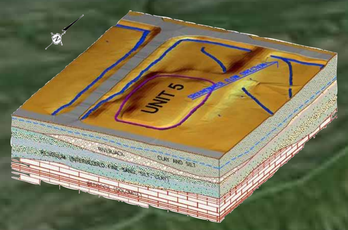
Radford Army Ammunition Plant

Main Manufacturing Area

HWMU-5

History

- Put into operation as an unlined impoundment in 1970
- Primarily used as an acid neutralization pond. Also received storm water and process wastewater.
- Liner placed in 1981
- Operation ceased in 1986
- Capped in 1989



Geology

- Limestone/dolomite bedrock covered by weathered and alluvial deposits
- Ground occurs in the unconsolidated material at approximately 15 to 20 ft bgs
- Groundwater generally flows to the northeast

Investigation Findings

- TCE present in soil and shallow groundwater at low levels
- Maximum detected concentration in soil is 120 ppb
- Current maximum concentration in shallow groundwater is 11 ppb
- Area of TCE impact in groundwater confined to within 140 feet of HWMU 5
- Monitored Natural Attenuation was selected as the groundwater remedy. The permit was modified to include a Corrective Action Plan for the purpose of implementing the selected remedy.

SWMU-31

(RAAP-026)
Coal Ash Settling Lagoons

History

- Comprised of three lagoons that served the potable Water Treatment Plant (WTP) and Power House No 2 since the 1950s
- Power House No. 2 discharged ceased in 1980s
- Received water carrying fly and bottom ash
- Currently receives filter water backwash from WTP

Investigations Completed

- RFI completed in July 2007
- Data Gap groundwater sampling conducted in 2008
- Final RFI Addendum was submitted in October 2009
- No Further Action based on unrestricted residential land use has been recommended

Findings

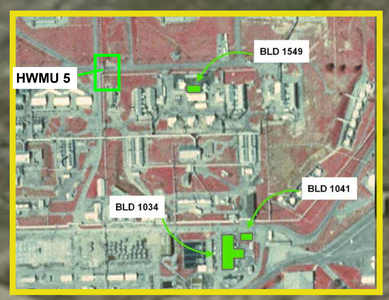
- Potential risks to human health under current land use (military / industrial) are within the USEPA generally acceptable risk range
- Low potential for ecological impacts associated with surface water and sediment in primary lagoon; however, risk is minimized due to small area that is affected (~0.11 acres)
- Ecological risk drivers in sediment were very low levels of dioxin and DDT
- Ecological risk drivers in surface water were aluminum, barium, iron, lead, endosulfan II, endrin and pyrene
- Concentrations of constituents in soil are within background levels or less than residential screening levels
- Concentrations of compounds detected in groundwater are less than MCLs or within background levels
- Data Gap groundwater sampling confirmed that benzo(a)pyrene is not present in groundwater

Buildings 1549, 1034, 1041

(RAAP-047)

History

- Building 1549: Maintenance Shop
- Building 1034: Electrical Shop; former Nitrocellulose Laboratory
- Building 1041: Scale Storage/Shop; involved former scale cleaning/degreasing
- Buildings have reported historic chlorinated solvent use however no releases were ever reported



RCRA Facility Investigation

- RFI initiated in 2008
- RFI followed EPA Triad approach and involved frequent stakeholder interaction (Army, EPA, VDEQ, RAB)
- Soil gas, soil and groundwater samples were collected in 2008
- Supplemental groundwater samples were collected in July 2009

Findings

Buildings 1549

- No detections above residential screening levels in soil, soil gas or groundwater

Buildings 1034 and 1041

- Soil Gas - TCE and chloroform were detected in soil gas.
  - Chloroform is related to leaking water supply lines
  - TCE concentrations were less than screening levels except at one location east of Building 1041
- Soil - No detections above industrial screening levels
  - Isolated detection of PCBs at one location south of Building 1041 above residential screening level
- Groundwater – Metals present in groundwater are associated with high turbidity levels in samples
- Potential risks to human health under current (miliatry/ industrial) and future (hypothetical residential) are within the USEPA generally acceptable risk range
- Final RFI report recommending No Further Action was submitted in September 2009 and approved by VDEQ and USEPA in October 2009

AOC A

(RAAP-031)
Nitrocellulose Rainwater Ditch

History

- Former unlined surface drainage ditch identified in the mid 1980s
- Listed for site screening in the 1990s by which time a concrete swale had been installed

Findings

- Site Screening Process identified dinitrotoluene and PCBs in soil greater than screening levels
- RCRA Facility Investigation (RFI) was conducted in 2008 to delineate dinitrotoluene and PCBs in soil
- Dinitrotoluene and PCBs are limited to surface soil in small area, capped by a concrete stormwater conveyence
- Potential risks to human health under current (miliatry/ industrial) and future (hypothetical residential) are within the USEPA generally acceptable risk range
- Final RFI report recommending No Further Action was submitted in September 2009 and approved by VDEQ and USEPA in October 2009