

APR 20 1993

EXPRESS MAIL
RETURN RECEIPT REQUESTED

Ana Gloria Ramos, P.E.
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Tutu Environmental Investigation Committee
P.O. Box 364269
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Re: Review of Technical Memorandum II, Results of the Field
Program, Tutu Service Station Investigation, St.
Thomas, U.S. Virgin Islands

The U.S. Environmental Protection Agency (EPA) has completed the review of the above referenced document submitted March 1, 1993. The purpose of the Technical Memorandum II is to present preliminary results of the field investigation and to determine if additional investigation is necessary before completing the remedial investigation (RI). EPA's general comments concerning the report are presented below, followed by specific comments with respect to the text.

GENERAL COMMENTS

1. Based on the maps, it appears that the upgradient extent of petroleum contamination can be delineated without the three additional wells proposed in the Technical Memo. However, one well might be warranted to the west of Western Auto, to establish whether that facility contributes to groundwater contamination. The locations of the proposed wells should be plotted on a map. Several questions remain as to the sources of chlorinated volatile organic compounds (VOCs) in groundwater. There are apparently at least two sources of chlorinated VOCs at the site - one in the vicinity of the Curriculum Building and, possibly, Tillet Gardens; the second in the vicinity of O'Henri cleaners. A shallow well should be installed south of MW-12D to identify and delineate the southern extent of the VOCs plume to the northern extent of the VOCs plume and to ascertain if the northern and southern plumes are connected.
2. EPA has compared the analytical results of our split sample analyses with Geraghty and Miller (G&M's) results.

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SURNAME --->	K. Ramos							
DATE ----->	12/19/93	4/19/93						

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All the split and PRP data compare within acceptable limits.

3. For the pumping tests, it is customary to present the following data graphically: background water level fluctuations; rainfall and barometric pressure data, if collected; and all measured water levels in all wells monitored during testing. *defer to RI*
4. It would be useful to present subsurface soil data from borings and monitoring wells on the same map in the RI report to create a more integrated picture of soil contamination. *OK*
5. Detailed core logs and drillers logs have not been provided. Though not crucial for this technical memorandum, they should be presented in the RI report. *defer to RI*
6. The VIHA supply wells should definitely be included in the next round of groundwater sampling. A schedule of pumping should be included, if available. *need to mention the pump.*

SPECIFIC COMMENTS

1. Page 2-1, Paragraph 2, first sentence - The other principal contaminants of concern (i.e., PCE, TCE and DCE) should be named. *# 193* *TRIC will do.* *OK*
2. Page 2-2, Paragraph 1 - The logs in Appendix A do not show blows/foot or HNu readings as indicated in this paragraph. *OK*
3. Page 2-2 - The fact that EPA's contractor, CDM-FPC, split a number of samples with G&M and sent them to a separate laboratory for confirmatory analysis should be mentioned in the QC sample discussion in the RI report. (As mentioned in General Comments, the results of the separate analyses are comparable.) *OK*
4. Page 2-3, Section 2.2.1 - The outcrop descriptions are not provided. *- mention in Tech 2 that more references are coming.* *defer to RI*
5. Page 2-4, Paragraphs 1 and 2 - Downhole drilling pressure, rate of penetration per foot and water circulation observations are not provided; nor are the bedrock coring logs. *✓*
6. Page 2-4, Section 2.2.3 - The downhole geophysical logs (caliper and sonic) are not provided in this technical memorandum. *✓*
7. Page 2-6, Paragraph 2, last sentence - The sentence should read that well MW-12D was completed as a deep, not a shallow, well.

8. Page 2-12, Section 2.4, Paragraph 2 - G&M needs to mention that the maximum aquifer test pumping rate was constrained by the capacity of the on-site water treatment system. Thus the aquifer was not stressed as much as it could have been. *OK*
9. Page 2-13, Paragraph 1 - G&M should specify the frequency of manual water level measurements collected during the test. *OK*
10. Page 2-13, Section 2.4.2, first sentence - The text should make clear that the two wells were not pumped simultaneously. *OK*
11. Page 3-2, Section 3.1.2 - How do the volcanic sandstone and siltstone described equate to the formations described under regional geology? *Wich*
12. Page 3-10, Paragraph 4, last sentence - Two possible explanations exist for the difference in heads observed between the shallow and deep wells: 1) local perched conditions may exist; or 2) a recharge source exists in the vicinity. *191D PWT pressure + transmiss on 191*
13. Page 3-12, Paragraph 1, last sentence - The wells for which the data are not usable should be specified. *2 weeks*
14. Page 3-12, Section 3.3.1 - Drawdown data should have been superimposed on a variety of type curves to assess the type of aquifer before determining that the Cooper-Jacob straight-line method was the appropriate one to use. *STATE how the comp*
15. Page 3-12, Section 3.3.1, 6th sentence - The text states that correction of drawdown values was not necessary, but on the associated figures, the y-axis is labelled "corrected drawdown". *OK*
16. Page 3-14, Section 3.3.2 - If the data for the pumping test of MW-6D is not useable due to the rainfall as stated on page 3-12, then G&M should qualify the discussion and numbers presented in this section. Based on figures 3-8 and 3-9, EPA believes that steady state conditions had not been reached after 24 hours of pumping and that the shape of the drawdown curves indicate that the system is being dewatered. *State why didn't stress system* *OK - want to evaluate hydro* *150 SPM pump 7/15*
17. Page 3-15 - The "drawdown" measured in well MW-7 is less than 0.1 foot. This change may not be due to the pumping well, located 230 feet away. *OK*
18. Page 4-1, Section 4.1 - The results from the soil boring samples should be considered in conjunction with those from the monitoring wells because they are really the same medium. Treating them separately makes it harder to *OK*

A DISCUSSION also not just figure

assess the distribution of contaminants in subsurface soil.

19. Page 4-3, Paragraph 2, item 2 - Total Petroleum Hydrocarbon (TPH) results are often elevated in fine-grained soils because the extraction method is more efficient due to the greater surface area from which the solvent can extract the TPH. This effect, however, does not result in "false positives".
20. *OK* Page 4-6, Section 4.3.1, Paragraph 1, fourth sentence - Only sample SS-5 is from the Tillett property; Sample SS-3 is from the Curriculum Building.
21. *list for TPH* Page 4-7, Section 4.5 - The analytes that are present above background concentrations should be listed, especially if any of them are contaminants of concern from a health perspective.
22. Page 4-8, Section 4.6 - See preceding comment. *last text*
23. Page 6-1, Last Paragraph - G&M should try to obtain more information on which supply wells are pumping and at what rates. *7 days*
24. Page 6-2, Section 6.2, Paragraph 2, last sentence - G&M has not provided adequate evidence for "false positive" TPH concentrations. TPH is certainly not unexpected in a service station study. Furthermore, as stated earlier, fine-grained soils may result in elevated concentrations due to more efficient extraction, but should not result in false-positive values. *down play all comments*
25. Page 6-2, Section 6.2, Paragraph 3 - The focus of the BNA discussion should not be on the possible laboratory artifacts, but rather on the polynuclear aromatic hydrocarbons that were detected at a number of properties.
26. Page 6-3, Paragraph 3 - According to the maps, arsenic was detected at 185 ppm in boring B-13 on the O'Henri property. This is three orders of magnitude higher than background. *state clearly that polynuclear aromatic hydrocarbons*
27. *see General Comment* Page 6-5, Paragraph 3 - Based on the groundwater results presented in this report, it appears that the upgradient extent of petroleum constituents can be defined with the existing data. Additional wells might be warranted to conclusively establish liability with respect to chlorinated compounds.
28. Page 7-1, item 2 - EPA Region II only accepts total, but will considered dissolved, metals results in remedial investigations. Total metal values are used both in the

assessment of groundwater risk and in evaluating remedial technologies. *Include BRA c/s*

29. Figure 3-1 - The labelling of geologic units from well to well is inconsistent on this diagram.
30. In Section 7 of the Technical Memo II, recommendation for future activities include resampling of all monitoring wells, installation of three monitoring wells near Western Auto and Ramsay Auto property. As stated in the general comments above, one additional well is needed west of Western Auto instead of two wells proposed in the Technical Memo II. Instead, MW-9 and MW-2 could serve the same purpose of the two additional wells proposed. For the VOCs plumes, a shallow well is required to identify and ascertain the extent of the southern VOCs plume to the northern VOCs plume.

Pursuant to Section X.1 of the Administrative Order Index No. II-RCRA-Proceeding 7003 and 9003-92-0401, the Respondent has within ten days from receipt of this letter to request a meeting with EPA to discuss the comments. A meeting has been scheduled on April 29 in the Department of Planning and Natural Resources office to discuss these above comments. Within fifteen days after this meeting, the revised Report should be sent to the EPA for review and approval. Please submit the revised Report on or before May 20, 1993.

Please contact Ms. Caroline Kwan of my staff if you have any questions.

Sincerely yours,

Carole Petersen, Chief
New York/Caribbean Superfund Branch II

cc: Leonard Reed- DPNR
Thomas Danahy- G&M
Sally Odland- CDM-FPC
Andrew Praschak- EPA-CFO