

March 2, 1993

Ms. Caroline Kwan, Project Manager
USEPA Region II
26 Federal Plaza, Room 737
New York, New York 10278

Re: Sampling Procedures and Waste-Classification Analytical Results of Drilling Cuttings
Tutu Service Station Investigation
St. Thomas, U.S. Virgin Islands

Dear Ms. Kwan:

On behalf of Ana Gloria Ramos, Designated Coordinator for the Tutu Environmental Investigation Committee (TEIC), Geraghty & Miller, Inc. has prepared this submittal regarding the above-referenced topic. Attached are the analytical results of the waste-classification samples collected on September 10, 1992 from the drilling material from the Tutu Service Station Investigation at the Tutu Wells Site, St. Thomas, U.S. Virgin Islands. The analytical parameters included USEPA Toxicity Characteristic Leachate Procedure (TCLP) and Resource Conservation and Recovery Act (RCRA) waste characteristic parameters (e.g., ignitability and corrosivity).

Three composite samples (see Table 1; DS-1, DS-2, DS-3) were taken of the drilling material with each sample representing one-third of the total material (approximately 100 drums). Each sample was retrieved with a stainless steel spoon and placed in a stainless steel bowl. After collecting a representative portion, the material was mixed in a stainless steel bowl and immediately transferred to the sample containers. A field blank sample (FB091092) was collected by pouring laboratory-supplied deionized water over the decontaminated stainless steel bowl and spoon (prior to sampling the drilling material) so that the rinsate flowed into the sample containers. A laboratory-supplied trip blank (TB091092) was sent along with the samples.

TUT 006 1462

All analytical results were below detection limits with the exception of barium (see Tables 2 through 7). The highest barium concentration reported was 0.24 parts per million (ppm) in sample DS-1, which is well below the TCLP regulatory limit of 100 ppm (40 CFR Part 261). No other TCLP parameters were detected. The results for other waste characteristic parameters were also indicative of non-hazardous material. The material was non-ignitable and the corrosivity was within the non-hazardous range of between 2 to 12.5 pH units. Total cyanide and total sulfide were below the method detection limits. Therefore, the drilling material is non-hazardous and should be disposed accordingly.

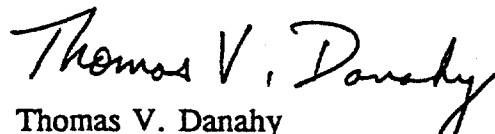
This material should be disposed as a non-hazardous solid waste. The TEIC will coordinate the proper disposal of this non-hazardous solid waste with the USEPA and Virgin Islands Department of Planning and Natural Resources. Your assistance would be greatly appreciated. If you have any questions or require additional information, please call.

Sincerely,

GERAGHTY & MILLER, INC.



Clinton Moffatt
Staff Scientist



Thomas V. Danahy
Senior Scientist/Project Manager



Daniel Nachman
Vice President/Project Officer

c: Ana Gloria Ramos, TEIC
Leonard Reed, DPNR
Clifford Crooke, DPNR

Enclosures
PR01301-wp3/011393.ltr/lcb

Table 1. Composite Sample Locations and Identifications, Tutu Service Station Investigation, St. Thomas, U.S. Virgin Islands.

Composite Sample Identification	DS-1	DS-2	DS-3
	Drilling Locations		
	MW-3	MW-2	MW-1
	MW-4	MW-7	MW-1D
	MW-4D	MW-8	MW-10
	MW-5	MW-11D	MW-10D
	MW-9	MW-12D	MW-6
	MW-9S	MW-13D	MW-6R
	B-1	MW-14	MW-6D
	B-2	B-10	
	B-4	B-11	
	B-5	B-12	
	B-6	B-13	

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Table 2. Concentrations of Volatile Organic Compounds in Waste-Classification Samples Collected in September 1992 at the Tutu Wells Site, St. Thomas, U.S. Virgin Islands.

Analyte	Sample ID: DS-1		DS-2	DS-3	Field Blank	Trip Blank
	Date:	10-Sep-92	10-Sep-92	10-Sep-92	10-Sep-92	10-Sep-92
Benzene		0.025 U	0.025 U	0.025 U	0.005 U	0.005 U
Carbon tetrachloride		0.025 U	0.025 U	0.025 U	0.005 U	0.005 U
Chlorobenzene		0.025 U	0.025 U	0.025 U	0.005 U	0.005 U
Chloroform		0.025 U	0.025 U	0.025 U	0.005 U	0.005 U
1,2-Dichloroethane		0.025 U	0.025 U	0.025 U	0.005 U	0.005 U
1,1-Dichloroethene		0.025 U	0.025 U	0.025 U	0.005 U	0.005 U
2-Butanone (MEK)		0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
Tetrachloroethene		0.025 U	0.025 U	0.025 U	0.005 U	0.005 U
Trichloroethene		0.025 U	0.025 U	0.025 U	0.005 U	0.005 U
Vinyl chloride		0.05 U	0.05 U	0.05 U	0.01 U	0.01 U

Analyte concentrations in milligrams per liter (parts per million [ppm]).
Analyses were performed by Enseco-East of Somerset, New Jersey, using USEPA Method 8240.

U Compound or element analyzed for, but not detected at the corresponding reporting limit.

TUT 006 1465

Table 3. Concentrations of Base Neutral and Acid Extractable Organic Compounds in Waste-Classification Samples Collected in September 1992 at the Tutu Wells Site, St. Thomas, U.S. Virgin Islands.

Analyte	Sample ID: DS-1	DS-2	DS-3	Field Blank
	Date: 10-Sep-92	10-Sep-92	10-Sep-92	10-Sep-92
m & p-Cresol(s)	0.05 U	0.05 U	0.05 U	0.01 U
o-Cresol	0.05 U	0.05 U	0.05 U	0.01 U
1,4-Dichlorobenzene	0.05 U	0.05 U	0.05 U	0.01 U
2,4-Dinitrotoluene	0.05 U	0.05 U	0.05 U	0.01 U
Hexachlorobenzene	0.05 U	0.05 U	0.05 U	0.01 U
Hexachlorobutadiene	0.05 U	0.05 U	0.05 U	0.01 U
Hexachloroethane	0.05 U	0.05 U	0.05 U	0.01 U
Nitrobenzene	0.05 U	0.05 U	0.05 U	0.01 U
Pentachlorophenol	0.25 U	0.25 U	0.25 U	0.05 U
Pyridine	0.1 U	0.1 U	0.1 U	0.02 U
2,4,5-Trichlorophenol	0.25 U	0.25 U	0.25 U	0.05 U
2,4,6-Trichlorophenol	0.05 U	0.05 U	0.05 U	0.01 U

Analyte concentrations in milligrams per liter (parts per million [ppm]).
Analyses were performed by Ensco-East of Somerset, New Jersey, using USEPA Method 8270.

U Compound or element analyzed for, but not detected at the corresponding reporting limit.

TUT 006 1466

Table 4. Concentrations of Pesticides in Waste-Classification Samples Collected in September 1992 at the Tutu Wells Site, St. Thomas, U.S. Virgin Islands.

Analyte	Sample ID: DS-1 DS-2 DS-3 Field Blank			
	Date: 10-Sep-92	10-Sep-92	10-Sep-92	10-Sep-92
gamma-BHC (Lindane)	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Chlordane	0.005 U	0.005 U	0.005 U	0.005 U
Endrin	0.001 U	0.001 U	0.001 U	0.001 U
Heptachlor (and its epoxide)	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Methoxychlor	0.005 U	0.005 U	0.005 U	0.005 U
Toxaphene	0.05 U	0.05 U	0.05 U	0.05 U

Analyte concentrations in milligrams per liter (parts per million [ppm]).
Analyses were performed by Enseco-East of Somerset, New Jersey, using USEPA Method 8080.

U Compound or element analyzed for, but not detected at the corresponding reporting limit.

TUT 006 1467

Table 5. Concentrations of Herbicides in Waste-Classification Samples Collected in September 1992 at the Tutu Wells Site, St. Thomas, U.S. Virgin Islands.

Analyte	Sample ID: DS-1	DS-2	DS-3
	Date: 10-Sep-92	10-Sep-92	10-Sep-92
2,4-D	0.005 U	0.005 U	0.005 U
2,4,5-TP (Silvex)	0.001 U	0.001 U	0.001 U

Analyte concentrations in milligrams per liter (parts per million [ppm]).
Analyses were performed by Enseco-East of Somerset, New Jersey, using USEPA Method 8150.

U Compound or element analyzed for, but not detected at the corresponding reporting limit.

Table 6. Concentrations of Metals in Waste-Classification Samples Collected in September 1992 at the Tutu Wells Site, St. Thomas, U.S. Virgin Islands.

Analyte	Sample ID: DS-1		DS-2	DS-3	Field Blank
	Date:	10-Sep-92	10-Sep-92	10-Sep-92	10-Sep-92
Arsenic		0.2 U	0.2 U	0.2 U	0.1 U
Barium		0.24	0.2	0.22	0.01 U
Cadmium		0.01 U	0.01 U	0.01 U	0.005 U
Chromium		0.02 U	0.02 U	0.02 U	0.01 U
Lead		0.1 U	0.1 U	0.1 U	0.05 U
Mercury		0.0002 U	0.0002 U	0.0002 U	0.0002 U
Selenium		0.4 U	0.4 U	0.4 U	0.2 U
Silver		0.02 U	0.02 U	0.02 U	0.01 U

Analyte concentrations in milligrams per liter (parts per million [ppm]).

Analyses were performed by Enseco-East of Somerset, New Jersey, using standard U.S. Environmental Protection Agency methodology.

U Compound or element analyzed for, but not detected at the corresponding reporting limit.

Table 7. Concentrations of Indicator Parameters in Waste-Classification Samples Collected in September 1992 at the Tutu Wells Site, St. Thomas, U.S. Virgin Islands.

Analyte	Sample ID: DS-1 DS-2 DS-3			
	Units Date: 10-Sep-92 10-Sep-92 10-Sep-92			
Ignitability	DEG F.	>200	>200	>200
Sulfide, Total	mg/kg	0.55 U	0.56 U	0.57 U
Cyanide, Total	mg/kg	0.55 U	0.56 U	0.57 U
Corrosivity	units	11.2	10.4	11.6

mg/kg Analyte concentrations in milligrams per kilogram (parts per million [ppm]).

DEG F. Degrees in Fahrenheit.

units Standard pH or color units.

Analyses were performed by Enseco-East of Somerset, New Jersey, using standard U.S. Environmental Protection Agency methodology.

U Compound or element analyzed for, but not detected at the corresponding reporting limit.

TUT 006 1470