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GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES*Department of Planning & Natural Resources**Division of Environmental Protection*

WATER GUT HOMES 1118

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January 26, 2001

Ms. Caroline Kwan
Remedial Project Manager
U.S. Environmental Protection Agency, Region II
290 Broadway, 20th Floor
New York, NY 10007-1866

RE: **Virgin Islands Chemical Superfund Site
St. Croix, USVI
Comments on the Final Draft Feasibility Study Report**

Dear Ms. Kwan:

The Department of Planning and Natural Resources (DPNR) has reviewed the Final Draft Feasibility Report (Final Draft FS) for the Virgin Islands Chemical Superfund Site and is forwarding the following comments:

Estimated Cleanup Times

The Draft Final FS assumes cleanup to MCLs in 3 to 4 years. Page 48 contains the following paragraph:

"Although the minimum estimated cleanup times (3-4 years) for both Areas are relatively short, the presence of geologic heterogeneities in both the AST and FPP Areas, as well as the presence of significant source mass above the water table in the AST area, could extend the estimated cleanup time by anywhere from a few years to more than 100 years and render the cleanup time predictions highly uncertain (National Academy Press, 1994)"

DPNR finds this important paragraph in need of further discussion and explanation regarding the source of this quote and how the authors of this paragraph calculate the estimated time for cleanup to MCLs.

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Geo-Hydrology

DPNR is concerned that the entire Final Draft FS is flawed based on a fundamental misinterpretation of the site and area geo-hydrology.

The Report describes two upper aquifers in the alluvium (sands, gravels and clays) layer. The authors seem to be unable to differentiate between unconsolidated materials in the Gut (which are typically unsaturated) and the fractured marly limestone of the Kingshill Marl (aquifer). The fractures in the marl are the water producing zones while groundwater recharge of the marl occurs in the guts through the unconsolidated material above.

The United States Geological Survey (USGS) has performed exhaustive studies of the Kingshill Aquifer in South Central St. Croix, including the aquifer in the area around the study site. The USGS describes the area as having 10 to 60 feet of alluvium (unconsolidated material) overlaying the Kingshill Marl (water bearing formation). The Final Draft FS describes the deeper zones of the alluvium as "exhibiting confined to semi-confined conditions". DPNR is unaware of any scientific or environmental study describing area conditions of the Kingshill Aquifer in the study area as "confined or semi-confined".

The USGS describes the Kingshill Aquifer as a "single, unconfined, hydrologically connected unit" (or 1 single aquifer), meaning water flows between the units without restriction. Typically loose material (alluvium) is 10-60 feet thick overlaying marly fractured limestone from 50-100 feet below that. The aquifer is usually not any deeper than 120 feet. Generally, south of the highway, the post- Kingshill limestone predominates (highly transmissive).

Describing "area" geo-hydrology as "two upper aquifers under confined to semi-confined conditions" is misleading and dramatically affects all ensuing risk assessments, the evaluation of the efficacy of the proposed treatment system and clean up duration estimates. DPNR is not satisfied with an FS based on a mischaracterization of the aquifer and will not accept a theory that is so drastically opposed to long-standing and documented investigations. DPNR urges EPA not to accept this two-aquifer theory or the implications it may have regarding the remedial plans/timeline.

Due to the multiple consultants historical misunderstanding/mischaracterization of area hydrology, DPNR believes it is essential to rewrite this section on area/site hydrology to reflect the well-documented and scientifically accurate description of area hydrology including, the USGS description of the aquifer and area/regional conditions. It is inconceivable that USGS publications on the subject would not be referenced in any of the reports produced during

the site investigation and leading up to the FS.

Specific borehole conditions should be described as such but should not be used to describe the "area aquifer" or to infer conditions beyond the immediate borehole location. Current descriptions of the site and area are misleading and leaves the reader with the impression that vertical groundwater/contamination movement is nearly impossible due to the inaccurate "two aquifer" scenario.

Additional review and comments will be forthcoming on the specifics of anaerobic and aerobic degradation of contaminants at the site, remediation time frames and the risk assessment.

In general the Department is disturbed by the tendency of the report to underestimate potential for lateral and vertical migration and to minimize the potential for off-site migration.

We appreciate your consideration of our comments. If you should have any additional questions, please give me a call.

Sincerely,



Syed Syedali, P.G.
Project Manager-DEP/DPNR