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NSWC CRANE
5090.3a

DEPARTMENT OF THE NAVY
CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
300 HIGHWAY 361
CRANE, INDIANA 47522-5000

IN REPLY REFER TO:

5090
Ser 095/1418

13 DEC 2001

U.S. Environmental Protection Agency, Region V
Waste, Pesticides, & Toxics Division
Waste Management Branch
Illinois, Indiana, and Michigan Section
ATTN: Mr. Peter Ramanauskas (DW-8J)
77 West Jackson Blvd.
Chicago, IL 60604

Dear Mr. Ramanauskas:

Crane Division, Naval Surface Warfare Center (NSWC Crane) submits the plan for additional soil sampling in the ditches at the Old Rifle Range (ORR - Solid Waste Management Unit 07/09). This plan results from the meeting held between the U.S. Environmental Protection Agency, Navy, Indiana Department of Environmental Management, and Tetra Tech NUS on October 30, 2001. Two copies are provided as enclosure (1). The permit required Certification Statement is provided as enclosure (2).

NSWC Crane point of contact is Mr. Thomas J. Brent, Code 09510, telephone 812-854-6160.

Sincerely,

Thomas J. Brent, acting
James M. Hunsicker
Director, Environmental
Protection Department
By direction of the Commander

Encl:
(1) ORR Additional Soil Sampling Plan
(2) Certification Statement

Copy to:
ADMINISTRATIVE RECORD
SOUTHNAVFACENGCOM (Code ES324) (w/o encl)
IDEM (Doug Griffin)
TTNUS (Roger Clark) (w/o encl)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Thomas J. Blent, acting
SIGNATURE

Environmental Protection Department Manager — 13 DEC 2001
TITLE — DATE

VERIFICATION SAMPLING AT THE OLD RIFLE RANGE (ORR)

A site visit was conducted at the Old Rifle Range on October 30, 2001 for the purpose of observing site characteristics at the ORR. One area of concern was the area around soil boring 16 (SB16) where elevated concentrations of energetics were detected in laboratory samples). Participants at the site visit included the following:

Bill Gates (Remedial Project Manager-SOUTHDIV)
Tom Brent (Environmental Site Manager-NSWC Crane)
Peter Ramanauskas (Project Manager-U.S. EPA Region 5)
Doug Griffin (Indiana Department of Environmental Management)
Ralph Basinski (Base Coordinator-Tetra Tech NUS)

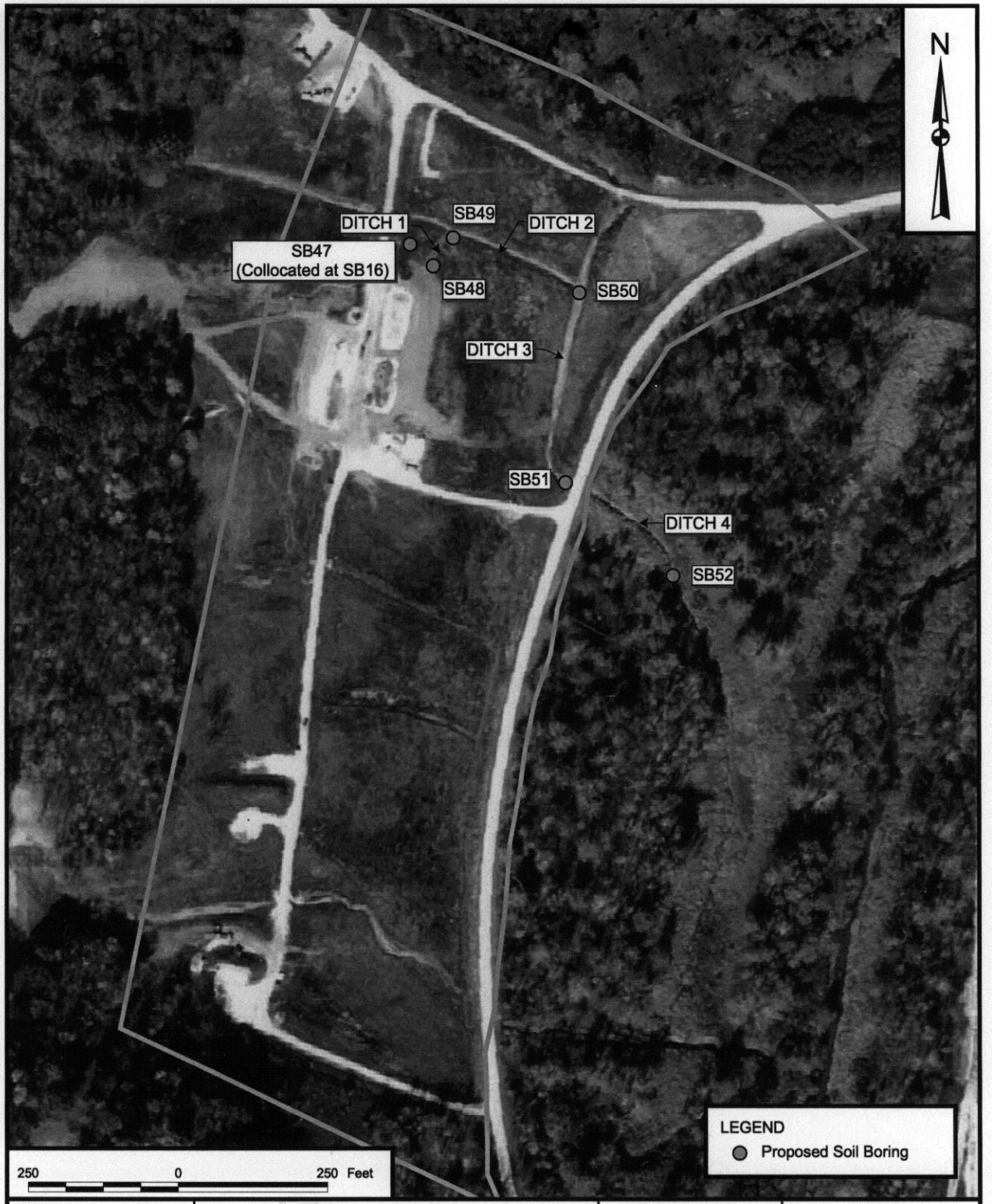
Based on results of soil sampling at the ORR in February 2001, elevated levels of energetics were detected at the extreme northeastern side of the ORR, not far from the yellow-D burn pits. Elevated concentrations were notable especially in the immediate vicinity of soil boring sampling location SB16. Energetics including 2,6-dinitrotoulene and 2,4,6-trinitrotoluene exceeded RBTLs. An in-ground, rusty pipe and valve were observed in the area where the soil sample was collected from SB16. The origin of the piping is unconfirmed but based on conversations with Base personnel, it was suggested that the pipe was connected to the concrete storage pads adjacent to the yellow-D burn pits. Additionally, the NSWC Crane Part B, Subpart X, Rev. IV, Sep 1999 Permit (Section II.A - Process Information, Page 13 of 18) describes the handling of precipitation that accumulated in fabricated devices and makes reference to removal of water which has collected in the sumps of the concrete pads. It is suggested that the piping is associated with this collection system.

Because the piping and valve ended at the head of a draining ditch, it was suggested that soil samples should be collected along the drainageway to verify the presence of contamination. Aerial historical photographs of the ORR were examined to determine if the area immediately adjacent to SB16 had changed significantly through time, which could therefore dictate appropriate locations to collect soil samples. Based on a review of photographs beginning in the late 40's to the present, no significant changes have occurred to the general topography or apparent drainage direction within this area. Based on an examination of recent photographic coverage, a number of drainage ditches at the ORR could serve as overland conduits for contaminants in the surface. The ditches are connected in such a manner that a contaminant found in the surface at SB16 could be transported away from the area by way of the drainage ditches and ultimately exit the site and discharge into nearby Turkey Creek. It is proposed that surface and shallow subsurface soil samples be collected within these drainage ditches to compare to results of the previous sampling and to determine if this contamination is also present in the ditches leading away from the concrete pads.

Figure 1 illustrates the proposed sampling locations for the verification sampling. Six (6) soil borings are proposed for sample collection within the area. The individual segments of the drainage ditches downgradient of SB16 (collocated sample SB47 on Figure 1) are identified as Ditch 1 through Ditch 4. Ditch 4 ultimately discharges into Turkey Creek, which forms a major tributary within the local area.

Seven (7) borings will be advanced using hand augers within the ditches. Six (6) of these locations are shown on Figure 1; the seventh will be selected in the field at the discretion of the field sampler. During the February 2001 sampling event, all subsurface samples were collected using DPT to a depth of four feet bgs. Also during this sampling event, samples were collected for analysis at two discrete sampling intervals, 0 to 1-foot bgs and 2 to 4 feet bgs. In order to have comparable sampling results, it is suggested that the current verification sampling use these same sampling intervals.

The analytes to be included in this verification sampling will include the three energetics from the project-specific chemicals of concern (COC), namely 2,6-dinitrotoulene; 2,4,6-trinitrotoluene; and hexahydro-1,3,5-trinitro-1,3,5,-triazine (RDX). Table 1 lists the sample identification number, location, depth (feet bgs), laboratory analytical parameters, and rationale. All field, laboratory, validation, and reporting procedures will follow the methods described in the previously approved QAPP entitled *SWMU 7 Phase III Soils RFI QAPP, Naval Surface Warfare Center Crane Division, Crane, Indiana, October 2000,* prepared by Tetra Tech NUS.



DRAWN BY J. LAMEY — DATE 12/5/01	Tetra Tech NUS, Inc.	CONTRACT NUMBER 7829	OWNER NO. 0160
CHECKED BY M. FRANCIS — DATE 12/5/01	DRAINAGE DITCH SAMPLING LOCATIONS SWMU 7 - OLD RIFLE RANGE NSWC CRANE, CRANE, INDIANA	APPROVED BY MRF — DATE 12/5/01	
COST/SCHEDULE-AREA		APPROVED BY RAC — DATE 12/5/01	
SCALE AS NOTED		DRAWING NO. FIGURE 1	REV 0

P:\GIS\NSWC_CRANE\7829.APR SWMU 7 (OLD RIFLE RANGE)-PROPOSED DITCH SAMPLING LOCATIONS 12/10/01 JAL

TABLE 1

SUMMARY OF ADDITIONAL SOIL SAMPLING ACTIVITIES
NSWC CRANE, CRANE, INDIANA

Sample I.D.	Sample Location (See Figure 1)	Sample Depth (feet bgs)	Laboratory Analytical Parameters	Sample Rationale
07-SB-47-0001	ORR-Collocated at SB16	0-1	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Confirm SB16 Results
07-SB-47-0204	ORR-Collocated at SB16	2-4	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Confirm SB16 Results
07-SB-48-0001	ORR- At Valve/Pipe Exit	0-1	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Additional Sample for Soils RFI
07-SB-48-0204	ORR- At Valve/Pipe Exit	2-4	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Additional Sample for Soils RFI
07-SB-49-0001	ORR-Confluence of Ditch 1 and Ditch 2	0-1	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Additional Sample for Soils RFI (area of potential sediment deposition)
07-SB-49-0204	ORR-Confluence of Ditch 1 and Ditch 2	2-4	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Additional Sample for Soils RFI (area of potential sediment deposition)
07-SB-50-0001	ORR-Confluence of Ditch 2 and Ditch 3	0-1	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Additional Sample for Soils RFI (area of potential sediment deposition)
07-SB-50-0204	ORR-Confluence of Ditch 2 and Ditch 3	2-4	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Additional Sample for Soils RFI (area of potential sediment deposition)
07-SB-51-0001	ORR-Edge of SWMU Boundary-Ditch 4	0-1	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Additional Sample for Soils RFI (prior to exiting SWMU)
07-SB-51-0204	ORR-Edge of SWMU Boundary-Ditch 4	2-4	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Additional Sample for Soils RFI (prior to exiting SWMU)
07-SB-52-0001	ORR- End of Ditch 4 (off SWMU Boundary)	0-1	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Additional Sample for Soils RFI (prior to entering Turkey Creek)

Sample I.D.	Sample Location (See Figure 1)	Sample Depth (feet bgs)	Laboratory Analytical Parameters	Sample Rationale
07-SB-52-0204	ORR- End of Ditch 4 (off SWMU Boundary)	2-4	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Additional Sample for Soils RFI (prior to entering Turkey Creek)
07-SB-53-0001	ORR-To Be Determined	0-1	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Additional Sample for Soils RFI
07-SB-53-0204	ORR-To Be Determined	2-4	2,4,6-Trinitrotoluene, 2,6-Dinitrotoluene, RDX	Additional Sample for Soils RFI

Notes:
IDW – Investigation Derived Waste
NA – Not applicable
QA/QC sampling requirements are indicated in Table 4-2.
TBD- Sample location to be determined in the field

TABLE 2

SUMMARY OF ADDITIONAL SOIL SAMPLE ANALYSES AND QUALITY CONTROL SAMPLES/MEASUREMENTS OLD RIFLE RANGE NSWC CRANE, CRANE, INDIANA

Parameter	No. of Environmental Samples	No. Field Duplicates[2]	No. of Ambient Condition Blanks[3]	No. of Rinsate Blanks[4, 5]	Source Water Blanks[6]	No. of MS/MSDs[7]	Total No. of Samples[5]	Analysis Method
SOILS								
Old Rifle Range (Old Rifle Range Proper) Laboratory Analyses:								
Energetics	14	2	TBD	1+	TBD	3/3	16+	SW-846 8330

1 Samples shown are for the initial rounds of sampling. Subsequent rounds of sampling will adhere to the same frequencies for QC sample collection but the total numbers of environmental samples and QC samples is likely to differ.
2 Field duplicate samples are collected at a minimum frequency of 1 per 10 environmental samples. Field duplicate soil samples must be selected to represent both sampling depths.
3 Ambient condition blanks will be collected at the discretion of the FOL to monitor site conditions. Because site conditions vary, totals are TBD.
4 Rinsate blanks are collected once per day for each source of final decontamination rinse water. Only one source of final decontamination rinse water is anticipated.
5 Plus sign (+) indicates potential for the total number of samples to increase, because of TBD variables.
6 Source water blanks will be collected at a frequency of 1 per water source per sampling event.
7 Extra sample volume for MS/MSD or MS/laboratory duplicate sample analyses will be collected at a frequency of 1 per 20 samples. For energetics, a MS and a MSD will be analyzed. MS/MSD soil samples must be selected to represent both sampling depths.

MS/MSD Matrix spike/matrix spike duplicate
NA Not Applicable
TBD To be determined

TABLE 3

SUMMARY OF SAMPLE ANALYSES, CONTAINER TYPES AND VOLUMES, PRESERVATION REQUIREMENTS, AND HOLDING TIMES NSWC CRANE, CRANE, INDIANA

Parameter	Sample Matrix	Sample Container	Container Volume	Preservation[1]	Maximum Holding Time[2]	Analytical Methodology
Energetics	Soil	Wide mouth glass with Teflon lid	8 oz[3]	Cool to 4 °C	Extract within 14 days; analyze within 40 days of extraction	SW-846 Method 8330

1 HNO_3 = Nitric Acid.
2 All holding times are from date of collection.
3 One 8-oz jar will provide ample sample volume for energetics analyses. One additional jar will be collected for samples designated for MS/MSD analyses.