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NAS PENSACOLA
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LETTER FROM U S EPA REGION IV REGARDING REVIEW OF EVALUATION OF MONITORED NATURAL ATTENUATION SITE 38 NAS PENSACOLA FL
10/14/1999
U S EPA REGION IV

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
SAM NUNN FEDERAL CENTER
61 FORSYTH STREET, S.W.
ATLANTA, GEORGIA 30303

October 14, 1999

4WD-FFB

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commanding Officer,
Southern Division, NAVFACENGCOM
Attn: Mr. Bill Hill (code 1851)
P.O. Box 190010
North Charleston, South Carolina 29419-9010

SUBJ: Evaluation of Monitored Natural Attenuation
Site 38, Operable Unit 11
Naval Air Station Pensacola
EPA Site ID No.: FL9170024567

Dear Mr. Hill:

The U. S. Environmental Protection Agency (EPA), has completed the review of the above subject document, dated July 20, 1999, comments are enclosed.

If you have any questions please contact me at (404) 562-8538.

Sincerely,

Gena D. Townsend
Senior Project Manager
Federal Facilities Branch

Enclosure

cc: Ron Joyner, NAS Pensacola
Allison Harris, Ensafe, Memphis
Joe Fugitt, FDEP

Comment:
Natural attenuation probably will be an appropriate remedial measure for this site, based on the information presented in this report. The scores from the MNA evaluation procedure seem to be high enough. Only two quarters of data had been collected when the report was written, so if the remaining two quarters of analytical results, which are recommended by the MNA guidelines, continue to be favorable, it is likely that MNA will be appropriate remedial measure for this site. [The first year of monitoring can include the four quarterly samples to support the MNA process.]

One year of quarterly samples for evaluation of seasonal trends is recommended by all MNA guidelines available since 1995. Once the process is verified and rates are estimated as described in the previous paragraph, the duration of monitoring can be estimated and the frequency of monitoring selected.

Comment:
Page 35 states that performance monitoring will be continued as long as contamination remains above clean up goals. The necessary frequency of monitoring in the future and the duration of monitoring might be estimated better if the data were presented in a more convincing manner than simply summarized in tables. It is mentioned that concentrations decrease with distance down gradient from the source. McAllister and Chiang (1994) describe plots of contaminant concentration versus distance from the source which would graphically demonstrate the statements in the text. Also, contaminant concentrations could be plotted versus time at selected wells. Degradation rates and clean up times could be estimated by superimposing an estimated initial concentration on the graph at some time before the first samples. This concentration would be diminished over time, by assuming that a first-order decay rate is an appropriate simulation of the apparent degradation rate of the contaminants. The initial estimated concentration and the degradation rate are selected so that all concentrations observed in monitoring wells fall on or below the projected line of the degrading concentration. With the data available for this site and the apparent understanding of the MNA process demonstrated, the recommendations in this memo should be a small step toward a convincing demonstration of MNA at this site.

Comment:
The figures in the report indicate that Pensacola Bay is the discharge for contaminated groundwater at this site. If there is no human or other ecological receptors impacted by the groundwater plumes, then MNA does appear to be an appropriate remedial measure for the site. Once the recommendations in the subsequent paragraphs are addressed, it seems likely that MNA could be approved as a remedial measure for this site.

Comment:
The groundwater contours on Figure 4-2 show a hydraulic gradient in Pensacola Bay toward the dock which protrudes into the bay. The groundwater contours in the vicinity of 38GS03 and 38GS13 probably trend to the west, parallel to the shore line and should not extend into the surface water of the bay as shown on the figure.

Comment:
Table 5.3 indicates that well 38GS12 is one of the contaminated wells, but this well is not sampled during each sampling event. All monitoring wells, particularly those with a history of contamination should be sampled during the quarterly monitoring event to verify contaminant trends in these wells.

Comment:
Only one analysis result is shown for 38GS05 on Table 5.3. Were all other results ND for this well. The notes on the table do not explain the data selection criteria.

Comment:
The source areas are not shown on Figure 4-2 or on any other figure in the report, and a map of the groundwater plume is not presented, so an interpretation of the data in Table 5.3 cannot be made. Contamination seems to be present consistently in well 38SG02 near the discharge area at the bay, and also in well 38GS12, which is somewhat further from the discharge area, but not apparently on the same flow path as well 38GS02.

Well 38GS03 has detects for CVOCs in some sample events and not others. From Figure 4-2, well 38GS03 appears to be down gradient from a different source area than the other wells. The water level contours on Figure 4-2 must be drawn to show groundwater discharge to Pensacola Bay. A groundwater plume cannot be constructed from the data in Table 5.3 and Figure 4-2, so it is not apparent that the wells are properly located to monitor conditions down gradient from the source areas. McAllister and Chiang (1994) and EPA MNA Seminar Notes (EPA/625/K-98/001 http://www.epa.gov/ttbnrmrl/attgw.htm) describe proper location of monitoring wells in a contaminated plume. A figure showing the sources, plumes and monitoring wells should be included in the report. The consultant must demonstrate that the monitoring wells are properly located in the plume between the source and natural discharge area in order to insure that the process of MNA will be characterized and monitored properly.

References:
McAllister, P.M., and C.Y. Chiang, 1994, A Practical Approach to Evaluating Natural Attenuation of Contaminants in Groundwater, Ground Water Monitoring and Remediation, Spring, 1994, pp. 161-173.