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NCBC GULFPORT  
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FINAL WORK PLAN FOR SEDIMENT REMOVAL/SEDIMENT RECOVERY TRAP  
INSTALLATION WITH TRANSMITTAL NCBC GULFPORT MS  
3/27/2003  
TETRA TECH

N4512-3.1.1



**TETRA TECH NUS, INC.**

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PITT-03-3-055

March 27, 2003

Project Number N4512

Commander, Southern Division  
Naval Facilities Engineering Command  
ATTN: Art Conrad (Code ES32)  
2155 Eagle Drive  
North Charleston, SC 29406

Reference: CLEAN Contract No. N62467-94-D-0888  
Contract Task Order 0278

Subject: Transmittal of Final Work Plan  
Sediment Removal/Sediment Recovery Trap Installation  
NCBC Gulfport, Mississippi

Dear Mr. Conrad:

Please find attached one (1) copy of the subject work plan. Copies of this work plan have also been submitted as indicated below. Field operations are tentatively scheduled to start Tuesday, April 1, 2003.

If you have any questions or comments regarding this document, please call me at at (412) 921-8401 or Bob Fisher at (850) 385-9899.

Very truly yours,

A handwritten signature in black ink, appearing to read 'JJB'.

Jason J. Brown  
Task Order Manager  
JJB/jjb

Enclosure

- c: Mr. G. Crane, NCBC Gulfport (two hardcopies)  
Mr. A. Hatfield, AFCEE, Brooks AFB (one hardcopy)  
Mr. R. Merrill, MDEQ (one hardcopy)  
Mr. P. Weathersby, MDEQ (cover letter only)  
Ms. D. Wroblewski (cover letter only)  
Mr. M. Perry/File (one hardcopy)

**WORK PLAN  
SEDIMENT REMOVAL/SEDIMENT RECOVERY TRAP INSTALLATION  
ADJACENT TO THE CANAL ROAD CULVERT  
NAVAL CONSTRUCTION BATTALION CENTER, GULFPORT, MISSISSIPPI**

**INTRODUCTION**

The City of Gulfport, Mississippi is planning to replace two culverts located under Canal Road at the location shown on Figure 1. Sediments to the east of the culverts have been impacted by dioxins resulting from the past storage of Herbicide Orange (HO) at the Naval Construction Battalion Center (NCBC) Gulfport, Mississippi. This Work Plan outlines the activities to be conducted to remove contaminated sediment from channels adjacent to the road/culverts so that City of Gulfport personnel will not be exposed to elevated levels of contamination during the culvert removal project.

This Work Plan has been prepared by Tetra Tech Nus, Inc. (TtNUS) for the Southern Division (SOUTHDIV) Naval Facilities Engineering Command (NAVFAC) under the Navy Comprehensive Long-Term Environmental Action Navy (CLEAN) Program, Contract Number N62467-94-D-0888, Contract Task Order (CTO) 0278.

**PROJECT BACKGROUND**

From 1968 to 1977, Site 8, an area located in the central portion of the NCBC Gulfport, was used by the United States Air Force for the storage of approximately 850,000 gallons of HO. As a result of the spills and leaks that occurred during the years of HO storage, dioxin migrated through the system of on-base ditches to the off-base swampland located across 28<sup>th</sup> Street from Outfall 3 (see Figure 1) and to the east of Canal Road. The only chemical of concern is 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), which is a manufacturing impurity of HO. In this Work Plan, TCDD and other dioxins and furans will be collectively referred to as "dioxin."

**FIELD ACTIVITIES**

Field activities will be performed to remove dioxin-contaminated sediment within and adjacent to the culverts. Specifically, a TtNUS subcontractor will perform the following activities:

- A pressure washer or other methods will be used to remove sediments deposited within the culvert.
- Sediment located east and west of the culverts will be excavated. The sediment east of the culverts is contained within a small channel. The section of the channel to be excavated extends approximately 30 feet east of the road and is an average of 12 feet in width. The top 2 feet of sediment will be excavated. On the western side of the culvert, past analytical results have shown

this area not to be contaminated; however, a small portion of sediment (approximately 3 cubic yards) directly adjacent to the culvert will be excavated as a conservative measure. In total, approximately 30 cubic yards of sediment will be excavated. Photographs of the excavation area are presented in Attachment 1.

- Excavated sediment will be transported to Site 8A at the NCBC Gulfport. The transportation vehicles will be lined with plastic sheeting to prevent the saturated sediments and/or drainage from the sediments from spilling/leaking from the vehicle.
- A sediment recovery trap (SRT) will be constructed at the easternmost extent of the excavation. A detail of the SRT is provided in Attachment 2.

Upon completion of these activities, TtNUS personnel will collect confirmatory samples to determine whether dioxin levels in the remaining sediments are less than the Mississippi Department of Environmental Quality (MDEQ) Tier 1 Target Risk Goal (TRG) of 4.26 ng/kg for unrestricted use. Two confirmatory samples will be collected – one to the west and one to the east of the culverts. The samples will be collected from representative areas to ensure that site workers will not be exposed to dioxin-contaminated sediment during culvert replacement operations. If sample results are found to be below the Tier 1 TRG, no special precautions would be proposed for site workers during the replacement of the culverts.

Excavation activities are not being performed for clean closure purposes at this time but to allow City of Gulfport workers safe access to the the area during the culvert replacement project. Sampling data collected for the culvert area excavation will be used at a future date when clean closure is sought for the other swampland areas affected by HO storage at the NCBC.

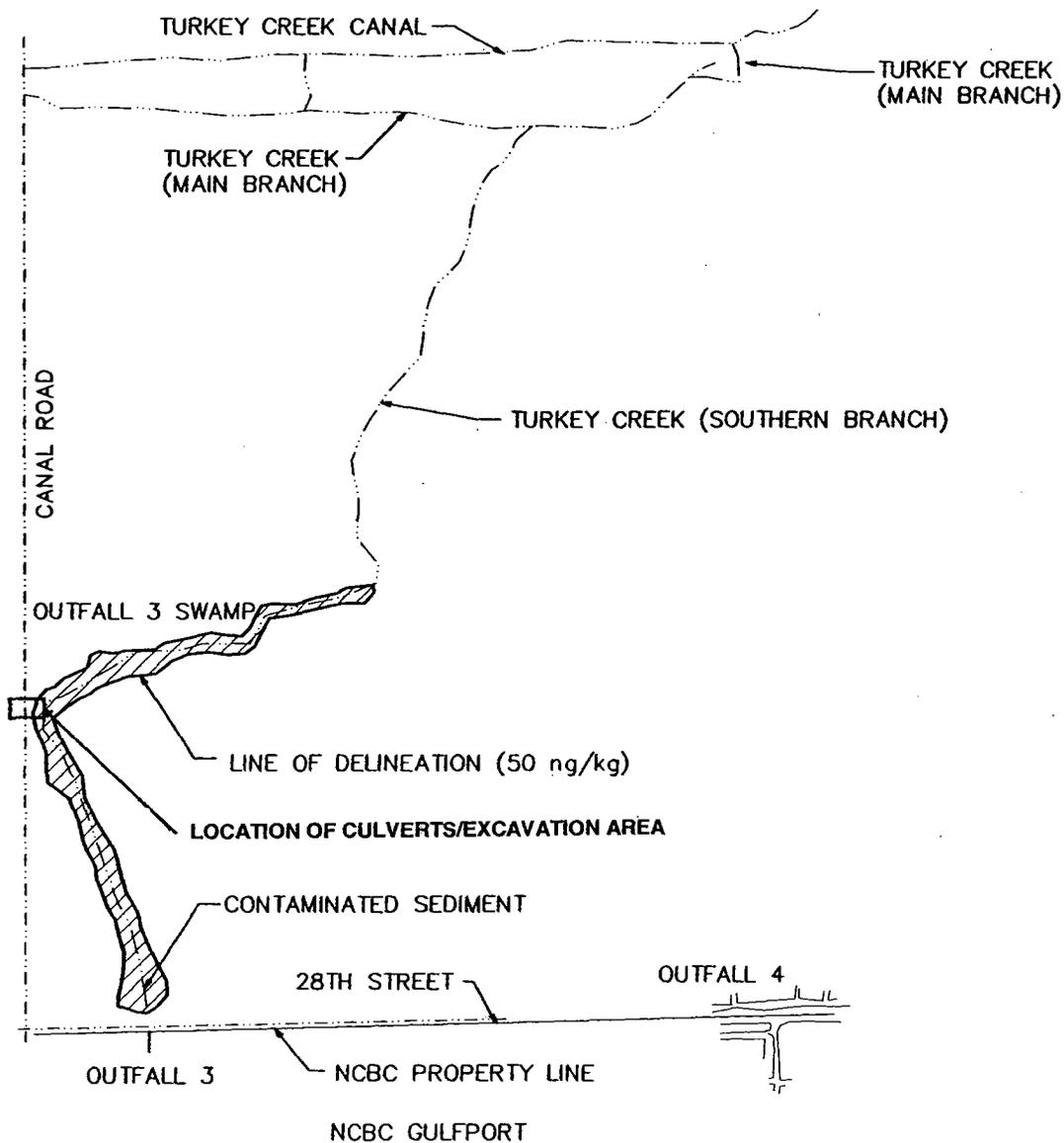
Sediment samples will be analyzed for dioxin using United States Environmental Protection Agency (U.S. EPA) SW-846 Method 8290. Using the individual dioxin and furan isomers obtained from these analysis, toxicity equivalent (TEQ) concentrations of TCDD will be calculated in accordance with the Interim Report on Data Methods for Assessment of TCDD Risks (U.S. EPA, 1989).

At each sample location, one grab sample will be collected from a depth of 0 to 6 inches below ground surface. Sediment will be collected using a stainless steel spoon, mixed in a stainless steel bowl, and transferred to sample jars for analysis. A description of the physical appearance of each sample and sampling location will be recorded on a sample log sheet. Between sampling locations, sampling equipment will be decontaminated. Equipment will first undergo an Alconox® wash and rinse, next an isopropyl alcohol rinse, and finally a de-ionized water rinse.

**REFERENCES**

United States Environmental Protection Agency, 1989. Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and -dibenzofurans (CDDs and CDFs) and 1989 Update. Risk Assessment Forum, Washington, DC, EPA/625/3-89/016.

ACAD:0567CM37.dwg 03/07/03 HJB PIT



SOURCE: REMEDIATION GUIDANCE DOCUMENT, HARDING LAWSON ASSOCIATES, MARCH 2000.

DRAWN BY HJB	DATE 3/7/03
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	



**CULVERT EXCAVATION AREA  
NAVAL CONSTRUCTION BATTALION CENTER  
GULFPORT, MISSISSIPPI**

CONTRACT NO. 0567	
APPROVED BY	DATE
APPROVED BY	DATE

**FIGURE 1**

**ATTACHMENT 1**



East Side of Road: Facing East Toward Canal Road



East Side of Road: Facing West From Road



East Side of Road: Facing Southwest

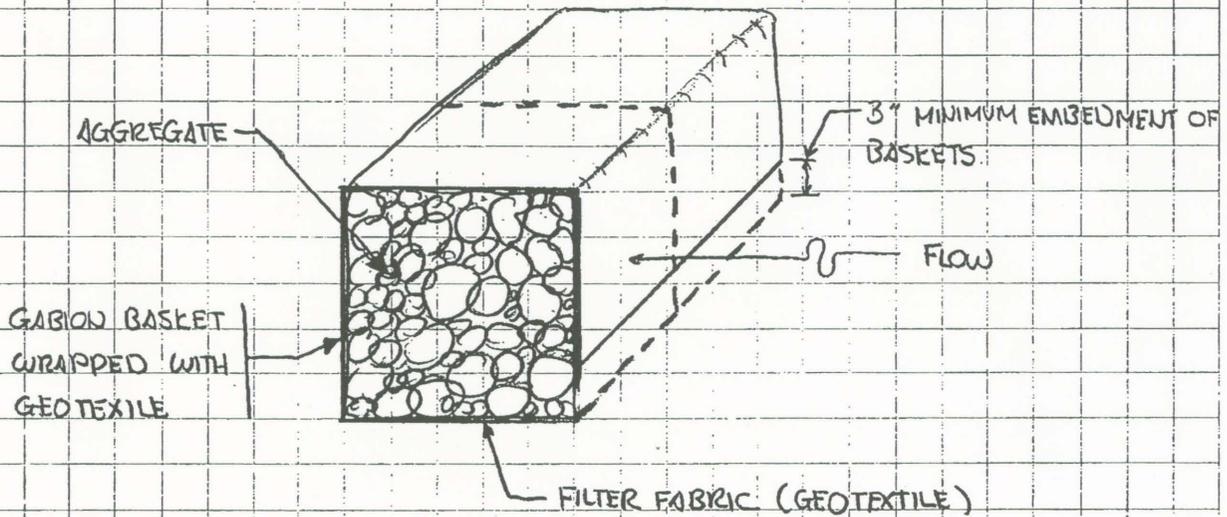


East Side of Road: Facing Southeast

**ATTACHMENT 2**

CLIENT NCBC GULFPORT, MISSISSIPPI		JOB NUMBER	
SUBJECT HAUL ROAD ALIGNMENT DESIGN SKETCHES			
BASED ON		DRAWING NUMBER	
BY TWS 10/28/02	CHECKED BY	APPROVED BY	DATE

DESIGN SKETCH #1 SEDIMENT RETENTION TRAP (SRT)  
(DESIGN SKETCH IS NOT TO SCALE)



- NOTES:
- 1) THE LENGTH OF EACH SRT WILL VARY DEPENDING ON THE TRAP LOCATION.
  - 2) SRT SIZES CAN BE INCREASED BY STACKING GABION BASKETS.
  - 3) GEOTEXTILES SHOULD BE OVERLAPED A MINIMUM OF 6-INCHES IF THE LENGTH OF THE SRT WARRANTS.