DEPARTMENT OF THE NAVY
CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
300 HIGHWAY 361
CRANE INDIANA 47522-5001

IN REPLY REFER TO:

5090
Ser 095/2158
09 MAY 2002

U.S. Environmental Protection Agency, Region V
Waste, Pesticides, & Toxics Division
Waste Management Branch
Corrective Action 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, for your review and approval, the First Quarter 2002 Quarterly Interim Progress Report (IPR) for January 1 through March 31, 2002 dated May 2002. Two copies of the report are provided as enclosure (1). Enclosure (2) is the required certification statement.

NSWC Crane point of contact is Ms. Christine D. Freeman, Code 09511, telephone 812-854-4423.

Sincerely,

James M. Hunsicker

JAMES M. HUNSICKER
Director Environmental Protection Department
By direction
of the Commander

Encls:
(1) IPR 1st QUARTER 2002 (JAN - MAR 2002)
(2) Certification Statement

Copy to:
Administrative Record
IDEM (D. Griffin)
SOUTHNAVFACENGCOM (Code ES32)
SOUTHNAVFACENGCOM ROICC (w/o encls)
TOLTEST Crane (w/o encls)

Naval Facilities Engineering Command
Naval Surface Warfare Center
Crane, Indiana

Full-Scale Operations
Soils Bioremediation Facility

Quarterly Interim Progress Report
1st Quarter 2002
January 1 – March 31

Revision 0
May 2002

QUARTERLY INTERIM PROGRESS REPORT
1st Quarter 2002
January 1 – March 31

Revision 0
May 2002

FULL-SCALE OPERATIONS
SOILS BIOREMEDIATION FACILITY
NAVAL SURFACE WARFARE CENTER
CRANE, INDIANA

ENVIRONMENTAL JOB ORDER CONTRACT
CONTRACT NO. N68950-96-D-0052
TOLTEST PROJECT NUMBER 37324.01

Submitted to:

OFFICER IN CHARGE OF NAVFAC CONTRACTS
NAVAL SURFACE WARFARE CENTER
CRANE, INDIANA

Submitted by:

TOLTEST, INC.
1915 NORTH 12TH STREET
P.O. BOX 2186
TOLEDO, OHIO 43603
(419) 241-7175

Prepared/Reviewed by:
Project Manager/Environmental Specialist

Peter J. Chevalier — 5/7/02
Date

Reviewed/Approved by:
Regional Manager

Lance Parsons — 5/7/02
Date

TABLE OF CONTENTS

Page No.

EXECUTIVE SUMMARY

This interim progress report has been prepared by TolTest, Inc. (TolTest) for Southern Division, Naval Facilities Engineering Command. This report documents the progress at the Bioremediation Facility (Biofacility) for treatment of explosives-contaminated soil at the Naval Surface Warfare Center (NSWC) Crane, Indiana. On March 27, 1999, TolTest assumed responsibility for the excavation and treatment of contaminated soil at the Biofacility. This report summarizes the work actions performed from January 1 through March 31, 2002 pursuant to the requirements of the approved *Full-Scale Operational Plan* and the *Quality Assurance Project Plan*. Full-scale bioremediation operations started in April 1998. All interim measures work actions have been performed in accordance with approved plans.

The scope of work includes initial site characterization by sampling and analysis, excavation and screening of explosives-contaminated soil, transportation of screened soil for treatment to the Biofacility, process monitoring and confirmatory sampling of the compost windrows, and disposal of treated soil.

All initial characterization soil sampling, post-excavation soil sampling, and contaminated soil excavation at Mine Fill A (MFA), Mine Fill B (MFB), and Rockeye (RKI) has been completed.

All contaminated soil has been processed at the Biofacility and transported back to the Solid Waste Management Unit of origin.

Decontamination of the Biofacility has commenced and a majority of the Navy equipment and tools have been turned over to the Navy. The retention ponds were cleaned and the sludge from the ponds was placed in the Middle compost building to dry. The North and South compost buildings, the asphalt areas, and the truck wash facility have been cleaned. Field Clarification Request - Full Scale 036 (FCR-FS036), which clarifies the sampling and analytical procedure to test the effectiveness of the decontamination process, has been approved by Environmental Protection Agency Region V personnel.

1.0 INTRODUCTION

This interim progress report has been prepared by TolTest for the Southern Division, Naval Facilities Engineering Command to document the progress of the full-scale bioremediation operation of explosives-contaminated soil at NSWC Crane, Crane, Indiana. It summarizes the work actions performed by TolTest during the period January 1 through March 31, 2002 pursuant to the requirements of the approved *Full-Scale Operational Plan* (FSOP) [MK, 1998a] and the *Quality Assurance Project Plan* (QAPP) [MK, 1998b]. Full-scale bioremediation operations started in April 1998. TolTest assumed responsibility on March 27,1999 from Morrison Knudsen Corp. (now Washington Group International, WGI) after the completion of their contract.

NSWC Crane, located in southwestern Indiana, provides support for equipment shipboard weapons systems, and ordnance. This site also supports Crane Army Ammunition Activity, which includes production and renovation, storage, shipment, and demilitarization and disposal of conventional ammunition. Explosive-compounds contaminated soils resulting from the above operations have been identified at four solid waste management units (SWMUs): Ammunition Burning Ground (ABG, SWMU-03/10); Rockeye Munitions Facility (RKI, SWMU-10/15); Mine Fill A (MFA, SWMU-12/14); and Mine Fill B (MFB, SWMU-13/14). No work has been performed at ABG pending the outcome of a risk assessment study.

On-site bioremediation of the high-explosives contaminated soil utilizing a windrow composting process has been selected as the preferred treatment alternative for the Interim Measures at these four SWMUs.

The scope of work includes initial site characterization by sampling and analysis, excavation and screening of explosives-contaminated soil, transportation of screened soil for treatment at the Biofacility, process monitoring, confirmatory sampling, disposal of treated soil, and site restoration. All work at MFA has been completed and has been included in the Interim Measures Report (IMR) for MFA prepared by WGI. TolTest has completed all work at MFB and RKI and will present the data in future IMRs.

2.0 EXCAVATION SITE ACTIVITIES

Work activities at the excavation site may include in-process sampling and screening, pre and post-excavation sampling, soil excavation, soil screening, and vegetation establishment. Fieldwork activities are performed in accordance with procedures included in the *FSOP* [MK, 1998a] and the *QAPP* [MK, 1998b]. Final drawings showing grid locations, post-excavation sample locations, and extent of excavation will be included in the IMRs.

2.1 Pre-Excavation Soil Sampling

Pre-excavation sampling is performed to provide initial site characterization and delineate the extent of contamination. The horizontal boundaries of contamination are influenced by the presence of buildings, roads, railroad tracks, and grids with either no detectable levels of contaminants or levels that are below the cleanup goals.

All pre-excavation sampling at MFA, MFB, and RKI was completed prior to this reporting period.

2.2 In-Process Excavation Soil Sampling

All field screening of in-process excavation soil samples for MFA, MFB, and RKI was completed prior to this reporting period.

2.3 Post-Excavation Soil Sampling

All post-excavation samples for MFA, MFB, and RKI were obtained prior to this reporting period.

2.4 Soil Excavation and Screening

Soil excavation operations at all three SWMUs are now complete. All contaminated soil has been processed in windrows at the Biofacility. Full-scale operations soil excavation quantities can be found in Table 1.0.

3.0 BIOFACILITY OPERATIONS

Treatment of high-explosives contaminated soil by composting involves microbial degradation of the explosives by optimizing the availability of organic material, temperature, moisture content, pH, and oxygen. The composting operation process description is provided in Section 5.0 of the approved *FSOP* [MK, 1998a].

3.1 Amendments

The compost mix used in full-scale operations consists of 25% soil, 15% chicken manure, and 60% straw by volume.

3.2 Windrow Construction and Treatment

All windrow composting operations are complete and all contaminated soil has been processed prior to this reporting period. Windrow N-216, the last windrow to be processed, met residential standards and was hauled to the Permanent Placement Area at MFB in the previous reporting period and graded during this reporting period (see Table 2 and Figure 1).

3.3 Retention Pond Maintenance

Retention pond monitoring and water control is an ongoing maintenance item at the Biofacility. Sufficient quantities of pond water were pumped into the sewer system so that pond overflows were not a concern during this reporting period.

3.4 Facility Decontamination

Decontamination of the compost buildings and the Navy equipment and tools commenced during this reporting period. All of the equipment was power washed and the tools were cleaned so that no visible dirt remained. All Navy tools and equipment (except for the backhoe) were inspected by Navy personnel on March 8, 2002 and all tools were placed in a locked storage container at the Biofacility. The equipment is being stored in the North compost building.

The inside and sumps of the North and South compost buildings were power washed with the aid of a man-lift. The Middle building was not cleaned because it is being used to contain the sediments and sludge from decontaminating the compost buildings and the retention ponds.

The water generated from power washing the buildings was either containerized for eventual disposal into the sewer system or pumped along with any sediments onto the floor of the Middle building. A sampling protocol for determining whether or not the decontamination procedure used on the compost buildings was satisfactory had not been approved during this reporting period.

The asphalt area was power washed and the water was containerized for eventual disposal into the sewer system. The sediments were trapped at the weir of each retention pond and placed in the Middle compost building.

The truck wash bay and sump were power washed and the sludge from the sump was placed in the Middle compost building.

Both retention ponds were cleaned and power washed during this reporting period. The sludge and sediment from the ponds was pumped onto the floor of the Middle compost building. During the cleaning process, three to four small tears (no larger than one inch long) were observed in the liner of each pond. Repairs could not be completed at the time of cleaning since the pond valves had to remain closed and the ponds began filling with rain water shortly after they were cleaned. Repair of the tears will take place when the ponds are emptied and cleaned for the last time and the discharge valves can be left opened.

To facilitate cleaning of the ponds, the groundwater under the pond liners was pumped into the adjacent drainage ditch. This allowed the workers to walk on a flat, hard surface instead of walking on a cushion of water. To accomplish this, the liner was cut at the top of the bank above the high water line and a pipe was inserted between the liner and the pond walls. A suction hose was then inserted into the pipe into the groundwater which was then pumped off. A permanent boot will be installed at the end of the project at the time the tears in the liners are repaired.

The water and sludge in the Middle compost building will be allowed to evaporate and dry at which time the sludge will be sampled for disposal characterization. After the sludge is removed, the Middle building will be decontaminated.

4.0 ANALYTICAL DATA INTERPRETATION AND VALIDATION

All windrows have been processed prior to this reporting period. The only analytical samples obtained during this reporting period were of decontamination water contained in storage tanks or retention pond water samples.

All data associated with these sampling events were verified, and at least 10% of the samples were validated and compared with field and laboratory quality control (QC) sample data to assess the data's usability for supporting full-scale operations. Data was verified by reviewing chain-of-custody forms, sample preservation records, analytical holding times, requested turnaround times, sample data in comparison to QC data, and reporting requirements. In addition, more than 10% of the data was validated using the validation procedures specified in Section 9.2.2 of the *QAPP*.

Laboratory QC consists of method blank, sample matrix spike (MS), sample matrix spike duplicate (MSD), surrogate, laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) analyses to evaluate laboratory accuracy and precision. Laboratory quality control was performed consistent with the requirements of the QAPP. Method blanks, LCS, LCSD, MS/MSD, and surrogates were acceptable in every analytical batch. Comparing the analytical reporting limits to the industrial and residential clean-up levels, the data is determined to be acceptable to show that clean-up goals have been successfully met.

Based on technical review of the field and laboratory QC data, analyses were performed within acceptable accuracy and precision requirements specified in the *QAPP*. The confirmation data meets the project's data quality objectives and are therefore considered usable to support full-scale operations.

5.0 DISPOSITION OF TREATED SOIL AND SITE RESTORATION

All Treated soil (compost) has been transported back to the SWMU of origination. The compost was placed either in the permanent storage areas or used as backfill in the open excavations. Disposal activity is listed in previous quarterly progress reports and will be summarized in the IMR for MFB and RKI. Site restoration (seeding, mulching, and watering) has been or will be implemented at all areas where TolTest has backfilled treated soil.

6.0 STATUS OF VARIOUS REPORTS

A response to comments for the Toxicity Report for Rockeye Soils is due to the Navy in early May of 2002. The IMR for RKI Soils is under review by the EPA and the IMR for MFB Soils is due to the Navy by June 4, 2002.

7.0 QUALITY CONTROL

Quality control inspections during this reporting period were conducted almost exclusively at the Biofacility since most field work was previously completed. Quality control checks were performed at required intervals using the field inspection checklists provided in Appendix F of the approved *Full-Scale OP* [MK, 1998a]. Copies of all inspection records are maintained at the Biofacility office.

During this period 138 individual items were verified and no deficiencies were identified. Immediate actions were taken to correct any minor findings observed.

8.0 SAFETY AND INDUSTRIAL HYGIENE

8.1 General Safety

During this period 2,293.0 man-hours were expended by TolTest. There were no OSHA recordable injuries. The project has a cumulative total of 72,021.0 man-hours by the end of this reporting period.

Thirteen formal safety inspections were performed during this quarter. No significant findings of an imminent or serious nature were found. Immediate actions were taken to correct any minor findings observed. Daily informal walk-around safety inspections reinforced and improved the workers safety performance.

8.2 Industrial Hygiene Sampling

No airborne monitoring for ammonia was performed during this reporting period and no explosives monitoring was conducted since composting operations were concluded prior to this reporting period.

No wipe sampling for explosive residues was performed at the Biofacility during this reporting period but wipe samples will be collected at the conclusion of facility decontamination.

No noise monitoring was performed during this quarter. Prior monitoring has concluded that associates are required to wear hearing protection while working around heavy equipment, which is when noise levels are likely to exceed 85 dBa during a weighted network steady state, or 140 dBa impulse, regardless of the duration of exposure.

9.0 FACILITY MAINTENANCE AND REPAIRS

The following maintenance and repairs were performed during this reporting period:

- Repaired hydraulic lines Kobelco excavator
- Repaired a tire on the John Deere tractor
- Changed oil in all water pumps
- Repaired two water pumps
- Greased the CAT backhoe
- Performed warranty work on the Kobelco excavator

10.0 REFERENCES

MK, 1998a. *Full-Scale Operational Plan for Soils Bioremediation Facility, NSWC Crane, Crane, Indiana.* Delivery Order Number 0009, Contract Number N62467-93-D-1106. Prepared by Morrison Knudsen Corporation, Environmental Services Group. Revision 2, March 12, 1998.

MK, 1998b. *Quality Assurance Project Plan for Full-Scale Operations, Soils Bioremediation Facility, NSWC Crane, Crane, Indiana.* Delivery Order Number 0009, Contract Number N62467-93-D-1106. Prepared by Morrison Knudsen Corporation, Environmental Services Group. Revision 2, March 12, 1998.

TABLES

Table 1.0
FULL-SCALE OPERATIONS SOIL EXCAVATION QUANTITIES
January through March 2002
Quantity (Tons)

Period	Mine Fill A	Mine Fill B	Rockeye	MFA Battery	Cumulative
Previously reported	21,045.39	22,115.20	1,272.68	18.01	44,451.28
January	0	0	0	0	44,451.28
February	0	0	0	0	44,451.28
March	0	0	0	0	**44,451.28**
Reporting Period Total	0	0	0	0	0
Site Totals	21,045.39	22,115.20	1,272.68	18.01	

TABLE 2
WINDROW PROCESS SCHEDULE

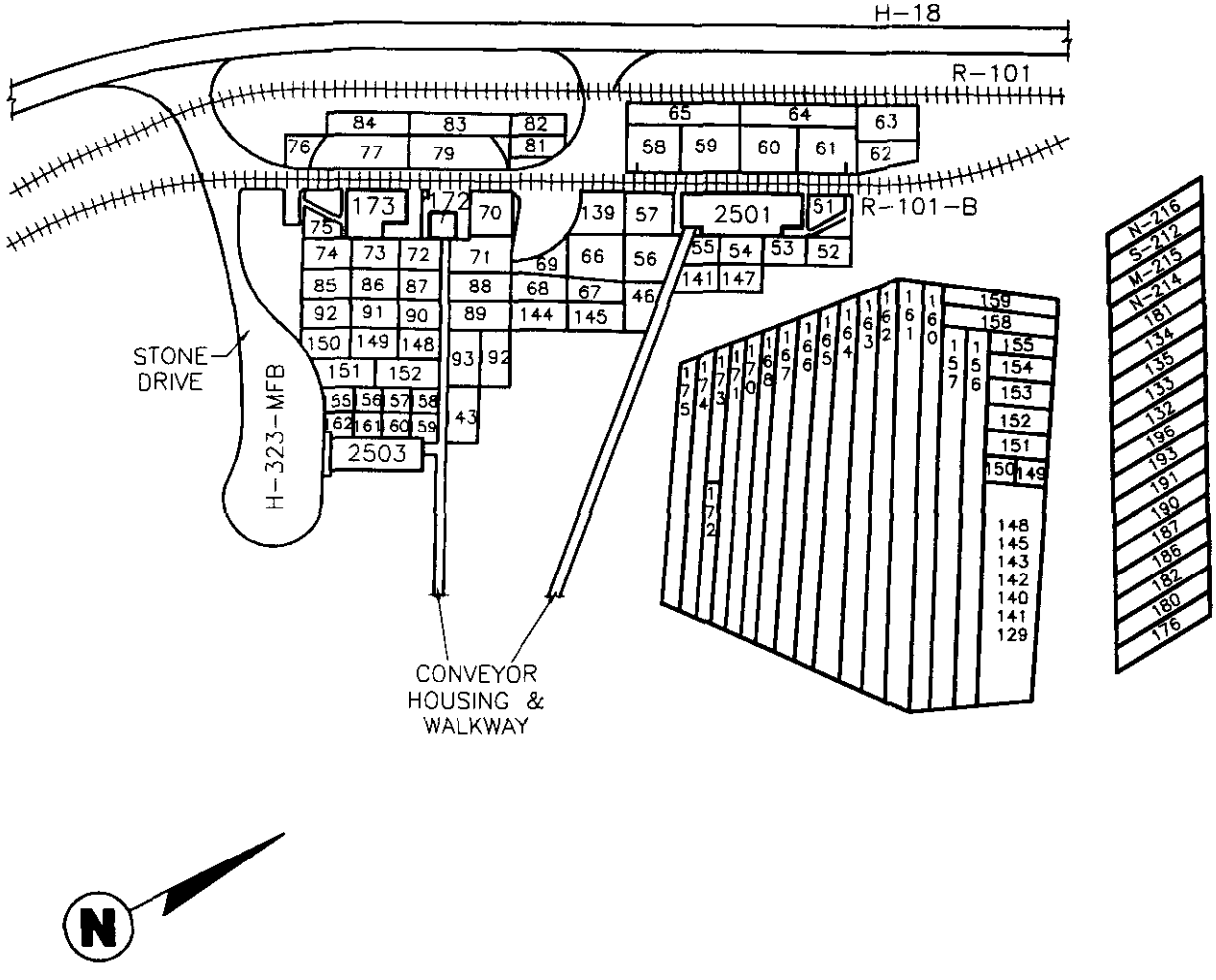
Windrow #	Start Date	Day Zero	Day Last	Lab Results Received	Complete Unload	Ton Processed	Soil Qty Ton Processed	Processed to Residential or Industrial Levels	Compost Disposal Location	Grid Disposal Locations
N-216	12/3/01	12/3/01	12/20/01	1/3/02	1/7/02	232.1	36,291.8	Residential	MFB PPA	Na

* = Resampled windrow, previously reported

PPA = Permanent Placement Area

Na = not applicable

FIGURE



MEASUREMENTS ARE APPROXIMATE
NOT TO SCALE

LEGEND

(R) – RESIDENTIAL
(I) – INDUSTRIAL

010102–033102 QUARTERLY REPORT

FIGURE 1
MFB GRID AND WINDROW LOCATION MAP

BACKFILL OPERATIONS
MINE FILL B – PERMANENT PLACEMENT AREA
NAVAL SURFACE WARFARE CENTER
CRANE, INDIANA

PREPARED FOR

NAVAL FACILITIES ENGINEERING COMMAND
NSWC CRANE, IN

DRAWN MRC/3-2-01	DRAWING NO.: 37324-02 Q1	
REVISED MRC/5-2-02	CHKD:	APPR:
JOB NO.: 37324.01		
SHEET NUMBER 1 of 1		

TOLTEST, INC.

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.

James M. Hamit

SIGNATURE

DIRECTOR, ENVIRONMENTAL PROTECTION DEPARTMENT
BY DIRECTION OF THE COMMANDER

TITLE

5/6/02

DATE