

DIVISION OF
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GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES

DEPARTMENT OF PLANNING AND NATURAL RESOURCES

NISKY SHOPPING CENTER

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Express Mail
Return Receipt Requested

April 27, 1995

Caroline Kwan
USEPA Superfund Division, Region II
New York/Caribbean Branch
290 Broadway, 20th Floor
New York, New York 10007-1866

Dear Ms. Kwan:

Enclosed are the Virgin Islands Department of Planning and Natural Resources (DPNR) comments on the March 1995 Draft Feasibility Study (FS) Report for the Tutu Wells Superfund Site in St. Thomas, USVI. These comments should be addressed by Geraghty & Miller prior to the finalization of the FS and the preparation of the Record of Decision (ROD).

If you have any questions regarding this matter please contact Mr. Adrian Schottroff or Mr. David Rosoff of my staff at (809) 774-3320.

Sincerely yours,

James H. Reed
Leonard Reed
Assistant Director

Post-It TM brand fax transmittal memo 7671		# of pages > 7
To Caroline Kwan	From Schottroff	
Co. EPA Region II	Co. VI DPNR - DEP	
Dept. SUPERFUND	Phone # 809 774-3320	
Fax # 212 637 4284	Fax # 774-5416	

Enclosure

* Notify Caroline Kwan @ 4275.*
Well Status information will
come on Monday. Any
questions, call me at home.
Adrian

TUT 006 2126

**DPNR COMMENTS ON THE DRAFT FEASIBILITY STUDY FOR THE TUTU
WELLFIELD SUPERFUND SITE IN ST. THOMAS, USVI**

Although the general presentation of remedial alternatives in the Draft Feasibility Study (FS) for the Tutu Well site is in accordance with the remedies discussed during the meeting held in St. Thomas in February 1995 between the VI Department of Planning and Natural Resources (DPNR), the United States Environmental Protection Agency (EPA) and the Potentially Responsible Party (PRP) Group, significant alterations to the document are required. These changes are discussed in the following comments.

General Comments:

Site Wide Remedial Alternative Discussion:

General Presentation of Soil Remedial Alternatives (SRAs) and Ground-water Remedial Alternatives (GRAs) into Site Wide Remedial Alternatives (SWRAs) is confusing. The SRAs and GRAs should be discussed separately and screened down to the final group of acceptable alternatives for each media. EPA can select the SRA(s) and GRA of choice from these distinct lists.

Incorporation of Source Control Remedies Proposed by Esso and Texaco for BTEX plume control:

A major flaw in the FS is its failure to adequately discuss source control remedies proposed at the Esso and Texaco service stations and incorporate the proposed designs of these pump and treat systems into the ground-water remedy discussions. On page 4-5 of the FS, it is stated that the implementation of Interim Remedial Measures (IRMs) at the service stations has been considered to ensure that the IRMs are compatible with the proposed SWRAs. However, the document does not discuss the parameters of either of these studies in conjunction with the proposed site-wide ground-water remediation strategies and the BTEX source remedies are not depicted on Figure 4-7.

Although detailed discussions of pump and treat specifications are not required at the FS stage, some mention of the parameters of the service station remedies and their effect on the overall ground-water remedy must be made. It is difficult to review the proposed well arrays and pump rates proposed by each remedy without knowledge of the source control well locations, well depth, pump rates, etc.

Proposed Parameters of the Ground Water Remedies:

It is unclear how the number and location of recovery wells and the proposed pumping rates for each remedial scenario were determined in the FS. It is standard procedure to estimate the number of recovery wells and rate of pumping in the FS for costing purposes, however, final selection of a well array and of

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pumping rates must be based on detailed modeling of site hydrologic conditions. The FS should make this clear in the discussions of the remedial alternatives.

Use of POET Systems:

Most of the remedial alternatives include the use of Point of Entry Treatment Systems (POETS) on commercial and residential private wells. Historically, DPNR has found that regulation of pumping rates and general usage of private wells has been problematic. DPNR envisions that certain wells that may be eligible for POET systems within the scope of this FS will be difficult to maintain control over in the long term. Because of the difficulty in implementing an effective and controlled Operation & Maintenance Program for POET systems on private wells in the Virgin Islands, DPNR will not support the selection of this remedy. However, discussion and eventual screening out of this alternative due to difficulty of implementability is appropriate.

Use of POTW:

Based on discussions with the VI Department of Public Works in the February meetings, there is no current option for discharge of any additional volume to the municipal sewer system in Tutu. At some time in the future, a new sewage treatment plant with expanded capacity will be constructed at Mangrove Lagoon which will receive the sewage from the Tutu Valley area. However, the FS cannot realistically utilize this speculative discharge as an option. Discussion of this option and its eventual removal through screening in the document is appropriate in case EPA determines that this discharge alternative is appropriate at some point in the future.

Soil Disposal:

On Page 4-4 of the FS, the statement is made that if the material that is excavated is non-hazardous, it will be disposed of at the Bovoni Dump. No potentially hazardous or contaminated material from the Tutu site can be disposed of at the Bovoni Dump without first meeting DPNR's disposal standards. To be determined non-hazardous, the material would have to under go the testing protocol required by DPNR. This testing procedure is described in the attached letter to Geraghty & Miller (attachment 2). Furthermore, the FS assumes, for costing purposes, that all of the excavated material will be nonhazardous and will be disposed of at the Bovoni Dump. This assumption is probably not valid and should be re-evaluated. A conservative costing estimate that includes off-island transport and disposal of some of the excavated material would be more accurate.

Treatability Studies for Soil Remediation:

The proposal of the innovative technologies of soil vapor extraction (SVE) and bioventing for soil remediation at certain properties is appropriate. However, it must be recognized that the use of these technologies will require substantive pilot-scale treatability studies during the Remedial Design. The geological and soil conditions in the Tutu Valley may not allow successful application of these technologies in-situ. As a result, ex-situ venting and vapor extraction should also be discussed.

Additional Pre-Design Work:

Section 4.5, Pre-Design Activities, provides a vague description of pre-design work that will be required prior to completion of the Remedial Design Report. This section must be enhanced with more detail and amended to include the following additional work:

- Additional pre-design soil sampling to define the extent of the contamination must occur at the Western Auto property (determine the source of contamination through investigation of the contaminated pipe and gravel layer), former Laga Building (both under and around the perimeter of the building), Tillett Gardens (in and around area of PCB contamination), and at the former Home petroleum station (now Kentucky Fried Chicken). Pre-design soil sampling must also occur at each impacted property to determine the extent of the areas of excavation and/or the position of the SVE wells.
- Additional ground-water sampling to define the horizontal extent of plume. The FS claims that the plume is approximately 800 to 1000 feet wide on page 2-19. However, data from the lateral portions of the plume is scarce and certain lateral wells that are potentially impacted by the plume have been left out of the plume delineation (i.e. the Harthman Racetrack Well which had 0.15 ppb of PCE in the 1994 sampling). Additional investigation of the Harthman wells and the installation of both eastern and western perimeter monitoring wells is required to fully delineate the plume boundaries.
- The nature of the plume in the southern portion of the site is poorly known. Additional ground-water elevation data for both the shallow and deep aquifer in the southern part of the site must be collected. Ground-water elevation data for the KFC wells, Harthman wells, EA wells, Rodriguez well, New Gassett well, REMW wells, Mathias well, Smith well, Delegarde well, and the Fort Mylner and Versailles supply wells should be collected. In addition, monitoring wells should be installed south-east of Fort Mylner Shopping Center and south-west of the Steele well.

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The information generated from these wells will aid in the understanding of the dynamics of the southern portion of the plume.

- Additional investigation of the suspected gasoline contamination emanating from the vicinity of KFC (formerly Home petroleum). Existing ground-water data show MTBE and chlorinated hydrocarbon contamination reaching as far south-east as the Delegarde well. It is conceivable that all or a portion of this contamination is coming from the area around KFC. If this is not the case, and the KFC plume is localized close to the site of origin, the possibility exists that recovery wells placed downgradient of the site will draw the plume to the south-east and further contaminate the aquifer. In either case, this potential source of contamination should be recognized, investigated and remediated as part of the overall remediation of the Tutu site.

- Detailed ground-water modeling utilizing site specific aquifer data generated from localized pumping tests conducted in potential areas of recovery must be completed prior to the design of the pump and treat system. This modeling is critical in determining location of recovery wells, rates of pumpage, methods of pulse pumping, zones of capture, aquifer drawdown with time versus the safe yield, etc. To date, modeling performed on the Tutu Wells site has been limited in scope although a substantial amount of data has been generated.

Page Specific Comments:

Page 2-22, Paragraph 4: It should be mentioned that the conclusion that subsurface soil does not exceed "unacceptable" (word left out of report) carcinogenic or non-carcinogenic risks is pathway based and is true only under circumstances where the soil is undisturbed.

Page 2-23: The section on risk does not provide any information on environmental risks associated with the site contaminants. A small mention of environmental risk is made on Page 3-3 where the document states that no ecosystems are potential receptors of COCs. Based on the CDM Risk Assessment, this does not appear to be an accurate statement. Potential exposure pathways for environmental receptors do exist, however, the risk assessment determined that they will not result in an unacceptable risk.

Page 3-2, Paragraph 7: The second and third sentences in this paragraph should be removed. Pumping, treating and discharging may not be wasteful use, since this effort will, over time, reduce the level of contamination of the aquifer.

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Page 3-4, Paragraph 2: The document repeatedly refers to the current inability to reduce or eliminate DNAPL concentrations in fractured bedrock aquifers. These statements may not be incorrect, but repeated caveats and references to the shortcomings of the best available technologies are not necessary throughout the document, especially in the remedial goals section of the report.

Page 3-10, Paragraph 3: The number of wells in the containment program (stipulated to be between 2 and 4 in this paragraph) cannot be determined without detailed Pre-design modeling of the plume and aquifer characteristics.

Page 4-2, Paragraph 2: Additional investigation into the oily gravel and pipe behind the former Western Auto store must be performed during Pre-design field work.

Page 4-3, Paragraphs 1 and 2: Additional soil sampling (soil borings) are required west and north-west of the building and under the Curriculum Center building to determine the extent of contamination. This should probably include some sampling within the building, through the slab, in the vicinity of the pipes containing the PCE and in the vicinity of the location of the former PCE "still".

Page 4-7, Paragraph 3: It is unclear why the proposed recovery wells will be installed to a depth of 250 feet and be fully penetrating. Pumping water from 250 feet would draw high-TDS water into the well and require a reverse osmosis process to be utilized in the treatment train to provide potable-quality water.

Page 4-8, Paragraph 2: Some discussion must be provided regarding the disposal of the GAC units which will be considered a hazardous waste.

Page 4-13, Paragraph 4: Why only use a 1.5-day storage. If potential potable distribution is a conceivable option, a larger tank might be more economical plus the extra volume might be required to hold water pending sampling results needed to verify water quality before distribution.

Page 4-17, Paragraph 4: Western Auto - SVE near and under buildings should be considered for a portion of the contamination there.

Page 4-32, Paragraph 1: The consideration of SRA 5 as the least effective option for soil remediation seems more based on cost and less based on effectiveness. The prime criterion for selecting the SRA should be effectiveness.

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Page 4-33, Paragraph 1: The statement, "There are also no O&M demands that would be associated with in-situ soil treatment systems", is false. Follow-up sampling is an operational aspect that is required to determine if the treatment is effective and when the treatment is "complete".