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MEMORANDUM PROVIDING JUSTIFICATION WHICH DEMONSTRATES
PROTECTIVENESS OF HUMAN HEALTH/ ENVIRONMENT VIA PROPOSED NO ACTION
REMEDY IN DECISION DOCUMENT FIREFIGHTER TRAINING AREA AND AUTO CRAFT
SITE FORT STORY VA
7/23/2004
COMMONWEALTH OF VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY



DIVISION OF WASTE PROGRAM
COORDINATION

OFFICE OF REMEDIATION PROGRAMS

MEMORANDUM

TO: Robert J. Weld through Durwood H. Willis; ORP

FROM: Eric J. Salopek; ORP

DATE: July 23, 2004

COPY: Fort Story Installation File

SUBJECT: Fort Story Decision Document (DD) Briefing Summary for Fire Training Area (Site 4) & Auto Craft Building Area (Site 7).

Fort Story consists of 1,451 acres on Cape Henry and within the city of Virginia Beach, Virginia. The installation's primary mission is training Army personnel in amphibious and Logistics Over-the-Shore operations. Historically, the activities at Fort Story consisted of utilization as a coastal artillery garrison; HQ for the Harbor Defense Command; location of a convalescent hospital during WWII; and an amphibious Op's training facility.

The purpose of this memorandum is to respectfully provide sufficient justification to your office which demonstrates both protectiveness of human health/environment via the proposed *no action* remedy for the Fire Training Area (Site 4) and the Auto Craft Building (Site 7).

The Fire Training Area (Site 4) is located in a sandy flat area adjacent to the northern flank of the central sand ridge in the southwestern section of Fort Story along Hospital Road/Hospital Circle. A former UST farm was located adjacent to this site. The area was used as a firefighter training area from 1978 until 1988. Prior to 1980, material was ignited on land surface, while subsequent to 1980, the training was conducted in a concrete pit area. Additionally, from 1980 until 1986, the area was reportedly used as an unauthorized dumping site. Therefore, no form of primary/secondary containment existed at Site 4. At present, the site is void of any debris and is functioning as a heavy equipment operation training area. Depth to groundwater at Site 4 is approximately 7.5 to 7.8 feet bgs and flows northeast. There is no current/predicted future use of groundwater at the site. In 1994, a rapid response removal action was conducted at the site to excavate/dispose of water in the fire pit, demolish the fire pit and excavate the contaminated soil and backfill.

Chemicals of Concern per media:

- Soils: TPH as Heavy Oil exceeded the VA action level in 3 of 72 samples collected from surface to 4 feet in depth. With the exception of arsenic (majority of samples) and iron (one sample), all metals were below EPA Region III RBCs.
- Groundwater: PCE exceeded the MCL in one sample (6.4 ug/l) in the northern area of the site. In one sample, TPH as Diesel Fuel (2 mg/l) exceeded the VA action level of 1 mg/l. No VOCs exceeded EPA Region III RBCs.
- Sediment: TPH as Heavy Oil was detected in the majority of sediment samples located in the drainage area, south of the site. The only hazardous constituent of TPH detected was toluene, but at concentrations lower than the EPA Region III RBC.

The human health risk assessment evaluated contaminant exposures to future residents only. The total hazard indices were < 1.0 and cancer risks for adults and children were within the acceptable risk range of 1×10^{-4} to 1×10^{-6} . Ecological risks to vegetation, invertebrates and small mammals may occur in the ditch adjacent to the Site, however, due to the small size of the ditch in relation to the mammals home range and the lack of visible impacts on vegetation, the risk is considered to be low.

Auto Craft Building (Site 7): Site 7 is located in the sand flat area south of the coastal dune complex at the junction of Atlantic Ave. and Cebu Road. Two solvent dip tanks were used for the storage of spent degreasing solvents and waste oils when the building was in use. Waste oil generated at the site was piped out of the building and into USTs that have since been removed. Prior to its use as an Auto Craft Building, the site functioned as a motor pool. In late 1989, a portion of the building was destroyed by fire. It was reported that waste solvents had been poured on the ground to control weeds along the fence. Currently, the majority of the site is capped by asphalt pavement. Depth to groundwater is from 7.8 to 10.9 feet bgs and flows northwest. There is no current or predicted future use of groundwater at the site.

Chemicals of Concern per media:

- Soils: Various VOCs were detected in the soils, but below EPA Region III RBCs. PAHs believed to be the result of asphalt leaching are present beneath the pad, also below EPA Region III RBCs. PAHs were not detected in any other soil samples. TPH as Heavy Oils was detected in 5 of 18 soil samples above the VA action level of 100 mg/l. Numerous metals were detected, with concentrations decreasing with depth. Arsenic, iron and manganese exceeded the EPA Region III RBCs for residential soils, but were less than the corresponding EPA Region III RBCs for industrial soils.
- Groundwater: Dissolved manganese in one sample (79.3 ug/l) slightly exceeded the tap water RBC (73 ug/l) in one monitoring well. However, when evaluating against EPA Region III SSLs (for soil to groundwater contaminant migration), the maximum concentration of manganese in surface soils (0 - 6 inches bgs) @ 170 ppm was well below the EPA Region III SSL of 950 ppm.
 - In an effort to adequately address the manganese tap water RBC exceedance referenced above, a comparison was made to area background concentrations. Due to the absence of manganese background data at Fort Story, a comparison was made to background concentrations at the nearby Naval Amphibious Base Little Creek. As you're aware, this facility is located approximately 7 - 8 miles ESE of Fort Story and under the identical geologic/hydrogeologic environment. According to the document entitled *Background Ground Water Quality Study*, dissolved manganese concentrations ranged from 80 ppb to 740 ppb. The average background concentration (for the seven monitoring wells) was 338 ppb. Therefore, the slight exceedance (79.3 ppb) of the EPA Region III tap water RBC at Fort Story was consistent with the lowest background sample concentration (80 ppb) identified at the nearby Naval Amphibious Base Little Creek. In conclusion, the slight exceedance of the EPA Region III tap water RBC at Fort Story is irrelevant based upon area consistency to background conditions.

The human health risk assessment evaluated contaminant exposures to future residents only. As communicated to your office in July 2003, the total hazard indices for adults (24) and children (67) were greater than 1.0; however, cancer risks were within the acceptable risk range for both receptors. At that time, it was calculated that inhalation of chloroform in groundwater was the greatest contributor to noncancer risk. However, please keep in mind that this conclusion/risk was based upon 1995 groundwater data. Per your direction, a follow-up round (post Decision Document) of groundwater sampling was conducted in August 2003 at monitoring wells MW-119 and 7MW-3. The results of this analysis concluded that chloroform was non-detect in groundwater, therefore, no inhalation risk is predicted.

As stated above, a follow-up round (post Decision Document) of groundwater sampling was conducted in August 2003 at monitoring wells MW-119 and 7MW-3. During this event, manganese was also sampled, which resulted in a HQ greater than one for children. As you are aware, there is no MCL for manganese, only a secondary MCL that has been established by the EPA for cosmetic/aesthetics purposes. Please be aware that ecological risks to vegetation, invertebrates, ground birds and small mammals, due to exposure to metals, may exist at the site. The site possesses minimal habitat value and no visible impacts to vegetation were noted; therefore, ecological risks are considered to be low.

In summation, I concur with the conclusions presented in the Fort Story Decision Document (and subsequent sampling/interpretation), and therefore, respectfully recommend a no action remedy for Sites 4 and 7.