

St. Juliens Creek Annex (SJCA) Restoration Advisory Board (RAB) Meeting Summary: May 16, 2007

RAB Members Present:

Agnes Sullivan	NAVFAC Mid-Atlantic	Karen Doran	Virginia DEQ
Robert Mann	RAB Community Co-chair	Kevin Lew	SPAWAR
Josh Barber	EPA (Region III)	Kim Henderson	CH2M HILL
		Janna Staszak	CH2M HILL

Location: Major Hillard Library, Chesapeake, Virginia

From: Janna Staszak/CH2M HILL

Date: June 19, 2007

RAB Welcome and Introductions

At 5:30 pm Ms. Sullivan presented opening remarks and introductions. Handouts of all of the presentations were distributed.

Site Status Update

Ms. Sullivan informed the RAB of the current status of the Installation Restoration Program (IRP) sites. The presentation addressed the four active sites (Sites 2, 4, 5, and 21), and indicated that to-date 49 sites have been determined to require no further action (NFA). Site 19 and Blows Creek were included in the presentation because they were both determined to require NFA since the previous RAB meeting. For each of the active sites, Ms. Sullivan showed an aerial photograph and then reviewed the site history and current status.

Summaries of the discussion for each site were as follows:

Site 2: Waste Disposal Area B

Site 2 is a 4.4-acre unlined waste disposal area that operated from 1921 to 1942.

Construction debris, blasting grit, waste ordnance, and solvents were disposed there. The Remedial Investigation (RI) phase began in 1997 and is ongoing. Potential concerns include waste; volatile organic compounds (VOCs) in groundwater and surface water; and metals, pesticides, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs) in soil and sediment. Site 2 is currently in the Remedial Investigation (RI) phase of the Comprehensive Environmental Response, Compensation, and Liability (CERCLA) process. An investigation is being conducted at the site using the Triad Approach (separate topic), and will be completed in early June. The results of the investigation will be reported in an Expanded RI Report in the fall of 2007. A groundwater treatability study or Feasibility Study will follow the investigation report.

Site 4: Landfill D

Site 4 is an 8.3-acre sanitary landfill that operated from 1970 to 1981. Wastes managed included primarily trash, wet garbage, construction material, some solvents, acids, bases, and PCBs. Potential concerns included waste; metals, PCBs, and PAHs in soil; and mercury in drainage sediment. The Record of Decision and Remedial Design were completed for the soil cover and drainage ditch sediment removal in 2004. The remedy for Site 4, a soil cover, was implemented in 2005. The Remedial Action Completion Report, documenting that the remedy at Site 4 is operational and functional in accordance with CERCLA and memorializing the response complete, was signed by the Navy, United States Environmental Protection Agency (USEPA), and Virginia Department of Environmental Quality (VDEQ) in October 2006. The site is currently closed with land use controls, including a fence and survey plat on file with the City of Chesapeake, to restrict the land use. Voluntary groundwater monitoring will be conducted for a minimum of eight rounds (two rounds completed to-date) over two years to evaluate the potential impact of the landfill on groundwater quality. Annual inspections are conducted to ensure the integrity of the soil cover and are summarized in an annual report.

Site 5: Burning Grounds

Site 5 is a 21-acre former burning grounds for ordnance disposal that operated from 1930 to the 1970s. Other wastes reportedly disposed of included solvents, paint sludge, pesticides, and various types of refuse. The RI phase was conducted from 1997 to 2006 and identified waste and burnt soil; metals, pesticides, and PAHs in surface soil and drainage sediment; and metals in groundwater as potential concerns. An Engineering Evaluation/Cost Analysis (EE/CA) has been prepared to address waste, burnt soil, surface soil, and drainage sediment through excavation and off-site disposal. The Removal Action developed in the EE/CA will be conducted in phases, dependent on funding. The first phase, which comprises the excavation of waste and burnt soil, will begin in the fall of 2007.

Mr. Lew asked what makes Site 6, which is encompassed by Site 5, a NFA site. Ms. Sullivan responded that a removal action was previously conducted at Site 6 and that the area was backfilled with borrow material.

Site 19: Building 190

Building 190 was used for ordnance management activities from the early 1900s through the 1970s. The Site Investigation phase was completed in 2005. Potential concerns included metals and PAHs in soil. The final EE/CA for Site 19 was completed in November 2005 and the removal action was completed in May 2006. A Site Closeout Report, concluding that NFA is necessary at the site, was finalized and signed by the Navy, USEPA, and VDEQ in December of 2006.

Site 21: Industrial Area

Site 21 is an industrial area where buildings were historically used as maintenance and electrical shops for equipment and chemical storage. The Site Investigation phase for Site 21 began in 2004 and was conducted in several phases lasting through February of 2007. The potential concern at Site 21 is the presence of VOCs in groundwater and the adjacent storm sewer line. The investigation results are currently being summarized and evaluated in a RI

report. A treatability study to evaluate potential groundwater treatment technologies is planned for the fall of 2007.

Mr. Mann asked what is meant by “groundwater” (i.e. how deep it is and what is it used for)? Ms. Sullivan responded that the groundwater referred to is the shallow aquifer, ranging from approximately 4 to 15 feet below the ground surface, and that shallow groundwater use is restricted.

Blows Creek

Several past and present IRP sites are potential sources of chemicals to Blows Creek. The Baseline Ecological Risk Assessment (BERA) investigation of sediment for Blows Creek was completed in 2005. Limited concerns were identified, including mercury and PAHs in sediment adjacent to Site 4. Site 4 was remediated with a soil cover and removal of the drainage ditch. An electronically enhanced BERA was finalized in February 2007, and recommended NFA for the site. USEPA and VDEQ provided concurrence with the document, and the decision will be documented in the Record of Decision for Site 5. Mr. Lew was provided a copy of the BERA on CD.

Action CH2M HILL: Bring a copy of the BERA CD to the next RAB meeting for Mr. Mann.

Site 21 Groundwater Investigation Plume and Treatment

Ms. Staszak presented an overview of the Site 21 groundwater plume investigation and planned treatment to the RAB. She reviewed the background of the site; discussed the investigation activities, results, and reporting; and introduced the potential groundwater treatment method.

Ms. Staszak reviewed the location and description of Site 21, which is summarized above in the Site Status Update topic. She indicated that historical records indicate that trichloroethene (TCE) was disposed in the area from degreasing operations as well as for weed control along railroad tracks. Ms. Henderson explained that this was an acceptable method of TCE disposal at the time. The buildings are currently used for storage and maintenance activities.

Ms. Staszak indicated that investigation activities were conducted at the site in many phases from 1995 through 2007, identifying and delineating a VOC plume (including TCE) in the shallow groundwater. Investigation activities included temporary and permanent groundwater monitoring well installation; groundwater, surface soil, subsurface soil, storm water, and surface water sampling; membrane interface probe (MIP) investigation; hydraulic conductivity testing; and a storm sewer video inspection.

Ms. Staszak indicated that the investigation results will be reported in a RI report, which will summarize the nature and extent of contaminant releases and assess the long term site risks. Ms. Staszak presented a figure showing the extent and concentrations of TCE, including three “source” areas and the surrounding plume. Mr. Mann asked how much dumping needed to occur to produce these concentrations (i.e., a gallon or a drum). Ms. Henderson indicated that very small amounts of TCE can contaminate groundwater and the plume map is indicative of the type of disposal that occurred (i.e., around buildings and on railroad tracks throughout the industrial area). The plume covers approximately 8 acres, and TCE concentrations have been detected up to 16,000 micrograms per liter. Ms. Staszak

presented a conceptual site model (CSM), showing the site geology, likely sources of contaminants, and transport pathways. The contaminants were applied to the ground surface for weed control or disposed through building drains. The contaminants leached through the vadose zone into the Columbia aquifer, where they were dispersed. The contaminants are bound by the Yorktown confining unit (less permeable layer), where analytical results indicated dense non-aqueous phase liquids (DNAPL) may be present. Contaminants have also entered the storm water sewer system and have been transported to the surface water body at its outfall (Site 2 inlet). DNAPL is very challenging from a remediation standpoint because it tends to accumulate in pockets and can be very difficult to locate. However, small quantities of DNAPL can impact surrounding groundwater over very large areas.

Ms. Staszak indicated that a human health risk screening was performed using the data (excluding the most recent round), and indicated potential risk from VOCs and arsenic in shallow groundwater. A full human health risk assessment will be performed and included in the RI report. Additionally, indoor air vapor intrusion evaluations will be performed as required on the active buildings. An ecological risk screening was performed and concluded that because there is no ecological habitat at the site, there is no potential risk. The surface water at the outlet of the storm water system will be addressed with Site 2.

Ms. Staszak introduced the potential treatability study technologies that may be implemented at the site. Treatability studies are conducted on sites to test treatment technologies to ensure they will achieve the desired results prior to full-scale implementation. In Situ Chemical Reduction (ISCR) with zero valent iron (ZVI), which promotes the breakdown of contaminants, is planned for the source areas. Enhanced reductive dechlorination (ERD), which adds an electron donor source (generally the limiting factor in the natural breakdown process), is planned for the plume. ZVI is a more aggressive method of treating the higher concentration areas, achieving greater results more quickly. ERD is a slower process, but lasts longer. In both cases, the chemicals are injected into the Columbia aquifer through well points installed by direct push technology (DPT).

Ms. Staszak reviewed the upcoming schedule for Site 21. The draft RI report will be submitted in June, followed by the final report in August. A draft treatability study work plan will be prepared in July and finalized in September. The field implementation of the treatability study will then be implemented in October. A Feasibility Study will follow the treatability study, likely in 2009.

Site 2 Triad Investigation

Ms. Henderson presented an overview of the Site 2 Triad Investigation. She reviewed the site background, introduced the Triad investigation approach, and discussed the ongoing investigation activities and preliminary results.

Ms. Henderson reviewed the site history, which is summarized above in the Site Status Update topic. Ms. Henderson reviewed the investigation history of the site. Several basewide investigations were conducted from 1981 through 2000. Site-specific investigations, including the RI and Expanded RI, followed in several phases beginning in 1997 and continuing now. These activities were reported in the RI report in 2004 and Expanded RI report in 2005. The objectives of the RI and Expanded RI were to characterize

the nature and extent of contamination (waste, surface soil, subsurface soil, shallow groundwater, deep groundwater, sediment, and surface water), evaluate potential impacts from Site 2 inlet to St. Juliens Creek, and quantify human health and ecological risk. The RI and Expanded RI reports concluded that data gaps remained at the site and recommended further definition of the nature and extent of chlorinated VOCs at the site.

Ms. Henderson explained that because data gaps remain after several phases of investigation, a new approach is being used for the next investigation to gather the necessary data and reduce the need for additional mobilizations. The Triad Investigation, which is a three-tiered investigation approach using systematic project planning, dynamic work strategies, and real-time measurement technologies to manage uncertainties, is being used at Site 2 for the current investigation. Systematic project planning consists of project team involvement and communication, definition of project end goals, and development of a CSM incorporating all aspects of the site. The dynamic work strategy consists of team development of the investigation approach and decision points that allow in-field decision making. Real-time measurement technologies are rapid data collection and analysis, which allow for the continuous incorporation of results into the CSM, allowing for immediate identification of data gaps in the field and modification of the work approach to address them.

Ms. Henderson discussed the team meeting held in December 2006 to develop the investigation work plan. During the meeting, the team identified key data gaps through discussion of future land use, development of remedial action objectives, and identification of potential remedial technologies; and developed the investigation approach and decision trees. The investigation began April 17 and will last through June 4, 2007. Activities include sediment diffusion sampling, MIP investigation, direct push technology groundwater and soil sampling, temporary piezometer installation and groundwater sampling, and permanent monitoring well installation and sampling. Ms. Henderson reviewed each of the activities, including their objectives and associated technologies. Ms. Henderson displayed examples of the CSM, including the horizontal and vertical plume delineation, and how the CSM has changed between the collection of the 2004 and 2007 data.

Ms. Henderson presented the conclusions and path forward for Site 2. The Triad approach is being used to streamline the investigation process. The investigation will be completed in early June. Results will be reported in an Expanded RI Report and remedial alternatives will then be evaluated in a Feasibility Study.

Roundtable / Q & A

Mr. Mann asked about the status of the sunken bridge within EPA. Mr. Barber indicated that EPA has currently determined that the bridge will not be added as an IRP site but was referred to the Elizabeth River project. Mr. Barber suggested that local government may be an avenue for action.

Mr. Lew asked what the schedule is for closure of SJCA. Mr. Barber indicated that 2011 is the current target for remedy in place.

Next Meeting: November 2007, RAB members will be notified by email and a public notice will be issued in the *Virginian-Pilot* newspaper. The RAB members were interested in a discussion of DNAPL and treatment technologies.

Meeting Adjourned.