

**RESTORATION ADVISORY BOARD (RAB) MEETING  
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT CALVERTON  
RIVERHEAD MASONIC LODGE, RIVERHEAD, NEW YORK  
SEPTEMBER 29, 1999**

The fifth meeting of the RAB began at 7:00 pm and ended at approximately 9:45 pm. RAB members attending were: community members Sid Bail, Lorraine Collins, Louis Cork, Bill Gunther, Sherry Johnson, Jean Mannhaupt, Ann Miloski, Joe Pannone, and Warren Voegelin; Marsden Chen from New York State Department of Environmental Conservation (NYSDEC) in Albany; Andrea Lohneiss representing the Town of Riverhead; Martin Simonson representing DCMC; Karen Bage representing The Nature Conservancy, and Joe Kaminski (representing Judith Hare) and Jim Colter from the Navy. Members absent included community members Henry Bookout, Herb Golden, Randolph Manning, Bob Pohlman, John Quinn, and Vanie Tuthill; and representatives from New York State Department of Health (NYSDOH), Suffolk County Department of Health Services (SCDHS), and U.S. EPA Region II.

**WELCOME AND AGENDA REVIEW**

Mr. Joe Kaminski, representing Ms. Judith Hare, welcomed everyone. Mr. Kaminski explained that Ms. Hare was not able to attend the RAB meeting because of an emergency permit hearing at a Navy facility in Texas that Ms. Hare was required to attend. Mr. Kaminski reported that on the 15<sup>th</sup> of September, 2,900 acres of the NWIRP Calverton property were deeded to the State of New York. This area was the buffer zone, used as a natural area, which surrounds the plant.

Mr. Kaminski provided two Department of Navy documents to Ms. Johnson, the RAB Community Co-chair. One document is titled "Environmental Restoration for Fiscal Years 1999 – 2003" dated February 1999 and the other is a directory of RABs dated May 1998. The Navy will provide Ms. Johnson with the next version of the RAB directory once it is available.

## REVIEW AND APPROVAL OF MINUTES

The stenographer transcripts from the June 10, 1999 RAB meeting were paraphrased and summarized into meeting minutes. The minutes were mailed out to all the RAB members for review. No comments were made on the June 10, 1999 RAB meeting minutes and the minutes were approved as written.

Before approval of the minutes, the Community RAB questioned how the minutes were prepared. It was explained that a stenographer prepares a meeting transcript verbatim, but the Navy prepares a meeting summary for distribution. The Community RAB requested two copies of the stenographer's transcript be sent to Ms. Johnson, for the Community RAB members' use.

There was also discussion of whether the stenographer's transcripts could indicate the name of the Community RAB member speaking, rather than just "RAB Member." It was explained that to do this, the person speaking would need to state their name for the record. Therefore, for future meetings, if RAB members would like to have their names recorded along with their statements, the members will need to state their names first.

## UPDATE ON NAVY ACTIVITY AND THE SEPTEMBER 22, 1999 TECHNICAL MEETING

Mr. Colter provided an update on the renewal of the RCRA permit for NWIRP Calverton. Because there are no longer any RCRA operations at the facility, the permit only covers the restoration activities. The Navy and NYSDEC are currently working out a few administrative details.

As discussed at the June 10, 1999 RAB, the Navy developed presentations (using the GIS and software referred to as Environmental Visualization System [EVS]) of the Site 6A, Site 10B, and Southern Area groundwater data (similar to the Site 7 presentation at the June 1999 technical meeting and RAB meeting) to provide an understanding of the groundwater contamination at the sites and to identify data gaps for these sites. Various maps were generated using the EVS and were submitted to the RAB. These

maps include a series of maps that graphically show the vertical profile of specific chemical contamination in groundwater at the Sites 6A/10B and Southern Area parcel (submitted September 7, 1999). These maps were the subject of the September 22, 1999 technical meeting presentation. The presentation for Sites 6A/10B and Southern Area was provided to the regulators at the technical meeting (attended by NYSDEC-Stony Brook, SCDHS, and the Navy). Minutes from the September 22, 1999 technical meeting are attached.

Several data gaps were identified at the technical meeting including the need to define the vertical extent of contamination at Site 6A, the need to refine the extent of groundwater contamination in the south/southwestern area of the Southern Area, and the need to conduct groundwater modeling in the Southern Area to understand groundwater contaminant fate and transport near the Peconic River. These are discussed further as part of the presentation discussion.

Mr. Marsden Chen from the NYSDEC in Albany indicated at the RAB meeting that NYSDEC-Albany was not able to attend the technical meeting and still needed to review the information presented. Mr. Chen indicated that site remediation at NWIRP Calverton was under the state Superfund program and not under the state RCRA program. Mr. Stan Farkas, in the NYSDEC RCRA office in Stony Brook, was no longer the main contact for NWIRP Calverton. Mr. Jeff McCullough out of the NYSDEC Albany office would now be the main contact for remedial activities. Therefore, any agreements/actions identified at the September technical meeting were tentative and need to be discussed between the two NYSDEC offices. NYSDEC will let the RAB know if there are any additional concerns.

#### **SITE 6A, SITE 10B, AND SOUTHERN AREA PRESENTATION AND QUESTION & ANSWER**

Dave Brayack from Tetra Tech NUS, Inc., with computer support from Judy Lamey from Tetra Tech NUS, Inc., provided the EVS-based presentation for Site 6A, Site 10B, and the Southern Area. The presentation was the same presentation provided at the September 22, 1999 technical meeting.

The focus of the discussion was on the area of the NWIRP Calverton facility around Site 6A – Fuel Calibration Pad, Site 10B – Engine Test House, and the Southern Area. The fuel calibration pad was an area used for the testing of aircraft fuel systems. During testing, the fuel system would be pressurized to determine whether there were any leaks in the system. While the old calibration pad was in use, leaks in the system would result in spills on the pad, which could then migrate to soil and groundwater. In the early 1980's, operations at the old calibration pad were moved to a new calibration pad. Because the new pad was constructed of concrete with secondary containment, any spills on the new pad were properly contained. During investigation of groundwater in the area, floating free product (a layer of fuel product floating on the groundwater) was identified. Groundwater contamination of fuel-related compounds and chlorinated volatile organic compounds (VOCs) was also identified. The chlorinated VOCs are likely from solvents used in painting operations conducted nearby.

The Engine Test House (Site 10B) is where the jet engines were tested. There was an underground storage tank at the site that Grumman removed in the early 1990s. During excavation of the tank, fuel contaminated soil was found. Over 100 cubic yards of contaminated soil, up to the existing fence line, was removed; however, the excavation could not go beyond the fence line. During the 1997 investigation, fuel contamination in soil and groundwater, but no free product, was noted.

The third area is referred to as the Southern Area, where contaminated groundwater was identified. The Navy believes the contamination came indirectly from the old fuel calibration pad, based on the overland flow patterns, the similarity of contaminant types between the two areas, and the fact that there has been no industrial activity in the Southern Area. A series of drainage ditches run along the old fuel calibration pad and discharge to a few ponds in the area. It is believed that surface water runoff and contaminated groundwater from the fuel calibration area entered the ditches, went through a culvert to the ponds and then from the ponds into groundwater downgradient of the pond. The contaminants detected in the Southern Area are similar to the contaminants detected at Site 6A (although at approximately 100 or more times lower concentration). Mr. Brayack indicated that the ponds, used for surface water runoff from the runway, are dry when there is little to no rainfall.

As shown on the facility map, the area identified as the Southern Area was identified before generation of the groundwater contour maps. Because groundwater contamination flows with the groundwater, using groundwater flow information, it is likely that the extent of contaminated groundwater in this area is smaller than depicted. However, refinement of the extent of groundwater contamination was noted as one of the data gaps for the Southern Area.

Three-dimensional visualization of groundwater contamination at the Sites 6A/10B/Southern Area parcel was developed based on figures prepared using the EVS software for interpreting and displaying the vertical profile of contamination. Videos of the figures for several chemicals were prepared for the technical meeting and RAB presentation. Several of these figures were included with the series of maps submitted on September 7, 1999. Some additional figures were also handed out at the RAB meeting. The presentation showed Site 6A, Site 10, and Southern Area groundwater sampling locations and specific groundwater contaminant plumes. The software is capable of presenting plan and three-dimensional views of contamination.

Mr. Brayack showed the video presentations developed for several chemicals. Mr. Brayack began with the presentations for benzene, ethylbenzene, toluene, and xylene (BETX), noting that the groundwater plumes for these contaminants were sufficiently defined. The benzene (maximum detection 77 ppb) plume is similar to the plumes for the other three chemicals, but benzene was detected at lower concentrations. At Site 6A, benzene was not detected at depth, and the cross section for benzene shows the plume is well defined. The plumes for the other three chemicals (ETX) were similar, although the concentrations of these chemicals differed. These chemicals were detected just downgradient of the Engine Test House (Site 10B) and around the old fuel calibration pad (Site 6A). These plumes were mostly within the extent of the free product area, with a couple of additional areas by the test house.

A RAB Community member questioned whether there are total petroleum hydrocarbon (TPH) concentrations for groundwater. Mr. Brayack indicated there are TPH data for soil, but not for groundwater. In particular, criteria for TPH in groundwater are not available. The State of New York requires that there be no sheen/floating free product

(which may occur when concentrations of TPH are greater than 10 mg/l). Because BETX are the more toxic components of fuel, developing cleanup strategies to address these chemicals ensures that fuel-related contamination is sufficiently addressed.

Mr. Brayack then showed the video presentations for the chlorinated solvents (including 1,1,1-trichloroethane [TCA] and 1,1-dichloroethane [DCA]). 1,1,1-TCA, similar to solvents used for dry cleaning, is used as a non-flammable degreaser. 1,1-DCA is not commonly used as a solvent, but is one of the products of degradation of 1,1,1-TCA. Trichloroethene (TCE) is not a contaminant of concern in groundwater at NWIRP Calverton, likely because this solvent was not commonly used at the facility. Because operations at NWIRP Bethpage included more manufacturing operations, TCE was the solvent commonly used at Bethpage, whereas for NWIRP Calverton 1,1,1-TCA was the solvent commonly used. Video presentations of other degradation products of 1,1,1-TCA were also shown (including vinyl chloride and 1,1-dichloroethene [DCE]). Also, other chemicals detected in groundwater, collectively referred to as freon, were discussed.

During the discussion of the 1,1,1-TCA plume, Mr. Brayack explained the use of "dummy" wells in developing the plume contours. Because the EVS software does not take into account geological or hydrogeological data, this information must be accounted for when developing the figures. Based on groundwater flow, a non-detect data point may be added to help define the plume contours. Such "dummy" wells are indicated differently than actual data points. Without the dummy wells, the program would make the plume run on, even though based on professional evaluation of the groundwater flow, etc., the plume would not flow in that direction. These "dummy" wells were used to develop the contours of the chlorinated compounds plumes.

Mr. Brayack explained that there were three areas of concern for the chlorinated compounds that are mostly defined by the 1,1,1-TCA and 1,1,-DCA plumes: around the old fuel calibration pad (Site 6A); the engine test house (Site 10B); and in the Southern Area. There are no industrial activities in between the Southern Area plume and the two plumes at Site 6A and 10B. As Mr. Brayack explained earlier, the Navy believes surface water in the drainage ditch, through the ponds, to groundwater downgradient of the ponds, is the likely migration pathway for the contaminants in the Southern Area and

there is no indication that there is a continuous plume from Sites 6A and 10B to the Southern Area.

The presentations for 1,1,1-TCA and 1,1-DCA were similar, but the 1,1-DCA plume is a little larger than the 1,1,1-TCA plume. Concentrations within the plumes are similar. Vinyl chloride was detected around Site 10B and a DCE plume was upgradient of the vinyl chloride. Also, freon was detected near the vinyl chloride detections.

Mr. Brayack explained that the vertical component of the chlorinated solvents plume was not sufficiently defined. He explained that at depth at the fuel pad, deep wells are contaminated with chlorinated solvents. Chlorinated solvents are heavier than water and will sink; therefore, the vertical component of contamination is a concern. Therefore, one of the data gaps identified is the vertical depth of the chlorinated plume. The Navy proposes to install additional deep monitoring wells (160 to 200 feet deep) to determine the vertical extent of the plume. In addition, the extent of the vinyl chloride and DCE contamination is not well defined, particularly upgradient of the detections. Additional monitoring wells are proposed to further define the horizontal extent of the vinyl chloride/DCE plumes.

Mr. Colter summarized the data gaps and indicated that the Navy would pursue preparation of a comprehensive work plan to address the data gaps for Sites 6A and 10B and the Southern Area, as well as any data gaps identified for Site 2. Site 2 data will be presented similarly using the GIS and EVS and data gaps will be identified at a technical meeting and presented at a RAB meeting. After preparation of the work plan, the Navy would pursue funding for the investigative activities. The investigative activities proposed based on the data gaps are as follows:

- Additional information upgradient of the detections of vinyl chloride and DCE is needed to further define the contamination plume in this area. Monitoring wells would be installed at depths of 60, 80, and 100 feet below the water table.
- Additional information upgradient, near, and downgradient of the high detections of TCA in the deeper groundwater is necessary to define the vertical extent of the contamination plume. Monitoring wells would be installed at depths of 160, 180, and 200 feet below ground surface.\* Because of the depth of the wells, the Navy

proposes using a mud rotary technique (drilling to a certain depth with mud rotary and near the final depth using hollow stem auger).

- Additional information is necessary to define the maximum extent of the groundwater plume in the Southern Area plume. Three monitoring wells are proposed to attempt to bound the Southern Area on the south/south western side.
- Additional information is necessary to determine whether how the groundwater flows in the vicinity of the Peconic River. Water level measurements at the Peconic River would be collected to try to find the depth where the groundwater flows into the Peconic or whether the groundwater is flowing under the river. In addition, groundwater modeling would be conducted to further understand the flow of groundwater in the vicinity of the River.

The RAB community members thought understanding the plume in the Southern Area was a high priority because the contamination was off-site of the Navy property and could impact the Peconic estuary. The RAB questioned how the Navy determined three monitoring wells in the Southern Area would be sufficient. Mr. Colter indicated that the number of wells was discussed at the technical meeting and was just an initial attempt to determine the plume south/south western boundary. If the data from the three monitoring wells indicated that the groundwater was not contaminated, then the Navy would use those wells to bound the groundwater plume. However, if contamination were detected in those wells, the Navy would need to install additional downgradient wells to attempt to bound the plume. Also Mr. Colter indicated that the details of the Navy's proposed field program would be provided in a work plan, which would specify the purpose of the data collection, well location, etc. The work plan will be submitted to the regulators and RAB for review.

There were various questions and comments from the RAB members throughout the presentation. One RAB member indicated that it would aid understanding the groundwater data if the Suffolk County monitoring wells were identified in a different color than Navy monitoring wells. In answer to a RAB question about sediment sampling in the ponds, the Navy indicated that an investigation was conducted, but VOC contamination was not found. A RAB member asked whether it was possible that the Southern Area plume was linked to the Site 2 (Fire Training Area) plume. The data available does not indicate that the Southern Area plume is coming from Site 2. The



contaminants in the Southern Area are similar to, but at lower concentrations than, Sites 6A and 10B. In answer to a RAB question on the rate of migration of the plume in the Southern Area, Mr. Brayack indicated it was about 100 feet per year.

There was some discussion on the Navy's Year 2000 budget and when the additional field work would be conducted. Mr. Colter indicated that the new field work was not budgeted for the Year 2000. Money was budgeted for remediation at Site 2, but this money could be used for remedial activities/investigation at any of the sites at Calverton. Based on the last RAB, remedial action at Site 7 and interim remedial action at Site 1 seemed to be a higher priority than additional investigations. Based on the budget, the Navy would not be able to conduct both remedial actions and investigations next year. The RAB community members felt a subcommittee meeting was necessary to discuss what the community members thought the priority should be. In addition, the RAB community members requested the Navy's Year 2000 budget for Calverton. Mr. Colter would provide the budget he prepared, but this would not be the final approved budget.

#### OTHER TOPICS

At the June 1999 RAB, a RAB community member raised a question on the components of jet fuel and whether all the components that presented a hazard were being identified in the remedial investigations of the sites. The RAB member was unable to find a list of the components of jet fuel since the information is proprietary to the military. After the June RAB meeting, the Navy looked into information on the constituents of jet fuel and found some specifications for jet fuel. While there may be health effects from other constituents, the BTEX compounds are found to be the most toxic constituents in jet fuel. Therefore, environmental investigations focus on the most toxic constituents. These are considered the target compounds; such that by remediating the target compounds to acceptable levels, the other compounds will be remediated sufficiently. The fuel related constituents are addressed by ensuring there are no free product layers in the groundwater. The Navy looked into finding information on the components of jet fuel and did not find much information. The Navy indicated they would provide the articles/information that they found on jet fuel to the RAB member.

Mr. Brayack explained some of the difficulties with the free product removal activities. The action memorandum indicated water table depression through groundwater extraction (pumping). However, because of high iron concentrations and the presence of vinyl chloride in the groundwater, the treatment of the extracted groundwater would be very expensive. Therefore, the Navy is looking into different actions to treat the free product. For Site 2, the Navy is considering bioventing and for Site 6 the Navy is considering excavating the contaminated soil, including the free product (since the groundwater is shallow at the site). The Navy needs to rewrite the action memorandum and is looking at a March/April 2000 time frame for the remedial activities.

Because of difficulty with the notice for the June technical meeting and RAB meeting (some RAB members did not receive the letter or did not have enough prior notice of the meeting), the notice for the September meetings was sent via Federal Express (except for RAB members use a post office box address) and the notice was sent via email to members who provided the Navy with their email address. Members who have not provided email addresses to the Navy and would like to be added to the email address list should email Debbie Cohen at *cohend@ttnus.com*.

#### **DATES AND DISCUSSION TOPICS FOR FUTURE MEETINGS**

The presentation of Site 2 groundwater data will be the subject of the next technical meeting and RAB. The RAB members then discussed the schedule for the next RAB meeting. To keep to a quarterly schedule but considering the winter holidays, late January was recommended for the next RAB meeting. The technical meeting would be targeted for mid-January. The RAB members were pleased with the accommodations at the Riverhead Masonic Lodge and Debbie Cohen of Tetra Tech NUS, Inc. will discuss with Warren Voegelin the possibility of using the Lodge again for the next RAB meeting.

#### **CLOSING REMARKS**

Mr. Kaminski requested Ms. Johnson to sign a form as the RAB Community Co-chair so that the NWIRP Calverton RAB could be included in the list of active RABs. Mr. Colter thanked everyone for attending the meeting.

**POSTSCRIPT NOTE**

Stenographer's transcripts are prepared for RAB meetings to assist the Navy in preparation of meeting minutes. The transcripts are available in the NWIRP Calverton Information Repository at the Riverhead Free Library. To assist the stenographer, RAB members and other attendees at the meeting are requested to speak one at a time for the stenographer to accurately transcribe the meeting discussions.

**ATTACHMENTS**

**Agenda**

**Minutes from September 22, 1999 Technical Meeting**

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## Agenda

### Restoration Advisory Board Naval Weapons Industrial Reserve Plant Calverton

September 29, 1999  
Riverhead Masonic Lodge, Riverhead, NY  
7:00 p.m.

#### Welcome and Agenda Review

Judithanne Hare  
Naval Air Systems Command

#### Review and Approval of Minutes

All Members

#### Update on Activities at NWIRP Calverton

Jim Colter  
Naval Facilities Engineering Command – Northern Division

#### Presentation and Discussion on the September 22 Technical Meeting

Dave Brayack  
Tetra Tech NUS, Inc.

#### Dates and Discussion Topics for Future Meetings

All Members

#### Closing Remarks

Judithanne Hare  
Naval Air Systems Command

*Presenters will be available after the program for questions.*

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NWIRP Calverton  
Technical Review Committee  
September 22, 1999

Attendees

Mr. Stan Farkas	NYSDEC
Mr. Daniel Pappachan	NYSDEC
Mr. Merlange Genece	NYSDEC
Mr. Ernest Lampro Jr.	NYSDEC
Mr. Jim Pim	SCDHS
Mr. Todd Bober	Navy
Mr. Jim Colter	Navy
Ms. Cheryl Grosso	Navy
Ms. Eileen Dougherty	Navy
Mr. Martin Simonson	DCMC
Mr. Dave Brayack	TtNUS
Ms. Judy Lamey	TtNUS

Introduction

A technical review committee meeting was held at the Stony Brook Office of NYSDEC to discuss the EVS evaluation for the Sites 6A - Old Fuel Calibration Area and 10B - Engine Test House and the Southern Area.

Mr. Farkas indicated that people from NYSDEC in Albany were not able to make the meeting.

The EVS for Sites 6A, 10B and the Southern Area were presented on a chemical specific basis. Because both fuel and chlorinated solvents are significant groundwater concerns in this area, the number of chemicals is greater than that presented for Site 7.

Based on a review of the data, three general data gaps were identified as follows.

- Extent of chlorinated solvent contamination in the deep groundwater near the former fuel calibration pad.
- Extent of chlorinated solvent contamination in an area between the old fuel calibration pad and the engine test house. Note that this area is bounded downgradient, but not upgradient.
- Extent of groundwater contamination in the southern area, south of River Road. Note that this area is bounded to the east by analytical data and is believed to be bounded by the Peconic River to the south.

To resolve these data gaps, there was agreement that the following field tasks should be conducted.

- Install three monitoring wells around the former fuel calibration pad. One well would be upgradient of the former fuel calibration pad, one well would be in the center of the area of concern, and one well would be located downgradient of the former fuel calibration pad. The wells would be sampled vertically on 20 foot centers from 100 to 200 feet bgs for the

upgradient location to 160 to 200 feet for the center and downgradient locations. These depths correspond to the location of data gaps.

- Retest existing monitoring wells FC-MW02S and FC-MW02I.
- Install one monitoring well in between the old fuel calibration pad and the engine test house. The well would be sampled on a 20 foot center from 60 to 100 feet bgs.
- Install one monitoring well near the engine test house. The well would be sampled on a 20 foot center from 60 to 100 feet bgs.
- Install 3 wells in the off site portion of the southern area. One on Golf Course Road and two near the hunting club. Sample depths would be based on the observed depth of contamination on site.
- The ultimate discharge of the southern area groundwater is likely to be the Peconic River. To investigate the discharge point for groundwater, several piezometers would be installed near the Peconic River and vertical groundwater gradients would be measured. This data would be entered into a localized groundwater model and used to predict the discharge point(s) for the contaminated groundwater. SCDHS offered the use of a device that allows vertical gradients within a stream channel to be measured.

The length and detail of the Site 6A EVS presentation were discussed. In general, the TRC thought that there was too much detail. It was explained that originally the data were presented in summary form, and the Navy was criticized for not providing sufficient detail. Presenting the EVS graphs for only some of the chemicals were discussed. It was decided to discuss the level of detail with the RAB.

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