



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
841 Chestnut Building  
Philadelphia, Pennsylvania 19107-4431

FEB 26 1996

Mr. Orlando Monaco  
Naval Facilities Engineering Command  
Environmental Contracts Branch  
10 Industrial Highway  
Lester, Pennsylvania 19113

Re: Naval Air Warfare Center (NAWC), Warminster, PA

Dear Mr. Monaco:

Please find below additional EPA comments on "Proposed Subsurface Soil Investigations for Area A" as submitted by Brown and Root Environmental under cover letters dated September 7, 1995, and to the extent possible, February 21, 1996. These comments supplement previous EPA comments on the proposed investigations dated October 16 and November 3, 1995.

The comments below address the balance of investigations proposed in the subject letters, with the exception of investigations in the vicinity of the two "areas of interest" excavated as part of the construction of groundwater transfer lines within Area A. EPA plans to provide comments on any investigations for these areas upon receipt and review of analytical data (including Tentatively Identified Compound (TIC) data) for soil samples collected from these "areas of interest". In addition, this letter does not provide any comments on additional RI work which may be necessary for soils or wastes within Area A which have been already been sampled to some extent under the Phase III RI (e.g., eastern part of Area A). As discussed, EPA highly recommends the Navy tabulate and distribute Phase III RI analytical data (including TICs) to the BCT as soon as practicable to help expedite the completion of RI work for Area A soils.

#### NORTH OF FORMER IMPOUNDMENTS

Of concern are potential disposal areas identified by EPIC, locations with elevated levels of VOCs in soil gas, and geophysical anomalies. Potential disposal areas identified by EPIC include the following historical features: pit P1, trench TR8, disturbed ground DG2, ground scars GS4 and mounded material MM4.

Pit P1 was approximately 100 feet by 40 feet in area and was in use from at least 1948 to 1950. Per an aerial photo dated August

7, 1971, trench TR8 was approximately 225 feet long and 20 feet in width through most of its length and apparently traversed the area formerly occupied by pit P1. This trench may potentially be "Site 2", which was reported by the Navy to the EPA in June 1981 to be a "sludge pit consisting of a 200 ft x 12 ft x 8 ft trench dug by dozer" where "industrial waste sludge cake was deposited".

The Navy reported that this disposal area was "closed in 1970 with 2 ft of earth cover, then graded and seeded." While exploratory soil borings were conducted within Area A during the Phase II RI, only boring S1-6 appears to have been conducted within the area of TR8 and P1. In boring S1-6, fill material was found from the surface down to bedrock and no industrial wastes were observed. Surficial disturbed ground (DG2) and mounded material (MM4) (approximately 60 ft by 60 ft) appeared within the area TR8 in an aerial photo dated March 1973 after trench TR8 had apparently been "covered". As noted in the letter of September 7, an electromagnetic anomaly indicative of metallic waste has been identified within the area of MM4 during the Phase III RI.

According to figures provided in a letter to EPA dated December 4, Monitoring Wells HN-11I and HN-11D are within the area formerly occupied by trench TR8 and immediately east of the location of Pit P1. TCE concentrations indicative of DNAPL have been detected in groundwater from HN-11I and, according to information provided by the Navy, elevated organic vapor readings (40 ppm) were encountered at 27 feet in depth during the drilling of HN-11D. During the Phase III RI, TCE was detected at levels of 0 to 8.6 ug/l in soil gas samples collected at 7 feet in depth within the area of TR8 and P1. The highest level of TCE in soil gas in the immediate vicinity of TR8 and P1 (26 ug/l) was detected at point approximately 25 feet south of the eastern end of TR8.

The subsurface soil investigations north of the impoundments should focus on those areas where there is evidence of historical subsurface disposal. These locations are P1, TR8 and the geophysical anomaly in the vicinity of MM4. Soil samples should be collected from at least four (4) soil borings to generate a sample data base representative of the area of P1. The axis for P1 should be determined by conducting several soil borings through the projected location of P1 (to be located using aerial photos) perpendicular to the east-west fenceline and identifying the location with the highest organic vapor readings, stained soils and/or waste materials. The axis of P1 should be through this location and parallel to the fenceline. For TR8, samples should be collected from one boring for every 30 feet of the length of the trench outside of the area of P1. Given this length is an estimated 125 feet, samples should be collected from at least four borings. These samples should be collected along the axis of TR8, which should be located by conducting a test pit perpendicular to the fenceline. Since there is no information to suggest VOC disposal at MM4, a test pit should be conducted at this location to investigate the geophysical anomaly of concern.

In addition, a soil boring should be conducted at the location where TCE was detected at 26 ug/l in soil gas.

EPA requests an opportunity to concur with the actual location of soil borings and test pits. As noted above, at this time, EPA is not providing comments at this time on any soil investigation in the vicinity of the "area of interest" excavated southeast of the EPIC features referred to above. In addition, it is assumed the investigation, as proposed above, will be modified if necessary based on the observation of significant buried waste or contaminated soil during the investigation and/or the results of sampling within the "area of interest".

#### FORMER DUMP D1

This disposal area appears to be "Site 1" which was reported by the Navy to EPA in 1981, when it was described as a "site located at a severe embankment of a ravine caused by the erosion action of a stream" where "material was dumped over the bank and burned". Per an EPA letter dated November 3, 1995, this dump was located on the bank of an unnamed tributary of Little Neshaminy Creek. Photos available to EPA also indicate apparent disposal activities associated with D1 extended over significant area immediately next to the subject stream/ravine. In particular, historically, the area of disposed waste within D1 appears to have covered an area of at least 280 feet by 100 feet (see Figure 3). It was reported that disposal began in 1940 and that waste disposed included inorganics, solvents, acids, bases and firing range wastes. It was further reported that the "site was closed in 1955 by using the area as a disposal site for excess earth generated by grading the extension of aircraft runway". As noted in the letter of November 3, the stream on NAWC property was filled in and the fill graded. The drainage functions of the stream were effectively replaced by a storm sewer installed through the fill.

The reports of disposal into a "ravine" formed by the stream appear to be supported by exploratory boreholes performed during Phase II RI, which found significant quantities of cinders, wood fragments, porcelain and glass at a depth of 7 to 10 feet within the apparent area of D1 (e.g., see logs for S1-23 and S1-24). The exploratory boreholes also found apparent fill containing black-stained gravel, cinders and elevated levels of organic vapors between the surface and 7 feet within this area (e.g., see logs for S1-25 and S1-26), suggesting that some of the fill may be contain VOCs of concern and/or petroleum products. In addition, preliminary analytical results for several surface soil samples (0 to 2 feet in depth) collected from the area of D1 during the Phase III RI (see SDA-05 and SDA-07) indicate highly elevated levels of lead (up to 80,800 mg/kg), copper (up to 3070 mg/kg) and zinc (up to 12,400 mg/kg). As indicated in a letter dated November 3, 1995, these same metals have been detected at elevated levels in surface water and sediment downstream of dump

D1 and may be associated with inorganics and firing range wastes reportedly disposed of in dump D1. The area of dump D1 also appears to include locations where elevated levels of TCE, PCE and carbon tetrachloride, were detected soil gas (see Figure 3). These locations of elevated soil gas levels also extend to locations outside of dump D1 and into the vicinity of the "area of interest" located between the fuel farm and the trailers.

To obtain a data base of representative of soils and/or wastes within the area of D1, a 35 foot grid should be established within the area of D1 and soil boring conducted approximately at the nodes of the grid, i.e., an estimated 24 borings should be conducted within D1. Soil boring locations within the grid should be modified as necessary to include points where significant VOCs were detected in soil gas during the Phase III RI. EPA requests an opportunity to concur with actual location and number of borings at D1, particularly because the grid will be modified based on soil gas results. Again, this investigation should be modified as necessary based on the observation of significant waste or contaminated soil during the planned investigation.

With regard the area between the fuel farm and the trailers, EPA will provide comments on proposed investigations upon receipt of a complete analytical data package for the applicable "area of interest". In addition, no comments are provided for investigations which may be needed for fill material placed within the former stream/ravine immediately east of D1 because the Navy has not proposed any investigation of this area under the Phase III RI at this time. Similarly, no comments are provided at this time for investigation work which may necessary for the area currently covered by the trailers.

Should you have any questions or comments regarding the above, please give me a call.

Sincerely,



Darius Ostrauskas  
Remedial Project Manager

cc: Tom Ames, NAWC  
Dave Kennedy, PADEP  
Kathy Davies

— approximate area of DI  
per interpretation of  
aerial photos

