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U S NAVY RESPONSES TO REGULATOR COMMENTS ON DRAFT FINAL FEASIBILITY STUDY FOR SITE 43 NAS PENSACOLA FL
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NAVFAC SOUTHERN

Response to FDEP Comments on the Draft Final Feasibility Study For Site 43, NAS Pensacola, Pensacola, Florida December 13, 2007

Comments by Jeff Lockwood, FDEP, September 26, 2007

FDEP Comment 1

I have reviewed the Draft Final version of the document. It appears to address an adequate range of alternatives for soil and groundwater remediation. Alternative G-2 is the only alternative that may require special attention from an engineering standpoint (all the other alternatives are just a matter of soil excavation, LUCs and/or monitoring) as well as a treatability study; the DAP would presumably immobilize the lead by forming a lead phosphate (PbHPO4) which is quite insoluble. The latest sampling from 2005 shows a lead exceedance in GP anomaly location 11 but no data from location 23 which is the other area being considered for treatment.

Response: No response is necessary. As noted in the Feasibility Study, the groundwater at Anomaly 23 is being treated because of the high lead concentrations in the soil.

FDEP Comment 2

Given the localized nature of the lead contamination, they should also consider groundwater extraction and ex-situ treatment (using DAP) which would not have UIC issues and would appear to be easily implementable.

Response: As noted in Section 2.3.1 of the Feasibility Study, Ex-situ Treatment (pump-and-treat) was not evaluated because the Navy generally considers it ineffective for restoring groundwater quality at a site. Moreover, because of the limited groundwater contamination present at the site, one cannot justify the construction and operation of an on-site treatment plant.

There are several issues that are factors against a pump-and-treat alternative that justify eliminating it during the initial screening step. After extraction and treatment, the groundwater must be either reinjected or discharged to a sanitary sewer or to the ocean, and some of the issues are post-treatment considerations. While some of the issues are technical, many drive up the cost of a pump-and-treat alternative. Several considerations include:

1. The depth to water is relatively shallow (15 feet below ground surface) and this could be a problem if the treated water is reinjected. If reinjection is at too high of a rate, the elevation of the top of the mounding may reach the ground surface.

2. To ensure complete capture of the plumes, groundwater modeling would be needed to confirm pumping rates and well placement. This would be needed for both extraction with discharge and extraction with reinjection.

3. For a reinjection system, there is a potential that the injection wells would get clogged by solids generated during the treatment process. Filtration steps to minimize the clogging would add to the overall cost of treatment.

4. Electricity must be brought to the treatment system. Although the distance to the main power lines is short, the cost for poles and disconnect equipment would be relatively high compared to the rest of the treatment system. The proposed DPT injection does not require this utility connection.

5. The site would be occupied by a trailer or small structure to house the treatment equipment and piping would be installed from the extraction wells to the treatment system, and then to either injection wells or a sewer. The presence of the structure and piping would limit full use of the area.

6. If the system uses extraction with discharge, then at least two wells must be installed. If reinjection is used, then an additional 6 to 10 wells would be required. A DPT injection system (as in Alternative GW-2) requires no permanent wells and an estimated 16 injection points.

7. If the treated water is discharged to surface water, additional treatment may be needed to meet the requirements of an NPDES permit. For example, considering that this discharge will have very little dilution from existing surface water (such as a stream), it will probably have to meet the criteria for Class III Marine in 62-302 FAC. For lead, this is 8.5 µg/L, which is less than the GCTL of 15 ug/L. Similarly, the iron concentration must be less than 300 µg/L, and the iron concentration in several nearby sites wells is greater than this. Routine analysis of the discharge would be required. A discharge to a POTW would likely have less stringent limitations, but routine monitoring and fees would be required.

8. Ex-situ treatment will generate a sludge that will require off-site disposal and incur costs.

9. An ex-situ system will require routine (once or twice per week) operator attention to monitor flow rates, treatment chemical solution inventory, and sludge handling.

Therefore based on the Navy's historic bias against ex-situ treatment (pump-and-treat) and the above considerations determined during the screening process, the development and evaluation of the additional alternative of ex-situ treatment will not be added or considered in the Feasibility Study.