



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

September 11, 2014

www.bracpmo.navy.mil

950 West Mall Square, Alameda City Hall West
Room 140, Community Conference Room
Alameda Point
Alameda, California

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

George Humphreys Restoration Advisory Board (RAB) Community Co-chair

RAB Members

Richard Bangert, Susan Galley, Carol Gottstein, M.D., Jim Leach, Skip McIntosh, Bert Morgan; Bill Smith; Dale Smith; Jane Sullwold; Jim Sweeney; Michael John Torrey

Community Members/Public Attendees

Tim Anderson, Bobbie Centurion, Gretchen Lipow

Regulatory Agencies and City

James Fyfe, California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC)

U. S. Navy

Bill McGinnis; BRAC PMO West, Lead Remedial Project Manager

Contractors

Yashekia Evans, Tetra Tech; Peter Russell, Russell Resources; Tommie Jean Valmassy, Tetra Tech

MEETING SUMMARY

I. Welcome and Introductions

George Humphreys (RAB Community Co-Chair) called the September 2014 former Naval Air Station Alameda (Alameda Point [AP]) RAB meeting to order, and initiated a round of introductions. Mr. Humphreys announced that Kurt Peterson has an excused absence. Derek Robinson (RAB Navy Co-Chair) reviewed the agenda ([Attachment A.](#))

II. Co-Chair Announcements

Mr. Humphreys said the RAB members received an application from Victor Quintell. Mr. Quintell was not present to introduce himself and answer questions, so a vote on his application was tabled until he attends a meeting. Mr. Humphreys provided a list of documents he received in July and August 2014 ([Attachment B](#)). He noted he had recently received some documents in September, but those will be listed on the handout at the next RAB meeting.

Mr. Robinson said Carol Gottstein (RAB member) provided a copy of an account of how the Alameda Point property came to be owned by the Navy; most of the acreage came from the City of Alameda, with a small portion coming from the Army ([Attachment C](#)).

Mr. Robinson said the Navy and its contractors have been engaged in field work this summer. Mr. Robinson said the draft final Site Management Plan (SMP) is available at the meeting. The document will not be finalized until Congress approves the budget. It is a good resource to see what documents are coming up for review.

III. Community and RAB Comment Period

Jim Leach (RAB Member) said he must resign. The RAB thanked him for his work, and Mr. Leach departed. Dale Smith (RAB Member) discussed the RAB tour that was held after the RAB meeting on July 12, 2014. She asked why the RAB was not allowed in Building 400. At an earlier meeting there had been a request to visit the building and the Navy's representative said it was not possible. On research it was learned that access was permitted by both the city and the tenant. Mr. Robinson subsequently announced a visit was possible. Mr. Robinson said the Navy has access to the second and third floor, via an interior staircase, where work is under way. The Navy does not have access to the first floor that the RAB wanted to view although that was not indicated earlier. Mr. Robinson said he had contacted the tenant, who was going to open the building for the RAB during the tour, but the tenant did not show up. Ms. Smith noted she overheard talk that the RAB would not be allowed access from a Navy employee and others. When the bus arrived the tenant was not there and Mr. Robinson already had a backup plan to visit another area. Ms. Smith noted the caretaker site office manager was carrying keys to all the buildings. Mr. Robinson said the Navy does not have keys to all the buildings at Alameda. The Navy will not force a tenant to allow access to the space if it is not for the environmental cleanup program. Skip McIntosh (RAB member) asked if the RAB tour is not part of the environmental program. Mr. Robinson said no, it is not. He added that if active cleanup work is not underway, a RAB tour would not be a reason for the Navy to require access.

Ms. D. Smith said it appears Building 400A is sealed off, preventing access to the public. Bill McGinnis (Navy) said he is not aware of any restrictions, and if there are any, it is not for environmental work. Mr. McGinnis said he will confirm that the hangar area of Building 400 is leased.

Ms. D. Smith said she is concerned that the Site 2 work plan states only that pickleweed will be used; reseeding should include grasses and other vegetation. She said the soil piles she saw at Site 1 during the RAB tour appear to be covered with lupine plants. She suggested the Navy require the contractor to collect seeds from those piles for reseeding at Site 2. Mr. Robinson said the Navy awarded a contract for operation and maintenance (O&M) of the Site 2 landfill cover. It is important to protect the soil cover with vegetation, and that is what the Navy and its contractors

will do. Mr. Robinson said he will ask his contractor about harvesting native lupine seeds to reseed at Site 2.

Mr. Humphreys asked if the Navy had identified an elevation in concentration of contaminants in groundwater after the Napa earthquake. Mr. Robinson said the Navy and contractors conducted physical inspections across all installations in the area, including Alameda Point, and no liquefaction was detected. At Alameda Point, the Navy specifically re-surveyed the Site 1 templates that are being placed as part of the remediation at that site and found no issues with the work in progress.

Dr. Gottstein asked why there is no City of Alameda representative on the RAB board. Mr. Humphreys said the most recent city representative was Tony Daysog. Bill Smith (RAB member) agreed to contact Mr. Daysog and request that he or another city representative attend Alameda Point RAB meetings.

IV. Field Work Updates for OU-2C and Sites 1, 3, 6, and 13

Mr. McGinnis presented an overview of the current field work taking place at Alameda Point and presented a program overview of sites where significant work was completed in 2013 and 2014 ([Attachment D](#)). Mr. McGinnis said this update will include sites where work is, or recently was, taking place. He noted the field work is sequential and cumulative, the result of many investigations, documents, and reviews. He thanked the following project managers and their contractors for these sites:

Site	Navy Project Manager	Supporting Contractor
Site 13	Cecily Sabedra	Cape Environmental
Operable Unit (OU) 2B	Mary Parker	Tetra Tech
Site 3 (part of OU-2B)	Mary Parker	Arcadis
Site 6	Dave Darrow	AMEC
Site 1	Cecily Sabedra	AMEC and various subcontractors

In addition, Mr. McGinnis thanked the RAB members for their input on the cleanup and Richard Bangert (RAB member) specifically for some of the photographs in the presentation.

During the review of slide 3, Ms. D. Smith asked if the Navy is monitoring the groundwater during the in situ bioremediation (ISB) treatment. The first round of post-construction sampling has not yet been conducted. As noted on the slide, quarterly groundwater monitoring will be conducted.

During the review of slide 6, Mr. Bangert asked if the Site 13 ISB system has two vents in each area – one to bring air in and one to release it. Mr. McGinnis said there are passive and active vents, but they are not equally distributed. It is based on the design of the treatment. Mr. Bangert asked if he would smell anything at the passive vents. Mr. McGinnis said the biovents are for oxygen circulation, and not to vent benzene. The ISB is treating the benzene in the ground; therefore, there should be no odor. In addition, the project is meeting all air quality requirements. Mr. Humphreys asked how the air is monitored. Mr. McGinnis said there is a sample port on the side of the tube to collect the sample.

During the review of slide 10, Mr. Bangert asked how using a camera inside a pipe can test for radiological contamination. Mr. McGinnis said the camera looks for breaks or other damage to the pipe, as well as sediment in the pipe. Those are the areas that are then targeted for investigation outside the pipe. Peter Russell (Russell Resources) said the Navy plans to institute institutional controls (ICs) along the pipe. Step-out samples are being collected 3 feet on both sides to verify the space is clean. These samples will dictate the size of the corridor for the ICs. Mr. Bangert asked if there is a possibility that no ICs would be instituted based on this investigation. Mr. McGinnis said it is unlikely, but nothing is ruled out yet; the Proposed Plan and Record of Decision (ROD) will determine the remedy.

Mr. Humphreys said he did not receive the final ROD for OU2C. Mr. McGinnis said he will check and make sure Mr. Humphreys receives a copy.

During the review of slide 12, Ms. D. Smith asked the depth to groundwater, and if metals went as deep. Mr. McGinnis said groundwater is at a depth of 6 to 7 feet, and metals were present at that depth. She also asked if there will be soil vapor intrusion problems after ISB is completed. Mr. McGinnis said there would not; the groundwater is being cleaned up to drinking water standards.

During the review of slide 25, Ms. D. Smith asked if the Navy found any contamination under the runway. Mr. McGinnis said the Navy is scanning for radiological isotopes, but to date none have been reported. Ms. D. Smith asked where the broken concrete from the runway will be sent. Mr. McGinnis said it is being staged on site and will be used as sub-grade fill at the landfill.

V. Community Co-Chair Nominations

Mr. Robinson asked for nominations for community Co-Chair and Community Vice Co-Chair. Mr. Humphreys confirmed he will complete his term and then declines to run again to allow others the opportunity to serve. Ms. Galleymore was nominated as Community Co-Chair and Jane Sullwold was nominated as Community Vice Co-Chair. Both members accepted the nomination. Voting will take place at the November RAB meeting.

V. Approval of Meeting Minutes/Review Action Items

Ms. D. Smith made the following comments:

- Page 3 third paragraph, third line down, change the end of the sentence to read "...designation in many documents depends on the old surface of the Bay mud prior to filling to create Alameda Point."
- Page 3 fourth paragraph, change the last sentence to read: "Mr. Robinson said that typically decommissioning includes injecting concrete slurry into the well to prevent vertical movement, then cutting the well down 5 feet and pouring in a grout mixture to cap it."

Mr. Humphreys made the following comments:

- Page 2, first paragraph, last sentence: strike "on the Navy's handout of upcoming documents" and replace with "because they were received in July."
- Page 2 under Community and RAB Comment Period, third paragraph: after Ms. Smith, add change to "were previously in the Responses to Comments (RTCs), and were..."

- Page 2 under Environmental Program Review, third paragraph, change “submitted” to “submission.”
- Page 3, second paragraph, after the first sentence, add the sentence: “He was concerned that contamination might have been forced out laterally by concrete pumping under the building.”
- Page 3, fourth paragraph, change the first sentence to read: “...Mr. Humphreys said the soil under roads and structures at Site 25 was never surveyed for PAHs, nor was 1 acre around the trees; both areas need to be restricted.”
- Page 4, third paragraph, add the following to the end of the paragraph: “Mr. Humphreys noted that there was no total for Navy expenditures and future project costs. Mr. Robinson said the total through fiscal year 2013 was \$513 million.”

The minutes were approved with the preceding changes incorporated. The next RAB meeting will be held on Thursday, November 13, 2014, at 6:30 p.m. The meeting was adjourned at 8:32 p.m.

Action Items:	Previous Item #/ Action Item Status/ Action Item Due Date:	Initiated by:	Responsible Person:
1. Request for Presentations: a. OU-2A Tarry Refinery Waste and Rail Cars	Pending	RAB	Mr. Robinson
2. Navy to look into video-conferencing capabilities at various Alameda locations.	Ongoing	RAB	Mr. Robinson
3. OU-5/FISCA IR-02 Navy to investigate whether a return to anaerobic conditions after cessation of biosparging will result in contaminant concentrations at the groundwater/soil interface.	Pending	Mr. Humphreys	Mr. Robinson
4. Ask AMEC how to find copies of the report from Subsurface Consultants that AMEC referenced in its Site 1 seismic design report.	New (Revised)	Ms. D. Smith	Mr. Robinson
5. Navy will answer the question: what happens if part of the IR Site 1 waste isolation barrier moves and the rest stays in place?	Pending	Mr. Humphreys	Mr. Robinson
6. Find out if any testing was done to see if PFOS (perfluorooctanesulfonic acid) was used at Alameda Point.	Pending	Ms. D. Smith	Mr. Robinson

Action Items:	Previous Item #/ Action Item Status/ Action Item Due Date:	Initiated by:	Responsible Person:
7. Confirm that the hangar area of Building 400 is leased.	New	Ms. D. Smith	Mr. McGinnis
8. Ask the contractor about harvesting native lupine seeds to reseed at Site 2.	New	Ms. D. Smith	Mr. Robinson
9. Contact Mr. Daysog and request that he or another city representative attend Alameda Point RAB meetings.	New	Dr. Gottstein	Mr. B. Smith

ATTACHMENTS

NAVAL AIR STATION ALAMEDA RESTORATION ADVISORY BOARD MEETING ATTACHMENTS

- A. Naval Air Station Alameda Restoration Advisory Board Meeting Agenda, September 11, 2014 (1 page)
- B. Documents Received during July - August 2014 – provided by George Humphreys (1 page)
- C. Excerpt from Alameda Community Book, pages 70-73 (4 pages)
- D. Alameda Point Program Review (30 slides)

RESTORATION ADVISORY BOARD

NAVAL AIR STATION, ALAMEDA

AGENDA

SEPTEMBER 11, 2014, 6:30 PM

**ALAMEDA POINT – 950 WEST MALL SQUARE, ALAMEDA CITY HALL WEST
SUITE 140/COMMUNITY CONFERENCE ROOM**

(FROM PARKING LOT ON W. MIDWAY AVENUE, ENTER THROUGH MIDDLE WING)

<u>TIME</u>	<u>SUBJECT</u>	<u>PRESENTER</u>
6:30 – 6:35	Welcome and Introductions	Community and RAB
6:35 – 6:45	Co-Chair Announcements	Co-Chairs
6:45 – 7:15	Community and RAB Comment Period*	Community and RAB
7:15 – 8:00	Field Work Updates for OU-2C and Sites 1, 3, 6, and 13	Mr. Bill McGinnis
8:00 – 8:15	RAB Co-Chair Nominations	RAB
8:15 – 8:30	Approval of Minutes	RAB
8:30	RAB Meeting Adjournment	

* If there is time at the end of the agenda, additional comments will be taken.

Alameda RAB
List of Documents Received
July-August 2014

1. "Final, Soil Remedial Action Work Plan, Operable Unit 2B, Installation Restoration Sites 3 and 4, Alameda Point, Alameda, California", July 8, 2014, (received July 9, 2014), Arcadia, U. S., Inc., prepared for Naval Facilities Engineering Command Southwest.
2. "Final, Remedial Design and Remedial Action Work Plan, Installation Restoration Site 1, Alameda Point, Alameda, California", July 8, 2014 (received July 10, 2014) cover, spine and replacement pages, plus new CD, AMEC Environment & Infrastructure, Inc., prepared for U. S. Department of the Navy, Base Realignment and Closure, Program Management Office West.

\$4,500,000 tube under the estuary" is a thrilling story in itself. Space, however, forbids its relation.

On the 27th day of October, 1928, the George A. Posey Tube, formerly called the Oakland-Alameda Estuary Subway, was officially dedicated, and at 6:00 p.m. of the same day was opened to traffic.

In anticipation of the opening of the Posey tube, the Key System Transit Company, December, 1927, announced its intention to apply to the railroad commission for permission to cease operation of street cars on the No. 1 line in Oakland and on Webster Street and Santa Clara Avenue in Alameda, and to supplant the cars with a bus system. Mr. Posey, chief engineer in the construction of the tube, expressed it as his opinion that "the use of busses would materially speed up the traffic through the subway. There will be less noise and vibration and consequently less deterioration of the subway itself." He also believed bus operation through the tube was "the safest and best from every standpoint."

In view of the fact that the construction of certain features of the estuary tube was being delayed pending a decision as to whether street cars or busses were to be operated therein, the Railroad Commission was urged by all parties interested in this question to hold an early hearing. Consequently, a hearing was held on March 30, 1928, and a decision was rendered on April 13, 1928. The Order of the Railroad Commission read as follows:

"It is hereby ordered that a certificate of public convenience and necessity be and it is hereby granted to the Key System Transit Company to operate bus service from points in the City of Oakland to points in the City of Alameda through the tube or subway under the Oakland Estuary."

The City Council of Alameda, without delay, appointed a committee on April 17, 1928, to hold conferences with representatives of the Key System Transit Company, and civic organizations in order to arrive at a conclusion as to the best route or routes. The policy adopted was that the operation of busses in Alameda be over the route of the No. 1 street car line, with a loop beyond High Street; that the route in Oakland be along Harrison Street to Tenth Street; to Washington Street; to San Pablo Avenue; to Broadway; to Tenth Street; to Harrison Street, to the tube. The City Attorney was later instructed by the City Council to proceed along the policy outlined, and, in so far as Alameda is involved, the solution suggested above was reached. Today the bus system operates with general satisfaction.

The Alameda Naval Air Base

On August 10, 1913, the state of California transferred to the city of Alameda all the state-owned tidelands within three miles of the city's boundaries. These tidelands, however, could not be sold or held in private ownership, but it would be legal to enter into 25-year leases with private interests. The transfer also required that Alameda must, within a period of five years,

expend at least \$200,000 on improving these areas, or the lands could again revert to the state. Alameda failed to meet this stipulation, but the state legislature, 1917, waived the penalty and granted the city the right to make whatever public grant it desired of these lands.

In the meantime, the Navy Department "had its eye" on Alameda since the first of the century. Immediately on learning of the action of the state legislature in 1917 the Navy Department dispatched a commission headed by Rear-Admiral J. M. Helm to prepare a report "for the establishment of a necessary additional Navy yard on the Pacific Coast." This report, made public December 7, 1917, recommended acquisition of the Alameda site for construction of a Navy Yard. Waging of the First World War, however, distracted attention from the project until 1919 when an election was held in Alameda to vote on the proposal to grant 5,340 acres of tideland to the Navy. The vote was 3,970 in favor of the transfer and 124 opposed. Pursuant to this authorization a deed to the specified tract of land, dated February 5, 1920, was delivered to the Government. The transfer, however, contained the provision that improvement on the tract should begin before January 1, 1924, or the land would revert again to Alameda. When it became apparent that the Government would not meet this obligation, another election was held to obtain authority to extend the period for one year. This vote resulted in a Yes of 3,672 and a No vote of 2,499.

From this time for a period of years the question of the tidelands seemed to drift, reflecting, perhaps, the period in our national thinking when reduction in armaments seemed propitious—the period of "disarmament by example."

Renewed interest in the Alameda tidelands became apparent early in 1933, when the Government evidenced interest in securing a Naval Supply Depot site. In the meantime, the San Francisco Bay Industrial Committee, composed of representatives of the several communities around the Bay, became active. On March 30, a meeting of the Co-ordinating Committee of this organization was held—at which meeting Mr. E. G. Ryder, president of the Alameda Chamber of Commerce, represented the city. Here it was agreed that the committee would support the selection of Alameda for a Navy base. This meeting was followed a week later by another in the offices of the Alameda Chamber of Commerce, at which plans were formulated for official action by the City of Alameda. Mayor Murray later appointed a commission, composed of E. G. Ryder, Ralph M. Bryant, A. K. Tichenor, Augustin Keane, F. J. Bruzzone and the Mayor himself. This committee was charged with the duty of preparing a report of the advantages of Alameda for the projected Naval expansion.

On October 16, 1933, a Congressional Naval Affairs sub-committee visited Alameda while on a tour of the Bay Area for prospective sites. Undoubtedly the committee members were favorably impressed, for Congress the next year authorized a more intensive survey to be made of the Alameda site. Consequently, on July 19, 1935, the Naval Affairs sub-committee again

visited the area. At the same time a Naval Board of Survey, having completed its inspection, announced its approval of the selection of Alameda for a Naval Air Base. Formal notification of this decision was given November 19, 1935, at a meeting of the Alameda Chamber of Commerce. The Chamber then adjourned to meet with the Alameda City Council where formal notice of the decision was delivered to that body. The next day Admiral E. H. Campbell, commandant of the Twelfth Naval District, made formal notification to Mayor Hans W. Roebke.

The City Council called a special election to be held in Alameda, January 28, 1936, to authorize granting of title to 929.3 acres of tide and submerged lands to the Federal Government "for public purposes." Approval of the voters was reflected by a vote of 8,282 to 378. Thus was brought to success an Alameda effort through the Naval Air Base Committee of the Alameda Chamber of Commerce, many of whom are today respected and active citizens. In addition to the general chairman, E. G. Ryder other members of the committee were Iva Dean Meyers, executive secretary; John C. Stannard, vice-chairman; S. Chesley Anderson; A. C. Carrington; Clem Fraser; Russell Franck; Hon. William J. Hamilton; George Hagy; C. G. Jamieson; Hon. William F. Knowland; Al J. Mathebat; John J. Mulvany; F. R. Neville; Dr. John Ohanneson; Rev. George E. Petrie; William G. Paden; Donald K. Quayle; Joseph L. Rosefield; Arthur Strehlow; R. U. St. John; E. R. Sanford; H. D. Schultz; Lloyd Smith; Helim G. Spaulding; George Sperbeck; A. K. Tichenor and Rev. Sumner Walters.

Alameda granted the property to the Navy Department on the understanding that "the United States will start actual development of said Naval Air Base at the earliest possible moment," and it was further agreed that "the United States will expend at least \$1,000,000 on said lands in said work of development by December 31, 1939." The Secretary of the Navy was then authorized to purchase the property for the consideration of one dollar. This check, uncashed, hangs in the office of the City Manager to this day. For the city of Alameda this was probably its most significant transaction.

In 1937 Congress appropriated \$15,000,000 to begin construction of the base. Committees of engineers selected a two-mile strip of swamp and tideland adjoining several truck gardens and the remnants of the old "20-Mule Team" borax works for development.

Construction began February 24, 1938, when dredgers anchored in the Bay began, by pumping, to drain the land. This was tedious work. Many times, relates "The Carrier (Naval Air Base paper), "the men sank up to their waists in watery mud, and had to be pulled out. Often they pushed planks ahead of them to walk on." While engaged in this operation, the workers struck pieces of railroad tracks and other equipment, remnants of the old road built by A. A. Cohen and his associates in the '60s.

Gradually the 2200-acre marsh became filled. The task required 15,000,000 cubic feet of material. Building construction followed rapidly, and

on November 1, 1940, the Alameda Naval Air Station was commissioned, with Captain Frank R. McCrary as its first commanding officer.

With the outbreak of war in December, 1941, the base sprang into high gear. At that time (December) 230,000 man hours were worked. In July, 1945, the total was 2,000,000 man hours.

Life at the Base during the war was one of tensions, high pressure, determination, sacrifice, and all the emotions that go with waging of a great conflict. Problems of housing the great population which came into Alameda because of the Base brought a major crisis in the history of Alameda. On the Base the complex problem of co-ordinating and consolidating this new population had to be met; recreations provided; essential supplies obtained and properly distributed; spiritual needs met. The story of the unfolding of these manifold situations cannot be told in this chapter. Engaged in these activities, however, we should mention several Alamedans who became prominent. Harold V. La Jeunesse, formerly of the Alameda School Department, became industrial relations officer, after having served as assistant personnel officer on Commander McCrary's staff. Jerry Thrall, now on the staff of the Times-Star, served as editor of the Base newspaper, "The Carrier."

The Naval Air Base boasts a fine war record. From 1941 to 1946 the Supply Department routed 79,596 shipments to the Navy in the Pacific area. Aircraft shipments totaled 24,328, with engine weights alone totaling 54,378,000 pounds. Of salvage material from the war zones the Base received 124,000,000 pounds.

The subsequent history of the Base reflects the ebb and flow of national public opinion and the international crises. With the close of the war in 1945, personnel returned to a 40-hour week; gasoline rationing ended; no more "grave-yard shifts"; back to normalcy. In November, 1945, a sharp reduction was made in civilian personnel. "The contingent of trim little Waves, once 1,000 strong," lamented the "Carrier", "has now disappeared, leaving only a few women officers." The war became a thing of the past and the carrier piers became the resting places of the Pacific Reserve Fleet. The war was over.

Nevertheless, important duties engaged the Base. It housed squadrons, berthed aircraft carriers, overhauled and repaired planes, salvaged war material. Air Group 15, attached to the carrier "Antietam" and Air Group 19, attached to the "Boxer" were stationed at the Base. In 1948 the first jet plane came into the Base shops for overhaul—initiating a new and important role.

With the outbreak of war in Korea the Base again sprang into action. Within a month 1,000 new employees were added; a 48-hour week restored. Intensive training in defense against the A-bomb was provided—for the Base is unquestionably one of the vital "war targets" of the nation. The reserve fleet was re-activated. The Marine contingent was sent immediately to Korea and suffered about 30 percent casualties in the desperate fighting of 1950. The Air Groups resumed intensive training in preparation for the day when it would be called into action.



NAS Alameda Environmental Fieldwork Update

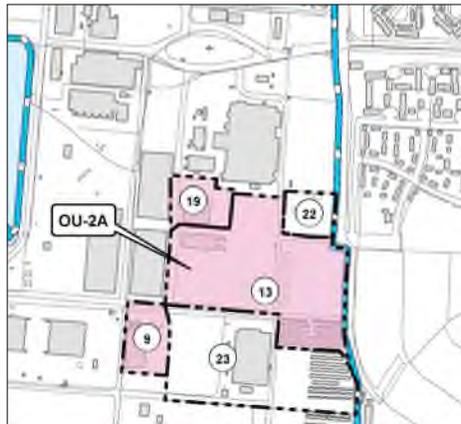
Alameda RAB Meeting Alameda Point

Mr. William McGinnis, PE
Navy BRAC PMO West
September 11, 2014

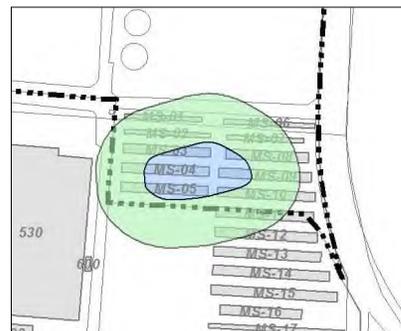


Site 13 Area

OU2A Location



Site 13 Plume Area





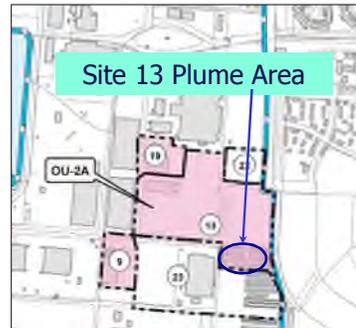
Site 13 In-situ Bio Remedial Action



Mobilization to Site: March 17

- Monitoring well (4) installation
- Biovent well (54) installation
- Auger boring (23) emplacement

- Direct push injections
- Phase 1: March (calcium peroxide)
- Phase 2: July (Klozur CR)
- Phase 3: December (calcium peroxide)



Monthly bio-vent operations and maintenance began in August 2014. Groundwater performance monitoring is being conducted quarterly to evaluate effectiveness.

3



Site 13 – Benzene Plume



4



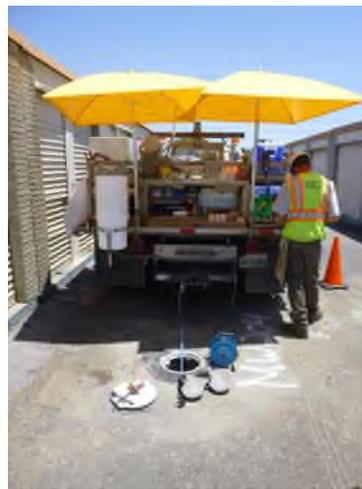
Site 13 In-situ Bio Remedial Action



5



Site 13 In-situ Bio Remedial Action



6



OU-2C Field Work in 2014



Field work conducted at Operable Unit (OU)-2C in 2014 includes:

- Radiological clean-up on the 2nd floor of Building 400 (Site 10)
- Further investigation of the drain lines (storm water and former industrial waste lines) associated with Sites 5 and 10

7



OU2C -Building 400 Clean Up



8



OU2C - Storm Water Line Investigation



OU2C - Industrial Waste Line Sampling





OU-2C Schedule



- March 2014: Completed the storm water line component of the drain line investigation
- May 2014: Finalized the Record of Decision for OU-2C excluding the drain lines outside the buildings
- June – August 2014: Conducted radiological clean-up of the 2nd floor of Building 400
- July – September 2014: Conducted former industrial waste line component of the drain line investigation; field work completed, laboratory analysis in progress
- January 2015: Draft Reports issued for agency review
- 2015: Begin Building 5 radiological cleanup and Site 5 groundwater cleanup
- 2016: Finalize Record of Decision for OU-2C drain lines outside the buildings



Site 3 – Soil Excavations



- Excavations for lead contaminated soil began in early-August 2014
- Excavation completed in mid-August and confirmation samples collected
- Confirmation results meet criteria





Site 3



13



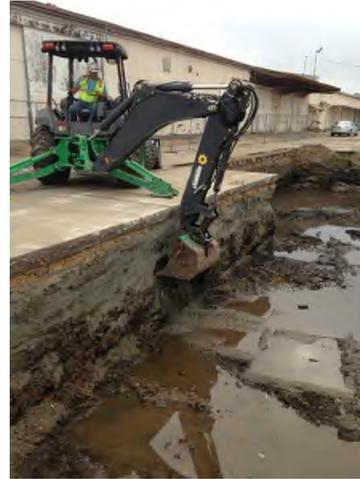
Site 3



14



Site 3



15



ALAMEDA OPERABLE UNIT 1 - IR SITE 6



ENHANCED IN-SITU BIOREMEDIATION (ISB) OF CHLORINATED SOLVENTS IN GROUNDWATER

- Site 6 was a former aircraft maintenance facility
 - 5.6 acres including Hangar 41 (unoccupied)
- 2007 ROD selected ISCO, ISB and/or MNA
- ISCO performed in 2010
 - Contaminants of concern (**COC**) include trichloroethene (**TCE**), cis-1,2 dichloroethene (**DCE**), and **vinyl chloride**.
 - ISCO was effective but remediation goals (RG) not yet met.
 - RGs are drinking water maximum contaminant levels (MCLs).
- **ISB** groundwater treatment implemented from July 9, 2014 to September 4, 2014.



SITE 6 - ENHANCED BIOREMEDIATION



- **Anaerobic bioremediation** was enhanced at Site 6 by introducing a food-grade lecithin (called EHC-L™). Lecithin ferments and generates hydrogen. Hydrogen is then used as energy source by bacteria to sequentially remove chlorine atoms from TCE, DCE, and vinyl chloride (*i.e., biotic reductive dechlorination*).
- Approximately 221,600 gallons of groundwater was extracted and amended with EHC-L and powdered iron. Iron bolsters the biodegradation process by forming iron sulfides which degrade chlorinated solvents without biological activity (*i.e., abiotic reductive dechlorination*).

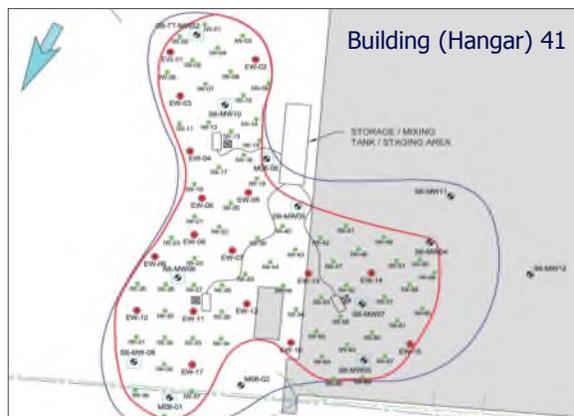


ENHANCED ISB TREATMENT LAYOUT



66 Injection Wells and 27 Extraction Wells
Treatment area is 42,000 sq ft., depth - 11 feet bgs

- Injection Well
- Extraction Well





IR SITE 6 ISB PHOTOS



ISB Treatment area looking northeast towards



IR SITE 6 ISB PHOTOS



Artemis racing sailboat (above) inside Bldg. 41 needed to be removed before system (right) was installed.





IR SITE 6 ISB PHOTOS



View Looking West from Bldg. 41

- Background shows two 10,000 gallon mixing tanks surrounded by totes of lecithin.

- Foreground shows valve assembly and 5-gallon tank holding *dehalocoides* (bacteria that degrade chlorinated solvents)



SITE 6 PHOTOS



Graduated cylinder with 5-gallon tank of *dehalocoides* to measure dechlorinating bacteria "innoculation". Tank on the left is nitrogen to push the bacteria into the manifold.

Bacteria tank

Nitrogen

Powdered iron mixing into extracted groundwater in top of 10,000 gallon tank





SITE 6 PHOTOS



NEXT PHASE: PERFORMANCE MONITORING



- **Monthly geochemistry measurements**
 - September through November 2014
- **Four Quarters of Groundwater Sampling**
 - November 2014 – August 2015
- **Evaluate Treatment Effectiveness and Report**



Site 1 – Summary



Implementation of the cover remedy at the former landfill includes:

- Installation of a waste isolation bulkhead (WIB)
- Select excavation of burn waste
- Placement of riprap in exposed beach areas (Area 5)
- Radiological scanning
- Soil cover placement

Field work is planned to be completed by the Summer of 2015



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Site 1 – Summary



Preliminary work activities:

- Stormwater BMPs installed and deployment of silt curtain (continue throughout the project)
- Clearing of vegetation and tree chipping
- Placement of crushed asphalt road along the northwest shoreline for the installation of the WIB
- Demolition of above ground structures
- Revetment placement on beach of Area 5a



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Site 1 – Current Activities



On-going activities:

- Surface gamma scans to identify and remove radiological hot spots
- Excavation of bayside and harbor side setback areas and the burn area select excavation
- Segregate radiologically impacted material for offside disposal
- Placement of the WIB templates and sheet pile driving of the WIB steel sheets
- Pulverizing and removing the harbor side taxiway



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Site 1 – Current Activities



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Site 1 – Current Activities



Site 1 – Current Activities

