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Interim Measures Report
Removal and Bioremediation of Contaminated Soil from Rockeye Munitions Facility SWMU 10/15

Full-Scale Bioremediation
NSWC Crane
Crane, Indiana

Revision 1

June 2002

Southern Division
Naval Facilities Engineering Command
North Charleston, South Carolina
29419-9010

TOLTEST, INC.

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

IN REPLY REFER TO:

5090
Ser 095/2113
03 APR 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 review and approval the Draft Interim Measures Report (IMR) for Rockeye (RKI), dated March 2002. Two copies of the report are included 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

Encl:
(1) Draft IMR for RKI
(2) Certification Statement

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

INTERIM MEASURES REPORT
REMOVAL AND BIOREMEDIATION OF CONTAMINATED SOIL FROM ROCKEYE MUNITIONS FACILITY SWMU 10/15

FULL-SCALE BIOREMEDIATION
NSWC CRANE
CRANE, INDIANA

Revision 1

June 2002

ENVIRONMENTAL JOB ORDER CONTRACT
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DELIVERY ORDER #FC08
TolTest Job No. 37324.09

Prepared for

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6/5/02

Lance Parsons — Date
Regional Manager

EXECUTIVE SUMMARY

This interim measures report has been prepared by TolTest, Inc. (TT) for Southern Division, Naval Facilities Engineering Command. This report documents the actions completed for the identification, removal, and treatment through bioremediation of explosives-contaminated soil Rockeye Munitions Facility, Solid Waste Management Unit 10/15, at Naval Surface Warfare Center Crane, Crane, Indiana, and the subsequent on-site backfill of the treated material. The report summarizes the work actions performed pursuant to the requirements of the approved *Full-Scale Operational Plan* [MK, 1998a] and the *Quality Assurance Project Plan* [MK, 1998b]. The field work was performed by TT from January 2000 to October 2001.

The scope of work included the following:

- Collection and analysis of 96 initial site characterization samples from 34 grids of potentially-impacted soil.
- Excavation and screening of 1,273 tons of explosives-contaminated soil and 20 tons of rocks identified during site characterization.
- Collection and analysis of 22 post-excavation confirmation samples that included sampling of excavations to verify that all soil exceeding the cleanup goals was removed (to the extent possible).
- Transportation of excavated, screened material to the on-site Bioremediation Facility for treatment.
- Treatment of the contaminated material at the Bioremediation Facility through composting to reduce the levels of the contaminants of concern to below the target cleanup goals.
- Confirmatory sampling of treated material to ensure cleanup goals were achieved. All treated material met residential cleanup levels for the constituents of concern.
- Transportation of approximately 2,237 tons of treated soil compost back to RKI for use as backfill.

All interim measures work actions have been completed in accordance with the approved plans and approved field changes. No further interim measures action is recommended for this site.

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ACRONYMS

°C	degrees Centigrade
2A46DT	2-amino-4,6-dintrotoluene
24DNT	2,4-dinitrotoluene
26DNT	2,6-dintrotoluene
2NT	2-nitrotoluene
3NT	3-nitrotoluene
4NT	4-nitrotoluene
4A26DT	4-amino-2,6-dintrotoluene
ABG	Ammunition Burning Ground
ACOE	Army Corps of Engineers
Biofacility	Bioremediation Facility
CFR	Code of Federal Regulations
dBa	decibels
DNB	1,3-dinitrobenzene
EPD	Environmental Protection Department
FCR	Field Change Request
FSOP	Full-Scale Operational Plan
HMX	cycloteremethylenetetranitramine
IAC	Indiana Administrative Code
ICS	Initial characterization sampling
IM	Interim Measure
IMR	Interim Measures Report
LCS	laboratory control spike
LCSD	laboratory control spike duplicate
LOQ	limit of quantitation
MFA	Mine Fill A
MFB	Mine Fill B
MK	Morrison Knudsen Corporation
Mg/kg	micro grams per kilo gram
MS	matrix spike
MSD	matrix spike duplicate
MSDS	material safety data sheets
NB	nitrobenzene
NPDES	National Pollution Discharge Elimination System
NSWC	Naval Surface Warfare Center
PETN	Pentaerylthritol tetranitrate
PEL	permissible exposure limit
PES	post excavation samples
PPE	personnel protective equipment
QAPP	Quality Assurance Project Plan
QC	quality control

ACRONYMS (continued)

RDX	cyclotrimethylene trinitramine
RKI	Rockeye Munitions Facility
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SOP	standard operating procedure
SVOC	semi-volatile organic compound
SWMU	solid waste management unit
TLV	Threshold Limit Value
TNT	2,4,6-trinitrotoluene
TNB	trinitrobenzene
Tetryl	methyl-2,4,6-trinitro phenylnitramine
TCLP	toxicity characteristic leaching procedure
TT	TolTest, Inc.
TtNUS	Tetra Tech NUS
U.S.EPA	United States Environmental Protection Agency
ug/L	micrograms per liter
VOC	volatile organic compound
WHC	water holding capacity

1.0 INTRODUCTION

This interim measures report (IMR) has been prepared by TolTest Inc. (TT) for Southern Division, Naval Facilities Engineering Command. This report documents the actions completed at Rockeye Munitions Facility (RKI), Solid Waste Management Unit (SWMU) 10/15, Naval Surface Warfare Center (NSWC) Crane, Crane, Indiana, for the identification, excavation, on-site treatment through bioremediation (composting) of explosives-contaminated soil, and on-site backfill of the compost. This IMR summarizes the work actions performed pursuant to the requirements of the approved *Full-Scale Operational Plan* [MK, 1998a] (FSOP) and the *Quality Assurance Project Plan for Full-Scale Operations, Soils Bioremediation Facility* [MK, 1998b] (QAPP). The field work was performed by TT from January 2000 to October 2001. Eight quarterly progress reports were generated by TT to document the work completed during this time period. Information provided in the progress reports and various field documentation were used in developing this IMR.

NSWC Crane, located in southwestern Indiana (Figure 1-1), 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 soil resulting from the above operations have been identified at Ammunition Burning Ground (ABG, SWMU 03/10), Mine Fill A (MFA, SWMU 12/14), Mine Fill B (MFB, SWMU 13/14), and RKI.

To reduce or eliminate the potential for contaminant migration, NSWC Crane evaluated its 31 SWMUs to determine which ones would be amenable to accelerated cleanup actions, otherwise known as Interim Measures (IM). NSWC Crane submitted a proposal to the United States Environmental Protection Agency (U.S. EPA) to conduct IM cleanup actions at selected SWMUs. RKI and the other three SWMUs mentioned above were identified for IM cleanup due to explosive contaminants in the soil.

Based on past success at other Department of Defense facilities, as well as other factors (including cost and contaminated soil transportation requirements), excavation and on-site ex-situ bioremediation of the contaminated soils was selected as the preferred treatment alternative for the IM at MFA, ABG, MFB, and RKI. Bioremediation has proven to be successful at other sites having explosive contaminated materials [Weston, 1993].

SWMU 33/00 was identified as the treatment location for the affected soil, to be known as the Bioremediation Facility (Biofacility). The Biofacility was constructed by Morrison Knudsen, Corp. (MK) from March 1996 to June 1997. The Biofacility area is a 5½-acre complex located in the southwest quadrant of NSWC Crane near the Crane Landfill as shown on Figure 1-2. It is comprised of three compost buildings each measuring 300 feet long by 70 feet wide by 18 feet tall, a vehicle decontamination facility, two lined storm-water collection ponds, a diesel storage tank, amendment storage area, and a field laboratory and administration facility. A description of the facility is provided in Section 3.0 of the *FSOP* [MK, 1998a] and the details of the facility are included in the *Construction As-Built Report* [MK, 1998c].

The first phase of the IM process consisted of a pilot-scale bioremediation operation that evaluated several mix recipes and provided lessons learned, a final recipe for full-scale operation, and cleanup goals for treated soil. Results and discussions of the pilot-scale operations are provided in the *Pilot-Scale Treatability Test Report* [MK, 1998d]. The second phase of the IM process consisted of excavating impacted soils and full-scale operation of the Biofacility for treatment of the soils. This IMR documents the identification, excavation, and treatment of 1,278.62 tons of explosives contaminated soil from RKI and subsequent backfill of approximately 2,237 tons of treated soil compost.

FIGURE 1–1

NSWC CRANE VICINITY MAP

ROCKEYE INTERIM MEASURES REPORT
NAVAL SURFACE WARFARE CENTER
CRANE, INDIANA

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DRAWING NUMBER 3732409-040	

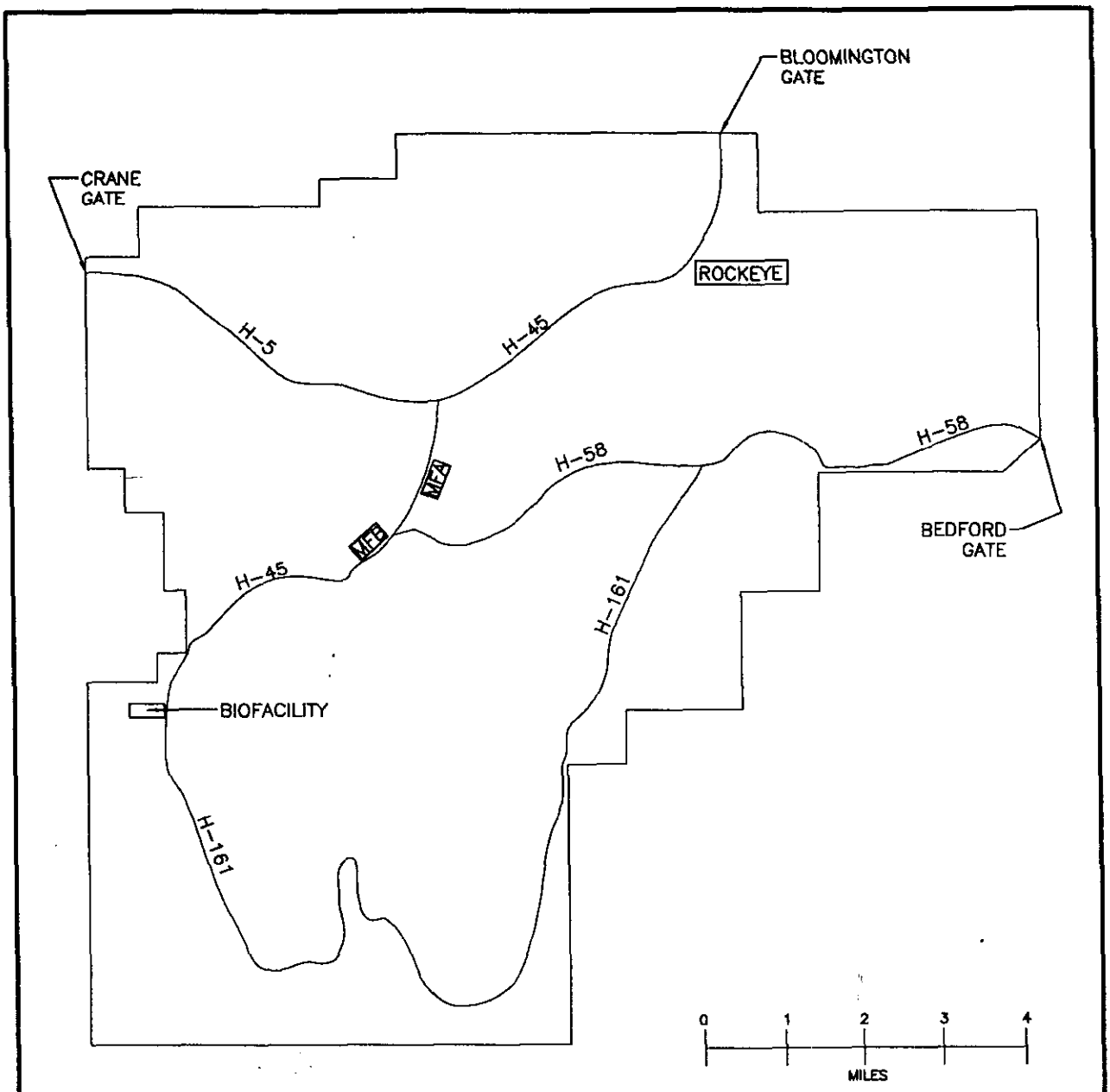

FIGURE 1-2

NSWC CRANE AREA MAP

ROCKEYE INTERIM MEASURES REPORT
NAVAL SURFACE WARFARE CENTER
CRANE, INDIANA

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DRAWING NUMBER 3732409-030	

1.1 SITE BACKGROUND

RKI, an active site, is an operational ammunition facility and not a storage, treatment, or disposal site. RKI is a 10-acre site located on a flattened ridge crest that separates Sulphur Creek and Boggs Creek in the north-central portion of the Base. The site is located on Highway 45, approximately 2 miles south of North Gate No. 1. The site map for SWMU 10 is presented as Figure 1-2.

Operations at the site began in the mid-1950s as a press-loading operation for 3-inch projectiles using Composition A-3 explosive (RDX and wax). In 1967 and 1968, the munitions facility was converted to a case-filling operation for the production of the MK20 series antitank RKI cluster bomb. The RKI bomb is a 500-pound unit that contains 247 steel-cased bomblets, each holding a 0.4-pound blend of Octol Type II and Composition B high explosives. Octol Type II contains 70 percent HMX (octahydro-1,3,5,7-tetranitro-1,2,5,7-tetrazocine, which is cyclotetramethylene tetranitramine) and 30 percent TNT (2,4,6-trinitrotoluene). Composition B is 60 percent RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine, which is cyclo-trimethyl-trinitramine or "cyclonite"), 39 percent TNT, and 1 percent wax. The wax is used as a desensitizer.

As part of loading operations, the production facility generated a large volume of explosive-contaminated wastewater, which was collected in sumps surrounding the buildings at the site. The sumps were periodically pumped and the residue was trucked to the Ammunition Burning Ground for treatment. Prior to 1978, when the sumps became full of explosive-contaminated wastewater, the wastewater was discharged via drainage pipes to the local intermittent tributaries located near the site. On the northern and eastern sides of the production facility, the wastewater was released to tributaries of Sulphur Creek, on the southern side the water was released to Turkey Creek, and on the western side the water was released to a tributary of Furst Creek.

In the spring of 1978, an activated carbon water treatment facility (Building 3044) was constructed to purify the wastewater for recycled usage. In addition to a water treatment system, a scrubber system to remove contaminated particulates was designed and installed. In the tray wash area of the production facility, explosive-contaminated trays are steam cleaned. Before the scrubber was installed, emissions were discharged directly to the atmosphere outside the production buildings. With the installation of the pollution abatement equipment, the release of explosive-contaminated waters has been eliminated.

The RKI Area has recently been re-named the Ordnance Renovation Complex to reflect its change in operations. Current operations include load, assemble, and pack of cast-load explosive items, renovation and painting of projectiles, and disassembly/demilitarization of munitions. Building 3044 continues to be used for treatment of explosive-contaminated waters.

The areas where soil was suspected to be impacted were around the sumps (identified as Sumps 1 – 9 on Figure 1-3), under a vent at B-2728, around B-3045, and between B 2733 and B-2734. The sumps and the pre-treatment facility at B-3045 were known to have overflowed with contaminated water. The soil against the blast wall between B-2733 and B-2734 was visibly contaminated from vents mounted on top of the blast wall.

The constituents of concern for RKI include compounds that were identified in the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Phase II Soils Report for RKI [ACOE, 1992]. Additional compounds were added to those identified in the RFI based on generator knowledge and process operations at RKI to ensure that solvent-contaminated soil, or characteristic wastes, were not transported to the Biofacility for composting. Compounds identified from both sources are included in Table 1-1.

TABLE 1-1
ROCKEYE CONSTITUENTS OF CONCERN

Explosive Compounds	
• Pentaerylthritol tetranitrate (PETN)	• 4-amino-2,6-dintrotoluene (4A26DT)
• 2,4,6-trinitrotoluene (TNT);	• 2-amino-4,6-dintrotoluene (2A46DT)
• cyclotrimethylene trinitramine (RDX)	• 2,4-dinitrotoluene (24DNT)
• cycloteremethylenetetranitramine (HMX)	• 2,6-dintrotoluene (26DNT)
• tetryl; trinitrobenzene (TNB)	• 2-nitrotoluene (2NT)
• 1,3-dinitrobenzene (DNB)	• 3-nitrotoluene (3NT)
• nitrobenzene (NB)	• 4-nitrotoluene (4NT)
Metals	
• Aluminum	• Cobalt
• Antimony	• Copper
• Arsenic	• Lead
• Barium	• Mercury
• Beryllium	• Nickel
• Cadmium	• Zinc
• Chromium	
Volatile Organic Compounds (VOCs)	
• 1,1,1-trichloroethane	• 1,1,2-trichloroethane
• trans-1,3-dichloropropene	• xylenes
Semi-Volatile Organic Compounds (SVOCs)	
• Fluoranthene	• Pyrene
• Phenanthrene	

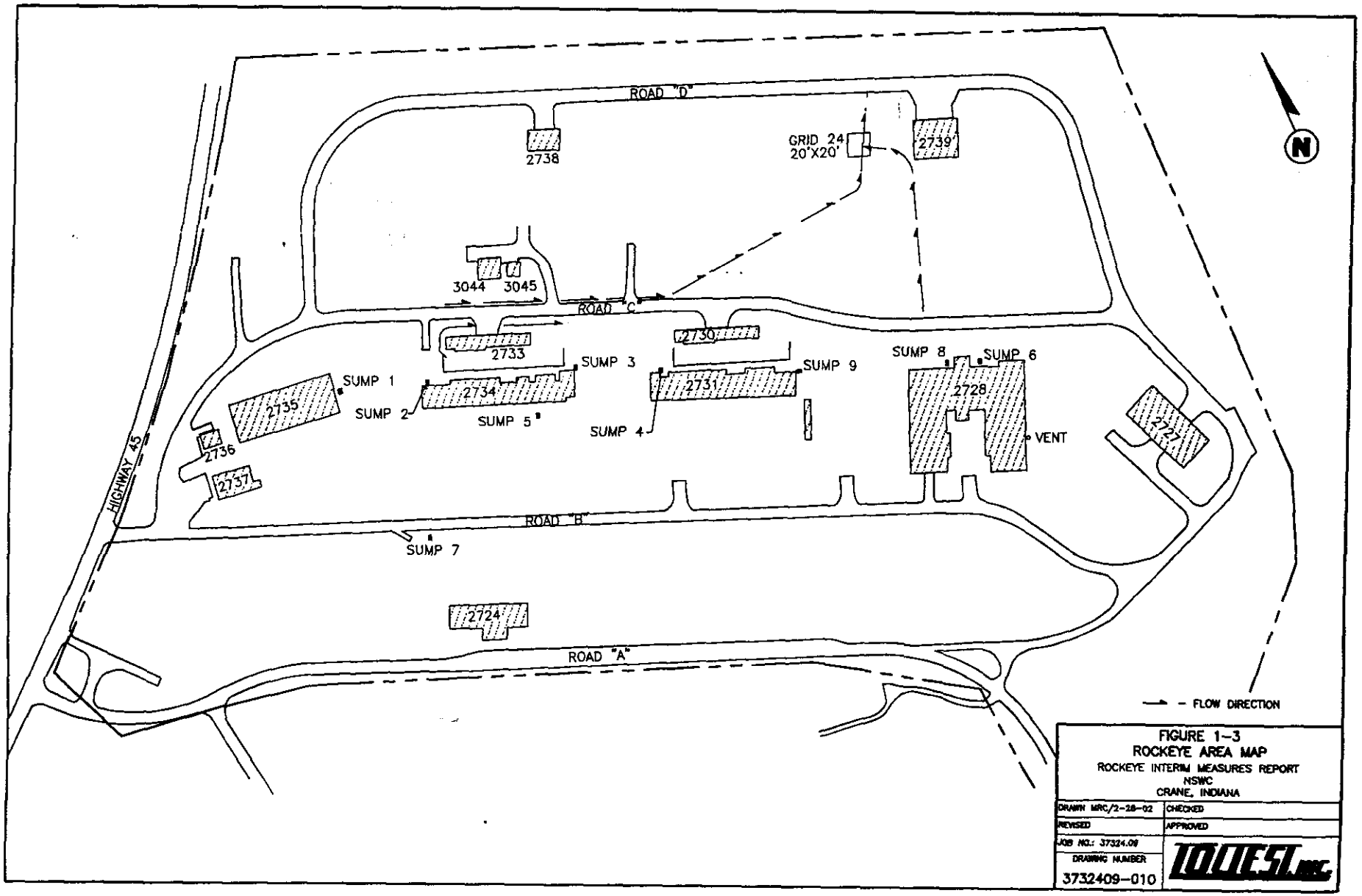

FIGURE 1-3
ROCKEYE AREA MAP
ROCKEYE INTERIM MEASURES REPORT
NSWC
CRANE, INDIANA

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REVISED	APPROVED
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DRAWING NUMBER 3732409-010	TOLTEST INC.

1.2 SCOPE OF WORK

The scope of work for the IM completed at RKI included:

- Initial site characterization by sampling and analysis of potentially contaminated in-situ soil to determine the levels of contamination and to delineate the extent of contamination
- Excavation of explosives-contaminated soil identified in the site characterization, screening of the soil, and transportation of the screened soil to the Biofacility for treatment
- Field screening during excavation to assist in determining the extent of contamination
- Confirmatory sampling after excavation was completed to document site conditions
- Treatment of the contaminated soil at the Biofacility through composting, including process monitoring of the compost windrows during treatment
- Confirmation sampling of the treated soil to ensure that cleanup goals had been met
- Transportation and backfill of the compost at RKI

Field clarification requests (FCRs) were generated to modify, clarify, and/or revise elements associated with the scope of work. Copies of the FCRs are included in Appendix A. Table 1-2 summarizes the FCRs that impacted operations at RKI.

TABLE 1-2
SUMMARY OF FIELD CLARIFICATION REQUESTS AFFECTING RKI OPERATIONS

FCR-FS-#	Date Issued	Description
014	4/23/99	Disposition of Rocks Excavated with Contaminated Soil
026	1/24/2000	Change methodology for detection of arsenic
027	2/1/2000	Consolidate Excavation Completion Report and Compost Completion Report
028	9/22/99	Eliminate Windrow Process Monitoring on Sundays
030	4/24/2001	Installation of Gutters on Biofacility Compost Buildings
032	5/18/2001	SOP for Elutriate Preparation for Microtox Testing
034	7/10/2001	Temporary Storage/Permanent Placement Area for Compost at Rockeye

2.0 REGULATORY COMPLIANCE

Various regulatory and site compliance issues were involved in the operations at RKI and the Biofacility. The following sections discuss the site and regulatory requirements associated with soil and treated compost media classification, waste management operations, storm water discharge, and excavation permitting.

2.1 CONTAMINATED MEDIA CLASSIFICATION

On-site bioremediation of contaminated soil complied with all relevant permitting and reporting requirements of RCRA (1976 *et seq.*). No hazardous waste was allowed to be treated in the Biofacility. Sampling and analysis of the soil to be treated was performed for the constituents of concern and additional VOCs and heavy metals that may have been present based on generator knowledge, to verify that material was non-hazardous.

Data obtained from in-situ soil samples from all excavation areas indicated that the contaminated soil did not contain Title 40 Code of Federal Regulations (CFR) 261 Appendix VIII hazardous constituents above the characteristic reactivity threshold as determined in 40 CFR 261.23. Contaminated soil containing reactive nitrated aromatics has been evaluated and it was determined that reactivity is not observable if the reactive constituents are present below concentrations of 10% (100,000 mg/kg) [Kristoff et al, 1987]. The site soil concentrations of nitrated aromatic compounds were below this concentration. Other hazardous waste characteristics including corrosivity and flammibility were not performed based on review of in-situ soil analysis. Toxicity analysis has been performed on SWMU specific contaminants and other compounds identified in the QAPP Table 1-2 on a total basis with a correction factor of 20 used to check if the values were below the toxicity characteristic leaching procedure regulatory limits.

Wash-out water from ammunition processing had previously been released to soil in various areas at NSWC Crane, including RKI. This wastewater was classified as KO47 (pink/red water from TNT operations). Per the regulations, KO47 waste becomes de-listed upon deactivation. The reactive level for TNT has been determined to be less than 10% as discussed above. The subject soils did not contain TNT concentrations greater than 10%, therefore the soil was acceptable for treatment at the Biofacility.

Review of in-situ soil analyses indicated that all soil at RKI were non-reactive and non-characteristic and therefore were classified as non-hazardous waste.

The Biofacility and buildings were designed and built to meet, or exceed, all applicable codes, standards, and regulations. Based on the classification of the soils to be treated as non-hazardous waste, the Biofacility was approved as a solid waste and contaminated media treatment facility.

2.2 WASTE MANAGEMENT

The NSWC Crane Environmental Protection Department (EPD) representative coordinated all waste management and disposal and TT complied with all EPD requirements for management of all generated wastes.

Decontamination water generated from the cleaning of equipment and tools was collected and subsequently used as moisture additive for windrows. Storm water was collected in retention ponds. When the ponds were nearly full, the water was sampled and analyzed as required by the FSOP and the QAPP. Based on sample results, the water was either released to the adjacent drainage ditch, pumped into the site sewer system, or used as process water on the windrows. No retention pond water was taken off-site for disposal.

Specific waste containers [for acetone, field screening kits, personal protective equipment (PPE), etc.] were generated in response to operational needs. These materials were characterized by generator knowledge and Material Safety Data Sheets (MSDS). All filled waste storage containers were stored, labeled, and disposed of in accordance with the appropriate regulations listed in Section 2.6 below and NSWC Crane directives. Specifically, waste acetone from the field test kits was transported to ABG for treatment. A *Contaminated Scrap Manifest - NSWCC 6280/4, Rev. 6-84* was filled out and submitted for approval by the EPD. Upon approval, these specific wastes were transported to the ABG for treatment. PPE was disposed at the on-site landfill. Copies of waste disposal documentation are included in Appendix B.

2.3 STORM WATER DISCHARGE

NSWC Crane obtained a Storm-water Discharge Permit [NSWC Crane, 1997] under Title 327 Indiana Administrative Code (IAC) 15, National Pollution Discharge Elimination System (NPDES) General Permit Rule Program. Operations were in compliance with the specifications in the *FSOP* [MK, 1998a] that is consistent with the permit. The storm-water diversion and retention controls for the Biofacility are described in Sections 3.6 and 7.2.4 of the FSOP. Additional details on sampling procedures and analytical methodologies for storm-water discharge are provided in the QAPP Section 4.3.

2.4 LANDFILL PERMITTING

Soil excavated from RKI was treated and returned to RKI for use as fill and cover in the existing excavations. No landfill permit was required for disposal of treated soil.

2.5 EXCAVATION PERMITTING

A Digging Permit was obtained from the Public Works Officer for soil excavation at RKI.

2.6 SPECIFICATIONS, CODES, AND STANDARDS

Compliance in the material, examination, testing, inspection, and documentation included the applicable portions of the specifications, codes, and standards listed below.

- U.S. Navy and NSWC Crane guidance
- U.S. Occupational Safety and Health Administration
  - 29 CFR 1910, Occupational Safety and Health Standards
  - 29 CFR 1926, Safety and Health Regulations for Construction
- U.S. Army Corps of Engineers
  - EM-385-1-1, Safety and Health Manual
- U.S. Environmental Protection Agency
  - 40 CFR 257, Criteria for Classification of Solid Waste Disposal Facilities and Practices
  - 40 CFR 261, Identification and Listing of Hazardous Waste
  - 40 CFR 262, Standards Applicable to Generators of Hazardous Waste
  - 40 CFR 264, Subpart S Corrective Action
  - 40 CFR 300, National Oil and Hazardous Substance Contingency Plan

- U.S. Department of Transportation
  - 49 CFR 172, Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements. This part describes requirements for completing shipping papers; marking, labeling, and placarding; training; and emergency response.
  - 49 CFR 173, General Requirements for Shipments and Packaging. This part describes classification and packaging of hazardous materials.

- Indiana Department of Environmental Management
  - 327 IAC 15, NPDES General Permit Rule Program
  - 329 IAC 2, Solid Waste Management
  - 329 IAC 3.1, Hazardous Waste Management Permit Program And
  - Related Hazardous Waste Management
  - Department of Defense Explosives Safety Board explosive safety standard for construction equipment.

- National Codes and Standards
  - ASTM, American Society for Testing and Materials
  - ANSI, American National Standards Institute
  - NEMA, National Electrical Manufactures Association
  - NEC, National Electric Code
  - NFPA, National Fire Protection Association

2.7 ENVIRONMENTAL PROTECTION

All work was conducted in a way that minimized pollution of the air, water, and land. Noise and the disposal of solid waste materials were controlled to protect human health and the environment.

All excavations, stockpiles, access roads, and other work areas were maintained free from excess dust to avoid causing a hazard. Dust at the excavation sites and Biofacility was controlled with a wetting spray from a potable water source.

Temporary erosion control was used in excavation areas until permanent surface drainage was re-established. The amount of bare soil exposed at any time did not exceed three acres. Excavations were protected when work was not in progress.

All erosion control structures in excavation areas were built to conform to SWMU specific conditions. Generally, erosion control structures consisted of berms, ditches, sumps or straw bale dikes. These structures were maintained as often as required to minimize the migration of sediment into, or out of, exclusion zones. Potentially-contaminated storm water contained and collected within the exclusion zones was pumped to on-site storage tanks and handled as described in Section 2.3.

3.0 RKI SITE OPERATIONS

3.1 INITIAL CHARACTERIZATION SOIL SAMPLING

3.1.1 Sample Locations

Pre-excavation site characterization sampling was performed for the purpose of delineating the extent of contaminated soil requiring excavation. The locations of potentially contaminated areas were based on visual observations and direction provided by personnel from EPD. A total of 35 grids were marked out as shown on Figure C-1, but only 34 grids were sampled (grid seven was not sampled because the gravel backfill in this grid was a minimum of three feet deep and soil could not be encountered). Samples were obtained around sumps, under vents, and in drainage ditches. The grid layout and boundaries were affected by the presence of buildings, railways, roadways, utilities, etc.

Initial Characterization Samples (ICS) were collected from each grid as described in Section 3.1.2 below. Sample results revealed that cleanup goals were exceeded in only those grids adjacent to B-2733.

3.1.2 Sample Collection and Analysis

Sampling in each grid consisted of two composite samples and one grab sample. The composite samples were analyzed for explosives, metals, and SVOCs, and the grab sample was analyzed for VOCs. The composite samples were collected at depths of zero to 12 inches and 24 to 36 inches and the grab sample was collected from a depth of 12 inches. Field duplicates and other appropriate field quality control (QC) samples were also collected from selected locations as described in Section 3.1.2 of the QAPP.

Samples were analyzed by U.S. EPA SW-846 methods 8330 (explosives), 8260 (VOCs), 8270 (SVOCs), and 6010/7470 (metals) for the constituents of concern identified in Section 1.1. The analysis of the compounds identified from generator knowledge and process operations at RKI was performed to ensure that solvent-contaminated soil, or other characteristic wastes, were not transported to the Biofacility for composting. Analysis of these parameters was on a total basis. The results were divided by an estimation factor of 20 and compared with the toxicity characteristic leaching procedure (TCLP) regulatory limits. All results were significantly less than 20 times the TCLP limit so the material was classified as not possessing the hazardous waste characteristic of toxicity.

3.1.3 Sampling Data Summary

Of the 34 grids sampled, ICS analysis revealed seven grids exceeded industrial cleanup objectives and required excavation (grids 8 – 12, 14, & 16). Table D in Appendix D summarizes the results of explosives analysis on samples collected from each grid and identifies which grids exceeded the cleanup goals for explosives and required excavation. ICS analytical results are summarized in Tables E-1 through E-4 in Appendix E. ICS QC analytical results are summarized in Table E-5 and E-6 in Appendix E.

After the ICS results were received, the horizontal boundaries of explosives contamination had been delineated by grids with no detectable levels of contamination, levels that were below cleanup objectives, or buildings, roads, railroad tracks or other physical limitations. No metals or VOCs were detected above cleanup action levels for SWMU-specific contaminants of concern in any grid that required excavation. Arsenic was present in samples at various levels which exceeded industrial cleanup goals. However, no action was taken because none of the arsenic total results, when divided by an estimation factor of 20, exceeded the TCLP regulatory limit (meaning the material did not possess the hazardous waste characteristic of toxicity). The arsenic data demonstrates that background levels of arsenic are present

throughout the Crane area and will need to be considered in future sites of excavation where arsenic is a contaminant of concern.

3.2 SOIL EXCAVATION, SCREENING, AND TRANSPORTATION

Soil excavation was performed on the blast wall berm between B-2733 and B-2734 and adjacent to the west side of B-2733. Surveyed drawings of these areas subsequent to excavation are included in Appendix F. Soil excavation and screening initially began in November 2000 and continued in earnest in April 2001.

Contaminated soil was initially excavated to a depth of three feet using a tracked excavator. In-process field screening was then performed, as described in Section 3.3, to determine if additional soil excavation was necessary. All excavated soil was transported to the screener site at MFB and screened to remove oversized material (1½-inch or larger) prior to transport to the Biofacility. This was to ensure homogeneity of the soil to be treated so that the composting operation would be effective.

Excavated soil was loaded into the soil screening equipment using a backhoe or tracked excavator. After screening, the fines were dropped from the screener onto the stacking conveyor and placed into a dump truck or a live-bottom truck bed for transport to the Biofacility. Before entering the Biofacility, each truck was weighed to determine the amount of soil being brought into the facility. A step-by-step procedure for soil screening is provided in Field Standard Operating Procedure (SOP) 1.0 in Appendix D of the FSOP.

Oversized material was separated into soil clods mixed with gravel, and large rocks. The reject soil mixed with gravel was re-screened several times to remove as much soil as possible. The rocks were transported to the Biofacility to be washed, as described in Section 3.6, to be placed back into the open excavation at a later date.

Table 3-1 shows the total quantity of soil and reject rocks that were excavated, screened, and transported to the Biofacility from RKI. The quantities listed are based on actual weigh scale tickets from the Biofacility truck scale.

TABLE 3-1
TOTAL SOIL EXCAVATED, SCREENED, AND TRANSPORTED TO THE BIOFACILITY FROM RKI

Month	Quantity (tons)
November 2000	16.45
April 2001	500.33
May 2001	221.96
June 2001	147.26
July 2001	386.86
July 2001	20.11 (rocks)
Total Soil	**1,272.68**
Total Soil and Rocks	**1,292.79**

3.3 IN-PROCESS EXCAVATION SOIL SAMPLING

Soil samples were collected during excavation activities to assist in determining the extent of excavation required at each grid. Field screening test kits were used to test RDX levels in the in-process soil samples to provide quick field screening results. Soil sampling during excavation was performed as specified in the Soil Excavation Plan, Appendix E of the FSOP. One composite sample was collected from the base of the excavation and one from each side wall (if a side wall was present). If the field screening indicated that concentrations of RDX were greater than industrial cleanup levels, subsequent

layers of contaminated soil were removed until field screening indicated acceptable concentrations of explosives (below the industrial cleanup objectives) or physical impediments (buildings, railways, roadways, utilities, etc.) were encountered.

3.4 POST-EXCAVATION CONFIRMATION SOIL SAMPLING

Post-excavation confirmation soil samples (PES) were collected, following excavation and field screening, to determine the levels of SWMU-specific contaminants remaining in the soil. PES included one composite and one grab sample from the base of each grid and one grab sample for each 20 feet of side wall. Samples were analyzed for all contaminants of concern. Post-excavation sample analysis indicated that grids eight and nine were excavated to less than industrial cleanup levels and grids 10, 11, 12, 14, and 16 were excavated to less than residential cleanup levels. Table D in Appendix D provides a summary of the PES collected from each grid. Appendix G includes grid location drawings that show the results of the post-excavation samples with respect to the cleanup goals. PES results are included in Appendix H.

3.5 EQUIPMENT DECONTAMINATION

Only the bucket of the tracked excavator came into contact with the contaminated soil at RKI. This was possible since the area of contamination was small enough that the excavator could stay outside the zone of contamination and reach into the zone to excavate the soil. The bucket was scraped clean and then decontaminated with a minimal amount of water prior to being transported to another site. The decontamination water was collected and transported to the Biofacility were it was stored with other decontamination water for eventual disposal.

3.6 ROCK WASHING

Initially, the FSOP specified washing and triple rinsing oversized material rejected from the soil screening process. The wash and rinse water were to be collected and analyzed as described in Figure 1.4 of the FSOP. This procedure was labor intensive, generated excessive amounts of contaminated rinse water, and proved to be futile in attaining the cleanup standards established in the FSOP for acceptable decontamination of the rocks [drinking water standards on the rinse water]. FCR 14 was generated to replace the original rock washing procedure. The revised procedure required that the rocks be washed with a high-pressure-low-volume sprayer to remove all visible soil contamination. The rocks were then returned to the bottom of an open excavation within the same SWMU and covered with no less than two feet of finished compost. This technique permitted more timely backfilling of the rocks back to the point of origin. Additionally, the rinse water was used for moisture conditioning of the windrows, thereby minimizing the quantity of generated waste requiring disposal.

The 20.11 tons of reject rocks excavated from RKI were washed in the manner described above and placed back into the bottom of grid eight behind B-2733.

4.0 BIOFACILITY COMPOSTING OPERATIONS

Explosive's contaminated soil excavated from RKI was treated in the Biofacility by composting to degrade the explosive compounds in the soil. Organic amendments (chicken manure and straw) were mixed with the contaminated soil to form the compost windrows. The amendments in the compost served as a carbon source for the microorganisms in the material that were capable of degrading the explosives. The availability of organic material and inorganic nutrients (such as nitrogen and phosphorus), temperature, moisture content, pH, and oxygen availability in the compost were optimized in order to enhance the process. Microbial activity in the soil was stimulated by heat that was generated and contained in the compost matrix. A full description of the composting operation process is provided in Section 5.0 of the approved FSOP.

Section 4.1 describes maintenance and repairs of the Biofacility. Section 4.2 describes the supply and storage of the amendments. Section 4.3 describes the windrow construction process. Section 4.4 describes the monitoring process of various parameters in the compost to ensure optimum conditions were maintained and to track the progress of the treatment. Section 4.5 describes the monitoring of explosives in the treated soil.

A total of eight windrows were formed, seven to treat the contaminated soil excavated from RKI (windrows 202 through 208) and one RKI Toxicity Control windrow. Windrow 202 was the Pilot Scale windrow for RKI. All windrows successfully achieved residential cleanup goals for the constituents of concern. Table 4-1 shows the estimated quantity of soil processed in each windrow. These amounts are only estimates since the amount of soil put on a windrow was based on the windrow recipe of using 232.1 tons of contaminated soil in each windrow. This estimate is the explanation for the difference in the total amount of soil treated in the eight RKI windrows (1,422.6 tons) as compared to the actual weight of soil excavated from RKI (1,272.68 tons as reported in Table 3-1 above).

4.1 BIOFACILITY MAINTENANCE AND REPAIRS

Routine maintenance and housekeeping activities were performed at the Biofacility. General building cleanliness was maintained during full-scale operations by using a front end loader and/or a skid steer loader to collect stray compost materials and reform the piles, as necessary. Brooms and shovels were used in inaccessible areas. Throughout operations, windrows were kept segregated, well-formed, and identified with signs containing the windrow number and date formed.

Inspections of Biofacility buildings and associated structures were performed on a quarterly basis. Items found to be deficient were repaired or scheduled for repair at the earliest available period. Special attention was paid to specific items such as checking for settlement cracks in the Biofacility building floors and leaks in either storm-water retention pond liners or compost buildings. The Biofacility building floors and sumps were inspected for new cracks between building compost cycles in addition to the quarterly inspection. Any new cracks were scheduled for repair. Repair was performed by saw-cutting the crack as necessary to allow installation of Silkaflex 1a Polyurethane sealant, or equivalent sealant.

In addition to the normal maintenance performed on Biofacility equipment, gutters, downspouts, and drainage piping were installed on the three compost buildings during the period RKI soil was being processed. This system diverted otherwise uncontaminated rain water into adjacent drainage ditches, preventing it from unnecessarily filling up Retention Pond 1.

TABLE 4.1
ROCKEYE WINDROW SUMMARY

Windrow #	Tons of Soil	Tons of Chicken Manure	Tons of Straw	Total Windrow Tonnage	Day Zero	Day Last	Process Duration (days)	Cleanup Goal Attained	Date Backfilled	Disposal Location
M-202	15	11.7	5.05	31.75	4/10/01	4/20/01	10	Residential	7/12/01	B-2733, grids 8-12 & 14
M-203	232.1	107.2	46.91	386.21	5/30/01	6/18/01	19	Residential	7/18/01	B-2733, grids 8-12 & 14
S-204	232.1	106.77	45.78	384.65	5/31/01	6/25/01	25	Residential	7/18/01	B-2733, grids 8-12 & 14
M-205	232.1	114.14	51.43	397.67	6/7/01	6/28/01	22	Residential	7/12/01	B-2733, grids 8-12 & 14
M-206	232.1	112.04	47.43	391.57	7/18/01	8/15/01	28	Residential	8/24/01	Permanent Placement Area
M-207	232.1	109.15	45.56	386.81	7/20/01	8/17/01	28	Residential	8/28/01	Permanent Placement Area
S-208	232.1	108.87	44.34	385.31	7/26/01	8/22/01	27	Residential	9/5/01	Permanent Placement Area
Control	15	5.8	2.44	23.24	8/10/01	9/4/01	25	Residential	10/2/01	B-2733, grid 16
Totals	1422.6	675.67	288.94	2387.21						

M = Middle compost building at the Biofacility
S = South compost building at the Biofacility

4.2 AMENDMENTS SUPPLY AND STORAGE

The compost mix used in full-scale operations included chicken manure and straw amendments that were mixed in with the soil. Straw was brought to the site and stored either in the asphalt-paved amendment storage bins at the Biofacility or in the straw storage field immediately south of the Biofacility. Chicken manure was brought to the facility generally on an as-needed basis and only temporarily stored in the amendment storage bins. The manure was from hens and contained approximately 1% feathers, eggs, or other natural impurities and was free of bedding material.

4.3 WINDROW CONSTRUCTION AND MAINTENANCE

The compost mix used in the Biofacility full-scale operations consisted of 25% soil, 15% chicken manure, and 60% straw by volume. Amendments were loaded on a volume basis into a tractor-powered grinder/mixer unit using a center-pivot loader as described in SOP 3.0 of Appendix D of the FSOP. The mixer then homogenized each load by mixing for 10 to 15 minutes. Water was added for dust control. The amendment blend was unloaded from the grinder/mixer unit through a side-mounted discharge conveyer forming a windrow approximately six feet high and 12 foot wide. The grinder/mixer then returned to the amendment storage area for reloading. This process continued until a windrow approximately 275 feet long was formed. A second windrow, adjacent to and partially overlapping the first windrow was then loaded into the building. This formed a single, larger windrow approximately 20 feet wide with two peaks 6 feet high. A full description of the windrow formation procedure is provided in SOP 4.0 of Appendix D of the FSOP.

After unloading the amendment blend onto the floor of the building, water was added, the amount depending on how dry the straw and manure was at the time. Typically, 6,000 gallons of water were added to moisten the amendment mix. A shaping pass was then made with the SCARAB to form the amendments and then the soil was added with the loader bucket. A full description of the transport and loading of soil into the windrow is provided in SOP 5.0 of Appendix D of the FSOP.

After the soil was loaded onto the amendments, the soil/amendment mix was turned with the compost machine (SCARAB®) to form a windrow approximately 20 feet wide, six feet tall, and 275 feet long. The SCARAB® generally made at least two or three passes during initial windrow construction to assure thorough mixing. Following formation, windrows were turned on a daily basis as described in SOP 6.0 of the FSOP. Water was added on an as-needed basis to maintain optimum moisture levels for microbial growth and contaminant degradation (see Section 4.4.3).

Record of Recipes sheets for each windrow are provided in Appendix I and summarized in Table 4-1 above. Windrow 202 was formed as the RKI Pilot-Scale windrow as reported in the *Pilot-Scale Treatability Test Report for Rockeye Soils, SWMU 10/15 [TT, 2001]*. The conclusion of this report was that the windrow recipe used for processing explosive's contaminated soil from MFA and MFB was successful in treating contaminated soil from RKI.

Windrow 203 through 208 were full size windrows. The Control windrow was a pilot-scale size windrow formed for toxicity testing of RKI compost as reported in the *Toxicity Report for Rockeye Munitions Facility SWMU 10/15 [TT 2002]*. The results of toxicity testing verified that treated contaminated soil compost did not show a greater toxicity than treated non-contaminated soil.

4.4 WINDROW PROCESS MONITORING

Process monitoring of each windrow included the daily monitoring of oxygen and temperature both prior to and after windrow turning with the SCARAB®. In addition, moisture levels and pH were monitored

periodically to ensure optimal conditions for biological degradation were maintained within the windrows. Field test kits were used to monitor the level of RDX in the compost. Full-scale windrows were monitored at 15 sample locations (five cross sections with three sample locations per cross section), while the pilot-scale windrow was monitored at only 12 locations (four cross sections with three sample locations per cross section). Monitoring locations and frequencies for each of these parameters are described in Section 6.0 of the FSOP. All field instrumentation was calibrated daily prior to use. A summary of the monitoring data is provided, by windrow, in Appendix I.

4.4.1 Temperature

Temperature was monitored during soil treatment, as it is the primary indicator of successful thermophilic composting. The process goal was to maintain average windrow temperatures near 55°C during treatment. Temperature decreasing over time to below 50°C is viewed as an indicator that a windrow is nearing the end of its operation [Weston, 1993].

During full-scale operations, windrow temperature was monitored twice daily, before and after windrow turning. Temperature readings were taken using a hand-held temperature probe at six monitoring locations at each of the five cross sections (3, 5, 7, 9, and 11) as described in Section 4.0 of the QAPP. Windrow 202, the pilot-scale windrow, was monitored at four cross section, identified as A, B, C, and D. These locations were selected to provide representative temperature profiles for the inner core and outer near-surface conditions. Ambient air temperature and humidity were recorded daily using monitors mounted to the wall of each building.

4.4.2 Oxygen

Oxygen levels approaching ambient atmospheric conditions, or about 20%, are preferred in a compost windrow, and 5% is considered the minimum for rapid compost degradation. Oxygen levels below 1% indicate anaerobic conditions. If sufficient oxygen levels are not maintained, proper microbial degradation may not occur, thermophilic temperatures may not be maintained, and putrefaction of organic matter may occur. The windrows were turned daily to help increase the oxygen levels in the compost. Like temperature, oxygen levels were also monitored twice daily, both before and after windrow turning was performed. A hand-held probe was used to measure oxygen at the same locations used for the temperature measurements.

4.4.3 Moisture

As discussed in the FSOP, the operating goal for composting moisture content was 40 to 60% maximum water holding capacity (WHC). Moisture level monitoring was performed three times per week to determine if moisture addition was required to maintain the operating goals. One composite sample per cross-section, composed of three discrete samples, was collected for moisture level determination. These samples were analyzed to determine the maximum WHC. The WHC is the ratio of the mass of water retained in the sample compared to the mass of water retained in the sample at saturation.

Based on the results of the moisture monitoring, water was added, as necessary, to maintain moisture conditions in the operating goals. Sources for the water included potable water, retention pond water, or sump water from the compost buildings or decontamination wash bay. Moisture was added to the windrows with a spray boom attached to a water wagon. At no time during operations was leachate observed from any of the windrows.

4.4.4 pH

Samples for pH monitoring were collected periodically during a windrow's life cycle, typically using the sampled collected for moisture determination. Large variations in pH would indicate abnormalities within the windrow. No such abnormalities were observed and the pH was never adjusted within any windrow.

4.4.5 Explosives

Field screening was performed at least weekly to monitor the level RDX in each windrow being processed. Each sample represented a composite of the three sampling locations from each cross-section. Field screening results were used to determine when explosive degradation had reached the desired cleanup goal and thus when samples for off-site laboratory analysis were to be obtained.

4.5 EXPLOSIVES CONTAMINANT LABORATORY SAMPLES

Explosives were the only contaminants that exceeded the industrial cleanup goals in the ICS, therefore, explosive compounds were the only parameters that required laboratory analysis during windrow treatment. Samples from windrows 202 through 208 were collected for laboratory analysis when the windrow was constructed (Day Zero) and on the last day of the treatment process (Day Last). Day Last samples were collected to confirm that the cleanup goals had been achieved. No Day Zero samples for explosives analysis were required from the Control Windrow since the soil used in this windrow (the Borrow Source soil) had been previously tested as reported in the *Toxicity Report for Rockeye Munitions Facility SWMU 10/15 [TT 2002]*.

Samples for windrows 203 through 208 were collected from each of the three sampling locations at each of the five cross-sections for a total of 15 samples, plus samples for QC purposes. Windrow 202 was sampled at each of the four cross sections (A – D) for a total of 12 samples, and the Control Windrow was sampled at only one cross section for a total of three samples. Samples were placed into glass jars, placed in a cooler, and shipped to Southwest Laboratories of Oklahoma analysis by Method 8330 according to the SOP provided in Appendix C of the QAPP. Shipping and handling procedures are detailed in Section 4.3.4 of the QAPP.

Analytical results of all explosives analyzed on Day Zero and Day Last are included, by windrow, in Appendix I. Average results for HMX, RDX and TNT are summarized on Table 4-2, by windrow. Cleanup levels for these compounds are shown on Table 4-3. Residential cleanup goals for explosive compounds were achieved for all windrows.

TABLE 4-2
AVERAGE DAY ZERO AND DAY LAST EXPLOSIVE RESULTS

Windrow #	202		203		204		205	
Day #	0	10	0	19	0	25	0	22
HMX	153	44.3	126.4	4.4	142.1	3.5	64.5	5.4
RDX	33.3	0.7	41	0.5	47	0.5	27.2	0.5
TNT	9.2	0.5	5.9	0.5	6.6	0.5	1.9	0.5

Windrow #	206		207		208		Control	
Day #	0	28	0	28	4	27	0	25
HMX	322.2	5.7	393.4	3.8	87.22	3	*	U
RDX	37.9	0.3	62.9	0.4	20.08	0.5	*	1.23
TNT	4	0.3	8	0.5	0.5	0.5	*	U

all results in mg/kg
* = no Day Zero samples obtained
U = undetectable

TABLE 4-3
CLEANUP GOALS FOR SELECT EXPLOSIVE COMPOUNDS
(mg/kg)

Compound	Residential Cleanup Goal	Industrial Cleanup Goal
HMX	3,300	34,000
RDX	4	17
TNT	15	64

5.0 DISPOSITION OF COMPOSTED SOIL AND DECONTAMINATED ROCKS

5.1 COMPOSTED SOIL

Once laboratory analytical data verified that treatment goals were met for a windrow, the compost was loaded into semi-tractor live-bottom trailers or dump trucks. The trailers and dump beds were free of contaminated soil prior to loading the treated material. The trucks were loaded outside the exclusion zone in a clean area and did not require decontamination before exiting the Biofacility. Each load was covered with a tarp and the compost was hauled to RKI for unloading.

Initially a temporary staging area was established at the far east end of RKI adjacent to B-2739 as approved in FCR-FS-034, Rev. 0 (Appendix A). Windrows 202 – 205 were stored in the staging area before being placed as backfill in the excavation area behind B-2733.

Since more compost is generated than there originally was soil excavated, the temporary storage area was then converted to a permanent placement area. Windrows 206, 207, and 208 were placed in their permanent locations in this area. Table 4-1 identifies the location(s) where each windrow was placed. Drawings showing the grid locations where windrows were backfilled are included in Appendix J. Final survey drawings of the work areas after completion of backfilling are included in Appendix F.

After backfilling, very little erosion occurred because a crust formed on the surface of the compost. Seeding and mulching of the compost in the excavation area and the permanent placement area will be completed in the Spring of 2002 when warmer temperatures prevail and a better success for seed germination is present.

5.2 DECONTAMINATED ROCKS

Rocks that were rejected by the screener and were too large to be composted were decontaminated at the Biofacility and hauled back to RKI. A total of 20.11 tons of rocks were handled in this manner and placed into the bottom of grid eight where they were covered with no less than two feet of compost. Backfill drawings in Appendix J show where the rocks were placed.

6.0 QUALITY CONTROL

6.1 QUALITY CONTROL FIELD INSPECTIONS

QC inspections included excavation site operations, composting operations, sampling activities, field test kit analyses, and facility maintenance. QC checks were performed at required intervals using the field inspection checklists provided in Appendix F of the FSOP. Copies of all inspection records are maintained at the Biofacility office.

6.2 DATA QUALITY CONTROL

Various data QC methods were utilized to verify the usability of samples collected and submitted for laboratory analysis (ICS, PES, and windrow contaminant monitoring samples (Day Zero and Day Last)). Samples were analyzed by Southwest Laboratory of Oklahoma, Inc. and Severn Trent Laboratories (formerly Quanterra) of California. All data submitted for laboratory analysis were verified by reviewing chain-of-custody records, sample extraction records, analytical holding times, requested turnaround times, sample data in comparison to QC data and reporting requirements. Additionally, more than 10% of the data were validated. The data were compared with field and laboratory QC sample data to assess its usability. Sections 6.2.1 and 6.2.2 below summarize the field and laboratory QC methods employed, respectively. Sections 6.2.3 through 6.2.5 summarize the findings of the field and laboratory QC for the various types of project laboratory data.

6.2.1 Field Quality Control

Field QC included field duplicates, trip blanks, and equipment rinseates. Analytical results for these samples were evaluated to identify potential sources of error introduced during sampling, transportation and storage. Results for QC samples associated with the ICS are summarized in Table E-2 in Appendix E and QC samples associated with the PES are summarized in Table H-2 in Appendix H.

Field duplicates were collected at a frequency of one in twenty samples specified in Section 3.1.2 in the QAPP. Field duplicates are samples collected at the same time and in the same location as the corresponding field sample in order to qualitatively assess field precision. There are no quantitative precision criteria specified in the QAPP.

Trip blanks were submitted with coolers containing samples to be analyzed for volatile organic compounds in order to evaluate the potential for cross-contamination during shipment to the laboratory. The trip blanks were received from the laboratory in a sealed container containing organic-free water, held intact at the site, and shipped back to the laboratory with the samples.

Equipment rinse blanks were collected by rinsing decontaminated sampling equipment with deionized water, collecting the rinse water in appropriate sample containers, adding any sample preservative required by the analytical method, and then submitting the rinse water for analysis. Results are used to evaluate the effectiveness of decontamination procedures in preventing sample cross-contamination.

Separate field blanks were not obtained since rinse blanks serve essentially as a field blank when no contamination is detected in the rinse blank.

6.2.2 Laboratory Quality Control

The laboratory performed method blank, surrogate, laboratory control sample (LCS), laboratory control sample duplicate (LCSD), sample matrix spike (MS), and sample matrix spike duplicate (MSD) analyses to evaluate laboratory accuracy and precision according to the established U.S. EPA procedures.

Laboratory method blanks were prepared and analyzed with the samples in order to evaluate potential target compounds or interferences from laboratory glassware, reagents and/or solvents used in the preparation and analysis of samples.

Laboratory replicate samples are a second sample aliquot of the control samples which the laboratory prepares and analyzes concurrently with the sample to evaluate analysis precision (relative percent difference calculations are evaluated).

Surrogate spikes are known amounts of non-target organic compounds, which are spiked into all samples prior to sample preparation, in order to evaluate the efficiency of the organic sample preparation and analysis.

LCS and LCSD are samples prepared in the laboratory, consisting of clean soil or water spiked with known amounts of target analytes which are processed through the same preparation as field samples. Evaluation of the spike recoveries, and the variability between the LCS and LCSD, gives an indication of analysis accuracy and precision in a clean matrix.

MS and MSD are field samples that have been spiked with a known amount of target analytes and processed through the preparation and analysis with the field samples. Evaluation of the spike recoveries, and the variability between the MS and MSD, gives an indication of analysis accuracy and precision in the sample matrix. MS/MSD accuracy and precision can be affected by concentrations of both target and non-target compounds present in the original field sample, as well as the matrix of the sample itself.

6.2.3 Initial Characterization Samples (ICS)

A total of 96 soil samples were collected from the grid sections to identify areas requiring excavation. Figures C-1 through C-6 in Appendix C show the locations of the grid sections. Various rinse and trip blanks were collected along with these samples for QC purposes. All samples were received by the laboratory in acceptable condition, with custody seals, correctly preserved, and with containers intact. Most samples were received at a recorded temperature of 4°C $\pm$ 2°C. A total of three (3) samples were received at temperatures between 1-2°C. Because none of the samples were frozen, these temperatures below 2°C did not impact the sample results.

In several instances, the samples collected for volatile analyses were prepped outside the 48-hour extraction hold time. However, the 48-hour extraction hold time applies to the encore sample tubes and not all samples for volatile analyses were submitted in encore tubes. All of the samples were analyzed within the 14-day hold time as specified within the NEESA 20.2-047B guideline and FS-QAPP. The discrepancies over the extraction hold times should not impact the data results since the sample results were significantly less than the IM Industrial clean-up goals.

Field QC

Field QC samples collected with the ICS included duplicates, trip blanks, and equipment rinse blanks.

The duplicate analysis for total metals showed sample results to have precision varying from 0 - 200% relative percent difference (RPD). In most cases samples had concentrations that were either both above or both below ("J" values) the reporting limit except sample ICS 010 and ICS010FD, (RPD was 200%), where thallium was detected in the first sample and not the duplicate. Explosive analysis showed analytes to have precision varying from 0 - 200% RPD. The relative percent difference for samples ICS 001 and 001FD was 200% due to HMX being detected in the duplicate sample but not the first sample. Duplicate pairs were acceptable (less than 25%) for the semi-volatile analysis.

Trip blanks were submitted with most coolers containing samples to be analyzed for VOCs in order to evaluate the potential for cross-contamination during shipping to the laboratory. The trip blanks were received from the laboratory in a sealed container containing organic-free water, held intact at the site, and shipped back to the laboratory with the samples. One trip blank arrived at the laboratory with a cracked lid that was immediately replaced by laboratory personnel upon receipt. However, the affected samples were all non-detect for volatile compounds, so that if any cross-contamination did occur, it did not adversely affect the interpretation of the data based upon sample concentrations relative to the IM Industrial Cleanup Goal values. The trip blank results were non-detect for all VOC analyses and the method QC samples were all acceptable. Based upon these results it is concluded that no volatile organic cross-contamination occurred during shipping or storage for the volatile compounds analyzed.

Two rinse blanks were collected for these samples. The rinse blank results for semi-volatiles, corresponding to samples ICS055-ICS063, were non-detect. The method blank and the LCS/LCSD results were acceptable. Two of eight surrogate recoveries for the method blank were outside the laboratory quality control limits. However, the surrogate recoveries for the LCS/LCSD and rinse blank were acceptable and the discrepancy with the method blank surrogate recoveries should not have adversely affected the results for the rinse blank. HMX was detected in the rinse blank at low levels ("J" value). The LCS/LCSD and surrogate recoveries were acceptable, and the method blank was non-detect. The sample concentrations for HMX were considerably less than the cleanup objective for the samples and any cross contamination that may have occurred during sampling would not have changed the interpretation of the sample results. Cobalt, chromium, iron, magnesium and zinc were detected at low levels in the rinse blank. The method blank was non-detect for all target metal analytes. The LCS/LCSD and MS/MSD sample percent recoveries were acceptable. Field samples associated with this rinse blank did not show concentrations of these compounds above the cleanup levels, therefore, low concentrations found in the equipment rinse blanks did not significantly impact the sample results.

All target compounds for explosive and mercury analyses were found to be non-detect in the rinse blank corresponding to ICS079-ICS096. The method blank was non-detect for all explosive target analytes. The surrogate recoveries for the explosive analysis were acceptable. The MS/MSD and LCS/LCSD sample percent recoveries were generally acceptable. Methyl-2,4,6-trinitro phenylnitramine (Tetryl), 3-NT and PETN were outside the laboratory quality control limits in the LCS/LCSD samples. The percent recovery for Tetryl was acceptable in the MS/MSD samples. However the percent recoveries for 3-NT and PETN were outside QC limits in the MS/MSD samples. The data for these two analytes are not usable and have been flagged with a "R" flag code by TT. However, the field samples associated with this rinse blank did not show concentrations of these compounds above the cleanup levels. All other method quality control criteria were met for the analysis, and since the rinse blank results were non-detect for these analytes the data was accepted. Lead, antimony and cobalt were detected in the rinse blank at low levels. Lead, copper, and zinc were detected at low levels in the method blank. The LCS/LCSD and MS/MSD percent recoveries were acceptable. Field samples associated with this rinse blank did not show concentrations of these compounds above the cleanup levels, therefore, low concentrations found in the equipment rinse blank did not significantly impact the sample results.

Laboratory QC

Method blanks, surrogates, LCS/LCSD and MS/MSD samples were used for laboratory quality control for the ICS.

Laboratory method blanks showed low level concentrations, (values between the method detection limit and the reporting limit or slightly above the reporting limit), of aluminum, copper, iron, magnesium, and barium in most of the batches. For all of these analytes, field sample levels were significantly less than the cleanup objectives. Method blanks were non-detect for explosives, volatiles and semi-volatiles. Based upon these results, it is concluded that method blank contamination has not adversely affected the interpretation of the data based upon field sample concentrations relative to the IM Industrial Cleanup Goal objectives.

Surrogate recoveries were generally acceptable for organic analyses. The explosive analyses had acceptable surrogate recoveries. Four of the 96 samples collected and two QC samples showed

surrogate recoveries outside of acceptable criteria. Five of the six samples had the surrogate recovery problems with the semi-volatile analyses. The initial analysis of sample ICS003 had surrogate recoveries outside the QC limits. The sample was re-extracted and the surrogate recoveries were within the laboratory quality control limits, but the re-extraction occurred outside of the method holding time. The sample results for both analyses were non-detect. Samples ICS058 and ICS066 each had one out of eight of the surrogates that was slightly below the laboratory quality control limits. Both sample results were non-detect for all target analytes. The samples were not re-extracted for the one surrogate because the other seven were within quality control limits and would not impact the sample results. Sample ICS043 was diluted and the surrogate recoveries were not quantifiable. The MSD associated with samples ICS010-015 had all surrogate recoveries outside of the QC limits. The LCS/LCSD and MS surrogate recoveries were within the QC limits. The laboratory report explained that the poor recovery was likely due to sample loss during the extraction. In each instance, the affected sample results for semi-volatiles were either non-detect or "J" values significantly less than the IM Industrial Cleanup Goals. The surrogate recovery for the volatile analyses was generally acceptable. One sample, the MSD associated with samples ICS055-069, had one out of three surrogate recoveries outside the laboratory control limits. The laboratory reported a computer malfunction, which attributed to the poor surrogate recovery. The corresponding sample results were non-detect for all volatile compounds and the other QC samples had acceptable surrogate recoveries and percent recoveries. The sample results for both the semi-volatile and volatile analyses were significantly less than the industrial cleanup objectives and for this reason, surrogate results that were outside of laboratory limits did not adversely affect the interpretation of the data.

The LCS/LCSD sets showed laboratory control spike precision and accuracy results for the spiked target analytes to be acceptable for explosive, VOC, SVOC, and metal analyses.

The replicate control sample spike precision results were generally acceptable for the MS/MSD samples. The RPD values were acceptable for the volatile analyses. The RPD values were acceptable for most explosive analyses except for the RPD value for HMX associated with samples ICS049-ICS054, which was just slightly above the upper control limit. Some variability may be expected with the matrix spike recoveries due to the field sample concentration being greater than the spike amount. However, the interpretation of the sample results should not be affected since the LCS/LCSD samples had acceptable precision results. The RPD values were acceptable for most of the semivolatile analyses. The semivolatile RPD values associated with samples ICS010-ICS015 were all outside the laboratory control limits. The laboratory case narrative explained that the MSD recoveries were low possibly due to sample loss during extraction, which affected the RPD values. Since the LCS/LCSD RPDs were acceptable for this batch and the percent recoveries were acceptable for the MS sample, the interpretation of the data should not be affected by the high RPD values for the MS/MSD samples. Some of the RPD values associated with samples ICS001-ICS009 were high for the semivolatile analysis. The case narrative suggested possible matrix interference problems since reinjection yielded similar results and the LCS/LCSD RPD values were acceptable. The metal precision results were acceptable for most analyses. RPD values that were outside the laboratory control limits in the MS/MSD samples were within the control limits in the LCS/LCSD samples. The corresponding field sample concentrations were relatively high compared to the spike amounts, which suggests possible matrix interference problems may have attributed to poor recovery of the analytes which affected the RPD values in the MS/MSD samples. The interpretation of the sample results should not have been affected since the LCS/LCSD samples showed acceptable precision results.

The MS/MSD sets were generally acceptable. The semi-volatile MS/MSD sets were acceptable for the target analytes with one exception. The MSD sample, which corresponded to samples ICS010-ICS015, percent recoveries for all of the target analytes were low. The laboratory case narrative explained that the low spike analyte recoveries were likely due to sample loss during the extraction. The LCS/LCSD and MS samples had acceptable spike analyte recoveries and the samples were non-detect for all target analytes. A matrix effect was not suspected of interfering with the sample results since the MS sample had acceptable spike analyte recoveries.

The VOC MS/MSD sets were generally acceptable. The MS/MSD set for samples ICS070-ICS081 had low recoveries for target analytes. Both the MS and MSD samples had low recoveries for 1,1,2-trichloroethane, and in addition the MSD sample had low recoveries for 1,1,1-trichlorethane, trans-1, 3-

dichloropropene, and o-xylene. The LCS/LCSD set for this batch was acceptable and the corresponding field samples were non-detect for the target analytes. The MSD sample for samples ICS055-ICS069 had spike analyte recoveries for toluene and trichloroethene outside of laboratory QC limits. The cause of the low recoveries was from a computer malfunction during desorption and since encore samples provide only enough sample to run one analysis, consequently there was not enough sample remaining to re-extract and reanalyze the sample. Both LCS/LCSD and MS sample recoveries were acceptable.

The MS/MSD sets for the explosive analyses were generally acceptable. The recoveries for HMX, RDX, TNT and 2-Amino-4, 6-dinitrotoluene typically showed poor percent recoveries. In almost every batch, at least one of these compounds was outside of the laboratory quality control limits in either one of the MS, MSD samples or the MS/MSD pair. The poor recoveries for HMX, RDX and TNT were attributed to high sample concentrations relative to the spike amount. The poor recoveries for 2-Amino-4, 6-dinitrotoluene in most instances were due to coelution of TNT off of the column which prevented the percent recovery from being calculated for 2-Amino-4, 6-dinitrotoluene. In all instances where the MS/MSD pair or individual MS or MSD sample exhibited poor recoveries for the target analytes, the LCS/LCSD samples were acceptable. The field sample results were generally at high concentration levels for these analytes and regardless of any matrix effects the interpretation of the data would not have been changed.

The MS/MSD sets for the metals analyses were generally acceptable. The recoveries for aluminum and iron were typically outside laboratory quality control limits in the MS/MSD pairs in almost every sample batch. The poor MS/MSD recoveries were due to the high concentration of target analytes relative to spiking concentrations. In several sample batches the MS or MSD recovery for antimony, chromium, magnesium and zinc were outside the laboratory quality control limits. Each analytical data set has been evaluated to determine the impact of the MS/MSD recoveries on the usability of the data. For the vast majority of samples, the results were significantly less than the cleanup objective levels, and the bias seen in the varying recoveries would not impact the data enough to consider that these values may either increase above, or decrease below, the cleanup levels if acceptable recoveries were obtained. In each instance where the MS/MSD pair had poor recoveries the LCS/LCSD pair had acceptable recoveries for the target analytes, and for these reasons, MS/MSD results that were outside of laboratory limits did not adversely affect the interpretation of the data.

Conclusion

The QC data demonstrate acceptable accuracy and precision when compared to the intended use of the data. The data meets the project objectives and are, therefore, considered usable for characterization analysis.

6.2.4 Post-Excavation Samples (PES)

Post excavation samples were collected following excavation and collection of in-process excavation samples to determine the levels of constituents of concern remaining in the soil at each grid section. A total of 22 post excavation samples and 2 borrow source samples were collected for laboratory analysis. All samples were received by the laboratory in acceptable condition, with custody seals, correctly preserved, and with containers intact. Ninety-six percent of the samples were received at temperatures of 4°C ± 2°C and four percent were received at 0.5°C to 2°C. Since none of the samples were frozen, the lower temperatures did not adversely affect the results.

Field QC

Field QC samples collected included duplicates, trip blanks, and equipment rinse blanks.

In analysis of duplicates, precision for semi-volatile, metal, and explosive analyses varied from 0-200% relative percent difference.

Trip blanks were submitted with most coolers containing samples to be analyzed for VOCs in order to evaluate the potential for cross-contamination during shipment to the laboratory. Two exceptions to this occurred when field personnel did not submit trip blanks with the samples, (Borrow Source 002 and PES 001-020). The corresponding sample results for PES 001-020 showed no evidence of the target compounds, thus indicating no cross-contamination. The Borrow Source 002 results indicated methylene chloride and acetone were detected in the sample. Methylene chloride and acetone were also detected in the method blank analyzed by the laboratory indicating that the source of the contamination may lie within the laboratory. Sample concentrations of acetone and methylene chloride levels were significantly less than the cleanup targets. Thus, the contamination did not adversely affect the interpretation of the data based upon sample concentrations relative to the industrial treatment standards. Method blank values for acetone and methylene chloride were well below treatment levels.

Laboratory QC

Method blanks, surrogates, LCS/LCSD and MS/MSD samples were used for laboratory quality control for the post excavation samples collected.

Laboratory method blanks showed the presence of acetone (4 - 6 ppb), and methylene chloride (3 - 16 ppb), common laboratory contaminates, at levels above the respective reporting limits for sample borrow source 002. The corresponding samples that had positive sample results for organic analytes have been flagged with a "B" flagcode to indicate possible elevated background levels. For both of these analytes, the corresponding sample had levels significantly less than the targeted cleanup levels. Based upon these results, it is felt that method blank contamination has not adversely affected the interpretation of the data based upon field sample concentrations relative to the IM Industrial Cleanup Goal objectives.

The LCS/LCSD sets showed laboratory control spike precision and accuracy results for the spiked target analytes to be acceptable for explosive, VOC, SVOC, herbicides, PCB, pesticides and metal analyses for the PES and borrow source 001 samples. The LCS/LCSD spike precision results were acceptable for the spike target analytes for explosives, VOC, SVOC, herbicides, PCB and metal analyses for borrow source 002 sample. The pesticide LCS/LCSD precision results associated with borrow source 002 were all outside the laboratory control limits. The case narrative explained that the laboratory did not spike the control samples before sample analysis. However, the precision results after reanalysis of the control samples were acceptable, but perfomed outside the holding time. The sample results were accepted since the discrepancy was due to spike omission and not instrumentation problems and the sample results were non-detect for all target analytes.

The replicate control sample spike precision results were generally acceptable for the MS/MSD samples that were analyzed. The control spike precision results were acceptable for the explosive and metal spiked target analytes for borrow source 002 sample. The herbicide precision results were acceptable for the spiked target analytes associated with borrow source 002 sample except for compounds 2,4,5-T and 2,4-DB. The RPD values exceeded the control limits due to poor recoveries in the MSD sample. The RPD values were acceptable for these compounds in the LCS/LCSD samples and the sample results should not be affected by the high RPD values. The control spike precision results were acceptable for the explosive, metal, and semivolatile analyses associated with the PES and borrow source 001 samples. The RPD values exceeded the control limits for the volatile analyses associated with the PES and borrow source 001 samples. The LCS/LCSD RPD values were within the control limits and the high RPD values for the MS/MSD samples should not affect the interpretation of the sample results.

Surrogate recoveries were generally acceptable for all explosive analyses. Surrogate recoveries were slightly below the laboratory quality control limits for PES 001, PES 019, PES020 and one method blank. The sample results indicated high concentration levels of the target analytes well above the reporting limit, but within the IM Industrial Cleanup goals. The method blank results were non-detect for the target analytes. Since the recoveries were slightly below the quality control limits, the laboratory did not re-extract for the low surrogate recoveries. The sample results would not have been impacted by the data enough to consider that the results would have increased above the cleanup levels if acceptable recoveries were obtained. Surrogate recoveries for VOC, SVOC, PCB, pesticides and herbicides were generally acceptable. The PCB analysis for borrow source 002 had one of two surrogates above the

laboratory QC limits. The sample had high target analyte concentrations and subsequent dilutions were required to bring the result within the linear range of the instrument. The diluted surrogate recovery was acceptable. The surrogate recovery for the herbicide analysis for borrow source 002 was slightly high. The sample was non-detect for the target analytes. Since the surrogate recovery was above the QC limits the target analytes would have had a positive bias if present and would have been detected in the sample. Therefore the sample results should not be affected by the high surrogate recovery. The levels of target analytes were orders of magnitudes lower than the cleanup levels, therefore, any results outside laboratory QC limits did not adversely affect the interpretation of data.

The LCS/LCSD sets were acceptable for the PES and borrow source 001 samples. The LCS/LCSD sets were generally acceptable for borrow source 002 sample. The LCS percent recovery for 1,1,2-trichloroethane was outside laboratory quality control limits, but the LCSD percent recovery was within the QC limits. The LCS/LCSD set percent recoveries for the pesticide analysis were 0%. The laboratory forgot to add the analyte spike to the LCS/LCSD samples. The samples were re-extracted and analyzed, but the re-extraction was outside the method holding time. The percent recoveries for the LCS/LCSD were within the laboratory quality control limits. The sample results for borrow source 002 were non-detect for both analyses. Since the discrepancy with the LCS/LCSD percent recoveries was due to an analyte spike omission rather than attributed to instrumentation problems the results were accepted, and should not affect the interpretation of the results since all other quality control criteria was acceptable and the sample results were well below the IM cleanup goals.

The MS/MSD sets were generally acceptable for the PES and borrow source samples. In all instances where the MS or MSD results did not meet laboratory QC limits, the corresponding LCS/LCSD results did meet QC limits, thus indicating a matrix effect and not a problem with instrumentation or analytical technique. Therefore, any MS/MSD results outside laboratory QC limits do not adversely affect the interpretation of the sample data.

Conclusion

All QC data relating to the PES and borrow source samples, except those noted above, are within laboratory control limits. The QC data satisfy the project objectives and the data are found usable for the confirmation of accuracy for the stated analyses. The QC data demonstrate acceptable accuracy and precision when compared to the intended use of the data. The data meets the project objectives and are, therefore, considered useable for post-excavation analysis.

6.2.5 Windrow Explosive Monitoring Samples

As indicated in Section 4.5, explosives were the only constituents of concern that exceeded the industrial cleanup goals in the ICS, therefore, they were the only parameters analyzed during windrow treatment. Windrow samples collected and submitted for laboratory analysis included Day Zero samples, collected upon construction of the windrow and Day Last samples, collected after completion of treatment. Day Last samples were collected to confirm that the cleanup goals had been achieved. Day Last samples were collected after results from field screening test kits for explosives (RDX was used) were below detectable levels. As stated in Section 4.5, samples were collected from 15 locations in each windrow. Samples were collected at Day Zero and Day Last for windrows 202 through 208. Increases in reporting limits are often seen in Day Zero analytical results due to dilutions necessary for analysis. Concentrations of RDX and HMX are at such high levels in Day Zero sampling that dilutions were performed.

A total of 115 Day Zero samples (for windrows 202 through 208) and 114 Day Last samples (for windrows 202 through 208) were collected by TT. All samples were received by the laboratory in acceptable condition, with custody seals and with containers intact. Eighty-five percent of the Day Zero samples and 72% of the Day Last samples were received at temperatures of 4°C ± 2°C. Fourteen percent of the Day Zero samples and 28% of the Day Last samples were received at 0.5°C to 2°C. The lower temperatures

did not affect the performance of the method analyses or the results of the samples since the samples were not frozen.

Field Quality Control

Field QC samples collected and analyzed with the Day Zero and Day Last samples included field duplicates to evaluate the precision of the field sampling and laboratory analysis.

Field duplicates were collected and analyzed as a method of field data QC. Precision for explosive analyses varied from 0-200%. This is not unexpected when considering the variable nature of the compost matrix. Precision of the field duplicates varied based upon the concentration of the target analytes. Day Last duplicate data was acceptable based upon the concentrations found in the samples relative to the cleanup levels.

Laboratory Quality Control

Method blanks, surrogates, LCS/LCSD and MS/MSD samples were prepared and analyzed for laboratory quality control for the windrow monitoring samples.

Laboratory QC was performed consistent with the requirements of the QAPP. Method blanks, LCS, and LCSD were acceptable in almost every analytical batch. MS, MSD and surrogate data were generally acceptable. In some of the Day Zero data, consistent elevated MS and MSD recoveries of RDX and HMX are often seen in the analytical data because of the high levels of these compounds initially present in the sample. In Day Zero samples, which often required dilutions after spiking of the sample, the concentration of the spiking solution is diluted to a low level which cannot often be distinguished from the variability of the sample itself. In Day Last samples, where MS/MSD recoveries did not meet the established laboratory criteria, in most cases the parent sample had high analyte concentrations with respect to the spiking amount in the MS/MSD sets attributing to interference problems.

The LCS/LCSD sets showed laboratory control spike precision results for the spiked target analytes to be acceptable for explosive analyses. The replicate control spike precision results for the MS/MSD sets were acceptable for the spiked target analytes in most of the sample batches. RPD values were outside the laboratory control limits for HMX (Windrow M202 Day 5), HMX and tetryl (Windrow M202 Day 10) and RDX (Windrow S208 Day 4). Matrix interferences likely attributed to the high RPD values since the parent samples had high concentrations for HMX and RDX. The sample results should not be affected since the LCS/LCSD sets had acceptable precision results for these windrows.

The surrogate recoveries were generally acceptable for most samples, however in samples having high concentrations of TNT, the corresponding surrogate recoveries were often outside laboratory QC limits. This is attributed to an interference effect of a large TNT concentration on the surrogate peak.

In Day Zero samples, there was 1 batch or set of LCS/LCSD samples where QC results for one analyte, 2-NT, did not meet laboratory control limits (Day Zero Windrow 204). However this analyte was not detected in the samples corresponding to this LCS/LCSD set. In addition the percent recoveries for 3-NT and 4-NT were outside laboratory control limits in the LCS sample, but were within the laboratory control limits in the LCSD sample. 3-NT was not detected in the corresponding samples, and 4-NT was detected at low levels in the samples well below the cleanup goals.

In Day Last samples, there was 1 set of LCS/LCSD sample data where QC results for one analyte, 2-NT, was outside of laboratory control limits with a low percent recovery (Day Last Windrow 205). The MS/MSD sample data was acceptable for 2-NT. All other analytes were within control limits for this set and the corresponding samples showed no evidence of the 2-NT analyte.

In Day Zero samples, no MS/MSD sets exhibited all analyte recoveries within the laboratory QC limits. Day Zero samples often required dilutions to bring RDX, and HMX to quantifiable levels. The dilution occurs after sample spiking, thus, the concentration of the spiked compounds were diluted out and could not be determined. In most of the instances where the MS or MSD results did not meet laboratory QC

limits, the corresponding LCS/LCSD results did meet QC limits, thus indicating a matrix effect and not a problem with instrumentation or analytical technique. Therefore, any MS/MSD results associated with Day Zero samples that were outside laboratory QC limits did not adversely affect the interpretation of the sample data. However, one exception to this occurred with Windrow 204 Day Zero. The LCS/LCSD results for 2-NT were outside the laboratory control limits as well as the MS/MSD. The data were not usable for this analyte only and have been flagged with an "R" by TT. However, all other laboratory quality control criteria were met and since additional samples were going to be submitted after treatment that would be used to determine if the IM Cleanup Goals were met, the data for Windrow 204 Day Zero was accepted.

For the MS/MSD associated with Day Last only four MS/MSD sets exhibited analytes slightly outside the limits in either the MS or MSD. As with the Day Zero samples, in all of the cases where the MS or MSD results did not meet laboratory QC limits, the corresponding LCS/LCSD results did meet QC limits, indicating a matrix effect and not a problem with instrumentation or analytical technique. Therefore, any MS/MSD results associated with Day Last samples that were outside laboratory QC limits did not adversely affect the interpretation of the sample data.

Conclusion

Based on technical review of the field and laboratory QC data, analyses were performed within acceptable accuracy and precision requirements specified in the QAPP. All QC data relating to Day Zero and Day Last samples, except those noted above are within the laboratory control limits. The QC data satisfy the project objectives and the data are found to be usable for the confirmation of accuracy for the stated analyses to support full-scale operations.

7.0 SAFETY AND INDUSTRIAL HYGIENE

7.1 GENERAL SAFETY

From the period beginning January 17, 2000, when the first RKI ICS were obtained, until October 2, 2001, when the last RKI windrow was placed in the field, a total of 37,755.3 hours were expended for work related to the Biofacility. No injuries or incidents were recorded during this time period.

A total of 99 formal safety inspections were performed during this time period. 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 worker safety performance.

7.2 INDUSTRIAL HYGIENE SAMPLING

Ammonia samples were collected by colorimetric methods. Sampling indicated ammonia levels above the permissible exposure limit (PEL) of 50 mg/kg and the Threshold Limit Value (TLV) of 25 mg/kg during windrow construction and the first 24 hours of the windrow life cycle. The chicken manure amendment was the primary contributor to the ammonia concentrations. As a result, full face air purifying respirators with ammonia cartridges were worn during windrow formation and during the first 24 hours of the windrow life cycle.

Airborne dust sampling for explosive compounds was performed at the Biofacility, including area samples and personnel samples. All samples were collected over a period of four hours. All samples were below the 1.5 mg/m^3 8 hour time weighted average exposure limit.

Wipe sampling for explosive residues was performed at the Biofacility. Area samples were collected from the laboratory trailer, shower trailer, office trailer, and lunchroom. The highest average concentration of any sampling event for the explosive HMX was 10.0 ug/wipe, and three ug/kg for RDX. The compound 3nitro-toluene was detected in one sample in one sampling event at 10.0 ug/wipe. Personnel and equipment decontamination procedures were stressed following receipt of these sample results from the laboratory.

Noise monitoring was performed using an Audio Dosimeter. The highest time-weighted average level of exposure of any sampling event was 87 decibels (dBa), and the highest average was 78 dBa. The highest one-second average sound level recorded was 141 dBa, and the highest average was 117.9 dBa. Associates are required to wear hearing protection when noise levels exceed 85 dBa during a weighted network steady state, or 140 dBa impulse, regardless of the duration of exposure.

In summary, monitoring during this period indicates no airborne explosive compounds hazards were present and adequate dust control measures are in place. Ammonia monitoring indicates respiratory protection is warranted during the first seven days of the windrow life cycle. Wipe sample analysis indicates that personnel decontamination procedures need to be stressed and adhered to. Noise monitoring indicates a need for hearing protection while working around heavy equipment at the site.

8.0 CONCLUSIONS AND RECOMMENDATIONS

IM work at RKI including identification, excavation, treatment, and placement as backfill of explosives-contaminated soil adjacent to B-2733 has been completed in accordance with all relevant plans and plan modifications. Investigation at other areas within RKI (i.e. drainage ditches and sumps) did not identify any explosive's contamination that exceeded the cleanup criteria.

Excavation of impacted soil was completed in all areas identified by initial characterization sampling. All excavated soil was successfully treated at the Biofacility by composting to levels below residential cleanup goals. Treated soil was returned to the site and used for backfill. No future IM work is recommended for RKI.

Results of ICS collected at RKI revealed levels of arsenic above cleanup goals. However, this may only represent a high background concentration for this compound at NSWC Crane, which has been confirmed by the *Basewide Background Soil Investigation Report* [TtNUS, 2001].

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Quarterly Interim Progress Report, October 1 – December 31, 2001, Full-Scale Operations, Bioremediation of Explosives Contaminated Soil, NSWC Crane, Crane, Indiana. TolTest, Inc.

APPENDIX A

FIELD CLARIFICATION REQUESTS

Crane Naval Surface Warfare Center TolTest, Inc.	EJOC Contract N622467-96-D-0052

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.: FC03	**Subcontract No.:** N/A	**FCR No.:** FCO3-FCR-FS014 **Rev. 0**
Disposition of Rocks Excavated with Contaminated Soils		Page 1 of 1

Reference Documents:
Full-Scale Operational Plan for Soils Bioremediation Facility, March 1998 Rev. 2

Problem / Change Description:
Require final clarification / disposition of rocks excavated with contaminated soil at the excavation sites. Current rock decontamination procedures are labor intensive (multiple washes and rinses are required for every rock) and generates an excessive amount of contaminated rinse water. Special approval is then required for disposal of this potentially contaminated rinse water. Analysis of the rinse water for disposal characterization must meet drinking water standards, which are restrictive since cleanup goals at the excavation sites are to industrial use standards. Realistically these drinking water standards are difficult to meet with this decontamination procedure ensuring that special procedures and approvals will be required for final disposition of the rocks.

Initiated by	Signature:	Organization: TolTest, Inc.	Date: 4/23/99

Resolution:
Amend the FSOP Section 7.1.1 as follows:

Change the third and fourth sentence of the first paragraph to "The separated rocks will be containerized and transported to the Biofacility Truck Wash decontamination bay. The rocks will be thoroughly rinsed with a high pressure, low volume sprayer to remove all visible soil contamination as described in Field SOP 7.0 in Appendix D of this plan."

Change the second paragraph to "Rinse water will be collected in the wash bay sump for use on the windrows as described in Field SOP 6.0 in Appendix D of this plan. If the rocks are to be placed in other than the SWMU of origination, final rinse samples will be collected and analyzed to determine the cleanliness of the washed rocks as described in SOP QAPP 2.0 of the approved QAPP for full Scale Operations. Figure 1-4 provides the decision-making flowchart for the rock decontamination.

Remove Figure 1-4 of the FSOP and replace with the revised Figure 1-4 (attached).

Amend the FSOP Field SOP 7.0, Section 3.2.2 as follows:

A) Delete number 1 through 8.
B) Insert the following:
   1) Containerize the rocks and transport to the Biofacility Truck Wash decontamination bay;
   2) Place the rocks on a metal screen or grate to protect the concrete base of the wash bay;
   3) Utilize a high-pressure low-volume sprayer to remove all visible soil contamination. Allow rinse water to drain into the wash bay sump.
   4) Utilize the rinse water from the wash bay sump on the windrows as described in Field SOP 6.0 in Appendix D of this plan.
   5) Return the rocks to the SWMU of origination and place in the bottom of an open excavation. Cover with no less than two feet of finished compost. Log and map the area and grid where the rocks were placed.
   6) If the rocks are to be placed in an area other than the SWMU of origination, then collect final rinse samples for off-site laboratory analysis per SOP QAPP 2.0 in the approved QAPP for Full-Scale Operations. The same volume of water shall be used per volume of rock for each final rinsing.

Approval by TolTest, PM	Signature: Lance Parsons Lance Parsons	Date: 4/27/99	**Approval by ROICC/NTR or RPM**	Signature: Brent Robertson Brent Robertson	Date 5/13/99
Approval by TolTest QC/SHSO	Signature: Travis Nowak Travis Nowak	Date: 4/27/99	**Approval by EPD ECOTR**	Signature: Christine D. Freeman Christine Freeman	Date: 4/28/99
			Additional Reviews: By/Date		

Regulator Approval/Notification Recommended:
Yes ☒ No ☐ see attached approval signature ~~(faxed copy)~~

Crane Naval Surface Warfare Center TolTest, Inc.	EJOC Contract N622467-96-D-0052

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.: FC03	**Subcontract No.:** N/A	**FCR No.:** FCO3-FCR-FS014 **Rev. 0**
Disposition of Rocks Excavated with Contaminated Soils		Page 1 of 1

Reference Documents:

Full-Scale Operational Plan for Soils Bioremediation Facility, March 1998 Rev. 2

Problem / Change Description:

Require final clarification / disposition of rocks excavated with contaminated soil at the excavation sites. Current rock decontamination procedures are labor intensive (multiple washes and rinses are required for every rock) and generates an excessive amount of contaminated rinse water. Special approval is then required for disposal of this potentially contaminated rinse water. Analysis of the rinse water for disposal characterization must meet drinking water standards, which are restrictive since cleanup goals at the excavation sites are to industrial use standards. Realistically these drinking water standards are difficult to meet with this decontamination procedure ensuring that special procedures and approvals will be required for final disposition of the rocks.

Initiated by	Signature:	Organization: TolTest, Inc.	Date: 4/23/99

Resolution:

Amend the FSOP Section 7.1.1 as follows:

Change the third and fourth sentence of the first paragraph to "The separated rocks will be containerized and transported to the Biofacility Truck Wash decontamination bay. The rocks will be thoroughly rinsed with a high pressure, low volume sprayer to remove all visible soil contamination as described in Field SOP 7.0 in Appendix D of this plan."

Change the second paragraph to "Rinse water will be collected in the wash bay sump for use on the windrows as described in Field SOP 6.0 in Appendix D of this plan. If the rocks are to be placed in other than the SWMU of origination, final rinse samples will be collected and analyzed to determine the cleanliness of the washed rocks as described in SOP QAPP 2.0 of the approved QAPP for full Scale Operations. Figure 1-4 provides the decision-making flowchart for the rock decontamination.

emove Figure 1-4 of the FSOP and replace with the revised Figure 1-4 (attached).

Amend the FSOP Field SOP 7.0, Section 3.2.2 as follows:

A) Delete number 1 through 8.
B) Insert the following:
   1) Containerize the rocks and transport to the Biofacility Truck Wash decontamination bay;
   2) Place the rocks on a metal screen or grate to protect the concrete base of the wash bay;
   3) Utilize a high-pressure low-volume sprayer to remove all visible soil contamination. Allow rinse water to drain into the wash bay sump.
   4) Utilize the rinse water from the wash bay sump on the windrows as described in Field SOP 6.0 in Appendix D of this plan.
   5) Return the rocks to the SWMU of origination and place in the bottom of an open excavation. Cover with no less than ~~three~~ TWO feet of finished compost. Log and map the area and grid where the rocks were placed.
   6) If the rocks are to be placed in an area other than the SWMU of origination, then collect final rinse samples for off-site laboratory analysis per SOP QAPP 2.0 in the approved QAPP for Full-Scale Operations. The same volume of water shall be used per volume of rock for each final rinsing.

Approval by TolTest, PM	Signature: Lance Parsons	Date:	**Approval by ROICC/NTR or RPM**	Signature: Brent Robertson	Date
Approval by TolTest QC/SHSO	Signature: Travis Nowak	Date:	**Approval by EPD ECOTR**	Signature: Christine Freeman	Date:
			Additional Reviews: By/Date		

Regulator Approval/Notification Recommended:
Yes ☒ No ☐ modification 2 feet cover okay instead of 3.
Send final pages after this approval. [illegible] 4/25/99

FIGURE 1-4
ROCK DECONTAMINATION WATER AND DISPOSAL DECISION-MAKING FLOWCHART

THIS FLOWCHART APPLIES TO THE EXCAVATION SITE ROCKS

EXCAVATION ROCKS
SCREENED FROM SOIL

↓

WASH ROCKS ← *B*
(Use Section 7.0 and SOP 7.0
Appendix D and QAPP
Procedures)

↓

Rocks to be returned to SWMU of origination? → Yes → Place in excavation and cover with minimum two feet of finished compost

NO

↓

SAMPLE FINAL RINSE WATER
(Use QAPP procedures for lab analysis,
Section 1.3 parameters)

↓

ARE THE RESULTS ALL NON-DETECT? → Yes → Rocks may be disposed of without use restrictions

NO

↓

WHAT REMEDIAL GOALS ARE MET?
(See Tables 1-4a and 1-4b, Section 1.3)

GO TO *A*

Crane Naval Surface Warfare Center TolTest, Inc.	EJOC Contract N622467-96-D-0052

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.: FC03	**Subcontract No.:** N/A	**FCR No.:** FCO3-FCR-FS026 **Rev. 0**
Change Methodology for Detection of Arsenic in Soils		Page 1 of 1

Reference Documents:

Full-Scale Operational Plan for Soils Bioremediation Facility, March 1998 Rev. 2

Quality Assurance Project Plan for Full-Scale Operations Soils Bioremediation Facility, March 12, 1998, Rev. 2

Problem / Change Description:

The Quality Assurance Project Plan (QAPP) requires that method number 7060 be utilized for detection of arsenic in soils and water. NSWC Crane requests that the method be changed to method number 6010 (like all other metals except Mercury & Cyanide). The 7060 graphite furnace method is being phased out and replaced by the ICP analyses 6010 and 6020. Method number 7060 has a reporting limit of 0.8 ppm in soils, and method number 6010 has a normal reporting limit of 1.0 ppm, both of which are below the industrial cleanup goal for arsenic set at 2.4 ppm. The reporting level for method 6010 can reach 0.8 ppm but with less accuracy. Method 6010 is more accurate at detecting high levels of arsenic in soil than method 7060 since fewer dilutions are needed.

Initiated by	Signature: Lance M Parsons	Organization: TolTest, Inc.	Date: 1/24/2000

Resolution:

Amend Table 1-1, 1-2, 1-3, and 1-4a and 1-4b in both the Full Scale Operations Plan and the QAPP as follows:

Replace the reference for detection of arsenic in soils and water by method 7060 with method 6010.

Approval by TolTest, PM	Signature: Lance Parsons	Date: 1/24/00	**Approval by ROICC/NTR or RPM**	Signature: Brent Robertson	Date 2/1/00
Approval by TolTest QC/SHSO	Signature: Debbie Leighty	Date: 1/24/00	**Approval by EPD ECOTR:**	Signature Christine D. Freeman Christine Freeman	Date 1/27/00

Regulator Approval/Notification Recommended:

Yes ☒ No ☐

Approval given by fax. Please see attached

Crane Naval Surface Warfare Center TolTest, Inc.	EJOC Contract N622467-96-D-0052

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.:	Subcontract No.:	FCR No.:
FC03	N/A	FCO3-FCR-FS026 Rev. 0
Change Methodology for Detection of Arsenic in Soils		Page 1 of 1

Reference Documents:

Full-Scale Operational Plan for Soils Bioremediation Facility, March 1998 Rev. 2

Quality Assurance Project Plan for Full-Scale Operations Soils Bioremediation Facility, March 12, 1998, Rev. 2

Problem / Change Description:

The Quality Assurance Project Plan (QAPP) requires that method number 7060 be utilized for detection of arsenic in soils and water. NSWC Crane requests that the method be changed to method number 6010 (like all other metals except Mercury & Cyanide). The 7060 graphite furnace method is being phased out and replaced by the ICP analyses 6010 and 6020. Method number 7060 has a reporting limit of 0.8 ppm in soils, and method number 6010 has a normal reporting limit of 1.0 ppm, both of which are below the industrial cleanup goal for arsenic set at 2.4 ppm. The reporting level for method 6010 can reach 0.8 ppm but with less accuracy. Method 6010 is more accurate at detecting high levels of arsenic in soil than method 7060 since fewer dilutions are needed.

Initiated by	Signature:	Organization: TolTest, Inc.	Date: 1/24/2000

Resolution:

nd Table 1-1, 1-2, 1-3, and 1-4a and 1-4b in both the Full Scale Operations Plan and the QAPP as follows:

Replace the reference for detection of arsenic in soils and water by method 7060 with method 6010.

Approval by TolTest, PM	Signature: Lance Parsons	Date:	Approval by ROICC/NTR or RPM	Signature: Brent Robertson	Date
Approval by TolTest QC/SHSO	Signature: Debbie Leighty	Date:	Approval by EPD ECOTR:	Signature Christine Freeman	Date

Regulator Approval/Notification Recommended:

Yes No ■

1/27/2000

Crane Naval Surface Warfare Center TolTest, Inc.	EJOC Contract N622467-96-D-0052

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.:	Subcontract No.:	FCR No.:
FC03	N/A	FCO3-FCR-FS027 Rev. 0
Consolidate Excavation Completion Report and Compost Completion Report		Page 1 of 1

Reference Documents:
Full-Scale Operational Plan for Soils Bioremediation Facility, March 1998 Rev. 2

Problem / Change Description:
Section 12 and Section 14 Table 14-1 of the Full Scale Bioremediation Facility Operations Plan requires that within 180 days of completion two separate Interim Measures reports for each SWMU, Excavation Completion Report and Compost Completion Report, should be submitted. For simplification and ease of managing reports and correspondence, it is requested that one Interim Measures report be submitted for each SWMU containing all the information required by the separate Excavation Completion Report and Compost Completion Report.

Initiated by	Signature:	Organization: TolTest, Inc.	Date: 2/1/2000

Resolution:
Amend Section 12 Paragraph 4 Bullet 3 of the Full Scale Bioremediation Facility Operations Plan as follows: Interim Measures Reports - These reports will include a summary of operations and analytical results, cubic yards of soil processed, process adjustments, disposal of wastes and treated soil, photographs, confirmatory sampling and backfilling actions, acceptance of work etc.. These reports will be submitted within 180 days upon completion of interim measures and restoration activities at each SWMU.

Amend Section 14 Table 14-1 of the Full Scale Bioremediation Facility Operations Plan as follows: see attachment.

Approval by TolTest PM	Signature: Lance Parsons	Date: 2/1/00	**Approval by ROICC/NTR or RPM**	Signature: Brent Robertson	Date 2/9/00
Approval by TolTest QC/SHSO	Signature: Debbie Leighty	Date: 2/1/00	**Approval by EPD ECOTR:**	Signature Christine Freeman	Date 2/2/00

Regulator Approval/Notification Recommended:
Yes ☑ No ☐

See faxed approval

Crane Naval Surface Warfare Center TolTest, Inc.	EJOC Contract N622467-96-D-0052

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.: FC03	Subcontract No.: N/A	FCR No.: FCO3-FCR-FS027 Rev. 0
Consolidate Excavation Completion Report and Compost Completion Report		Page 1 of 1

Reference Documents:
Full-Scale Operational Plan for Soils Bioremediation Facility, March 1998 Rev. 2

Problem / Change Description:
Section 12 and Section 14 Table 14-1 of the Full Scale Bioremediation Facility Operations Plan requires that within 180 days of completion two separate Interim Measures reports for each SWMU, Excavation Completion Report and Compost Completion Report, should be submitted. For simplification and ease of managing reports and correspondence, it is requested that one Interim Measures report be submitted for each SWMU containing all the information required by the separate Excavation Completion Report and Compost Completion Report.

Initiated by	Signature:	Organization: TolTest, Inc.	Date: 2/1/2000

Resolution:
Amend Section 12 Paragraph 4 Bullet 3 of the Full Scale Bioremediation Facility Operations Plan as follows: Interim Measures Reports - These reports will include a summary of operations and analytical results, cubic yards of soil processed, process adjustments, disposal of wastes and treated soil, photographs, confirmatory sampling and backfilling actions, acceptance of work etc.. These reports will be submitted within 180 days upon completion of interim measures and restoration activities at each SWMU.

Amend Section 14 Table 14-1 of the Full Scale Bioremediation Facility Operations Plan as follows: see attachment.

Approval by TolTest, PM	Signature: Lance Parsons	Date:	Approval by ROICC/NTR or RPM	Signature: Brent Robertson	Date
Approval by TolTest QC/SHSO	Signature: Debbie Leighty	Date:	Approval by EPD ECOTR:	Signature Christine Freeman	Date

Regulator Approval/Notification Recommended:
Yes No ■

2/3/2000

TABLE 14-1 SCHDEULE FOR DOCUMENT SUBMITTAL			
Document Title	**Frequency**	**Schedule**	**Distribution**
Initial Full-Scale Batch Report	One report per SWMU site.	Within 60 days of completion of first batch	NAVFACENGCOM Southern Division, NSWC Crane EPD, ROICC, U.S.EPA Region 5, and IDEM
Interim Progress Report	One report every 90 days of operation	One report every 90 days of operation	NAVFACENGCOM Southern Division, NSWC Crane EPD, ROICC, U.S.EPA Region 5, and IDEM
Interim Measures Report	One report per SWMU site.	Within 180 days of completion of final excavation and treatment, confirmatory sampling, backfilling, treated soil disposal, and acceptance of work at each SWMU site.	NAVFACENGCOM Southern Division, NSWC Crane EPD, ROICC, U.S.EPA Region 5, and IDEM
Daily Report	One report daily for the duration of the project.	By 10:00 am the following business day for the first thirty days of operation for each SWMU site. After the thirty days, the reports will be filed at the Bioremediation Facility Office.	NSWC Crane EPD
Photographic Documentation	As required to show different stages of operation.	The documentation will be filed at the Bioremediation Facility Office.	Not applicable
Inspection Records	As required by the Testing Plan and Log (Appendix F).	The documentation will be filed at the Bioremediation Facility Office.	Not applicable

Crane Naval Surface Warfare Center TolTest, Inc.	EJOC Contract N622467-96-D-0052

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.: FC03	**Subcontract No.:** N/A	**FCR No.:** FCO3-FCR-FS028 Rev. 1
Eliminate Windrow Process Monitoring on Sundays		Page 1 of 1

Reference Documents:

Full-Scale Operational Plan for Soils Bioremediation Facility, March 1998 Rev. 2 (FSOP)

Quality Assurance Project Plan for Full-Scale Operations Soils Bioremediation Facility July 1999, Rev. 3 (QAPP)

Problem / Change Description:

As of 9/5/00 183 full-scale windrows have been processed to industrial clean-up goals (at a minimum). Historical data generated from windrow process monitoring has indicated that thermophilic temperatures are being reached within two to three days of windrow initiation and are being sustained throughout the composting process. While aerobic degradation is the most important process in composting explosives, anaerobic decomposition also occurs throughout the composting process. Currently no windrow turning or monitoring is undertaken on national holidays. Yet all of the windrows that have sat idle on these occasions have reached, at a minimum, industrial cleanup goals. The data clearly indicates that the composting process is successful in achieving clean-up goals despite the windrows sitting idle for a short period. Therefore the requirement for windrow turning and process monitoring on Sundays is not essential and suspending operations on Sundays will not adversely affect the composting process.

Initiated by	Signature: Lance Parsons	Organization: TolTest, Inc.	Date: 9/22/99

Resolution:

.iminate windrow turn events and process monitoring on Sundays for windrows containing soil from Mine Fill A and Mine Fill B. Eliminate windrow turn events and process monitoring on Sundays for windrows with soil from Rockeye if the Pilot Scale windrow indicates that the composting process is successful on soil from Rockeye. Windrow turn events and process monitoring will be completed on Sundays if a national holiday that TolTest observes occurs on a Monday (no work is completed on these national holidays). That is, the windrows will not be idle for more than one day at a time. If it is determined that suspending turn events on newly formed windrows results in an adverse effect on the treatment process, then Sunday turn events will only be suspended on those windrows that have reached thermophilic temperatures by at least the preceding Friday.

Approval by TolTest, PM	Signature: Lance Parsons Lance Parsons	Date: 9/22/00	**Approval by ROICC/NTR or RPM**	Signature: Brent Robertson Brent Robertson	Date 9/26/00
Approval by TolTest QC/SHSO	Signature: Debbie Leighty Debbie Leighty	Date: 9/22/00	**Approval by EPD ECOTR**	Signature: Thomas J. Brent Christine Freeman	Date: 9/25/00
			Additional Reviews: By/Date		

Regulator Approval/Notification Recommended:

Yes ☐ No ☐

Crane Naval Surface Warfare Center TolTest, Inc.	EJOC Contract N622467-96-D-0052

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.: FC03	**Subcontract No.:** N/A	**FCR No.:** FCO3-FCR-FS028 **Rev. 1**
Eliminate Windrow Process Monitoring on Sundays		Page 1 of 1

Reference Documents:

Full-Scale Operational Plan for Soils Bioremediation Facility, March 1998 Rev. 2 (FSOP)

Quality Assurance Project Plan for Full-Scale Operations Soils Bioremediation Facility July 1999, Rev. 3 (QAPP)

Problem / Change Description:

As of 9/5/00 183 full-scale windrows have been processed to industrial clean-up goals (at a minimum). Historical data generated from windrow process monitoring has indicated that thermophilic temperatures are being reached within two to three days of windrow initiation and are being sustained throughout the composting process. While aerobic degradation is the most important process in composting explosives, anaerobic decomposition also occurs throughout the composting process. Currently no windrow turning or monitoring is undertaken on national holidays. Yet all of the windrows that have sat idle on these occasions have reached, at a minimum, industrial cleanup goals. The data clearly indicates that the composting process is successful in achieving clean-up goals despite the windrows sitting idle for a short period. Therefore the requirement for windrow turning and process monitoring on Sundays is not essential and suspending operations on Sundays will not adversely affect the composting process.

Initiated by	Signature:	Organization: TolTest, Inc.	Date: 9/20/99

Resolution:

Eliminate windrow turn events and process monitoring on Sundays for windrows containing soil from Mine Fill A and Mine Fill B. Eliminate windrow turn events and process monitoring on Sundays for windrows with soil from Rockeye if the Pilot Scale windrow indicates that the composting process is successful on soil from Rockeye. Windrow turn events and process monitoring will be completed on Sundays if a national holiday that TolTest observes occurs on a Monday (no work is completed on these national holidays). That is, the windrows will not be idle for more than one day at a time. If it is determined that suspending turn events on newly formed windrows results in an adverse effect on the treatment process, then Sunday turn events will only be suspended on those windrows that have reached thermophilic temperatures by at least the preceding Friday.

Approval by TolTest, PM	Signature: Lance Parsons	Date:	**Approval by ROICC/NTR or RPM**	Signature: Brent Robertson	Date
Approval by TolTest QC/SHSO	Signature: Debbie Leighty	Date:	**Approval by EPD ECOTR**	Signature: Christine Freeman	Date:
			Additional Reviews: By/Date		

Regulator Approval/Notification Recommended:

Yes No ■ 9/20/2000

Crane Naval Surface Warfare Center TolTest, Inc.	EJOC Contract N622467-96-D-0052

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.: FC03	**Subcontract No.:** N/A	**FCR No.:** FCO3-FCR-FS030 **Rev. 0**
Installation of gutters on Biofacility compost buildings		Page 1 of 1

Reference Documents:

Full-Scale Operational Plan for Soils Bioremediation Facility, March 1998 Rev. 2

Problem / Change Description:

Currently the rainwater that falls on the roofs of the three compost buildings falls to the pavement and is directed into Retention Pond #1 on the west side of the facility. This water greatly increases the amount of water flowing into this pond which causes the pond to fill rapidly, causing potential water control problems.

Initiated by	Signature:	Organization: TolTest, Inc.	Date: 4/24/2001

Resolution:

To divert the rainwater that falls onto the roofs of the three compost buildings away from the retention pond, a water control system will be installed to include gutters, downspouts, and piping to divert this water to drainage ditches. Water from the downspouts on all but the South side of the South compost building will be collected in aboveground horizontal collection pipes at the base of each wall which will flow to the west end of each building. At this point, the piping will be directed under the pavement and emptied into the adjacent drainage ditches. To facilitate this, the asphalt pavement will be cut and removed to allow installation of the piping below grade. New asphalt (4 inches of base and 2 inches of top coat) will be placed after the piping is installed. A sealer coat will be applied after the asphalt has cured. Each downspout on the South side of the South building will be connected to a pipe which will be directed over the asphalt curb directly into the grass, no trenching will be required.

Approval by TolTest, PM	Signature: Lance Parsons	Date: 4/30/01	**Approval by ROICC/NTR or RPM**	Signature: Brent Robertson	Date 5/3/01
Approval by TolTest QC/SHSO	Signature: John Lyttle	Date: 5/1/01	**Approval by EPD ECOTR:**	Signature Christine D. Freeman Christine Freeman	Date 5/2/01

Regulator Approval/Notification Recommended:
Yes ☒ No ☐

See attached faxed signature approval.

Crane Naval Surface Warfare Center	EJOC Contract N622467-96-D-0052
TolTest, Inc.	

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.:	Subcontract No.:	FCR No.:
FC03	N/A	FCO3-FCR-FS030 Rev. 0
Installation of gutters on Biofacility compost buildings		Page 1 of 1

Reference Documents:

Full-Scale Operational Plan for Soils Bioremediation Facility, March 1998 Rev. 2

Problem / Change Description:

Currently the rainwater that falls on the roofs of the three compost buildings falls to the pavement and is directed into Retention Pond #1 on the west side of the facility. This water greatly increases the amount of water flowing into this pond which causes the pond to fill rapidly, causing potential water control problems.

Initiated by	Signature:	Organization: TolTest, Inc.	Date: 4/24/2001

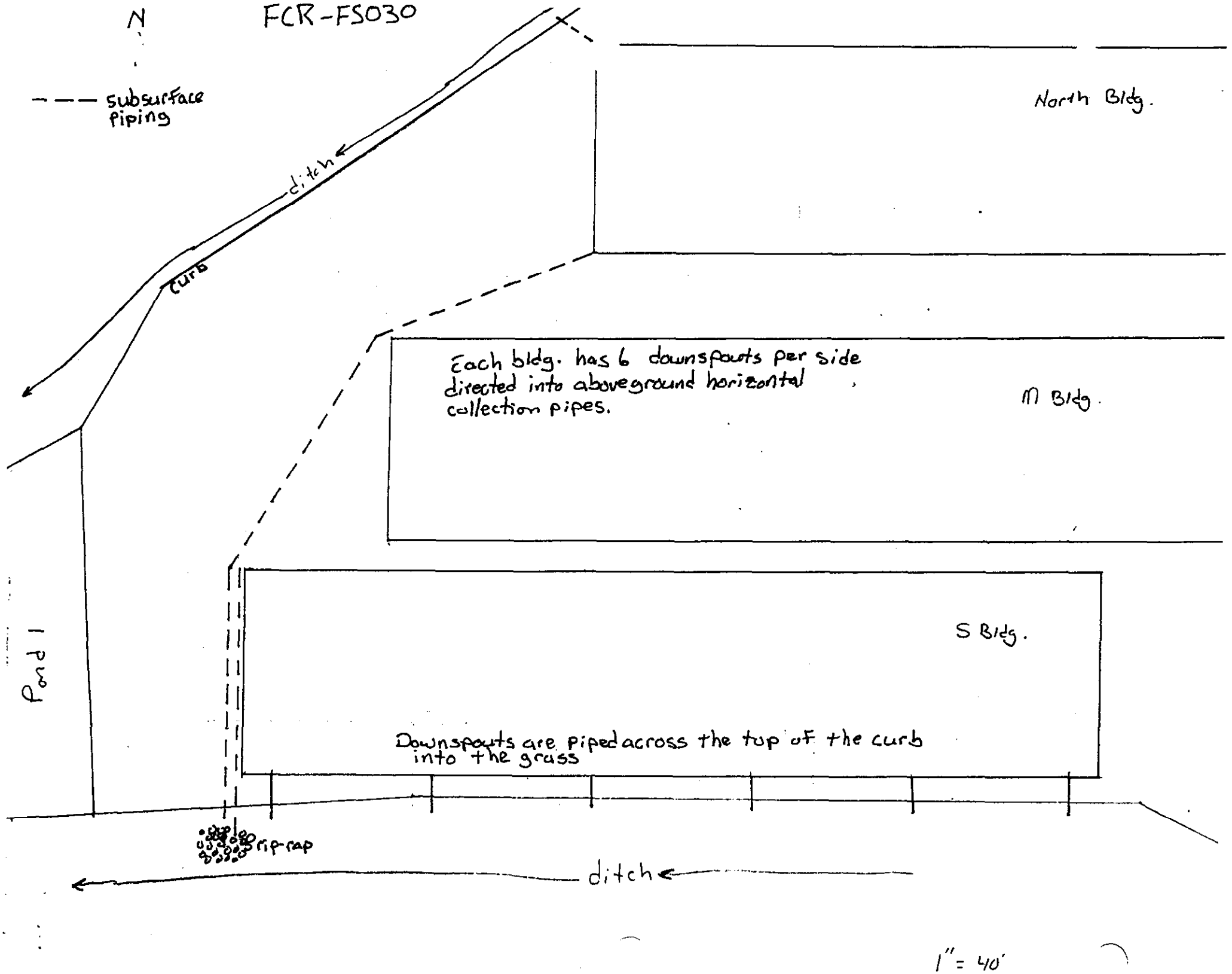
Resolution:

To divert the rainwater that falls onto the roofs of the three compost buildings away from the retention pond, a water control system will be installed to include gutters, downspouts, and piping to divert this water to drainage ditches. Water from the downspouts on all but the South side of the South compost building will be collected in aboveground horizontal collection pipes at the base of each wall which will flow to the west end of each building. At this point, the piping will be directed under the pavement and emptied into the adjacent drainage ditches. To facilitate this, the asphalt pavement will be cut and removed to allow installation of the piping below grade. New asphalt (4 inches of base and 2 inches of top coat) will be placed after the piping is installed. A sealer coat will be applied after the asphalt has cured. Each downspout on the South side of the South building will be connected to a pipe which will be directed over the asphalt curb directly into the grass, no trenching will be required.

Approval by TolTest, PM	Signature: Lance Parsons	Date:	Approval by ROICC/NTR or RPM	Signature: Brent Robertson	Date
Approval by TolTest QC/SHSO	Signature: John Lyttle	Date:	Approval by EPD ECOTR:	Signature Christine Freeman	Date

Regulator Approval/Notification Recommended:
Yes ■ No ■

5/1/01


N
FCR-FS030
subsurface piping
ditch
curb
North Bldg.
Each bldg. has 6 downspouts per side directed into aboveground horizontal collection pipes.
M Bldg.
S Bldg.
Pond 1
Downspouts are piped across the top of the curb into the grass
rip-rap
ditch
1" = 40'

Crane Naval Surface Warfare Center	EJOC Contract N622467-96-D-0052
TolTest, Inc.	

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.:	Subcontract No.:	FCR No.:
FC03	N/A	FCO3-FCR-FS032 **Rev. 0**
SOP for Elutriate Preparation for Microtox Testing		Page 1 of 1

Reference Documents:

Quality Assurance Project Plan for Full-Scale Operations Soils Bioremediation Facility, March 1998 Rev. 2

Problem / Change Description:

The approved standard operating procedure SOP/PRP/005, found on page A-3d of Appendix G to the Biofacility QAPP, is not the appropriate SOP for preparation of elutriate used in toxicity testing. This SOP describes a procedure used on sediment samples, not soil samples. Although this is the approved SOP, the contract laboratory performing toxicity analysis used the more appropriate SOP, SOP/SED/202 (attached), in previous toxicity sampling events.

Initiated by TolTest Env. Spec.	Signature: Peter J. Chevalier	Organization: TolTest, Inc.	Date: 5/18/2001

Resolution:

Replace SOP/PRP/005 with SOP/SED/202. The applicable sections of SOP/SED/202 for preparation of the elutriate are 1.7, 1.8, and 1.9. The remaining sections of this SOP are not applicable.

Approval by TolTest PM	Signature: Lance Parsons	Date: 5/18/01	**Approval by ROICC/NTR or RPM**	Signature: Brent Robertson	Date 5/22/01
Approval by TolTest QC/SHSO	Signature: John Lyttle	Date: 5-18-01	**Approval by EPD ECOTR:**	Signature Christine Freeman	Date 5/21/01

Regulator Approval/Notification Recommended:
Yes ☐ No ☐

5/22/01

STATIC NON-RENEWAL TEST FOR DETERMINING ACUTE TOXICITY OF AQUEOUS WASTES AND SOIL AND SOLID WASTE ELUTRIATES TO THE SEEDLINGS OF TERRESTRIAL PLANTS

OBJECTIVE

The objective of this procedure is to determine the acute toxicity of aqueous wastes and soil and solid waste elutriates to the seedlings of terrestrial plants.

For purposes of uniformity and practicality, this procedure is designed for use with the seeds of the specific domestic cultivar, "Buttercrunch", of the common lettuce, *Lactuca sativa*, but may be applied with equal effect to the seeds other species, both domestic and wild.

MATERIALS

1. Untreated seeds, of a single lot of the year, of *Lactuca sativa* var "Buttercrunch"
2. Wire mesh screens:
   - 1/6-in x 1/28-in
   - 1/6-in x 1/30-in
   - 1/6-in x 1/32-in
   - 1/6-in x 1/3-in
3. Triple-beam balance
4. 500-mL HDPE screw-cap bottles
5. 1-L screw-cap centrifuge bottles
6. 250-mL borosilicate glass beakers
7. 5-mL, 10-mL and 25-mL disposable syringes
8. Whatman® grade 3, 9-cm (100-mm qualitative cellulose) filter paper
9. 100-mm x 15-mm plastic petri dishes with covers
10. Forceps
11. Incubation chamber
12. Thermometer
13. pH meter
14. Metric ruler

PROCEDURE

1. Preparation

   1.3 Carefully inspect the lot of seeds and remove any trash, empty seed hulls and damaged seeds. Grade the seeds by size as follows:

1.3.1 Nest the wire mesh screens, in descending mesh size order from top to bottom, with a bottom pan beneath.

1.3.2 Pour the seeds onto the top screen and gently agitate the set of screens until all seed has been completely distributed according to size, remaining on one of the screens or having passed through to the bottom pan.

1.3.3 Collect for testing that size class containing the greatest quantity of seed.

1.4 Store the remaining seed fractions, in packets according to size, in airtight, waterproof containers at 4° C.

1.5 Calibrate the triple-beam balance as per SOP/INS/000.

1.6 Determine the moisture fraction (MF) of the test sample as per SOP/GEN/010.

1.7 Prepare the sample elutriate as follows:

1.7.1 From the moisture fraction (MF) determination, calculate the total wet weight of sample equivalent to 50 g dry weight:

· Wet Wt Equivalent (g) = [50 g dry sample] + [MF x 50 g dry sample]

1.7.2 Using the triple-beam balance, weigh the wet weight equivalent of 50 g dry weight of test sample into a 500-mL HDPE bottle.

1.7.3 Calculate the volume of deionized water to add to the sample:

· Volume Water (mL) = [500 mL] - [MF x 50 g dry sample]

1.7.4 Measure the volume of deionized water required into the 500-mL bottle.

1.8 Agitate the hydrated sample for 48 hours at 20 ± 2° C in total darkness. Secure the bottle to a mechanical end-over-end shaker and set to mix. Alternatively, if an end-over-end shaker is not available, secure the bottle to the mechanical shaker and set to agitate vigorously. Remove the bottle from the shaker twice daily during the 48-h period and thoroughly mix manually, end-over-end, for several minutes to ensure adequate interaction of the water with the sample.

1.9 After agitation is complete, pour the suspension into a centrifuge bottle and centrifuge at 4200 rpm for 13 min. Carefully decant the elutriate fraction into a 250-mL beaker.

1.10 Calibrate the thermometer (SOP/INS/002) and pH meter (SOP/INS/004).

Crane Naval Surface Warfare Center TolTest, Inc.	EJOC Contract N68950-96-D-0052

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.: FC08	**Subcontract No.:** N/A	**FCR No.:** FCO8-FCR-FS034 **Rev. 0**
Temporary Storage/Permanent Placement Area for Compost at Rockeye		Page 1 of 1

Reference Documents:
Full-Scale Operational Plan Soils Bioremediation Facility (FSOP), March 1998 Rev. 2

Problem / Change Description:
A greater amount of compost will be generated from soil excavated at Rockeye (RKI) than can be placed in the area of excavation behind B-2733. Therefore identification of an area at RKI for temporary storage/permanent placement of compost is required.

Initiated by TolTest Env. Spec.	Signature: Peter J. Chevalier	Organization: TolTest, Inc.	Date: 7/10/2001

Resolution:
TolTest, in conjunction with Crane Army Ammunition Activity personnel, have identified and area within RKI adjacent to Building 2739 for temporary storage/permanent placement of compost generated from soil excavated at RKI (see attached maps). Compost can not be hauled directly into the area of excavation behind B-2733 because the trucks that haul the compost to RKI are too large to fit into this area. Therefore it is necessary to off-load the compost in the storage area and then move it to the area of excavation using smaller trucks. Any compost that is not moved to the area of excavation will be considered in permanent placement. The permanent placement location of all compost, either behind B-2733 or in the permanent placement area, will be logged and mapped. All RKI soils will be treated to residential cleanup goals and only compost that has attained residential cleanup goals will be handled in this manner or be considered for permanent placement.

Approval by TolTest, PM	Signature: Lance Parsons	Date: 7/10/01	**Approval by ROICC/NTR or RPM**	Signature: Brent Robertson	Date 8/9/01
Approval by TolTest QC/SHSO	Signature: John Lyttle	Date: 7/10/01	**Approval by EPD ECOTR:**	Signature Christine Freeman	Date 7/10/01

Regulator Approval/Notification Recommended:
Yes ☐ No ☐

Crane Naval Surface Warfare Center	EJOC Contract N68950-96-D-0052
TolTest, Inc.	

FIELD CLARIFICATION REQUEST (FCR)

Delivery Order No.:	Subcontract No.:	FCR No.:
FC08	N/A	FCO8-FCR-FS034 Rev. 0
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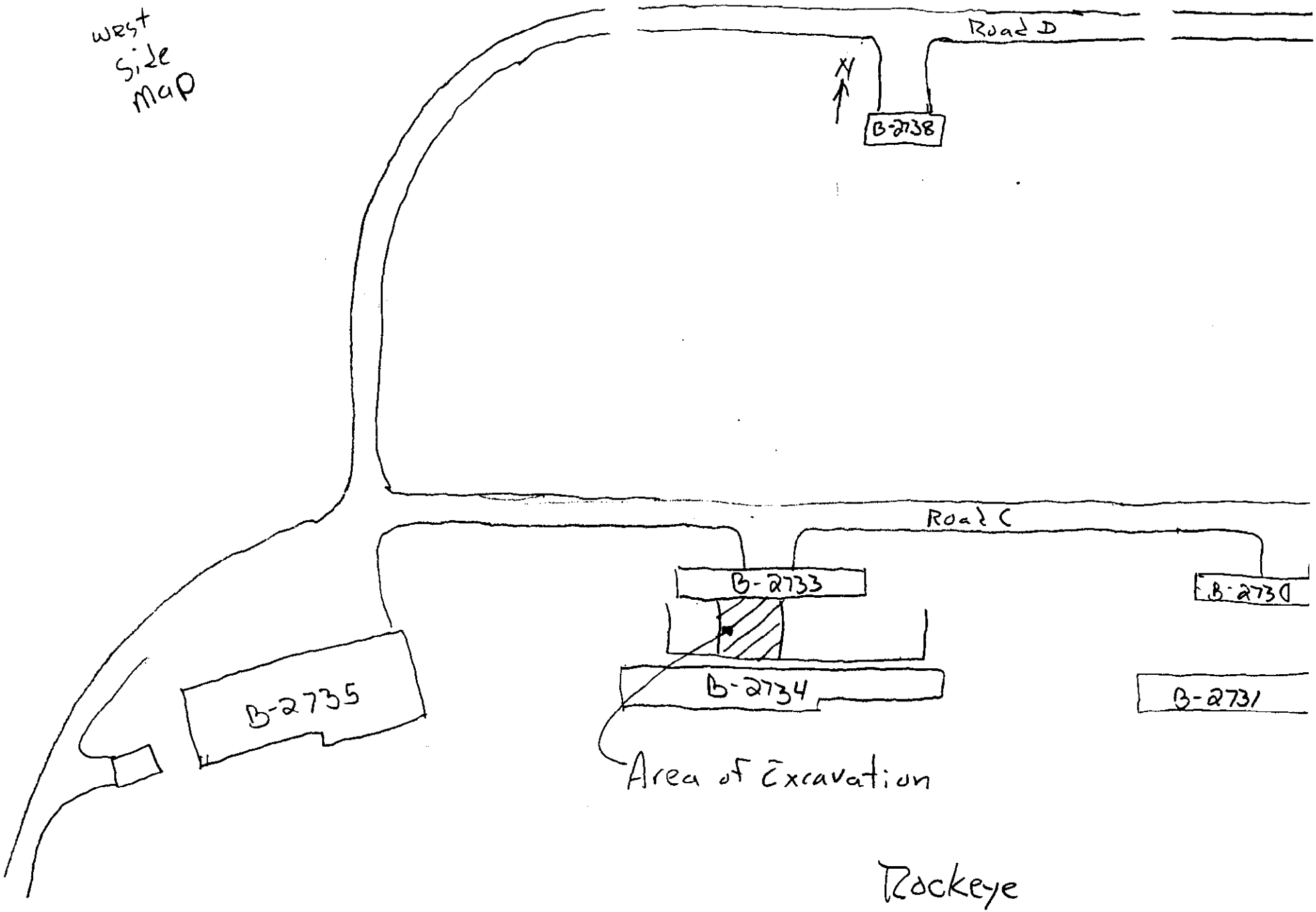
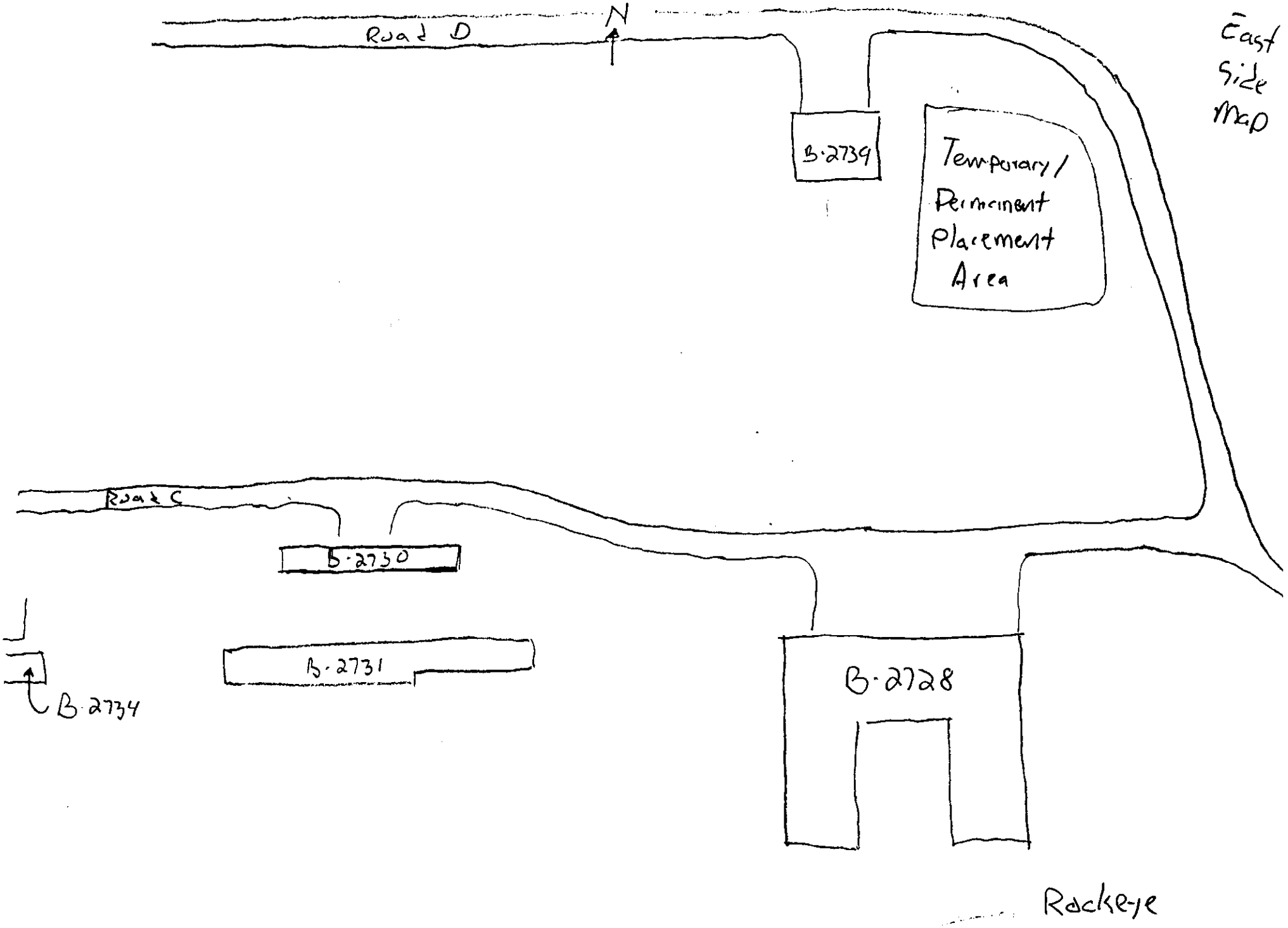
Approval by TolTest, PM	Signature: Lance Parsons	Date:	Approval by ROICC/NTR or RPM	Signature: Brent Robertson	Date
Approval by TolTest QC/SHSO	Signature: John Lyttle	Date:	Approval by EPD ECOTR:	Signature Christine Freeman	Date

Regulator Approval/Notification Recommended:
Yes ☐ No ☐

7/10/01


west side map
Road D
N
B-2738
Road C
B-2733
B-2730
B-2735
B-2734
B-2731
Area of Excavation
Rockeye


East Side Map
N
Road D
B-2739
Temporary / Permanent Placement Area
Road C
B-2730
B-2731
B-2734
B-2728
Rackeye

APPENDIX B

WASTE DISPOSAL DOCUMENTATION

CONTAMINATED SCRAP MANIFEST
NWSCC 6280/4 (REV. 6-84)

The following material is hereby certified as being contaminated with explosives and/or pyrotechnics

TYPE OF SCRAP	TYPE OF CONTAINER	TYPE OF CONTAMINATION*	BUILDING/AREA AND CODE	APPROXIMATE QUANTITY (lb.)
etone	5gal. metal	explosives	Bis facility	40

*Indicate if material is mixed with water or other chemical solvents. Identify the specific chemical solvent used.

SIGNATURE *(Generator or Facility Supervisor-Extension No.)*	CODE	DATE
Christine D. Freeman	09511	8/14/01

SIGNATURE *(Transporter)*	ORGANIZATION	DATE
[illegible]	TolTest, Inc.	8/14/01

SIGNATURE *(Operator at Treatment Facility)*	TREATMENT FACILITY	DATE
Bobby [illegible]	NWC	8/14/01

DISTRIBUTION

The following copies shall be withdrawn by the respective personnel and sent to Code 0924, Building 2516, within 5 work days.

.d - Generator; Yellow - Transporter; White - Treatment Facility Operator

NOTE: Generator - retains Pink; Operator of Treatment Facility retains Green

APPENDIX C

INITIAL CHARACTERIZATION SAMPLING GRID LOCATION MAP

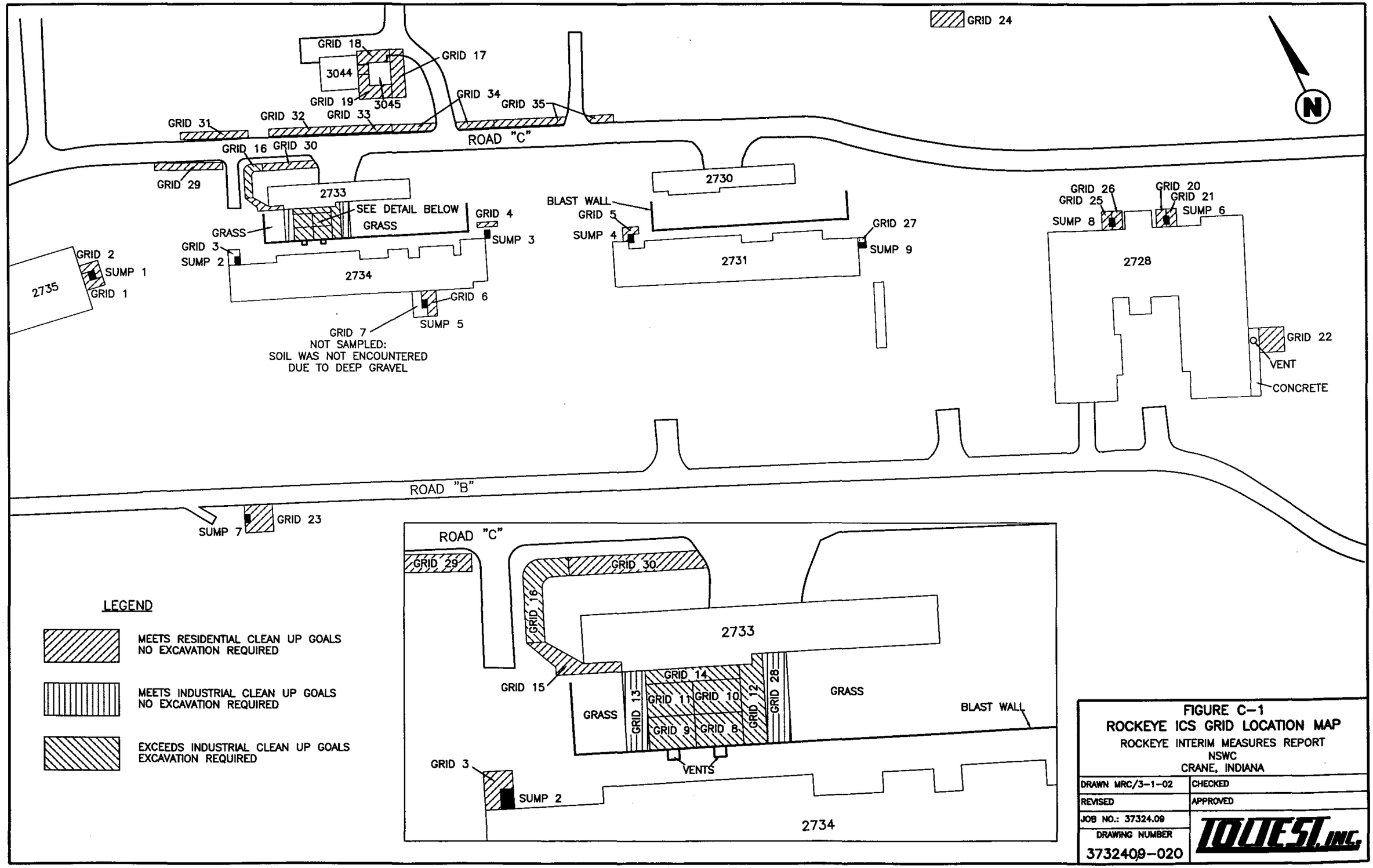


FIGURE C-1
ROCKEYE ICS GRID LOCATION MAP
ROCKEYE INTERIM MEASURES REPORT
NSWC
CRANE, INDIANA

DRAWN MRC/3-1-02	CHECKED
REVISED	APPROVED
JOB NO.: 37324.09	TOLTEST, INC.
DRAWING NUMBER 3732409-020	

APPENDIX D

RKI GRID EXPLOSIVE SAMPLING SUMMARY

TABLE D
RKI GRID EXPLOSIVE SAMPLING SUMMARY

Grid Number	Sample ID: RKI ICS	Sample Depth, inches	Res. Cleanup Goal Met	Ind. Cleanup Goal Met	Cleanup Goals Exceeded	Sample ID: RKI PES	Sample Depth, inches	Res. Cleanup Goal Met	Ind. Cleanup Goal Met	Cleanup Goals Exceeded
26	013	0-12	yes	yes	no					
	015	24-36	yes	yes	no					
27	025	0-12	no	yes	no					
	027	24-36	yes	yes	no					
28	072	0-12	no	yes	no					
	074	24-36	yes	yes	no					
29	079	0-12	yes	yes	no					
	081	24-36	yes	yes	no					
30	082	0-12	yes	yes	no					
	084	24-36	yes	yes	no					
31	085	0-12	yes	yes	no					
	087	24-36	yes	yes	no					
32	088	0-12	yes	yes	no					
	090	24-36	yes	yes	no					
33	091	0-12	yes	yes	no					
34	093	0-12	yes	yes	no					
35	095	0-12	yes	yes	no					

TABLE D
RKI GRID EXPLOSIVE SAMPLING SUMMARY

	INITIAL CHARACTERIZATION					POST-EXCAVATION				
Grid Number	Sample ID: RKI ICS	Sample Depth, inches	Res. Cleanup Goal Met	Ind. Cleanup Goal Met	Cleanup Goals Exceeded	Sample ID: RKI PES	Sample Depth, inches	Res. Cleanup Goal Met	Ind. Cleanup Goal Met	Cleanup Goals Exceeded
1	022	0-12	yes	yes	no					
	024	24-36	yes	yes	no					
2	019	0-12	yes	yes	no					
	021	24-36	yes	yes	no					
3	049	0-12	yes	yes	no					
	051	24-36	yes	yes	no					
4	064	0-12	yes	yes	no					
	066	24-36	yes	yes	no					
5	016	0-12	yes	yes	no					
	018	24-36	yes	yes	no					
6	067	0-12	yes	yes	no					
	069	24-36	yes	yes	no					
8	046	0-12	no	no	**YES**	007	0 - 6	no	yes	no
	048	24-36	no	no	**YES**					
9	043	0-12	no	no	**YES**	011	0 - 6	no	yes	no
	045	24-36	no	no	**YES**	013	0- 6	yes	yes	no
10	037	0-12	no	no	**YES**	009		yes	yes	no
	039	24-36	no	no	**YES**					
11	031	0-12	no	no	**YES**	015	0 - 6	yes	yes	no
	033	24-36	no	no	**YES**	017	0 - 6	yes	yes	no
12	040	0-12	no	no	**YES**	001	0 - 6	yes	yes	no
	042	24-36	no	yes	no	003	0 - 6	yes	yes	no
						005	0 - 6	yes	yes	no
13	028	0-12	no	yes	no					
	030	24-36	yes	yes	no					
14	034	0-12	no	no	**YES**	019	0 - 6	yes	yes	no
	036	24-36	no	no	**YES**					
15	052	0-12	yes	yes	no					
	054	24-36	yes	yes	no					
16	070	0-6	no	no	**YES**	021	0 - 6	yes	yes	no
17	058	0-12	yes	yes	no					
	060	24-36	yes	yes	no					
18	055	0-12	yes	yes	no					
	057	24-36	yes	yes	no					
19	061	0-12	yes	yes	no					
	063	24-36	yes	yes	no					
20	007	0-12	yes	yes	no					
	009	24-36	yes	yes	no					
21	004	0-12	yes	yes	no					
	006	24-36	yes	yes	no					
22	001	0-12	yes	yes	no					
	003	24-36	yes	yes	no					
23	077	0-6	yes	yes	no					
24	075	0-6	yes	yes	no					
25	010	0-12	yes	yes	no					
	012	24-36	yes	yes	no					

APPENDIX E

INITIAL CHARACTERIZATION SAMPLE RESULTS

Table E-1 Explosives
Table E-2 Metals
Table E-3 Semi-volatiles
Table E-4 Volatiles
Table E-5 Rinse Blank Sample Results
Table E-6 Trip Blank Sample Results

TABLE E-1
ROCKEYE INITIAL CHARACTERIZATION SAMPLE RESULTS
NSWC CRANE

ANALYTE				EXPLOSIVES														
				135TNB	13DNB	246TNT	24DNT	26DNT	2A46DT	2NT	3NT	4A26DT	4NT	HMX	NB	PETN	RDX	TETRYL
BI Industrial Cleanup Goal				34	68	64	1400	680	1400	6800	6800	880	6800	34000	94	0.25	17	6800
BI Residential Cleanup Goal				3.3	6.5	15	130	65	130	650	650	85	650	3300	18	0.25	4	650
Units of Measurement				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site ID	Sample Date	Grid #	Depth (in.)															
RKYICS001	1/17/00	22	0-12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.16 J	1 U	2.5 U	1 U	1 U
RKYICS003	1/17/00	22	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U	1 U	1 U
RKYICS004	1/17/00	21	0-12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	1 U	2.5 U	1 U	1 U
RKYICS006	1/17/00	21	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.33 J	1 U	2.5 U	1 U	1 U
RKYICS007	1/17/00	20	0-12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U	1 U	1 U
RKYICS009	1/17/00	20	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.19 J	1 U	2.5 U	1 U	1 U
RKYICS010	1/27/00	25	0-12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.26 J	1 U	2.5 U	1 U	1 U
RKYICS012	1/27/00	25	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U	1 U	1 U
RKYICS013	1/27/00	26	0-12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U	1 U	1 U
RKYICS015	1/27/00	26	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U	1 U	1 U
RKYICS016	2/1/00	5	0-12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4.9	1 U	2.5 U	2.3	1 U
RKYICS018	2/1/00	5	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5	1 U	2.5 U	0.18 J	1 U
RKYICS019	2/1/00	2	0-12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.1 J	1 U	2.5 U	1 U	1 U
RKYICS021	2/1/00	2	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U	1 U	1 U
RKYICS022	2/1/00	1	0-12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U	1 U	1 U
RKYICS024	2/1/00	1	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U	1 U	1 U
RKYICS025	2/2/00	26	0-12	1 U	1 U	3.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	37 D	1 U	2.5 U	11	1 U
RKYICS027	2/2/00	26	24-36	1 U	1 U	5.3	1 U	1 U	1 U	1 U	1 U	5 U	1 U	38 D	1 U	2.5 U	1.8	1 U
RKYICS028	2/2/00	13	0-12	1 U	1 U	0.71 J	1 U	1 U	1 U	1 U	1 U	0.5 J	1 U	180 D	1 U	2.5 U	4.6	1 U
RKYICS030	2/2/00	13	24-36	1 U	1 U	1.8	1 U	1 U	0.15 J	1 U	1 U	0.42 J	1 U	36 D	1 U	2.5 U	3.9	1 U
RKYICS031	2/2/00	11	0-12	1.2	1 U	860 D	1 U	1 U	40 U	1 U	1 U	40 U	1 U	2800 D	1 U	2.5 U	1000 D	1 U
RKYICS033	2/2/00	11	24-36	4.3	1 U	2000 D	1 U	1 U	20 U	1 U	1 U	20 U	1 U	2400 D	1 U	2.5 U	590 E	1 U
RKYICS034	2/3/00	14	0-12	1 U	1 U	68 JD	1 U	1 U	30 U	1 U	1 U	14	1 U	1700 D	1 U	2.5 U	390 D	1 U
RKYICS036	2/3/00	14	24-36	1 U	1 U	13	1 U	1 U	10 U	1 U	1 U	3.5	1 U	280 D	1 U	2.5 U	35 JD	1 U
RKYICS037	2/3/00	10	0-12	1 U	1 U	350 D	1 U	1 U	30 U	1 U	1 U	30 U	1 U	3100 D	1 U	2.5 U	290 D	1 U
RKYICS039	2/3/00	10	24-36	6.2	1 U	180 D	1 U	1 U	10 U	1 U	1 U	10 U	1 U	830 D	1 U	2.5 U	110 D	1 U
RKYICS040	2/3/00	12	0-12	2.6	1 U	46 JD	1 U	1 U	10 U	1 U	1 U	10 U	1 U	990 D	1 U	2.5 U	37 JD	1 U
RKYICS042	2/3/00	12	24-36	1 U	1 U	4.4	1 U	1 U	1 U	1 U	1 U	1.7	1 U	330 D	1 U	2.5 U	5.2	1 U
RKYICS043	2/4/00	9	0-12	2.4	1 U	2700 D	2 U	1 U	60 U	1 U	1 U	60 U	1 U	2100 D	1 U	2.5 U	510 D	1 U
RKYICS045	2/4/00	9	24-36	8 U	1 U	340 D	1 U	1 U	10 U	1 U	1 U	10 U	1 U	1500 D	1 U	2.5 U	94 JD	1 U
RKYICS046	2/4/00	8	0-12	10	1 U	430 D	1 U	1 U	10 U	1 U	1 U	10 U	1 U	2400 D	1 U	2.5 U	230 D	1 U
RKYICS048	2/4/00	8	24-36	10	1 U	120 D	1 U	1 U	3 U	1 U	1 U	3 U	1 U	430 D	1 U	2.5 U	63 D	1 U
RKYICS049	2/9/00	3	0-12	1 U	1 U	0.25 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3.7	1 U	2.5 U	1 U	1 U
RKYICS051	2/9/00	3	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.82 J	1 U	2.5 U	1 U	1 U
RKYICS052	2/9/00	15	0-12	1 U	1 U	0.17J	1 U	1 U	1 U	1 U	1 U	0.12 J	1 U	180 D	0.37 J	2.5 U	3.8	1 U
RKYICS054	2/9/00	15	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	98 D	1 U	2.5 U	1.4	1 U
RKYICS055	2/23/00	18	0-12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.2	1 U	2.5 U	1 U	1 U
RKYICS057	2/23/00	18	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.2	1 U	2.5 U	1 U	1 U
RKYICS058	2/23/00	17	0-12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.7	1 U	2.5 U	1 U	1 U
RKYICS060	2/23/00	17	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.7	1 U	2.5 U	1 U	1 U
RKYICS061	2/23/00	19	0-12	1 U	1 U	0.16 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.61 J	1 U	2.5 U	1 U	1 U
RKYICS063	2/23/00	19	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.33 J	1 U	2.5 U	1 U	1 U
RKYICS064	2/23/00	4	0-12	1 U	1 U	0.17 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	7.6	1 U	2.5 U	1 U	1 U
RKYICS066	2/23/00	4	24-36	1 U	1 U	1.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	6.2	1 U	2.5 U	0.13 J	1 U
RKYICS067	2/23/00	6	0-12	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.1	1 U	2.5 U	1 U	1 U
RKYICS069	2/23/00	6	24-36	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	1 U	2.5 U	1 U	1 U
RKYICS070	3/9/00	16	0-6	1 U	1 U	31 JD	1 U	1 U	20 U	1 U	1 U	9.7	1 U	2500 D	1 U	0.86 J	560 D	1 U
RKYICS072	3/9/00	28	0-12	1 U	1 U	2.6	1 U	1 U	1 U	1 U	1 U	1.2	1 U	1900 D	1 U	2.5 U	6.8	1 U
RKYICS074	3/9/00	28	24-36	1 U	1 U	0.17 J	1 U	1 U	0.12 J	1 U	1 U	0.24 J	1 U	47 D	1 U	2.5 U	2.6	1 U
RKYICS075	3/9/00	24	0-6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.15 J	1 U	8.7	1 U	2.5 U	0.14 J	1 U
RKYICS077	3/9/00	23	0-6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U	1 U	1 U
RKYICS079	4/9/01	29	0-12	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U
RKYICS081	4/9/01	29	24-36	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
RKYICS082	4/10/01	30	0-12	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	191,000 DP	0.500 U	0.500 U	0.500 U	0.500 U
RKYICS084	4/10/01	30	24-36	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	1.28	0.500 U	0.500 U	0.500 U	0.500 U
RKYICS085	4/10/01	31	0-12	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.711	0.500 U	0.500 U	0.500 U	0.500 U
RKYICS087	4/10/01	31	24-36	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.406 J	0.500 U	0.500 U	0.500 U	0.500 U
RKYICS088	4/11/01	32	0-12	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U
RKYICS090	4/11/01	32	24-36	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U	0.476 U
RKYICS091	4/12/01	33	0-12	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
RKYICS093	4/12/01	34	0-12	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.706	0.500 U	0.500 U	0.500 U	0.500 U
RKYICS095	4/12/01	35	0-12	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.190 PJ	0.500 U	0.500 U	0.500 U	0.500 U

TABLE E-2
ROCKEYE INITIAL CHARACTERIZATION SAMPLE RESULTS
NSWC CRANE

ANALYTE				METALS																	
				Hg	Al	As	Ba	Cd	Sb	Be	Cr	Co	Cu	Pb	Mn	Ni	Se	Ag	Tl	V	Zn
IM Industrial Cleanup Goal				510	100000	2.4	100000	850	680	1.1	450	97000	63000	1000	43000	34000	8500	8500	140	12000	100000
IM Residential Cleanup Goal				23	77000	0.32	5300	38	31	0.14	210	4600	2800	400	3200	1500	380	380	6.3	540	23000
Units of Measurement				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site ID	Sample Date	Grid #	Depth (in.)																		
RKYICS001	1/17/00	22	0-12	0.014 J	8780	3.3	58.3	0.58 U	7 U	0.52 J	15.1	7.4	10.3	11.2 J	162	11.4	29.1 U	1.2 U	29.1 U	21.7	32.1
RKYICS003	1/17/00	22	24-36	0.012 J	6880	3.6	49	0.57 U	6.8 U	0.48 J	10.7	5.4	8.2	10.2 J	204	9.2	28.5 U	1.1 U	28.5 U	16.6	34.2
RKYICS004	1/17/00	21	0-12	0.036 J	9220	3.5	66.4	0.61 U	7.3 U	0.56 J	12.5	10.2	9.2	15.3	638	8.5	30.5 U	1.2 U	30.5 U	22.8	25.9
RKYICS006	1/17/00	21	24-36	0.017 J	9500	3.6	39.6	0.6 U	7.3 U	0.25 J	16.7	2.4 J	9.3	10.6 J	99.3	4.4 J	30.2 U	1.2 U	30.2 U	20.6	21.7
RKYICS007	1/17/00	20	0-12	0.0098 J	10400	3.8	69.9	0.64 U	7.8 U	0.28 J	12.9	4.5	9	12.6 J	236	6.6	31.8 U	1.3 U	31.8 U	22.7	27.4
RKYICS009	1/17/00	20	24-36	0.03 J	9070	3.7	45.8	0.61 U	7.3 U	0.25 J	11.4	3.1	7.8	10.4 J	89.7	5.9	30.5 U	1.2 U	30.5 U	18	22.6
RKYICS010	1/27/00	25	0-12	0.012 J	8450	5.2	85	0.58 U	5.5 J	0.51 J	12.3	5.1	8.3	9 J	213	11.4	29.1 U	1.2 U	0.95 J	20	25.5
RKYICS012	1/27/00	25	24-36	0.039 U	13900	4.6	50.9	0.6 U	7.1 U	0.58 J	17.5	2.6 J	6.6	9.4 J	30.1	8.2	29.8 U	1.2 U	1.2 U	33.1	14
RKYICS013	1/27/00	26	0-12	0.032 J	11900	5.7	57.8	0.61 U	7.3 U	0.53 J	16.9	6.9	10.6	15.6	234	12.1	30.6 U	1.2 U	1.2 U	27.3	29.6
RKYICS015	1/27/00	26	24-36	0.027 J	11400	6.5	57.3	0.64 U	7.6 U	0.98	16.5	10.3	15.2	17	266	26.9	31.8 U	1.3 U	1.3 U	23.2	42
RKYICS016	2/1/00	5	0-12	0.03 J	8490	6.3	54.4	0.6 U	7.2 U	0.63	13.4	8	11.9	13.6	NT	15	30 U	1.2 U	NT	NT	39.9
RKYICS018	2/1/00	5	24-36	0.0066 J	11100	7.5	94	0.61 U	7.3 U	0.71	15.8	10.4	13.6	14.4	NT	12.8	30.3 U	1.2 U	NT	NT	35.4
RKYICS019	2/1/00	2	0-12	0.043 U	6800	4	60.7	0.65 U	7.8 U	0.31 J	10.4	3 J	6	8.9 J	NT	8.4	32.6 U	1.3 U	NT	NT	15.8
RKYICS021	2/1/00	2	24-36	0.041 U	6480	4	54.5	0.62 U	7.4 U	0.52 J	7.9	3.2	3.7	7.9 J	NT	6.5	30.9 U	1.2 U	NT	NT	9
RKYICS022	2/1/00	1	0-12	0.041 U	7930	5.6	44.2	0.62 U	7.4 U	0.28 J	10.5	3.3	8.4	8.4 J	NT	7.4	30.8 U	1.2 U	NT	NT	19.2
RKYICS024	2/1/00	1	24-36	0.01 J	9300	9.5	62.3	0.63 U	7.6 U	0.38 J	15.5	4.2	9	13.5	NT	7.3	31.7 U	1.3 U	NT	NT	25.7
RKYICS025	2/2/00	26	0-12	0.027 J	9180	4.8	80.5	0.63 U	7.6 U	0.4 J	12.2	6.4	10.7	9 J	NT	8.7	31.6 U	1.3 U	NT	NT	26.6
RKYICS027	2/2/00	26	24-36	0.016 J	8600	6.3	63.4	0.6 U	7.2 U	0.52 J	12.6	6.4	9.7	14.6	NT	10.7	29.9 U	1.2 U	NT	NT	31.5
RKYICS028	2/2/00	13	0-12	0.0066 J	9600	11.3	46.8	0.61 U	7.3 U	0.47 J	29.8	4	9.5	14.8	NT	7.8	30.6 U	1.2 U	NT	NT	22.1
RKYICS030	2/2/00	13	24-36	0.019 J	10700	6.1	64.6	0.64 U	7.7 U	0.27 J	15.4	3.1 J	11	10.4 J	NT	9.2	32 U	1.3 U	NT	NT	27.9
RKYICS031	2/2/00	11	0-12	0.04 J	8360	8.6	57.1	0.64 U	7.6 U	0.34 J	13.2	5.8	10.1	23.8	NT	8.4	31.8 U	1.3 U	NT	NT	35.5
RKYICS033	2/2/00	11	24-36	0.017 J	9590	7.7	59.3	0.67 U	8 U	0.39 J	15.4	5.2	10.8	13.7	NT	9.9	33.4 U	1.3 U	NT	NT	29.1
RKYICS034	2/3/00	14	0-12	0.031 J	7140	5.6	56.9	0.61 U	7.3 U	0.47 J	11.1	7.1	8	15.8	NT	8.8	9.5 J	1.2 U	NT	NT	30.1
RKYICS036	2/3/00	14	24-36	0.023 J	9950	7.4	63.2	0.62 U	7.4 U	0.43 J	14.9	5.9	11.7	11.9 J	NT	8.9	30.8 U	1.2 U	NT	NT	29.8
RKYICS037	2/3/00	10	0-12	0.029 J	11400	7.6	81.2	0.61 U	7.3 U	0.53 J	17.2	7.9	10.5	13.1	NT	11.6	30.3 U	1.2 U	NT	NT	35.9
RKYICS039	2/3/00	10	24-36	0.011 J	10700	7.2	58.6	0.62 U	7.5 U	0.37 J	17.2	6	11.8	13.9	NT	10.4	31.1 U	1.2 U	NT	NT	29.2
RKYICS040	2/3/00	12	0-12	0.023 J	9510	6.4	117	0.61 U	7.3 U	0.51 J	12.8	26.5	9.6	20.1	NT	11.4	30.4 U	1.2 U	NT	NT	29.9
RKYICS042	2/3/00	12	24-36	0.028 J	10100	5.6	65.9	0.61 U	7.3 U	0.43 J	13.9	9.1	11.3	9.9 J	NT	9.9	30.4 U	1.2 U	NT	NT	29.4
RKYICS043	2/4/00	9	0-12	0.028 J	12600	8.3	71.8	0.6 U	7.2 U	0.42 J	18.4	5.4	14.1	12.7	NT	12.7	29.9 U	1.2 U	NT	NT	39.1
RKYICS045	2/4/00	9	24-36	0.015 J	11300	5.8	67.4	0.64 U	7.7 U	0.36 J	17.3	3.6	11.7	10.9 J	NT	10.7	32 U	1.3 U	NT	NT	24.9
RKYICS046	2/4/00	8	0-12	0.019 J	10100	6	75	0.6 U	7.2 U	0.5 J	15.8	6	10.7	8 J	NT	11.8	30.2 U	1.2 U	NT	NT	30.6
RKYICS048	2/4/00	8	24-36	0.015 J	10300	7.7	57.9	0.62 U	7.4 U	0.33 J	15.9	4.1	12	9.8 J	NT	10.3	31 U	1.2 U	NT	NT	30.6
RKYICS049	2/9/00	3	0-12	0.037 J	10900	4.8	65.9	0.61 U	7.3 U	0.46 J	14.4	10.3	9.2	15	NT	8.9	30.4 U	1.2 U	NT	NT	30.2
RKYICS051	2/9/00	3	24-36	0.02 J	11000	8	63	0.61 U	7.3 U	0.54 J	24.8	7.1	9.7	14.6	NT	8.6	13.7 J	1.2 U	NT	NT	32.5
RKYICS052	2/9/00	15	0-12	0.026 J	10400	14.9	65.4	0.58 U	7 U	1.2	20.7	12	11.8	16.8	NT	10.4	29.1 U	1.2 U	NT	NT	40.9
RKYICS054	2/9/00	15	24-36	0.02 J	8600	8.3	42.7	0.6 U	7.2 U	0.6	12.9	7.3	10.7	15.5	NT	13.2	12 J	1.2 U	NT	NT	70
RKYICS055	2/23/00	18	0-12	0.014 J	12900	5.7	87.9	0.58 U	6.9 U	0.47 J	16	6.9	10.3	13.5	NT	10.4	14.3 J	1.2 U	NT	NT	42.3
RKYICS057	2/23/00	18	24-36	0.02 J	12300	6.9	60.6	0.63 U	3.2 J	0.51 J	19.4	5.4	404	27.3	NT	14.7	31.6 U	1.3 U	NT	NT	90
RKYICS058	2/23/00	17	0-12	0.021 J	14400	6.6	92.1	0.68 U	6.2 U	0.57 J	18.3	7.6	12.7	14.4	NT	13.9	34.2 U	1.4 U	NT	NT	47.6
RKYICS060	2/23/00	17	24-36	0.011 J	12700	5.3	71.2	0.63 U	7.6 U	0.49 J	16.8	7.7	11.2	13.7	NT	10.5	31.7 U	1.3 U	NT	NT	57.8
RKYICS061	2/23/00	19	0-12	0.022 J	14800	9.8	79.3	0.65 U	7.8 U	0.39 J	19	5.6	10.6	15	NT	9.1	32.3 U	1.3 U	NT	NT	38.3
RKYICS063	2/23/00	19	24-36	0.034 J	11800	5.7	57.8	0.62 U	7.4 U	0.46 J	NT	NT	NT	10.8 J	NT	7.6	NT	1.2 U	NT	NT	NT
RKYICS064	2/23/00	4	0-12	0.015 J	9200	7.1	63.6	0.58 U	6.9 U	0.5 J	12	5.8	10.9	12.7	NT	11.2	28.9 U	1.2 U	NT	NT	41.2
RKYICS066	2/23/00	4	24-36	0.04	11800	8	66.6	0.61 U	7.3 U	0.5 J	14.9	5.5	11.5	13	NT	9.5	30.5 U	1.2 U	NT	NT	43
RKYICS067	2/23/00	6	0-12	0.039 U	14000	6.9	77.6	0.59 U	7.1 U	0.78	18.7	9.2	10.6	24.9	NT	12.4	10.2 J	1.2 U	NT	NT	29.2
RKYICS069	2/23/00	6	24-36	0.011 J	12500	4.6	55	0.59 U	7.1 U	0.55 J	13.7	3.6	6.6	10.1 J	NT	8.3	29.4 U	1.2 U	NT	NT	18
RKYICS070	3/9/00	16	0-6	0.022 J	9090	8.8	60.7	0.64 U	7.7 U	0.5 J	16.8	7.8	10.6	27.3	NT	9.3	32.2 U	1.3 U	NT	NT	91.3
RKYICS072	3/9/00	28	0-12	0.019 J	16100	7.6	88	0.59 U	7.1 U	0.66	22.7	8.9	12.1	14.2	NT	12.2	9 J	1.2 U	NT	NT	41.2
RKYICS074	3/9/00	28	24-36	0.013 J	15200	5.5	64.9	0.6 U	7.2 U	0.59 J	19.6	8.1	12	10.9 J	NT	12.1	30.1 U	1.2 U	NT	NT	38.8
RKYICS075	3/9/00	24	0-6	0.014 J	11700	4.2	80.7	2.3	3.9 J	0.34 J	15	6	11.5	18	NT	9.8	34.3 U	1.4 U	NT	NT	105
RKYICS077	3/9/00	23	0-6	0.037 U	9820	4.3	111	0.51 J	6.8 U	0.6	18.1	7	17.5	21.7	NT	16.6	28.2 U	1.1 U	NT	NT	144
RKYICS079	4/9/01	29	0-12	0.02 U	7980	3.8	46.7	0.23 B	0.59 NU	0.4 B	9.4	4.7	5.8 B	16.3	NT	7	NT	NT	NT	NT	43.2
RKYICS081	4/9/01	29	24-36	0.02 U	8890	2.9	43.1	0.12 U	0.59 NU	0.39 B	9.2	6.5	4.5 B	10.4	NT	7.8	NT	NT	NT	NT	14.5
RKYICS082	4/10/01	30	0-12	0.02 U	7000	4.2	66.2	0.15 B	0.59 NU	0.45 B	12.7 N*	5.6	5.2 B	16.4	NT	6.2	NT	NT	NT	NT	33.8
RKYICS084	4/10/01	30	24-36	0.02 U	9170	5	68.3	0.12 U	0.58 NU	0.62	22.3 N*	15.6	5.4 B	12	NT	7.7	NT	NT	NT	NT	14.5
RKYICS085	4/10/01	31	0-12	0.02 U	9590	4.4	45.7	0.12 U	0.59 NU	0.47 B	11.3 N*	7.7	6.2	16.3	NT	9.9	NT	NT	NT	NT	26.5
RKYICS087	4/10/01	31	24-36	0.02 U	7920	4.2	91.9	0.12 U	0.59 NU	0.36 B	8.9 N*	5.4	7	9	NT	11.5	NT	NT	NT	NT	18.6
RKYICS088	4/11/01	32	0-12	0.02 U	8040	5	88.4	0.12 U	0.59 NU	0.75	18.8	19.3	7.8	13.7	NT	12.8	NT	NT	NT	NT	29.5
RKYICS090	4/11/01	32	24-36	0.02 U	6830	5	89.9	0.12 U	0.61 NU	0.79	13	10.4	12.7	14.6	NT	19.5	NT	NT	NT	NT	33.7
RKYICS091	4/12/01	33	0-12	0.03 B	13100	7.3	58.2	0.12 U	0.6 NU	0.3 B	17.7 N*	9.9	7.4	15.7	NT	7.8	NT	NT	NT	NT	33
RKYICS093	4/12/01	34	0-12	0.03 B	8510	7.9	60.1	0.12 U	0.61 NU	0.4 B	24.3 N*	5.7	9.7	18	NT	7.7	NT	NT	NT	NT	51
RKYICS095	4/12/01	35	0-12	0.03 B	8670	5.4	59.3	0.13 U	0.63 NU	0.6 B	16.2 N*	6.7	12.1	17	NT	14.2	NT	NT	NT	NT	49.5

NT-this compound is not a ...tituent of concern for RKI and its analysis was discontinued

TABLE E-3
ROCKEYE INITIAL CHARACTERIZATION SAMPLE RESULTS
NSWC CRANE

ANALYTE				SEMIVOLATILES								
				BAANTR	BBFANT	B2EHP	CHRY	DNBP	FANT	NNDPA	PHANTR	PYR
IM Industrial Cleanup Goal				2600	2600	140000	7000	68000000	27000000	390000	100000	100000
IM Residential Cleanup Goal				900	900	46000	7000	6500000	2600000	130000	100000	100000
Units of Measurement				ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Site ID	Sample Date	Grid #	Depth (in.)									
RKYICS001	1/17/00	22	0-12	380 U	380 U	380 U	380 U	380 U	380 U	380 U	380 U	380 U
RKYICS003	1/17/00	22	24-36	380 U	380 U	380 U	380 U	380 U	380 U	380 U	380 U	380 U
RKYICS004	1/17/00	21	0-12	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U
RKYICS006	1/17/00	21	24-36	400 U	400 U	92 J	400 U	400 U	400 U	400 U	400 U	400 U
RKYICS007	1/17/00	20	0-12	420 U	420 U	420 U	420 U	420 U	420 U	420 U	420 U	420 U
RKYICS009	1/17/00	20	24-36	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U
RKYICS010	1/27/00	25	0-12	380 U	380 U	380 U	380 U	380 U	380 U	380 U	380 U	380 U
RKYICS012	1/27/00	25	24-36	390 U	390 U	390 U	390 U	390 U	390 U	390 U	390 U	390 U
RKYICS013	1/27/00	26	0-12	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U
RKYICS015	1/27/00	26	24-36	420 U	420 U	420 U	420 U	420 U	420 U	420 U	420 U	420 U
RKYICS016	2/1/00	5	0-12	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS018	2/1/00	5	24-36	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS019	2/1/00	2	0-12	NT	NT	NT	NT	NT	430 U	NT	430 U	430 U
RKYICS021	2/1/00	2	24-36	NT	NT	NT	NT	NT	410 U	NT	410 U	410 U
RKYICS022	2/1/00	1	0-12	NT	NT	NT	NT	NT	410 U	NT	410 U	410 U
RKYICS024	2/1/00	1	24-36	NT	NT	NT	NT	NT	420 U	NT	420 U	420 U
RKYICS025	2/2/00	26	0-12	NT	NT	NT	NT	NT	420 U	NT	420 U	420 U
RKYICS027	2/2/00	26	24-36	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS028	2/2/00	13	0-12	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS030	2/2/00	13	24-36	NT	NT	NT	NT	NT	420 U	NT	420 U	420 U
RKYICS031	2/2/00	11	0-12	NT	NT	NT	NT	NT	420 U	NT	420 U	420 U
RKYICS033	2/2/00	11	24-36	NT	NT	NT	NT	NT	440 U	NT	440 U	440 U
RKYICS034	2/3/00	14	0-12	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS036	2/3/00	14	24-36	NT	NT	NT	NT	NT	410 U	NT	410 U	410 U
RKYICS037	2/3/00	10	0-12	NT	NT	NT	NT	NT	71 J	NT	400 U	400 U
RKYICS039	2/3/00	10	24-36	NT	NT	NT	NT	NT	410 U	NT	410 U	410 U
RKYICS040	2/3/00	12	0-12	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS042	2/3/00	12	24-36	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS043	2/4/00	9	0-12	NT	NT	NT	NT	NT	7900 U	NT	7900 U	7900 U
RKYICS045	2/4/00	9	24-36	NT	NT	NT	NT	NT	420 U	NT	420 U	420 U
RKYICS046	2/4/00	8	0-12	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS048	2/4/00	8	24-36	NT	NT	NT	NT	NT	410 U	NT	410 U	410 U
RKYICS049	2/9/00	3	0-12	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS051	2/9/00	3	24-36	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS052	2/9/00	15	0-12	NT	NT	NT	NT	NT	170 J	NT	82 J	130 J
RKYICS054	2/9/00	15	24-36	NT	NT	NT	NT	NT	1300	NT	1000	980
RKYICS055	2/23/00	18	0-12	NT	NT	NT	NT	NT	380 U	NT	380 U	380 U
RKYICS057	2/23/00	18	24-36	NT	NT	NT	NT	NT	420 U	NT	92 J	420 U
RKYICS058	2/23/00	17	0-12	NT	NT	NT	NT	NT	450 U	NT	450 U	450 U
RKYICS060	2/23/00	17	24-36	NT	NT	NT	NT	NT	420 U	NT	420 U	420 U
RKYICS061	2/23/00	19	0-12	NT	NT	NT	NT	NT	430 U	NT	430 U	430 U
RKYICS063	2/23/00	19	24-36	NT	NT	NT	NT	NT	410 U	NT	410 U	410 U
RKYICS064	2/23/00	4	0-12	NT	NT	NT	NT	NT	380 U	NT	380 U	380 U
RKYICS066	2/23/00	4	24-36	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS067	2/23/00	6	0-12	NT	NT	NT	NT	NT	390 U	NT	390 U	390 U
RKYICS069	2/23/00	6	24-36	NT	NT	NT	NT	NT	390 U	NT	390 U	390 U
RKYICS070	3/9/00	16	0-6	NT	NT	NT	NT	NT	700	NT	400 J	650
RKYICS072	3/9/00	28	0-12	NT	NT	NT	NT	NT	83 J	NT	390 U	95 J
RKYICS074	3/9/00	28	24-36	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS075	3/9/00	24	0-6	NT	NT	NT	NT	NT	450 U	NT	450 U	450 U
RKYICS077	3/9/00	23	0-6	NT	NT	NT	NT	NT	370 U	NT	370 U	370 U
RKYICS079	4/9/01	29	0-12	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS081	4/9/01	29	24-36	NT	NT	NT	NT	NT	390 U	NT	390 U	390 U
RKYICS082	4/10/01	30	0-12	NT	NT	NT	NT	NT	370 J	NT	290 J	370 J
RKYICS084	4/10/01	30	24-36	NT	NT	NT	NT	NT	380 U	NT	380 U	380 U
RKYICS085	4/10/01	31	0-12	NT	NT	NT	NT	NT	410 U	NT	410 U	410 U
RKYICS087	4/10/01	31	24-36	NT	NT	NT	NT	NT	390 U	NT	390 U	390 U
RKYICS088	4/11/01	32	0-12	NT	NT	NT	NT	NT	410 U	NT	410 U	410 U
RKYICS090	4/11/01	32	24-36	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS091	4/12/01	33	0-12	NT	NT	NT	NT	NT	380 U	NT	380 U	380 U
RKYICS093	4/12/01	34	0-12	NT	NT	NT	NT	NT	400 U	NT	400 U	400 U
RKYICS095	4/12/01	35	0-12	NT	NT	NT	NT	NT	390 U	NT	390 U	390 U

NT-this compound is not a constituent of concern for RKI and its analysis was discontinued

BAANTR Benzo[a]anthracene
BBFANT Benzo[b]fluoranthene
B2EHP Bis(2-ethylhexyl)phthalate
CHRY Chrysene
DNBP Di-n-butyl phthalate
FANT Fluoranthene
NNDPA N-nitrosodiphenylamine
PHANTR Phenanthrene
PYR Pyrene

TABLE E-4
ROCKEYE INITIAL CHARACTERIZATION SAMPLE RESULTS
NSWC CRANE

ANALYTE				VOLATILES																	
				111TCE	112TCE	11DCLE	11DCE	12DCLE	12DCE	Acetone	C2H5CL	CHCL3	MEK	CH2CL2	MIBK	TCLEE	Toluene	T13DCP	TRCLE	Vinyl Chloride	Xylenes, total
IM Industrial Cleanup Goal				3000000	1500	1700000	80	550	550	8800000	1600000	530	27000000	18000	2800000	17000	880000	550	7000	35	320000
IM Residential Cleanup Goal				1200000	650	500000	70	400	350	2000000	1100000	30	7100000	7800	770000	11000	790000	250	5000	30	320000
Units of Measurement				ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Site ID	Sample Date	Grid #	Depth (in.)																		
RKYICS002	1/17/00	22	12	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U	12	5.8 U	5.8 U	12 U	5.8 U	12 U	5.8 U	0.75 J	5.8 U	5.8 U	5.8 U	5.8 U
RKYICS005	1/17/00	21	12	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	10 J	6.1 U	6.1 U	12 U	6.1 U	12 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U
RKYICS008	1/17/00	20	12	6.4 U	6.4 U	6.4 U	6.4 U	6.4 U	6.4 U	9.5 J	6.4 U	6.4 U	13 U	6.4 U	13 U	6.4 U	6.4 U	6.4 U	6.4 U	6.4 U	6.4 U
RKYICS011	1/27/00	25	12	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U	12 U	5.8 U	5.8 U	12 U	5.8 U	12 U	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U
RKYICS014	1/27/00	26	12	5.7 U	5.7 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	5.7 U	NT	NT	5.7 U
RKYICS017	2/1/00	5	12	6 U	6 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6 U	NT	NT	6 U
RKYICS020	2/1/00	2	12	6.5 U	6.5 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.5 U	NT	NT	6.5 U
RKYICS023	2/1/00	1	12	6.2 U	6.2 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.2 U	NT	NT	6.2 U
RKYICS026	2/2/00	28	12	6.5 U	6.5 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.5 U	NT	NT	6.5 U
RKYICS029	2/2/00	13	12	8.8 U	8.8 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	8.8 U	NT	NT	8.8 U
RKYICS032	2/2/00	11	12	6.2 U	6.2 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.2 U	NT	NT	6.2 U
RKYICS035	2/3/00	14	12	6.2 U	6.2 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.2 U	NT	NT	6.2 U
RKYICS038	2/3/00	10	12	6.1 U	6.1 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.1 U	NT	NT	6.1 U
RKYICS041	2/3/00	12	12	6.3 U	6.3 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.3 U	NT	NT	6.3 U
RKYICS044	2/4/00	9	12	6.2 U	6.2 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.2 U	NT	NT	6.2 U
RKYICS047	2/4/00	8	12	6.1 U	6.1 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.1 U	NT	NT	6.1 U
RKYICS050	2/9/00	3	12	6.1 U	6.1 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.1 U	NT	NT	6.1 U
RKYICS053	2/9/00	15	12	5.8 U	5.8 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	5.8 U	NT	NT	5.8 U
RKYICS056	2/23/00	18	12	6.4 U	6.4 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.4 U	NT	NT	6.4 U
RKYICS059	2/23/00	17	12	6.3 U	6.3 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.3 U	NT	NT	6.3 U
RKYICS062	2/23/00	19	12	6.5 U	6.5 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.5 U	NT	NT	6.5 U
RKYICS065	2/23/00	4	12	6 U	6 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6 U	NT	NT	6 U
RKYICS068	2/23/00	6	12	6 U	6 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6 U	NT	NT	6 U
RKYICS071	3/9/00	16	6	6.1 U	6.1 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.1 U	NT	NT	6.1 U
RKYICS073	3/9/00	28	12	6.9 U	6.9 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.9 U	NT	NT	6.9 U
RKYICS076	3/9/00	24	6	6.8 U	6.8 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	6.8 U	NT	NT	6.8 U
RKYICS078	3/9/00	23	6	5.6 U	5.6 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	5.6 U	NT	NT	5.6 U
RKYICS080	4/9/01	29	12	5 U	5 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	5 U	NT	NT	5.0 U
RKYICS083	4/10/01	30	12	4 U	4 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	4 U	NT	NT	4.0 U
RKYICS086	4/10/01	31	12	4 U	4 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	4 U	NT	NT	4.0 U
RKYICS089	4/11/01	32	12	4 U	4 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	4 U	NT	NT	4.0 U
RKYICS092	4/12/01	33	12	5 U	5 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	5 U	NT	NT	5.0 U
RKYICS094	4/12/01	34	12	5 U	5 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	5 U	NT	NT	5.0 U
RKYICS096	4/12/01	35	12	4 U	4 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	4 U	NT	NT	4.0 U

NT-this compound is not a constituent of concern for RKI and its analysis was discontinued

111TCE 1,1,1-TRICHLOROETHANE
112TCE 1,1,2-TRICHLOROETHANE
11DCLE 1,1-DICHLOROETHANE
11DCE 1,1-DICHLOROETHENE
12DCLE 1,2-DICHLOROETHANE
12DCE 1,2-DICHLOROETHYLENES (CIS & TRANS)

C2H5CL CHLOROETHANE
CHCL3 CHLOROFORM
MEK MEK / 2-BUTANONE
CH2CL2 METHYLENE CHLORIDE
MIBK MIBK / 4-METHYL-2-PENTANONE
TCLEE TETRACHLOROETHENE
T13DCP TRANS-1,3-DICHLOROPROPENE
TRCLE TRICHLOROETHENE

TABLE E-5

ROCKEYE RINSE BLANK SAMPLE RESULTS

all results in ug/l

		EXPLOSIVES														
Sample ID	Sample Date	135TNB	13DNB	246TNT	24DNT	26DNT	2A46DT	2NT	3NT	4A26DT	4NT	HMX	NB	PETN	RDX	TETRYL
RKYRB022300	2/23/00	0.3 U	0.1 U	0.1 U	0.1 U	0.3 U	0.1 U	1 U	1 U	0.1 U	1 U	0.31 J	1 U	1 U	0.8 U	1 U
RKYRB041601	4/16/01	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U

		METALS														
Sample ID	Sample Date	Hg	Al	As	Ba	Cd	Sb	Be	Cr	Co	Cu	Pb	Ni	Zn	Se	Ag
RKYRB022300	2/23/00	0.2 U	200 U	10 U	200 U	5 U	60 U	5 U	4.3 J	8.2 J	25 U	100 U	40 U	3.1 J	250 U	10 U
RKYRB041601	4/16/01	0.1 U	47 U	3.3 U	1 U	2 U	4 B	0.4 U	1 U	1.2 B	2 U	3.9	2 U	2 U	NT	NT

		SEMIVOLATILES		
Sample ID	Sample Date	Fluoran thene	Phenan threne	Pyrene
RKYRB022300	2/23/00	10 U	10 U	10 U
RKYRB041601	4/16/01	not analyzed		

TABLE E-6
ROCKEYE TRIP BLANK SAMPLE RESULTS

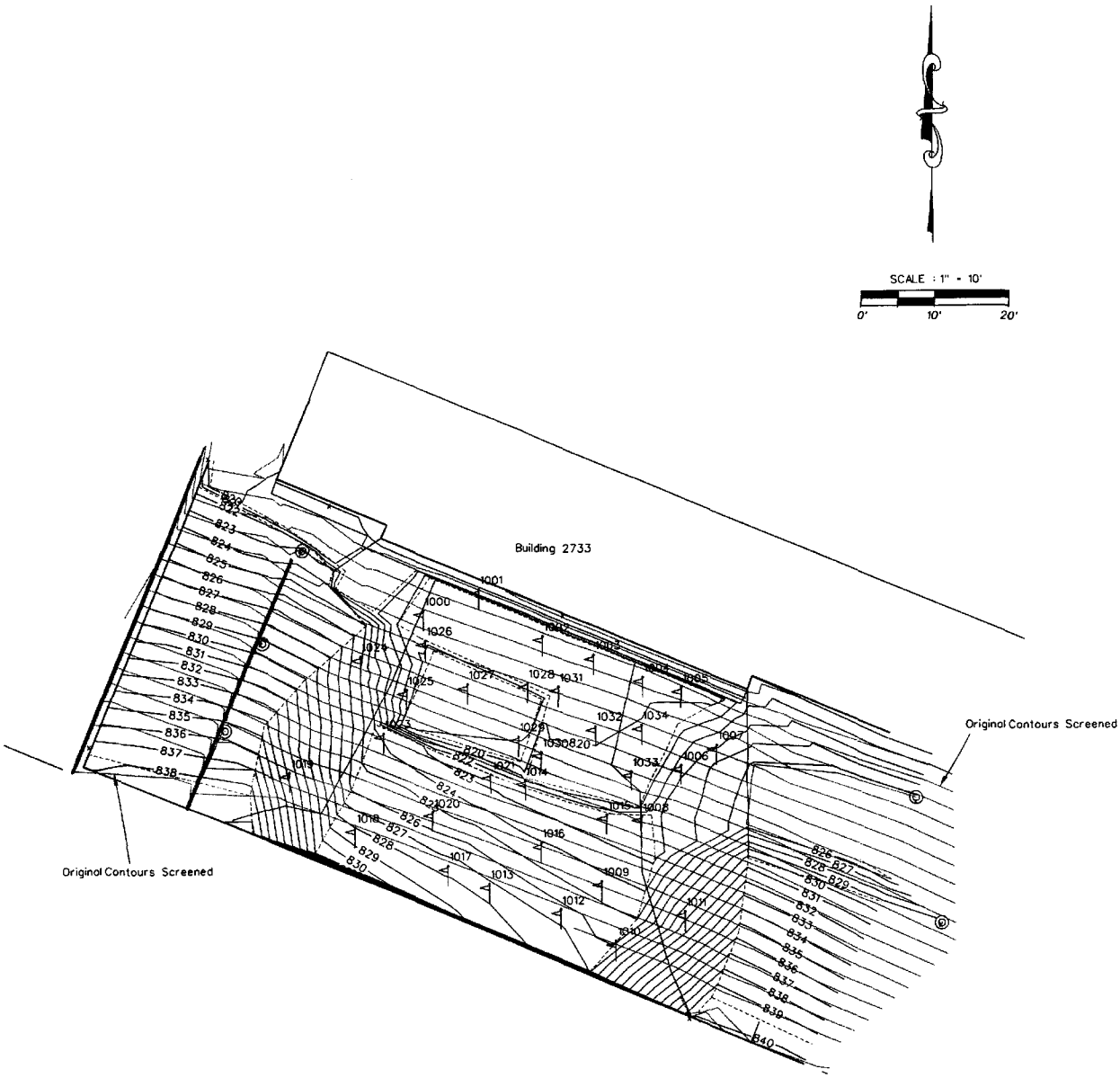
all results in ug/l

		Volatiles			
Sample ID	Sample Date	111TCE	112TCE	T13DCP	XYLENES
RKYTB020100	02/01/00	1 U	1 U	1 U	1 U
RKYTB020200	02/02/00	1 U	1 U	1 U	1 U
RKYTB020300	02/03/00	1 U	1 U	1 U	1 U
RKYTB020400	02/04/00	1 U	1 U	1 U	1 U
RKYTB021000	02/10/00	1 U	1 U	1 U	1 U
RKYTB022300	02/23/00	1 U	1 U	1 U	1 U
RKYTB030900	03/09/00	1 U	1 U	1 U	1 U

111TCE 1,1,1-TRICHLOROETHANE
112TCE 1,1,2-TRICHLOROETHANE
T13DCP TRANS-1,3-DICHLOROPROPENE

APPENDIX F

SURVEYED DRAWINGS



ORIGINAL SURFACE: rock_original
FINAL SURFACE: rockeye_01
COMPACTION FACTOR: 0% SHRINK
CUT VOLUME = 600.5 CU YD
FILL VOLUME = 21.4 CU YD

Mid-States ENGINEERING
350 E. New York St., Suite 300
Indianapolis, IN 46204
(317) 634-6434 Phone
(317) 634-3576 Fax

REVISIONS AND DATES

DESIGNED BY:
DRAWN BY: GSB
CHECKED BY: TJ/DQ
APPROVED BY:

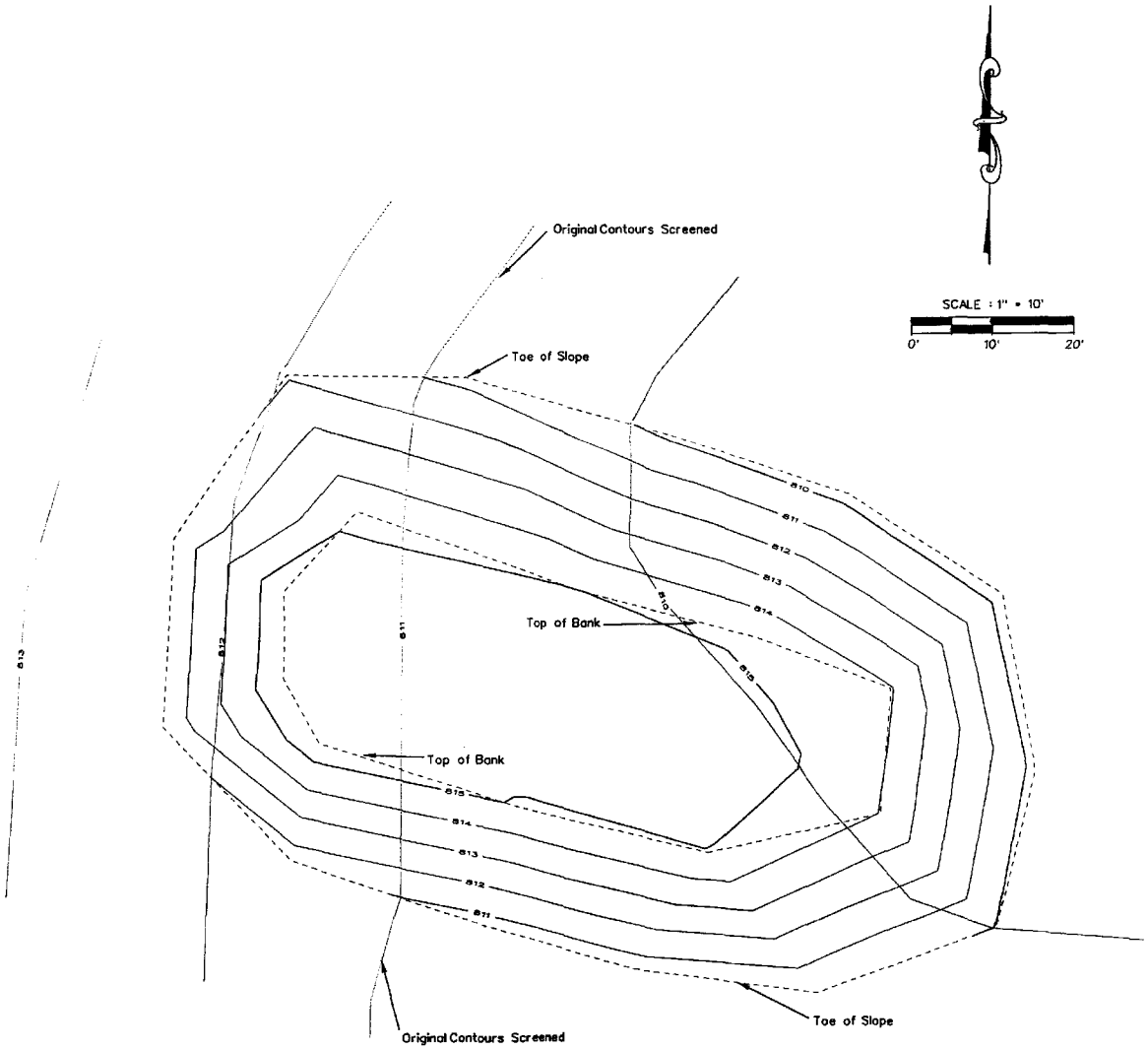
DATE: May 25, 2001

Rockeye

Building 2733

Sample Locations taken May 16, 2001

SCALE: 1" = 10' JOB No.: 121-4359 SHEET No.: 1 of 1



ORIGINAL SURFACE: rock03_pile_ori
FINAL SURFACE: rock03_asb
COMPACTION FACTOR: 0% SHRINK
CUT VOLUME = 0.0 CU YD
FILL VOLUME = 668.7 CU YD

Mid-States ENGINEERING
350 E. New York St., Suite 300
Indianapolis, IN 46204
(317) 634-6434 Phone
(317) 634-3576 Fax

REVISIONS AND DATES

DESIGNED BY:
DRAWN BY: GSB
CHECKED BY: TJ/DQ
APPROVED BY:

DATE: October 5, 2001

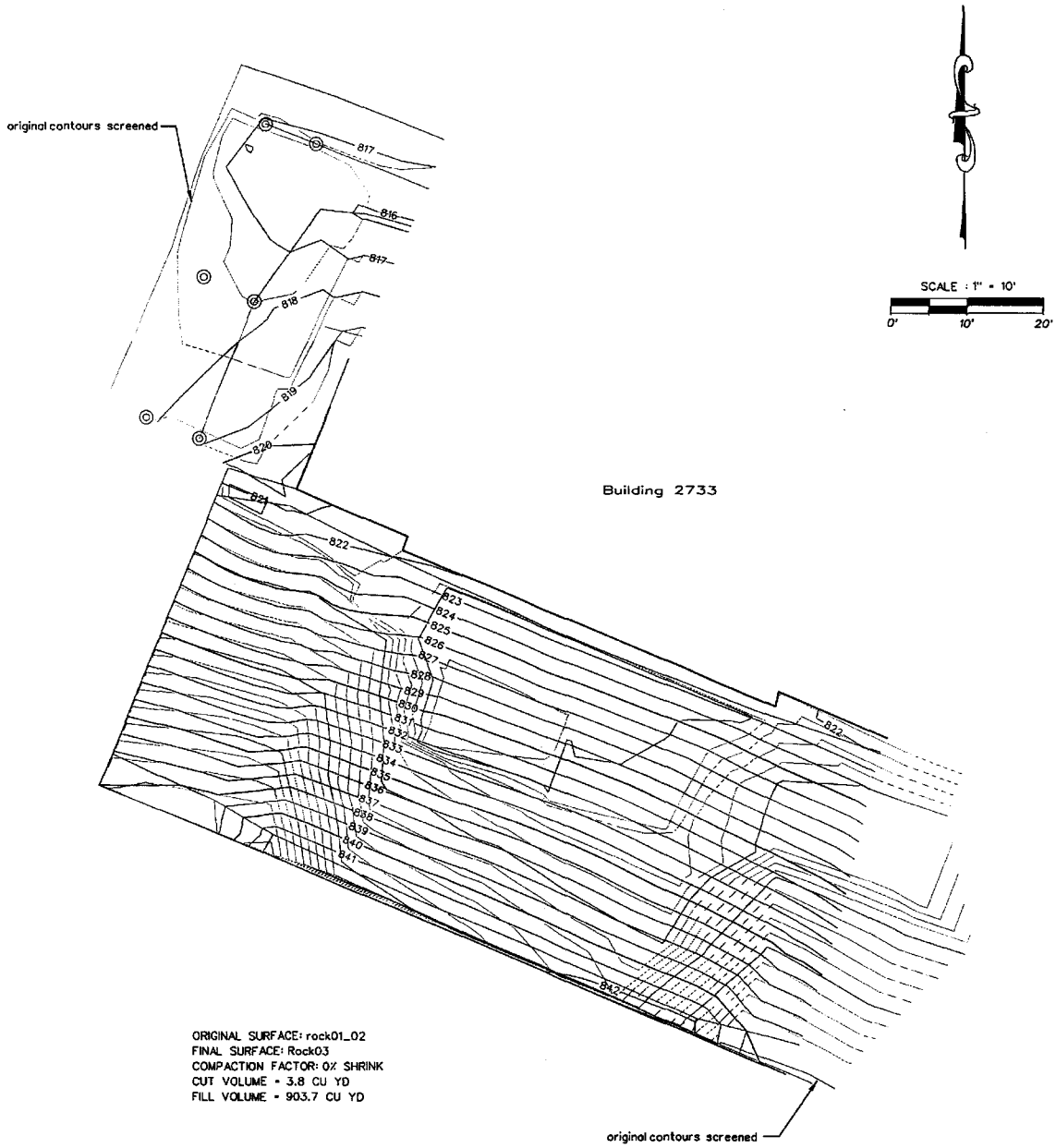
Rockeye

Spoil Pile As-Built

As-Built Locations taken October 2, 2001

SCALE: 1" = 10' JOB No.: 121-4359 SHEET No.: 1 of 1

rockeye_03.dgn



Mid-States ENGINEERING
350 E. New York St., Suite 300
Indianapolis, IN 46204
(317) 634-6434 Phone
(317) 634-3576 Fax

REVISIONS AND DATES

DESIGNED BY:
DRAWN BY: GSB
CHECKED BY: TJ/DQ
APPROVED BY:

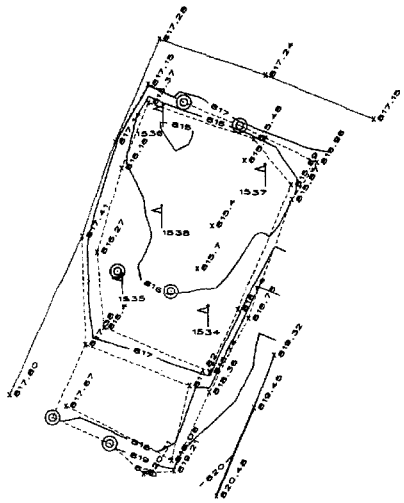
DATE: October 5, 2001

Rockeye

Building 2733

As-Built Locations taken October 2, 2001

SCALE: 1" = 10' JOB No.: 121-4359 SHEET No.: 1 of 1



C O G O

PROJECT: Tolteat-Crane
PAGE: 1

DATE: 10-05-01
TIME: 13:59:04

NODE/COORDINATE LIST

Number	Northing	Easting	Elevation	Description
1534	1327574.14	3043867.79	816.63	Grid 16A RKY PES 21
1535	1327579.31	3043857.09	816.27	Grid 16B RKY PES 21
1536	1327598.82	3043862.15	814.97	Grid 16C RKY PES 21
1537	1327591.60	3043874.76	815.74	Grid 16D RKY PES 21
1538	1327586.47	3043861.98	815.90	Grid 16E RKY PES 21 22

Mid-States ENGINEERING
350 E. New York St., Suite 300
Indianapolis, IN 46204
(317) 634-6434 Phone
(317) 634-3576 Fax

REVISIONS AND DATES

DESIGNED BY:
DRAWN BY: GSB
CHECKED BY: TJ/DQ
APPROVED BY:

DATE: October 2, 2001

Rockeye

Building 2733

Sample Locations taken October 2, 2001

SCALE: 1" = 10' JOB No.: 121-4359 SHEET No.: 1 of 1

COGO

PROJECT: Toltest-Crane

PAGE: 1

DATE: 05-30-01

TIME: 10:26:35

Rockye

NODE/COORDINATE LIST

Number	Northing	Easting	Elevation	Description
1000	1327533.06	3043888.67	819.67	Grid 14A RKY PES 19
1001	1327535.98	3043896.20	819.47	Grid 14B RKY PES 19
1002	1327529.56	3043905.02	819.54	Grid 14C RKY PES 19
1003	1327527.02	3043911.97	819.31	Grid 14D RKY PES 19
1004	1327523.96	3043918.69	819.88	Grid 14E RKY PES 19
1005	1327522.52	3043923.91	820.15	Grid 12A RKY PES 1
1006	1327512.10	3043923.96	823.29	Grid 12B RKY PES 1
1007	1327514.91	3043928.69	824.16	Grid 12C RKY PES 3 4
1008	1327504.92	3043918.48	822.73	Grid 12D RKY PES 2
1009	1327496.16	3043913.17	824.95	Grid 12E RKY PES 1
1010	1327488.10	3043915.07	828.42	Grid 12F RKY PES 1
1011	1327492.04	3043924.36	830.86	Grid 12G RKY PES 5 6
1012	1327492.29	3043907.56	827.17	Grid 8A RKY PES 7
1013	1327495.75	3043897.64	828.02	Grid 8B RKY PES 7
1014	1327509.91	3043902.60	822.74	Grid 8C RKY PES 7
1015	1327505.19	3043913.76	822.72	Grid 8D RKY PES 7
1016	1327501.30	3043904.88	824.79	Grid 8E RKY PES 8
1017	1327498.21	3043891.95	828.45	Grid 9A RKY PES 11
1018	1327503.38	3043879.33	829.10	Grid 9B RKY PES 11
1019	1327511.18	3043870.60	833.23	Grid 9C RKY PES 11 12
1020	1327505.56	3043889.83	826.05	Grid 9D RKY PES 12
1021	1327510.84	3043897.83	823.12	Grid 9E RKY PES 11
1023	1327516.52	3043883.26	824.19	Grid 9F RKY PES 11
1024	1327526.86	3043880.15	824.94	Grid 11A RKY PES 17 18
1025	1327522.35	3043886.38	819.09	Grid 11B RKY PES 15
1026	1327529.02	3043888.94	818.68	Grid 11C RKY PES 15
1027	1327523.14	3043894.64	818.56	Grid 11D RKY PES 16
1028	1327523.19	3043902.94	818.50	Grid 11E RKY PES 15
1029	1327515.99	3043901.66	819.21	Grid 11F RKY PES 15
1030	1327513.93	3043904.87	820.29	Grid 10A RKY PES 9
1031	1327522.75	3043907.13	819.72	Grid 10B RKY PES 9
1032	1327517.42	3043912.29	820.01	Grid 10C RKY PES 10

1033	1327511.23	3043917.18	820.46	Grid 10D RKY PES 9
1034	1327517.54	3043918.56	820.16	Grid 10E RKY PES 9

COGO

PROJECT: Toltest-Crane

DATE: 10-05-01

PAGE: 1

TIME: 13:59:04

NODE/COORDINATE LIST

Number	Northing	Easting	Elevation	Description
1534	1327574.14	3043867.79	816.63	Grid 16A RKY PES 21
1535	1327578.31	3043857.09	816.27	Grid 16B RKY PES 21
1536	1327598.82	3043862.15	814.97	Grid 16C RKY PES 21
1537	1327591.60	3043874.76	815.74	Grid 16D RKY PES 21
1538	1327586.47	3043861.98	815.90	Grid 16E RKY PES 21 22

APPENDIX G

POST-EXCAVATION GRID SAMPLE LOCATION DRAWINGS

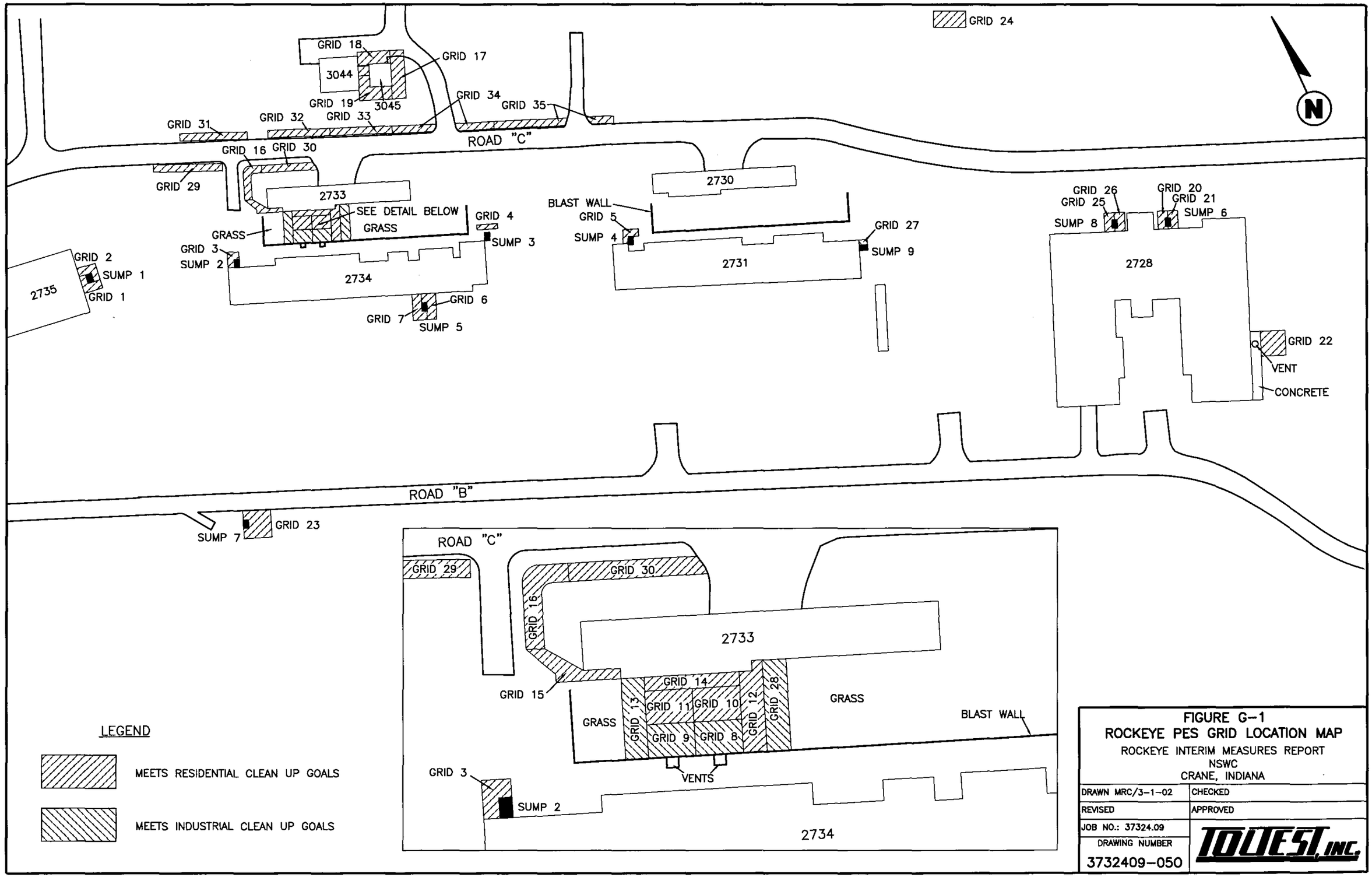


FIGURE G-1
ROCKEYE PES GRID LOCATION MAP
ROCKEYE INTERIM MEASURES REPORT
NSWC
CRANE, INDIANA

DRAWN MRC/3-1-02	CHECKED
REVISED	APPROVED
JOB NO.: 37324.09	TOLTEST, INC.
DRAWING NUMBER 3732409-050	

APPENDIX H

POST-EXCAVATION SAMPLE RESULTS

Table H-1 Explosives
Table H-2 Metals
Table H-3 Semi-volatiles
Table H-4 Volatiles
Table H-5 Trip Blank Sample Results

TABLE H-1
ROCKEYE POST EXCAVATION SAMPLE RESULTS
NSWC CRANE

ANALYTE				EXPLOSIVES														
				135TNB	13DNB	246TNT	24DNT	26DNT	2A46DT	2NT	3NT	4A26DT	4NT	HMX	NB	PETN	RDX	TETRYL
IM Industrial Cleanup Goal				34	68	64	1400	680	1400	6800	6800	680	6800	34000	94	0.25	17	6800
IM Residential Cleanup Goal				3.3	6.5	15	130	65	130	650	650	65	650	3300	18	0.25	4	650
Units of Measurement				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site ID	Sample Date	Grid #	Depth (In.)															
RKYPES001	5/3/01	12	0-6	0.155 J	0.500 U	1.070 P	0.500 U	0.500 U	0.162 J	0.500 U	0.500 U	0.571 P	0.500 U	5.56	0.500 U	0.500 U	3.2	0.500 U
RKYPES003	5/3/01	12	0-6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.111 PJ	0.500 U	0.500 U	0.355 PJ	0.500 U	6.55	0.500 U	0.500 U	0.0476 PJ	0.500 U
RKYPES005	5/3/01	12	0-6	0.500 U	0.500 U	0.366 PJ	0.500 U	0.500 U	0.170 J	0.500 U	0.500 U	0.402 PJ	0.500 U	5.82	0.500 U	0.500 U	0.605	0.500 U
RKYPES007	5/3/01	8	0-6	0.275 J	0.500 U	1.050 P	0.500 U	0.500 U	0.196 J	0.500 U	0.500 U	0.632 P	0.500 U	3.53	0.500 U	0.500 U	8.07	0.500 U
RKYPES009	5/3/01	10	0-6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.0793 PJ	0.500 U	0.500 U	0.333 PJ	0.500 U	0.103 PJ	0.500 U	0.500 U	0.500 U	0.500 U
RKYPES011	5/3/01	9	0-6	0.313 J	0.500 U	0.652 P	0.500 U	0.500 U	0.180 PJ	0.500 U	0.500 U	0.501 P	0.500 U	6.95	0.500 U	0.500 U	4.47	0.500 U
RKYPES013	5/3/01	9	0-6	0.500 U	0.500 U	0.851 P	0.500 U	0.500 U	0.169 J	0.500 U	0.500 U	0.482 PJ	0.500 U	18.3	0.500 U	0.500 U	0.699	0.500 U
RKYPES015	5/3/01	11	0-6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.032 J	0.500 U	0.500 U	0.198 PJ	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
RKYPES017	5/3/01	11	0-6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	1.94	0.500 U	0.500 U	0.0733 J	0.500 U
RKYPES019	5/3/01	14	0-6	0.500 U	0.500 U	1.080 P	0.500 U	0.500 U	0.212 J	0.500 U	0.500 U	0.660 P	0.500 U	9.3	0.500 U	0.500 U	1.32	0.500 U
RKYPES021	7/12/01	16	0-6	0.454 U	0.454 U	0.454 U	0.454 U	0.454 U	0.454 U	0.454 U	0.454 U	0.454 U	0.454 U	11.2	0.454 U	0.454 U	0.454 U	0.454 U

TABLE H-2
ROCKEYE POST EXCAVATION SAMPLE RESULTS
NSWC CRANE

ANALYTE				METALS												
				Hg	Al	As	Ba	Cd	Sb	Be	Cr	Co	Cu	Pb	Ni	Zn
IM Industrial Cleanup Goal				510	100000	2.4	100000	850	680	1.1	450	97000	63000	1000	34000	100000
IM Residential Cleanup Goal				23	77000	0.32	5300	38	31	0.14	210	4600	2800	400	1500	23000
Units of Measurement				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site ID	Sample Date	Grid #	Depth (in.)													
RKYPES001	5/3/01	12	0-6	0.03 B	14600	7.1	71.2	0.12 U	0.61 NU	0.46 B	19.1	6.2	13.6	11.6	10.9	36.8
RKYPES003	5/3/01	12	0-6	0.06	16300	8.6	42.5	0.12 U	0.62 NU	0.32 B	20.6	5.3	17.4	12.3	11.6	47
RKYPES005	5/3/01	12	0-6	0.03 B	15700	8.3	67.1	0.12 U	0.59 NU	0.52 B	19.5	6.6	14.1	11.6	11.6	40.4
RKYPES007	5/3/01	8	0-6	0.06	13600	6.8	64	0.16 B	0.59 NU	0.42 B	18.7	5.3	12.1	12.2	9.5	33.6
RKYPES009	5/3/01	10	0-6	0.03 B	12700	5.9	90.4	0.23 B	0.59 NU	0.71	17.2	11.4	9.1	12.2	11.1	34.7
RKYPES011	5/3/01	9	0-6	0.02 U	15400	8.9	75.1	0.24 B	0.6 NU	0.43 B	19.9	5.2	14.3	13.2	10.9	40.8
RKYPES013	5/3/01	9	0-6	0.02 U	15000	5.9	61.6	0.11 U	0.57 NU	0.46 B	19.7	4.9	13.2	10.6	10.2	30.5
RKYPES015	5/3/01	11	0-6	0.03 B	8350	4.9	87.2	0.12 U	0.61 NU	0.69	10.7	16.2	4.7 B	14.6	8.3	23.6
RKYPES017	5/3/01	11	0-6	0.02 B	15400	6.2	66.3	0.13 B	0.57 NU	0.45 B	19	5.5	14.1	11.3	10.4	38.1
RKYPES019	5/3/01	14	0-6	0.03 B	8920	6.5	63.3	0.13 B	0.57 NU	0.59	10.8	9.4	8.5	10.7	9.6	30
RKYPES021	7/12/01	16	0-6	0.02 U	16900	4.7	60.4	0.26 U	0.69 NB	0.5	16.2	7.4	8.6	10.9	11.2	38.8

TABLE H-3
ROCKEYE POST EXCAVATION SAMPLE RESULTS
NSWC CRANE

ANALYTE				SEMIVOLATILES		
				FANT	PHANTR	PYR
IM Industrial Cleanup Goal				27000000	100000	100000
IM Residential Cleanup Goal				2600000	100000	100000
Units of Measurement				ug/kg	ug/kg	ug/kg
Site ID	Sample Date	Grid #	Depth (in.)			
RKYPES001	5/3/01	12	0-6	380 J	190 J	350 J
RKYPES003	5/3/01	12	0-6	410 U	410 U	410 U
RKYPES005	5/3/01	12	0-6	390 U	390 U	390 U
RKYPES007	5/3/01	8	0-6	390 U	390 U	390 U
RKYPES009	5/3/01	10	0-6	390 U	390 U	390 U
RKYPES011	5/3/01	9	0-6	360 J	170 J	470
RKYPES013	5/3/01	9	0-6	380 U	380 U	380 U
RKYPES015	5/3/01	11	0-6	400 U	400 U	400 U
RKYPES017	5/3/01	11	0-6	380 U	380 U	380 U
RKYPES019	5/3/01	14	0-6	380 U	31 J	380 U
RKYPES021	7/12/01	16	0-6	440 U	31 J	440 U

FANT	FLUORANTHENE
PHANTR	PHENANTHRENE
PYR	PYRENE

TABLE H-4
ROCKEYE POST EXCAVATION SAMPLE RESULTS
NSWC CRANE

ANALYTE				VOLATILES		
				111TCE	112TCE	T13DCP
IM Industrial Cleanup Goal				3000000	1500	550
IM Residential Cleanup Goal				1200000	650	250
Units of Measurement				ug/kg	ug/kg	ug/kg
Site ID	Sample Date	Grid #	Depth (in.)			
RKYPES002	5/3/01	12	0-6	6 U	6 U	6 U
RKYPES004	5/3/01	12	0-6	6 U	6 U	6 U
RKYPES006	5/3/01	12	0-6	9 U	9 U	9 U
RKYPES008	5/3/01	8	0-6	6 U	6 U	6 U
RKYPES010	5/3/01	10	0-6	5 U	5 U	5 U
RKYPES012	5/3/01	9	0-6	5 U	5 U	5 U
RKYPES014	5/3/01	9	0-6	5 U	5 U	5 U
RKYPES016	5/3/01	11	0-6	6 U	6 U	6 U
RKYPES018	5/3/01	11	0-6	6 U	6 U	6 U
RKYPES020	5/3/01	14	0-6	5 U	5 U	5 U
RKYPES022	7/12/01	16	0-6	5 U	5 U	5 U

T13DCP TRANS-1,3-DICHLOROPROPENE
112TCE 1,1,2-TRICHLOROETHANE
111TCE 1,1,1-TRICHLOROETHANE

TABLE H-5
ROCKEYE TRIP BLANK SAMPLE RESULTS

all results in ug/l

				Volatiles			
Sample ID	Sample Date	Grid #	Depth (in.)	111TCE	112TCE	T13DCP	XYLENES
RKYTB071201	7/12/01	NA	NA	5 U	5 U	5 U	5 U

111TCE 1,1,1-TRICHLOROETHANE
112TCE 1,1,2-TRICHLOROETHANE
T13DCP TRANS-1,3-DICHLOROPROPENE

APPENDIX I

WINDROW RECIPES, FIELD MONITORING RESULTS, AND DAY ZERO/DAY LAST SAMPLE RESULTS SUMMARY

RECORD OF RECIPE (MIX NO. 7B)

Building # 2/M Windrow # 202 PERFORMED BY: HAUSER

DATE: 4/1/01 INSPECTED BY: _____

Design Quantity: Chicken Manure 5700 CY _____ Pounds
Straw 2400 CY _____ Pounds
Soil _____ CY _____ Pounds

Batch Number	CHICKEN MANURE Supplier: _____		STRAW Supplier: _____		SOIL Location: _____		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
1	3.25	5850	12.00	2490	5			
2	3.15	5790	12.25	2570	5			
3	3.15	5810	12.00	2470	5			
4	3.50	5940	12.50	2620				
Total								

Comments:

Average Daily Windrow Temperature Summary Report

Windrow Number	Construction Date	Date Monitored	Age (Days)	PRE-Turn (Deg C)	POST-Turn (Deg C)
2	4/10/01	4/10/01	0		38.33
		4/11/01	1	35.75	35.25
		4/12/01	2	53.92	46.54
		4/13/01	3	60.58	53.17
		4/14/01	4	61.25	53.00
		4/15/01	5	62.04	56.50
		4/16/01	6	67.63	54.92
		4/17/01	7	67.42	60.50
		4/18/01	8	67.71	61.79
		4/19/01	9	61.25	53.00
		4/20/01	10	63.54	55.75
		4/21/01	11	64.71	55.42
		4/22/01	12	64.92	56.75
		4/23/01	13	60.83	51.63
		4/24/01	14	63.42	56.17
		4/25/01	15	65.96	54.83
		4/26/01	16	65.29	55.38
		5/26/01	46	61.50	54.33

All average temperatures are in degrees centigrade

Wednesday, March 27, 2002

Average Daily Windrow Oxygen Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
M202	4/10/01	4/10/01	0		16.67
		4/11/01	1	5.50	12.54
		4/12/01	2	5.71	11.67
		4/13/01	3	10.88	15.88
		4/14/01	4	12.29	13.13
		4/15/01	5	12.54	15.83
		4/16/01	6	8.75	14.33
		4/17/01	7	8.08	12.29
		4/18/01	8	6.50	11.88
		4/19/01	9	12.67	10.21
		4/20/01	10	9.04	12.00
		4/21/01	11	9.08	10.95
		4/22/01	12	6.46	15.13
		4/23/01	13	13.83	15.67
		4/24/01	14	4.46	13.29
		4/25/01	15	4.96	12.63
		4/26/01	16	4.54	11.75
		5/26/01	46	8.17	11.13

All average Oxygen values are expressed as a percent

Wednesday, March 27, 2002

Average Daily Windrow WHC Summary Report

drow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
M202	4/10/01	4/10/01	0		54.23
		4/11/01	1		44.18
		4/12/01	2		
		4/13/01	3		
		4/14/01	4		
		4/15/01	5		
		4/16/01	6		35.63
		4/17/01	7		
		4/18/01	8		
		4/19/01	9		
		4/20/01	10		
		4/21/01	11		40.77
		4/22/01	12		
		4/23/01	13		
		4/24/01	14		
		4/25/01	15		31.17
		4/26/01	16		
		5/26/01	46		

All average MWHC values are expressed in percent

Average Daily Windrow PH Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn*	*PRE-Turn*
M202	4/10/01	4/10/01	0		8.7
		4/16/01	6		8.4
		4/25/01	15		8.325

All average PH values are expressed in standard units

Wednesday, March 27, 2002

Windrow Number: M202 *1,3,5-TRINITROBENZENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
135TNB	04/10/01	04/10/01	0	A	1		438	J
					2	LT	500	
					3		84	J
					Average Concentration for Cross Section A :			*341*
135TNB	04/10/01	04/10/01	0	B	1	LT	476	
					2		1150	
					3		117	J
					Average Concentration for Cross Section B :			*581*
135TNB	04/10/01	04/10/01	0	C	1		334	J
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section C :			*437*
135TNB	04/10/01	04/10/01	0	D	1		376	J
					2	LT	476	
					3		1170	
					Average Concentration for Cross Section D :			*674*

Average Concentration for Windrow on Day 0 : ***508***

Standard Deviation: ***336***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
135TNB	04/10/01	04/15/01	5	A	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section A :			*461*
135TNB	04/10/01	04/15/01	5	B	1	LT	500	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section B :			*469*
135TNB	04/10/01	04/15/01	5	C	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section C :			*461*
135TNB	04/10/01	04/15/01	5	D	1	LT	476	
					2	LT	500	
					3	LT	454	
					Average Concentration for Cross Section D :			*477*

Average Concentration for Windrow on Day 5 : ***467***

Standard Deviation: ***18***

Windrow Number: M202 *1,3,5-TRINITROBENZENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
135TNB	04/10/01	04/20/01	10	A	1		115 J	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section A :				*348*
135TNB	04/10/01	04/20/01	10	B	1	LT	500	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section B :				*484*
135TNB	04/10/01	04/20/01	10	C	1	LT	500	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section C :				*492*
135TNB	04/10/01	04/20/01	10	D	1	LT	500	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section D :				*492*

Average Concentration for Windrow on Day 10 : 454

Standard Deviation: 108

Percent Reduction of 135TNB: 10.63%

Windrow Number: M202 *1,3-DINITROBENZENE Results*

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
13DNB	04/10/01	04/10/01	0	A	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section A :			*492*
13DNB	04/10/01	04/10/01	0	B	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section B :			*484*
13DNB	04/10/01	04/10/01	0	C	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section C :			*484*
13DNB	04/10/01	04/10/01	0	D	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section D :			*484*
				Average Concentration for Windrow on Day 0 :			*486*
						Standard Deviation:	*12*

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
13DNB	04/10/01	04/15/01	5	A	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section A :			*461*
13DNB	04/10/01	04/15/01	5	B	1	LT	500
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section B :			*469*
13DNB	04/10/01	04/15/01	5	C	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section C :			*461*
13DNB	04/10/01	04/15/01	5	D	1	LT	476
					2	LT	500
					3	LT	454
				Average Concentration for Cross Section D :			*477*
				Average Concentration for Windrow on Day 5 :			*467*
						Standard Deviation:	*18*

Windrow Number: M202 ***1,3-DINITROBENZENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
13DNB	04/10/01	04/20/01	10	A	1	LT	476
					2	LT	454
					3	LT	476
				Average Concentration for Cross Section A :			*469*
13DNB	04/10/01	04/20/01	10	B	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section B :			*484*
13DNB	04/10/01	04/20/01	10	C	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section C :			*492*
13DNB	04/10/01	04/20/01	10	D	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section D :			*492*

Average Concentration for Windrow on Day 10 : ***484***

Standard Deviation: ***15***

Percent Reduction of 13DNB: 0.38%

Windrow Number: M202 ***2,4,6-TRINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location		Concentration	UGKG
246TNT	04/10/01	04/10/01	0	A	1		28700	
					2		12000	
					3		6030	
				Average Concentration for Cross Section			*A :*	*15577*
246TNT	04/10/01	04/10/01	0	B	1		2590	
					2		11700	
					3		9570	
				Average Concentration for Cross Section			*B :*	*7953*
246TNT	04/10/01	04/10/01	0	C	1		9440	
					2		3550	
					3		4400	
				Average Concentration for Cross Section			*C :*	*5797*
246TNT	04/10/01	04/10/01	0	D	1		7490	
					2		2480	
					3		17600	
				Average Concentration for Cross Section			*D :*	*9190*
				Average Concentration for Windrow on Day 0 :				***9629***
							Standard Deviation:	***7506***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location		Concentration	UGKG
246TNT	04/10/01	04/15/01	5	A	1		1180	
					2		5740	
					3		453 J	
				Average Concentration for Cross Section			*A :*	*2458*
246TNT	04/10/01	04/15/01	5	B	1		1440	
					2		1270	
					3	LT	454	
				Average Concentration for Cross Section			*B :*	*1055*
246TNT	04/10/01	04/15/01	5	C	1	LT	476	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section			*C :*	*461*
246TNT	04/10/01	04/15/01	5	D	1		560	
					2	LT	500	
					3	LT	454	
				Average Concentration for Cross Section			*D :*	*505*
				Average Concentration for Windrow on Day 5 :				***1120***
							Standard Deviation:	***1502***

Windrow Number: M202 ***2,4,6-TRINITROTOLUENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*		*Concentration*	UGKG
246TNT	04/10/01	04/20/01	10	A	1		1800	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section A :				*910*
246TNT	04/10/01	04/20/01	10	B	1	LT	500	
					2	LT	476	
					3		254 J	
				Average Concentration for Cross Section B :				*410*
246TNT	04/10/01	04/20/01	10	C	1		247 J	
					2	LT	476	
					3		649	
				Average Concentration for Cross Section C :				*457*
246TNT	04/10/01	04/20/01	10	D	1		262 J	
					2	LT	500	
					3		257 J	
				Average Concentration for Cross Section D :				*340*

Average Concentration for Windrow on Day 10 : ***529***

Standard Deviation: ***421***

Percent Reduction of 246TNT: 94.50%

Windrow Number: M202 *2,4-DINITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
24DNT	04/10/01	04/10/01	0	A	1	LT	476	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section A :			*492*
24DNT	04/10/01	04/10/01	0	B	1	LT	476	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section B :			*484*
24DNT	04/10/01	04/10/01	0	C	1	LT	476	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section C :			*484*
24DNT	04/10/01	04/10/01	0	D	1	LT	476	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section D :			*484*
					Average Concentration for Windrow on Day 0 :			***486***
					Standard Deviation:			***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
24DNT	04/10/01	04/15/01	5	A	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section A :			*461*
24DNT	04/10/01	04/15/01	5	B	1	LT	500	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section B :			*469*
24DNT	04/10/01	04/15/01	5	C	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section C :			*461*
24DNT	04/10/01	04/15/01	5	D	1	LT	476	
					2	LT	500	
					3	LT	454	
					Average Concentration for Cross Section D :			*477*
					Average Concentration for Windrow on Day 5 :			***467***
					Standard Deviation:			***18***

Windrow Number: M202 ***2,4-DINITROTOLUENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
24DNT	04/10/01	04/20/01	10	A	1	LT	476
					2	LT	454
					3	LT	476
				Average Concentration for Cross Section A :			*469*
24DNT	04/10/01	04/20/01	10	B	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section B :			*484*
24DNT	04/10/01	04/20/01	10	C	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section C :			*492*
24DNT	04/10/01	04/20/01	10	D	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section D :			*492*

Average Concentration for Windrow on Day 10 : ***484***

Standard Deviation: ***15***

Percent Reduction of 24DNT: 0.38%

Windrow Number: M202 *2,6-DINITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
26DNT	04/10/01	04/10/01	0	A	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section A :			*492*
26DNT	04/10/01	04/10/01	0	B	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section B :			*484*
26DNT	04/10/01	04/10/01	0	C	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section C :			*484*
26DNT	04/10/01	04/10/01	0	D	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section D :			*484*

Average Concentration for Windrow on Day 0 : ***486***

Standard Deviation: ***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
26DNT	04/10/01	04/15/01	5	A	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section A :			*461*
26DNT	04/10/01	04/15/01	5	B	1	LT	500
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section B :			*469*
26DNT	04/10/01	04/15/01	5	C	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section C :			*461*
26DNT	04/10/01	04/15/01	5	D	1	LT	476
					2	LT	500
					3	LT	454
				Average Concentration for Cross Section D :			*477*

Average Concentration for Windrow on Day 5 : ***467***

Standard Deviation: ***18***

Windrow Number: M202 ***2,6-DINITROTOLUENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*		UGKG
26DNT	04/10/01	04/20/01	10	A	1	LT	476	
					2	LT	454	
					3	LT	476	
					Average Concentration for Cross Section A :			*469*
26DNT	04/10/01	04/20/01	10	B	1	LT	500	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section B :			*484*
26DNT	04/10/01	04/20/01	10	C	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section C :			*492*
26DNT	04/10/01	04/20/01	10	D	1	LT	500	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section D :			*492*

Average Concentration for Windrow on Day 10 : ***484***

Standard Deviation: ***15***

Percent Reduction of 26DNT: 0.38%

Windrow Number: M202 *2-AMINO-4,6-DINITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2A46DT	04/10/01	04/10/01	0	A	1	LT	476
					2	LT	500
					3		242 J
				Average Concentration for Cross Section A :			*406*
2A46DT	04/10/01	04/10/01	0	B	1		212 J
					2		395 J
					3		324 J
				Average Concentration for Cross Section B :			*310*
2A46DT	04/10/01	04/10/01	0	C	1		362 J
					2		257 J
					3		288 J
				Average Concentration for Cross Section C :			*302*
2A46DT	04/10/01	04/10/01	0	D	1		238 J
					2		550
					3		714
				Average Concentration for Cross Section D :			*501*

Average Concentration for Windrow on Day 0 : ***380***

Standard Deviation: ***153***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2A46DT	04/10/01	04/15/01	5	A	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section A :			*461*
2A46DT	04/10/01	04/15/01	5	B	1	LT	500
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section B :			*469*
2A46DT	04/10/01	04/15/01	5	C	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section C :			*461*
2A46DT	04/10/01	04/15/01	5	D	1	LT	476
					2	LT	500
					3	LT	454
				Average Concentration for Cross Section D :			*477*

Average Concentration for Windrow on Day 5 : ***467***

Standard Deviation: ***18***

Windrow Number: M202 ***2-AMINO-4,6-DINITROTOLUENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
2A46DT	04/10/01	04/20/01	10	A	1	LT	476
					2	LT	454
					3	LT	476
				Average Concentration for Cross Section A :			*469*
2A46DT	04/10/01	04/20/01	10	B	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section B :			*484*
2A46DT	04/10/01	04/20/01	10	C	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section C :			*492*
2A46DT	04/10/01	04/20/01	10	D	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section D :			*492*

Average Concentration for Windrow on Day 10 : ***484***

Standard Deviation: *15*

Percent Reduction of 2A46DT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M202 ***2-NITROTOLUENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
2NT	04/10/01	04/10/01	0	A	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section A :			*492*
2NT	04/10/01	04/10/01	0	B	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section B :			*484*
2NT	04/10/01	04/10/01	0	C	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section C :			*484*
2NT	04/10/01	04/10/01	0	D	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section D :			*484*
				Average Concentration for Windrow on Day 0 :			***486***
						Standard Deviation:	*12*

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
2NT	04/10/01	04/15/01	5	A	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section A :			*461*
2NT	04/10/01	04/15/01	5	B	1	LT	500
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section B :			*469*
2NT	04/10/01	04/15/01	5	C	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section C :			*461*
2NT	04/10/01	04/15/01	5	D	1	LT	476
					2	LT	500
					3	LT	454
				Average Concentration for Cross Section D :			*477*
				Average Concentration for Windrow on Day 5 :			***467***
						Standard Deviation:	*18*

Windrow Number: M202 ***2-NITROTOLUENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
2NT	04/10/01	04/20/01	10	A	1	LT 476	
					2	LT 454	
					3	LT 476	
				Average Concentration for Cross Section A :			*469*
2NT	04/10/01	04/20/01	10	B	1	LT 500	
					2	LT 476	
					3	LT 476	
				Average Concentration for Cross Section B :			*484*
2NT	04/10/01	04/20/01	10	C	1	LT 500	
					2	LT 476	
					3	LT 500	
				Average Concentration for Cross Section C :			*492*
2NT	04/10/01	04/20/01	10	D	1	LT 500	
					2	LT 500	
					3	LT 476	
				Average Concentration for Cross Section D :			*492*

Average Concentration for Windrow on Day 10 : ***484***

Standard Deviation: ***15***

Percent Reduction of 2NT: 0.38%

Windrow Number: M202 *3-NITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
3NT	04/10/01	04/10/01	0	A	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section A :			*492*
3NT	04/10/01	04/10/01	0	B	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section B :			*484*
3NT	04/10/01	04/10/01	0	C	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section C :			*484*
3NT	04/10/01	04/10/01	0	D	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section D :			*484*
				Average Concentration for Windrow on Day 0 :			*486*
						Standard Deviation:	*12*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
3NT	04/10/01	04/15/01	5	A	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section A :			*461*
3NT	04/10/01	04/15/01	5	B	1	LT	500
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section B :			*469*
3NT	04/10/01	04/15/01	5	C	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section C :			*461*
3NT	04/10/01	04/15/01	5	D	1	LT	476
					2	LT	500
					3	LT	454
				Average Concentration for Cross Section D :			*477*
				Average Concentration for Windrow on Day 5 :			*467*
						Standard Deviation:	*18*

Windrow Number: M202 ***3-NITROTOLUENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
3NT	04/10/01	04/20/01	10	A	1	LT	476
					2	LT	454
					3	LT	476
				Average Concentration for Cross Section A :			*469*
3NT	04/10/01	04/20/01	10	B	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section B :			*484*
3NT	04/10/01	04/20/01	10	C	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section C :			*492*
3NT	04/10/01	04/20/01	10	D	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section D :			*492*

Average Concentration for Windrow on Day 10 : ***484***

Standard Deviation: ***15***

Percent Reduction of 3NT: 0.38%

Windrow Number: M202 *4-AMINO-2,6-DINITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
4A26DT	04/10/01	04/10/01	0	A	1	LT	476	
					2	LT	500	
					3		1670	
					Average Concentration for Cross Section A :			*882*
4A26DT	04/10/01	04/10/01	0	B	1		1180	
					2		3530	
					3		2420	
					Average Concentration for Cross Section B :			*2377*
4A26DT	04/10/01	04/10/01	0	C	1		2570	
					2		1320	
					3		1370	
					Average Concentration for Cross Section C :			*1753*
4A26DT	04/10/01	04/10/01	0	D	1		1740	
					2		1040	
					3		4500	
					Average Concentration for Cross Section D :			*2427*
					Average Concentration for Windrow on Day 0 :			*1860*
					Standard Deviation:			*1208*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
4A26DT	04/10/01	04/15/01	5	A	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section A :			*461*
4A26DT	04/10/01	04/15/01	5	B	1	LT	500	
					2		689	
					3	LT	454	
					Average Concentration for Cross Section B :			*548*
4A26DT	04/10/01	04/15/01	5	C	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section C :			*461*
4A26DT	04/10/01	04/15/01	5	D	1	LT	476	
					2	LT	500	
					3	LT	454	
					Average Concentration for Cross Section D :			*477*
					Average Concentration for Windrow on Day 5 :			*487*
					Standard Deviation:			*66*

Windrow Number: M202 ***4-AMINO-2,6-DINITROTOLUENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
4A26DT	04/10/01	04/20/01	10	A	1	LT	476
					2	LT	454
					3	LT	476
				Average Concentration for Cross Section A :			*469*
4A26DT	04/10/01	04/20/01	10	B	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section B :			*484*
4A26DT	04/10/01	04/20/01	10	C	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section C :			*492*
4A26DT	04/10/01	04/20/01	10	D	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section D :			*492*

Average Concentration for Windrow on Day 10 : ***484***

Standard Deviation: ***15***

Percent Reduction of 4A26DT: 73.96%

Windrow Number: M202 *4-NITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4NT	04/10/01	04/10/01	0	A	1	LT	476
					2		568
					3	LT	500
				Average Concentration for Cross Section A :			*515*
4NT	04/10/01	04/10/01	0	B	1	LT	476
					2	LT	476
					3		298 J
				Average Concentration for Cross Section B :			*417*
4NT	04/10/01	04/10/01	0	C	1		1440
					2		1890
					3	LT	500
				Average Concentration for Cross Section C :			*1277*
4NT	04/10/01	04/10/01	0	D	1	LT	476
					2		702
					3	LT	500
				Average Concentration for Cross Section D :			*559*

Average Concentration for Windrow on Day 0 : ***692***

Standard Deviation: *473*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4NT	04/10/01	04/15/01	5	A	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section A :			*461*
4NT	04/10/01	04/15/01	5	B	1	LT	500
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section B :			*469*
4NT	04/10/01	04/15/01	5	C	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section C :			*461*
4NT	04/10/01	04/15/01	5	D	1	LT	476
					2	LT	500
					3	LT	454
				Average Concentration for Cross Section D :			*477*

Average Concentration for Windrow on Day 5 : ***467***

Standard Deviation: *18*

Windrow Number: M202 ***4-NITROTOLUENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*		UGKG
4NT	04/10/01	04/20/01	10	A	1	LT	476	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section A :				*469*
4NT	04/10/01	04/20/01	10	B	1	LT	500	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section B :				*484*
4NT	04/10/01	04/20/01	10	C	1	LT	500	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section C :				*492*
4NT	04/10/01	04/20/01	10	D	1	LT	500	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section D :				*492*

Average Concentration for Windrow on Day 10 : ***484***

Standard Deviation: ***15***

Percent Reduction of 4NT: 30.02%

Windrow Number: M202 ***HMX Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
HMX	04/10/01	04/10/01	0	A	1	283000	
					2	109000	
					3	133000	
				Average Concentration for Cross Section A :			*175000*
HMX	04/10/01	04/10/01	0	B	1	80600	
					2	271000	
					3	108000	
				Average Concentration for Cross Section B :			*153200*
HMX	04/10/01	04/10/01	0	C	1	186000	
					2	64000	
					3	38500	
				Average Concentration for Cross Section C :			*96167*
HMX	04/10/01	04/10/01	0	D	1	128000	
					2	57800	
					3	271000	
				Average Concentration for Cross Section D :			*152267*

Average Concentration for Windrow on Day 0 : ***144158***

Standard Deviation: ***88019***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
HMX	04/10/01	04/15/01	5	A	1	143000	
					2	130000	
					3	74600	
				Average Concentration for Cross Section A :			*115867*
HMX	04/10/01	04/15/01	5	B	1	69800	
					2	124000	
					3	69000	
				Average Concentration for Cross Section B :			*87600*
HMX	04/10/01	04/15/01	5	C	1	27600	
					2	102000	
					3	47300	
				Average Concentration for Cross Section C :			*58967*
HMX	04/10/01	04/15/01	5	D	1	79700	
					2	118000	
					3	58500	
				Average Concentration for Cross Section D :			*85400*

Average Concentration for Windrow on Day 5 : ***86958***

Standard Deviation: ***36035***

Windrow Number: M202 ***HMX Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
HMX	04/10/01	04/20/01	10	A	1	43000	
					2	54400	
					3	33000	
					Average Concentration for Cross Section A :		*43467*
HMX	04/10/01	04/20/01	10	B	1	6580	
					2	45200	
					3	73400	
					Average Concentration for Cross Section B :		*41727*
HMX	04/10/01	04/20/01	10	C	1	10600	
					2	11600	
					3	75600	
					Average Concentration for Cross Section C :		*32600*
HMX	04/10/01	04/20/01	10	D	1	51100	
					2	37100	
					3	51200	
					Average Concentration for Cross Section D :		*46467*

Average Concentration for Windrow on Day 10 : ***41065***

Standard Deviation: *22777*

Percent Reduction of HMX: *71.51%*

Windrow Number: M202 ***NITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
NB	04/10/01	04/10/01	0	A	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section A :			*492*
NB	04/10/01	04/10/01	0	B	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section B :			*484*
NB	04/10/01	04/10/01	0	C	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section C :			*484*
NB	04/10/01	04/10/01	0	D	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section D :			*484*

Average Concentration for Windrow on Day 0 : ***486***

Standard Deviation: ***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
NB	04/10/01	04/15/01	5	A	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section A :			*461*
NB	04/10/01	04/15/01	5	B	1	LT	500
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section B :			*469*
NB	04/10/01	04/15/01	5	C	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section C :			*461*
NB	04/10/01	04/15/01	5	D	1	LT	476
					2	LT	500
					3	LT	454
				Average Concentration for Cross Section D :			*477*

Average Concentration for Windrow on Day 5 : ***467***

Standard Deviation: ***18***

Windrow Number: M202 ***NITROBENZENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
NB	04/10/01	04/20/01	10	A	1	LT	476
					2	LT	454
					3	LT	476
				Average Concentration for Cross Section A :			*469*
NB	04/10/01	04/20/01	10	B	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section B :			*484*
NB	04/10/01	04/20/01	10	C	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section C :			*492*
NB	04/10/01	04/20/01	10	D	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section D :			*492*

Average Concentration for Windrow on Day 10 : ***484***

Standard Deviation: ***15***

Percent Reduction of NB: 0.38%

Windrow Number: M202 ***RDX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
RDX	04/10/01	04/10/01	0	A	1	26300	
					2	18900	
					3	27500	
					Average Concentration for Cross Section A :		*24233*
RDX	04/10/01	04/10/01	0	B	1	15700	
					2	24900	
					3	18100	
					Average Concentration for Cross Section B :		*19567*
RDX	04/10/01	04/10/01	0	C	1	20100	
					2	14400	
					3	186000	
					Average Concentration for Cross Section C :		*73500*
RDX	04/10/01	04/10/01	0	D	1	17100	
					2	10000	
					3	28900	
					Average Concentration for Cross Section D :		*18667*
					Average Concentration for Windrow on Day 0 :		***33992***
					Standard Deviation:		***48213***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
RDX	04/10/01	04/15/01	5	A	1	LT 476	
					2	16400	
					3	LT 454	
					Average Concentration for Cross Section A :		*5777*
RDX	04/10/01	04/15/01	5	B	1	LT 500	
					2	LT 454	
					3	LT 454	
					Average Concentration for Cross Section B :		*469*
RDX	04/10/01	04/15/01	5	C	1	LT 476	
					2	LT 454	
					3	815	
					Average Concentration for Cross Section C :		*582*
RDX	04/10/01	04/15/01	5	D	1	3770	
					2	3330	
					3	LT 454	
					Average Concentration for Cross Section D :		*2518*
					Average Concentration for Windrow on Day 5 :		***2336***
					Standard Deviation:		***4584***

Windrow Number: M202 ***RDX Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*		UGKG
RDX	04/10/01	04/20/01	10	A	1		202 J	
					2	LT	454	
					3	LT	476	
					Average Concentration for Cross Section A :			*377*
RDX	04/10/01	04/20/01	10	B	1		3560	
					2	LT	476	
					3		230 J	
					Average Concentration for Cross Section B :			*1422*
RDX	04/10/01	04/20/01	10	C	1		363 J	
					2	LT	476	
					3		313 J	
					Average Concentration for Cross Section C :			*384*
RDX	04/10/01	04/20/01	10	D	1		336 J	
					2	LT	500	
					3		499	
					Average Concentration for Cross Section D :			*445*

Average Concentration for Windrow on Day 10 : ***657***

Standard Deviation: ***920***

Percent Reduction of RDX: 98.07%

Windrow Number: M202 ***TETRYL Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
TETRYL	04/10/01	04/10/01	0	A	1	LT	476	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section A :				*492*
TETRYL	04/10/01	04/10/01	0	B	1	LT	476	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section B :				*484*
TETRYL	04/10/01	04/10/01	0	C	1	LT	476	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section C :				*484*
TETRYL	04/10/01	04/10/01	0	D	1	LT	476	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section D :				*484*

Average Concentration for Windrow on Day 0 : ***486***

Standard Deviation: ***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
TETRYL	04/10/01	04/15/01	5	A	1	LT	476	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section A :				*461*
TETRYL	04/10/01	04/15/01	5	B	1	LT	500	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section B :				*469*
TETRYL	04/10/01	04/15/01	5	C	1	LT	476	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section C :				*461*
TETRYL	04/10/01	04/15/01	5	D	1	LT	476	
					2	LT	500	
					3	LT	454	
				Average Concentration for Cross Section D :				*477*

Average Concentration for Windrow on Day 5 : ***467***

Standard Deviation: ***18***

Windrow Number: M202 ***TETRYL Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*		UGKG
TETRYL	04/10/01	04/20/01	10	A	1	LT	476	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section A :				*469*
TETRYL	04/10/01	04/20/01	10	B	1	LT	500	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section B :				*484*
TETRYL	04/10/01	04/20/01	10	C	1	LT	500	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section C :				*492*
TETRYL	04/10/01	04/20/01	10	D	1	LT	500	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section D :				*492*

Average Concentration for Windrow on Day 10 : ***484***

Standard Deviation: ***15***

Percent Reduction of TETRYL: 0.38%

RECORD OF RECIPE (MIX NO. 7B)

Building # 211 Windrow # 211 PERFORMED BY: _____

DATE: 5/28/101 203 INSPECTED BY: _____

Design Quantity: Chicken Manure 3 CY 5700 Pounds
Straw 22 CY 2400 Pounds
Soil _____ CY _____ Pounds

Building #2

Batch Number	CHICKEN MANURE Supplier: _____		STRAW Supplier: _____		SOIL Location: _____		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
1	3	5710	13	3200				
2	3.1	5700	12	2410				
3	3	5730	12	2390				
4	3.2	5810	12.6	2750				
5	3.2	5920	12.1	2340				
6	3	5740	12.8	3020				
7	3.2	5810	13.2	3400				
8	3.2	5920	12.5	2620				
9	3.2	5880	12.2	2550				
10	3.2	5800	12	2400				
11	3.2	5860	12.2	2530				
12	3.2	5840	12.3	2630				
13	3.1	5790	12.2	2580				
14	3.2	5840	12.1	2490				
15	3.1	5790	12.5	2610				
16	3.2	5880	12	2390				
17	3.2	5800	12.2	2800				
18	3	5730	12	2420				
19								
Total								

Comments:

RECORD OF RECIPE (MIX NO. 7B)

Building # M Windrow # M203 PERFORMED BY: _____

DATE: 5/10/01 INSPECTED BY: _____

Design Quantity: Chicken Manure 3 CY 5700 Pounds
Straw 12 CY 2400 Pounds
Soil _____ CY _____ Pounds

Batch Number	CHICKEN MANURE Supplier: _____		STRAW Supplier: _____		SOIL Location: _____		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
19	3.2	5890	12.2	2560				
20	3.15	5760	12.2	2550				
21	3.15	5820	12.1	2490				
22	3.15	5790	12.2	2530				
23	3.15	5820	12.3	2580				
24	3.1	5780	12.25	2600				
25	3.1	5740	12.1	2480				
26	3.1	5790	12.2	2540				
27	3.1	5730	12.1	2480				
428	3.1	5750	12	2410				
429	3.15	5790	12.1	2430				
430	3.15	5850	12.2	2510				
431	3.15	5820	12.2	2550				
432	3.1	5730	12	2410				
433	3.1	5760	12.1	2440				
434	3	5720	12	2410				
435	3.1	5780	12.1	2460				
836	3.1	5720	12	2420				
937	3.1	5740	12.1	2430				
Total								

Comments:

Average Daily Windrow Temperature Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (Deg C)*	*POST-Turn (Deg C)*
3	5/30/01	5/30/01	0		34.20
		5/31/01	1	53.40	46.70
		6/1/01	2	57.57	52.13
		6/2/01	3	60.60	54.80
		6/4/01	5	64.17	58.33
		6/5/01	6	61.77	57.40
		6/6/01	7	65.93	59.50
		6/7/01	8	64.77	61.17
		6/8/01	9	64.37	60.40
		6/9/01	10	64.03	59.57
		6/11/01	12	64.07	58.43
		6/12/01	13	61.13	58.63
		6/13/01	14	60.87	58.30
		6/14/01	15	61.73	59.50
		6/15/01	16	61.53	58.07
		6/16/01	17	64.67	63.97

All average temperatures are in degrees centigrade

Wednesday, March 27, 2002

Average Daily Windrow Oxygen Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
M203	5/30/01	5/30/01	0		10.73
		5/31/01	1	8.23	7.30
		6/1/01	2	6.70	9.60
		6/2/01	3	6.70	7.83
		6/4/01	5	5.13	6.10
		6/5/01	6	4.50	5.77
		6/6/01	7	8.03	6.87
		6/7/01	8	4.90	6.23
		6/8/01	9	4.87	5.80
		6/9/01	10	3.27	5.27
		6/11/01	12	6.07	5.30
		6/12/01	13	2.27	9.07
		6/13/01	14	2.00	1.50
		6/14/01	15	3.03	4.97
		6/15/01	16	2.67	3.20
		6/16/01	17	4.77	2.20

All average Oxygen values are expressed as a percent

Wednesday, March 27, 2002

Average Daily Windrow WHC Summary Report

drow Number	Construction Date	Date Monitored	Age (Days)	PRE-Turn (%)	POST-Turn (%)
M203	5/30/01	5/30/01	0		52.62
		5/31/01	1		
		6/1/01	2		
		6/2/01	3		
		6/4/01	5		
		6/5/01	6		
		6/6/01	7		
		6/7/01	8		
		6/8/01	9		
		6/9/01	10		
		6/11/01	12		
		6/12/01	13		
		6/13/01	14		
		6/14/01	15		
		6/15/01	16		
		6/16/01	17		

All average MWHC values are expressed in percent

Average Daily Windrow PH Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn*	*PRE-Turn*
M203	5/30/01	6/6/01	7	8.56	

All average PH values are expressed in standard units

Wednesday, March 27, 2002

Windrow Number: M203 ***1,3,5-TRINITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
135TNB	05/30/01	05/30/01	0	03	1	LT	500
					2		44.9 J
					3	LT	476
				Average Concentration for Cross Section 03 :			*340*
135TNB	05/30/01	05/30/01	0	05	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 05 :			*484*
135TNB	05/30/01	05/30/01	0	07	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
135TNB	05/30/01	05/30/01	0	09	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 09 :			*476*
135TNB	05/30/01	05/30/01	0	11	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*476*

Average Concentration for Windrow on Day 0 : ***452***

Standard Deviation: ***113***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
135TNB	05/30/01	06/18/01	19	03	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*477*
135TNB	05/30/01	06/18/01	19	05	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 05 :			*492*
135TNB	05/30/01	06/18/01	19	07	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 07 :			*500*
135TNB	05/30/01	06/18/01	19	09	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*492*
135TNB	05/30/01	06/18/01	19	11	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 19 : ***491***

Standard Deviation: ***15***

Percent Reduction of 135TNB: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M203 ***1,3-DINITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
13DNB	05/30/01	05/30/01	0	03	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*492*
13DNB	05/30/01	05/30/01	0	05	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 05 :			*484*
13DNB	05/30/01	05/30/01	0	07	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
13DNB	05/30/01	05/30/01	0	09	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 09 :			*476*
13DNB	05/30/01	05/30/01	0	11	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*476*

Average Concentration for Windrow on Day 0 : ***482***

Standard Deviation: ***11***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
13DNB	05/30/01	06/18/01	19	03	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*477*
13DNB	05/30/01	06/18/01	19	05	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 05 :			*492*
13DNB	05/30/01	06/18/01	19	07	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 07 :			*500*
13DNB	05/30/01	06/18/01	19	09	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*492*
13DNB	05/30/01	06/18/01	19	11	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 19 : ***491***

Standard Deviation: ***15***

Percent Reduction of 13DNB: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M203 ***2,4,6-TRINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
246TNT	05/30/01	05/30/01	0	03	1	8560	
					2	17000	
					3	2130	
					Average Concentration for Cross Section 03 :		*9230*
246TNT	05/30/01	05/30/01	0	05	1	15800	
					2	2940	
					3	LT 476	
					Average Concentration for Cross Section 05 :		*6405*
246TNT	05/30/01	05/30/01	0	07	1	5120	
					2	2190	
					3	2950	
					Average Concentration for Cross Section 07 :		*3420*
246TNT	05/30/01	05/30/01	0	09	1	5430	
					2	2800	
					3	1320	
					Average Concentration for Cross Section 09 :		*3183*
246TNT	05/30/01	05/30/01	0	11	1	2120	
					2	3790	
					3	7650	
					Average Concentration for Cross Section 11 :		*4520*

Average Concentration for Windrow on Day 0 : 5352

Standard Deviation: 5013

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
246TNT	05/30/01	06/18/01	19	03	1	LT 454	
					2	LT 500	
					3	LT 476	
					Average Concentration for Cross Section 03 :		*477*
246TNT	05/30/01	06/18/01	19	05	1	LT 500	
					2	LT 500	
					3	LT 476	
					Average Concentration for Cross Section 05 :		*492*
246TNT	05/30/01	06/18/01	19	07	1	LT 500	
					2	LT 500	
					3	LT 500	
					Average Concentration for Cross Section 07 :		*500*
246TNT	05/30/01	06/18/01	19	09	1	LT 476	
					2	LT 500	
					3	LT 500	
					Average Concentration for Cross Section 09 :		*492*
246TNT	05/30/01	06/18/01	19	11	1	LT 500	
					2	LT 476	
					3	LT 500	
					Average Concentration for Cross Section 11 :		*492*

Average Concentration for Windrow on Day 19 : 491

Standard Deviation: 15

Percent Reduction of 246TNT: 90.83%

Windrow Number: M203 ***2,4-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
24DNT	05/30/01	05/30/01	0	03	1	LT	500	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*492*
24DNT	05/30/01	05/30/01	0	05	1	LT	500	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 05 :			*484*
24DNT	05/30/01	05/30/01	0	07	1	LT	500	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 07 :			*484*
24DNT	05/30/01	05/30/01	0	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
24DNT	05/30/01	05/30/01	0	11	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*476*
					Average Concentration for Windrow on Day 0 :			***482***
					Standard Deviation:			***11***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
24DNT	05/30/01	06/18/01	19	03	1	LT	454	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*477*
24DNT	05/30/01	06/18/01	19	05	1	LT	500	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 05 :			*492*
24DNT	05/30/01	06/18/01	19	07	1	LT	500	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*500*
24DNT	05/30/01	06/18/01	19	09	1	LT	476	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 09 :			*492*
24DNT	05/30/01	06/18/01	19	11	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*492*
					Average Concentration for Windrow on Day 19 :			***491***
					Standard Deviation:			***15***

Percent Reduction of 24DNT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M203 *2,6-DINITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
26DNT	05/30/01	05/30/01	0	03	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*492*
26DNT	05/30/01	05/30/01	0	05	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 05 :			*484*
26DNT	05/30/01	05/30/01	0	07	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
26DNT	05/30/01	05/30/01	0	09	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 09 :			*476*
26DNT	05/30/01	05/30/01	0	11	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*476*

Average Concentration for Windrow on Day 0 : ***482***

Standard Deviation: ***11***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
26DNT	05/30/01	06/18/01	19	03	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*477*
26DNT	05/30/01	06/18/01	19	05	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 05 :			*492*
26DNT	05/30/01	06/18/01	19	07	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 07 :			*500*
26DNT	05/30/01	06/18/01	19	09	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*492*
26DNT	05/30/01	06/18/01	19	11	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 19 : ***491***

Standard Deviation: ***15***

Percent Reduction of 26DNT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M203 ***2-AMINO-4,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2A46DT	05/30/01	05/30/01	0	03	1	1630	
					2	2720	
					3	318 J	
					Average Concentration for Cross Section 03 :		*1556*
2A46DT	05/30/01	05/30/01	0	05	1	2690	
					2	330 J	
					3	LT 476	
					Average Concentration for Cross Section 05 :		*1165*
2A46DT	05/30/01	05/30/01	0	07	1	712	
					2	242 J	
					3	256 J	
					Average Concentration for Cross Section 07 :		*403*
2A46DT	05/30/01	05/30/01	0	09	1	570	
					2	345 J	
					3	358 J	
					Average Concentration for Cross Section 09 :		*424*
2A46DT	05/30/01	05/30/01	0	11	1	100 J	
					2	218 J	
					3	963	
					Average Concentration for Cross Section 11 :		*427*

Average Concentration for Windrow on Day 0 : ***795***

Standard Deviation: ***863***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2A46DT	05/30/01	06/18/01	19	03	1	LT 454	
					2	LT 500	
					3	LT 476	
					Average Concentration for Cross Section 03 :		*477*
2A46DT	05/30/01	06/18/01	19	05	1	LT 500	
					2	LT 500	
					3	LT 476	
					Average Concentration for Cross Section 05 :		*492*
2A46DT	05/30/01	06/18/01	19	07	1	LT 500	
					2	LT 500	
					3	LT 500	
					Average Concentration for Cross Section 07 :		*500*
2A46DT	05/30/01	06/18/01	19	09	1	LT 476	
					2	LT 500	
					3	LT 500	
					Average Concentration for Cross Section 09 :		*492*
2A46DT	05/30/01	06/18/01	19	11	1	LT 500	
					2	LT 476	
					3	LT 500	
					Average Concentration for Cross Section 11 :		*492*

Average Concentration for Windrow on Day 19 : ***491***

Standard Deviation: ***15***

Percent Reduction of 2A46DT: 38.31%

Windrow Number: M203 ***2-NITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2NT	05/30/01	05/30/01	0	03	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*492*
2NT	05/30/01	05/30/01	0	05	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 05 :			*484*
2NT	05/30/01	05/30/01	0	07	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
2NT	05/30/01	05/30/01	0	09	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 09 :			*476*
2NT	05/30/01	05/30/01	0	11	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*476*
				Average Concentration for Windrow on Day 0 :			***482***
						Standard Deviation:	***11***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2NT	05/30/01	06/18/01	19	03	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*477*
2NT	05/30/01	06/18/01	19	05	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 05 :			*492*
2NT	05/30/01	06/18/01	19	07	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 07 :			*500*
2NT	05/30/01	06/18/01	19	09	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*492*
2NT	05/30/01	06/18/01	19	11	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			*492*
				Average Concentration for Windrow on Day 19 :			***491***
						Standard Deviation:	***15***

Percent Reduction of 2NT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M203 ***3-NITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
3NT	05/30/01	05/30/01	0	03	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*492*
3NT	05/30/01	05/30/01	0	05	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 05 :			*484*
3NT	05/30/01	05/30/01	0	07	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
3NT	05/30/01	05/30/01	0	09	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 09 :			*476*
3NT	05/30/01	05/30/01	0	11	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*476*

Average Concentration for Windrow on Day 0 : ***482***

Standard Deviation: ***11***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
3NT	05/30/01	06/18/01	19	03	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*477*
3NT	05/30/01	06/18/01	19	05	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 05 :			*492*
3NT	05/30/01	06/18/01	19	07	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 07 :			*500*
3NT	05/30/01	06/18/01	19	09	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*492*
3NT	05/30/01	06/18/01	19	11	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 19 : ***491***

Standard Deviation: ***15***

Percent Reduction of 3NT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M203 ***4-AMINO-2,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4A26DT	05/30/01	05/30/01	0	03	1	4140	
					2	7000	
					3	1460	
				Average Concentration for Cross Section 03 :			*4200*
4A26DT	05/30/01	05/30/01	0	05	1	5770	
					2	1650	
					3	LT 476	
				Average Concentration for Cross Section 05 :			*2632*
4A26DT	05/30/01	05/30/01	0	07	1	2080	
					2	1370	
					3	1450	
				Average Concentration for Cross Section 07 :			*1633*
4A26DT	05/30/01	05/30/01	0	09	1	2370	
					2	1930	
					3	1170	
				Average Concentration for Cross Section 09 :			*1823*
4A26DT	05/30/01	05/30/01	0	11	1	752	
					2	1470	
					3	3570	
				Average Concentration for Cross Section 11 :			*1931*

Average Concentration for Windrow on Day 0 : 2444

Standard Deviation: 1879

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4A26DT	05/30/01	06/18/01	19	03	1	LT 454	
					2	LT 500	
					3	LT 476	
				Average Concentration for Cross Section 03 :			*477*
4A26DT	05/30/01	06/18/01	19	05	1	LT 500	
					2	LT 500	
					3	LT 476	
				Average Concentration for Cross Section 05 :			*492*
4A26DT	05/30/01	06/18/01	19	07	1	LT 500	
					2	LT 500	
					3	LT 500	
				Average Concentration for Cross Section 07 :			*500*
4A26DT	05/30/01	06/18/01	19	09	1	LT 476	
					2	LT 500	
					3	LT 500	
				Average Concentration for Cross Section 09 :			*492*
4A26DT	05/30/01	06/18/01	19	11	1	LT 500	
					2	LT 476	
					3	LT 500	
				Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 19 : 491

Standard Deviation: 15

Percent Reduction of 4A26DT: 79.93%

Windrow Number: M203 ***4-NITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
4NT	05/30/01	05/30/01	0	03	1		248 J	
					2		161 J	
					3		517	
					Average Concentration for Cross Section 03 :			*309*
4NT	05/30/01	05/30/01	0	05	1	LT	500	
					2		890	
					3		877	
					Average Concentration for Cross Section 05 :			*756*
4NT	05/30/01	05/30/01	0	07	1		1440	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 07 :			*797*
4NT	05/30/01	05/30/01	0	09	1	LT	476	
					2	LT	476	
					3		964	
					Average Concentration for Cross Section 09 :			*639*
4NT	05/30/01	05/30/01	0	11	1	LT	476	
					2		899	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*617*

Average Concentration for Windrow on Day 0 : ***623***

Standard Deviation: ***328***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
4NT	05/30/01	06/18/01	19	03	1	LT	454	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*477*
4NT	05/30/01	06/18/01	19	05	1	LT	500	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 05 :			*492*
4NT	05/30/01	06/18/01	19	07	1	LT	500	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*500*
4NT	05/30/01	06/18/01	19	09	1	LT	476	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 09 :			*492*
4NT	05/30/01	06/18/01	19	11	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 19 : ***491***

Standard Deviation: ***15***

Percent Reduction of 4NT: 21.32%

Windrow Number: M203 ***HMX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
HMX	05/30/01	05/30/01	0	03	1	258000	
					2	262000	
					3	55600	
					Average Concentration for Cross Section 03 :		*191867*
HMX	05/30/01	05/30/01	0	05	1	397000	
					2	95600	
					3	12800	
					Average Concentration for Cross Section 05 :		*168467*
HMX	05/30/01	05/30/01	0	07	1	114000	
					2	94800	
					3	111000	
					Average Concentration for Cross Section 07 :		*106600*
HMX	05/30/01	05/30/01	0	09	1	79300	
					2	78200	
					3	43900	
					Average Concentration for Cross Section 09 :		*67133*
HMX	05/30/01	05/30/01	0	11	1	87200	
					2	97000	
					3	170000	
					Average Concentration for Cross Section 11 :		*118067*

Average Concentration for Windrow on Day 0 : 130427

Standard Deviation: 101627

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
HMX	05/30/01	06/18/01	19	03	1	1210	
					2	9420	
					3	513	
					Average Concentration for Cross Section 03 :		*3714*
HMX	05/30/01	06/18/01	19	05	1	82.4 J	
					2	480 J	
					3	LT 476	
					Average Concentration for Cross Section 05 :		*346*
HMX	05/30/01	06/18/01	19	07	1	LT 500	
					2	961	
					3	1140	
					Average Concentration for Cross Section 07 :		*867*
HMX	05/30/01	06/18/01	19	09	1	141 J	
					2	7160	
					3	5400	
					Average Concentration for Cross Section 09 :		*4234*
HMX	05/30/01	06/18/01	19	11	1	2220	
					2	1470	
					3	34400	
					Average Concentration for Cross Section 11 :		*12697*

Average Concentration for Windrow on Day 19 : 4372

Standard Deviation: 8773

Percent Reduction of HMX: 96.65%

Windrow Number: M203 ***NITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
NB	05/30/01	05/30/01	0	03	1	LT	500
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 03 :		*492*
NB	05/30/01	05/30/01	0	05	1	LT	500
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 05 :		*484*
NB	05/30/01	05/30/01	0	07	1	LT	500
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 07 :		*484*
NB	05/30/01	05/30/01	0	09	1	LT	476
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 09 :		*476*
NB	05/30/01	05/30/01	0	11	1	LT	476
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 11 :		*476*

Average Concentration for Windrow on Day 0 : ***482***

Standard Deviation: ***11***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
NB	05/30/01	06/18/01	19	03	1	LT	454
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 03 :		*477*
NB	05/30/01	06/18/01	19	05	1	LT	500
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 05 :		*492*
NB	05/30/01	06/18/01	19	07	1	LT	500
					2	LT	500
					3	LT	500
					Average Concentration for Cross Section 07 :		*500*
NB	05/30/01	06/18/01	19	09	1	LT	476
					2	LT	500
					3	LT	500
					Average Concentration for Cross Section 09 :		*492*
NB	05/30/01	06/18/01	19	11	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 11 :		*492*

Average Concentration for Windrow on Day 19 : ***491***

Standard Deviation: ***15***

Percent Reduction of NB: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M203 ***RDX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
RDX	05/30/01	05/30/01	0	03	1	50400	
					2	47100	
					3	11800	
					Average Concentration for Cross Section 03 :		*36433*
RDX	05/30/01	05/30/01	0	05	1	126000	
					2	24900	
					3	2360	
					Average Concentration for Cross Section 05 :		*51087*
RDX	05/30/01	05/30/01	0	07	1	19000	
					2	20500	
					3	20800	
					Average Concentration for Cross Section 07 :		*20100*
RDX	05/30/01	05/30/01	0	09	1	28400	
					2	183000	
					3	12900	
					Average Concentration for Cross Section 09 :		*74767*
RDX	05/30/01	05/30/01	0	11	1	28700	
					2	44200	
					3	38100	
					Average Concentration for Cross Section 11 :		*37000*

Average Concentration for Windrow on Day 0 : 43877

Standard Deviation: 48126

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
RDX	05/30/01	06/18/01	19	03	1	LT	454	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*477*
RDX	05/30/01	06/18/01	19	05	1	LT	500	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 05 :			*492*
RDX	05/30/01	06/18/01	19	07	1	LT	500	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*500*
RDX	05/30/01	06/18/01	19	09	1	LT	476	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 09 :			*492*
RDX	05/30/01	06/18/01	19	11	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 19 : 491

Standard Deviation: 15

Percent Reduction of RDX: 98.88%

Windrow Number: M203 ***TETRYL Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
TETRYL	05/30/01	05/30/01	0	03	1	LT	500	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*492*
TETRYL	05/30/01	05/30/01	0	05	1	LT	500	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 05 :			*484*
TETRYL	05/30/01	05/30/01	0	07	1	LT	500	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 07 :			*484*
TETRYL	05/30/01	05/30/01	0	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
TETRYL	05/30/01	05/30/01	0	11	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*476*

Average Concentration for Windrow on Day 0 : ***482***

Standard Deviation: ***11***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
TETRYL	05/30/01	06/18/01	19	03	1	LT	454	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*477*
TETRYL	05/30/01	06/18/01	19	05	1	LT	500	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 05 :			*492*
TETRYL	05/30/01	06/18/01	19	07	1	LT	500	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*500*
TETRYL	05/30/01	06/18/01	19	09	1	LT	476	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 09 :			*492*
TETRYL	05/30/01	06/18/01	19	11	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 19 : ***491***

Standard Deviation: ***15***

Percent Reduction of TETRYL: Not Applicable; Sample Results Below Reporting Limit

RECORD OF RECIPE (MIX NO. 7B)

Building # 3 Windrow # 204 PERFORMED BY: _____

DATE: 1 1 INSPECTED BY: _____

Design Quantity: Chicken Manure 3 CY 5700 Pounds
Straw 12 CY 2400 Pounds
Soil _____ CY _____ Pounds

Batch Number	CHICKEN MANURE Supplier: _____		STRAW Supplier: _____		SOIL Location: _____		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
1	3.1	5760	12.1	2460				
2	3	5730	12	2420				
3	3.1	5760	12.1	2450				
4	3.1	5770	12.2	2490				
5	3.1	5750	12	2420				
6	3.2	5780	12	2410				
7	3.1	5740	12	2420				
8	3.1	5730	12	2410				
9	3.2	5790	12.1	2460				
10	3.1	5750	12.2	2480				
11	3.2	5770	12.1	2430				
12	3.2	5790	12.1	2460				
13	3.1	5750	12.1	2440				
14	3	5720	12.1	2460				
15	3	5730	12.2	2470				
16	3	5710	12.1	2430				
17	3.1	5780	12.1	2490				
18	3	5730	12.1	2450				
19	3.2	5790	12	2420				
Total								

Comments:

RECORD OF RECIPE (MIX NO. 7B)

Building # 3 Windrow # 204 PERFORMED BY: _____

DATE: 1 1 ~~# 20 B~~ INSPECTED BY: _____

Design Quantity: Chicken Manure 5700 CY _____ Pounds
Straw 2400 CY _____ Pounds
Soil _____ CY _____ Pounds

Batch Number	CHICKEN MANURE Supplier: 5700		STRAW Supplier: 2400		SOIL Location:		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
20	3.2	5810	12.2	2500				
21	3.2	5760	12	2400				
22 3	3.2	5790	12.3	2530				
23 4	3.2	5810	12.3	2740				
24 5	3	5720	12.0	2370				
25 6	3.2	5890	12.3	2560				
26 7	3	5720	12.1	2460				
27 8	3.2	5840	12	2380				
28 9	3.2	5850	12.1	2450				
29 10	3.1	5790	12	2610				
H 30	3.2	5810	12	2420				
H 31	3.1	5740	12.2	2500				
H 32	3.1	5700	12.1	2370				
H 33	3.2	5820	12.1	2450				
H 34	3.1	5740	12.1	2710				
H 35	3	5710	12	2420				
H 36	3.2	5800	12.1	2630				
H 37	3.15	5850	12.1	2530				
19								
Total								

mments:

Average Daily Windrow Temperature Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (Deg C)*	*POST-Turn (Deg C)*
S204	5/31/01	5/31/01	0		34.97
		6/1/01	1	54.23	47.10
		6/2/01	2	61.00	55.13
		6/4/01	4	65.60	59.00
		6/5/01	5	64.30	58.33
		6/6/01	6	65.03	61.70
		6/7/01	7	68.50	62.83
		6/8/01	8	67.17	62.53
		6/9/01	9	67.17	62.73
		6/11/01	11	66.83	62.90
		6/12/01	12	66.43	58.67
		6/13/01	13	66.93	62.60
		6/14/01	14	66.30	62.50
		6/15/01	15	63.67	62.47
		6/16/01	16	64.40	63.90
		6/18/01	18	65.30	61.33
		6/19/01	19	67.07	63.90
		6/20/01	20	67.90	63.07
		6/21/01	21	64.70	62.67
		6/22/01	22	63.90	62.00
		6/23/01	23	63.83	64.20

All average temperatures are in degrees centigrade

Friday, March 29, 2002

Average Daily Windrow PH Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn*	*PRE-Turn*
S204	5/31/01	6/6/01	6	8.58	

All average PH values are expressed in standard units

Friday, March 29, 2002

Average Daily Windrow Oxygen Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
S204	5/31/01	5/31/01	0		10.70
		6/1/01	1	8.23	10.50
		6/2/01	2	7.47	9.83
		6/4/01	4	7.73	8.63
		6/5/01	5	5.20	9.37
		6/6/01	6	7.13	7.27
		6/7/01	7	5.67	6.17
		6/8/01	8	6.30	8.67
		6/9/01	9	5.30	6.67
		6/11/01	11	5.60	7.07
		6/12/01	12	4.20	9.00
		6/13/01	13	2.47	2.27
		6/14/01	14	7.10	5.27
		6/15/01	15	3.37	2.87
		6/16/01	16	3.80	2.10
		6/18/01	18	5.10	5.47
		6/19/01	19	5.73	2.10
		6/20/01	20	3.33	1.93
		6/21/01	21	4.67	1.93
		6/22/01	22	3.77	2.30
		6/23/01	23	3.23	3.50

ll average Oxygen values are expressed as a percent

Average Daily Windrow WHC Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
S204	5/31/01	5/31/01	0		
		6/1/01	1		
		6/2/01	2		
		6/4/01	4		
		6/5/01	5		
		6/7/01	7		

All average MWHC values are expressed in percent

Windrow Number: S204 ***1,3,5-TRINITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location		Concentration	UGKG
135TNB	05/31/01	05/31/01	0	03	1		173 J	
					2	LT	476	
					3		122 J	
					Average Concentration for Cross Section 03 :			*257*
135TNB	05/31/01	05/31/01	0	05	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 05 :			*492*
135TNB	05/31/01	05/31/01	0	07	1		231 J	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*402*
135TNB	05/31/01	05/31/01	0	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
135TNB	05/31/01	05/31/01	0	11	1	LT	476	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*484*
					Average Concentration for Windrow on Day 0 :			***422***
							Standard Deviation:	***130***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location		Concentration	UGKG
135TNB	05/31/01	06/25/01	25	03	1	LT	500	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*492*
135TNB	05/31/01	06/25/01	25	05	1	LT	476	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 05 :			*492*
135TNB	05/31/01	06/25/01	25	07	1	LT	476	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*484*
135TNB	05/31/01	06/25/01	25	09	1	LT	454	
					2	LT	454	
					3	LT	500	
					Average Concentration for Cross Section 09 :			*469*
135TNB	05/31/01	06/25/01	25	11	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*492*
					Average Concentration for Windrow on Day 25 :			***486***
							Standard Deviation:	***17***

Percent Reduction of 135TNB: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: S204 ***1,3-DINITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
13DNB	05/31/01	05/31/01	0	03	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 03 :			*492*
13DNB	05/31/01	05/31/01	0	05	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 05 :			*492*
13DNB	05/31/01	05/31/01	0	07	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*492*
13DNB	05/31/01	05/31/01	0	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
13DNB	05/31/01	05/31/01	0	11	1	LT	476	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*484*

Average Concentration for Windrow on Day 0 : ***487***

Standard Deviation: ***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
13DNB	05/31/01	06/25/01	25	03	1	LT	500	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*492*
13DNB	05/31/01	06/25/01	25	05	1	LT	476	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 05 :			*492*
13DNB	05/31/01	06/25/01	25	07	1	LT	476	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*484*
13DNB	05/31/01	06/25/01	25	09	1	LT	454	
					2	LT	454	
					3	LT	500	
					Average Concentration for Cross Section 09 :			*469*
13DNB	05/31/01	06/25/01	25	11	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 25 : ***486***

Standard Deviation: ***17***

Percent Reduction of 13DNB: 0.27%

Windrow Number: S204 ***2,4,6-TRINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
246TNT	05/31/01	05/31/01	0	03	1		5800	
					2	LT	476	
					3		5260	
					Average Concentration for Cross Section 03 :			*3845*
246TNT	05/31/01	05/31/01	0	05	1		1990	
					2		2410	
					3		1760	
					Average Concentration for Cross Section 05 :			*2053*
246TNT	05/31/01	05/31/01	0	07	1		7940	
					2		1410	
					3		3310	
					Average Concentration for Cross Section 07 :			*4220*
246TNT	05/31/01	05/31/01	0	09	1		1170	
					2		1490	
					3		3000	
					Average Concentration for Cross Section 09 :			*1887*
246TNT	05/31/01	05/31/01	0	11	1		3880	
					2		1370	
					3		2330	
					Average Concentration for Cross Section 11 :			*2527*
					Average Concentration for Windrow on Day 0 :			***2906***
					Standard Deviation:			***2046***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
246TNT	05/31/01	06/25/01	25	03	1	LT	500	
					2		867	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*614*
246TNT	05/31/01	06/25/01	25	05	1	LT	476	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 05 :			*492*
246TNT	05/31/01	06/25/01	25	07	1	LT	476	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*484*
246TNT	05/31/01	06/25/01	25	09	1	LT	454	
					2	LT	454	
					3	LT	500	
					Average Concentration for Cross Section 09 :			*469*
246TNT	05/31/01	06/25/01	25	11	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*492*
					Average Concentration for Windrow on Day 25 :			***510***
					Standard Deviation:			***100***

Percent Reduction of 246TNT: 82.44%

Windrow Number: S204 ***2,4-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
24DNT	05/31/01	05/31/01	0	03	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 03 :			*492*
24DNT	05/31/01	05/31/01	0	05	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 05 :			*492*
24DNT	05/31/01	05/31/01	0	07	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*492*
24DNT	05/31/01	05/31/01	0	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
24DNT	05/31/01	05/31/01	0	11	1	LT	476	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*484*
					Average Concentration for Windrow on Day 0 :			***487***
					Standard Deviation:			***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
24DNT	05/31/01	06/25/01	25	03	1	LT	500	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*492*
24DNT	05/31/01	06/25/01	25	05	1	LT	476	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 05 :			*492*
24DNT	05/31/01	06/25/01	25	07	1	LT	476	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*484*
24DNT	05/31/01	06/25/01	25	09	1	LT	454	
					2	LT	454	
					3	LT	500	
					Average Concentration for Cross Section 09 :			*469*
24DNT	05/31/01	06/25/01	25	11	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*492*
					Average Concentration for Windrow on Day 25 :			***486***
					Standard Deviation:			***17***

Percent Reduction of 24DNT: 0.27%

Windrow Number: S204 ***2,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
26DNT	05/31/01	05/31/01	0	03	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 03 :		*492*
26DNT	05/31/01	05/31/01	0	05	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 05 :		*492*
26DNT	05/31/01	05/31/01	0	07	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 07 :		*492*
26DNT	05/31/01	05/31/01	0	09	1	LT	476
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 09 :		*476*
26DNT	05/31/01	05/31/01	0	11	1	LT	476
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 11 :		*484*

Average Concentration for Windrow on Day 0 : ***487***

Standard Deviation: ***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
26DNT	05/31/01	06/25/01	25	03	1	LT	500
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 03 :		*492*
26DNT	05/31/01	06/25/01	25	05	1	LT	476
					2	LT	500
					3	LT	500
					Average Concentration for Cross Section 05 :		*492*
26DNT	05/31/01	06/25/01	25	07	1	LT	476
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 07 :		*484*
26DNT	05/31/01	06/25/01	25	09	1	LT	454
					2	LT	454
					3	LT	500
					Average Concentration for Cross Section 09 :		*469*
26DNT	05/31/01	06/25/01	25	11	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 11 :		*492*

Average Concentration for Windrow on Day 25 : ***486***

Standard Deviation: ***17***

Percent Reduction of 26DNT: 0.27%

Windrow Number: S204 ***2-AMINO-4,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location		Concentration	UGKG
2A46DT	05/31/01	05/31/01	0	03	1		382 J	
					2	LT	476	
					3		416 J	
				Average Concentration for Cross Section 03 :				*425*
2A46DT	05/31/01	05/31/01	0	05	1		204 J	
					2		251 J	
					3	LT	500	
				Average Concentration for Cross Section 05 :				*318*
2A46DT	05/31/01	05/31/01	0	07	1		562	
					2		137 J	
					3		312 J	
				Average Concentration for Cross Section 07 :				*337*
2A46DT	05/31/01	05/31/01	0	09	1	LT	476	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section 09 :				*476*
2A46DT	05/31/01	05/31/01	0	11	1		332 J	
					2	LT	476	
					3		375 J	
				Average Concentration for Cross Section 11 :				*394*
				Average Concentration for Windrow on Day 0 :				***390***
							Standard Deviation:	*122*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location		Concentration	UGKG
2A46DT	05/31/01	06/25/01	25	03	1	LT	500	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 03 :				*492*
2A46DT	05/31/01	06/25/01	25	05	1		47.8 J	
					2		120 J	
					3		45.7 J	
				Average Concentration for Cross Section 05 :				*71*
2A46DT	05/31/01	06/25/01	25	07	1	LT	476	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section 07 :				*484*
2A46DT	05/31/01	06/25/01	25	09	1	LT	454	
					2	LT	454	
					3	LT	500	
				Average Concentration for Cross Section 09 :				*469*
2A46DT	05/31/01	06/25/01	25	11	1	LT	500	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section 11 :				*492*
				Average Concentration for Windrow on Day 25 :				***402***
							Standard Deviation:	*173*

Percent Reduction of 2A46DT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: S204 ***2-NITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2NT	05/31/01	05/31/01	0	03	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 03 :		*492*
2NT	05/31/01	05/31/01	0	05	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 05 :		*492*
2NT	05/31/01	05/31/01	0	07	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 07 :		*492*
2NT	05/31/01	05/31/01	0	09	1	LT	476
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 09 :		*476*
2NT	05/31/01	05/31/01	0	11	1	LT	476
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 11 :		*484*

Average Concentration for Windrow on Day 0 : 487

Standard Deviation: 12

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2NT	05/31/01	06/25/01	25	03	1	LT	500
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 03 :		*492*
2NT	05/31/01	06/25/01	25	05	1	LT	476
					2	LT	500
					3	LT	500
					Average Concentration for Cross Section 05 :		*492*
2NT	05/31/01	06/25/01	25	07	1	LT	476
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 07 :		*484*
2NT	05/31/01	06/25/01	25	09	1	LT	454
					2	LT	454
					3	LT	500
					Average Concentration for Cross Section 09 :		*469*
2NT	05/31/01	06/25/01	25	11	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 11 :		*492*

Average Concentration for Windrow on Day 25 : 486

Standard Deviation: 17

Percent Reduction of 2NT: 0.27%

Windrow Number: S204 ***3-NITROTOLUENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
3NT	05/31/01	05/31/01	0	03	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 03 :		*492*
3NT	05/31/01	05/31/01	0	05	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 05 :		*492*
3NT	05/31/01	05/31/01	0	07	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 07 :		*492*
3NT	05/31/01	05/31/01	0	09	1	LT	476
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 09 :		*476*
3NT	05/31/01	05/31/01	0	11	1	LT	476
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 11 :		*484*

Average Concentration for Windrow on Day 0 : ***487***

Standard Deviation: ***12***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
3NT	05/31/01	06/25/01	25	03	1	LT	500
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 03 :		*492*
3NT	05/31/01	06/25/01	25	05	1	LT	476
					2	LT	500
					3	LT	500
					Average Concentration for Cross Section 05 :		*492*
3NT	05/31/01	06/25/01	25	07	1	LT	476
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 07 :		*484*
3NT	05/31/01	06/25/01	25	09	1	LT	454
					2	LT	454
					3	LT	500
					Average Concentration for Cross Section 09 :		*469*
3NT	05/31/01	06/25/01	25	11	1	LT	500
					2	LT	476
					3	LT	500
					Average Concentration for Cross Section 11 :		*492*

Average Concentration for Windrow on Day 25 : ***486***

Standard Deviation: ***17***

Percent Reduction of 3NT: 0.27%

Windrow Number: S204 *4-AMINO-2,6-DINITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location		Concentration	UGKG
4A26DT	05/31/01	05/31/01	0	03	1		3040	
					2	LT	476	
					3		2860	
					Average Concentration for Cross Section 03 :			*2125*
4A26DT	05/31/01	05/31/01	0	05	1		1220	
					2		1480	
					3		932	
					Average Concentration for Cross Section 05 :			*1211*
4A26DT	05/31/01	05/31/01	0	07	1		4120	
					2		1740	
					3		1860	
					Average Concentration for Cross Section 07 :			*2573*
4A26DT	05/31/01	05/31/01	0	09	1	LT	476	
					2		702	
					3		1150	
					Average Concentration for Cross Section 09 :			*776*
4A26DT	05/31/01	05/31/01	0	11	1		2300	
					2	LT	476	
					3		1430	
					Average Concentration for Cross Section 11 :			*1402*

Average Concentration for Windrow on Day 0 : 1617

Standard Deviation: 1070

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location		Concentration	UGKG
4A26DT	05/31/01	06/25/01	25	03	1	LT	500	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*492*
4A26DT	05/31/01	06/25/01	25	05	1		236 J	
					2		265 J	
					3		176 J	
					Average Concentration for Cross Section 05 :			*226*
4A26DT	05/31/01	06/25/01	25	07	1		187 J	
					2		162 J	
					3		74.2 J	
					Average Concentration for Cross Section 07 :			*141*
4A26DT	05/31/01	06/25/01	25	09	1	LT	454	
					2		124 J	
					3	LT	500	
					Average Concentration for Cross Section 09 :			*359*
4A26DT	05/31/01	06/25/01	25	11	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 25 : 342

Standard Deviation: 168

Percent Reduction of 4A26DT: 78.85%

Windrow Number: S204 ***4-NITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
4NT	05/31/01	05/31/01	0	03	1		343 J	
					2		565	
					3	LT	500	
					Average Concentration for Cross Section 03 :			*469*
4NT	05/31/01	05/31/01	0	05	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 05 :			*492*
4NT	05/31/01	05/31/01	0	07	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*492*
4NT	05/31/01	05/31/01	0	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
4NT	05/31/01	05/31/01	0	11	1	LT	476	
					2		639	
					3		565	
					Average Concentration for Cross Section 11 :			*560*
					Average Concentration for Windrow on Day 0 :			***498***
					Standard Deviation:			***63***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
4NT	05/31/01	06/25/01	25	03	1	LT	500	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*492*
4NT	05/31/01	06/25/01	25	05	1	LT	476	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 05 :			*492*
4NT	05/31/01	06/25/01	25	07	1	LT	476	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*484*
4NT	05/31/01	06/25/01	25	09	1	LT	454	
					2	LT	454	
					3	LT	500	
					Average Concentration for Cross Section 09 :			*469*
4NT	05/31/01	06/25/01	25	11	1	LT	500	
					2	LT	476	
					3	LT	500	
					Average Concentration for Cross Section 11 :			*492*
					Average Concentration for Windrow on Day 25 :			***486***
					Standard Deviation:			***17***

Percent Reduction of 4NT: 2.41%

Windrow Number: S204 ***HMX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
HMX	05/31/01	05/31/01	0	03	1	215000	
					2	5920	
					3	213000	
					Average Concentration for Cross Section 03 :		*144640*
HMX	05/31/01	05/31/01	0	05	1	81500	
					2	101000	
					3	46200	
					Average Concentration for Cross Section 05 :		*76233*
HMX	05/31/01	05/31/01	0	07	1	246000	
					2	50300	
					3	132000	
					Average Concentration for Cross Section 07 :		*142767*
HMX	05/31/01	05/31/01	0	09	1	20300	
					2	80200	
					3	132000	
					Average Concentration for Cross Section 09 :		*77500*
HMX	05/31/01	05/31/01	0	11	1	177000	
					2	55300	
					3	53900	
					Average Concentration for Cross Section 11 :		*95400*

Average Concentration for Windrow on Day 0 : 107308

Standard Deviation: 75551

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
HMX	05/31/01	06/25/01	25	03	1	LT 500	
					2	6680	
					3	10300	
					Average Concentration for Cross Section 03 :		*5827*
HMX	05/31/01	06/25/01	25	05	1	LT 476	
					2	7690	
					3	4270	
					Average Concentration for Cross Section 05 :		*4145*
HMX	05/31/01	06/25/01	25	07	1	LT 476	
					2	2640	
					3	750	
					Average Concentration for Cross Section 07 :		*1289*
HMX	05/31/01	06/25/01	25	09	1	LT 454	
					2	10200	
					3	5080	
					Average Concentration for Cross Section 09 :		*5245*
HMX	05/31/01	06/25/01	25	11	1	LT 500	
					2	900	
					3	3520	
					Average Concentration for Cross Section 11 :		*1640*

Average Concentration for Windrow on Day 25 : 3629

Standard Deviation: 3608

Percent Reduction of HMX: 96.62%

Windrow Number: S204 ***NITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
NB	05/31/01	05/31/01	0	03	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 03 :			*492*
NB	05/31/01	05/31/01	0	05	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 05 :			*492*
NB	05/31/01	05/31/01	0	07	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 07 :			*492*
NB	05/31/01	05/31/01	0	09	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 09 :			*476*
NB	05/31/01	05/31/01	0	11	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			*484*

Average Concentration for Windrow on Day 0 : ***487***

Standard Deviation: ***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
NB	05/31/01	06/25/01	25	03	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*492*
NB	05/31/01	06/25/01	25	05	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 05 :			*492*
NB	05/31/01	06/25/01	25	07	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 07 :			*484*
NB	05/31/01	06/25/01	25	09	1	LT	454
					2	LT	454
					3	LT	500
				Average Concentration for Cross Section 09 :			*469*
NB	05/31/01	06/25/01	25	11	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 25 : ***486***

Standard Deviation: ***17***

Percent Reduction of NB: 0.27%

Windrow Number: S204 ***RDX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
RDX	05/31/01	05/31/01	0	03	1	31700	
					2	2880	
					3	43500	
				Average Concentration for Cross Section 03 :			*26027*
RDX	05/31/01	05/31/01	0	05	1	15100	
					2	15100	
					3	48800	
				Average Concentration for Cross Section 05 :			*26333*
RDX	05/31/01	05/31/01	0	07	1	42900	
					2	14100	
					3	23200	
				Average Concentration for Cross Section 07 :			*26733*
RDX	05/31/01	05/31/01	0	09	1	9150	
					2	19000	
					3	25500	
				Average Concentration for Cross Section 09 :			*17883*
RDX	05/31/01	05/31/01	0	11	1	32800	
					2	24200	
					3	12400	
				Average Concentration for Cross Section 11 :			*23133*

Average Concentration for Windrow on Day 0 : 24022

Standard Deviation: 13561

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
RDX	05/31/01	06/25/01	25	03	1	LT 500	
					2	LT 500	
					3	LT 476	
				Average Concentration for Cross Section 03 :			*492*
RDX	05/31/01	06/25/01	25	05	1	LT 476	
					2	LT 500	
					3	LT 500	
				Average Concentration for Cross Section 05 :			*492*
RDX	05/31/01	06/25/01	25	07	1	LT 476	
					2	LT 476	
					3	LT 500	
				Average Concentration for Cross Section 07 :			*484*
RDX	05/31/01	06/25/01	25	09	1	LT 454	
					2	LT 454	
					3	LT 500	
				Average Concentration for Cross Section 09 :			*469*
RDX	05/31/01	06/25/01	25	11	1	LT 500	
					2	LT 476	
					3	LT 500	
				Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 25 : 486

Standard Deviation: 17

Percent Reduction of RDX: 97.98%

Windrow Number: S204 ***TETRYL Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
TETRYL	05/31/01	05/31/01	0	03	1	LT 500	
					2	LT 476	
					3	LT 500	
					Average Concentration for Cross Section 03 :		*492*
TETRYL	05/31/01	05/31/01	0	05	1	LT 500	
					2	LT 476	
					3	LT 500	
					Average Concentration for Cross Section 05 :		*492*
TETRYL	05/31/01	05/31/01	0	07	1	LT 500	
					2	LT 476	
					3	LT 500	
					Average Concentration for Cross Section 07 :		*492*
TETRYL	05/31/01	05/31/01	0	09	1	LT 476	
					2	LT 476	
					3	LT 476	
					Average Concentration for Cross Section 09 :		*476*
TETRYL	05/31/01	05/31/01	0	11	1	LT 476	
					2	LT 476	
					3	LT 500	
					Average Concentration for Cross Section 11 :		*484*

Average Concentration for Windrow on Day 0 : ***487***

Standard Deviation: ***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
TETRYL	05/31/01	06/25/01	25	03	1	LT 500	
					2	LT 500	
					3	LT 476	
					Average Concentration for Cross Section 03 :		*492*
TETRYL	05/31/01	06/25/01	25	05	1	0.588 J	
					2	36.8 J	
					3	LT 500	
					Average Concentration for Cross Section 05 :		*179*
TETRYL	05/31/01	06/25/01	25	07	1	LT 476	
					2	LT 476	
					3	LT 500	
					Average Concentration for Cross Section 07 :		*484*
TETRYL	05/31/01	06/25/01	25	09	1	LT 454	
					2	LT 454	
					3	LT 500	
					Average Concentration for Cross Section 09 :		*469*
TETRYL	05/31/01	06/25/01	25	11	1	LT 500	
					2	LT 476	
					3	LT 500	
					Average Concentration for Cross Section 11 :		*492*

Average Concentration for Windrow on Day 25 : ***423***

Standard Deviation: ***165***

Percent Reduction of TETRYL: 13.12%

RECORD OF RECIPE (MIX NO. 7B)

Building # 2 Windrow # 205 PERFORMED BY: [illegible]

DATE: 6 15 01 INSPECTED BY: _____

Design Quantity: Chicken Manure 5700 _____ Pounds
Straw 2400 CY _____ Pounds
Soil _____ CY _____ Pounds

Batch Number	CHICKEN MANURE Supplier: 5700		STRAW Supplier: 2400		SOIL Location:		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
1	3	5790	12.2	2610				
2	3.1	5810	12.4	2840				
3	3	5700	12	2440				
4	3.1	5830	12.1	2520				
5	3.1	5860	12	2450				
6	3.1	5825	12	2250				
7	3	5680	12.1	2590				
8	3.1	5890	12.4	2810				
9	3.2	5900	12.3	2700				
10	3	5720	12.2	2640				
11	3	5710	12.1	2510				
12	3	5690	12.5	2940				
13	3.1	5890	12.9	3410				
14	3	5720	12.4	2840				
15	3.1	5800	12	2340				
16	3	5680	12.4	2890				
17	3	5790	12.3	2760				
18	3	5680	12.3	2790				
19	3.2	5910	12	2410				
Total 20	3	5760	12.4	2840				

Comments:

RECORD OF RECIPE (MIX NO. 7B)

Building # 2 Windrow # 405 PERFORMED BY: _____

DATE: 061051 01 INSPECTED BY: _____

Design Quantity: Chicken Manure 5,700 CY _____ Pounds
Straw 2,400 CY _____ Pounds
Soil _____ CY _____ Pounds

Batch Number	CHICKEN MANURE Supplier: 5,700		STRAW Supplier: 2,400		SOIL Location:		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
1	3.1	~~5,350~~ 5,800	12	2,350				
2	3.1	5,850	12.1	2,500				
3	3.1	5,800	12.3	2,800				
4	3	5,600	12	2,300				
5	3	5,700	12	2,400				
6	3	5750	12	2460				
7	3	5725	12.1	2,500				
8	3.1	5800	12	2,450				
9	3	5750	12	2,400				
10	3	5700	12.1	2,550				
11	3.1	5,800	12.1	2,500				
12	3.1	5750	12	2,475				
13	3.2	5,800	12	2,400				
14	3.1	5700	12.1	2,500				
15	3.1	5,775	12	2,450				
16	3.1	5,750	12	2,475				
17	3.1	5700	12	2,400				
18	3.1	5,725	12	2450				
19	3.1	5700	12	2,475				
Total	3.1	5,700	12	2450				

Comments:

Average Daily Windrow Temperature Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (Deg C)*	*POST-Turn (Deg C)*
5	6/6/01	6/6/01	0		36.50
		6/7/01	1	52.20	47.50
		6/8/01	2	56.00	53.80
		6/9/01	3	59.40	56.37
		6/11/01	5	64.17	59.87
		6/12/01	6	63.80	60.77
		6/13/01	7	64.70	61.30
		6/14/01	8	67.13	62.63
		6/15/01	9	65.70	61.20
		6/16/01	10	66.30	64.83
		6/18/01	12	54.23	60.53
		6/19/01	13	67.13	65.90
		6/20/01	14	66.93	63.97
		6/21/01	15	65.13	63.17
		6/22/01	16	62.80	61.83
		6/23/01	17	65.40	65.00
		6/25/01	19	66.27	56.67
		6/26/01	20	60.57	54.13
		6/27/01	21	59.97	58.00

All average temperatures are in degrees centigrade

Average Daily Windrow Oxygen Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
M205	6/6/01	6/6/01	0		8.15
		6/7/01	1	9.67	5.10
		6/8/01	2	3.93	5.53
		6/9/01	3	3.10	4.17
		6/11/01	5	5.20	5.57
		6/12/01	6	5.10	10.83
		6/13/01	7	4.37	3.37
		6/14/01	8	8.83	5.30
		6/15/01	9	3.77	4.73
		6/16/01	10	4.13	2.17
		6/18/01	12	5.53	3.07
		6/19/01	13	2.97	2.23
		6/20/01	14	4.00	2.20
		6/21/01	15	4.47	2.47
		6/22/01	16	6.10	2.27
		6/23/01	17	4.93	2.87
		6/25/01	19	5.07	5.13
		6/26/01	20	4.17	6.47
		6/27/01	21	2.77	3.30

All average Oxygen values are expressed as a percent

Wednesday, March 27, 2002

Average Daily Windrow WHC Summary Report

'ndrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
M205	6/6/01	6/25/01	19		52.96

All average MWHC values are expressed in percent

Average Daily Windrow PH Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn*	*PRE-Turn*
M205	6/6/01	6/7/01	1	8.58	

All average PH values are expressed in standard units

Wednesday, March 27, 2002

Windrow Number: M205 **1,3,5-TRINITROBENZENE Results**

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
135TNB	06/06/01	06/06/01	0	03	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 03 :			484
135TNB	06/06/01	06/06/01	0	05	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 05 :			492
135TNB	06/06/01	06/06/01	0	07	1	LT	476
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 07 :			484
135TNB	06/06/01	06/06/01	0	09	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			492
135TNB	06/06/01	06/06/01	0	11	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			476

Average Concentration for Windrow on Day 0 : 486

Standard Deviation: 12

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
135TNB	06/06/01	06/28/01	22	03	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			492
135TNB	06/06/01	06/28/01	22	05	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 05 :			500
135TNB	06/06/01	06/28/01	22	07	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 07 :			500
135TNB	06/06/01	06/28/01	22	09	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			500
135TNB	06/06/01	06/28/01	22	11	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			492

Average Concentration for Windrow on Day 22 : 497

Standard Deviation: 8

Percent Reduction of 135TNB: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M205 ***1,3-DINITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
13DNB	06/06/01	06/06/01	0	03	1	LT	476	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section 03 :				*484*
13DNB	06/06/01	06/06/01	0	05	1	LT	500	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 05 :				*492*
13DNB	06/06/01	06/06/01	0	07	1	LT	476	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 07 :				*484*
13DNB	06/06/01	06/06/01	0	09	1	LT	476	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 09 :				*492*
13DNB	06/06/01	06/06/01	0	11	1	LT	476	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section 11 :				*476*
				Average Concentration for Windrow on Day 0 :				***486***
						Standard Deviation:		***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
13DNB	06/06/01	06/28/01	22	03	1	LT	500	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 03 :				*492*
13DNB	06/06/01	06/28/01	22	05	1	LT	500	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 05 :				*500*
13DNB	06/06/01	06/28/01	22	07	1	LT	500	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 07 :				*500*
13DNB	06/06/01	06/28/01	22	09	1	LT	500	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 09 :				*500*
13DNB	06/06/01	06/28/01	22	11	1	LT	500	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section 11 :				*492*
				Average Concentration for Windrow on Day 22 :				***497***
						Standard Deviation:		***8***

Percent Reduction of 13DNB: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M205 ***2,4,6-TRINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
246TNT	06/06/01	06/06/01	0	03	1	3110	
					2	2560	
					3	1030	
				Average Concentration for Cross Section 03 :			*2233*
246TNT	06/06/01	06/06/01	0	05	1	1030	
					2	2070	
					3	3430	
				Average Concentration for Cross Section 05 :			*2177*
246TNT	06/06/01	06/06/01	0	07	1	1630	
					2	3890	
					3	LT 476	
				Average Concentration for Cross Section 07 :			*1999*
246TNT	06/06/01	06/06/01	0	09	1	1740	
					2	LT 500	
					3	LT 500	
				Average Concentration for Cross Section 09 :			*913*
246TNT	06/06/01	06/06/01	0	11	1	1020	
					2	LT 476	
					3	2100	
				Average Concentration for Cross Section 11 :			*1199*
				Average Concentration for Windrow on Day 0 :			*1704*
						Standard Deviation:	*1136*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
246TNT	06/06/01	06/28/01	22	03	1	LT 500	
					2	LT 500	
					3	LT 476	
				Average Concentration for Cross Section 03 :			*492*
246TNT	06/06/01	06/28/01	22	05	1	LT 500	
					2	LT 500	
					3	LT 500	
				Average Concentration for Cross Section 05 :			*500*
246TNT	06/06/01	06/28/01	22	07	1	LT 500	
					2	LT 500	
					3	LT 500	
				Average Concentration for Cross Section 07 :			*500*
246TNT	06/06/01	06/28/01	22	09	1	LT 500	
					2	LT 500	
					3	LT 500	
				Average Concentration for Cross Section 09 :			*500*
246TNT	06/06/01	06/28/01	22	11	1	LT 500	
					2	LT 476	
					3	LT 500	
				Average Concentration for Cross Section 11 :			*492*
				Average Concentration for Windrow on Day 22 :			*497*
						Standard Deviation:	*8*

Percent Reduction of 246TNT: 70.85%

Windrow Number: M205 ***2,4-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
24DNT	06/06/01	06/06/01	0	03	1	LT	476	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section 03 :				*484*
24DNT	06/06/01	06/06/01	0	05	1	LT	500	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 05 :				*492*
24DNT	06/06/01	06/06/01	0	07	1	LT	476	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 07 :				*484*
24DNT	06/06/01	06/06/01	0	09	1	LT	476	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 09 :				*492*
24DNT	06/06/01	06/06/01	0	11	1	LT	476	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section 11 :				*476*
				Average Concentration for Windrow on Day 0 :				***486***
						Standard Deviation:		***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
24DNT	06/06/01	06/28/01	22	03	1	LT	500	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 03 :				*492*
24DNT	06/06/01	06/28/01	22	05	1	LT	500	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 05 :				*500*
24DNT	06/06/01	06/28/01	22	07	1	LT	500	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 07 :				*500*
24DNT	06/06/01	06/28/01	22	09	1	LT	500	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 09 :				*500*
24DNT	06/06/01	06/28/01	22	11	1	LT	500	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section 11 :				*492*
				Average Concentration for Windrow on Day 22 :				***497***
						Standard Deviation:		***8***

Percent Reduction of 24DNT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M205 ***2,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
26DNT	06/06/01	06/06/01	0	03	1	LT 476	
					2	LT 476	
					3	LT 500	
					Average Concentration for Cross Section 03 :		*484*
26DNT	06/06/01	06/06/01	0	05	1	LT 500	
					2	LT 500	
					3	LT 476	
					Average Concentration for Cross Section 05 :		*492*
26DNT	06/06/01	06/06/01	0	07	1	LT 476	
					2	LT 500	
					3	LT 476	
					Average Concentration for Cross Section 07 :		*484*
26DNT	06/06/01	06/06/01	0	09	1	LT 476	
					2	LT 500	
					3	LT 500	
					Average Concentration for Cross Section 09 :		*492*
26DNT	06/06/01	06/06/01	0	11	1	LT 476	
					2	LT 476	
					3	LT 476	
					Average Concentration for Cross Section 11 :		*476*

Average Concentration for Windrow on Day 0 : ***486***

Standard Deviation: ***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
26DNT	06/06/01	06/28/01	22	03	1	LT 500	
					2	LT 500	
					3	LT 476	
					Average Concentration for Cross Section 03 :		*492*
26DNT	06/06/01	06/28/01	22	05	1	LT 500	
					2	LT 500	
					3	LT 500	
					Average Concentration for Cross Section 05 :		*500*
26DNT	06/06/01	06/28/01	22	07	1	LT 500	
					2	LT 500	
					3	LT 500	
					Average Concentration for Cross Section 07 :		*500*
26DNT	06/06/01	06/28/01	22	09	1	LT 500	
					2	LT 500	
					3	LT 500	
					Average Concentration for Cross Section 09 :		*500*
26DNT	06/06/01	06/28/01	22	11	1	LT 500	
					2	LT 476	
					3	LT 500	
					Average Concentration for Cross Section 11 :		*492*

Average Concentration for Windrow on Day 22 : ***497***

Standard Deviation: ***8***

Percent Reduction of 26DNT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M205 ***2-AMINO-4,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2A46DT	06/06/01	06/06/01	0	03	1	LT	476
					2		134 J
					3		152 J
				Average Concentration for Cross Section 03 :			*254*
2A46DT	06/06/01	06/06/01	0	05	1	LT	500
					2	LT	500
					3		109 J
				Average Concentration for Cross Section 05 :			*370*
2A46DT	06/06/01	06/06/01	0	07	1	LT	476
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
2A46DT	06/06/01	06/06/01	0	09	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*492*
2A46DT	06/06/01	06/06/01	0	11	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*476*

Average Concentration for Windrow on Day 0 : ***415***

Standard Deviation: ***147***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2A46DT	06/06/01	06/28/01	22	03	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*492*
2A46DT	06/06/01	06/28/01	22	05	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 05 :			*500*
2A46DT	06/06/01	06/28/01	22	07	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 07 :			*500*
2A46DT	06/06/01	06/28/01	22	09	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*500*
2A46DT	06/06/01	06/28/01	22	11	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 22 : ***497***

Standard Deviation: ***8***

Percent Reduction of 2A46DT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M205 *2-NITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2NT	06/06/01	06/06/01	0	03	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 03 :			*484*
2NT	06/06/01	06/06/01	0	05	1		146 J
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 05 :			*374*
2NT	06/06/01	06/06/01	0	07	1	LT	476
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
2NT	06/06/01	06/06/01	0	09	1	LT	476
					2		1040
					3	LT	500
				Average Concentration for Cross Section 09 :			*672*
2NT	06/06/01	06/06/01	0	11	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*476*

Average Concentration for Windrow on Day 0 : ***498***

Standard Deviation: ***174***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2NT	06/06/01	06/28/01	22	03	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*492*
2NT	06/06/01	06/28/01	22	05	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 05 :			*500*
2NT	06/06/01	06/28/01	22	07	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 07 :			*500*
2NT	06/06/01	06/28/01	22	09	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*500*
2NT	06/06/01	06/28/01	22	11	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 22 : ***497***

Standard Deviation: ***8***

Percent Reduction of 2NT: 0.24%

Windrow Number: M205 ***3-NITROTOLUENE Results***

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
3NT	06/06/01	06/06/01	0	03	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 03 :			*484*
3NT	06/06/01	06/06/01	0	05	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 05 :			*492*
3NT	06/06/01	06/06/01	0	07	1	LT	476
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
3NT	06/06/01	06/06/01	0	09	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*492*
3NT	06/06/01	06/06/01	0	11	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*476*
				Average Concentration for Windrow on Day 0 :			***486***
						Standard Deviation:	*12*

Compound	*Construction Date*	*Date Sampled*	*DaysOld*	*CrossSection*	*Location*	*Concentration*	UGKG
3NT	06/06/01	06/28/01	22	03	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*492*
3NT	06/06/01	06/28/01	22	05	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 05 :			*500*
3NT	06/06/01	06/28/01	22	07	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 07 :			*500*
3NT	06/06/01	06/28/01	22	09	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*500*
3NT	06/06/01	06/28/01	22	11	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			*492*
				Average Concentration for Windrow on Day 22 :			***497***
						Standard Deviation:	*8*

Percent Reduction of 3NT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M205 ***4-AMINO-2,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4A26DT	06/06/01	06/06/01	0	03	1	458 J	
					2	1320	
					3	746	
					Average Concentration for Cross Section 03 :		*841*
4A26DT	06/06/01	06/06/01	0	05	1	931	
					2	586	
					3	1620	
					Average Concentration for Cross Section 05 :		*1046*
4A26DT	06/06/01	06/06/01	0	07	1	692	
					2	1850	
					3	LT 476	
					Average Concentration for Cross Section 07 :		*1006*
4A26DT	06/06/01	06/06/01	0	09	1	LT 476	
					2	LT 500	
					3	LT 500	
					Average Concentration for Cross Section 09 :		*492*
4A26DT	06/06/01	06/06/01	0	11	1	LT 476	
					2	LT 476	
					3	LT 476	
					Average Concentration for Cross Section 11 :		*476*

Average Concentration for Windrow on Day 0 : ***772***

Standard Deviation: ***458***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4A26DT	06/06/01	06/28/01	22	03	1	LT 500	
					2	LT 500	
					3	LT 476	
					Average Concentration for Cross Section 03 :		*492*
4A26DT	06/06/01	06/28/01	22	05	1	LT 500	
					2	LT 500	
					3	LT 500	
					Average Concentration for Cross Section 05 :		*500*
4A26DT	06/06/01	06/28/01	22	07	1	LT 500	
					2	LT 500	
					3	LT 500	
					Average Concentration for Cross Section 07 :		*500*
4A26DT	06/06/01	06/28/01	22	09	1	LT 500	
					2	LT 500	
					3	LT 500	
					Average Concentration for Cross Section 09 :		*500*
4A26DT	06/06/01	06/28/01	22	11	1	LT 500	
					2	LT 476	
					3	LT 500	
					Average Concentration for Cross Section 11 :		*492*

Average Concentration for Windrow on Day 22 : ***497***

Standard Deviation: ***8***

Percent Reduction of 4A26DT: 35.66%

Windrow Number: M205 *4-NITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4NT	06/06/01	06/06/01	0	03	1		196 J
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 03 :			*391*
4NT	06/06/01	06/06/01	0	05	1		655
					2	LT	500
					3		161 J
				Average Concentration for Cross Section 05 :			*439*
4NT	06/06/01	06/06/01	0	07	1	LT	476
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
4NT	06/06/01	06/06/01	0	09	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*492*
4NT	06/06/01	06/06/01	0	11	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*476*

Average Concentration for Windrow on Day 0 : ***456***

Standard Deviation: ***122***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4NT	06/06/01	06/28/01	22	03	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*492*
4NT	06/06/01	06/28/01	22	05	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 05 :			*500*
4NT	06/06/01	06/28/01	22	07	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 07 :			*500*
4NT	06/06/01	06/28/01	22	09	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*500*
4NT	06/06/01	06/28/01	22	11	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 22 : ***497***

Standard Deviation: ***8***

Percent Reduction of 4NT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M205 ***HMX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
HMX	06/06/01	06/06/01	0	03	1	210000	
					2	324000	
					3	87100	
				Average Concentration for Cross Section 03 :			*207033*
HMX	06/06/01	06/06/01	0	05	1	78200	
					2	182000	
					3	265000	
				Average Concentration for Cross Section 05 :			*175067*
HMX	06/06/01	06/06/01	0	07	1	114000	
					2	169000	
					3	25700	
				Average Concentration for Cross Section 07 :			*102900*
HMX	06/06/01	06/06/01	0	09	1	139000	
					2	39800	
					3	29800	
				Average Concentration for Cross Section 09 :			*69533*
HMX	06/06/01	06/06/01	0	11	1	66400	
					2	32700	
					3	81900	
				Average Concentration for Cross Section 11 :			*60333*

Average Concentration for Windrow on Day 0 : 122973

Standard Deviation: 90824

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
HMX	06/06/01	06/28/01	22	03	1	LT 500	
					2	5140	
					3	21600	
				Average Concentration for Cross Section 03 :			*9080*
HMX	06/06/01	06/28/01	22	05	1	84.4 J	
					2	1480	
					3	47800	
				Average Concentration for Cross Section 05 :			*16455*
HMX	06/06/01	06/28/01	22	07	1	LT 500	
					2	91.3 J	
					3	1390	
				Average Concentration for Cross Section 07 :			*660*
HMX	06/06/01	06/28/01	22	09	1	238 J	
					2	657	
					3	2200	
				Average Concentration for Cross Section 09 :			*1032*
HMX	06/06/01	06/28/01	22	11	1	20.6 J	
					2	115 J	
					3	4510	
				Average Concentration for Cross Section 11 :			*1549*

Average Concentration for Windrow on Day 22 : 5755

Standard Deviation: 12849

Percent Reduction of HMX: 95.32%

Windrow Number: M205 ***NITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
NB	06/06/01	06/06/01	0	03	1	LT	476	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section 03 :				*484*
NB	06/06/01	06/06/01	0	05	1	LT	500	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 05 :				*492*
NB	06/06/01	06/06/01	0	07	1	LT	476	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 07 :				*484*
NB	06/06/01	06/06/01	0	09	1	LT	476	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 09 :				*492*
NB	06/06/01	06/06/01	0	11	1	LT	476	
					2	LT	476	
					3		9900	
				Average Concentration for Cross Section 11 :				*3617*

Average Concentration for Windrow on Day 0 : ***1114***

Standard Deviation: ***2431***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
NB	06/06/01	06/28/01	22	03	1	LT	500	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 03 :				*492*
NB	06/06/01	06/28/01	22	05	1	LT	500	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 05 :				*500*
NB	06/06/01	06/28/01	22	07	1	LT	500	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 07 :				*500*
NB	06/06/01	06/28/01	22	09	1	LT	500	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 09 :				*500*
NB	06/06/01	06/28/01	22	11	1	LT	500	
					2	LT	476	
					3	LT	500	
				Average Concentration for Cross Section 11 :				*492*

Average Concentration for Windrow on Day 22 : ***497***

Standard Deviation: ***8***

Percent Reduction of NB: 55.40%

Windrow Number: M205 ***RDX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
RDX	06/06/01	06/06/01	0	03	1	30700	
					2	72900	
					3	21900	
				Average Concentration for Cross Section 03 :			*41833*
RDX	06/06/01	06/06/01	0	05	1	14200	
					2	23000	
					3	41200	
				Average Concentration for Cross Section 05 :			*26133*
RDX	06/06/01	06/06/01	0	07	1	24200	
					2	29900	
					3	6110	
				Average Concentration for Cross Section 07 :			*20070*
RDX	06/06/01	06/06/01	0	09	1	15600	
					2	12900	
					3	11100	
				Average Concentration for Cross Section 09 :			*13200*
RDX	06/06/01	06/06/01	0	11	1	19100	
					2	12100	
					3	29200	
				Average Concentration for Cross Section 11 :			*20133*

Average Concentration for Windrow on Day 0 : ***24274***

Standard Deviation: ***16345***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
RDX	06/06/01	06/28/01	22	03	1	LT 500	
					2	LT 500	
					3	LT 476	
				Average Concentration for Cross Section 03 :			*492*
RDX	06/06/01	06/28/01	22	05	1	LT 500	
					2	LT 500	
					3	LT 500	
				Average Concentration for Cross Section 05 :			*500*
RDX	06/06/01	06/28/01	22	07	1	LT 500	
					2	LT 500	
					3	LT 500	
				Average Concentration for Cross Section 07 :			*500*
RDX	06/06/01	06/28/01	22	09	1	LT 500	
					2	LT 500	
					3	LT 500	
				Average Concentration for Cross Section 09 :			*500*
RDX	06/06/01	06/28/01	22	11	1	LT 500	
					2	LT 476	
					3	LT 500	
				Average Concentration for Cross Section 11 :			*492*

Average Concentration for Windrow on Day 22 : ***497***

Standard Deviation: ***8***

Percent Reduction of RDX: 97.95%

Windrow Number: M205 ***TETRYL Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
TETRYL	06/06/01	06/06/01	0	03	1	LT	476
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 03 :			*484*
TETRYL	06/06/01	06/06/01	0	05	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 05 :			*492*
TETRYL	06/06/01	06/06/01	0	07	1	LT	476
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
TETRYL	06/06/01	06/06/01	0	09	1	LT	476
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*492*
TETRYL	06/06/01	06/06/01	0	11	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*476*
				Average Concentration for Windrow on Day 0 :			***486***
						Standard Deviation:	***12***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
TETRYL	06/06/01	06/28/01	22	03	1	LT	500
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*492*
TETRYL	06/06/01	06/28/01	22	05	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 05 :			*500*
TETRYL	06/06/01	06/28/01	22	07	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 07 :			*500*
TETRYL	06/06/01	06/28/01	22	09	1	LT	500
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 09 :			*500*
TETRYL	06/06/01	06/28/01	22	11	1	LT	500
					2	LT	476
					3	LT	500
				Average Concentration for Cross Section 11 :			*492*
				Average Concentration for Windrow on Day 22 :			***497***
						Standard Deviation:	***8***

Percent Reduction of TETRYL: Not Applicable; Sample Results Below Reporting Limit

RECORD OF RECIPE (MIX NO. 7B)

Building # M Windrow # 206 PERFORMED BY: [illegible]

DATE: 7/6/01 INSPECTED BY: _____

Design Quantity: Chicken Manure 3 CY 5700 Pounds
Straw 12 CY [illegible] Pounds
Soil _____ CY _____ Pounds

Batch Number	CHICKEN MANURE Supplier: _____		STRAW Supplier: _____		SOIL Location: _____		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
1	3.10	5770	12.10	2470				
2	3	5700	12.15	2510				
3	3.10	5750	12.15	2500				
4	3.10	5790	12	2400				
5	3.10	5760	12.15	2550				
6	3.15	5810	12.10	2500				
7	3	5700	12.10	2490				
8	3.15	5820	12	2400				
9	3	5700	12	2400				
10	3.10	5750	12.15	2550				
11	3.10	5790	12.15	2570				
12	3	5700	12.10	2450				
13	3.10	5780	12.15	2590				
14	3.10	5770	12.15	2520				
15	3	5700	12.10	2420				
16	3.10	5750	12	2400				
17	3	5700	12.10	2450				
18	3.15	5790	12.10	2490				
19	3	5700	12.15	2450				
Total								

Comments:

RECORD OF RECIPE (MIX NO. 7B)

Building # 2 Windrow #206 PERFORMED BY: _____

DATE: 7/16/01 INSPECTED BY: _____

Design Quantity: Chicken Manure _____ CY _____ Pounds
Straw _____ CY 2400 Pounds
Soil _____ CY 5700 Pounds

Batch Number	CHICKEN MANURE Supplier: _____		STRAW Supplier: _____		SOIL Location: _____		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
1	340	6300	12	2400				
2	335	6200	12	2400				
3	325	6000	1175	2300				
4	350	6400	1200	2400				
5	325	6000	1250	2600				
6	350	6400	1225	2500				
7	325	6000	1250	2600				
8	350	6500	1225	2500				
9	335	6100	1300	2800				
10	325	6000	1225	2500				
11	315	5900	1275	2700				
12	325	6000	1225	2500				
13	325	6000	1225	2500				
14	320	5800	1225	2500				
15	315	5900	1275	2700				
16	320	5800	1300	2800				
17	325	6000	1250	2600				
18	305	5800	1225	2500				
Total								

Comments:

RECORD OF RECIPE (MIX NO. 7B)

Building # _____ Windrow # 206 PERFORMED BY: _____

DATE: / / INSPECTED BY: _____

Design Quantity: Chicken Manure_____CY _____Pounds
Straw_____CY_____Pounds
Soil_____CY_____Pounds

Batch Number	CHICKEN MANURE Supplier:_____		STRAW Supplier:_____		SOIL Location:_____		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
20	310	5750	1210	2470				
Total								

Comments:

Average Daily Windrow Temperature Summary Report

Windrow Number	Construction Date	Date Monitored	Age (Days)	PRE-Turn (Deg C)	POST-Turn (Deg C)
06	7/18/01	7/18/01	0		51.30
		7/19/01	1	58.90	57.93
		7/20/01	2	66.20	61.37
		7/21/01	3	67.07	62.30
		7/23/01	5	66.33	66.87
		7/24/01	6	69.30	66.00
		7/25/01	7	70.00	63.17
		7/26/01	8	68.87	62.63
		7/27/01	9	69.83	66.33
		7/28/01	10	70.13	65.20
		7/30/01	12	67.37	64.30
		7/31/01	13	69.63	64.63
		8/1/01	14	67.63	67.23
		8/2/01	15	68.97	64.83
		8/3/01	16	64.87	64.07
		8/4/01	17	67.70	65.03
		8/6/01	19	65.07	62.97
		8/7/01	20	65.27	63.80
		8/8/01	21	68.03	63.47
		8/9/01	22	60.10	56.97
		8/10/01	23	61.87	57.30
		8/11/01	24	56.93	52.20
		8/13/01	26	61.43	58.30
		8/14/01	27	63.27	52.30

All average temperatures are in degrees centigrade

Wednesday, March 27, 2002

Average Daily Windrow Oxygen Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
M206	7/18/01	7/18/01	0		8.47
		7/19/01	1	11.13	6.77
		7/20/01	2	6.43	8.37
		7/21/01	3	8.20	9.60
		7/23/01	5	12.87	7.17
		7/24/01	6	9.73	6.03
		7/25/01	7	4.73	10.27
		7/26/01	8	7.60	9.17
		7/27/01	9	8.07	4.13
		7/28/01	10	6.57	7.83
		7/30/01	12	11.57	10.47
		7/31/01	13	6.80	3.90
		8/1/01	14	6.93	5.33
		8/2/01	15	5.80	6.83
		8/3/01	16	6.07	4.23
		8/4/01	17	6.83	7.33
		8/6/01	19	8.00	6.73
		8/7/01	20	6.33	6.37
		8/8/01	21	7.37	7.17
		8/9/01	22	8.10	7.43
		8/10/01	23	6.17	8.43
		8/11/01	24	5.93	8.63
		8/13/01	26	3.00	3.47
		8/14/01	27	2.57	9.30

All average Oxygen values are expressed as a percent

Wednesday, March 27, 2002

Average Daily Windrow WHC Summary Report

ıdrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
M206	7/18/01	7/24/01	6		47.18
		7/26/01	8		44.46
		7/31/01	13		43.62
		8/2/01	15		44.14
		8/6/01	19		41.94
		8/11/01	24		41.94

All average MWHC values are expressed in percent

Average Daily Windrow PH Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn*	*PRE-Turn*
M206	7/18/01	7/20/01	2	8.94	
		7/26/01	8	8.70	
		8/2/01	15	8.46	

All average PH values are expressed in standard units

Wednesday, March 27, 2002

Windrow Number: M206 ***1,3,5-TRINITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location		Concentration	UGKG
135TNB	07/18/01	07/18/01	0	03	1		587	
					2		142 J	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*402*
135TNB	07/18/01	07/18/01	0	05	1		447 J	
					2		227 J	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*376*
135TNB	07/18/01	07/18/01	0	07	1	LT	476	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*469*
135TNB	07/18/01	07/18/01	0	09	1		693	
					2		243 J	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*471*
135TNB	07/18/01	07/18/01	0	11	1		964	
					2		553	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*664*

Average Concentration for Windrow on Day 0 : ***476***

Standard Deviation: ***195***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location		Concentration	MGKG
135TNB	07/18/01	08/15/01	28	03	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 03 :			*0*
135TNB	07/18/01	08/15/01	28	05	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 05 :			*0*
135TNB	07/18/01	08/15/01	28	07	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 07 :			*0*
135TNB	07/18/01	08/15/01	28	09	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 09 :			*0*
135TNB	07/18/01	08/15/01	28	11	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 11 :			*0*

Average Concentration for Windrow on Day 28 : ***0***

Standard Deviation: ***0***

Percent Reduction of 135TNB: 99.95%

Windrow Number: M206 ***1,3-DINITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
13DNB	07/18/01	07/18/01	0	03	1	LT	476	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 03 :				*484*
13DNB	07/18/01	07/18/01	0	05	1	LT	476	
					2	LT	476	
					3	LT	454	
				Average Concentration for Cross Section 05 :				*469*
13DNB	07/18/01	07/18/01	0	07	1	LT	476	
					2	LT	476	
					3	LT	454	
				Average Concentration for Cross Section 07 :				*469*
13DNB	07/18/01	07/18/01	0	09	1	LT	476	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section 09 :				*469*
13DNB	07/18/01	07/18/01	0	11	1	LT	454	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section 11 :				*461*
				Average Concentration for Windrow on Day 0 :				***470***
						Standard Deviation:		***13***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		MGKG
13DNB	07/18/01	08/15/01	28	03	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 03 :				*0*
13DNB	07/18/01	08/15/01	28	05	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 05 :				*0*
13DNB	07/18/01	08/15/01	28	07	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 07 :				*0*
13DNB	07/18/01	08/15/01	28	09	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 09 :				*0*
13DNB	07/18/01	08/15/01	28	11	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 11 :				*0*
				Average Concentration for Windrow on Day 28 :				***0***
						Standard Deviation:		***0***

Percent Reduction of 13DNB: 99.95%

Windrow Number: M206 ***2,4,6-TRINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
246TNT	07/18/01	07/18/01	0	03	1	8730	
					2	2510	
					3	347 J	
				Average Concentration for Cross Section 03 :			*3862*
246TNT	07/18/01	07/18/01	0	05	1	10400	
					2	3210	
					3	289 J	
				Average Concentration for Cross Section 05 :			*4633*
246TNT	07/18/01	07/18/01	0	07	1	2570	
					2	1050	
					3	LT 454	
				Average Concentration for Cross Section 07 :			*1358*
246TNT	07/18/01	07/18/01	0	09	1	8250	
					2	4030	
					3	1090	
				Average Concentration for Cross Section 09 :			*4457*
246TNT	07/18/01	07/18/01	0	11	1	12500	
					2	7730	
					3	LT 476	
				Average Concentration for Cross Section 11 :			*6902*

Average Concentration for Windrow on Day 0 : ***4242***

Standard Deviation: ***4148***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	MGKG
246TNT	07/18/01	08/15/01	28	03	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 03 :			*0*
246TNT	07/18/01	08/15/01	28	05	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 05 :			*0*
246TNT	07/18/01	08/15/01	28	07	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 07 :			*0*
246TNT	07/18/01	08/15/01	28	09	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 09 :			*0*
246TNT	07/18/01	08/15/01	28	11	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 11 :			*0*

Average Concentration for Windrow on Day 28 : ***0***

Standard Deviation: ***0***

Percent Reduction of 246TNT: 99.99%

Windrow Number: M206 **2,4-DINITROTOLUENE Results**

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
24DNT	07/18/01	07/18/01	0	03	1	LT	476	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 03 :				484
24DNT	07/18/01	07/18/01	0	05	1	LT	476	
					2	LT	476	
					3	LT	454	
				Average Concentration for Cross Section 05 :				469
24DNT	07/18/01	07/18/01	0	07	1	LT	476	
					2	LT	476	
					3	LT	454	
				Average Concentration for Cross Section 07 :				469
24DNT	07/18/01	07/18/01	0	09	1	LT	476	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section 09 :				469
24DNT	07/18/01	07/18/01	0	11	1	LT	454	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section 11 :				461
				Average Concentration for Windrow on Day 0 :				470
				Standard Deviation:				13

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		MGKG
24DNT	07/18/01	08/15/01	28	03	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 03 :				0
24DNT	07/18/01	08/15/01	28	05	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 05 :				0
24DNT	07/18/01	08/15/01	28	07	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 07 :				0
24DNT	07/18/01	08/15/01	28	09	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 09 :				0
24DNT	07/18/01	08/15/01	28	11	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 11 :				0
				Average Concentration for Windrow on Day 28 :				0
				Standard Deviation:				0

Percent Reduction of 24DNT: 99.95%

Windrow Number: M206 ***2,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
26DNT	07/18/01	07/18/01	0	03	1	LT	476	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*484*
26DNT	07/18/01	07/18/01	0	05	1	LT	476	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*469*
26DNT	07/18/01	07/18/01	0	07	1	LT	476	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*469*
26DNT	07/18/01	07/18/01	0	09	1	LT	476	
					2	LT	454	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*469*
26DNT	07/18/01	07/18/01	0	11	1	LT	454	
					2	LT	454	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*461*

Average Concentration for Windrow on Day 0 : ***470***

Standard Deviation: ***13***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		MGKG
26DNT	07/18/01	08/15/01	28	03	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 03 :			*0*
26DNT	07/18/01	08/15/01	28	05	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 05 :			*0*
26DNT	07/18/01	08/15/01	28	07	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 07 :			*0*
26DNT	07/18/01	08/15/01	28	09	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 09 :			*0*
26DNT	07/18/01	08/15/01	28	11	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 11 :			*0*

Average Concentration for Windrow on Day 28 : ***0***

Standard Deviation: ***0***

Percent Reduction of 26DNT: 99.95%

Windrow Number: M206 ***2-AMINO-4,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
2A46DT	07/18/01	07/18/01	0	03	1		437 J	
					2		142 J	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*352*
2A46DT	07/18/01	07/18/01	0	05	1		577	
					2		226 J	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*419*
2A46DT	07/18/01	07/18/01	0	07	1		188 J	
					2		45.8 J	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*229*
2A46DT	07/18/01	07/18/01	0	09	1		454 J	
					2		270 J	
					3		68.2 J	
					Average Concentration for Cross Section 09 :			*264*
2A46DT	07/18/01	07/18/01	0	11	1		879	
					2		324 J	
					3		65.4 J	
					Average Concentration for Cross Section 11 :			*423*

Average Concentration for Windrow on Day 0 : ***337***

Standard Deviation: ***228***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		MGKG
2A46DT	07/18/01	08/15/01	28	03	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 03 :			*0*
2A46DT	07/18/01	08/15/01	28	05	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 05 :			*0*
2A46DT	07/18/01	08/15/01	28	07	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 07 :			*0*
2A46DT	07/18/01	08/15/01	28	09	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 09 :			*0*
2A46DT	07/18/01	08/15/01	28	11	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 11 :			*0*

Average Concentration for Windrow on Day 28 : ***0***

Standard Deviation: ***0***

Percent Reduction of 2A46DT: 99.93%

Windrow Number: M206 ***2-NITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
2NT	07/18/01	07/18/01	0	03	1	LT	476	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*484*
2NT	07/18/01	07/18/01	0	05	1	LT	476	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*469*
2NT	07/18/01	07/18/01	0	07	1	LT	476	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*469*
2NT	07/18/01	07/18/01	0	09	1	LT	476	
					2	LT	454	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*469*
2NT	07/18/01	07/18/01	0	11	1	LT	454	
					2	LT	454	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*461*
					Average Concentration for Windrow on Day 0 :			***470***
					Standard Deviation:			***13***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		MGKG
2NT	07/18/01	08/15/01	28	03	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 03 :			*0*
2NT	07/18/01	08/15/01	28	05	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 05 :			*0*
2NT	07/18/01	08/15/01	28	07	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 07 :			*0*
2NT	07/18/01	08/15/01	28	09	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 09 :			*0*
2NT	07/18/01	08/15/01	28	11	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 11 :			*0*
					Average Concentration for Windrow on Day 28 :			***0***
					Standard Deviation:			***0***

Percent Reduction of 2NT: 99.95%

Windrow Number: M206 ***3-NITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
3NT	07/18/01	07/18/01	0	03	1	LT	476	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 03 :				*484*
3NT	07/18/01	07/18/01	0	05	1	LT	476	
					2	LT	476	
					3	LT	454	
				Average Concentration for Cross Section 05 :				*469*
3NT	07/18/01	07/18/01	0	07	1	LT	476	
					2	LT	476	
					3	LT	454	
				Average Concentration for Cross Section 07 :				*469*
3NT	07/18/01	07/18/01	0	09	1	LT	476	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section 09 :				*469*
3NT	07/18/01	07/18/01	0	11	1	LT	454	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section 11 :				*461*
				Average Concentration for Windrow on Day 0 :				***470***
						Standard Deviation:		***13***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		MGKG
3NT	07/18/01	08/15/01	28	03	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 03 :				*0*
3NT	07/18/01	08/15/01	28	05	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 05 :				*0*
3NT	07/18/01	08/15/01	28	07	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 07 :				*0*
3NT	07/18/01	08/15/01	28	09	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 09 :				*0*
3NT	07/18/01	08/15/01	28	11	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 11 :				*0*
				Average Concentration for Windrow on Day 28 :				***0***
						Standard Deviation:		***0***

Percent Reduction of 3NT: 99.95%

Windrow Number: M206 ***4-AMINO-2,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4A26DT	07/18/01	07/18/01	0	03	1	2060	
					2	957	
					3	328 J	
				Average Concentration for Cross Section 03 :			*1115*
4A26DT	07/18/01	07/18/01	0	05	1	2080	
					2	1340	
					3	203 J	
				Average Concentration for Cross Section 05 :			*1208*
4A26DT	07/18/01	07/18/01	0	07	1	1260	
					2	499	
					3	LT 454	
				Average Concentration for Cross Section 07 :			*738*
4A26DT	07/18/01	07/18/01	0	09	1	2310	
					2	1070	
					3	422 J	
				Average Concentration for Cross Section 09 :			*1267*
4A26DT	07/18/01	07/18/01	0	11	1	2300	
					2	1860	
					3	385 J	
				Average Concentration for Cross Section 11 :			*1515*

Average Concentration for Windrow on Day 0 : ***1169***

Standard Deviation: ***781***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	MGKG
4A26DT	07/18/01	08/15/01	28	03	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 03 :			*0*
4A26DT	07/18/01	08/15/01	28	05	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 05 :			*0*
4A26DT	07/18/01	08/15/01	28	07	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 07 :			*0*
4A26DT	07/18/01	08/15/01	28	09	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 09 :			*0*
4A26DT	07/18/01	08/15/01	28	11	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 11 :			*0*

Average Concentration for Windrow on Day 28 : ***0***

Standard Deviation: ***0***

Percent Reduction of 4A26DT: 99.98%

Windrow Number: M206 ***4-NITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4NT	07/18/01	07/18/01	0	03	1	LT 476	
					2	LT 500	
					3	741	
				Average Concentration for Cross Section 03 :			*572*
4NT	07/18/01	07/18/01	0	05	1	LT 476	
					2	LT 476	
					3	LT 454	
				Average Concentration for Cross Section 05 :			*469*
4NT	07/18/01	07/18/01	0	07	1	LT 476	
					2	LT 476	
					3	LT 454	
				Average Concentration for Cross Section 07 :			*469*
4NT	07/18/01	07/18/01	0	09	1	LT 476	
					2	LT 454	
					3	657	
				Average Concentration for Cross Section 09 :			*529*
4NT	07/18/01	07/18/01	0	11	1	LT 454	
					2	LT 454	
					3	LT 476	
				Average Concentration for Cross Section 11 :			*461*

Average Concentration for Windrow on Day 0 : 500

Standard Deviation: 83

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	MGKG
4NT	07/18/01	08/15/01	28	03	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 03 :			*0*
4NT	07/18/01	08/15/01	28	05	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 05 :			*0*
4NT	07/18/01	08/15/01	28	07	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 07 :			*0*
4NT	07/18/01	08/15/01	28	09	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 09 :			*0*
4NT	07/18/01	08/15/01	28	11	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
				Average Concentration for Cross Section 11 :			*0*

Average Concentration for Windrow on Day 28 : 0

Standard Deviation: 0

Percent Reduction of 4NT: 99.95%

Windrow Number: M206 ***HMX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
HMX	07/18/01	07/18/01	0	03	1	528000	
					2	180000	
					3	65200	
				Average Concentration for Cross Section 03 :			*257733*
HMX	07/18/01	07/18/01	0	05	1	745000	
					2	394000	
					3	139000	
				Average Concentration for Cross Section 05 :			*426000*
HMX	07/18/01	07/18/01	0	07	1	410000	
					2	98100	
					3	6730	
				Average Concentration for Cross Section 07 :			*171610*
HMX	07/18/01	07/18/01	0	09	1	684000	
					2	287000	
					3	56500	
				Average Concentration for Cross Section 09 :			*342500*
HMX	07/18/01	07/18/01	0	11	1	846000	
					2	554000	
					3	55000	
				Average Concentration for Cross Section 11 :			*485000*

Average Concentration for Windrow on Day 0 : 336569

Standard Deviation: 280648

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	MGKG
HMX	07/18/01	08/15/01	28	03	1	0.096 J	
					2	0.75	
					3	0.33	
				Average Concentration for Cross Section 03 :			*0*
HMX	07/18/01	08/15/01	28	05	1	0.1 J	
					2	5.1	
					3	6.4	
				Average Concentration for Cross Section 05 :			*4*
HMX	07/18/01	08/15/01	28	07	1	0.55	
					2	17	
					3	9	
				Average Concentration for Cross Section 07 :			*9*
HMX	07/18/01	08/15/01	28	09	1	1.3	
					2	18	
					3	1.2	
				Average Concentration for Cross Section 09 :			*7*
HMX	07/18/01	08/15/01	28	11	1	2.5	
					2	5.6	
					3	13	
				Average Concentration for Cross Section 11 :			*7*

Average Concentration for Windrow on Day 28 : 5

Standard Deviation: 6

Percent Reduction of HMX: 100.00%

Windrow Number: M206 ***NITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
NB	07/18/01	07/18/01	0	03	1	LT	476	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*484*
NB	07/18/01	07/18/01	0	05	1	LT	476	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*469*
NB	07/18/01	07/18/01	0	07	1	LT	476	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*469*
NB	07/18/01	07/18/01	0	09	1	LT	476	
					2	LT	454	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*469*
NB	07/18/01	07/18/01	0	11	1	LT	454	
					2	LT	454	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*461*
					Average Concentration for Windrow on Day 0 :			***470***
					Standard Deviation:			*13*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		MGKG
NB	07/18/01	08/15/01	28	03	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 03 :			*0*
NB	07/18/01	08/15/01	28	05	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 05 :			*0*
NB	07/18/01	08/15/01	28	07	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 07 :			*0*
NB	07/18/01	08/15/01	28	09	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 09 :			*0*
NB	07/18/01	08/15/01	28	11	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
					Average Concentration for Cross Section 11 :			*0*
					Average Concentration for Windrow on Day 28 :			***0***
					Standard Deviation:			*0*

Percent Reduction of NB: 99.95%

Windrow Number: M206 ***RDX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
RDX	07/18/01	07/18/01	0	03	1	76600	
					2	24400	
					3	13100	
					Average Concentration for Cross Section 03 :		*38033*
RDX	07/18/01	07/18/01	0	05	1	120000	
					2	31600	
					3	10100	
					Average Concentration for Cross Section 05 :		*53900*
RDX	07/18/01	07/18/01	0	07	1	35600	
					2	12000	
					3	3310	
					Average Concentration for Cross Section 07 :		*16970*
RDX	07/18/01	07/18/01	0	09	1	70200	
					2	38100	
					3	9000	
					Average Concentration for Cross Section 09 :		*39100*
RDX	07/18/01	07/18/01	0	11	1	78900	
					2	61500	
					3	10600	
					Average Concentration for Cross Section 11 :		*50333*

Average Concentration for Windrow on Day 0 : ***39667***

Standard Deviation: ***34367***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	MGKG
RDX	07/18/01	08/15/01	28	03	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
					Average Concentration for Cross Section 03 :		*0*
RDX	07/18/01	08/15/01	28	05	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
					Average Concentration for Cross Section 05 :		*0*
RDX	07/18/01	08/15/01	28	07	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
					Average Concentration for Cross Section 07 :		*0*
RDX	07/18/01	08/15/01	28	09	1	LT 0.25	
					2	LT 0.25	
					3	LT 0.25	
					Average Concentration for Cross Section 09 :		*0*
RDX	07/18/01	08/15/01	28	11	1	LT 0.25	
					2	0.16 J	
					3	LT 0.25	
					Average Concentration for Cross Section 11 :		*0*

Average Concentration for Windrow on Day 28 : ***0***

Standard Deviation: ***0***

Percent Reduction of RDX: 100.00%

Windrow Number: M206 ***TETRYL Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
TETRYL	07/18/01	07/18/01	0	03	1	LT	476	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 03 :				*484*
TETRYL	07/18/01	07/18/01	0	05	1	LT	476	
					2	LT	476	
					3	LT	454	
				Average Concentration for Cross Section 05 :				*469*
TETRYL	07/18/01	07/18/01	0	07	1	LT	476	
					2	LT	476	
					3	LT	454	
				Average Concentration for Cross Section 07 :				*469*
TETRYL	07/18/01	07/18/01	0	09	1	LT	476	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section 09 :				*469*
TETRYL	07/18/01	07/18/01	0	11	1	LT	454	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section 11 :				*461*
				Average Concentration for Windrow on Day 0 :				***470***
							Standard Deviation:	***13***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		MGKG
TETRYL	07/18/01	08/15/01	28	03	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 03 :				*0*
TETRYL	07/18/01	08/15/01	28	05	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 05 :				*0*
TETRYL	07/18/01	08/15/01	28	07	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 07 :				*0*
TETRYL	07/18/01	08/15/01	28	09	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 09 :				*0*
TETRYL	07/18/01	08/15/01	28	11	1	LT	0.25	
					2	LT	0.25	
					3	LT	0.25	
				Average Concentration for Cross Section 11 :				*0*
				Average Concentration for Windrow on Day 28 :				***0***
							Standard Deviation:	***0***

Percent Reduction of TETRYL: 99.95%

RECORD OF RECIPE (MIX NO. 7B)

Building # 11 Windrow # ~~208~~ 207 PERFORMED BY: _____

DATE: 7/9/01 INSPECTED BY: _____

Design Quantity: Chicken Manure_____CY _____Pounds
Straw_____CY_____Pounds
Soil_____CY_____Pounds

Batch Number	CHICKEN MANURE Supplier:_____		STRAW Supplier:_____		SOIL Location:_____		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
1	3	5700	12	2400				
2	3.25	5850	12.25	2500				
3	3	5750	11.75	2300				
4	3.25	5800	12.25	2500				
5	3	5720	12.25	2400				
6	3	5750	12.25	2500				
7	3.25	5800	12	2400				
8	3	5750	12	2400				
9	3	5700	12.25	2500				
10	3	5700	12.00	2400				
11	3.25	5900	12.25	2500				
12	3.25	5800	12	2400				
13	3.25	5900	12	2400				
14	3.25	5850	12.25	2400				
15	3.25	5950	13.00	2800				
16	3.30	5800	12.00	2400				
17	3.25	5750	12.25	2550				
18	3.15							
Total								

Comments:

RECORD OF RECIPE (MIX NO. 7B)

Building # 2M Windrow # 207 PERFORMED BY: [illegible]

DATE: 7/9/01 INSPECTED BY: _____

Design Quantity: Chicken Manure 3 CY 5700 Pounds
Straw 12 CY 2400 Pounds
Soil _____ CY _____ Pounds

Batch Number	CHICKEN MANURE Supplier: _____		STRAW Supplier: _____		SOIL Location: _____		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
1	3.3	6300	12.0	2400				
2	2.95	5500	12.0	2400				
3	3.2	6000	12.75	2800				
4	3.25	6100	12	2400				
5	3.0	5700	12	2400				
6	3.3	6300	12	2400				
7	3.2	6000	12.5	2500				
8	3.3	6200	12.5	2500				
9	3.0	5700	12.0	2400				
10	3.5	6600	12.0	2400				
11	3.5	6000	13.5	2700				
12	3	5700	12	2400				
13	3.25	5700	12.25	2500				
14	3.0	5700	12.0	2400				
15	3.25	6100	12.0	2400				
16	3.2	6000	11.0	2200				
17	3.2	6000	12.0	2400				
18	3.3	6300	12.5	2500				
19	3.0	5700	12.0	2400				
Total								

Comments:

Average Daily Windrow Temperature Summary Report

Windrow Number	Construction Date	Date Monitored	Age (Days)	PRE-Turn (Deg C)	POST-Turn (Deg C)
)7	7/20/01	7/20/01	0		45.47
		7/21/01	1	58.13	56.93
		7/23/01	3	68.83	65.57
		7/24/01	4	68.93	65.93
		7/25/01	5	69.83	63.59
		7/26/01	6	70.97	65.10
		7/27/01	7	71.07	65.30
		7/28/01	8	69.37	65.83
		7/30/01	10	69.67	61.20
		7/31/01	11	70.67	66.13
		8/1/01	12	70.23	67.37
		8/2/01	13	70.00	64.53
		8/3/01	14	67.67	65.90
		8/4/01	15	68.37	66.70
		8/6/01	17	67.93	65.40
		8/7/01	18	68.43	66.43
		8/8/01	19	64.53	64.73
		8/9/01	20	64.38	60.60
		8/10/01	21	64.60	59.10
		8/11/01	22	61.87	55.77
		8/13/01	24	64.53	61.73
		8/14/01	25	65.73	58.80
		8/15/01	26	60.87	58.87
		8/16/01	27	62.97	57.73

All average temperatures are in degrees centigrade

Wednesday, March 27, 2002

Average Daily Windrow Oxygen Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
M207	7/20/01	7/20/01	0		3.90
		7/21/01	1	5.53	4.67
		7/23/01	3	10.93	6.70
		7/24/01	4	10.13	4.47
		7/25/01	5	7.40	5.10
		7/26/01	6	8.07	9.40
		7/27/01	7	9.47	3.30
		7/28/01	8	6.97	7.40
		7/30/01	10	10.33	9.50
		7/31/01	11	7.60	5.03
		8/1/01	12	7.93	6.40
		8/2/01	13	8.03	7.83
		8/3/01	14	6.73	5.63
		8/4/01	15	4.80	8.10
		8/6/01	17	6.47	6.17
		8/7/01	18	8.43	6.93
		8/8/01	19	4.33	7.17
		8/9/01	20	6.17	7.17
		8/10/01	21	5.70	8.90
		8/11/01	22	6.33	9.83
		8/13/01	24	7.27	5.13
		8/14/01	25	5.80	7.10
		8/15/01	26	5.86	5.00
		8/16/01	27	1.67	2.93

All average Oxygen values are expressed as a percent

Wednesday, March 27, 2002

Average Daily Windrow WHC Summary Report

'ndrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
M207	7/20/01	7/24/01	4		53.92
		7/27/01	7		43.40
		7/31/01	11		52.52
		8/8/01	19		37.76
		8/11/01	22		47.22
		8/16/01	27		42.02

All average MWHC values are expressed in percent

Average Daily Windrow PH Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn*	*PRE-Turn*
M207	7/20/01	7/24/01	4	8.52	
		7/31/01	11	8.38	
		8/8/01	19	8.52	

All average PH values are expressed in standard units

Windrow Number: M207 *1,3,5-TRINITROBENZENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
135TNB	07/20/01	07/20/01	0	03	1		380 J	
					2		128 J	
					3		2520	
					Average Concentration for Cross Section 03 :			*1009*
135TNB	07/20/01	07/20/01	0	05	1		183 J	
					2		81.9 J	
					3	LT	476	
					Average Concentration for Cross Section 05 :			*247*
135TNB	07/20/01	07/20/01	0	07	1		815	
					2		306 J	
					3		123 J	
					Average Concentration for Cross Section 07 :			*415*
135TNB	07/20/01	07/20/01	0	09	1		303 J	
					2		705	
					3		297 J	
					Average Concentration for Cross Section 09 :			*435*
135TNB	07/20/01	07/20/01	0	11	1		824	
					2		369 J	
					3		288 J	
					Average Concentration for Cross Section 11 :			*494*

Average Concentration for Windrow on Day 0 : ***520***

Standard Deviation: ***602***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
135TNB	07/20/01	08/17/01	28	03	1	LT	454	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 03 :			*454*
135TNB	07/20/01	08/17/01	28	05	1	LT	500	
					2	LT	909	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*579*
135TNB	07/20/01	08/17/01	28	07	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*461*
135TNB	07/20/01	08/17/01	28	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
135TNB	07/20/01	08/17/01	28	11	1	LT	476	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 11 :			*469*

Average Concentration for Windrow on Day 28 : ***494***

Standard Deviation: ***112***

Windrow Number: M207 ***1,3,5-TRINITROBENZENE Results***

Percent Reduction of 135TNB: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M207 ***1,3-DINITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
13DNB	07/20/01	07/20/01	0	03	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*476*
13DNB	07/20/01	07/20/01	0	05	1	LT	476	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 05 :			*484*
13DNB	07/20/01	07/20/01	0	07	1	LT	454	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*485*
13DNB	07/20/01	07/20/01	0	09	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 09 :			*461*
13DNB	07/20/01	07/20/01	0	11	1	LT	454	
					2	LT	454	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*461*
					Average Concentration for Windrow on Day 0 :			***473***
					Standard Deviation:			***17***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
13DNB	07/20/01	08/17/01	28	03	1	LT	454	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 03 :			*454*
13DNB	07/20/01	08/17/01	28	05	1	LT	500	
					2	LT	454	
					2	LT	909	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*579*
13DNB	07/20/01	08/17/01	28	07	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*461*
13DNB	07/20/01	08/17/01	28	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
13DNB	07/20/01	08/17/01	28	11	1	LT	476	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 11 :			*469*
					Average Concentration for Windrow on Day 28 :			***494***
					Standard Deviation:			***112***

Windrow Number: M207 ***1,3-DINITROBENZENE Results***

Percent Reduction of 13DNB: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M207 — *2,4,6-TRINITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
246TNT	07/20/01	07/20/01	0	03	1	4850	
					2	3560	
					3	17400	
				Average Concentration for Cross Section 03 :			*8603*
246TNT	07/20/01	07/20/01	0	05	1	3720	
					2	2400	
					3	1180	
				Average Concentration for Cross Section 05 :			*2433*
246TNT	07/20/01	07/20/01	0	07	1	8490	
					2	4350	
					3	2290	
				Average Concentration for Cross Section 07 :			*5043*
246TNT	07/20/01	07/20/01	0	09	1	3160	
					2	8460	
					3	6120	
				Average Concentration for Cross Section 09 :			*5913*
246TNT	07/20/01	07/20/01	0	11	1	42900	
					2	7440	
					3	5330	
				Average Concentration for Cross Section 11 :			*18557*
				Average Concentration for Windrow on Day 0 :			***8110***
						Standard Deviation:	***10395***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
246TNT	07/20/01	08/17/01	28	03	1	LT	454	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section 03 :				*454*
246TNT	07/20/01	08/17/01	28	05	1	LT	500	
					2	LT	454	
					2	LT	909	
					3	LT	454	
				Average Concentration for Cross Section 05 :				*579*
246TNT	07/20/01	08/17/01	28	07	1	LT	476	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section 07 :				*461*
246TNT	07/20/01	08/17/01	28	09	1	LT	476	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section 09 :				*476*
246TNT	07/20/01	08/17/01	28	11	1	LT	476	
					2	LT	476	
					3	LT	454	
				Average Concentration for Cross Section 11 :				*469*
				Average Concentration for Windrow on Day 28 :				***494***
							Standard Deviation:	***112***

Windrow Number: M207

2,4,6-TRINITROTOLUENE Results

Percent Reduction of 246TNT: 93.51%

Windrow Number: M207 ***2,4-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
24DNT	07/20/01	07/20/01	0	03	1	LT	476	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section 03 :				*476*
24DNT	07/20/01	07/20/01	0	05	1	LT	476	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 05 :				*484*
24DNT	07/20/01	07/20/01	0	07	1	LT	454	
					2	LT	500	
					3	LT	500	
				Average Concentration for Cross Section 07 :				*485*
24DNT	07/20/01	07/20/01	0	09	1	LT	476	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section 09 :				*461*
24DNT	07/20/01	07/20/01	0	11	1	LT	454	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section 11 :				*461*
				Average Concentration for Windrow on Day 0 :				***473***
						Standard Deviation:		***17***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
24DNT	07/20/01	08/17/01	28	03	1	LT	454	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section 03 :				*454*
24DNT	07/20/01	08/17/01	28	05	1	LT	500	
					2	LT	454	
					2	LT	909	
					3	LT	454	
				Average Concentration for Cross Section 05 :				*579*
24DNT	07/20/01	08/17/01	28	07	1	LT	476	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section 07 :				*461*
24DNT	07/20/01	08/17/01	28	09	1	LT	476	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section 09 :				*476*
24DNT	07/20/01	08/17/01	28	11	1	LT	476	
					2	LT	476	
					3	LT	454	
				Average Concentration for Cross Section 11 :				*469*
				Average Concentration for Windrow on Day 28 :				***494***
						Standard Deviation:		***112***

Windrow Number: M207 ***2,4-DINITROTOLUENE Results***

Percent Reduction of 24DNT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M207 ***2,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
26DNT	07/20/01	07/20/01	0	03	1	LT	476
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 03 :		*476*
26DNT	07/20/01	07/20/01	0	05	1	LT	476
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 05 :		*484*
26DNT	07/20/01	07/20/01	0	07	1	LT	454
					2	LT	500
					3	LT	500
					Average Concentration for Cross Section 07 :		*485*
26DNT	07/20/01	07/20/01	0	09	1	LT	476
					2	LT	454
					3	LT	454
					Average Concentration for Cross Section 09 :		*461*
26DNT	07/20/01	07/20/01	0	11	1	LT	454
					2	LT	454
					3	LT	476
					Average Concentration for Cross Section 11 :		*461*

Average Concentration for Windrow on Day 0 : ***473***

Standard Deviation: ***17***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
26DNT	07/20/01	08/17/01	28	03	1	LT	454
					2	LT	454
					3	LT	454
					Average Concentration for Cross Section 03 :		*454*
26DNT	07/20/01	08/17/01	28	05	1	LT	500
					2	LT	454
					2	LT	909
					3	LT	454
					Average Concentration for Cross Section 05 :		*579*
26DNT	07/20/01	08/17/01	28	07	1	LT	476
					2	LT	454
					3	LT	454
					Average Concentration for Cross Section 07 :		*461*
26DNT	07/20/01	08/17/01	28	09	1	LT	476
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 09 :		*476*
26DNT	07/20/01	08/17/01	28	11	1	LT	476
					2	LT	476
					3	LT	454
					Average Concentration for Cross Section 11 :		*469*

Average Concentration for Windrow on Day 28 : ***494***

Standard Deviation: ***112***

Windrow Number: M207 ***2,6-DINITROTOLUENE Results***

Percent Reduction of 26DNT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M207 *2-AMINO-4,6-DINITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2A46DT	07/20/01	07/20/01	0	03	1	373 J	
					2	198 J	
					3	591	
				Average Concentration for Cross Section 03 :			*387*
2A46DT	07/20/01	07/20/01	0	05	1	198 J	
					2	178 J	
					3	83 J	
				Average Concentration for Cross Section 05 :			*153*
2A46DT	07/20/01	07/20/01	0	07	1	781	
					2	343 J	
					3	238 J	
				Average Concentration for Cross Section 07 :			*454*
2A46DT	07/20/01	07/20/01	0	09	1	214 J	
					2	472	
					3	432 J	
				Average Concentration for Cross Section 09 :			*373*
2A46DT	07/20/01	07/20/01	0	11	1	929	
					2	644	
					3	486	
				Average Concentration for Cross Section 11 :			*686*

Average Concentration for Windrow on Day 0 : ***411***

Standard Deviation: ***243***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2A46DT	07/20/01	08/17/01	28	03	1	LT 454	
					2	LT 454	
					3	LT 454	
				Average Concentration for Cross Section 03 :			*454*
2A46DT	07/20/01	08/17/01	28	05	1	LT 500	
					2	LT 454	
					2	LT 909	
					3	LT 454	
				Average Concentration for Cross Section 05 :			*579*
2A46DT	07/20/01	08/17/01	28	07	1	LT 476	
					2	LT 454	
					3	LT 454	
				Average Concentration for Cross Section 07 :			*461*
2A46DT	07/20/01	08/17/01	28	09	1	LT 476	
					2	LT 476	
					3	LT 476	
				Average Concentration for Cross Section 09 :			*476*
2A46DT	07/20/01	08/17/01	28	11	1	LT 476	
					2	LT 476	
					3	LT 454	
				Average Concentration for Cross Section 11 :			*469*

Average Concentration for Windrow on Day 28 : ***494***

Standard Deviation: ***112***

Windrow Number: M207 ***2-AMINO-4,6-DINITROTOLUENE Results***

Percent Reduction of 2A46DT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M207 *2-NITROTOLUENE Results*

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2NT	07/20/01	07/20/01	0	03	1	LT 476	
					2	LT 476	
					3	LT 476	
				Average Concentration for Cross Section 03 :			*476*
2NT	07/20/01	07/20/01	0	05	1	LT 476	
					2	LT 500	
					3	443 J	
				Average Concentration for Cross Section 05 :			*473*
2NT	07/20/01	07/20/01	0	07	1	128 J	
					2	LT 500	
					3	LT 500	
				Average Concentration for Cross Section 07 :			*376*
2NT	07/20/01	07/20/01	0	09	1	LT 476	
					2	LT 454	
					3	LT 454	
				Average Concentration for Cross Section 09 :			*461*
2NT	07/20/01	07/20/01	0	11	1	LT 454	
					2	LT 454	
					3	LT 476	
				Average Concentration for Cross Section 11 :			*461*
				Average Concentration for Windrow on Day 0 :			***450***
						Standard Deviation:	***91***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2NT	07/20/01	08/17/01	28	03	1	LT 454	
					2	LT 454	
					3	LT 454	
				Average Concentration for Cross Section 03 :			*454*
2NT	07/20/01	08/17/01	28	05	1	LT 500	
					2	LT 909	
					2	LT 454	
					3	LT 454	
				Average Concentration for Cross Section 05 :			*579*
2NT	07/20/01	08/17/01	28	07	1	LT 476	
					2	LT 454	
					3	LT 454	
				Average Concentration for Cross Section 07 :			*461*
2NT	07/20/01	08/17/01	28	09	1	LT 476	
					2	LT 476	
					3	LT 476	
				Average Concentration for Cross Section 09 :			*476*
2NT	07/20/01	08/17/01	28	11	1	LT 476	
					2	LT 476	
					3	LT 454	
				Average Concentration for Cross Section 11 :			*469*
				Average Concentration for Windrow on Day 28 :			***494***
						Standard Deviation:	***112***

Windrow Number: M207 ***2-NITROTOLUENE Results***

Percent Reduction of 2NT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M207 ***3-NITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
3NT	07/20/01	07/20/01	0	03	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*476*
3NT	07/20/01	07/20/01	0	05	1	LT	476	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 05 :			*484*
3NT	07/20/01	07/20/01	0	07	1	LT	454	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*485*
3NT	07/20/01	07/20/01	0	09	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 09 :			*461*
3NT	07/20/01	07/20/01	0	11	1	LT	454	
					2	LT	454	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*461*

Average Concentration for Windrow on Day 0 : ***473***

Standard Deviation: ***17***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
3NT	07/20/01	08/17/01	28	03	1	LT	454	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 03 :			*454*
3NT	07/20/01	08/17/01	28	05	1	LT	500	
					2	LT	909	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*579*
3NT	07/20/01	08/17/01	28	07	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*461*
3NT	07/20/01	08/17/01	28	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
3NT	07/20/01	08/17/01	28	11	1	LT	476	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 11 :			*469*

Average Concentration for Windrow on Day 28 : ***494***

Standard Deviation: ***112***

Windrow Number: M207 ***3-NITROTOLUENE Results***

Percent Reduction of 3NT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M207 ***4-AMINO-2,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4A26DT	07/20/01	07/20/01	0	03	1	2120	
					2	978	
					3	1580	
				Average Concentration for Cross Section 03 :			*1559*
4A26DT	07/20/01	07/20/01	0	05	1	1080	
					2	1040	
					3	711	
				Average Concentration for Cross Section 05 :			*944*
4A26DT	07/20/01	07/20/01	0	07	1	1750	
					2	1620	
					3	1010	
				Average Concentration for Cross Section 07 :			*1460*
4A26DT	07/20/01	07/20/01	0	09	1	1300	
					2	2330	
					3	1870	
				Average Concentration for Cross Section 09 :			*1833*
4A26DT	07/20/01	07/20/01	0	11	1	2060	
					2	2150	
					3	1770	
				Average Concentration for Cross Section 11 :			*1993*
				Average Concentration for Windrow on Day 0 :			***1558***
						Standard Deviation:	***508***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4A26DT	07/20/01	08/17/01	28	03	1	LT 454	
					2	LT 454	
					3	LT 454	
				Average Concentration for Cross Section 03 :			*454*
4A26DT	07/20/01	08/17/01	28	05	1	LT 500	
					2	LT 454	
					2	LT 909	
					3	LT 454	
				Average Concentration for Cross Section 05 :			*579*
4A26DT	07/20/01	08/17/01	28	07	1	LT 476	
					2	LT 454	
					3	LT 454	
				Average Concentration for Cross Section 07 :			*461*
4A26DT	07/20/01	08/17/01	28	09	1	LT 476	
					2	LT 476	
					3	LT 476	
				Average Concentration for Cross Section 09 :			*476*
4A26DT	07/20/01	08/17/01	28	11	1	LT 476	
					2	LT 476	
					3	LT 454	
				Average Concentration for Cross Section 11 :			*469*
				Average Concentration for Windrow on Day 28 :			***494***
						Standard Deviation:	***112***

Windrow Number: M207

4-AMINO-2,6-DINITROTOLUENE Results

Percent Reduction of 4A26DT: 66.21%

Windrow Number: M207 **4-NITROTOLUENE Results**

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
4NT	07/20/01	07/20/01	0	03	1	LT	476	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section 03 :				476
4NT	07/20/01	07/20/01	0	05	1	LT	476	
					2	LT	500	
					3		131 J	
				Average Concentration for Cross Section 05 :				369
4NT	07/20/01	07/20/01	0	07	1		94.9 J	
					2	LT	500	
					3		207 J	
				Average Concentration for Cross Section 07 :				267
4NT	07/20/01	07/20/01	0	09	1	LT	476	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section 09 :				461
4NT	07/20/01	07/20/01	0	11	1	LT	454	
					2	LT	454	
					3	LT	476	
				Average Concentration for Cross Section 11 :				461
				Average Concentration for Windrow on Day 0 :				407
				Standard Deviation:				138

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
4NT	07/20/01	08/17/01	28	03	1	LT	454	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section 03 :				454
4NT	07/20/01	08/17/01	28	05	1	LT	500	
					2	LT	454	
					2	LT	909	
					3	LT	454	
				Average Concentration for Cross Section 05 :				579
4NT	07/20/01	08/17/01	28	07	1	LT	476	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section 07 :				461
4NT	07/20/01	08/17/01	28	09	1	LT	476	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section 09 :				476
4NT	07/20/01	08/17/01	28	11	1	LT	476	
					2	LT	476	
					3	LT	454	
				Average Concentration for Cross Section 11 :				469
				Average Concentration for Windrow on Day 28 :				494
				Standard Deviation:				112

Windrow Number: M207 ***4-NITROTOLUENE Results***

Percent Reduction of 4NT: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M207 ***HMX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
HMX	07/20/01	07/20/01	0	03	1	419000	
					2	136000	
					3	539000	
				Average Concentration for Cross Section 03 :			*364667*
HMX	07/20/01	07/20/01	0	05	1	306000	
					2	201000	
					3	123000	
				Average Concentration for Cross Section 05 :			*210000*
HMX	07/20/01	07/20/01	0	07	1	498000	
					2	416000	
					3	224000	
				Average Concentration for Cross Section 07 :			*379333*
HMX	07/20/01	07/20/01	0	09	1	383000	
					2	641000	
					3	416000	
				Average Concentration for Cross Section 09 :			*480000*
HMX	07/20/01	07/20/01	0	11	1	588000	
					2	466000	
					3	478000	
				Average Concentration for Cross Section 11 :			*510667*

Average Concentration for Windrow on Day 0 : 388933

Standard Deviation: 159900

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
HMX	07/20/01	08/17/01	28	03	1	553	
					2	2450	
					3	2210	
				Average Concentration for Cross Section 03 :			*1738*
HMX	07/20/01	08/17/01	28	05	1	2060	
					2	15400	
					2	14900	
					3	2620	
				Average Concentration for Cross Section 05 :			*8745*
HMX	07/20/01	08/17/01	28	07	1	208 J	
					2	7050	
					3	6400	
				Average Concentration for Cross Section 07 :			*4553*
HMX	07/20/01	08/17/01	28	09	1	119 J	
					2	9180	
					3	966	
				Average Concentration for Cross Section 09 :			*3422*
HMX	07/20/01	08/17/01	28	11	1	157 J	
					2	7170	
					3	4810	
				Average Concentration for Cross Section 11 :			*4046*

Average Concentration for Windrow on Day 28 : 4766

Standard Deviation: 4957

Windrow Number: M207 ***HMX Results***

Percent Reduction of HMX: 98.69%

Windrow Number: M207 ***NITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
NB	07/20/01	07/20/01	0	03	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*476*
NB	07/20/01	07/20/01	0	05	1	LT	476	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 05 :			*484*
NB	07/20/01	07/20/01	0	07	1	LT	454	
					2	LT	500	
					3	LT	500	
					Average Concentration for Cross Section 07 :			*485*
NB	07/20/01	07/20/01	0	09	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 09 :			*461*
NB	07/20/01	07/20/01	0	11	1	LT	454	
					2	LT	454	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*461*
					Average Concentration for Windrow on Day 0 :			***473***
					Standard Deviation:			***17***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
NB	07/20/01	08/17/01	28	03	1	LT	454	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 03 :			*454*
NB	07/20/01	08/17/01	28	05	1	LT	500	
					2	LT	909	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*579*
NB	07/20/01	08/17/01	28	07	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*461*
NB	07/20/01	08/17/01	28	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
NB	07/20/01	08/17/01	28	11	1	LT	476	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 11 :			*469*
					Average Concentration for Windrow on Day 28 :			***494***
					Standard Deviation:			***112***

Windrow Number: M207 ***NITROBENZENE Results***

Percent Reduction of NB: Not Applicable; Sample Results Below Reporting Limit

Windrow Number: M207 ***RDX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
RDX	07/20/01	07/20/01	0	03	1	59600	
					2	19300	
					3	63000	
				Average Concentration for Cross Section 03 :			*47300*
RDX	07/20/01	07/20/01	0	05	1	57900	
					2	40600	
					3	22100	
				Average Concentration for Cross Section 05 :			*40200*
RDX	07/20/01	07/20/01	0	07	1	81800	
					2	109000	
					3	31600	
				Average Concentration for Cross Section 07 :			*74133*
RDX	07/20/01	07/20/01	0	09	1	58800	
					2	93400	
					3	66900	
				Average Concentration for Cross Section 09 :			*73033*
RDX	07/20/01	07/20/01	0	11	1	57900	
					2	77200	
					3	87400	
				Average Concentration for Cross Section 11 :			*74167*

Average Concentration for Windrow on Day 0 : ***61767***

Standard Deviation: ***25821***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
RDX	07/20/01	08/17/01	28	03	1	LT 454	
					2	LT 454	
					3	LT 454	
				Average Concentration for Cross Section 03 :			*454*
RDX	07/20/01	08/17/01	28	05	1	LT 500	
					2	LT 454	
					2	LT 909	
					3	372 J	
				Average Concentration for Cross Section 05 :			*559*
RDX	07/20/01	08/17/01	28	07	1	109 J	
					2	LT 454	
					3	LT 454	
				Average Concentration for Cross Section 07 :			*339*
RDX	07/20/01	08/17/01	28	09	1	LT 476	
					2	LT 476	
					3	LT 476	
				Average Concentration for Cross Section 09 :			*476*
RDX	07/20/01	08/17/01	28	11	1	LT 476	
					2	LT 476	
					3	LT 454	
				Average Concentration for Cross Section 11 :			*469*

Average Concentration for Windrow on Day 28 : ***466***

Standard Deviation: ***149***

Windrow Number: M207 ***RDX Results***

Percent Reduction of RDX: 99.20%

Windrow Number: M207 ***TETRYL Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
TETRYL	07/20/01	07/20/01	0	03	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 03 :			*476*
TETRYL	07/20/01	07/20/01	0	05	1	LT	476
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 05 :			*484*
TETRYL	07/20/01	07/20/01	0	07	1	LT	454
					2	LT	500
					3	LT	500
				Average Concentration for Cross Section 07 :			*485*
TETRYL	07/20/01	07/20/01	0	09	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 09 :			*461*
TETRYL	07/20/01	07/20/01	0	11	1	LT	454
					2	LT	454
					3	LT	476
				Average Concentration for Cross Section 11 :			*461*

Average Concentration for Windrow on Day 0 : ***473***

Standard Deviation: ***17***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
TETRYL	07/20/01	08/17/01	28	03	1	LT	454
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 03 :			*454*
TETRYL	07/20/01	08/17/01	28	05	1	LT	500
					2	LT	454
					2	LT	909
					3	LT	454
				Average Concentration for Cross Section 05 :			*579*
TETRYL	07/20/01	08/17/01	28	07	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 07 :			*461*
TETRYL	07/20/01	08/17/01	28	09	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 09 :			*476*
TETRYL	07/20/01	08/17/01	28	11	1	LT	476
					2	LT	476
					3	LT	454
				Average Concentration for Cross Section 11 :			*469*

Average Concentration for Windrow on Day 28 : ***494***

Standard Deviation: ***112***

Windrow Number: M207 ***TETRYL Results***

Percent Reduction of TETRYL: Not Applicable; Sample Results Below Reporting Limit

RECORD OF RECIPE (MIX NO. 7B)

Building # 5 Windrow # 208 PERFORMED BY: _____

DATE: 7/25/01 INSPECTED BY: _____

Design Quantity: Chicken Manure 3 CY 5700 Pounds
Straw 12 CY 2400 Pounds
Soil _____ CY _____ Pounds

Batch Number	CHICKEN MANURE Supplier: _____		STRAW Supplier: _____		SOIL Location: _____		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
1	3.10	5750	12.15	2540				
2	3.10	5790	12	2400				
3	3.10	5770	12.15	2570				
4	3	5200	12.10	2450				
5	3.10	5760	12.15	2580				
6	3.10	5790	12.15	2500				
7	3.10	5750	12.10	2450				
8	3	5,700	12	2,400				
9	3.10	5,760	12.5	2,600				
10	3	5,700	12	2,400				
11	3	5,750	12.25	2,500				
12	3.05	5,775	12.15	2,450				
13	3.05	5,790	12	2,400				
14	3.05	5,780	12.75	2,590				
15	3	5,760	12	2,400				
16	3	5,770	12	2,450				
17	3	5,750	12.25	2,500				
18								
19								
Total								

Comments:

RECORD OF RECIPE (MIX NO. 7B)

Building # 3 Windrow # 208 PERFORMED BY: _____

DATE: 7.25.01 INSPECTED BY: _____

Design Quantity: Chicken Manure 5700 CY _____ Pounds
Straw _____ CY 2400 Pounds
Soil _____ CY _____ Pounds

Batch Number	CHICKEN MANURE Supplier: 5700		STRAW Supplier: 2400		SOIL Location:		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
1 18	5920	360	1215	2490				
2 19	5840	340	1225	2510				
3 20	5740	3	13.25	3130				
4 21	5840	340	12	2380				
5 22	5910	3	1250	2620				
6 23	5890	375	12	2330				
7 24	5950	3	1250	2650				
8 25	375	5900	12	2400				
9 26	390	6000	1250	2600				
10 27	40	6200	12	2400				
12 28	410	6400	1295	2800				
13 29	325	5900	1275	2800				
14 30	325	5800	1275	2800				
15 31	3	5700	1280	2700				
16 32	350	5800	1250	2600				
17 33	400	6300	12	2400				
18 34	350	5900	1225	2500				
19 35	3	5700	12.0	2400				
Total								

Comments:

Average Daily Windrow Temperature Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (Deg C)*	*POST-Turn (Deg C)*
8	7/26/01	7/26/01	0		40.63
		7/27/01	1	57.17	56.10
		7/28/01	2	65.30	60.00
		7/30/01	4	68.70	64.17
		7/31/01	5	70.23	65.40
		8/1/01	6	69.67	66.57
		8/2/01	7	69.30	66.90
		8/3/01	8	70.03	67.03
		8/4/01	9	69.73	64.77
		8/6/01	11	67.80	62.10
		8/7/01	12	68.27	66.23
		8/8/01	13	68.00	66.23
		8/9/01	14	67.27	65.77
		8/10/01	15	66.50	62.80
		8/11/01	16	63.50	58.50
		8/13/01	18	66.37	65.77
		8/14/01	19	63.80	60.40
		8/15/01	20	60.77	58.90
		8/16/01	21	64.33	63.93
		8/17/01	22	64.33	63.83
		8/18/01	23	62.97	58.63
		8/20/01	25	61.67	55.57
		8/21/01	26	64.30	65.93
		8/22/01	27	57.80	53.90

All average temperatures are in degrees centigrade

Average Daily Windrow Oxygen Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
S208	7/26/01	7/26/01	0		9.86
		7/27/01	1	9.50	2.97
		7/28/01	2	6.80	9.83
		7/30/01	4	9.97	11.50
		7/31/01	5	7.63	5.73
		8/1/01	6	7.70	5.30
		8/2/01	7	7.70	5.63
		8/3/01	8	7.07	5.27
		8/4/01	9	7.63	9.53
		8/6/01	11	8.13	7.20
		8/7/01	12	8.62	7.53
		8/8/01	13	7.23	7.27
		8/9/01	14	7.80	7.13
		8/10/01	15	7.93	9.07
		8/11/01	16	12.27	15.00
		8/13/01	18	7.20	6.17
		8/14/01	19	4.10	8.10
		8/15/01	20	3.60	2.63
		8/16/01	21	4.57	3.53
		8/17/01	22	4.63	4.53
		8/18/01	23	6.33	8.27
		8/20/01	25	9.13	8.90
		8/21/01	26	6.57	9.30
		8/22/01	27	6.23	6.48

All average Oxygen values are expressed as a percent

Wednesday, March 27, 2002

Average Daily Windrow WHC Summary Report

ndrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
S208	7/26/01	7/26/01	0		60.84
		7/27/01	1		52.86
		7/31/01	5		46.80
		8/8/01	13		40.92
		8/14/01	19		38.20

All average MWHC values are expressed in percent

Average Daily Windrow PH Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn*	*PRE-Turn*
S208	7/26/01	7/31/01	5	8.82	
		8/8/01	13	8.44	
		8/14/01	19	8.66	

All average PH values are expressed in standard units

Wednesday, March 27, 2002

Windrow Number: S208 ***1,3,5-TRINITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
135TNB	07/26/01	07/30/01	4	03	1	LT	454	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 03 :				*477*
135TNB	07/26/01	07/30/01	4	05	1	LT	476	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section 05 :				*461*
135TNB	07/26/01	07/30/01	4	07	1	LT	500	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section 07 :				*484*
135TNB	07/26/01	07/30/01	4	09	1	LT	476	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section 09 :				*476*
135TNB	07/26/01	07/30/01	4	11	1	LT	454	
					2	LT	476	
					3	LT	476	
				Average Concentration for Cross Section 11 :				*469*
				Average Concentration for Windrow on Day 4 :				***473***
						Standard Deviation:		***15***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
135TNB	07/26/01	08/22/01	27	03	1	LT	476	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 03 :				*484*
135TNB	07/26/01	08/22/01	27	05	1	LT	476	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section 05 :				*461*
135TNB	07/26/01	08/22/01	27	07	1	LT	454	
					2	LT	454	
					3	LT	454	
				Average Concentration for Cross Section 07 :				*454*
135TNB	07/26/01	08/22/01	27	09	1	LT	454	
					2	LT	500	
					3	LT	476	
				Average Concentration for Cross Section 09 :				*477*
135TNB	07/26/01	08/22/01	27	11	1	LT	500	
					2	LT	476	
					3	LT	454	
				Average Concentration for Cross Section 11 :				*477*
				Average Concentration for Windrow on Day 27 :				***471***
						Standard Deviation:		***18***

Percent Reduction of 135TNB: 0.59%

Windrow Number: S208 ***1,3-DINITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
13DNB	07/26/01	07/30/01	4	03	1	LT	454	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*477*
13DNB	07/26/01	07/30/01	4	05	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*461*
13DNB	07/26/01	07/30/01	4	07	1	LT	500	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 07 :			*484*
13DNB	07/26/01	07/30/01	4	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
13DNB	07/26/01	07/30/01	4	11	1	LT	454	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*469*

Average Concentration for Windrow on Day 4 : ***473***

Standard Deviation: ***15***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
13DNB	07/26/01	08/22/01	27	03	1	LT	476	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*484*
13DNB	07/26/01	08/22/01	27	05	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*461*
13DNB	07/26/01	08/22/01	27	07	1	LT	454	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*454*
13DNB	07/26/01	08/22/01	27	09	1	LT	454	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*477*
13DNB	07/26/01	08/22/01	27	11	1	LT	500	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 11 :			*477*

Average Concentration for Windrow on Day 27 : ***471***

Standard Deviation: ***18***

Percent Reduction of 13DNB: 0.59%

Windrow Number: S208 ***2,4,6-TRINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
246TNT	07/26/01	07/30/01	4	03	1		947	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*641*
246TNT	07/26/01	07/30/01	4	05	1		711	
					2		316 J	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*494*
246TNT	07/26/01	07/30/01	4	07	1	LT	500	
					2	LT	476	
					3		149 J	
					Average Concentration for Cross Section 07 :			*375*
246TNT	07/26/01	07/30/01	4	09	1	LT	476	
					2	LT	476	
					3		140 J	
					Average Concentration for Cross Section 09 :			*364*
246TNT	07/26/01	07/30/01	4	11	1		836	
					2	LT	476	
					3		1150	
					Average Concentration for Cross Section 11 :			*821*
					Average Concentration for Windrow on Day 4 :			***539***
					Standard Deviation:			***274***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
246TNT	07/26/01	08/22/01	27	03	1	LT	476	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*484*
246TNT	07/26/01	08/22/01	27	05	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*461*
246TNT	07/26/01	08/22/01	27	07	1	LT	454	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*454*
246TNT	07/26/01	08/22/01	27	09	1	LT	454	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*477*
246TNT	07/26/01	08/22/01	27	11	1	LT	500	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 11 :			*477*
					Average Concentration for Windrow on Day 27 :			***471***
					Standard Deviation:			***18***

Percent Reduction of 246TNT: 12.68%

Windrow Number: S208 ***2,4-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
24DNT	07/26/01	07/30/01	4	03	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*477*
24DNT	07/26/01	07/30/01	4	05	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 05 :			*461*
24DNT	07/26/01	07/30/01	4	07	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
24DNT	07/26/01	07/30/01	4	09	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 09 :			*476*
24DNT	07/26/01	07/30/01	4	11	1	LT	454
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*469*

Average Concentration for Windrow on Day 4 : ***473***

Standard Deviation: ***15***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
24DNT	07/26/01	08/22/01	27	03	1	LT	476
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*484*
24DNT	07/26/01	08/22/01	27	05	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 05 :			*461*
24DNT	07/26/01	08/22/01	27	07	1	LT	454
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 07 :			*454*
24DNT	07/26/01	08/22/01	27	09	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 09 :			*477*
24DNT	07/26/01	08/22/01	27	11	1	LT	500
					2	LT	476
					3	LT	454
				Average Concentration for Cross Section 11 :			*477*

Average Concentration for Windrow on Day 27 : ***471***

Standard Deviation: ***18***

Percent Reduction of 24DNT: 0.59%

Windrow Number: S208 ***2,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
26DNT	07/26/01	07/30/01	4	03	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*477*
26DNT	07/26/01	07/30/01	4	05	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 05 :			*461*
26DNT	07/26/01	07/30/01	4	07	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
26DNT	07/26/01	07/30/01	4	09	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 09 :			*476*
26DNT	07/26/01	07/30/01	4	11	1	LT	454
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*469*

Average Concentration for Windrow on Day 4 : ***473***

Standard Deviation: ***15***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
26DNT	07/26/01	08/22/01	27	03	1	LT	476
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*484*
26DNT	07/26/01	08/22/01	27	05	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 05 :			*461*
26DNT	07/26/01	08/22/01	27	07	1	LT	454
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 07 :			*454*
26DNT	07/26/01	08/22/01	27	09	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 09 :			*477*
26DNT	07/26/01	08/22/01	27	11	1	LT	500
					2	LT	476
					3	LT	454
				Average Concentration for Cross Section 11 :			*477*

Average Concentration for Windrow on Day 27 : ***471***

Standard Deviation: ***18***

Percent Reduction of 26DNT: 0.59%

Windrow Number: S208 ***2-AMINO-4,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2A46DT	07/26/01	07/30/01	4	03	1	LT	454
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 03 :		*477*
2A46DT	07/26/01	07/30/01	4	05	1	LT	476
					2	LT	454
					3	LT	454
					Average Concentration for Cross Section 05 :		*461*
2A46DT	07/26/01	07/30/01	4	07	1	LT	500
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 07 :		*484*
2A46DT	07/26/01	07/30/01	4	09	1	LT	476
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 09 :		*476*
2A46DT	07/26/01	07/30/01	4	11	1	LT	454
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 11 :		*469*

Average Concentration for Windrow on Day 4 : ***473***

Standard Deviation: ***15***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2A46DT	07/26/01	08/22/01	27	03	1	LT	476
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 03 :		*484*
2A46DT	07/26/01	08/22/01	27	05	1	LT	476
					2	LT	454
					3	LT	454
					Average Concentration for Cross Section 05 :		*461*
2A46DT	07/26/01	08/22/01	27	07	1	LT	454
					2	LT	454
					3	LT	454
					Average Concentration for Cross Section 07 :		*454*
2A46DT	07/26/01	08/22/01	27	09	1	LT	454
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 09 :		*477*
2A46DT	07/26/01	08/22/01	27	11	1	LT	500
					2	LT	476
					3	LT	454
					Average Concentration for Cross Section 11 :		*477*

Average Concentration for Windrow on Day 27 : ***471***

Standard Deviation: ***18***

Percent Reduction of 2A46DT: 0.59%

Windrow Number: S208 **2-NITROTOLUENE Results**

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2NT	07/26/01	07/30/01	4	03	1	LT	454
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 03 :		*477*
2NT	07/26/01	07/30/01	4	05	1	LT	476
					2	LT	454
					3	LT	454
					Average Concentration for Cross Section 05 :		*461*
2NT	07/26/01	07/30/01	4	07	1	LT	500
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 07 :		*484*
2NT	07/26/01	07/30/01	4	09	1	LT	476
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 09 :		*476*
2NT	07/26/01	07/30/01	4	11	1	LT	454
					2	LT	476
					3	LT	476
					Average Concentration for Cross Section 11 :		*469*

Average Concentration for Windrow on Day 4 : ***473***

Standard Deviation: ***15***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
2NT	07/26/01	08/22/01	27	03	1	LT	476
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 03 :		*484*
2NT	07/26/01	08/22/01	27	05	1	LT	476
					2	LT	454
					3	LT	454
					Average Concentration for Cross Section 05 :		*461*
2NT	07/26/01	08/22/01	27	07	1	LT	454
					2	LT	454
					3	LT	454
					Average Concentration for Cross Section 07 :		*454*
2NT	07/26/01	08/22/01	27	09	1	LT	454
					2	LT	500
					3	LT	476
					Average Concentration for Cross Section 09 :		*477*
2NT	07/26/01	08/22/01	27	11	1	LT	500
					2	LT	476
					3	LT	454
					Average Concentration for Cross Section 11 :		*477*

Average Concentration for Windrow on Day 27 : ***471***

Standard Deviation: ***18***

Percent Reduction of 2NT: 0.59%

Windrow Number: S208 ***3-NITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
3NT	07/26/01	07/30/01	4	03	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*477*
3NT	07/26/01	07/30/01	4	05	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 05 :			*461*
3NT	07/26/01	07/30/01	4	07	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
3NT	07/26/01	07/30/01	4	09	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 09 :			*476*
3NT	07/26/01	07/30/01	4	11	1	LT	454
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*469*
				Average Concentration for Windrow on Day 4 :			***473***
						Standard Deviation:	***15***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
3NT	07/26/01	08/22/01	27	03	1	LT	476
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*484*
3NT	07/26/01	08/22/01	27	05	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 05 :			*461*
3NT	07/26/01	08/22/01	27	07	1	LT	454
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 07 :			*454*
3NT	07/26/01	08/22/01	27	09	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 09 :			*477*
3NT	07/26/01	08/22/01	27	11	1	LT	500
					2	LT	476
					3	LT	454
				Average Concentration for Cross Section 11 :			*477*
				Average Concentration for Windrow on Day 27 :			***471***
						Standard Deviation:	***18***

Percent Reduction of 3NT: 0.59%

Windrow Number: S208 ***4-AMINO-2,6-DINITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4A26DT	07/26/01	07/30/01	4	03	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*477*
4A26DT	07/26/01	07/30/01	4	05	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 05 :			*461*
4A26DT	07/26/01	07/30/01	4	07	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
4A26DT	07/26/01	07/30/01	4	09	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 09 :			*476*
4A26DT	07/26/01	07/30/01	4	11	1	LT	454
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*469*

Average Concentration for Windrow on Day 4 : ***473***

Standard Deviation: ***15***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
4A26DT	07/26/01	08/22/01	27	03	1	LT	476
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*484*
4A26DT	07/26/01	08/22/01	27	05	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 05 :			*461*
4A26DT	07/26/01	08/22/01	27	07	1	LT	454
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 07 :			*454*
4A26DT	07/26/01	08/22/01	27	09	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 09 :			*477*
4A26DT	07/26/01	08/22/01	27	11	1	LT	500
					2	LT	476
					3	LT	454
				Average Concentration for Cross Section 11 :			*477*

Average Concentration for Windrow on Day 27 : ***471***

Standard Deviation: ***18***

Percent Reduction of 4A26DT: 0.59%

Windrow Number: S208 ***4-NITROTOLUENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
4NT	07/26/01	07/30/01	4	03	1	LT	454	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*477*
4NT	07/26/01	07/30/01	4	05	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*461*
4NT	07/26/01	07/30/01	4	07	1	LT	500	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 07 :			*484*
4NT	07/26/01	07/30/01	4	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
4NT	07/26/01	07/30/01	4	11	1	LT	454	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*469*
					Average Concentration for Windrow on Day 4 :			***473***
					Standard Deviation:			***15***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
4NT	07/26/01	08/22/01	27	03	1	LT	476	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*484*
4NT	07/26/01	08/22/01	27	05	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*461*
4NT	07/26/01	08/22/01	27	07	1	LT	454	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*454*
4NT	07/26/01	08/22/01	27	09	1	LT	454	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*477*
4NT	07/26/01	08/22/01	27	11	1	LT	500	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 11 :			*477*
					Average Concentration for Windrow on Day 27 :			***471***
					Standard Deviation:			***18***

Percent Reduction of 4NT: 0.59%

Windrow Number: S208 ***HMX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
HMX	07/26/01	07/30/01	4	03	1	87100	
					2	50700	
					3	90600	
					Average Concentration for Cross Section 03 :		*76133*
HMX	07/26/01	07/30/01	4	05	1	54700	
					2	91400	
					3	68000	
					Average Concentration for Cross Section 05 :		*71367*
HMX	07/26/01	07/30/01	4	07	1	30800	
					2	19100	
					3	75400	
					Average Concentration for Cross Section 07 :		*41767*
HMX	07/26/01	07/30/01	4	09	1	71400	
					2	54600	
					3	84000	
					Average Concentration for Cross Section 09 :		*70000*
HMX	07/26/01	07/30/01	4	11	1	245000	
					2	84000	
					3	78300	
					Average Concentration for Cross Section 11 :		*135767*

Average Concentration for Windrow on Day 4 : ***79007***

Standard Deviation: ***50745***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
HMX	07/26/01	08/22/01	27	03	1	10100	
					2	8430	
					3	3950	
					Average Concentration for Cross Section 03 :		*7493*
HMX	07/26/01	08/22/01	27	05	1	1940	
					2	4300	
					3	2380	
					Average Concentration for Cross Section 05 :		*2873*
HMX	07/26/01	08/22/01	27	07	1	280 J	
					2	4590	
					3	951	
					Average Concentration for Cross Section 07 :		*1940*
HMX	07/26/01	08/22/01	27	09	1	199 J	
					2	1130	
					3	773	
					Average Concentration for Cross Section 09 :		*701*
HMX	07/26/01	08/22/01	27	11	1	62.8 J	
					2	1710	
					3	2030	
					Average Concentration for Cross Section 11 :		*1268*

Average Concentration for Windrow on Day 27 : ***2855***

Standard Deviation: ***2992***

Percent Reduction of HMX: 96.39%

Windrow Number: S208 ***NITROBENZENE Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
NB	07/26/01	07/30/01	4	03	1	LT	454	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*477*
NB	07/26/01	07/30/01	4	05	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*461*
NB	07/26/01	07/30/01	4	07	1	LT	500	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 07 :			*484*
NB	07/26/01	07/30/01	4	09	1	LT	476	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*476*
NB	07/26/01	07/30/01	4	11	1	LT	454	
					2	LT	476	
					3	LT	476	
					Average Concentration for Cross Section 11 :			*469*
					Average Concentration for Windrow on Day 4 :			***473***
							Standard Deviation:	***15***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration		UGKG
NB	07/26/01	08/22/01	27	03	1	LT	476	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 03 :			*484*
NB	07/26/01	08/22/01	27	05	1	LT	476	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 05 :			*461*
NB	07/26/01	08/22/01	27	07	1	LT	454	
					2	LT	454	
					3	LT	454	
					Average Concentration for Cross Section 07 :			*454*
NB	07/26/01	08/22/01	27	09	1	LT	454	
					2	LT	500	
					3	LT	476	
					Average Concentration for Cross Section 09 :			*477*
NB	07/26/01	08/22/01	27	11	1	LT	500	
					2	LT	476	
					3	LT	454	
					Average Concentration for Cross Section 11 :			*477*
					Average Concentration for Windrow on Day 27 :			***471***
							Standard Deviation:	***18***

Percent Reduction of NB: 0.59%

Windrow Number: S208 ***RDX Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
RDX	07/26/01	07/30/01	4	03	1	56200	
					2	19300	
					3	30700	
					Average Concentration for Cross Section 03 :		*35400*
RDX	07/26/01	07/30/01	4	05	1	27500	
					2	27600	
					3	13800	
					Average Concentration for Cross Section 05 :		*22967*
RDX	07/26/01	07/30/01	4	07	1	16500	
					2	11100	
					3	14200	
					Average Concentration for Cross Section 07 :		*13933*
RDX	07/26/01	07/30/01	4	09	1	12400	
					2	5170	
					3	9040	
					Average Concentration for Cross Section 09 :		*8870*
RDX	07/26/01	07/30/01	4	11	1	49800	
					2	13200	
					3	10000	
					Average Concentration for Cross Section 11 :		*24333*

Average Concentration for Windrow on Day 4 : 21101

Standard Deviation: 14921

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
RDX	07/26/01	08/22/01	27	03	1	LT 476	
					2	LT 500	
					3	LT 476	
					Average Concentration for Cross Section 03 :		*484*
RDX	07/26/01	08/22/01	27	05	1	LT 476	
					2	LT 454	
					3	446 J	
					Average Concentration for Cross Section 05 :		*459*
RDX	07/26/01	08/22/01	27	07	1	LT 454	
					2	LT 454	
					3	LT 454	
					Average Concentration for Cross Section 07 :		*454*
RDX	07/26/01	08/22/01	27	09	1	LT 454	
					2	LT 500	
					3	LT 476	
					Average Concentration for Cross Section 09 :		*477*
RDX	07/26/01	08/22/01	27	11	1	LT 500	
					2	336 J	
					3	LT 454	
					Average Concentration for Cross Section 11 :		*430*

Average Concentration for Windrow on Day 27 : 461

Standard Deviation: 39

Percent Reduction of RDX: 97.82%

Windrow Number: S208 ***TETRYL Results***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
TETRYL	07/26/01	07/30/01	4	03	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*477*
TETRYL	07/26/01	07/30/01	4	05	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 05 :			*461*
TETRYL	07/26/01	07/30/01	4	07	1	LT	500
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 07 :			*484*
TETRYL	07/26/01	07/30/01	4	09	1	LT	476
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 09 :			*476*
TETRYL	07/26/01	07/30/01	4	11	1	LT	454
					2	LT	476
					3	LT	476
				Average Concentration for Cross Section 11 :			*469*

Average Concentration for Windrow on Day 4 : ***473***

Standard Deviation: ***15***

Compound	Construction Date	Date Sampled	DaysOld	CrossSection	Location	Concentration	UGKG
TETRYL	07/26/01	08/22/01	27	03	1	LT	476
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 03 :			*484*
TETRYL	07/26/01	08/22/01	27	05	1	LT	476
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 05 :			*461*
TETRYL	07/26/01	08/22/01	27	07	1	LT	454
					2	LT	454
					3	LT	454
				Average Concentration for Cross Section 07 :			*454*
TETRYL	07/26/01	08/22/01	27	09	1	LT	454
					2	LT	500
					3	LT	476
				Average Concentration for Cross Section 09 :			*477*
TETRYL	07/26/01	08/22/01	27	11	1	LT	500
					2	LT	476
					3	LT	454
				Average Concentration for Cross Section 11 :			*477*

Average Concentration for Windrow on Day 27 : ***471***

Standard Deviation: ***18***

Percent Reduction of TETRYL: 0.59%

RECORD OF RECIPE (MIX NO. 7B)

Building # _____ Windrow # Controlled RKI PERFORMED BY: HAUSER

DATE: 8/10/01 INSPECTED BY: _____

esign Quantity: Chicken Manure _____ CY 5700 Pounds
Straw _____ CY 2400 Pounds
Soil _____ CY _____ Pounds

Batch Number	CHICKEN MANURE Supplier: _____		STRAW Supplier: _____		SOIL Location: _____		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
#1	3.2	5810	12.2	2460				
#2	3.1	5790	12.2	2420				
Total								

Comments: _____

Average Daily Windrow Temperature Summary Report

Windrow Number	Construction Date	Date Monitored	Age (Days)	PRE-Turn (Deg C)	POST-Turn (Deg C)
NTROL2	8/10/01	8/10/01	0		28.00
		8/11/01	1	50.33	45.17
		8/13/01	3	63.17	60.00
		8/14/01	4	70.00	54.00
		8/15/01	5	59.00	59.33
		8/16/01	6	64.17	57.50
		8/17/01	7	60.83	61.17
		8/18/01	8	63.67	56.33
		8/20/01	10	55.67	51.56
		8/21/01	11	59.00	65.94
		8/22/01	12	55.72	54.11
		8/23/01	13	63.00	55.61
		8/24/01	14	65.17	59.00
		8/25/01	15	69.00	63.17
		8/27/01	17	64.83	59.83
		8/28/01	18	64.83	58.17
		8/29/01	19	63.17	56.17
		8/30/01	20	58.17	50.33
		8/31/01	21	64.50	65.00
		9/2/01	23	53.33	51.50

All average temperatures are in degrees centigrade

Average Daily Windrow Oxygen Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
CONTROL2	8/10/01	8/10/01	0		14.33
		8/11/01	1	8.67	12.83
		8/13/01	3	7.67	7.50
		8/14/01	4	6.83	8.83
		8/15/01	5	7.50	4.00
		8/16/01	6	6.67	2.50
		8/17/01	7	1.67	2.67
		8/18/01	8	7.17	11.00
		8/20/01	10	13.83	9.00
		8/21/01	11	5.83	7.11
		8/22/01	12	9.28	11.28
		8/23/01	13	4.50	9.61
		8/24/01	14	4.50	9.00
		8/25/01	15	6.00	9.33
		8/27/01	17	7.67	5.17
		8/28/01	18	8.33	18.17
		8/29/01	19	8.17	2.83
		8/30/01	20	12.00	11.83
		8/31/01	21	4.33	8.33
		9/2/01	23	7.17	3.33

All average Oxygen values are expressed as a percent

Wednesday, March 27, 2002

Average Daily Windrow WHC Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
CONTROL2	8/10/01	8/10/01	0		55.40
		8/14/01	4		51.10
		8/16/01	6		58.80

All average MWHC values are expressed in percent

Wednesday, March 27, 2002

Sample Results for SDG: 47498

SiteID: BIO10/15CONT **Field ID:** CONTROL2
Sample Date: 09/04/01 **Lab Number:** 47498.01

Analysis Method: SW8330

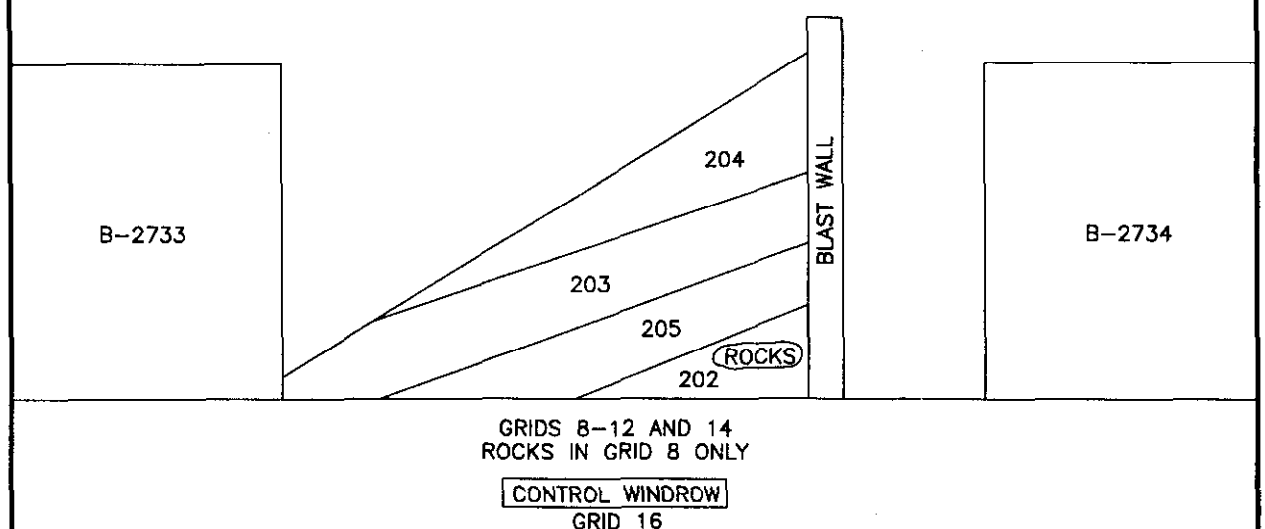
Compound	*Result*	*Units*	*Residential Level*	*Industrial Level*
1,3,5-TRINITROBENZENE	476 U	UGKG	3300	34000
1,3-DINITROBENZENE	476 U	UGKG	6500	68000
2,4,6-TRINITROTOLUENE	476 U	UGKG	15000	64000
2,4-DINITROTOLUENE	476 U	UGKG	130000	1400000
2,6-DINITROTOLUENE	476 U	UGKG	65000	680000
2-AMINO-4,6-DINITROTOLUENE	476 U	UGKG	130000	1400000
2-NITROTOLUENE	476 U	UGKG	650000	6800000
3-NITROTOLUENE	476 U	UGKG	650000	6800000
4-AMINO-2,6-DINITROTOLUENE	476 U	UGKG	65000	680000
4-NITROTOLUENE	476 U	UGKG	650000	6800000
HMX	358 J	UGKG	3300000	34000000
NITROBENZENE	476 U	UGKG	18000	94000
RDX	1230	UGKG	4000	17000
TETRYL	476 U	UGKG	650000	6800000

Notes:

B (organics) = detected in corresponding method blank
B (metals) = reported value is greater that instrument detection limit but less reporting limit
D = secondary dilution required for analysis
E = Value greater than highest calibration standard
J = Estimated value; value greater than MDL but below Reporting Limit
P = Greater than 40% difference detected between the two GC columns
U = Not detected
UGKG = µg/kg or ppb UGL = µg/L or ppb
MGKG = mg/kg or ppm MGL = mg/L or ppm

APPENDIX J

BACKFILL GRID LOCATION DRAWINGS



NOT TO SCALE

FIGURE J-1
ROCKEYE GRID AND WINDROW LOCATION MAP

NSWC CRANE, INDIANA

PREPARED FOR
NAVAL FACILITIES ENGINEERING COMMAND
NSWC CRANE, INDIANA

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REVISED	APPROVED:
JOB NO.: 37324.09	TOLTEST, INC.
DRAWING NUMBER 3732409-060	

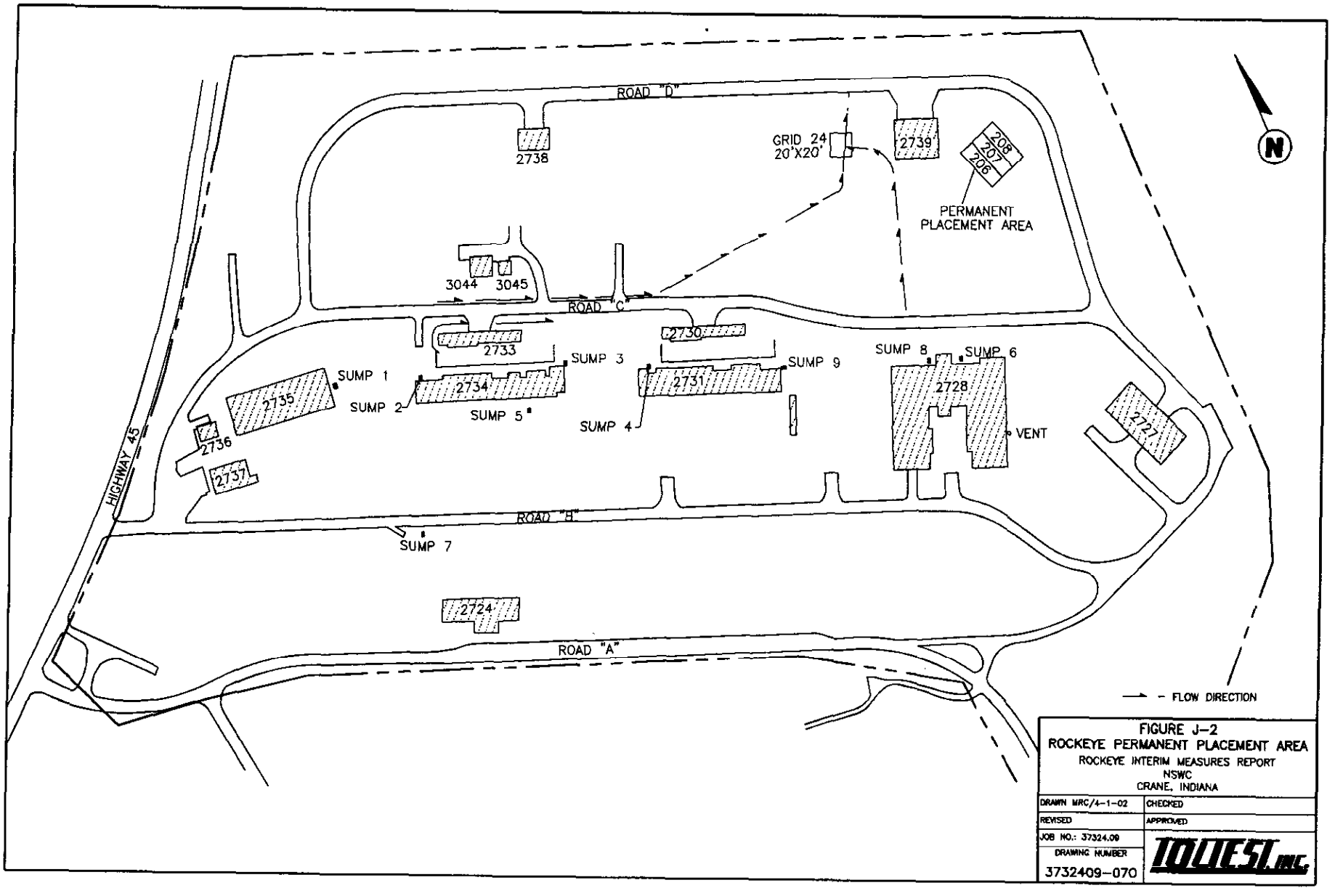

FIGURE J-2
ROCKEYE PERMANENT PLACEMENT AREA
ROCKEYE INTERIM MEASURES REPORT
NSWC
CRANE, INDIANA

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REVISED	APPROVED
JOB NO.: 37324.09	
DRAWING NUMBER 3732409-070	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. Hunsicke
SIGNATURE

DIRECTOR, ENVIRONMENTAL PROTECTION DEPARTMENT
BY DIRECTION OF THE COMMANDER
TITLE

3/3/02
DATE