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NCBC GULFPORT
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WORK PLAN LETTER FOR PHASE 2 WORK PLAN FOR ADDITIONAL OFF BASE AREAS OF
CONCERN INVESTIGATION NCBC GULFPORT MS
11/14/2008
TETRA TECH NUS

TtNUS/TAL-08-089/0049

November, 14, 2008

Project Number 00521

Commander, Southeast
Naval Facilities Engineering Command Southeast
Attn: Bill Neimes (Code OPGEVR)
Remedial Project Manager
NAS Jacksonville
Jacksonville, FL 32212-0030

Reference: CLEAN Contract No. N62467-04-D-0055
Contract Task Order No. 0049

Subject: Workplan: Phase 2 Additional Offbase AOC Investigation
Naval Construction Battalion Center
Gulfport, Mississippi

Dear Mr. Neimes:

The following workplan letter provides details concerning the sampling in the Off Base Areas of Concern (AOC). The locations described below are named according to the MDEQ letter requesting this action, dated July 12, 2007. Modifications to this workplan letter reflect the comments from MDEQ dated 29 August 2008.

Introduction

Based on our meeting in Jackson, MS, (Jackson) the results from the Phase 1 investigation (Figure 2), and the subsequent communications between the Navy and MDEQ, this workplan letter provides details for the Phase 2 AOC investigation. The site nomenclature will remain consistent with previous investigations and the MDEQ letters requesting action on these areas dated July 12, 2007 and August 29, 2008.

The Phase 2 fieldwork will include the following tasks:

- GPS mapping of the major features included in the study area – including the Turkey Creek soil piles, the drainage system related to the landfill (including the 2 ravines), and

the location of all samples. Given the tree cover and terrain, a high-sensitivity handheld GPS with a helix-type antenna will be used.

- Vertical profile composite sampling of the Turkey Creek piles.
- Additional surface water and sediment samples from AOC's 2, 3, 5, and 6 to evaluate the potential for Herbicide Orange-related dioxin in the drainage systems adjacent to the "Old" and "New" landfills.
- All samples will be analyzed for dioxins/furans following USEPA 8290 methodology.
- No other analytical methods will be used although split samples will be made available for MDEQ if they choose to analyze for additional methods.

The following section provides the details for the Phase 2 sampling. Sampling details are also provided in Table 1.

Sampling and Analysis Plan

AOC 1 – Based on the review of community comments and historical information such as aerial photography, the Navy will take no action at AOC 1 at this time. The Navy will instead rely upon the dioxin results from the drainage systems immediately adjacent to the landfill as described below.

AOC 2 – The samples from the Turkey Creek piles did not contain TCDD and are generally below unrestricted screening levels. The exception is the sample AOC2-SS-07; from a soil pile trending north-south, north of Turkey Creek. This sample contained TCDD and exceeded screening concentrations. The average concentration of the soil piles is currently 5.2 PPT excluding the northern sample. At the meeting in Jackson, MDEQ requested vertical profiling of the Turkey Creek piles.

Field Program: Map the extent of the Turkey Creek piles. Collect vertical composite samples from locations shown on Figure 1. The locations include three (3) from the North/South piles near sample AOC2-SS-07, three (3) from the piles north of Turkey Creek and four (4) from the piles south of Turkey Creek.

AOC 3 – The Trench Disposal Area samples south of Turkey Creek. While Phase 1 sample results were low, additional sampling will be required to more fully investigate these trenches.

Field Program: Map the extent of the two trenches. Collect two (2) co-located sediment and surface water samples just prior to the point of discharge into Turkey Creek and two (2) additional grab samples from the sediment from each trench (Figure 1).

AOC 5 – Turkey Creek Sediment Samples.

Field Program: Collect two (2) additional sediment samples as shown on Figure 1.

AOC 6 – This system encompasses the drainage system around the “Old” and “New” rubbish Landfills. If Herbicide Orange were disposed of or emanating from these landfills, this sediment in this system would be impacted.

Field Program: Completely map the drainage system from the southeastern-most point of the “New” landfill to the junction with the trenches identified as AOC 3. The total distance is approximately 1,800 feet. Existing samples (Figure 2) are limited to the northern and southern extent of this area. Collect six (6) sediment and three (3) surface water grab samples (also shown on Figure 1) to fill the existing data gaps. The sample to the extreme north is now designated under AOC 3 rather than AOC 6.

Table 1 provides a summary of the number and soil/sediment samples and water samples that will be collected and analyzed as discussed in this workplan.

**Table 1
Sampling and Analysis Summary Table**

AOC	Soil/Sediment	Surface Water	Analytical Method
AOC 2	10	0	SW-846 8290
AOC 3	4	2	SW-846 8290
AOC 5	2	0	SW-846 8290
AOC 6	6	3	SW-846 8290
Total	22	5	

Data Analysis and Reporting

Mr. Bill Neimes
Naval Facilities Engineering Command Southeast
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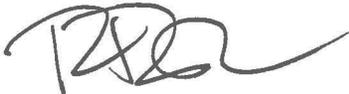
Upon receipt of the USEPA Method 8290 sampling results, the laboratory data will undergo full validation. The results, including all 17 dioxin and furan congeners, will be evaluated using the WHO 2005 congener toxicity equivalency factors. The resulting toxicity equivalency quotients will be screened against MDEQ unrestricted (uTRG) and restricted (rTRG) target remedial goals.

The summary of laboratory results and conclusions will be reported in a letter report format that includes all validated data, summary tables and figures.

The results will also be used to determine if additional remedial action(s) are needed. If necessary, an EE/CA or RD will be developed for MDEQ approval to address unacceptable risk concentrations.

If you have any questions regarding the information presented in this document, please contact me by phone at (850) 385-9899 or via e-mail at robert.fisher@tetrattech.com

Sincerely,



Robert Fisher, P.G.
Task Order Manager

Enclosures

c: Gordon Crane (2 copies)
Debbie Humbert (1 copy)
Mark Perry (1 copy)



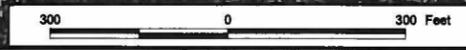
LEGEND

- Proposed Soil and Sediment Sample Location
- ◐ Proposed Co-Located Surface Water Sample Location
- Dredge Pile Vertical Composite Sample Location
- 2 AOC Number
- Drainage System
- Turkey Creek Dredge Piles

DRAWN BY	DATE
S. STROZ	10/24/08
CHECKED BY	DATE
B. FISHER	10/24/08
COST/SCHED-AREA	
SCALE	
AS NOTED	



**PHASE 2 PROPOSED SAMPLING LOCATIONS
AREAS OF CONCERN (AOC) 2,3,5, AND 6
NAVAL CONSTRUCTION BATTALION CENTER
GULFPORT, MISSISSIPPI**



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DRAWING NO. FIGURE 1	REV. 0



<p>AOC5_SD_01 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 3.07 TCDD 0.936 J</p>	<p>AOC2_SS_07 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 17.22 TCDD 1.2</p>	<p>AOC2_SS_06 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 3.63 TCDD 0.368 U</p>	<p>AOC2_SS_05 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 1.10 TCDD 0.259 U</p>
<p>AOC2_SS_01 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 5.80 TCDD 0.239 U</p>	<p>AOC2_SS_02 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 4.29 TCDD 0.239 U</p>	<p>AOC3_SD_02 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 7.11 TCDD 1.92</p>	<p>AOC2_SS_04 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 2.24 TCDD 0.24 U</p>
<p>AOC3_SD_01 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 5.18 TCDD 1.85 J</p>			<p>AOC2_SS_03 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 14.42 TCDD 0.184 U</p>
			<p>AOC5_SD_02 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 7.06 TCDD 1.85</p>

<p>AOC6_SD_02 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 1.92 TCDD 0.222 U</p>
<p>AOC6_SD_01 (0 - 0.5 FT) Dioxins (ng/kg) TEQ (WHO 2005) 1.67 TCDD 0.261 U</p>

LEGEND

- Soil Sample Location
- △ Sediment Sample Location
- Drainage System
- Turkey Creek Dredge Piles

TCDD Tetrachlorodibenzodioxin
TEQ Toxicity Equivalent
NG/KG Nanograms/Kilogram
PG/L Picograms/Liter

DRAWN BY	DATE
S. STROZ	10/24/08
CHECKED BY	DATE
B. FISHER	10/24/08
COST/SCHED-AREA	

SCALE
AS NOTED



**PHASE 1 RESULTS
AREAS OF CONCERN (AOC) 2,3,5, AND 6
NAVAL CONSTRUCTION BATTALION CENTER
GULFPORT, MISSISSIPPI**



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DRAWING NO. FIGURE 2	REV. 0