

St. Juliens Creek Annex Restoration Advisory Board Meeting Summary: May 23, 2012 Meeting

Meeting Attendees

Walter Bell	NAVFAC Mid-Atlantic	Henry Blevins	US Senate
Robert Mann	RAB Community Co-chair	Roland DeGuzman	NNSY
Kevin Lew	RAB Member	Janna Staszak	CH2M HILL
Robert Stroud	USEPA (Region III)	Adrienne Jones	CH2M HILL
Karen Doran	Virginia DEQ	Kate Landman	Shaw
Valerie Walker	NNSY	Charles Whitehurst	City of Portsmouth
Terry Rivenbark	NNSY	Barbara Brumbaugh	City of Chesapeake

Location: Major Hillard Library, Chesapeake, Virginia

Meeting Date: May 23, 2012

From: Adrienne Jones/CH2M HILL

Minutes Date: July 24, 2012

Restoration Advisory Board Welcome and Introductions

At 5:00 PM Mr. Bell presented opening remarks and introductions to the Restoration Advisory Board (RAB). Mr. Bell explained that he is the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Remedial Project Manager for St. Juliens Creek Annex (SJCA). The other RAB members and the guests introduced themselves. Handouts of all of the presentations were distributed.

Mr. Bell provided a brief overview of the SJCA RAB. RABs are made up of community members and government officials representing the Navy, United States Environmental Protection Agency (USEPA), and Virginia Department of Environmental Quality (VDEQ). RABs provide a focal point for a continual exchange of information, concerns, values, and needs between the local community and the SJCA Environmental Restoration Program (ERP). The purpose of RAB meetings is to provide a forum for gaining effective input from stakeholders on cleanup activities; enable community members to gain a better understanding of technical data, investigation results, potential human health and environmental effects, and remedial actions; and increase installation responsiveness to the community's concerns about the ERP. Under the ERP, the Navy investigates and remediates areas resulting from past facility-related hazardous waste management practices. The ERP is consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or "Superfund" and all federal, state, and local laws and regulations. A figure depicting the 54 ERP sites at SJCA that were closed out with no further action was projected. Figures depicting the locations of the five ERP sites currently active in the ERP were projected.

Installation Restoration Program Site 5 Removal Action

Ms. Staszak led the discussion. The purpose of the topic was to explain the site background, the approach for the removal action, the removal action work that had been completed, challenges associated with the removal action, and the path forward for the site.

Ms Staszak provided an overview of the background of Installation Restoration (IRP) Site 5. The site was used from 1930 to the 1970s primarily for disposal of ordnance wastes (through open burning) and ordnance equipment decontamination. It was also used for general waste disposal. The site consists of approximately 23 acres, of which approximately 6.4 acres had been used for the burning/waste disposal. The Remedial Investigation activities that were conducted at the site between 2003 and 2007 identified potential unacceptable human health and environmental risks associated with waste, potential munitions, metals, and pesticides in the waste and burnt soil; and metals and pesticides in the surface soil and sediment. As a result, an engineering evaluation and cost analysis was performed and identified a removal action approach to address the potential unacceptable risks. The removal action approach included excavation of the waste and soil from the areas posing unacceptable risk, off-site disposal of excavated materials at an USEPA-approved landfill or recycling facility, and site restoration to pre-excavation conditions (upland and wetland). Excavation in the waste/burnt soil area was to be performed to the extent of visible contamination/debris and confirmed through collection and analysis of post-excavation confirmation samples. Excavation in the soil and sediment areas that presented a potential risk to human receptors was to be performed to a depth of 1 foot below ground surface and confirmed through collection and analysis of confirmation samples. Excavation in the soil and sediment areas that presented a potential risk to ecological receptors was to be excavated to a depth of 1 foot below ground surface. Any munitions discovered during the removal action were to be disposed on site through open detonation.

Ms. Staszak summarized the removal action activities that had been completed. Mobilization was originally initiated in December 2007; however, munitions and explosives of concern (MEC) were found during silt fence installation adjacent to the waste/burnt soil area. Therefore, work was put on hold while an Explosive Safety Submission (ESS) was generated for the waste/burnt soil area and adjacent areas. Excavation and restoration of the human health and ecological risk areas not adjacent to the waste/burnt soil area was conducted July through September 2008, while the ESS was being generated. The ESS was finalized in December 2008 and work resumed in the waste/burnt soil area and adjacent areas in January 2009; however, another MEC item was discovered. Because that item was larger than planned for in the ESS, work was put on hold again while the ESS was revised. Work resumed at the site in November 2010 under the revised ESS, and was ongoing. Since the removal action began, 21,000 cubic yards of soil; 1.3 million pounds of cultural debris, waste that is not munitions related; and 27,000 pounds of munitions debris, debris that is associated with munitions but not a complete munitions item and have no explosive hazards, were removed from the site. Eight MEC items were discovered and destroyed.

Ms. Staszak explained some of the challenges that were encountered during the removal action. Development and approval of the ESS took much longer than expected and delayed the schedule. Compliance with the ESS resulted in changes in the operational approach for the removal action contractor and therefore, the contractor's work plan had to be revised and approved. Since the Navy Explosive and Ordnance Disposal (EOD) team was unable to respond to MEC items that are safe to move, provisions for the removal contractor to be able to store and ultimately destroy the items at the site had to be incorporated into the plan. The waste characterization samples that were

collected to determine how the soil that was excavated would need to be disposed of indicated hazardous levels of lead in some of the soil; therefore, a plan had to be developed to stabilize the lead in the soil to ensure it remained bound to the soil so that the soil could be rendered non-hazardous before being shipped offsite for disposal. The soil had a very high clay content which made it difficult to mechanically screen it for MEC; therefore, the removal action contractor had to hand screen the material, which was a much slower process. Additionally, wet weather slowed progress. Mr. Lew asked why the Navy EOD team was unable to respond to the MEC items that were safe to move. Ms. Staszak responded that the Navy EOD team is for emergency response. Mr. Bell explained that in instances where unexpected ordnance is discovered, the Navy EOD team has been very responsive.

Ms. Staszak provided the status of the removal action. Excavation was completed in May 2012. Backfilling of the excavated areas would be completed in June 2012. Site restoration is planned for June and July 2012; however, additional funding may be required to complete the restoration because the excavation/backfill volume was greater than anticipated. If additional funding is needed, the timing of that funding is not certain. Restoration will consist of placement of topsoil, hydroseeding of the upland areas, and planting of the wetland areas with wetland plants. A figure of the restoration plan was projected. Following restoration, a Construction Closeout Report will be prepared to document the removal action and a Proposed Plan will be prepared to propose no further action (NFA) for the site. The Proposed Plan is a public document so it will be made available for a public review period and presented at a public meeting during the fall or winter of 2012. A NFA Record of Decision will be prepared after the Proposed Plan.

Ms. Staszak asked if there were any additional comments or questions; no additional comments or questions were received.

Munitions Response Program Area UXO 1 Anomaly Source Investigation

Mr. Bell led the discussion. The purpose of the topic was to review the background of Munitions Response Program (MRP) Area UXO 1 and discuss the upcoming Expanded Site Inspection (ESI) field activities (anomaly source investigation).

Mr. Bell provided an overview of the site background. MRP Area UXO 1 consists of approximately 2,230 linear feet of current and former wharf areas along the Southern Branch of the Elizabeth River. The northern wharf area was used for loading and unloading of ordnance, particularly Mark VI mines. The northern wharf is no longer present with the exception of pilings. The southern wharf area was used for loading and unloading various ordnance. It was damaged when two ships struck it in 1975. The southern wharf is still in use, but not for ordnance loading and unloading. Investigation of the northern wharf area as IRP Site 20 began in 1981, when an Initial Assessment Study was conducted. EOD team divers visually inspected the area and identified metal and thick silt deposits. It was determined that ordnance could have been dropped adjacent to the former wharf area, but it was not considered a hazard if the sediment was not disturbed. A Relative Risk Ranking, which included site reconnaissance, a magnetometer survey, and sediment sampling, was conducted for the northern wharf area in 1996. Metallic items were detected, but visual inspection was not performed. A Site Screening Assessment was conducted for the northern wharf area in 1996. Human health and ecological risks were determined to be acceptable based on screenings conducted on the RRR data. NFA for the northern wharf area under the IRP was recommended because potential risk from MEC would be addressed under the Navy's Range Program. Based on the potential for MEC to be present in the northern wharf area, several activities were conducted following the SSA: signs were posted in the area to prohibit intrusive activities; the United States Army Corp of Engineers

were notified of the potential presence of MEC; real estate maps were annotated to indicate unexploded ordnance may exist along all SJCA wharfs; and the wharf areas (northern and southern) were identified as MRP Area UXO 1 in 2008 because the Navy's Range Program never officially started.

A Preliminary Assessment for MRP Area UXO 1 was conducted in 2009. On-site and off-site records were reviewed during the Preliminary Assessment to determine the potential for munitions to have been dropped into the water during loading operations. Although no documentation was found to confirm the presence of munitions in the vicinity of the wharf areas, anecdotal evidence through interviews indicated there was potential for munitions to have been dropped. A Site Inspection (SI) was conducted in 2010 to further evaluate MRP Area UXO 1. The SI consisted of side scan, bathymetry, and digital geophysical mapping surveys. The results of the surveys were projected. The digital geophysical mapping survey identified 265 anomalies in the northern wharf area and 1,386 anomalies in the southern area. Although the anomalies are metallic items, the results of the survey could not identify whether they are munitions related. Mr. Lew asked if the results of the digital geophysical mapping surveys in the northern and southern wharf areas are to scale and include parts of the channel. Ms. Staszak responded that on an individual basis they are to scale, but that they are not in scale to each other.

Ms. Staszak explained that, based on the results of the SI, an ESI, also being referred to as an anomaly source investigation, was being planned and would be conducted in 2012. The objectives of the investigation are to determine if metallic items detected during the SI are munitions-related and if the presence of munitions-related debris, if present, has resulted in the release of environmental contaminants to sediment. The scope of the investigation includes investigation of 15 locations. From each of the 15 locations, metal will be collected from the river bottom for inspection and a sediment sample will be collected for explosives analysis. The locations were selected to represent a subset of the metal detected during the Site Inspection and the areas that could not be investigated during SI. Mr. Bell indicated that the investigation approach is an innovative technology that will be used; it is typically used for removal of known items not investigation of unknown items. The investigation will be conducted from barges on the river. An electromagnet lowered by a crane will be used to recover metal from the river bottom. A rake that is attached to a long-reach excavator will be used to loosen metal debris from sediment, as necessary. Sediment samples will be collected from the sediment pulled up with debris, if possible. Material will primarily be processed on the barge; sediment will be washed from metal debris and the debris will be inspected by Unexploded Ordnance Technicians. The processed debris will be transported to shore for recycling/disposal. Mr. Bell explained that a 43 foot explosive arc will be set up around the operations for safety. He indicated that the investigation activities were being coordinated with the US Coast Guard and that operations will halt for river traffic.

Ms. Staszak explained that the path forward for the site was dependent on the results of the ESI. If military munitions are not encountered, no further investigation for munitions will be required. If military munitions are encountered, either a removal action or Remedial Investigation will be planned. If explosives are present in the sediment at concentrations that indicate the site does not pose an unacceptable risk, then no additional analytical sampling will be needed. If explosives are present in the sediment at concentrations above applicable screening criteria, additional investigation may be necessary. Ms. Staszak reviewed the schedule for MRP Area UXO 1. The ESI will be conducted in July and August 2012. The ESI data evaluation and reporting should be completed by March 2013. Based on the outcome of the ESI, site closeout documentation, Remedial

Investigation/Feasibility Study planning, or removal action planning will be initiated in the spring of 2013.

Mr. Bell asked if there were any comments or questions. Mr. Lew asked why it was okay to use a rake to disturb the sediment during the ESI when the investigation in the northern wharf area concluded that sediment should not be disturbed. Mr. Bell responded that an ESS was generated for the work and that Naval Ordnance Safety and Security Activity reviewed the ESS to ensure that qualified personnel would perform the work and that adequate safety measures would be established for the work. Ms. Walker indicated that metal that is recovered might be able to be recycled at the NNSY solid waste recycling facility, Building 1416. She asked if the metal recovered from Site 5 had been recycled at NNSY. Mr. Bell responded that he was unsure and that he would look into it.

Installation Restoration Program Site 21 Remedial Action

Ms. Landman led the discussion. The purpose of the topic was to provide an update on the IRP Site 21 remedial action (RA).

Ms. Landman reviewed the site background. Figures showing the location and features of Site 21 were projected. Site 21 is located within a light industrial area of the facility. Historical activities at the site were associated with maintenance shops, ordnance loading, and a fuel service station. Current site activities include storage and maintenance. Building 1556 is the most active building, used for warehousing and office space. Contamination at the site consists of trichloroethene (TCE) and its breakdown products [1,1-dichloroethene (DCE), cis-1,2-DCE, and vinyl chloride (VC)] in the shallow aquifer groundwater. The remedial action objectives are to reduce contaminants in shallow groundwater to the maximum extent practicable and prevent exposures until concentrations allow for unlimited use and unrestricted exposure. The cleanup goals for the contaminants of concern were presented in a table. A figure showing the extent of the TCE plume in the groundwater at the time of the Remedial Investigation in 2007 was projected.

Ms. Landman explained the components of the selected remedy for the groundwater contamination. The remedy consists of In-site Chemical Reduction (ISCR) and Enhanced Reductive Dechlorination (ERD). ISCR was conducted through direct injection of zero valent iron (ZVI) into the shallow aquifer, in order to cause a chemical reaction that will break down TCE and its daughter products. The ZVI was targeted in the high-concentration areas of the plume. ERD was conducted through direct injection of emulsified vegetable oil (EVO) into the shallow aquifer. It was injected into the shallow aquifer in the lower concentration areas of the site. Injections were performed in rows so that groundwater would be treated as it flows through the injection rows. A figure showing the injection layout was projected.

Ms. Landman reviewed the RA work that had been performed. In November 2010, 12 groundwater monitoring wells were installed and all 30 of the site monitoring wells were sampled to generate a baseline data set prior to initiation of injections. The ZVI injections were conducted December 2010 through February 2011. The EVO injections were conducted April through September 2011. Post-ZVI injection performance groundwater monitoring was conducted in March 2011, one month after injections, and May 2011, three months after injections. The results of the post-ZVI injection monitoring indicated significant reductions in the TCE levels; four of the eight monitoring wells sampled had a 99% reduction, five of the eight monitoring wells had a 60% reduction; and two of the eight had achieved the cleanup goal. The maximum sitewide concentration from the Remedial Investigation, 16,000 micrograms per liter, had been reduced by an order of magnitude, to 7,320

micrograms per liter. Other performance indicators of the treatment also showed positive results. Figures depicting the configuration of the baseline TCE plume and the TCE plume following the ZVI injections were projected.

Semi-annual post-injection RA performance monitoring was conducted in December 2011 and May 2012. The samples from the May 2012 monitoring event were still being analyzed by the laboratory and were not available for discussion. The December 2011 monitoring results indicated significant reductions in TCE levels in the lower and higher concentration areas. The sitewide maximum TCE concentration had been further reduced to 306 micrograms per liter. The cleanup goal for TCE is 5 micrograms per liter. Other performance indicators continued to show positive responses. Overall, the cleanup goals for TCE had been achieved in 20 of the 30 monitoring wells. All of the cleanup goals except for VC had been achieved in 15 of the 30 monitoring wells goals. All of the cleanup goals had been achieved in nine of the monitoring wells. Figures depicting the changes in the individual COC plumes and the overall plume extent were projected.

Future RA activities will consist of semi-annual groundwater sampling and monitoring of storm sewer infiltration. The groundwater monitoring will continue until the cleanup goals have been achieved. The next monitoring event is scheduled for November 2012. The monitoring well network and monitoring frequency may be revised as the site achieves the cleanup goals.

Ms. Brumbaugh asked if the injection wells are still in place. Ms. Landman responded that they were temporary injection points, not injection wells, and were immediately abandoned following injections. Ms. Brumbaugh asked if additional injection will be needed since the treatment seems to be working. Ms. Landman responded that the remedial design anticipated that only one round of injections would be needed and that appears to be the case. Ms. Brumbaugh asked if microbes were injected. Ms. Landman responded that they were not because they were naturally occurring at the site and that a food source for the microbes, EVO, had been injected. Ms. Brumbaugh asked if the storm water sampling that will take place is part of the overall site project. Mr. Bell responded that it will be performed as part of the Site 21 activities but that it is being conducted to ensure that contamination does not migrate from Site 21 into the new drainage basin being created as part of the IRP Site 2 RA. Mr. Bell clarified that it is not technically storm water sampling, that it is monitoring for infiltration into the drainage basin.

Roundtable / Question and Answer

Mr. Bell asked if there were any general questions or comments for discussion. Mr. Mann asked for an explanation of the sampling that was conducted in St. Juliens Creek. Mr. Bell explained that sediment samples were collected in the creek in order to define the vertical extent of the sediment that needed to be removed at the outfall from Site 2 during the Site 2 RA. The sediment samples were collected at the outfall as well as north and south of the outfall to determine background conditions in the creek. Mr. Mann asked if the results of the sampling were available. Ms. Staszak responded that the background sample concentrations were much lower than the outfall sample concentrations. Ms. Brumbaugh asked what the samples were analyzed for. Ms. Staszak responded that they were sampled for select polycyclic aromatic hydrocarbons and metals. Mr. Blevins asked if part of SJCA is located in the City of Chesapeake and part is located in the City of Portsmouth. Mr. Bell responded that the entire facility is located in the City of Chesapeake. Mr. Bell indicated that he had recently attended a community event, the Cradock Sprinfest, in order to inform the community about the SJCA RAB.

Mr. Mann indicated that he is very impressed with the planning approach and cleanup methods being used at SJCA. Mr. Lew indicated that the RAB is a good forum for keeping the Navy accountable. Mr. Deguzman indicated that the goal of the RAB is to keep the Navy accountable and that the Navy wants to ensure that the community understands the issues and that the Navy understands what is important to the community. He asked that the community inform the Navy if they would like any different types of information to be presented at the RAB meetings or if the information is too technical. Ms. Brumbaugh asked if another facility tour was being scheduled during 2012. Mr. Bell responded that it was not but that it could be considered.

Next Meeting:

Mr. Bell noted that the next RAB meeting will be in approximately 6 months, in November 2012. Mr. Bell asked if 5:00 PM would be a good starting time for the next meeting; the meeting attendees indicated that it would. Mr. Bell asked if there were any topics that the RAB members would like to be included in the next meeting. Mr. Bell suggested including a Site 2 RA topic. The meeting attendees agreed and no additional agenda items were suggested. Mr. Bell indicated that the May 2012 RAB meeting was his last meeting and that Krista Parra would be resuming the role as the NAVFAC RPM role for SJCA.

Meeting Adjourned.