

Hunters Point Shipyard

ENVIRONMENTAL CLEANUP NEWSLETTER



Expanded Issue • Summer-Fall 2003

This expanded full-color issue of the Environmental Cleanup Newsletter is the eleventh in a series of newsletters describing the Navy's environmental cleanup program at the Hunters Point Shipyard (HPS).

This newsletter includes articles and information about ongoing environmental cleanup activities, project progress, upcoming events, and key milestones. This issue focuses on innovative technology being used to remove solvents from the groundwater at Parcel C; continuing removal actions at the Parcel E Landfill; and waste consolidation efforts at Parcels B, C, D, and E. This newsletter also includes a survey report on recent fires in the HPS area.

The expanded format provides more space for articles and news items of interest to the community, and more photos and figures illustrating recent remedial activities at HPS.

The Navy contracts with local businesses to print and distribute these newsletters to individuals on the current mailing list.

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Successful Cleanup Demonstration at Hunters Point Shipyard Using Zero-Valent Iron Injection

The Navy has completed testing of an innovative cleanup technology to destroy groundwater contaminants at Hunters Point Shipyard. In the past, chlorinated solvents such as trichloroethene (TCE) were used at the shipyard to remove grease and sludge from metal parts. Shallow groundwater in parts of the shipyard has been contaminated by these solvents. The area at Building 272 in Parcel C (also known as Groundwater Remedial Unit C4) was the site of a recent test of FeroxSM zero-valent iron (ZVI) injection.



ZVI slurry is mixed in the mobile tank and injected in TCE-contaminated areas.

When iron is injected into the ground, it acts as a catalyst to help destroy the chlorinated solvents in adjacent groundwater through a series of chemical reactions. The Navy completed the ZVI injection in December 2002, and is currently compiling and evaluating the data from the test to determine the ZVI technology's performance.

Results indicate that TCE concentrations in the treatment area were significantly reduced in just three weeks. Cost and performance data will be used to evaluate whether or not this technology can be used to treat contaminated groundwater at other Hunters Point locations and other Navy cleanup sites.

A description of the ZVI technology is presented below, followed by a preliminary evaluation of the cleanup demonstration at HPS, and an overview of the cost and performance report that was prepared.

INNOVATIVE TECHNOLOGY

As iron corrodes beneath the water table, it reacts chemically with other compounds in the immediate environment. One of the reactions that take place helps break down chlorinated solvents. The chlorinated solvents become less stable, and break down to harmless by-products. This chemical reaction is termed reductive dechlorination.

Reactive iron (iron that will corrode) has been used for several years in a treatment method that uses permeable reactive walls; but with this method, treatment takes place only when contaminated groundwater flows through the

wall structure and comes in contact with the reactive iron. The advantage of injecting zero-valent iron over using the permeable reactive wall approach is that treatment is delivered directly to the contaminated zone (by the creation of a reducing environment), rather than waiting for the contamination to move toward the treatment zone.

Here's how the ZVI process works: reactive iron powder is injected into the groundwater under pressure, using nitrogen gas as a carrier fluid. Pulses of nitrogen are first injected into the area to be treated, making the soil more porous so more of the iron-containing material can be distributed in the contaminated zone. Immediately following this first nitrogen injection, a slurry of ZVI powder (which is very finely ground and has the consistency of flour) and water is added to the nitrogen carrier, and injected into the contaminated zone. This method of delivery helps the iron powder disperse underground, and maximizes the contact between the ZVI powder and the contaminants to speed the treatment/reaction process.

Both soil and groundwater are cleaned up using ZVI. Since the treatment material is iron powder, and the reaction removes (or reduces the concentrations of) harmful chlorinated solvents, ZVI is considered one of the most innocuous and safe treatment methods available.

TECHNOLOGY EVALUATION

The primary objective of the ZVI demonstration at the Shipyard was to estimate the ability of ZVI injection to reduce chlorinated solvent concentrations in groundwater. The success of the test is measured by looking at several indicators. First, the extent of the area treated by the injection procedure is evaluated by looking for evidence of the injected iron in soil and groundwater. Concentrations of iron and chlorinated solvents, and indications that the injected iron is corroding, are measured to see how much of the contamination has been removed, or might be reduced by reactive iron remaining in the contaminated zone. The iron can continue to corrode for as much as two years.

To gather the data needed to evaluate this experiment, the Navy conducted one round of (baseline) groundwater monitoring before the ZVI injection and three separate rounds of monitoring at three, six, and twelve weeks after ZVI injection.

The extent of the area treated is determined primarily on the basis of field measurements of the oxidation-reduction potential (ORP) of groundwater at each sampling location. This parameter decreased from an average of 87 millivolts to -460 millivolts a few weeks after the injections, which indicates that the injected ZVI powder is actively corroding in the test area. Based on the results of the groundwater monitoring at Hunters Point, it appears that the area of effective treatment

extends approximately 15 to 20 feet beyond each location where ZVI is injected.

Groundwater monitoring results from sampling after the injection procedure show significant decreases in TCE concentrations. Groundwater samples collected from 11 monitoring wells within the treatment areas (i.e., within approximately 15 feet of the injection points) averaged over 27,000 micrograms per liter (µg/L) of TCE before treatment. The average concentration at these locations decreased to 230 µg/L TCE after treatment. This reflects a TCE removal efficiency of over 99 percent within the treatment areas. At the most contaminated location, TCE was reduced from a concentration of 88,000 µg/L during the baseline round to 4 µg/L after treatment, indicating a removal efficiency of 99.9 percent.

To evaluate the possibility that the injection process might contribute to the spread of existing contaminants in the vicinity of the treatment area, groundwater samples from eight monitoring wells around the perimeter of the treatment area, farther away from the injection points, were analyzed. Preliminary results indicate that the ZVI injections had a negligible "spreading" effect.

In the area just beyond the treatment areas, results show slight TCE increases in five wells, modest decreases in two wells, and a significant decrease in one well. For example, TCE was not detected in a well located 19 feet from the closest injection point before treatment, but was detected at a mean concentration of 50 µg/L after treatment.

In contrast, the TCE concentration in a well 20 feet from the nearest injection point decreased from 7,400 µg/L before treatment to an average concentration of 640 µg/L after treatment (a 91 percent reduction). Smaller changes were noted even at greater distances from the treatment zone. The TCE concentration in a well 39 feet from an injection point decreased from 71 µg/L before treatment to a mean concentration of 40 µg/L after treatment.

COST AND PERFORMANCE REPORT

The ZVI technology appears to be effective at the test site, and may show promise for treatment of other areas at HPS and other Installation Restoration (IR) sites where groundwater is contaminated with chlorinated solvents.

A Cost and Performance report prepared by the Navy and released in July 2003 outlines the project objectives, presents the analytical results of the ZVI injection technology demonstration, and details the findings of the cost/performance review for this demonstration.

For more information, please contact Mr. Pat Brooks, Lead RPM, Navy Southwest Division (SWDIV), at: Phone: (619) 532-0930 or E-mail: george.brooks@navy.mil

WASTE CONSOLIDATION PROJECT SUMMARY

Environmental studies conducted at Hunters Point Shipyard identified eight types of waste consolidation items in buildings within Parcels B, C, D, and E. The identified waste consolidation items included:

- (1) industrial process equipment (IPE) that may have used oils containing polychlorinated biphenyls (PCBs),
- (2) asbestos-containing materials,
- (3) structural materials that may have been contaminated during industrial activities,
- (4) paint booths,
- (5) hoods, vents, and ducting associated with industrial processes,
- (6) aboveground tanks,
- (7) sumps, vaults and trenches associated with industrial processes, and
- (8) other miscellaneous items that could pose a health risk.

Where present, these items may need to be addressed before Findings of Suitability to Transfer (FOSTs) for these parcels can be completed.

To identify the specific waste consolidation activities required in each building, comprehensive surveys were conducted from May to August 2001 (Parcel B) and April through December 2002 (Parcels C, D, and E). These surveys consisted of performing detailed visual inspections in each building; inspecting the grounds surrounding each building; and reviewing results from past studies, including the Environmental Baseline Survey. Extensive sampling also was conducted during the surveys to identify waste consolidation items that may have been contaminated as a result of industrial

activities at the Shipyard. Based on the results of the surveys and sampling, action plans were developed for each of the identified waste consolidation items. The results of the surveys and the planned actions are summarized as follows:

- Navy-owned IPE (such as punches, presses, lathes, and milling machines) that may have used oils containing PCBs were identified and sampled. Two of these had PCBs above the regulatory limit of 50 parts per million (ppm). These two pieces of IPE will be disposed of off site. The remaining IPE items will be labeled to indicate that they contain less than 50 ppm of PCBs.
- Three types of confirmed or suspected asbestos-containing materials that were friable and damaged were identified during the waste consolidation surveys: thermal system insulation, transite wallboard, and miscellaneous other items such as gasket material. Each of these items will be removed, encapsulated, or secured in such a manner that the building in which it is located can be transferred.
- Thirteen areas of contaminated structural materials were identified. These were primarily areas of wood block flooring (located in several buildings) that had absorbed metals and/or PCBs while the buildings were in use. These contaminated structural materials will be removed and disposed of off site.
- Twelve paint booths were identified during the surveys. Because these paint booths may have been contaminated with metals or PCBs while they were in use, each will be disassembled and disposed of off site.
- A total of 149 hoods, vents, and/or ducts that were

WASTE CONSOLIDATION, CONTINUED ON PAGE 10 ►

Below: A High Efficiency Particulate Air (HEPA) filtration system is used to remediate suspected asbestos contamination in Building 235.



Above: Environmental technicians collect samples from waste materials remaining in Building 369 for analysis.

Survey of Recent Fires in the HPS Area

Fire engines are heard fairly often around HPS, and neighbors have expressed concern about fire hazards at the Shipyard. To develop an objective picture of the nature and causes of fires on and immediately adjacent to HPS, all responses by the San Francisco Fire Department (SFFD) and the HPS Base Fire Department were reviewed for a four-month period (from mid-May through mid-September 2003).

HPS fires. A small grass fire started accidentally on May 15 by a subcontractor removing fenceposts for a remediation project burned an area approximately 15 by 50 feet within Parcel E. Following a review of this incident, the contractor's work procedures were modified to create more effective fire-prevention guidelines. A small rubbish fire also started in Parcel E on July 27, reportedly caused by smouldering embers from a July 21 fire (see below).

Fires impacting HPS. A July 17 fire that began in the Reardon/Old Navy Road area impacted HPS as the flames spread. Five fire units responded to the blaze, which consumed five acres of grass and brush. A month later, a smaller grass fire started in the same area and spread to HPS property. A few blocks away, off Griffith Street, a fire in an abandoned couch spread to four acres of grassland (including HPS property) on September 12. Embers from this fire flared up two days later, and again crossed into HPS. The western end of HPS was the site of two fires during the May-September 2003 period. A two-acre fire on July 21 near Fitch Street spread to HPS, and rekindled a week later on the HPS side of the fence.

Fires in the HPS vicinity. SFFD and/or HPS fire crews responded to fires at a number of locations on City property near the HPS boundaries. Small grass fires occurred on June 15, July 4, July 14, July 22, and July 23, and a SFFD unit also responded to a small trash fire in a residential area on July 25. Two other grass fires in the area between HPS and Candlestick Point (one in mid-May and one in mid-August) were extinguished by SFFD crews.

None of the reported fires caused personal injuries or damage to property—other than to a couch that had already been discarded. In some respects, HPS and nearby neighborhoods may be safer than many areas when fire does strike, because both SFFD and HPS fire crews are able to respond. And as area residents on the Community Notification list learned at the time of the May 15 fire, an effective system is in place for circulating information about fires and other potential emergencies.

The most important fact learned from this review, however, is that most of these incidents could have been prevented: the cause of each fire with an identified source was human carelessness—in the form of poor work practices, discarded smoking material, or fireworks. The Navy will continue to review fires in and around HPS as a standard procedure, and will develop additional information about causes and preventive measures.

COMMUNITY INVOLVEMENT PLAN BEING REVISED

To support the Installation Restoration (IR) Program at Hunters Point Shipyard, the Navy is reviewing community outreach activities for the Bayview-Hunters Point community, and preparing a new Community Involvement Plan (CIP).

The planning process to date has included a review of documents related to the existing CIP; interviews with over forty individuals (current and former RAB members, former HPS employees, and community representatives); and further discussion by an ad-hoc RAB CIP subcommittee. Questions and concerns that have been identified include:

- the health and safety of the community
- the adequacy of past, present, and future cleanup activities
- the level of community involvement

- RAB meeting productivity
- communication between the Navy and the community.

As outlined in the Draft CIP that was released in June 2003, the primary goals of the CIP include:

1. Documenting the concerns, interests, and information needs of the Bayview-Hunters Point community related to the IR Program at HPS as expressed by interviewees.
2. Describing the Navy's overall objectives for the IR program, which involve increasing local awareness of and involvement in the Navy IR Program; increasing the community's access to information; and conducting focused outreach activities that meet the needs of all interested and impacted segments of the community.

COMMUNITY INVOLVEMENT, CONTINUED ON PAGE 8 ►

LANDFILL GAS REMOVAL ACTION

An investigation conducted by the Navy from February through April 2002 showed that methane, a constituent of landfill gas, had migrated beyond the landfill in Parcel A into soils beneath the adjacent University of California, San Francisco (UCSF) compound. With the cooperation of UCSF, the Navy conducted a Removal Action to withdraw the landfill gas and reduce the methane concentrations in soils.

The Removal Action involved both construction and extraction activities. To contain these gases within the perimeter of the landfill as far as possible, a barrier wall (also called a "GundWall") nearly 1500 feet long was constructed by driving interlocking panels of heavy, high-density polyethylene below the depth of the groundwater surface on the northern edge of the landfill.

To facilitate installation of the sheets, pre-trenching was done to remove large obstructions and loosen the soil in the trench. After the barrier panels were installed, a perforated pipe was placed along the length of the trench, on the landfill side of the barrier, to collect landfill gas. A two-foot thick layer of bentonite grout was installed in the trench on both sides of the barrier to seal the top of the trench and force landfill gases through carbon and hydrosil (an odor-absorbing medium) filters. Clean off-gas was vented to the atmosphere.

Four passive vents, each with a pollution control filter (carbon and hydrosil), were connected to the pipe. When construction of the barrier wall was complete, ten landfill gas extraction wells were installed on the UCSF side of the barrier to remove methane from the UCSF property.

Active extraction from the UCSF property was accomplished using two trailer-mounted extraction systems, each consisting of a blower that could extract up to 30 cubic feet per minute, a moisture knock-out tank, a flow meter, and a pollution control filter.

To monitor the effectiveness of the Removal Action, 26 gas monitoring probes (GMPs) were installed along Crisp Avenue, on UCSF property, and on Navy property. The work plan, approved by the BRAC Cleanup Team (BCT), specified that the Removal Action would be concluded when methane levels were reduced by the extraction/venting procedures to less than 5% methane within the UCSF compound. Monitoring will continue to ensure the Removal Action goals are met.

Construction began in July 2002, and active extraction began on October 4, 2002. On January 20, 2003, when the specified methane levels were achieved, active extraction ceased and monitoring began. In May, gas samples were collected for analysis in the laboratory.

LANDFILL GAS REMOVAL CONTINUED ON PAGE 10 ►



Installation of the barrier wall

PARCEL-BY-PARCEL STATUS UPDATE: JANUARY-SEPTEMBER 2003

Hunters Point Shipyard is divided into six parcels (Parcels A through F) to more effectively manage the cleanup effort and efficiently transfer the property to the City and County of San Francisco. Although chemical contamination resulting from past Shipyard activities varies from site to site on each parcel, chemical contaminants at a site may include compounds present in industrial solvents, PCBs, pesticides, gasoline, diesel, motor oil, and/or metals. Following are brief descriptions of environmental investigation/cleanup accomplishments that occurred during January-September 2003, and a look ahead at upcoming planning, remediation, and reporting activities

Parcel B: January-September 2003 Activities

- Conducted three rounds of quarterly groundwater monitoring events
- Completed sampling for Parcel B shoreline data gaps
- Prepared and submitted the Final 2002 Annual Groundwater Monitoring Report
- Prepared and submitted the Final Parcel B Waste Consolidation Summary Report
- Prepared and submitted the Five-Year Review document (including a brief update on basewide issues), performed a site inspection, and conducted interviews and a public meeting
- Prepared and submitted the Final Building 123 Soil Vapor Extraction (SVE) Confirmation Study Summary Report
- Installed wells associated with the Building 123 Ferox injection treatability study and began baseline sampling
- Prepared and submitted the Final January-March 2003 and the Draft April-June 2003 Quarterly Groundwater Monitoring Reports

What's Next?

- Prepare and submit a shoreline data gaps technical memorandum
- Continue preparation of the technical memorandum to support the proposed record of decision (ROD) amendment
- Prepare the Final April-June 2003 Quarterly Groundwater Monitoring Report
- Prepare the Draft July-September 2003 Quarterly Groundwater Monitoring Report
- Continue radiation screening surveys based on the findings of the Historic Radiological Assessment (HRA)

Parcel C: January-September 2003 Activities

- Prepared and submitted the Final Dry Dock 4 Removal Action Closeout Report
- Continued radiation screening surveys (based on the findings of the ongoing HRA and radiation removal action at Building 253)
- Prepared and submitted the final report for Phase III Groundwater Data Gaps Investigation (GDGI) activities
- Prepared and submitted a Work Plan for Dry Dock 4 Water Sampling and Debris Removal
- Continued waste consolidation work
- Evaluated SVE performance data and continued preparing the Confirmation Sampling Work Plan for the Phase II SVE Treatability Study at the volatile organic contaminant (VOC) area (this study also includes portions of Parcel B and Parcel E)
- Installed supplemental monitoring wells and began baseline sampling at Building 272
- Prepared and submitted a cost and performance evaluation for the Ferox injection technology demonstration at Building 272

What's Next

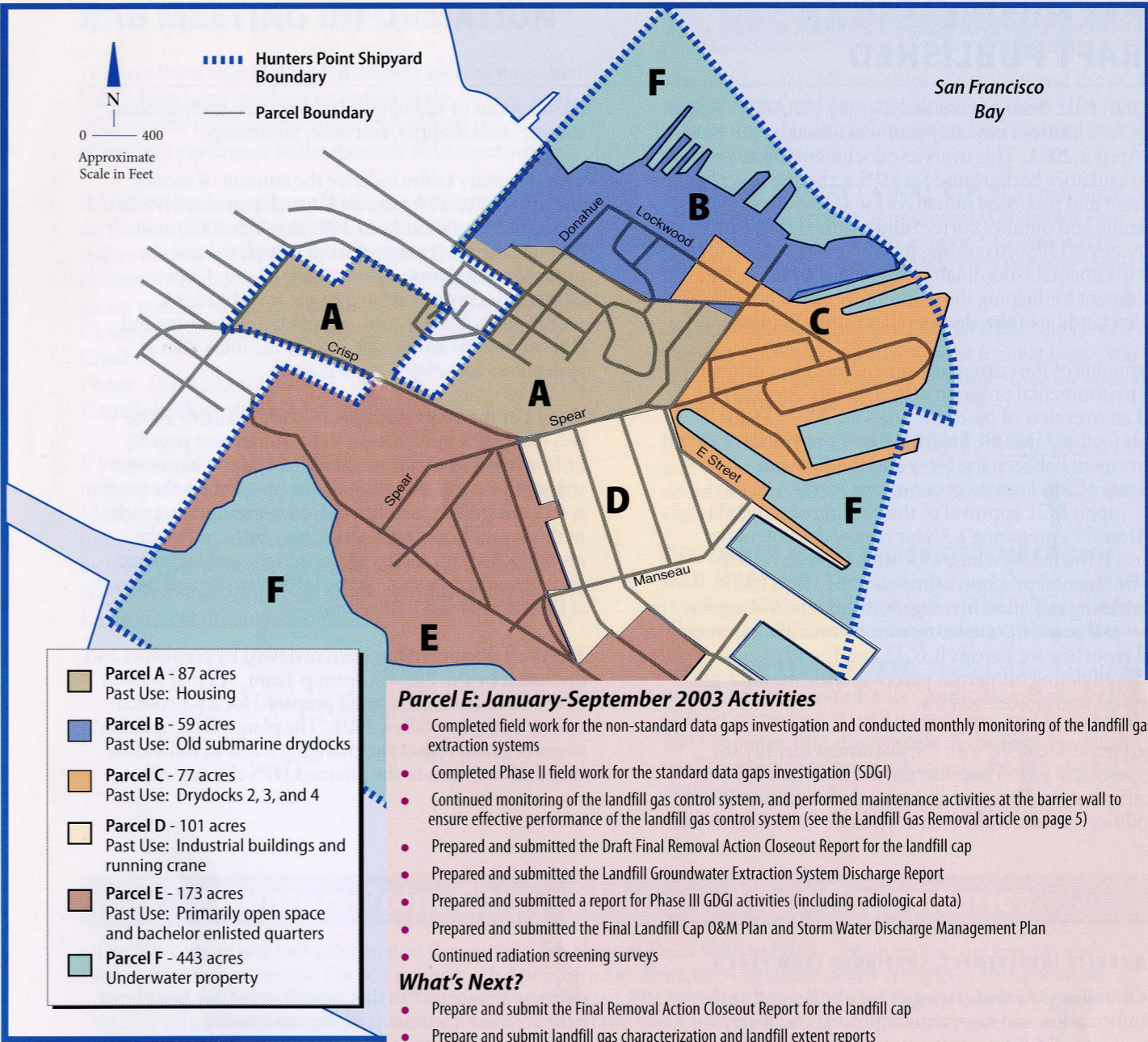
- Prepare and submit a draft work plan for a sequential anaerobic/aerobic bioremediation treatability study in Building 134
- Continue radiation screening surveys based on the findings of the HRA
- Continue waste consolidation work
- Prepare and submit the final work plan for the follow-on Ferox injection treatability study at Building 272 (the study also includes work at Parcel B, Building 123)

Parcel D: January-September 2003 Activities

- Completed waste consolidation work, and prepared and submitted the Draft Parcel D Waste Consolidation Post-Construction Report
- Continued radiation removal activities near Building 366 and addressed radiation screening survey results from Building 366

What's Next?

- Prepare an action memorandum and work plan for Parcel D removal actions
- Continue human health risk assessment data evaluation
- Continue radiation screening surveys based on the findings of the HRA



BRAC BUSINESS PLAN DRAFT PUBLISHED

A Draft Base Realignment and Closure (BRAC) Business Plan for Hunters Point Shipyard was issued by the Navy on April 2, 2003. This overview document discusses the regulatory background for HPS activities; describes current and proposed initiatives for accelerating cleanup; and outlines current and planned cleanup activities at HPS. According to Mr. Keith Forman, BRAC Environmental Coordinator, this plan is an important document for helping the community gain a better understanding of the cleanup effort at the Shipyard.

Highlights of the current document include a summary of environmental program achievements during 2002 and an overview of basewide goals for 2003. Major goals for 2003 include finalizing the Conveyance Agreement between the Navy and the City and County of San Francisco; conveying Parcel A to the City (upon BCT approval of the Finding of Suitability to Transfer); preparing a 5-year review document for Parcel B (including a basewide status update on the environmental program); finalizing the HRA, and completing radiation investigation and removal actions at several parcels; completing waste consolidation work and reporting for Parcels B, C, D, and E; and planning and completing numerous parcel-specific monitoring, removal, and closure actions.

The figures included with the document identify the property and parcel boundaries and individual IR site locations at the Shipyard, illustrate the environmental condition of each study area at Hunters Point, and depict

the locations of radiological survey sites, underground storage tanks, utilities, and other landmarks.

Two summary tables indicate the amount of money already spent on IR projects for each parcel at HPS (a total of \$285 million from 1986 through 2002), and estimate the percentage of work completed and the probable completion date for each IR site. Copies of many documents related to site investigations, remediation, closures, and regulatory procedures and determinations are attached to the Business Plan as appendices for reference purposes.

Copies of the Draft Business Plan are available at the two local HPS Information Repositories (see page 9) or from the U.S. Department of the Navy. The current status of many of the action items planned for the year is reflected in the parcel-by-parcel status update article in this issue. Additional details may be found in the monthly RAB minutes and transcripts, and fact sheets and newsletters posted on the HPS Web site and housed at the Information Repositories.

The draft document has been reviewed by regulators and discussed by the BRAC Cleanup Team. A Final version of the Business Plan is being prepared for a scheduled release in the late fall of 2003. The plan will be updated periodically to reflect the changing status of individual sites and revisions to the planned HPS cleanup effort.

COMMUNITY INVOLVEMENT, CONTINUED FROM PAGE 4

3. Outlining potential strategies for implementing the information and involvement process effectively.
- Responses to the concerns identified through the review process will influence the revised CIP in many ways. Among the information items and proposed actions reflected in the document are:
- A Community Notification Plan (CNP) outlining procedures that will be followed, and individuals and organizations that will be notified, in the event of emergency situations at HPS and to publicize/announce Shipyard activities and events.
 - Updated lists of community contacts, including community members, organizations, and the media.
 - Updating a list of IR publications and other points of contact with the community, as a starting point for reviewing how and where effective communication can take place.
 - Reviewing recent community relations efforts to identify effective events and other outreach activities; and

- defining new activities that meet current needs and can help involve all segments of the community.
- Correcting incomplete or incorrect information about the CERCLA process overall and the roles (especially the extensive reporting and oversight) of the regulatory agencies and the HPS environmental team in the IR process at the Shipyard.
- Copies of the Draft Plan are available for community review on the HPS website and at the HPS Information Repositories. Additional details will be incorporated into the Draft Final version of the Plan.
- The CIP is based on guidelines established by the U.S. Environmental Protection Agency (EPA), the Department of Defense (DoD), the Navy Facilities Engineering Command, and other federal and state agencies, and will supersede a CRP originally issued in 1989 and updated in 1996.

RAB MEETING INFORMATION

Hunters Point Shipyard RAB members and the interested public have been regularly informed of the cleanup work underway at the Shipyard. Approximately 60 people attend and participate in the monthly RAB meetings.

RAB meetings typically are held from 6:00 to 8:00 pm on the fourth Thursday of each month at Dago Mary's Italian Restaurant (Building #916 at the Shipyard). For current RAB and Subcommittee schedule information, please contact Mr. Keith Forman, Base Realignment and Closure Environmental Coordinator and RAB Navy Co-Chair at:
Phone: (619) 532-0913 or
E-mail: keith.s.forman@navy.mil

If you are interested in becoming a RAB member, please indicate your preference on the Hunters Point Shipyard Mailing List Update Form (see the back page of this newsletter). You will receive an application promptly by mail. The application is also available on line at the Navy's Web page: <http://www.efdswnavfac.navy.mil/Environmental/HuntersPoint.htm>

HPS Activities Calendar

The regular monthly meetings of the RAB and the BCT, special events, and open meetings are held at HPS from time to time. Significant recent and upcoming events include the following:

OCTOBER 2: DRAFT FINAL CIP. The Draft Final version of the revised Community Involvement Plan is scheduled for release on October 2. Copies will be available for public review on the HPS Web site and at the HPS Information Repositories.

OCTOBER 23: NEXT RAB MEETING. The October monthly RAB meeting will begin at 6 pm at Dago Mary's. All community members are welcome. (See the adjacent article for more information.)

NOVEMBER 15: COME TO THE FAIR! See the News and Notes section of this newsletter for information about the free HPS Community Information Fair and Open House.

DECEMBER 4: NOVEMBER-DECEMBER 2003 RAB MEETING. The November and December RAB meetings will be combined, and will be held on the first Thursday in December. Please mark your calendar.

2004: CNP LIST UPDATE. The list of local contacts included in the Community Notification Plan (see the CIP article on page 4) will be reviewed and updated in 2004 to assure that all segments of the Bayview-Hunters Point community are informed promptly during the notification process.

Hunters Point Shipyard Information Repositories

The Navy maintains two Information Repositories for Hunters Point Shipyard that contain project documents and other reference materials. The Main Library in downtown San Francisco contains a nearly complete record of all the documents related to the cleanup of Hunters Point Shipyard. The Bayview/Anna E. Waden Branch Library houses a smaller collection of documents, and it contains copies of the major investigation reports for each parcel as well as documents related to more current activities. Public Information Material binders, containing archives of RAB meeting minutes and handouts, are available at both libraries.

The Navy encourages you to visit the libraries and review the documents prepared for Hunters Point Shipyard to gain a more complete understanding of the cleanup investigations and activities at HPS.

CITY OF SAN FRANCISCO MAIN LIBRARY
Science, Technical, and Government Documents Room
100 Larkin Street
San Francisco, CA 94102
(415) 557-4500

BAYVIEW/ANNA E. WADEN BRANCH LIBRARY
5075 Third Street
San Francisco, CA 94124
(415) 355-5757

NOTE: Hunters Point Shipyard RAB meeting minutes and agendas will continue to be available to the public at the Information Repositories (listed above) established for the Hunters Point Shipyard cleanup program. Many documents also are available on the Hunters Point section of the Navy's web page at <http://www.efdswnavfac.navy.mil/Environmental/HuntersPoint.htm>

For more information on the cleanup program at Hunters Point Shipyard, please contact Mr. Keith Forman, Base Realignment and Closure Environmental Coordinator and RAB Navy Co-Chair at (415) 515-6216 or (619) 532-0913.

During the monitoring, methane was not detected in any of the GMPs along Crisp Avenue. However, methane was detected in the trench outside the barrier wall, and the Navy performed a number of maintenance actions. When an extraction blower was connected to one of the passive vents, and operated at a low flow rate, the methane concentration was reduced below 0.5% in less than two days.

Wind-operated turbines were added to some of the passive vents in an effort to increase the flow of landfill gases through these systems, and methane removal was increased slightly.

The bentonite seal that forms a cap over the barrier wall trench was inspected to determine if the seal was effective. This investigation revealed that the bentonite could be hydrated better at several locations. The bentonite along the entire length of the trench was rehydrated, which caused the bentonite to swell and created a more effective seal.

Following this procedure, methane levels on the UCSF side of the barrier did not rise as rapidly as before rehydration, indicating that the flow of methane was inhibited to some extent. The Navy also pressure-grouted approximately 450 linear feet of the trench outside the barrier wall. This action also increased the effectiveness of the landfill barrier.

Monitoring will continue to assure that the Removal Action goals are met, and additional maintenance actions will be taken if necessary. A Removal Action Closeout Report is being prepared to document the fieldwork. The report is scheduled for release in December 2003.

associated with industrial processes were identified. (This group includes a number of "baghouses" used to filter out particles before the air was vented outside.) Samples collected from many of these items found residual levels of metals and, occasionally, PCBs. Each of these hoods, vents, and ducts will be removed, decontaminated, and scrapped off site. The baghouses will be disposed of off site.

- A total of 147 aboveground tanks (including dip tanks and batch tanks) were identified. Most of the tanks were associated with industrial processes, and these tanks will be removed, decontaminated, and scrapped off site. Some of the tanks are pressure vessels and had not contained hazardous materials. These tanks will be depressurized, disabled, and left in place.
- A total of 154 sumps, vaults, and trenches that may have been contaminated by industrial activities were identified during the surveys. Each of these will be emptied and/or decontaminated.
- Slightly more than 1,300 other miscellaneous waste items were identified during the surveys. These are primarily items containing abandoned waste or corrosives, including empty or partially empty paint cans, drums, batteries, fuel cans, cans of solvent/degreaser, and containers filled with waste oils. Each abandoned waste item will be recovered, emptied (if it contains liquid or solid contents) and properly disposed of off site. The recovered contents will be sampled and also properly disposed of off site. This category also includes drains and piping that were associated with industrial processes. Each of these will be either removed or decontaminated and left in place.

Waste consolidation cleanup activities at Parcel B began in December 2001, and were largely completed by October 2002. Cleanup at Parcel D was completed in May 2003, and all cleanup at parcels B, C, and E is expected to be completed by December 2003.

Installation Restoration Program Process

Preliminary Assessment/ Site Inspection (PA/SI)	Remedial Investigation (RI)	Feasibility Study (FS)	Proposed Plan/Public Comment Period	Record of Decision (ROD)/ Responsiveness Summary	Remedial Design	Remedial Action	Property Transfer and Reuse
The PA/SI results in the discovery and verification of potential sites.	The RI identifies and confirms the sources and areas of soil and groundwater contamination.	The FS identifies remedial alternatives for soil and groundwater cleanup.	The public has the opportunity to comment on the preferred remedy and other proposed alternatives.	The selected remedial alternative, public comments, and responses are documented in the ROD.	Detailed specifications for the selected remedies are developed.	A qualified contractor performs the closure actions according to specifications.	A Finding of Suitability to Transfer (FOST) is prepared.

Note: The Navy's IR Program is consistent with the guidelines outlined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Interim Actions or Removal Actions may be performed at sites at any point in this process. The Navy meets on an ongoing basis with the BRAC Cleanup Team to determine ways to accelerate the cleanup of Hunters Point Shipyard.