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NAS CECIL FIELD, FL
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MINUTES FROM 6 JUNE 2006 RESTORATION ADVISORY BOARD MEETING NAS CECIL FIELD FL
6/6/2006
TETRA TECH NUS INC

Minutes

Cecil Commerce Center and Cecil Field Airport Restoration Advisory Board (RAB)

Meeting Minutes

Tuesday, June 6, 2006

A meeting of the Cecil Field Restoration Advisory Board (RAB) was held on Tuesday, June 6, 2006 in the second floor conference room of the Control Tower (Building 82) at Cecil Commerce Center.

The following RAB members were present:

Community Members
Richard Darby, Community Co-Chair

Navy, Regulators, and Officials
Mark Davidson, Navy Co-Chair
David Grabka, FDEP
Stephen Ball, EPA

The following RAB members were absent:

Community Members
Lisa Chelf
William Dike
Margaret Day Julian
Iran Maisonet
Edward Renckley
David Scott

Navy, Regulators, and Officials
John Flowe, RESD City of Jacksonville

The following support personnel and guests were present:

Mark Jonnet (TtNUS), Mike Halil (CH2MHill), Ralinda Miller (TtNUS), and Mark Speranza (TtNUS).

Administrative

Richard Darby called the meeting to order at 7:05 PM. The July 2004 RAB Meeting Minutes were approved with no changes.

Site 15 Feasibility Study

Mark Jonnet of TtNUS presented the results of the updated Feasibility Study (FS) for Site 15, Ordnance Disposal Area Blue 10. Site 15 includes 85 heavily wooded acres in the southwestern portion of theYellow Water Weapons Area of the former NAS Cecil Field. It was previously used as an ordnance disposal area and as a trap and skeet range. Contaminants of concern at the site include lead, polynuclear aromatic hydrocarbons (PAHs), total recoverable petroleum hydrocarbons (TRPH), and arsenic in soil and arsenic in groundwater. Reuse plans call for maintaining the Site 15 area as a "green space."

Cleanup levels for the site were based on site-specific data. Human health cleanup levels were chosen to be protective of recreational receptors and were based on site-wide exposure and infrequent use of the site (e.g., occasional hiker). Ecological cleanup levels were developed for the mockingbird based on site-wide exposure and for the shrew based on a 2-acre exposure area.

Carcinogenic PAHs (cPAHs) were evaluated in terms of benzo(a)pyrene equivalents, and the cleanup level determined to be protective of recreational receptors is 2,250 µg/kg. To achieve a site-wide benzo(a)pyrene equivalent concentration of 2,250 µg/kg, soil with concentrations of cPAHs greater than 35,000 µg/kg needs to be removed.

Q: Is the 2,250 µg/kg value a State of federal level?
A: It is a site-specific, risk-based number based on recreational reuse of the site.

In addition to meeting the site-wide cleanup level, the Florida Department of Environmental Protection (FDEP) Three Times Rule must be considered. This rule of thumb requires that soil with concentrations greater than three times the site-wide cleanup level (or 6,750 µg/kg) must also be removed. Soil removal to comply with this rule would result in a site-wide concentration of cPAHs of 797 µg/kg. Based on this value after implementation of the Three Times Rule, no additional remediation is required to address ecological concerns.

For lead, the existing (pre-remediation) site-wide average concentration is 990 mg/kg, and the maximum lead concentration is 41,400 mg/kg. To be protective of recreational receptors, the site-wide cleanup level was determined to be 3,281 mg/kg, and the acute toxicity level (based on concentrations in any one sample) was determined to be 6,500 mg/kg. No cleanup is required to meet the site-wide concentration because the current site-wide average (990 mg/kg) is less than the site-wide average required to be protective. Cleanup is required to meet the acute toxicity value (6,500 mg/kg) because the current maximum lead concentration is 41,400 mg/kg. For ecological receptors, the site-wide concentration required to be protective of the mockingbird is 1,127 mg/kg, which is greater than the current site-wide average; therefore, no remediation to meet this level is required. However, remediation is required to meet the 2,512 mg/kg level determined to be protective of the shrew over the 2-acre exposure units. After these areas are addressed for cPAHs and lead, the required additional soil remediation includes small areas of arsenic and TRPH contamination.

Remediation areas were determined using geostatistical methods for cPAHs and lead and using FDEP residential Soil Cleanup Target Levels for arsenic and TRPH. The order of remediation is as follows:

- Soil with cPAH concentrations exceeding 6,750 µg/kg (based on the FDEP Three Times Rule) will be removed. This will result in a site-wide average cPAH concentration of 797 µg/kg, which also achieves the site-wide cleanup level of 2,250 µg/kg for protection of recreational receptors. For comparison purposes, the FDEP residential and industrial SCTLs are 100 and 700 µg/kg, respectively.

- Soil with lead concentrations exceeding 6,500 mg/kg (based on the acute toxicity value) will be removed. This will result in a site-wide average lead concentration of 577 mg/kg, which is also protective of the mockingbird (site-wide exposure).

- In two additional 2-acre areas, removal of soil with lead concentrations greater than 4,000 mg/kg is required be protective of the shrew (based on a 2-acre exposure area).

The total volume of soil proposed for removal is 11,595 cubic yards, as follows:

- cPAHs – 8,740 cubic yards
- Lead – 2,780 cubic yards
- Arsenic – 60 cubic yards
- TRPH – 15 cubic yards

The depth of soil removal for cPAHs , lead, and arsenic is 1 foot below ground surface. The area of TRPH contamination, which extends to 2 feet below ground surface, is within an area that will be excavated to 1 foot for PAHs.

New Groundwater Cleanup Target Levels (GCTLs) were issued by FDEP in April 2005. All groundwater results were less than the GCTLs in effect before April 2005. However, based on the revision of the arsenic GCTL from 50 to 10 µg/L, the arsenic concentration in one well at Site 15 exceeded the new GCTL. The

draft FS, submitted in May 2005, did not address this groundwater issue. The BCT has decided to address the issue using the new risk management options detailed in Chapter 62-780.680, Florida Administrative Code (F.A.C.). The option that applies to Site 15 is Risk Management Option II – No Further Action with Controls. Because iron concentrations in groundwater samples from the site exceed the secondary drinking water standard, groundwater results can be compared to the less stringent "Poor Quality" GCTLs. The arsenic Poor Quality GCTL is 100 µg/L, and all arsenic results from Site 15 are less than this value. The requirements to meet Risk Management Option II are as follows:

- One year of data to verify that migration off of the site is not occurring. To accomplish this, a monitoring well will be installed downgradient of the well with the elevated arsenic concentration and will be sampled for arsenic for at least one year.
- Institutional and/or engineering controls. Groundwater use restrictions will be added to the Land Use Control (LUC) Remedial Design (RD).
- The contamination must be localized; the plume must be less than ¼ acre in aerial extent. Groundwater has been impacted by an area of arsenic-contaminated soil smaller than ¼ acre, and the contaminated soil will be removed as part of the soil excavation activities.

Remedial alternatives developed for Site 15 and associated costs are as follows:

- Alternative S1/G1: No Action - $0.
- Alternative S2/G2: Soil Cover to Meet Recreational Remedial Action Objectives (RAOs), Off-Site Soil Disposal, Groundwater Monitoring, and Soil and Groundwater Land Use Controls (LUCs) - $1,534,000.
- Alternative S3A/G2: Soil Excavation to Meet Recreational RAOs, Off-Site Soil Treatment and Disposal, Groundwater Monitoring, and Soil and Groundwater LUCs - $2,017,000.
- Alternative S3B/G2: Soil Excavation to Meet Recreational RAOs, On-Site Soil Treatment and Reuse, Groundwater Monitoring, and Soil and Groundwater LUCs - $4,815,000.
- Alternative 4A/G2: Soil Excavation to Allow Unrestricted Site Use, Off-Site Soil Treatment and Disposal, Groundwater Monitoring, and Groundwater LUCs - $15,906,000.
- Alternative 4B/G2: Soil Excavation to Allow Unrestricted Site Use, On-Site Soil Treatment and Reuse, Groundwater Monitoring, and Groundwater LUCs – 28,930,000.

The recommended alternative is Alternative S3A/G2, which includes the following:

- Soil excavation to meet recreational RAOs
- Off-site disposal of soil
- Groundwater monitoring
- Soil and groundwater LUCs

Q: After the soil is excavated, will the hole left be refilled with dirt?
A: Yes.

Operable Unit 9, Site 59 Remedial Invstigation/Feasibility Study Summary

Mark Speranza of TtNUS presented a summary of the results of the Remedial Investigation (RI) and FS for Operable Unit (OU) 9, Site 59 (formerly known as Building 324 Area). After the notice of contamination was received from Embraer, a direct-push technology (DPT) groundwater investigation was initiated to evaluate the extent of groundwater contamination. Subsequent RI field activities included installation of 57 monitoring wells at 20 locations and sampling of 60 wells (57 new and three previously installed). Based on the distribution of contaminants, it is assumed that there were several source areas across the site as a result of dumping, spillage, etc.

Volatile organic compounds (VOCs) detected during RI sampling included:

- Trichloroethene (TCE), 1,1-dichloroethene (DCE), cis-1,2-DCE, and vinyl chloride
- Ethylbenzene and toluene (maximum concentration 2.3 µg/L)

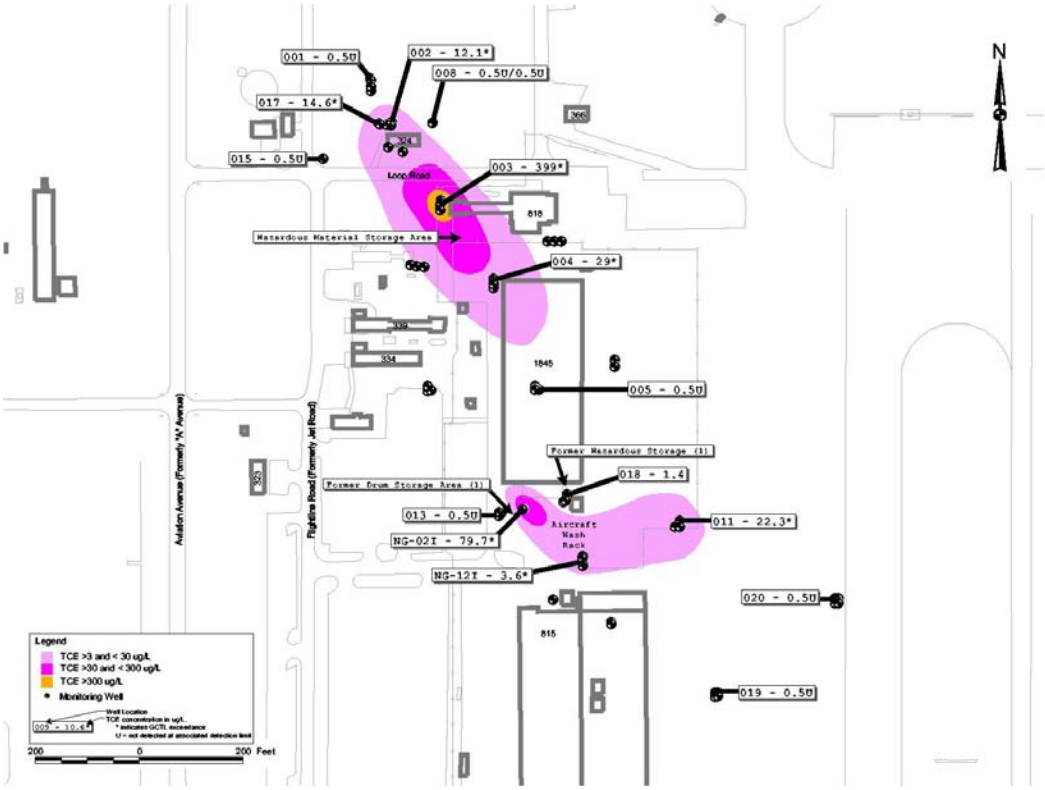
TCE was the only VOC detected at concentrations greater than FDEP GCTLs. TCE was detected in 21 of 60 samples from 12 of 20 locations at a maximum concentration of 1,810 µg/L and an average concentration of 286 µg/L.

Minimal TCE breakdown products were detected during the RI:

- cis-1,2-DCE was detected in 15 wells at eight locations at concentrations ranging from 0.51 to 6.1 µg/L
- 1,1-DCE was detected in two wells at two locations at 0.85 and 0.87 µg/L
- Vinyl chloride was detected in one well at 0.68 µg/L

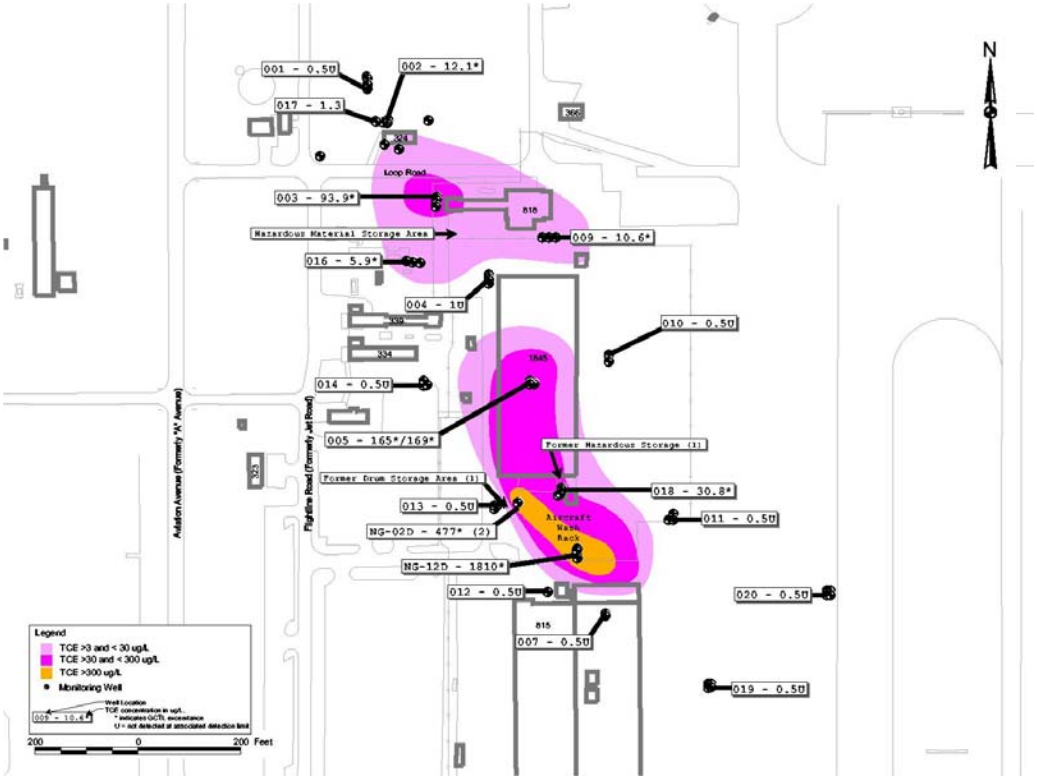
It appears that natural attenuation of TCE is not working at the site because conditions are not favorable for it. The groundwater is aerobic (breakdown of TCE is more efficient under anaerobic conditions), and the pH of groundwater at the site is low. In addition, DHC (the bacterium that reduces TCE to DCE) was not detected during RI sampling.

TCE Concentrations in the 30-Foot Zone

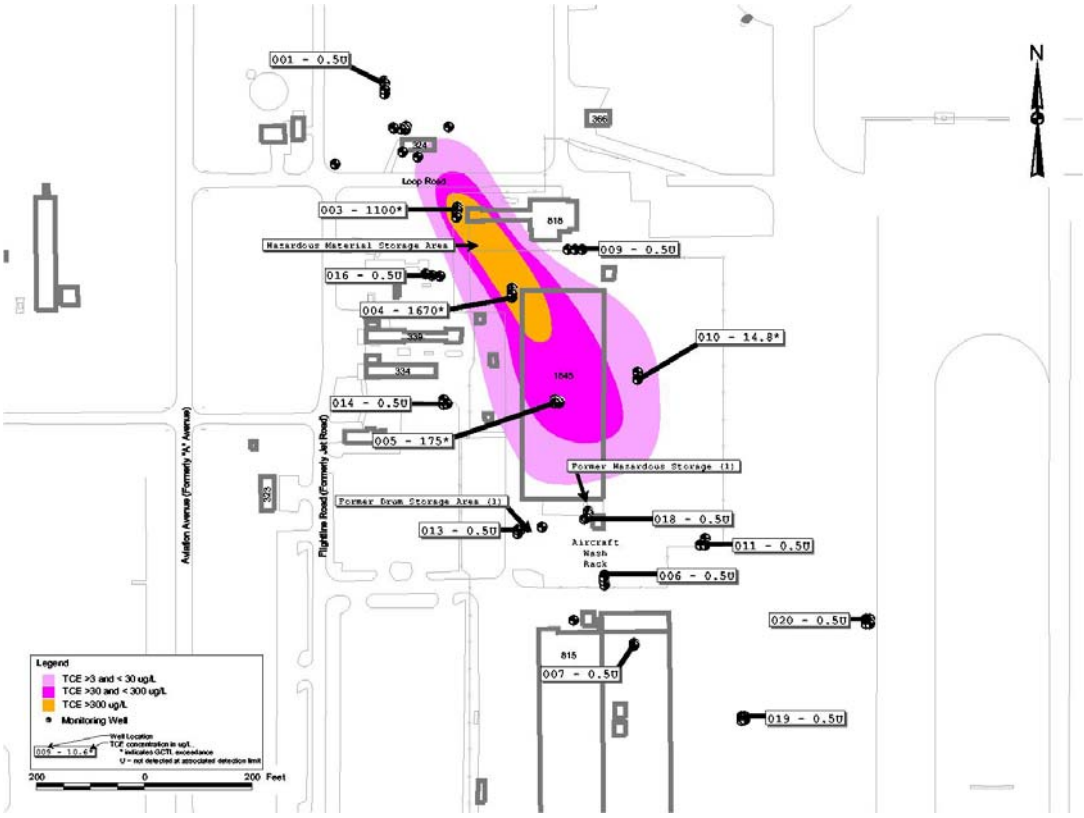


The orange areas have TCE concentrations greater than the FDEP Natural Attenuation Default Criterion of 300 µg/L for TCE. These areas must be treated; in other areas, natural attenuation can be used.

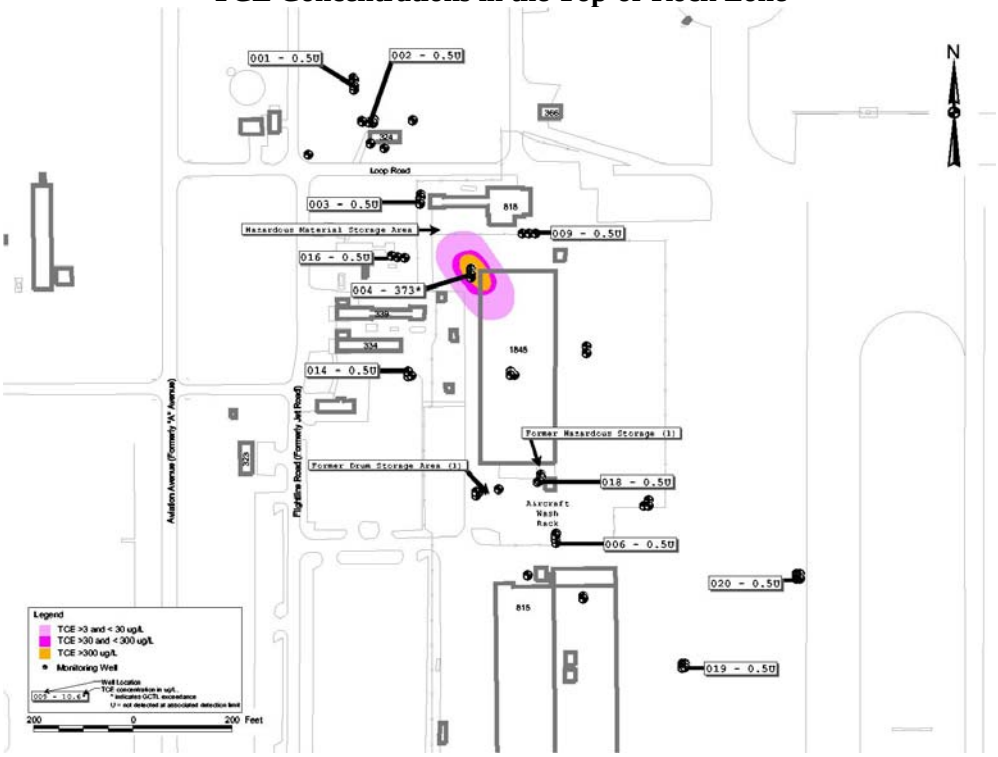
TCE Concentrations in the 50-Foot Zone



TCE Concentrations in the 70- to 80-Foot Zone



TCE Concentrations in the Top-of-Rock Zone



The cleanup alternatives evaluated in the FS for Site 59 include the following:

- Alternative 1 – No Action.

- Alternative 2 – Natural Attenuation, Institutional Controls, and Monitoring. This alternative has a net present worth of $1,104,000 and achieves Preliminary Remediation Goals (PRGs) within approximately 71 years.

- Alternative 3 – In-Situ Chemical Oxidation of TCE Hot Spots (areas with concentrations greater than 300 µg/L) and Petroleum Plume, Natural Attenuation, Institutional Controls, and Monitoring. This alternative has a net present worth of $2,972,000 and achieves PRGs within approximately 57 years.

- Alternative 4a – In-Situ Biological Treatment of TCE Hot Spots (areas with concentrations greater than 300 µg/L) and Petroleum Plume, Natural Attenuation, Institutional Controls, and Monitoring. This alternative has a net present worth of $3,490,000 and achieves PRGs within approximately 57 years.

- Alternative 4b – In-Situ Biological Treatment of TCE Hot Spots and Fringes (areas with concentrations greater than 30 µg/L) and Petroleum Plume, Natural Attenuation, Institutional Controls, and Monitoring. This alternative has a net present worth of $8,196,000 and achieves PRGs within approximately 29.5 years.

A pilot-scale study is being conducted to evaluate ways to optimize conditions in the aquifer for biological degradation of TCE to ethane/ethane. The study will evaluate ways to stimulate the aquifer to increase the pH and get the naturally occurring microbes working. The goal is to get the conditions right for biological activity. A closed-loop recirculation system consisting of two injection wells and one extraction well are being used. Pilot study implementation began in February 2006. The recirculation system is operating at 3.0 gallons per minute (gpm). Sodium lactate is being added as an electron donor. It is a food for bacteria and its consumption uses up oxygen in the aquifer, changing conditions from aerobic to anaerobic. Sodium

bicarbonate is being injected to adjust the pH of the aquifer. The next step in the pilot study would have been to add bacteria, but baseline groundwater sampling (before the startup of the recirculation system) indicated that TCE concentrations in the treatment area were less then the Natural Attenuation Default Criterion of 300 µg/L. After these results were received, system operation was continued to see if aquifer conditions would improve, which they did. Chemical additions achieved the desired aquifer conditions, but TCE concentrations (now significantly lower than when the system was designed) were not reduced. It is harder to achieve reductions at lower concentrations. Based on this information, the BCT decided to relocate the system to the southern area of the site where TCE concentrations remain high. This involves moving the trailer, installing the injection and extraction wells in the area, and reconnecting the electric service. Southern system implementation is planned for July 2006.

Munitions and Explosives of Concern Site Update

Mike Halil of CH2MHill Constructors, Inc. provided an update on sites classified as Munitions and Explosives of Concern (MEC) and Munitions Response Sites (MRS). MEC include unexploded ordnance (UXO), Discarded Military Munitions (DMM), and munitions constituents such as TNT and RDX that pose unique explosive safety risks. MEC are potentially flammable, shock sensitive, and explosive. They are considered reactive hazardous wastes, and disposal is by thermal treatment.

Building 365 located north of Site 59 and north of the parcel on which the Embraer hangar is to be built. MEC was discovered during clearing and grubbing for the north apron plume expansion in the area. DMM initially found at Building 365 included one 20-mm HE projectiles and 12 cartridge actuated devices (CADs). These discoveries caused work stoppage and notifications. The original area of evaluation was 5 acres, but this was subsequently expanded to 20 acres, and 2 additional acres to the north were just completed last month. A total of 22 acres have been cleared, and 20 acres have been transferred back to JAA because no MEC environmental impacts were indicated. A fourth expansion of the evaluation area to the northeast is upcoming to get a clear boundary for the site and to make sure that everything has been found. MEC recovered included 341 items during Phase I, 396 items during Phase II, and 18 items during Phase III. Two disposal events, associated with Phase I and Phase II work, have been completed and included 23 total detonations. The Phase III disposal event is pending and is planned in conjunction with Hangar 860 activities. MEC items are being stored in a temporary magazine until the disposal event.

Hangar 860 is a recently discovered MRS located near the end of the east-west runways. Items were found in an open stormwater ditch near the building. MEC was discovered in February 2006 by the Florida Army National Guard and included JAU-22/B CAIs. EOD Mayport conducted an emergency response and recovered 22 CAIs identified as expended. The evaluation of the entire Building 860 area (not just the ditch from which the CAIs were recovered) began on May 22, 2006 and included 20 acres covering all grassy and wooded areas around the ready magazine and transport areas where things are likely to be found. Three or 4 more weeks of field work are planned. MEC recovered from the Building 860 area included 381 CAIs and 10 CADs. So far, everything found has been linked to known past uses of the site.

Site 15, the Blue 10 Ordnance Disposal Area, was used as a skeet range from the early 1940s to the mid-1950s. Ordnance disposal took place from the mid-1960s to 1977 at the static rocket firing pad and the ordnance burn chamber. Soil excavation to address lead and polynuclear aromatic hydrocarbon (PAH) contamination has been proposed, with subsequent recreational use of the site. Because of the past uses of the site and proposed excavation activities, a Preliminary Assessment was conducted in May 2006 to determine any potential threats to public health or the environment from MEC at the site. The objectives of the Preliminary Assessment are to determine if there is an MEC threat associated with the site, the level of MEC involvement in proposed excavations, and whether additional MEC investigation is required. The records search is being completed now, and the report is scheduled for submittal at the end of July.

Sites Update – Exit Strategies

The next agenda item was a Detailed Sites Update; however, Richard Darby requested a more abbreviated discussion dealing mainly with exit strategies for the sites. Mark Davidson, Navy Co-Chair, provided this information based on the Sites Update included in the handout.

IR Sites

Operable Unit (OU) 1, Sites 1 and 2 was transferred as part of the JAA Phase IV Parcels and are in a no-use zone. These sites are good candidates for FDEP's new Risk-Based Corrective Action (RBCA) Risk Management Option (RMO) of No Further Action (NFA) with land use controls (LUCs). Groundwater and soil restrictions and five-year reviews will be required in perpetuity. Yearly monitoring would be discontinued under this option.

OU 2, Site 5 will be transferred soon (as part of the EDC Phase V Parcels) and is also a good candidate for the RMO of NFA with LUCs. Soil LUCs will be required forever, so it is no problem to continue groundwater LUCs too instead of monitoring to try to have them removed at some point. Currently, LUCs for subsurface soil and five-year reviews will be required in perpetuity. OU 2, Site 17 was transferred as part of JAA Phase IV. Groundwater monitoring, groundwater LUCs, and five-year reviews are required until concentrations decrease to less than FDEP GCTLs.

OU 3, Site 7 is NFA. OU 3, Site 8 was transferred as part of JAA Phase IV and consists of a small groundwater plume. Concentrations continue to decrease. OU 4, Site 11 and OU 5, Site 14 are NFA. The status of OU 5, Site 15 was discussed earlier tonight. OU 5, Site 49 has had two soil excavations, and soils are now clean. The site had no groundwater issues. NFA is required based on this information. The site will be transferred soon as part of the EDC Phase VI Parcels.

OU 6, Site 11 is NFA. OU 7, Site 16 has only groundwater issues, but it is not known how long monitoring will be required. Site 16 was transferred as part of JAA Phase IV. Continued monitoring and five-year reviews are required until groundwater concentrations decrease to less than GCTLs. OU 8, Site 3 has soil and groundwater restrictions and was transferred as part of the JAA Phase IV Parcels. Continued monitoring and five-year reviews are required.

OU 9, Sites 36 and 37, Site 57, and Site 58 with be transferred soon (with the JAA Phase V Parcels) and have only groundwater restrictions. Groundwater monitoring, groundwater LUCs, and five-year reviews are required until concentrations decrease to less than FDEP GCTLs. OU 10, Site 21 and Site 25 have small plumes of groundwater contamination and are good candidates for the RMO of NFA with LUCs. Even if the RBCA RMO option is approved, the Navy could still go back at some point in the future, collect two rounds of groundwater samples, and if results were less than GCTLs in both rounds, petition the State to approve NFA and remove the LUCs.

OU 11, Site 45 has soil and groundwater restrictions. The projected time frame for groundwater cleanup is very long (i.e., hundreds of years). Site 45 is also a good candidate for the RMO of NFA with LUCs. OU 12, Site 32 will have soil LUCs forever but does not have groundwater restrictions. It will be transferred with the EDC Phase V Parcels. OU 12, Sites 42 and 44 and Old Golf Course are NFA.

Petroleum Sites

North Fuel Farm (NFF) was transferred as part of the JAA Phase IV Parcels. Groundwater contamination is present over a large area and includes the Truck Stand site groundwater contamination. The air sparging/soil vapor extraction (AS/SVE) system has been running for about a year now, and reductions are being seen in some areas. South Fuel Farm (SFF) has soil and groundwater restrictions and will hopefully be transferred this fiscal year. Jet Engine Test Cell (JETC) has only groundwater contamination. Multiple soil digs have addressed previous soil contamination. JETC is scheduled for transfer in July 2007 with the EDC Phase VI Parcels. Groundwater monitoring will continue at the site.

Day Tank 1 soils are clean, and groundwater is now being addressed by monitored natural attenuation (MNA). The treatment system has been shut down. The 103rd Street Pipeline site is now NFA, and the treatment system building is being dismantled. Building 9 is NFA. CH2MHill is conducting an optimization study at Building 46 where a nutrient-enhanced sparging system has operated since 2001. The system was designed to treat some soil, but this soil may have to be excavated. Additional delineation activities are being conducted at Building 81, Tanks 81 A/B/C. A pilot-scale AS treatability study is in progress at address contamination at Building 82, Tank 82 and the nearby BP Wells plume.

Building 271, Tanks 271 SUL/R/UL/D has only groundwater contamination, which is being addressed by an AS system that began operation in 2003. Additional assessment activities are being conducted at Building 502, Tank 502 to address groundwater contamination. No soil contamination was identified at the site. The small, shallow plume at Building 815 Wash Rack Area is now being addressed with Site 59 groundwater contamination. The Building 860, Tanks 860 A/B/D site is NFA with conditions; soil LUCs are required in perpetuity. The Ocala Crash Site is not located within NAS Cecil Field. Groundwater monitoring is continuing at the North-South Apron Plume (NSAP) site. Building 312, Tank 312-OWS and Building 842, Tank G842B are NFA.

BRAC Sites

Investigation of the Abandoned Railroad Bed South of Normandy Boulevard has been completed, and the Sampling and Analysis Report (SAR) has been approved. The SAR for the Abandoned Railroad Bed North of Normandy has been submitted, and hopefully no further investigation is required. Some of this area will have restrictions and some will not.

Conclusion

As decided during the Steering Committee Meeting, the next meeting is scheduled for June 2007, unless an issue arises that necessitates a meeting before then. If anyone has any suggestions as to future RAB agenda items, contact one of the BCT members. If the location changes, a public notice will be placed in the Florida Times-Union announcing the new location. The meeting was adjourned at 8:08 pm.