M00263.AR.000129
MCRD PARRIS ISLAND
5090.3a

LETTER REGARDING REVISED REQUEST FOR HANDLING OF INVESTIGATION DERIVED WASTE FROM INVESTIGATION OF MEDIA AT SITE 1, SITE 2, SITE 3 AND SITE 12 WITH ATTACHMENTS MCRD PARRIS ISLAND SC
3/2/1999
TETRA TECH NUS

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PITT-03-9-018

March 2, 1999

Project Numbers 7394 & 7803

Mr. Jerry Stamps Project Manager
South Carolina Department of Health and Environmental Controls
Bureau of Land and Waste Management
Columbia, South Carolina 29201

Subject: IDW Management
From Investigation of Media at SWMUs 1,2,3, and 10
MCRD Parris Island, South Carolina

Reference: a. CTOs 0020 and 0053
b. CLEAN Contract No. N62467-94-D-0888

Dear Mr. Stamps:

This letter represents a revised request to handle the subject material as indicated below and incorporates comments from your January 28, 1999 letter regarding listed hazardous waste.

TtNUS has completed field work identified in the RCRA Facility Investigation/Remedial Investigation Work Plan for Sites/SWMUs 1,2,3, and 15, SWMU 41, and Site 12/SWMU 10 at MCRD Parris Island. As part of this work and in accordance with the work plan, Investigation Derived Waste (IDW) consisting of soils, solid wastes, and waters were collected and containerized in 55-gallon drums. The IDW generated on base was consolidated on Horse Island and the IDW generated on Jericho Island was consolidated on Jericho Island.

At this time, the analytical data has been received and evaluated. The analytical data used to characterize the water and soil IDW are presented in Tables 1 and 2, respectively. Based on the characterization, the IDW would not be considered a RCRA characteristic hazardous waste.

In accordance with the work plan, a comparison of the individual site drummed soil results with Region III Residential RBCs was conducted. A summary of exceedances is presented as follows.

Drummed IDW Soils (mg/kg)

Chemical	EPA Reg. III RBC	Site/ SWMU 1 - IDW soils	Site/ SWMU 2 – IDW soils	Site/ SWMU 3 – IDW soils	Site 12/ SWMU 10 – IDW soils
Benzo(a)pyrene	0.087	0.36J	-	0.15J	-
Dibenzo(a,h)anthracene	0.087	0.13J	-	-	-
Arsenic	0.43	6.6	2.2	3.8	1.3

Note that background arsenic soil and sediment results ranged from 1.2 to 12 mg/kg. Therefore the arsenic results presented are considered to be background, and not site related contamination.

To determine if listed hazardous wastes are present in the drummed soils, a review of historical records and evaluation of the analytical data was conducted. A record search was conducted at MCRD Parris Island as part of the 1986 Initial Assessment Study (Initial Assessment Study of MCRD Parris Island, NEESA 13-095, September 1986). This record search was conducted to determine the type and quantity of wastes that may have been disposed at Sites/SWMUs 1, 2, and 3 at MCRD Parris Island. This search found that the following wastes might have been disposed at these three sites. Documentation does not indicate the disposal of other types of wastes.

- Household waste
- Incinerator ash (Site 1 only)
- Empty containers
- Petroleum products
- Chlorinated solvents/sludge/still bottoms
- Non chlorinated solvents/sludges/still bottoms
- Paint Wastes
- Amalgam, beryllium, and metals shavings
- PCB contaminated oils

Based on a comparison of these potential wastes with South Carolina Subpart D List of Hazardous Wastes, 79-261.31 and .32, only wastes associated with the chlorinated and non chlorinated solvents and paint wastes could potentially be considered listed hazardous wastes. Listed hazardous waste codes associated with these solvents are F001, F002, F003, and F005. The basis for listing of these wastes is as follows:

- Tetrachloroethene
- Trichloroethene
- 1,1,1-trichloroethane
- Carbon tetrachloride
- Chlorinated fluorocarbons

- Chlorobenzene
- Dichlorobenzene
- Toluene
- Methyl ethyl ketone
- Carbon disulfide
- Isobutanol
- Pyridine
- 2 – ethoxyethanol
- Benzene
- 2 - nitropropane.

Of this list, benzene, chlorobenzene, carbon disulfide, and methyl ethyl ketone were detected in the drummed soils, but at very low concentrations (less than 100 ug/kg). Since the concentrations of these detected chemicals were less than the EPA Region III Soil Screening Values - Residential, which are the most conservative of screening criteria, the drummed IDW would be classified as "no longer containing hazardous waste". Note that pyridine, chlorinated fluorocarbons (freons), 2-ethoxyethanol, and 2 nitropropane were not analyzed. These chemicals are not expected to be present in the waste at the site.

Benzo(a) pyrene and dibenzo(a,h) anthracene are not components of documentable listed wastes potentially present at the site. The presence of benzo(a) pyrene, dibenzo(a,h) anthracene, and other similar PAHs are the sites are most likely associated with road base material (asphalt) and/or coal tar in commercial products such as roof shingles or treated wood. None of these potential sources of PAHs is a listed hazardous wastes. The only listed hazardous wastes that identify similar PAHs as the basis for listing are coke production, oil refining, and wood coating operations. Disposal of these wastes is not known to have occurred at MCRD Parris Island.

Based on this evaluation in accordance with the Work Plan, Site/SWMU 2 and Site 12/SWMU 10 soils can be spread back at their respective sites. Site/SWMU 3 IDW soils were observed to contain soil waste (paper and plastic, etc) and therefore are considered inherently waste like. Accordingly, Site/SWMU 3 drummed soils will be disposed off site in an approved solid waste landfill.

At this time, TtNUS is also requesting permission to spread soils from Site/SWMU 1 drilling activities at Site/SWMU 1. The basis for this request is that the drummed Site/SWMU 1 soils are not inherently waste like, but rather consist of soils/sediments. Also, the RBC exceedances are relatively minor (a factor of 1 to 3 above the criteria and only for two PAHs). The industrial use scenario criteria for these two PAHs is 0.78 mg/kg. Using the industrial criteria, there would be no RBC exceedances. Also, access to the site is currently limited, and these soils would be addressed in the future with the site.

TtNUS is proposing to place the drummed Site/SWMU 1 soils at the location of PAI-01-SS-008, (see attached Figure). This area is a depression approximately 4 feet deep and approximately 70 horizontal and 12 vertical feet from the high water shoreline. This location is also capable of holding the volume of Site/SWMU 1 drummed soils, without creating a mound. In addition, this surface soil location represents an area where PAHs, pesticides, and 13 metals exceed human health or ecological screening values. As a result, placement of these soils at this location will reduce potential impacts to receptors.

Liquid IDW will be treated at the Depot's wastewater treatment plant.

If you have any questions or comments, please call me at 412-921-8375.

Sincerely,

David D. Brayack, P.E.
Project Manager

ddb

Enclosure

cc: Ms. D. Evans-Ripley, SOUTHDIV (w/o enclosure)
Mr. T. Harrington, MCRD Parris Island
Mr. K. Lapierre, EPA
Mr. A. Sanford, SOUTHDIV
Ms. D. Wroblewski (w/o enclosure)
Mr. M. Perry (w/o enclosure)
Mr. J. Brown (with enclosure)
File: 7394
File: 7803

TABLE 1

CHARACTERIZATION OF WATER IDW WITH RCRA CRITERIA
MCRD PARRIS ISLAND, SOUTH CAROLINA

Fraction	RCRA Criteria	MAXIMUM GROUNDWATER CONCENTATION				DECON FLUID	
		Site 1	Site 2	Site 3	Site 12	Sites 1, 2 and 3	Site 12
Volatiles (ug/L)							
1,1-DICHLOROETHENE	700	-	-	-	-	-	-
1,2-DICHLOROETHANE	500	-	-	-	-	-	-
2-BUTANONE (METHYL ETHYL KETONE)	200,000	3.4 J	-	-	-	7.5 J	38 J
BENZENE	500	-	-	21 J	-	-	-
CARBON TETRACHLORIDE	500	-	-	-	-	-	-
CHLOROBENZENE	100,000	-	-	130	-	-	-
CHLOROFORM	6,000	0.9 J	2.9	0.3 J	4.5	-	-
TETRACHLOROETHENE	700	-	-	-	-	-	-
TRICHLOROETHENE	500	-	-	-	0.4 J	-	-
VINYL CHLORIDE	200	-	-	-	-	-	-
SVOCs (ug/L)							
1,4-DICHLOROBENZENE	7,500	-	-	10	-	-	-
2,4,5-TRICHLOROPHENOL	400,000	-	-	-	-	-	-
2,4,6-TRICHLOROPHENOL	2,000	-	-	-	-	-	-
2,4-DINITROTOLUENE	130	-	-	-	-	-	-
2-METHYLPHENOL (o-CRESOL)	200,000	1 J	-	-	-	2 J	3 J
3-METHYLPHENOL (m-CRESOL)	200,000	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL (p-CRESOL)	200,000	-	-	73	-	-	2 J
HEXACHLOROBENZENE	130	-	-	-	-	-	-
HEXACHLOROBUTADIENE	500	-	-	-	-	-	-
HEXACHLOROETHANE	3,000	-	-	-	-	-	-
NITROBENZENE	2,000	-	-	-	-	-	-
PENTACHLOROPHENOL	100,000	-	-	-	-	-	-
PYRIDINE	5,000	-	-	-	-	NA	NA
PCBs/Pesticides (ug/L)							
2,4,5-TP (SILVEX)	1,000	-	-	-	-	NA	NA
2,4-D	10,000	-	-	-	-	NA	NA
CHLORDANE	30	-	-	-	-	NA	NA
ENDRIN	20	-	-	-	-	-	-
GAMMA-BHC (LINDANE)	400	-	-	-	-	-	-
HEPTACHLOR	8	-	-	-	-	-	-
HEPTACHLOR EPOXIDE	8	-	-	-	-	-	-
METHOXYCHLOR	10,000	-	-	-	-	-	-

TABLE 1

CHARACTERIZATION OF WATER IDW WITH RCRA CRITERIA
MCRD PARRIS ISLAND, SOUTH CAROLINA

Fraction	RCRA Criteria	MAXIMUM GROUNDWATER CONCENTATION				DECON FLUID	
		Site 1	Site 2	Site 3	Site 12	Sites 1, 2 and 3	Site 12
TOXAPHENE	500	-	-	-	-	-	-
Metals (ug/l)							
ARSENIC	5,000	4.4	1.7	34.5	35.4	8.5	5.2
BARIUM	100,000	1,230	243	901	901	194	218
CADMIUM	1,000	2.7	-	-	9.2	3.9	-
CHROMIUM	5,000	26.9	15.2	27	25.2	48.8	7
LEAD	5,000	36.4	-	-	-	171	-
MERCURY	200	-	-	-	-	-	-
SELENIUM	1,000	-	-	-	7.1 J	-	-
SILVER	5,000	-	-	-	-	-	-
Water Quality Parameters							
BIOCHEMICAL OXYGEN DEMAND (mg/l)	None	NA	NA	NA	NA	< 5	< 5
CHEMICAL OXYGEN DEMAND (mg/l)	None	NA	NA	NA	NA	50	44
CHLORIDE (mg/l)	None	20,000	12,000	10,000	17,000	NA	NA
FECAL COLIFORM	None	NA	NA	NA	NA	< 10	< 100
FLOURIDE (mg/L)	None	300	26	200	19	NA	NA
HARDNESS as CaCO3 (mg/l)	None	6,300	4,200	3,900	6,200	NA	NA
NITRATE/NITRITE, AS N (mg/l)	None	0.06	6.8 J	-	0.3	NA	NA
OIL & GREASE (mg/l)	None	NA	NA	NA	NA	-	-
PH	None	5.89 - 7.88	4.74 - 8.10	6.18 - 7.14	5.11 - 6.81	10.2	7.1
SULFATE (mg/l)	None	1,500	1,500	1,300	2,200	NA	NA
TOTAL DISSOLVED SOLIDS (mg/l)	None	35,000	23,000	17,000	31,000	1200	4,200
TOTAL ORGANIC CARBON (mg/l)	None	45	8.1	74	24	NA	NA
TOTAL SUSPENDED SOLIDS (mg/l)	None	270	59	92	150	45	16
Misc. Parameters							
Reactivity		NA	NA	NA	NA	No	No
Corrosivity (pH)	2 < pH > 12.5	No	No	No	No	No	No

A "-" indicates that a positive detection was not observed
NA - Not analyzed

TABLE 2

Soil IDW Results - Maximum Detections
MCRD Parris Island

Groundwater Fraction	RCRA Criteria (ug/L)	Soils[1][2][3] Site 1	Site 2	Site 3	Site 12
VOCs					
1,1-DICHLOROETHENE	700	-	-	-	-
1,2-DICHLOROETHANE	500	-	-	-	-
2-BUTANONE	200,000	-	-	-	-
BENZENE	500	-	-	2 J	-
CARBON TETRACHLORIDE	500	-	-	-	-
CARBON DISULFIDE	None	2J	-	5J	-
CHLOROBENZENE	100,000	2 J	-	54	-
CHLOROFORM	6,000	-	-	-	-
4-METHANOL 2- PENTANONE	None	-	-	-	8
TETRACHLOROETHENE	700	-	-	-	-
TRICHLOROETHENE	500	-	-	-	-
VINYL CHLORIDE	200	-	-	-	-
SVOCs					
1,4-DICHLOROBENZENE	7,500	-	-	-	-
2,4,5-TRICHLOROPHENOL	400,000	-	-	-	-
2,4,6-TRICHLOROPHENOL	2,000	-	-	-	-
2,4-DINITROTOLUENE	130	-	-	-	-
2-METHYLPHENOL	200,000	-	-	-	-
3-METHYLPHENOL	200,000	NA	NA	NA	NA
4-METHYLPHENOL	200,000	-	-	41 J	-
HEXACHLOROBENZENE	130	-	-	-	-
HEXACHLOROBUTADIENE	500	-	-	-	-
HEXACHLOROETHANE	3,000	-	-	-	-
NITROBENZENE	2,000	-	-	-	-
PENTACHLOROPHENOL	100,000	-	-	-	-
PYRIDINE	5,000	NA	NA	NA	NA
PCBs/Pesticides					
CHLORDANE	30	NA	NA	NA	NA
ENDRIN	20	-	-	-	-
GAMMA-BHC (LINDANE)	400	-	-	-	-
HEPTACHLOR	8	-	-	-	-
HEPTACHLOR EPOXIDE	8	-	-	-	-
METHOXYCHLOR	10,000	-	-	-	-
TOXAPHENE	500	-	-	-	-
2,4,5-TP (SILVEX)	1,000	NA	NA	NA	NA
2,4-D	10,000	NA	NA	NA	NA
TCLP Metal Leachate Data					
ARSENIC	5,000	24.1	-	-	-
BARIUM	100,000	1,090	715	928	755
CADMIUM	1,000	2	-	2.5	-
CHROMIUM	5,000	-	6.8	16.2	11.4
LEAD	5,000	80.6	-	35.2	24.7
MERCURY	200	2.2	-	-	-
SELENIUM	1,000	-	-	-	-
SILVER	5,000	-	-	-	-
Misc. Parameters					
Reactivity		No	No	No	No
Corrosivity (pH)	2 < pH > 12.5	No (8.2)	No (7.7)	No (9.4)	No (9.9)

[1] VOCs, SVOCs, PCB, and pesticide results reported in ug/kg. Assuming 100 percent leaching to extraction fluid, results would be would be less than RCRA criteria.

[2] TCLP leachate data reported in ug/L.

[3] A "-" indicates that a positive detection was not observed.

NA - Not analyzed