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RESTORATION ADVISORY BOARD MEETING MINUTES 9 JULY 2012 NCBC GULFPORT  
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7/9/2012  
RESTORATION ADVISORY BOARD



**Minutes**  
**NCBC Gulfport RAB Meeting**  
**Naval Construction Battalion Center**  
**Gulfport, Mississippi**  
*July 9, 2012*

The following members of the Restoration Advisory Board (RAB) met at the Good Deeds Community Center in Gulfport, Mississippi on July 9, 2012. RAB members present at the meeting included:

Gordon Crane (NCBC Gulfport)	Joyce Shaw
David Marshall (Alt. Community Co-Chair)	Phillip Shaw

Administrative and technical support were provided by:

Bill Olson, Tetra Tech  
Jon Overholtzer, CH2M HILL  
Greg Roof, Tetra Tech  
Nancy Rouse, Tetra Tech

Guests in attendance:  
Fred Boykin, Jr

### **Welcome and Introductions**

Dave Marshall, Alternate Community Co-Chair, opened the meeting at 6:30 p.m. Meeting attendees were invited to introduce themselves.

### **Environmental Restoration Program (ERP) Update**

Greg Roof of Tetra Tech provided a site-by-site status of the NCBC Gulfport Environmental Restoration Program as follows:

*Site 1:* The Remedial Investigation will be issued as final. The Feasibility Study draft final is being discussed to determine the path forward. The Proposed Plan will be available within the next three months.

*Site 2:* The Remedial Investigation field work has been completed and a document is in preparation.

*Site 3:* Final edits to the Feasibility Study are being completed and a discussion about future landfill cap is underway. The Decision Document, which was delayed to allow for a decision about landfill changes, went to the Navy for review.

*Site 4:* Completed installation and sampling of groundwater monitoring.

*Site 5:* The Remedial Action has been constructed (i.e., a landfill cap was installed).

*Site 6:* The Remedial Action is ongoing (i.e., long term groundwater monitoring is being conducted).

*Site 7:* The Remedial Investigation is underway. To date, the extent of the landfill has been defined.

*Site 8:* The Site 8 cap was installed and land use controls and monitoring are ongoing.

*Site 10:* The Remedial Action (lining of the ditches) is completed. Land Use Controls and Monitoring are ongoing.

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Land Use Controls: The Memorandum of Agreement is in negotiation. The facility is currently monitoring and controlling the sites.

*Munitions Response Program (MRP) Site Status:* The Preliminary Assessment (PA) for the MRP is being written. Ten MRP sites have been identified. Site Investigations (SIs) have been funded for two sites. Tetra Tech will begin preparing the SI Work Plan after the PA is completed (in approximately 6 months).

*Question:* Which way is the groundwater moving on the base?

*Answer:* Groundwater flows to the northwest in the golf course area, and towards the east and south east in from the south central are of the base (around Site 10, the Parade Ground).

*Question:* What lies beneath the debris in the landfill to protect the groundwater?

*Answer:* We have monitored the groundwater in the direction of flow and will continue to do so. We have not found any contamination moving off of the base.

*Question:* What do we know about groundwater flow rates?

*Answer:* We have measured flow throughout our investigations. The fastest flow measured to date was approximately 10 feet per year and the slowest was about 1 foot per year. However, it should be noted that major storm events can dramatically alter these flow rates. The direction and velocity of groundwater flow is used at every site to determine the best placement of the groundwater monitoring wells.

Upcoming Public Meetings for Installation Restoration Program Sites: Public meetings are held for each site when the Navy has prepared a Proposed Plan for a remedy. These public meeting are held in conjunction with a 30-day Public Comment Period for the Proposed Plan. The next public meetings will be held for Site 1 at the October RAB meeting. [Note, since the RAB meeting, this date has shifted to the December 2013 meeting,] The Site 2 and Site 7 Proposed Plans will be ready for public review within 12 to 18 months.

### **Proposed Changes in the Remedial Action Approach for Remaining Landfill Sites**

Greg Roof of TetraTech presented a proposed change in the landfill covers that are a key component of the remedies for the landfill sites at NCBC Gulfport. To date, landfill covers at the base have included a low permeability cover, either a synthetic liner or dense clay. The purpose of these covers was to prevent groundwater from infiltrating the landfill. Mr. Roof explained that because the landfills are located in a flood plain, the edges of the constructed covers are positioned at or below the water table. As a result, the landfill contents are already potentially in contact with groundwater, and hence the low permeability covers to not add a level of protectiveness.

*Question:* Are we still going to have two feet of soil covering the landfill?

*Answer:* Yes, we have gone back to assess the depth of the existing soil cover at Site 4, and, if this change is implemented, we will be grade the landfill and add soil as needed to ensure that there is two feet of soil covering the landfill.

*Question:* How are you disseminating information to the public about the environmental restoration work being done at NCBC Gulfport?

*Answer:* The primary vehicle for disseminating information is through these RAB meetings. RAB meetings are advertised using direct mailing to a list developed over time which includes churches, meeting attendees who expressed interest in being added to the list, as well as environmental and community activists. Meetings are also announced via a paid display ad in the *Sun Herald* newspaper. Other outreach activities have been used over the years, including participation in community workshops, door-to-door interviews, Public Meetings, and mailed fact sheets. Currently the program's Community Involvement Plan is being revised. This revision involved interviewing over 60 community members to assess the best practices for involving the community in NCBC Gulfport's environmental restoration program.

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*Comment from RAB Member:* Attendees often show up a few times then don't come back. I think these attendees leave feeling that the Navy has the cleanup under control.

*Comment from Community Member:* I am concerned about the apathy of the community.

A Navy member of the RAB offered to provide a copy of the Community Involvement Plan to the community member for review.

### **Golf Course Landfill (Site 4) Groundwater Monitoring**

Bill Olson of Tetra Tech presented an update on the status of Site 4. Site 4 operated from 1966 to 1972. Solid and liquid wastes as well as demolition debris were buried at the site. The golf course was constructed at the site in the early 1990's. Construction of the existing cap on the site was completed in 2010.

Studies of the Golf Course Landfill site began in 1985 with an Initial Assessment Study in 1985, followed by a Verification Study in 1987. The site was included in a base wide groundwater, surface water, and sediment investigation in 1995 and groundwater monitoring which was documented in 1999. These studies identified chlorinated solvents in the groundwater in concentrations that were higher than the regulatory limits.

In 2007 a Treatability Study was completed that involved injecting bacteria into the groundwater to help break down the chlorinated solvents. The bacteria used for this project, called Dehalococcoides, are effective in breaking down chlorinated solvents because they use chlorine as a nutrient. As the chlorine molecules are removed by the bacteria, the chemical structure of the chlorinated solvent changes, which ultimately breaks down the contaminant in the environment. The process of allowing bacteria break down contaminants is called Natural Attenuation. When this process is aided by added bacteria or nutrients, the process is referred to as Enhanced Natural Attenuation. The results of the treatability study were promising for using Enhanced Natural Attenuation as a remedial alternative at the site.

Following the Treatability Study, a Remedial Investigation and Feasibility Study were completed to determine the nature and extent of contamination at the site and to propose ways to clean it up. The Remedial Investigation looked at groundwater, surface water, surface soil, and sediment. The groundwater study component of the Remedial Investigation provided a much clearer understanding of the location and concentrations of chlorinated solvents at the site.

The Remedial Investigation included development of objectives for making the site protective of human health and the environment. These objectives are called "Remedial Action Objectives." Remedial Action Objectives for Site 4 include preventing exposure to landfill contents, preventing exposure to groundwater, controlling infiltration and leaching to groundwater by covering the site with an appropriate material, managing landfill gas, and protecting the landfill cover from erosion. These Remedial Action Objectives were achieved with the installation of the landfill cap in 2010. This cap included a low permeability layer, surface grading to prevent ponding of rainwater, landfill gas control, protection of the Canal No. 1 bank by placing rip rap to prevent erosion, and long term monitoring of the groundwater to see how the system is working with respect to preventing contaminants from moving away from the cap.

The first round of groundwater monitoring has been completed. The samples were collected from nine wells located around the landfill. The samples were analyzed for Volatile Organic Compounds (which include chlorinated solvents), metals, dioxins, natural attenuation parameters, and a count of the number organism living from the previously injected bacteria.

*Question:* Where is Canal No. 1 and where does it flow?

*Answer:* Canal No. 1 is located on the west side of the base and extends from the south to the north fenceline. Canal No. 1 can flow in either direction depending on rainfall, but typically flows from south to north, exiting the base near 28<sup>th</sup> Street and Canal Road.

*Question:* What is the elevation of groundwater at the site?

*Answer:* Groundwater elevations are taken from wells located around the perimeter of the landfill. The highest elevation at the site is 25 feet above sea level.

Sample results showed that one well contained vinyl chloride, a breakdown product of chlorinated solvents, at 55 micrograms per liter (or 55 parts per trillion). In a previous study, vinyl chloride at the same location was found to be 0.97 micrograms per liter. Although the most recent concentration is above the regulatory level of 2 micrograms per liter, this increase is viewed as a positive indication that Natural Attenuation is effectively degrading chlorinated solvents at the site. Another positive indication is the significant increase in number of bacteria (called *Dehalococcoides*) injected to speed up the process of Natural Attenuation. In this most recent sample, the bacteria count increased from a maximum of 53.5 organisms per liter to 3740 cells per liter.

Dioxins were also sampled in groundwater at the site. The most toxic form of dioxin, TCDD, was found at low concentrations (8.98 parts per quadrillion), which is considered below any Mississippi Department of Environmental Quality action levels. OCDD, a significantly less toxic form of dioxin, was found at 52 and 218 parts per quadrillion, which are slightly higher than the acceptable values.

## **Conclusion**

**Next Meeting Date:** The next RAB meeting will tentatively be held on October 1, 2012, at 6:30 p.m. Tentative topics for our October 1, 2012 meeting will most likely include updates on Sites 1, 2, 3, and 7.

The meeting closed at 7:45 p.m.