

better control on the southern plume boundary and show that the OU-5/IR-02 plume does not extend as far south into Bayport as previously believed.

Mr. Humphreys commented that a figure in the work plan shows what appears to be a hot spot outside of the plume boundary. Ms. Parker replied that he probably had been looking at the soil gas maps, and the Navy had conducted qualitative passive soil gas surveys. Therefore, a soil gas map would have darker colors to indicate relatively higher soil gas concentrations, but might not indicate high levels of contaminants indicative of a hot spot. On the soil gas maps, the highest soil gas concentration that was detected was plotted as the darkest red/purple color. Ms. Parker said that overall, the passive soil gas survey results were low to non-detect (Final RD/RAWP Section 3.2). It should be noted that the Navy did hydropunch groundwater sampling in several locations to assess the maximum passive soil gas survey results (shown as the darkest colors on the soil gas maps). Results of this sampling showed that groundwater concentrations in the areas of maximum soil gas concentrations were not higher than in the surrounding areas. The plume contains the areas with the highest detections of groundwater contaminants.

Ms. Parker completed her review of the map on Slide 5, noting that the first number at the sampling locations indicates the concentration of benzene and the second indicates the concentration of naphthalene. Ms. Parker noted that the "U" symbol indicates non-detect. Mr. Hoffman asked if this plume is in groundwater, and Ms. Parker confirmed that it is.

Ms. Parker summarized the first technology slide (Slide 6) and introduced the Tetra Tech EC, Inc. Project Manager for the remediation, Mr. Pete Everds, to discuss how biosparging works, the field work, and the methodology for the remediation. Mr. Everds began by reviewing the schematic drawing of a biosparge/soil vapor extraction (SVE) system on Slide 7. He noted the addition of dissolved oxygen into the water (biosparging) to encourage the indigenous microbes to grow. Mr. Everds stated that a vacuum system (the SVE portion of the system) sends any potential vapors through a treatment system before release into the atmosphere to prevent contaminants from entering the air. Mr. Everds noted that the Navy had success and was able to achieve non-detect levels for the contaminants of concern during the pilot test for this system. Thus, the Navy was able to achieve the appropriate air flow in the biosparge system to prevent volatilization of the contaminants of concern.

Mr. Hoffman asked whether the system was drawing more air than was being pumped in. Mr. Everds stated that statement is correct because the system is also drawing air from the vadose zone and sources other than groundwater. Mr. Hoffman asked if certain gases are not being detected as a result. Mr. Everds said emissions were analyzed for vapors at each individual well and at the treatment system, and results were all non-detect.

Mr. Hoffman asked whether bubbles of air could be passing up along the well. Mr. Everds replied that the scenario was evaluated during the pilot test. Dissolved oxygen levels were measured in groundwater at various distances from each well, and then the levels were monitored to ensure increases with use of the remediation system.

Mr. Humphreys asked if the team had injected nutrients into the system during the pilot test conducted on Kollman Circle. Mr. Everds replied the team did not inject nutrients into that system because there was no need; he noted the indigenous microbes were working well without nutrients. Mr. Everds added that the full-scale system is set up so that nutrients can be added, if needed.

Mr. Everds reviewed the figure on Slide 8, which shows the two groundwater treatment areas based on data collected during the pilot study. Mr. Everds reviewed the activities that had been completed from October through December 2008 (Slide 9). Mr. Everds explained that results of the pilot study indicate that the source of contamination is the Marsh Crust. Cone penetrometer testing (CPT) was used to identify the Marsh Crust layer, which is about 18 feet depth. The remediation system was set up to have biosparge well screens at the Marsh Crust level, which is at 17 to 18 feet below ground surface (bgs). Mr. Everds noted that six additional monitoring wells were installed in these groundwater treatment areas. In addition, 290 biosparge wells and 12 SVE wells were installed. The trenching, piping, and backfilling to connect the system together are scheduled to be completed by mid-January 2009 (Slide 9).

Mr. Everds reviewed Slide 10, noting that the CPT allowed for an accurate understanding of the location of the Marsh Crust. Mr. Hoffman asked whether the CPT locations were solely investigative or whether they had been left in place. Mr. Everds explained they were investigative and that nothing was left behind. Mr. Humphreys asked if wells had been installed in residents' yards. Mr. Everds replied that there are wells in almost every yard within the fenced treatment area because there are approximately 300 wells. He noted, however, that only the six monitoring wells are aboveground; the rest of the wells are below grade and unobtrusive. Mr. Torrey asked if there is a well on the playground at the Island High School, and Mr. Everds responded there are a number of wells in the playground, with the portion of the playground where the wells are located (within the remediation area) fenced during the construction of the system. Mr. Everds said that the purple shading indicates where system piping is underground. He noted that the fenced area in Marina Village Housing and former North Housing is unoccupied housing. Ms. Smith asked why the area is unoccupied. Mr. Everds responded that the agency in charge of Marina Village Housing, the Coast Guard, did not want the residents to be inconvenienced by the construction, so the area is unoccupied for this construction period. The Coast Guard previously determined that they did not need North Housing, so those units are vacant also.

Mr. Humphreys indicated on the Slide 10 figure an area where there was another hot spot, and asked why that area was not part of the treatment area. Mr. Everds said that the treatment areas cover the areas with the highest contaminant concentrations.

Ms. Smith asked if the Navy plans to use natural attenuation to address the rest of the contamination. Ms. Parker said yes, monitored natural attenuation is planned for the remainder of the plume, as explained in the detailed description of the selected alternative in the Final FS Report and other documents. Anna-Marie Cook (U.S. EPA) said that the Navy and the Base Realignment and Closure Cleanup Team (BCT) have a difference of opinion on this, but have agreed that the treatment areas shown on the map would be Phase I, and the rest of the

contamination would be dealt with in another phase of treatment. Ms. Cook added that the contamination has been present for decades and it is unlikely natural attenuation would resolve it. Mr. Brooks said the Navy would like to see results from this treatment system before the Navy decides whether to expand it, and added he would still like to allow natural attenuation a chance to work. Ms. Cook noted there is a fundamental disagreement on whether natural attenuation will work. Ms. Parker noted that in some wells, there had been significant drops in the levels of contamination without treatment, as outlined in the Final RD/RAWP, indicating natural attenuation in these wells, but would have to wait for further data collection after the treatment system has been operating for awhile. Mr. Brooks confirmed that the Navy has agreed to assess the data collected during operation of the treatment system and make any required changes to the remediation based on that data.

Mr. Leach noted that not much oxygen is encountered past 3 feet bgs. Mr. Leach also noted that pressure swing oxygen generators are cost efficient. He asked if the Navy had considered using ozone instead of oxygen because it is more effective underground. Mr. Everds replied that using ozone was considered, but ozone was cost-prohibitive because of the size of the project and the number of wells. Mr. Leach noted he had used ozone for a plume that was 1 mile in diameter.

Mr. Humphreys wanted to reinforce what Ms. Cook said about natural attenuation. He noted that if the Marsh Crust is the source of contamination, then the contamination dates to the 1890s. Therefore, it seems unlikely that natural attenuation will work now if it has not been effective in more than 100 years. Mr. Brooks said that there may be other sources, such as surface spills.

Mr. Humphreys said that a large sewer line was installed when Bayport housing was built. He asked if the Navy had investigated whether that sewer line was serving as a conduit for the contamination to migrate out of the area. Ms. Parker clarified the houses shown on the map are in Marina Village Housing, not the Bayport housing. Ms. Cook said that the developer, Catellus, was required to sample and monitor groundwater and soil when the sewer and storm drains were being installed. This work included a large soil management plan. Ms. Cook stated the BCT has been tracking the project and so far there is no indication of a change in groundwater patterns.

Mr. Humphreys commented that some of the workers who were installing the sewer system told him they could smell petroleum vapors. Mr. Russell said there was a petroleum release underneath one of the warehouses that had been torn down in the area. He explained Catellus worked with the Water Board to address that release immediately.

Mr. Hoffman asked if the pilot study is still operational. Mr. Everds said it was not, though the full-scale system is using some of the same wells from the pilot study. Ms. Cook asked if there was evidence of any contaminant rebound in the pilot study areas. Mr. Everds replied that there was rebound, and added that the pilot study was a brief event and the full-scale system will run much longer. Mr. Hoffman asked why rebound occurred. Mr. Everds responded that the pilot study was in an area of significant contamination and was run for a short time, so rebound was expected. Mr. Hoffman asked if the pilot test area was cleaned up and then groundwater brought in new contamination. Mr. Everds noted that the contamination levels were lowered, but the contamination desorbed back into groundwater after the system was shut down.

Slides 11 through 16 show photographs of field work and equipment; a schematic of a biosparge well is shown on Slide 13. Mr. Humphreys asked if a layer of gravel lies beneath the buildings on Slide 14 for vapor extraction. Mr. Everds replied that the buildings have a sub-slab barrier system and added that a DTSC representative was present during installation.

Ms. Smith asked whether the ground in the picture on Slide 16 is soil or concrete. Mr. Everds noted the location is the Island High School playground. The trench is cut through asphalt and into soil.

Mr. Everds said that after the wells were installed, they were covered, so it will not be possible to see them. All of the wells are connected to well control stations, with each station controlling 30 wells. That arrangement allows a technician to go to one well control box to check the status on 30 wells at a time, and it also improves the appearance of the area.

Mr. Everds reviewed Slide 17, showing an aerial photograph with the eastern treatment system piping overlaid. Jean Sweeney (RAB member) noted that the legend on Slide 17 lists hoses and pipes, and asked about the difference. Mr. Everds responded there is no difference. Hoses versus pipes were considered during design, and all pipes were used.

Mr. Humphreys asked if there were two compressors. Mr. Everds said there were two and noted that housing will contain all of the equipment and that the two compressors will be installed side-by-side. Ms. Sweeney noted the Shinsei housing development is also in progress, and asked if Mr. Everds' team was working near that development team. Mr. Everds said his team had been working side-by-side with the housing construction crew. He noted his team would be finished in the area soon, while he believed that the housing construction crew would be there until summer.

Mr. Hoffman asked if any noise complaints have been received, to which Mr. Everds replied that no complaints had been received. He noted the system needs to be located as centrally as possible; that it is within a fenced area and will be behind a block wall from the nearest residents. The team tested and recorded noise levels at around 50 decibels at the brick wall. He noted there would be sound insulation and soundproofing on the equipment housing to make sure noise is not a nuisance.

Mr. Everds reviewed the schedule for the eastern treatment system on Slide 18. On Slide 19, he reviewed the plans for the western treatment system. Mr. Everds said the schedule for the western treatment system is different. He noted it is a smaller area, but it is more difficult to construct the system with residents in the area. Because this area was added in the draft final RD/RAWP, there was not enough advance notice to relocate tenants, so work in this area will not start until summer 2009, when the units are vacant.

Mr. Torrey asked if the western treatment system is near the Bayport Housing, and Ms. Sweeney asked if the main street on the aerial photograph is Monterey Circle. Mr. Everds said the area is

in Marina Village Housing and the main street there is Mosley Avenue; he noted that only about 10 homes are affected in that treatment area.

Mr. Hoffman referenced the rebound after the pilot study and asked why only the contamination in the aqueous phase would degrade, and if microbes are effective on sorbed material. Mr. Everds replied that the microbes will work on the sorbed material to some extent, but are most efficient in the aqueous phase. Mr. Hoffman asked how long the Navy would operate this full-scale system. Mr. Everds replied that the operation duration is to be determined, and the data from monitoring will be used to make that decision. He added that the pilot system did not run long enough to make an accurate prediction. Mr. Hoffman asked about the high concentrations of benzene in groundwater. Mr. Everds responded they exceed 1,000 parts per billion (ppb) in some areas.

Mr. Leach commented that there seems to be a double shadow on the photograph on Slide 20, and asked about the source. Mr. Russell replied that it is an aerial photograph with a site diagram overlaid, which are not matching exactly.

Ms. Sweeney said that benzene has been an issue at well M25-05, on Slide 5, and noted the members who were on the FISCA RAB may remember the issue. She said that the level of contamination increases at depth, and asked Mr. Everds about Navy plans for the contamination. Mr. Everds replied that well M25-05 is not within the treatment areas. Ms. Parker added that the Navy will continue to monitor the well to determine the need for any future action.

IV. Data Gaps Investigation at Operable Units 2A and 2B

Mr. Brooks introduced Curtis Moss (Navy) to deliver the second presentation (Attachment B-4). Mr. Moss said time would not allow for a comprehensive review of all the data gathered in this investigation, so he would focus on OU-2B, which is the more northern site.

Mr. Moss said the purpose of the data gaps investigation was to gather additional data to refine conceptual site models in support of the feasibility studies (FS) for each of these sites. He said OU-2B includes Site 3, also referred to as “plane on a stick.” Mr. Moss said that the Navy used a Hydropunch to sample for lead in soil at Building 118, and noted that lead was not detected. While the Navy was conducting the investigation, field crews discovered soils that contained a blue and yellow crystalline substance. The material was fused glass, metal, and charcoal, and was found to contain elevated levels of copper and lead, so the Navy will address it in the OU-2B Feasibility Study. Mr. Hoffman asked if the Navy knew the origin of the substance. Mr. Moss said it appears to be from some type of smelting operation that was hot enough to melt these items. Ms. Smith asked about the size of the area where the substance was found. Mr. Moss said it was found in a single boring.

Mr. Moss then reviewed the investigations at the other sites in OU-2B, including Sites 4, 11, and 21. Mr. Moss said that at Site 4, shallow soil and groundwater contamination was discovered adjacent to an oil-water separator (OWS) designated as OWS-163. Mr. Moss noted that the

Navy plans to remove OWS-163 on Tuesday, January 13, 2009, and conduct a pilot test with zero-valent iron (ZVI) to help evaluate removal of the VOCs in groundwater there.

During the OU-2B Data Gap investigation, volatile organic compounds (VOC) were detected in groundwater samples from 10 to 60 feet bgs at two major "hot spots" [Plume 4-1 and Plume 4-2]. Ms. Sweeney asked if the Navy had bored down to a depth of 60 feet. Mr. Moss stated the Navy went farther, to a depth of about 70 feet.

Mr. Moss said the Navy had conducted two previous pilot tests to assess source removal effectiveness at Plume 4-1; in 2002, the Navy used thermal treatment, and in 2003, the Navy used in situ chemical oxidation (ISCO). Mr. Moss said the Navy used a low temperature process and noted the ISCO worked but there was rebound. Mr. Moss said funding is available to address Plume 4-1 in 2009, and added that Kerr Laboratories [U.S. EPA] may conduct research at the site, which would benefit both the Navy and the EPA.

Mr. Moss reviewed the figure on Slide 13, noting all of the details on the map cannot be seen, but adding that the purpose of the figure is to show the plume locations. Mr. Moss explained the color designations: the area shaded in orange has the highest concentrations, at greater than 10,000 ppb; yellow is 1,000 to 10,000 ppb; green is 100 to 1,000 ppb; and blue is just above screening criteria up to 100 ppb. Mr. Moss then reviewed the figures on Slides 14 and 15. He said three-phase heating, conducted at Plume 4-2, was used to reduce the contaminant levels to below 10,000 ppb, which was successful.

Mr. Humphreys asked for clarification about the three-phase heating, and asked if six-phase heating was used in this area. Mr. Brooks confirmed three-phase heating was conducted and noted the technology is similar; the difference is in the system design and the number of electrodes used. Ms. Smith asked why six-phase heating was not used in this area. Mr. Moss responded the temperature was brought up to the same level with the three-phase, but the design is different; the six-phase process uses a honeycomb-shaped configuration.

Mr. Humphreys asked Mr. Moss to clarify the temperature, noting Mr. Moss said earlier that the system was used at lower temperatures because of power lines in the area. Mr. Moss said Plume 4-1 could not be heated past a certain temperature due to high voltage power lines and a gas line present. However, at Plume 4-2, near Building 360, the Navy was able to safely heat to high temperatures. Ms. Sweeney asked if Building 360 is where the Navy cut holes in the building and installed equipment through the floor. Mr. Moss confirmed that was how the treatment was conducted, and noted it was also done outside of the Building 360.

On Slide 16, Mr. Moss noted that the Plume 4-1 data are from wells that are 5 or 6 years old, including ISCO and heat treatment wells. Ms. Sweeney commented that the heat treatment wells are not likely as old, since the project started only a few years ago. Mr. Moss explained there was an older heat treatment, at Plume 4-1, which was conducted in 2002, so those wells are about 6 years old. A different heat treatment [three-phase heating] was conducted at Plume 4-2 in late 2007.

Mr. Brooks pointed out the significance of the upcoming removal of OWS-163. He noted it is not typically possible to complete such a removal with just a draft work plan. However, Mr. Moss worked with the Navy quality assurance (QA) officer and with the regulatory agencies to obtain agreement to move ahead with immediate removal of the OWS to expedite the cleanup. In the meantime, the Navy will continue to work on the draft work plan to address more complicated issues. Mr. Brooks commended Mr. Moss, the Navy QA officer, and the regulatory agencies for removing this OWS quickly.

Mr. Hoffman asked how removing the OWS would remove the source of contamination. Mr. Brooks indicated on the map the location of the OWS, and noted the Navy would remove the OWS and the surrounding soil to remove contaminated soil. Mr. Hoffman asked if the contamination was below the water table, and Mr. Brooks said some of it is below the water table. Ms. Sweeney asked how the Navy would remove the OWS and the soil. Mr. Brooks replied the Navy would excavate. Mr. Moss noted the source area is against the building, so the Navy would excavate to the extent safe and practicable given the site conditions.

Mr. Hoffman suggested the Navy consider an additional phase of cleanup. He noted the plumes are bullseye-like and said it might be efficient to pump out as much of the mass as possible before ISCO treatment begins. He added that, ISCO might work even better if the majority of the mass can be removed. Mr. Brooks said the Navy would evaluate the conditions when excavation begins and determine approaches that are feasible for this plume. Mr. Hoffman noted there are two additional plumes that are well delineated and bullseye-like, and the Navy also should consider pumping those plumes. Mr. Moss reminded the RAB that this site has not yet reached the FS stage. At that stage, the Navy will evaluate the pilot studies and will review mass removal at that time.

Mr. Brooks noted the Navy and regulatory agencies are proposing Plume 4-1 to Kerr Laboratories on this project for the insight and expertise it can bring to the project. Ms. Sweeney asked about the identity of Kerr Laboratories, and Mr. Brooks said it is the EPA's laboratory, located in Ada, Oklahoma, and includes staff from many universities. Kerr Laboratories has obtained a research grant and was recommended to the Navy by DTSC. Mr. Brooks said the Navy is still waiting to find out if the site will be selected.

Ms. Smith commented that, in her experience, it can be impossible to excavate near buildings. It is difficult to reach contamination that is under the building, and there is often rebound. Mr. Brooks noted that issue would be evaluated in the FS.

Mr. Brooks suggested the group move to the next agenda item. Ms. Smith asked if Mr. Moss would complete the presentation (the details for OU-2A). Mr. Brooks said a future meeting will be scheduled to allow Mr. Moss to complete the presentation and to talk about the ZVI pilot study.

Mr. Humphreys said he would like to see a figure of the vertical extent of the plumes, and Ms. Smith asked if the figures are available in PDF format. Mr. Moss replied that the files are in

PDF, but are too large to e-mail. Mr. Moss agreed to load the files on a compact disc and mail it to the RAB members, and noted the figures would include vertical cross-sections of the plumes.

V. BCT Update

Mr. Brooks introduced Dot Lofstrom (DTSC) to provide the BCT update. Ms. Lofstrom said she wanted to clarify the role of the regulatory agency representatives at RAB meetings and to talk about some of the recent BCT projects with the Navy. Ms. Lofstrom explained that, for the majority of the RAB presentations, the BCT has already seen the presentation and has already been working on the project with the Navy. She said that the regulatory agency representatives often do not discuss the projects with the Navy at the RAB meetings because they have already been discussed and because these meetings are for RAB members. The regulatory agency representatives want to allow RAB members time to ask their own questions.

Ms. Lofstrom said there may be the perception that the regulatory agency representatives impede the cleanup process by asking the Navy to gather more information; however, the BCT feels it is important to proceed slowly in some cases. She added that the BCT is also in favor of time-critical removal actions and immediate cleanups, but action depends on the site and the situation. Ms. Lofstrom noted the project Mr. Moss presented is an example of collaboration between the Navy and the BCT. The BCT had identified data gaps that needed to be addressed in the FS for OU-5, which included discovery of the OWS. Because of its partnership and strong working relationship with the Navy, which has been cultivated over time, the BCT and the Navy were able to identify the best path forward. Ms Lofstrom added that in the previous month the BCT had spent time on the work plan for the ZVI pilot study. The BCT felt the conclusion was not fully supported, and the vertical extent of the plume needed to be delineated. In fact, the BCT spent 2.5 hours with the Navy discussing the best options and were able to arrive at a consensus.

Ms. Lofstrom emphasized that the BCT is working with the Navy to clean up Alameda Point. She said that the BCT members care about this project and will continue to collaborate with the Navy and be deeply involved at Alameda Point.

VI. Community and RAB Comment Period

Ms. Sweeney requested the Navy provide a figure that gives more information on the conclusion that a landfill no longer exists at Site 1. Specifically, Ms. Sweeney would like to know where the specific locations and depths of the trenching. Mr. Russell responded that the Navy had issued a trenching report and that the information is in the report. Ms. Sweeney said that the figure in that report shows only an “x” on a map and does not give all of the information she would like to see.

Mr. Leach commented that the trenching locations on the figure do not seem to be in the best locations, noting they are not where the landfill was historically thought to be. Mr. Russell replied that the Navy’s selections of trenching locations were based on two purposes: (1) to verify there are no drums present, and (2) to better estimate the volume of waste in the landfill.

The area believed to be the location of the landfill was divided into seven cells, and two samples were taken from each cell; one sample was collected in the center of the cell, and one at the edge of the cell.

Mr. Leach noted that the figure should show the investigative trenches with an overlay of the original landfill boundary; he believes the trenching locations were not in the correct areas. Some of the trenches in the center of the cells, which should be the deepest, were the shallowest. He added that interviews of staff who worked at Alameda Point have provided anecdotal evidence that a landfill existed at Site 1.

Mr. Matarrese noted that Mr. Russell is a consultant to ARRA and was reviewing the Navy's work. He stated that the Navy should be responsible for answering questions about the landfill and supplying any figures. Mr. Brooks replied that he would provide a figure with the trench locations and the trench logs at the next RAB meeting.

Mr. Matarrese asked for clarification about the BCT update. He said regulatory oversight is more effective when the regulatory agency has the final say in a dispute and asked who has the final say at Alameda Point. Ms. Cook replied that the BCT has entered into a Federal Facilities Agreement, or FFA, which is a legal document that dictates how agreements will be reached. Ms. Cook explained it is a "step-up" process, where disagreements can be elevated through various levels of management. Ultimately, an EPA administrator would make the final decision. Ms. Cook added that this BCT functions well, and has rarely reached even the second tier of dispute resolution. She noted that when the regulatory agencies make a strong case, the Navy typically responds positively. Mr. Brooks added that the Navy, regulatory agencies, and RAB have the same ultimate goal, which is cleanup and transfer of Alameda Point.

Gretchen Lipow (Community Member) asked if the cleanup process would change now that there is a new president-elect. Ms. Cook replied that the FFA will not change. She also added that there have not been federal funding issues at Alameda Point. However, she said one change for EPA might be greater ease in listing certain items as carcinogens. Ms. Cook said that the current process is cumbersome and can take 5 or 6 years. Mr. Brooks added that the economic stimulus package that was recently approved may positively affect the Navy and Alameda Point specifically.

Mr. Humphreys distributed his list of documents and correspondence he received during December 2008 (Attachment B-5). Mr. Humphreys noted that correspondence item 1 is the Navy's response to ARRA's letter dated October 20, 2008. Mr. Humphreys briefly summarized the letter and noted the Navy rejected both points ARRA presented in its original letter. Mr. Humphreys summarized that Sites 2A, 2B, and 3B are not being moved to Site 32 for further evaluation. Mr. Humphreys also noted that the Navy's letter referenced 335 *live* rounds and said that the RAB had never been told there were live rounds in the landfill, but rather there were only inert munitions in the Site 1 landfill.

Mr. Humphreys stated that he had attended the VA meeting on December 18, 2008. He said the preferred alternative presented by the VA was to build a VA hospital and a regional center, and

noted there were other alternatives in the proposal. Mr. Matarrese commented that the VA is not offering to build a hospital, but rather to lease land obtained in a federal-to-federal transfer. Mr. Matarrese said the City of Alameda favors a columbarium along the western shore, adding the VA had discussed swapping conveyed land with land set aside for wildlife. He said the City of Alameda has no authority in a federal-to-federal transfer, but would help facilitate the exchange. Ms. Smith said that the Sierra Club and the Audubon Society are concerned about the least tern area and about the impact of a building complex on that area.

Mr. Brooks noted the next RAB meeting will be held on February 5, 2009.

VII. Meeting Adjournment

The meeting was adjourned at 8:35 p.m.

Action Items

Action Items:	**Action Item Update**:
1. Approval of October RAB Meeting Minutes.	1. Completed
2. Site 26 Status Report	2. Pending, to be completed at the February 2009 RAB meeting.
3. Maps of Site 1 Sampling Plan from the Technical Subcommittee meeting	3. Completed
4. Request for Presentations: a. OU-5/FISCA IR02 groundwater cleanup b. Data gap sampling results of OU- 2A and OU- 2B c. Site 2 FS d. OU-2C	4. Requests a and b are completed; c and d are pending.
5. Mr. Moss will copy the OU-2B plume figures to CDs and mail them to each RAB member.	5. New
6. Mr. Brooks will provide a detailed trenching map and trenching logs for the Site 1 landfill investigation.	6. New

ATTACHMENT A

NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD MEETING AGENDA

January 8, 2008

(1 page)

RESTORATION ADVISORY BOARD

NAVAL AIR STATION, ALAMEDA

AGENDA

JANUARY 8, 2008, 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	Ms. Dale Smith
6:45 - 7:00	Co-Chair Announcements	Co-Chairs
7:00 – 7:30	OU-5 Groundwater Cleanup	Mary Parker
7:30 – 8:00	OU-2A and 2B Groundwater Data Gaps Report	Curtis Moss
8:00 – 8:15	BCT Update	Dot Lofstrom
8:15 – 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 Response to Action Item 2, Peter Russell changes to the October 2008 meeting minutes (3 pages)

B-2 Response to Action Item 4, Collection of maps, figure numbers 17-1 through 17-4. Distributed by Pat Brooks, RAB Navy Co-Chair (4 pages)

B-3 OU-5/IR-02 Groundwater Remediation System Installation. Distributed by Mary Parker, Navy (11 pages)

B-4 Data Gaps Investigation at OU-2A and 2B. Distributed by Curtis Moss, Navy (12 pages)

B-5 List of Reports and Correspondence Received During December 2008. Distributed by George Humphreys, RAB member (1 page)

ATTACHMENT B-1

CHANGES TO OCTOBER 2008 MEETING MINUTES

(3 pages)

deficiencies of the proposed plan. On July 17, 2008, the RAB visited Site 1, Site 2, and the vicinity of Site 32. Mr. Humphreys said that at the August 14, 2008, RAB meeting, he presented two comment summaries he prepared based on his review of the Site 1 PP and the Site 1 trenching report. On August 22, he sent a letter to the Navy noting the transmittal of the summaries. Mr. Humphreys believes that the Navy proposed a new approach to the sites at the September RAB meeting. Mr. Humphreys provided his letter to the Navy and the two review summaries to Mr. Matarrese, who then requested that Mr. Humphreys attend an ARRA meeting and discuss the two documents. Mr. Humphreys gave a presentation similar to his RAB presentation and also mentioned the Navy's new proposed approach of cutting back the shoreline and moving the cap area further inland with the retaining wall. Based on the ARRA meeting discussion, ARRA requested its consultant, Dr. Russell, prepare an analysis of Mr. Humphrey's evaluation. Dr. Russell provided ARRA his analysis of RAB comments and a summary of the September RAB meeting on September 24, 2008. Ms. Debbie Potter (city) presented Dr. Russell's material at the ARRA meeting held October 1, 2008. Mr. Humphreys said he then presented his response to Dr. Russell's evaluation to the ARRA. Mr. Humphreys requested Dr. Russell talk about his analysis of Site 1.

Dr. Russell said that the agenda item is a discussion about the September 10, 2008, ARRA meeting and clarified that he did not personally attend this meeting. Dr. Russell said that the day after the ARRA meeting (September 11, 2008), ARRA requested he provide an evaluation of the two RAB comment letters that had been presented to the ARRA board.

Dr. Russell said that after going through the issue it became apparent to him that the landfill likely no longer exists. In reviewing the trenching report, he realized that the results from the 11 trenches showed they contained virtually no waste, which contradicts the conceptual site model, a fundamental component of the CERCLA decision-making process. Dr. Russell said, however, that he cannot conclude that there is no landfill, but there should be a presumption that the landfill is no longer present. Dr. Russell thanked the RAB members who met with him to critique a draft on his evaluation summary.

Dr. Russell said that he addressed the comments that Mr. Humphreys made on the PP and trenching report and briefly summarized how the comments were evaluated. Dr. Russell said that the RAB's comments were thorough. Many of the points made are addressed by the Navy in the preliminary remedial design, for example, the rodent barrier and improved shoreline seismic stability by excavating and backfilling a 200-foot swath along the shoreline. Dr. Russell said that the primary area where the RAB had several comments, which he does not endorse, are oriented toward excluding water from the landfill. He said there are some comments that compared and contrasted the Alameda Point landfill to the Mare Island landfill, where he does not agree. Dr. Russell provided reasoning why the Alameda Point landfill's proposed closure is different, noting the Mare Island landfill is subject to the Resource Conservation and Recovery Act (RCRA), while the Alameda Point landfill is not, and no groundwater contamination has been detected that appears to be emanating from the Alameda Point landfill, unlike at Mare Island. The Navy has documentation showing aircraft parts storage and maintenance at the primary groundwater contamination site that are consistent with the presence of solvent contamination.

Deleted: did not fit

Deleted: they

Deleted: could

Deleted: and m

Deleted: . F

Deleted: ;

Deleted: are addressed through

Deleted: the

Deleted: excavation

Deleted: did

Deleted: was

Deleted: were

Deleted: did

Deleted: site

Dr. Russell said that one RAB comment noted an issue with a membrane that is no longer a part of the cover design. This and other comments aimed at controlling groundwater and precipitation into the landfill are overly conservative, as groundwater contamination that appears to be emanating from the landfill has not been detected. Other comments that focus on groundwater contamination were well received. The RAB members also suggested improving notification or elaborating on the Navy's plan.

Dr. Russell said the Navy described remediation of groundwater during the September RAB meeting. Some of the features thought to be most important for treating groundwater are to establish hydraulic control of the area to ensure contaminants do not enter the Bay. This hydraulically controlled remediation could be similar to the treatment at IR Site 14.

Dr. Russell said there is a concern about whether metals or radium will be mobilized by altering the geochemical environment in the groundwater treatment zone. Therefore, before the hydraulic control is discontinued, it should be verified that there is no likelihood of migration of radium or metals as a result of the treatment, and groundwater monitoring should be conducted to confirm this. In addition, before field work begins, the remedial design should include modeling the effect the proposed treatment on the mobility of radium and metals.

On the trenching report, Dr. Russell said that the RAB comments that little waste was present and he questions the assumption that a landfill is still present. He said the facts suggest that there is no landfill. Dr. Russell said that his conclusion from the evaluation is that the CERCLA conceptual site model, which is the basis of decision making at IR Site 1, appears to be seriously flawed. As a result, Areas 1a, 2b, 5a, and 5b should be removed from the current IR Site 1 Record of Decision (ROD), as has already been done for Areas 2a, 3a, and 3b. He also suggested there should be three remedial areas that move forward as expeditiously as possible in the IR Site 1 ROD: Area 1b- burn area, the groundwater treatment, and Area 4 - firing range berm area (already cleaned up through a time-critical removal action [TCRA]). He added Areas 1a, 2b, 5a, and 5b should be handled separately from the current IR Site 1 ROD, because they would take time and this would delay groundwater treatment and excavation of the burn area, Area 1B. Dr. Russell said he thinks further investigation is needed for Area 1a to evaluate how much, if any, of the waste originally still remains, and to characterize the radiological and chemical concentrations of the soil that was backfilled into the former landfill site.

Mr. Leach said the hypothesis could benefit if the material were removed from the landfill. Mr. Leach said that his concern was that there is evidence of disposal in the landfill, whereas there is little evidence that any of the material was removed. He added that he is not satisfied with the trenching and cannot conclude that there is no landfill. Mr. Leach said that if physical material that does not deteriorate was not found, then the landfill was not found. The presence of aluminum engines has been reported, and it can be assumed that soda bottles, plastic buckets, and other items would be deposited into the landfill besides the drums. Mr. Leach agreed with Dr. Russell that it is necessary to characterize the soil because the evidence of disposal would still remain even if the items had been removed. He added that the trenches should have been deeper. Mr. Leach said that there is still evidence that the landfill exists.

Deleted: on
Deleted: was
Deleted: at the landfill
Deleted: ed
Deleted: were
Deleted: b
Deleted: would
Deleted: implemented
Deleted: ed
Deleted: ed
Deleted: was
Deleted: is
Deleted: and that some positions
Deleted: only
Deleted: the rest of the a
Deleted: actions to address
Deleted: evaluation
Deleted: b
Deleted: Area 4 to see whether most or all of the landfill needs
Deleted: be
Deleted: d
Deleted: based on
Deleted: and also to further evaluate including the soil under the cap

The ARRA will send the Navy a letter asking to delay a CERCLA decision at Areas 1a, 2b, 5a, and 5b, as they require further investigation. Mrs. Sweeney asked about the contents of the ARRA letter to the Navy. Dr. Russell replied that the ARRA's letter would evaluate the RAB report comments and focus on the flaws in the conceptual site model. He added that virtually no waste was found during the trenching and hence the presumption should be that the landfill is no longer present. Regardless of the speculation that the Navy excavated the landfill from IR Site1 and moved it to IR Site 2, the ARRA would like further investigation before a decision is made about the site.

Deleted: Dr. Russell said that the ARRA board wished to extend the comment period on the draft final ROD, which is scheduled for submittal on October 2, 2008.

Deleted: also

Deleted: these sites

Deleted: s

Deleted: would

Deleted: not

Mr. Humphreys asked Dr. Russell whether he had a copy of the evaluation of the RAB's comment letter. Dr. Russell replied that he e-mailed it to the RAB members and sent it to Mr. Humphreys by mail. Dr. Russell noted he could e-mail another electronic copy of his evaluation, if needed.

Mr. Humphreys read his responses to Dr. Russell's evaluation of the RAB comments on IR Site 1 (Attachment B-3). Mr. Humphreys requested this handout be included with Dr. Russell's evaluation as a complete package.

IV. Fiscal Year 2008 Highlights

Mr. Brooks began the presentation on Alameda Point accomplishments (Attachment B-4). The presentation is a series of photographs provided by the contractors showing the cleanup over the last year at Alameda Point. Mr. Brooks said that only a few sites remain in the investigation phase, while most of the sites have moved on to FS, remedial action, and remedial design. He noted that the remediation at most sites supports unrestricted use.

Slide 2 lists the top 10 cleanup sites at Alameda Point. Slides 4 and 5 show the TCRA excavation at the firing range berm and trucks being loaded with soil. Mr. Brooks said that dust control is closely monitored in the berm area. Slide 7 shows that the berm has been excavated and the soil removed. Slide 8 shows the screening machines that starts with a ¾-inch screen and narrows to a ¼-inch screen. The screening separates metal and debris from the soil. Slide 9 shows the soil stockpile that is free of metal debris. Slide 10 shows the sorting process to remove larger fragments of metal.

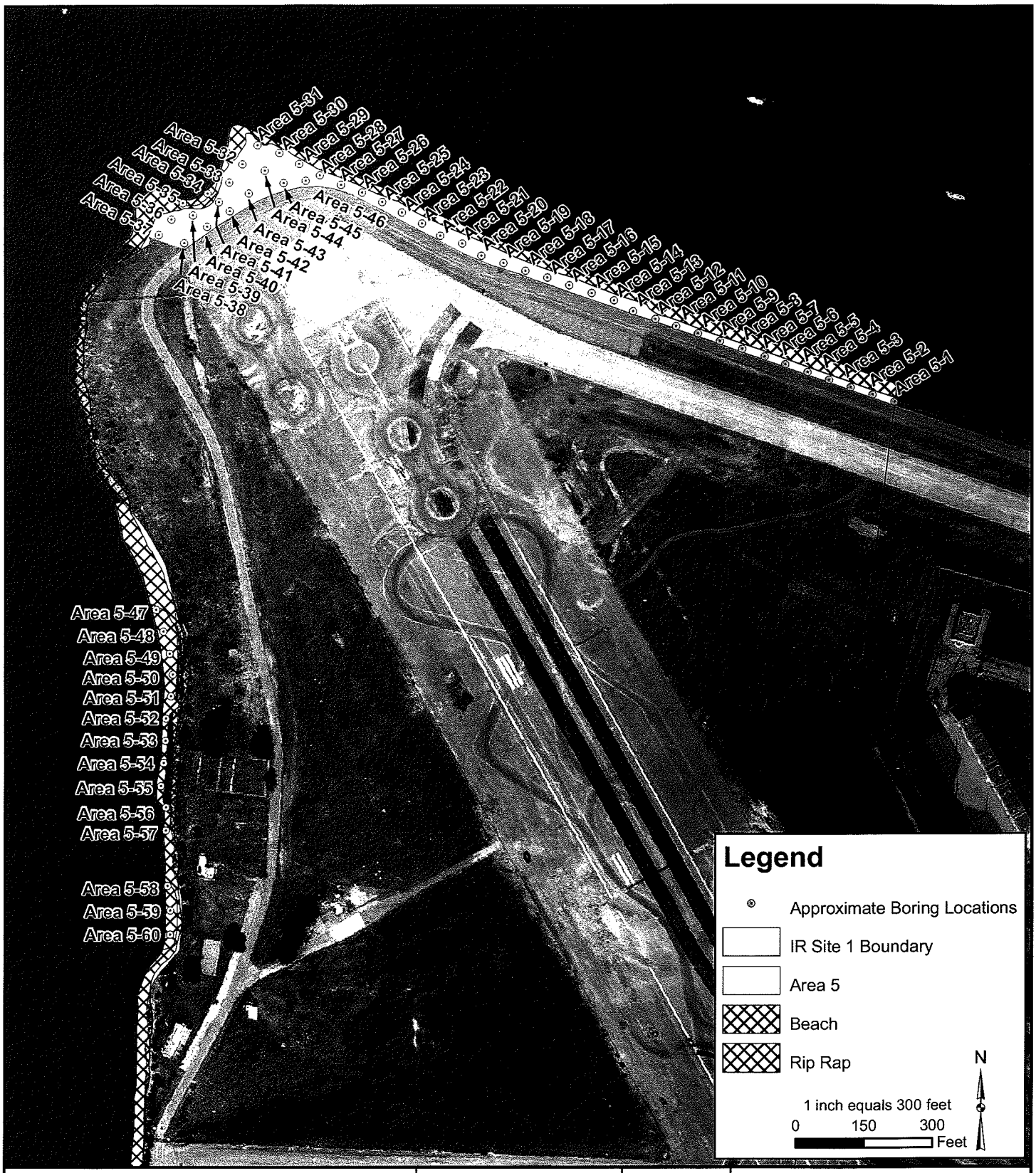
Slide 11 shows the IR Site 1 debris pit excavation. Mr. Brooks said that the site contained projectile material and some of the 20 millimeter (mm) projectiles were encased in concrete (Slide 12). Slide 13 shows management of projectile waste inside a bunker. The waste is stored in drums.

Slides 15 to 23 illustrate the removal action at Sites 1, 2 and 32. Slide 16 shows the process of locating radiological anomalies. Mr. Brooks said that a paint sprayer is used, which sprays paint on the ground were radiological anomalies are detected. Slide 17 shows the field screening measurements being taken.

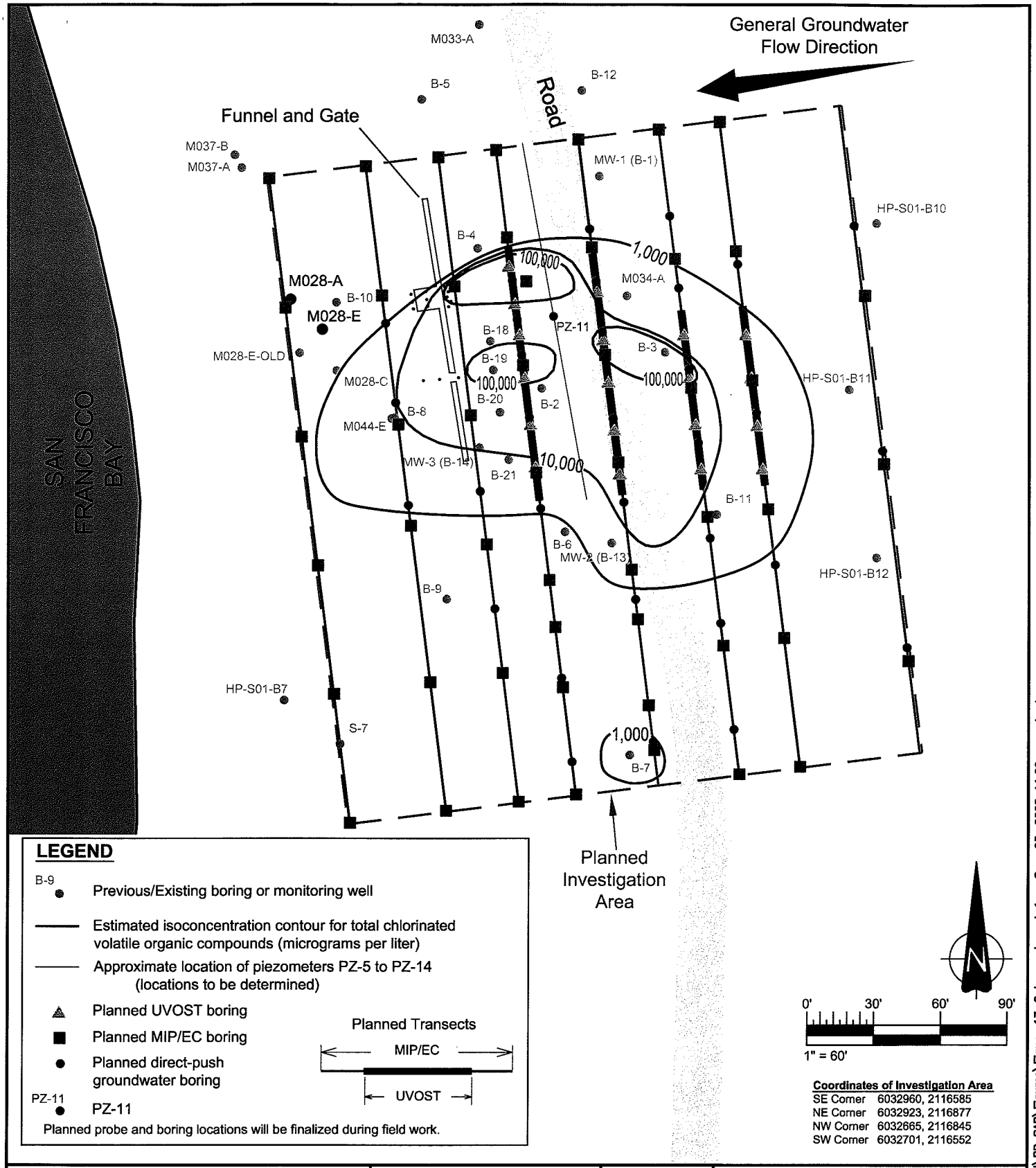
ATTACHMENT B-2

COLLECTION OF MAPS, FIGURE NUMBERS 17-1 THROUGH 17-4

(4 pages)



AMEC Earth & Environmental 9210 Sky Park Court, Suite 200 San Diego, CA 92123	amec		U.S. Department of the Navy BRAC PMO West San Diego, California
PROJECT PD-SAP FOR IR SITE 1	DWN BY:	DATUM NAD 83	DATE: September 2008
TITLE PROPOSED SOIL BORING LOCATIONS IN AREA 5	CHK'D BY:	REV. NO.:	PROJECT NO: 8151020002.0003.0006
	PROJECTION	SCALE: AS SHOWN	FIGURE NO: 17-1



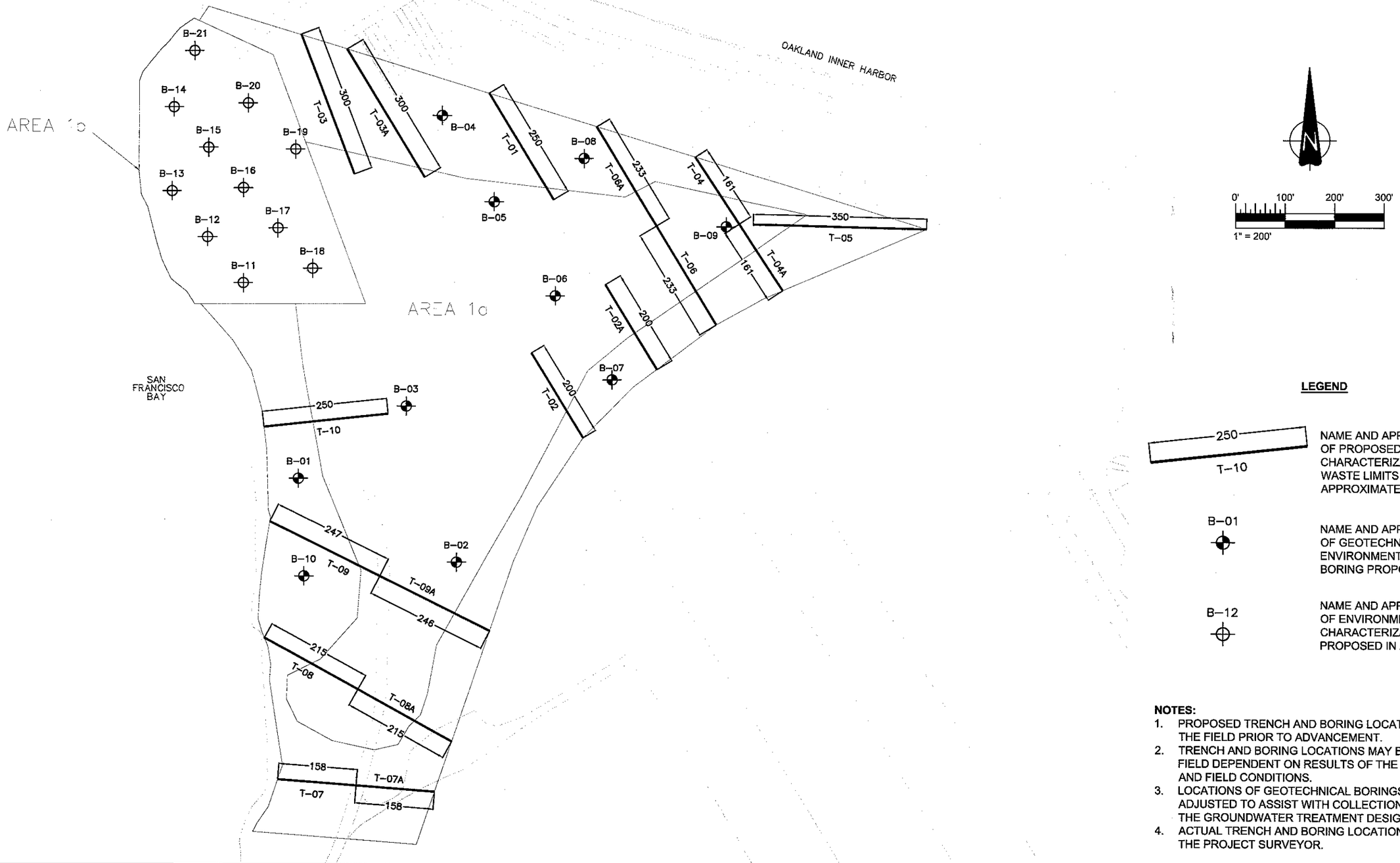
AMEC Earth & Environmental
9210 Sky Park Court, Suite 200
San Diego, CA 92123

amec

U.S. Department of the Navy
BRAC PMO West
San Diego, California

PROJECT: PD-SAP FOR IR SITE 1	DWN BY: BRJ/PM	DATUM: NAD83	DATE: SEPTEMBER 2008
TITLE: PROPOSED FOCUSED CHARACTERIZATION OF VOC PLUME	CHK'D BY: RB	REV. NO.: 1	PROJECT NO: 8151020002.0003.0006
	PROJECTION: California State Plane III, feet	SCALE: AS SHOWN	FIGURE No. 17-2

K:\Projects\PERMAC\AlamedaLandfill\PD SAP\Figures\Figure 17-2.dwg – Layout 1 – Sep. 05, 2008 11:00am – jon.borr



LEGEND

250 / T-10 — NAME AND APPROXIMATE LOCATION OF PROPOSED AND ALTERNATE CHARACTERIZATION TRENCHES FOR WASTE LIMITS DELINEATION. APPROXIMATE LENGTH SHOWN IN FEET.

B-01 — NAME AND APPROXIMATE LOCATION OF GEOTECHNICAL AND ENVIRONMENTAL CHARACTERIZATION BORING PROPOSED IN AREA 1a.

B-12 — NAME AND APPROXIMATE LOCATION OF ENVIRONMENTAL CHARACTERIZATION BORING PROPOSED IN AREA 1b

NOTES:

1. PROPOSED TRENCH AND BORING LOCATIONS WILL BE STAKED IN THE FIELD PRIOR TO ADVANCEMENT.
2. TRENCH AND BORING LOCATIONS MAY BE ADJUSTED IN THE FIELD DEPENDENT ON RESULTS OF THE GEOPHYSICAL SURVEY AND FIELD CONDITIONS.
3. LOCATIONS OF GEOTECHNICAL BORINGS B-01 AND B-10 MAY BE ADJUSTED TO ASSIST WITH COLLECTION OF SOIL SAMPLES FOR THE GROUNDWATER TREATMENT DESIGN.
4. ACTUAL TRENCH AND BORING LOCATIONS WILL BE VERIFIED BY THE PROJECT SURVEYOR.

THIS DRAWING WAS DEVELOPED BASED ON DATA GATHERED DURING RECENT SITEWALKS AND REVIEW OF 1) *SUMMARY OF FINDINGS - EXPLORATORY TRENCHES* (MAR. 2008), 2) *DRAFT RECORD OF DECISION* (APR. 2007), 3) *FINAL FEASIBILITY STUDY REPORT* (FEB. 2006), AND 4) *FINAL ORDANACE AND EXPLOSIVES WASTE / GEOTECHNICAL CHARACTERIZATION REPORT REV. 0* (NOV. 2002).

THE BASE MAP USED TO GENERATE THIS MAP WAS PROVIDED IN AMENDMENT 0004 (31 MAR. 2008) TO THE REQUEST FOR PROPOSAL TITLED: *REMEDIAL DESIGN AND REMEDIAL ACTION INSTALLATION RESTORATION SITE 1 AT ALEMEDA POINT, ALAMEDA, CA*.

NAVAL FACILITIES ENGINEERING COMMAND
SOUTHWEST SAN DIEGO, CA

AMEC Earth & Environmental
9210 Sky Park Court, Suite 200
San Diego, CA 92123

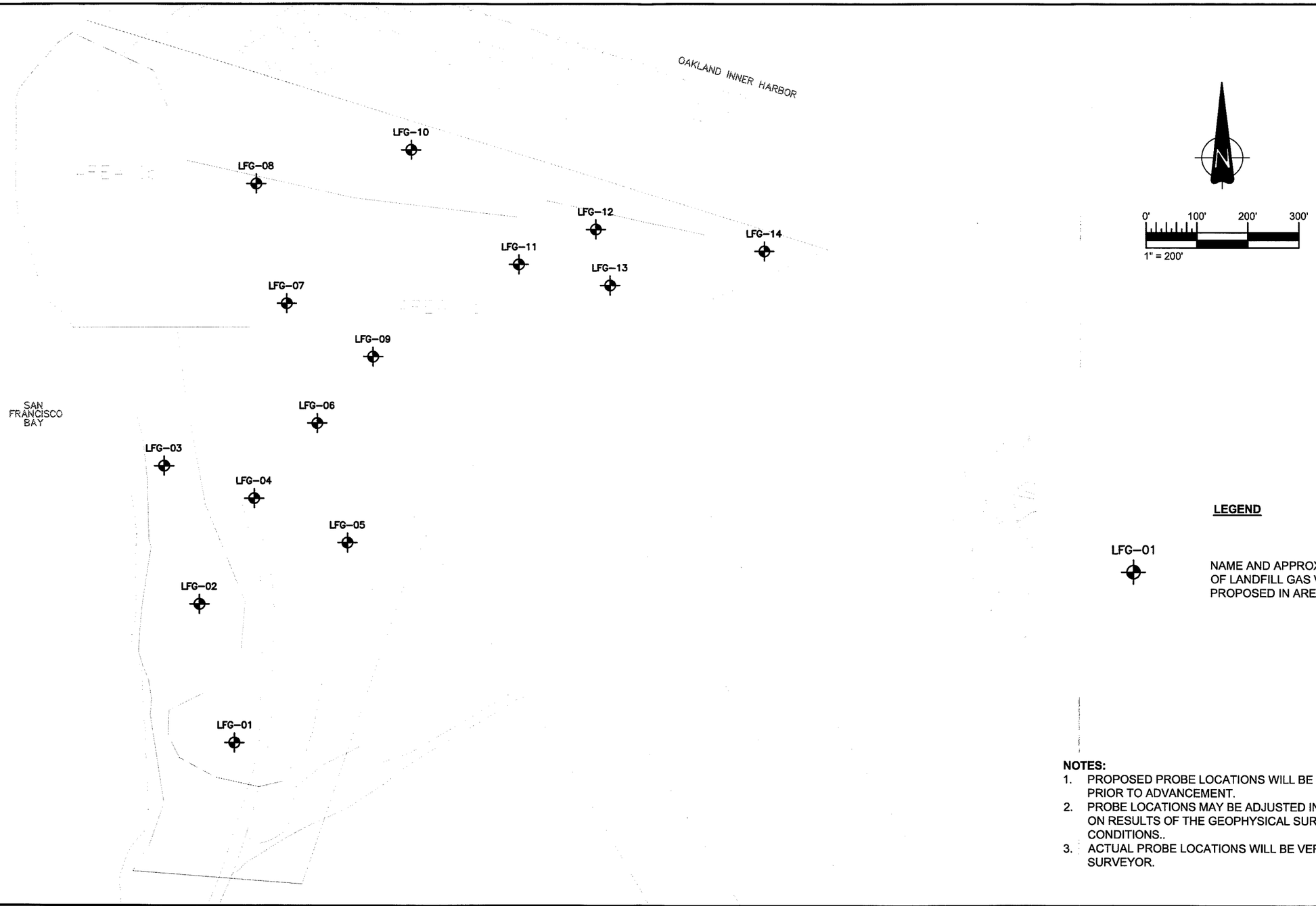
amec

DWN BY:	PAG
CHK'D BY:	DAK
DATUM:	N/A
PROJECTION:	N/A
SCALE:	1" = 200'

PROJECT
INSTALLATION RESTORATION SITE 1
ALAMEDA POINT, ALAMEDA, CA

TITLE
AREA 1a TRENCHES/BORINGS
& AREA 1b BORINGS
PROPOSED LOCATIONS MAP

DATE: 19 NOV. 2008
CONTRACT NO: N68711-05-D-6404
REV. NO.: B
FIGURE NO. **17-03**



LEGEND

LFG-01 — NAME AND APPROXIMATE LOCATION OF LANDFILL GAS VERIFICATION PROBES PROPOSED IN AREA 1a.

NOTES:

1. PROPOSED PROBE LOCATIONS WILL BE STAKED IN THE FIELD PRIOR TO ADVANCEMENT.
2. PROBE LOCATIONS MAY BE ADJUSTED IN THE FIELD DEPENDENT ON RESULTS OF THE GEOPHYSICAL SURVEY AND FIELD CONDITIONS..
3. ACTUAL PROBE LOCATIONS WILL BE VERIFIED BY THE PROJECT SURVEYOR.

THIS DRAWING WAS DEVELOPED BASED ON DATA GATHERED DURING RECENT SITEWALKS AND REVIEW OF 1) *SUMMARY OF FINDINGS - EXPLORATORY TRENCHES* (MAR. 2008), 2) *DRAFT RECORD OF DECISION* (APR. 2007), 3) *FINAL FEASIBILITY STUDY REPORT* (FEB. 2006), AND 4) *FINAL ORDANACE AND EXPLOSIVES WASTE / GEOTECHNICAL CHARACTERIZATION REPORT REV. 0* (NOV. 2002).

THE BASE MAP USED TO GENERATE THIS MAP WAS PROVIDED IN AMENDMENT 0004 (31 MAR. 2008) TO THE REQUEST FOR PROPOSAL TITLED: *REMEDIAL DESIGN AND REMEDIAL ACTION INSTALLATION RESTORATION SITE 1 AT ALEMEDA POINT, ALAMEDA, CA .*

U.S. Department of the Navy
BRAC PMO West, San Diego, California

AMEC Earth & Environmental
9210 Sky Park Court, Suite 200
San Diego, CA 92123

DWN BY:	PAG
CHK'D BY:	DAK
DATUM:	N/A
PROJECTION:	N/A
SCALE:	1" = 200'

PROJECT: **PD-SAP FOR IR SITE 1**

TITLE: **AREA 1a LANDFILL GAS VERIFICATION SAMPLING LOCATIONS MAP**

DATE: SEPTEMBER 2008
CONTRACT NO: N68711-05-D-6404
REV. NO.: A
FIGURE NO. **17-4**

ATTACHMENT B-3

OU-5/IR-02 GROUNDWATER REMEDIATION SYSTEM INSTALLATION

(11 pages)

OU-5/IR-02 Groundwater Remediation System Installation Alameda Point and FISCA, Alameda, California

RAB Meeting
January 8, 2009

Mary Parker
Navy Project Manager

Pete Everds
Tetra Tech EC, Inc.

Purpose

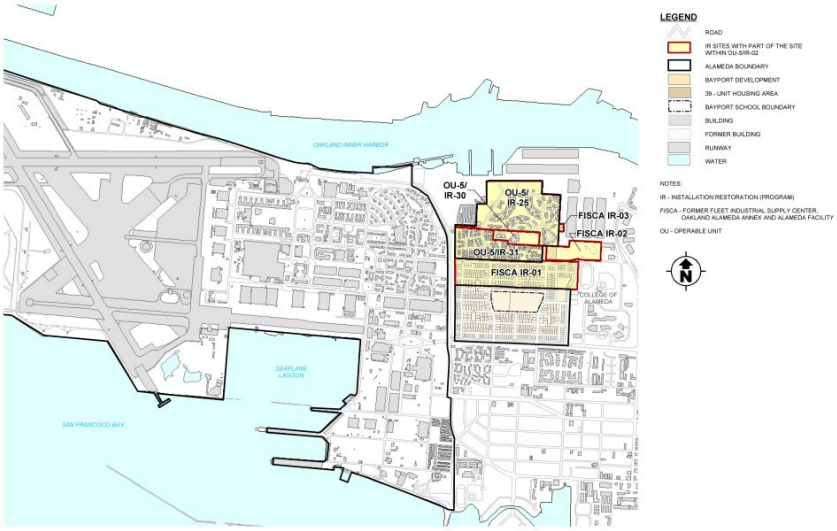
Provide an update on the remediation system installation:

- **Activities completed**
- **Schedule of activities to be completed**
- **Western treatment system installation**

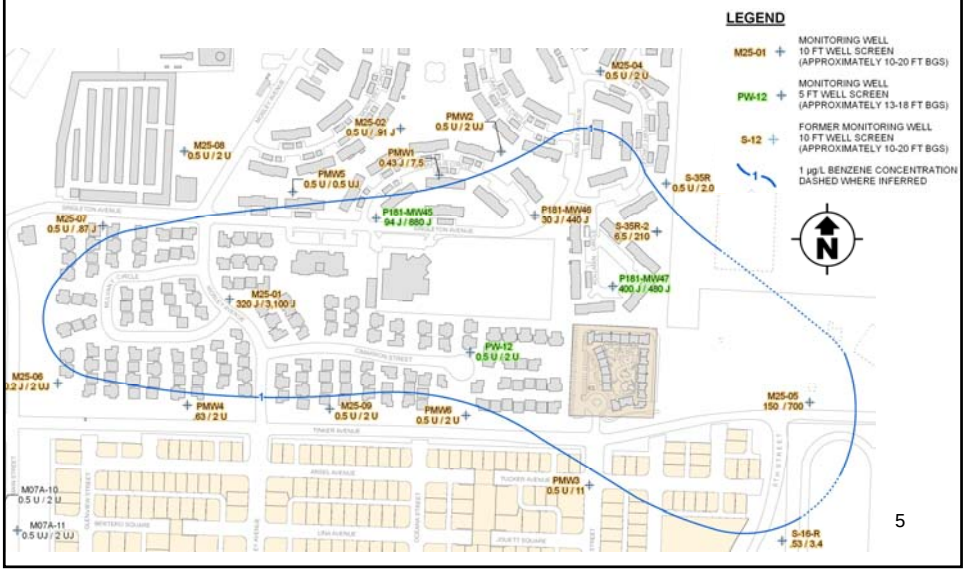
Introduction

- The OU-5/IR-02 plume covers portions of Operable Unit 5 at Alameda Point and FISCA, including FISCA Site IR-02
- OU-5/IR-02 shallow groundwater is impacted with benzene and naphthalene
- Pre-design field work completed in fall 2007:
  - Refined 1ppb plume boundary
  - Provided design data for biosparge zones
- Final OU-5/IR-02 Remedial Design/Remedial Action Work Plan issued in September 2008.
- Mobilized October 6 for remediation system installation

Site Location Map



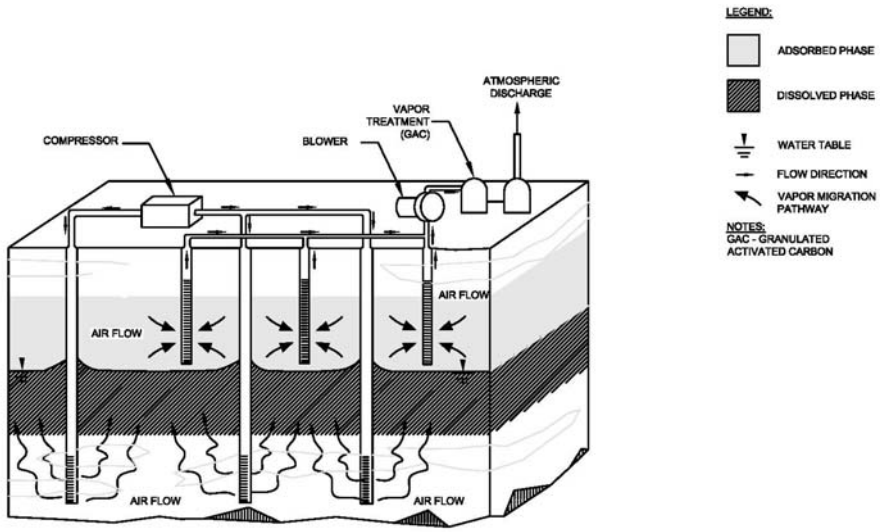
Plume Boundary
Benzene / Naphthalene Concentrations



Introduction: Groundwater Technology

- **Benzene and naphthalene in groundwater are typically cleaned up by enhancing natural aerobic microbiological processes.**
- **The OU-5 / IR-02 groundwater treatment system will add air (oxygen) – <u>Biosparging.</u>**

BioSparge / SVE System

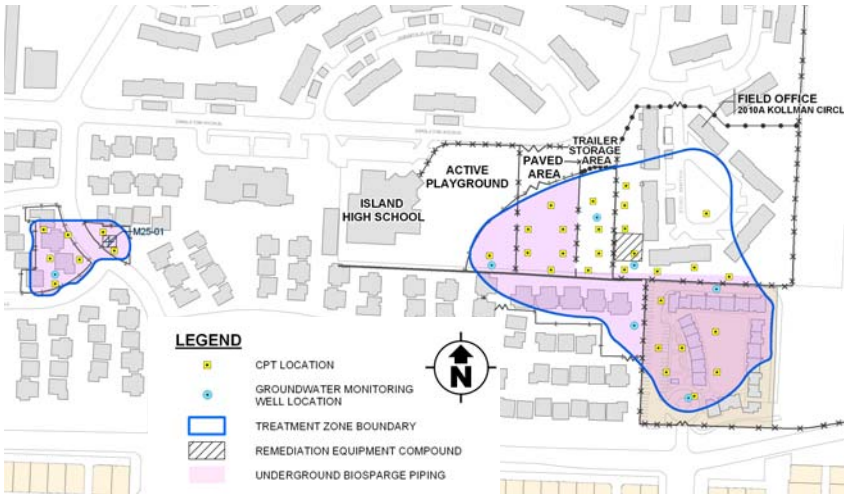


Groundwater Treatment Areas

Activities Completed October – December 2008

- 28 CPTs
- 6 Monitoring wells
- 290 Biosparge wells
- 12 SVE wells
- Trenching / piping / backfill (to be completed by mid-January 2009)

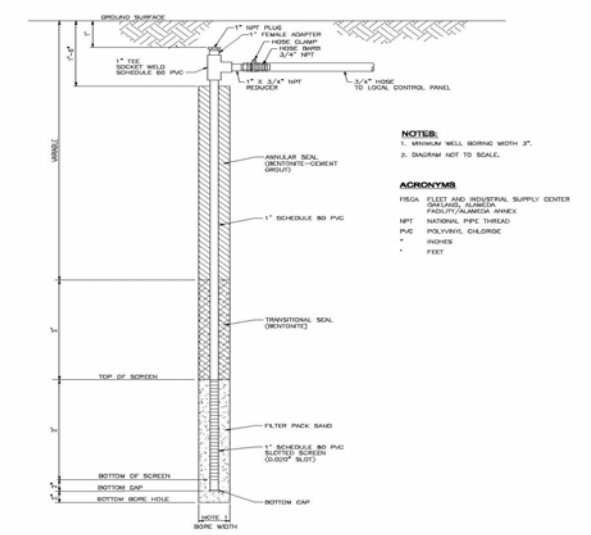
CPT and Monitoring Well Locations



CPT Rig

Monitoring Well Installation Using Hollow Stem Auger Rig

Biosparge Well Schematic

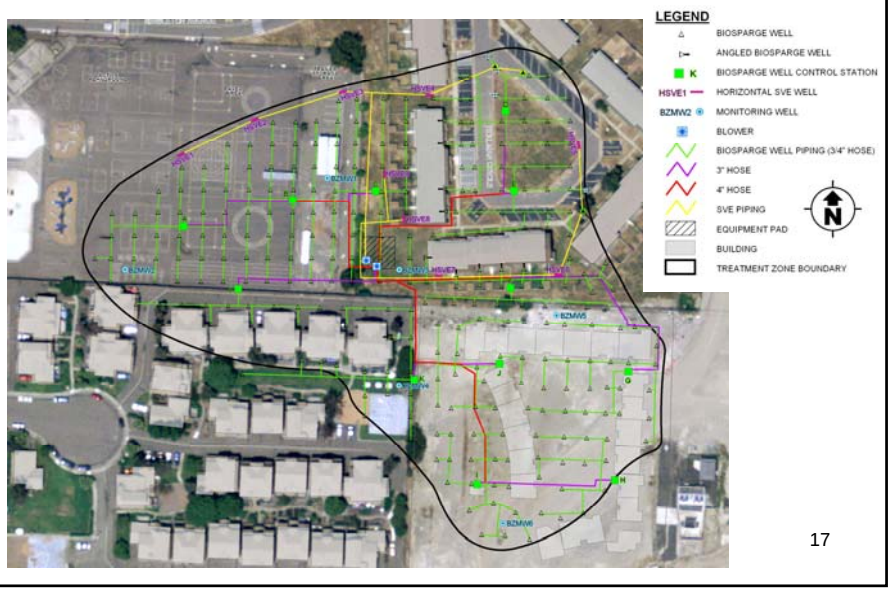


Biosparge Well Installation Using Limited Access Rig

Biosparge Wells

Trenching for Biosparge Wells

Eastern Treatment System Piping



Schedule of Activities to Complete Eastern Treatment System-2009

- Late January - Equipment compound slab
- Late January – Install biosparge well control stations
- Late January – Baseline groundwater sampling
- February – Install and connect equipment
- Late February-early March – system startup/adjust
- March – Begin system O&M

Western Treatment System

- Install summer 2009
- 2 Monitoring wells
- 32 Biosparge wells
- Trenching / piping / backfill
- Treatment system to be housed in sound shielded shed east of Mosley Avenue

Western Treatment System

Questions

ATTACHMENT B-4

DATA GAPS INVESTIGATION AT OU-2A AND OU-2B

(12 pages)

Data Gaps Investigation at Operable Units 2A & 2B, Alameda Point, California

Curtis Moss, P.G.
Navy Project Manager

RAB Meeting
Alameda Point
January 8, 2009

OU-2A and 2B Presentation Outline

Data Gaps Investigation Purpose:

Refine Conceptual Site Models to Optimize the Feasibility Studies for Each OU

Outline:

- Summarize Soil and Groundwater Results
- Identify groundwater contamination source zones
- Discuss Follow-up work

2

Screening Criteria

Soil Screening Levels

- **U.S. EPA Preliminary Remediation Goals (PRGs) or CA-modified PRGs; whichever is less (EPA, 2004); except for**
- **Arsenic, where background concentration is used**

Groundwater Screening Levels

- **U.S. EPA Maximum Contaminant Level (MCLs) or CA-modified MCLs; whichever is less (EPA, 2007)**

3

OU-2B IR Site 3

Site 3 investigation included assessment of the following data gaps:

- **Former Carpentry Shop in Bldg. 112**
  - Analyzed for VOCs, SVOCs, metals, and PCBs
  - All results below screening levels
- **Former Drum Storage Area north of Bldg. 112**
  - Analyzed for VOCs, SVOCs, metals, and PCBs
  - All results below screening levels
- **Delineate northern extent of lead plume at Bldg. 118**
  - All four Hydropunch™ samples did not report lead

4

OU-2B IR Site 3 (cont'd)

Building 118 Lead Sampling:

- **Blue and yellow crystalline material with fused glass, metal, and charcoal observed in soil boring beneath Bldg. 118**
- **Elevated copper** (8,420 mg/kg) **and lead** (463 mg/kg) **reported from this sample**

OU-2B IR Site 21

Site 21 investigation included assessing the following data gaps:

- **SWMUs: Generator Accumulation Points (GAP) 11, 44 and 76**
  - Limited TPH reported at GAP 11 and SVOCs at GAP 44
  - Vinyl chloride reported at GAP 76 (12.6 µg/L)
- **Previous Soil Sample Location 126-002-003**
  - All three shallow soil samples below screening criteria
- **Bldg. 113**
  - All samples below screening criteria
- **Bldg. 162**
  - TCE reported above soil screening criteria in 1 of 12 samples
- **Bldg. 398**
  - Vanadium and arsenic reported above screening levels

OU-2B IR Site 11

Site 11 soil investigation included assessing the following data gaps:

- **OWS's 014A through 014E –** All samples below screening levels
- **UST 14-4/UST(R)-06 –** TPH reported above screening level
- **Former Bldg. 118 –** All samples below screening levels
- **Previous sample M11-03 -** All samples below screening levels
- **Former Bldg. 265 -** All samples below screening levels
- **Previous sub-slab sample 14SG08 (Bldg. 14)**
  - All samples below screening levels
- **Groundwater**

OU-2B IR Site 4

Site 4 investigation included assessing the following data gaps:

- **BLDG 372, SWMU 372 and OWS 372A**
- **BLDG 163 and OWS 163**
- **BLDG 360, OWS 360, AST 360E, and storm water catch basins**
- **GAP 59**
- **Groundwater**

OU-2B Groundwater

Three major chlorinated hydrocarbon source zones identified within IR Site 4:

- **Plume 4-1 north of Bldg. 360**
- **Plume 4-2 west portion of Bldg. 360**
- **OWS-163 west side of Bldg. 163**

- **Sources coalesce westward and migrate between Bldg. 162 and 14**
- **Plume extends from near Building 360 to Seaplane Lagoon**
  - **(~ 400 yards)**
- **VOCs reported from 10 to 60' bgs (highest levels @ 20-40' bgs)**

9

IR Site 4 OWS-163

- **Maximum trichoroethene (TCE) concentration in groundwater:**
  - **220,000 µg/L (5-10' bgs at OWS-163 influent pipe)**
- **Daughter products present: cis-1,2 DCE** (66,000 µg/L) **and vinyl chloride** (16,000 µg/L)
- **Data suggest release is laterally limited**
- **Plan to remove OWS Tuesday Jan. 13th, sample, and conduct Zero Valent Iron Pilot Test to address VOCs groundwater**

10

Source Zone Treatment: Plume 4-1

Pilot Tests performed:

- 2002 Thermal Treatment
- 2003 In-Situ Chemical Oxidation (ISCO)

Planned Work at Plume 4-1:

- Funding in place for treatment in 2009
- DoD Research Grant: U.S. EPA Kerr Laboratories planning detailed research and analysis to optimize remedy
- On-going semi-annual groundwater sampling

Source Zone Treatment: Plume 4-2

Pilot Tests performed:

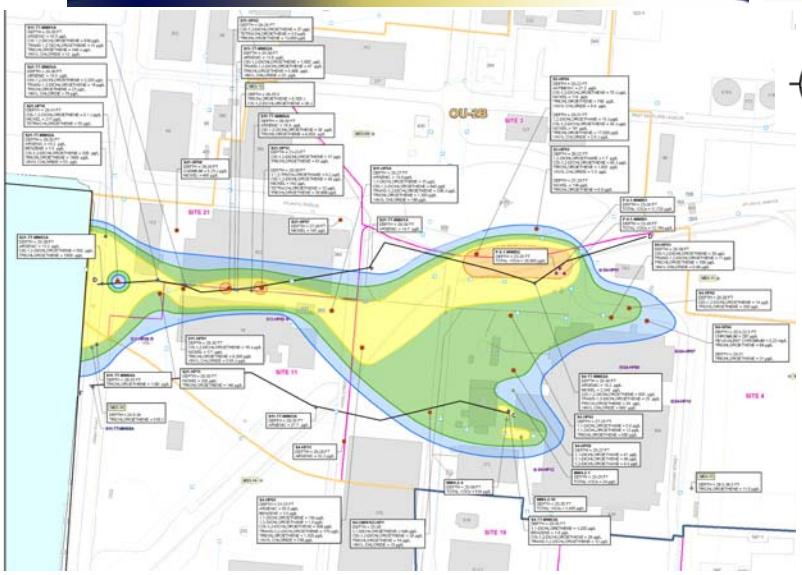
- 2008 Thermal Treatment
- Effective in destroying VOCs

Planned Work at Plume 4-2:

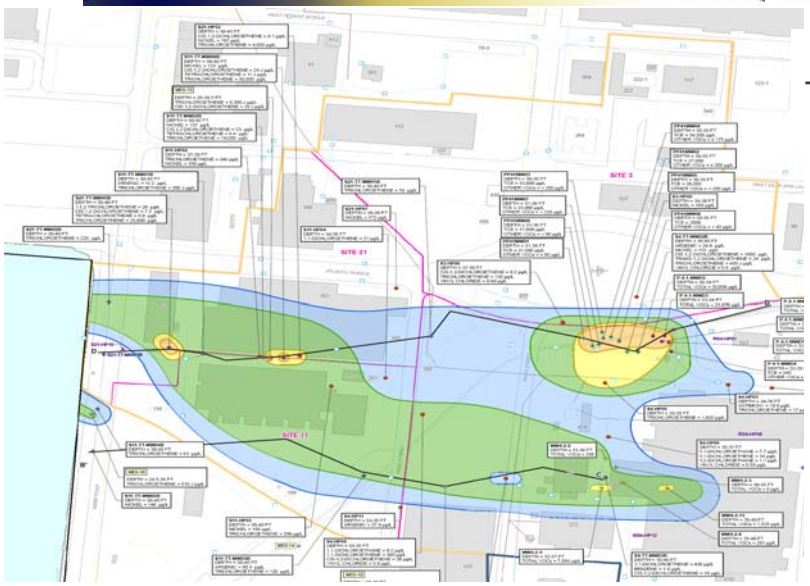
- Currently sampling soil gas and groundwater to assess rebound
- On-going semi-annual groundwater sampling

OU-2B VOCs in Groundwater 5-15' bgs

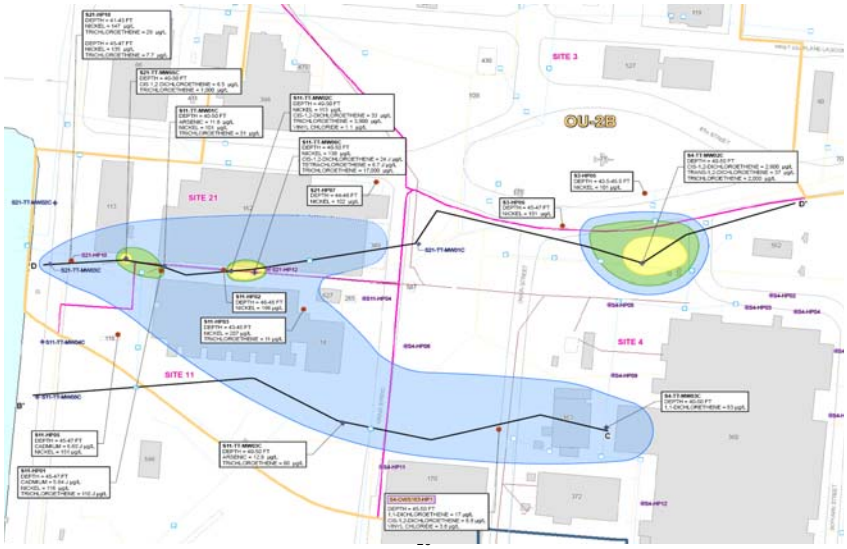
VOCs in OU-2B Groundwater (20 – 30 feet bgs)



OU-2B Groundwater (30-40 feet bgs)



OU-2B Groundwater (40-50 feet bgs)

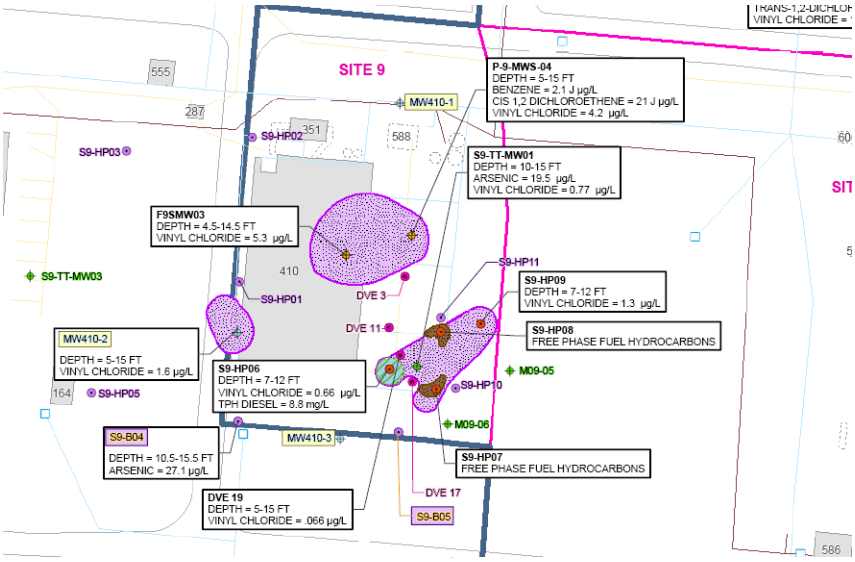


OU-2A Site 9 Groundwater

- Nine Hydropunch™ sampling locations
- Free-product observed in two borings
- Vinyl chloride above screening level (maximum 5.3 µg/L)
- Previous Treatments:
  - ISCO (chlorinated solvents): 2003, 2004, and 2005
    - Effective: only vinyl chloride remains
  - Free-product recovery (fuel)
- Further free product recovery planned 2009

17

OU-2A Site 9 Groundwater



OU-2A Site 13

Site of Former Oil Refinery and Incinerator:

SOIL:

- 15 soil borings at former incinerator
  - Vanadium, PAHs, napthalene, and lead exceeded screening levels
- AST 324, 325, 326, 327 and 328 soil samples below screening levels
- Soil samples adjacent to previous borings exceeded screening levels for lead, PAHs, and arsenic

GROUNDWATER:

- Arsenic exceeded screening level (max = 20.8 µg/L)
- Vinyl chloride detected above screening level at 0.64 µg/L

19

OU-2A Site 19

Data Gaps included assessing:

- Former Hazardous Waste Storage Yard D-13
- Nine soil samples collected:
  - PAHs exceeded screening levels in 2 of 9 samples
- Two groundwater samples collected:
  - PCE and TCE reported slightly above screening levels

20

OU-2A Site 22

Data Gaps included assessing:

- **OWS 547**
  - **All soil and groundwater results below screening levels**
  - **No further action recommended**
- **Investigated previous soil sample locations 547-5, -6, -11 where lead was reported in RI**
  - **Lead below screening levels in all samples**

21

OU-2A and 2B Current Status

- **Responding to Agency comments evaluating additional data needs for each Feasibility Study**
- **OU-2B FS underway, updating conceptual site models and performing new Human Health Risk Assessment**
  - Aggressive treatment of source zones
  - Mitigate for plume impacting Sea Plane Lagoon
- **OU-2A FS will begin early February 2009**

22

OU-2A and 2B Data Gap Presentation

THANK YOU!

QUESTIONS???

COMMENTS….

23

ATTACHMENT B-5

LIST OF REPORTS AND CORRESPONDENCE RECEIVED - DECEMBER 2008

(1 page)

Restoration Advisory Board
Documents and Correspondence
Received during December 2008

Documents

1. December 8, 2008, "Final, Remedial Design/Remedial Action Work Plan Installation Restoration Site 14, Alameda Point, Alameda, California", prepared by Innovative Technical Solutions, Inc. for BRAC Program Management Office West.
2. December 5, 2008 (received December 11, 2008), "Final Addendum 2 to Final Project Plans, Utility Corridor Investigation at Petroleum Corrective Action Area 3, Alameda Point, Alameda, California", prepared by Shaw Environmental Inc. for BRAC Program Management Office West.
3. December 11, 2008, "Navy Response to Comments Received May 28, 2008 from the U. S. EPA Regarding the Final Remedial Design and Remedial Work Plan, IR Site 14, Alameda Point, California", prepared by Battelle, Columbus for BRAC Program Management Office West.
4. December 11, 2008, (received December 16, 2008), "Technical Memorandum for Third Quarter 2008, CAA 3 and CAA C, Alameda Point, Alameda, California", prepared by Shaw Environmental Inc. for BRAC Program Management Office West.
5. December 5, 2008, (received December 19, 2008), "Final, 2009 Amendment to the Site Management Plan", prepared by BRAC Program Management Office West.

Correspondence

1. December 15, 2008, "Navy's Response to ARRA letter of October 20, 2008 entitled 'Deficiencies with CERCLA Conceptual Model for Area 1a at IR Site 1, the 1943-1956 Disposal Area, Alameda Point, Alameda, California'", letter from George Patrick Brooks, BRAC Program Management Office West to Ms. Debbie Potter, Alameda Reuse and Redevelopment Agency.
2. December 5, 2008 (received December 20, 2008), "Final Amendment to the Site Management Plan, Alameda Point, Alameda, California", letter from Mr. George Patrick Brooks to Ms. Anna-Marie Cook, U. S. EPA, Region IX, Ms. Xuan-Mai Tran, U. S. EPA, Region IX, and Ms. Dot Lofstrom, DTSC.
3. December 17, 2008, "Comments on Revised Final Feasibility Study Report IR Site 2, West Beach Landfill and Wetlands, Alameda Point, Alameda, CA", letter from Ms. Dot Lofstrom, P. G., DTSC, to Mr. George Patrick Brooks,, BRAC Program Management Office West.
4. December 19, 2008 (received December 29, 2008), "Review of Draft Final Work Plan for Closure of Aboveground Storage Tanks, Alameda Point, Alameda, CA", letter from Mr. John West, S. F. Bay Regional Water Quality Control Board to Mr. George Patrick Brooks, BRAC Program Management Office West.