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NIROP FRIDLEY
5090.3a

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A-E QUALITY CONTROL SUMMARY REPORT FOR WELL INSTALLATION AND GROUND WATER AND SOIL SAMPLING AT THE NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT FRIDLEY, MINNESOTA

FEBRUARY 1991

CONTRACT NO. DACA45-86-C-0015
MODIFICATION NOS. P00008
AND P00009

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Date 2/1/91 Registration No. 19450

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February 1, 1991

Name and Location of Project: Naval Industrial Reserve Ordnance Plant (NIROP)
Fridley, Minnesota

Contract No.: DACA45-86-C-0015
Modification No. P00008 & P00009

U.S. Army Corps of Engineers
Omaha District
Attn: CEMRO-ED-ED-2 (John Japp)
Brandeis Building; 6th Floor
Omaha, NE 68102

Dear John:

Enclosed for your use are 7 copies of the A-E Quality Control Summary Report for Well Installation and Ground Water and Soil Sampling. Other copies of this report have been distributed according to the attached Distribution List.

As requested by Jim Shafer of the U.S. Navy, the copies being distributed to the United States Environmental Protection Agency and the Minnesota Pollution Control Agency are intended to be for review and comments by these agencies.

Sincerely,

Eric Gredell

Eric Gredell, P.E.
Project Manager

tfr

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1. INTRODUCTION

RMT, Inc. (RMT), has been retained by the Omaha District of the U.S. Army Corps of Engineers (USACE) under Contract No. DACA45-86-C-0015, Modification P00008 and P00009, to perform services at the Naval Industrial Reserve Ordnance Plant (NIROP) located in Fridley, Minnesota. Services to be performed include the following:

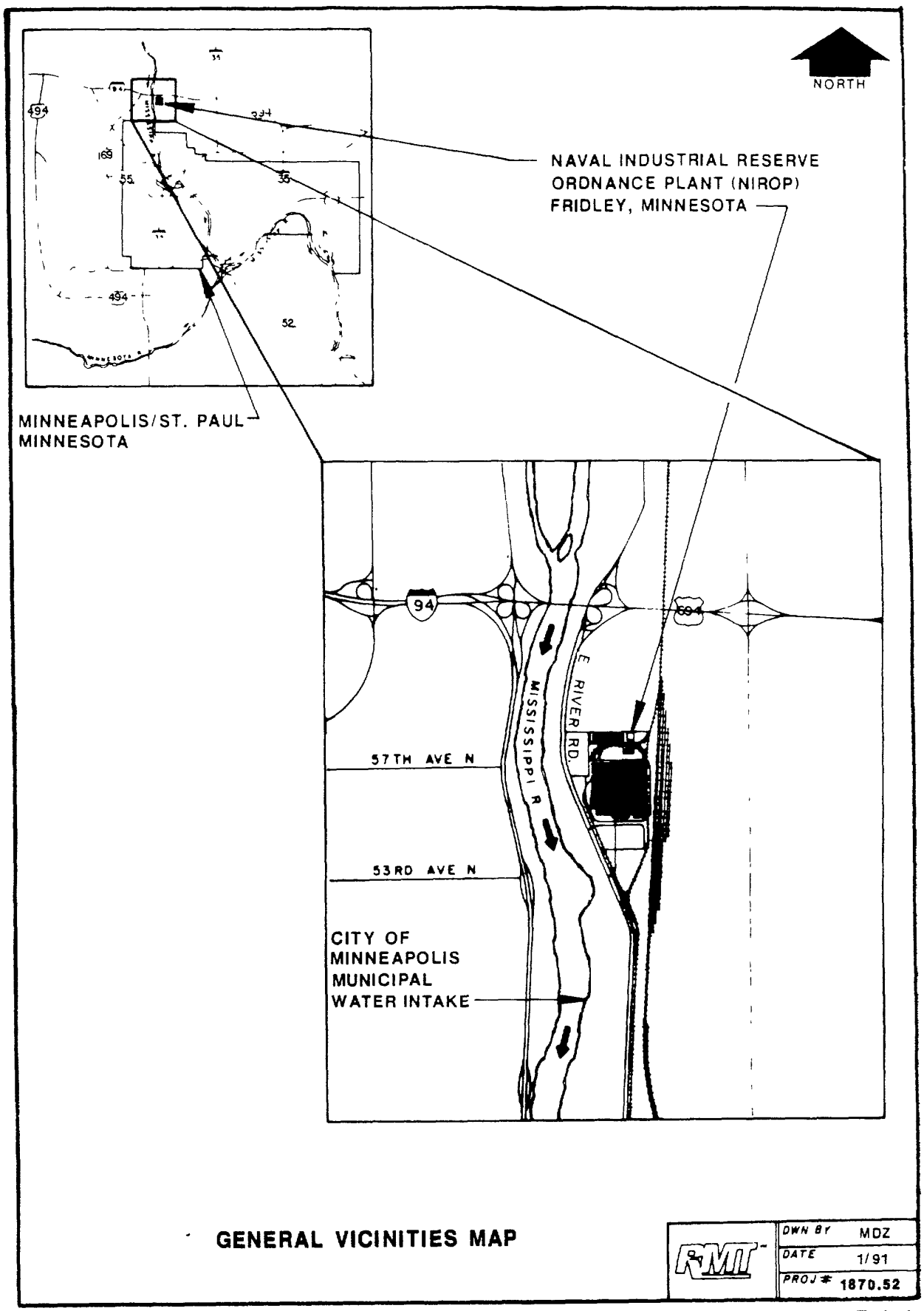
- Sampling and analysis of ground water.
- Sampling and analysis of soil.
- Installation of three additional monitoring wells.

This A-E Quality Control Summary Report (A-E QCSR) is one of two A-E QCSR documents, addressing the first round of monitoring well sampling and analysis, soil sampling and analysis, and well installation. The second A-E QCSR will cover a second round of monitoring well sampling and analysis.

1.1 Project Description and Background

The Naval Industrial Reserve Ordnance Plant (NIROP) is a government-owned, contractor-operated facility. The plant is operated by the Naval Systems Division of FMC Corporation. Advanced naval weapons systems are designed and manufactured at the NIROP. The NIROP began production in 1941, making it the first plant to mass-produce naval guns during World War II. The NIROP has continued to produce naval guns and has expanded into the production of guided missile launching systems, torpedo tubes, and hydraulic and electric power drive and control systems.

The NIROP is located in the northern portion of the Minneapolis/St. Paul, Minnesota, metropolitan area within the city limits of Fridley, Minnesota (see Figure 1-1). It is situated approximately 700 feet east of the Mississippi River and less than 1 mile south of Interstate 694. The facility is bordered on the west by East River Road and on the east by the Burlington Northern rail yard. The government-owned, contractor-operated portion of the plant



GENERAL VICINITIES MAP

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FIGURE 1-1

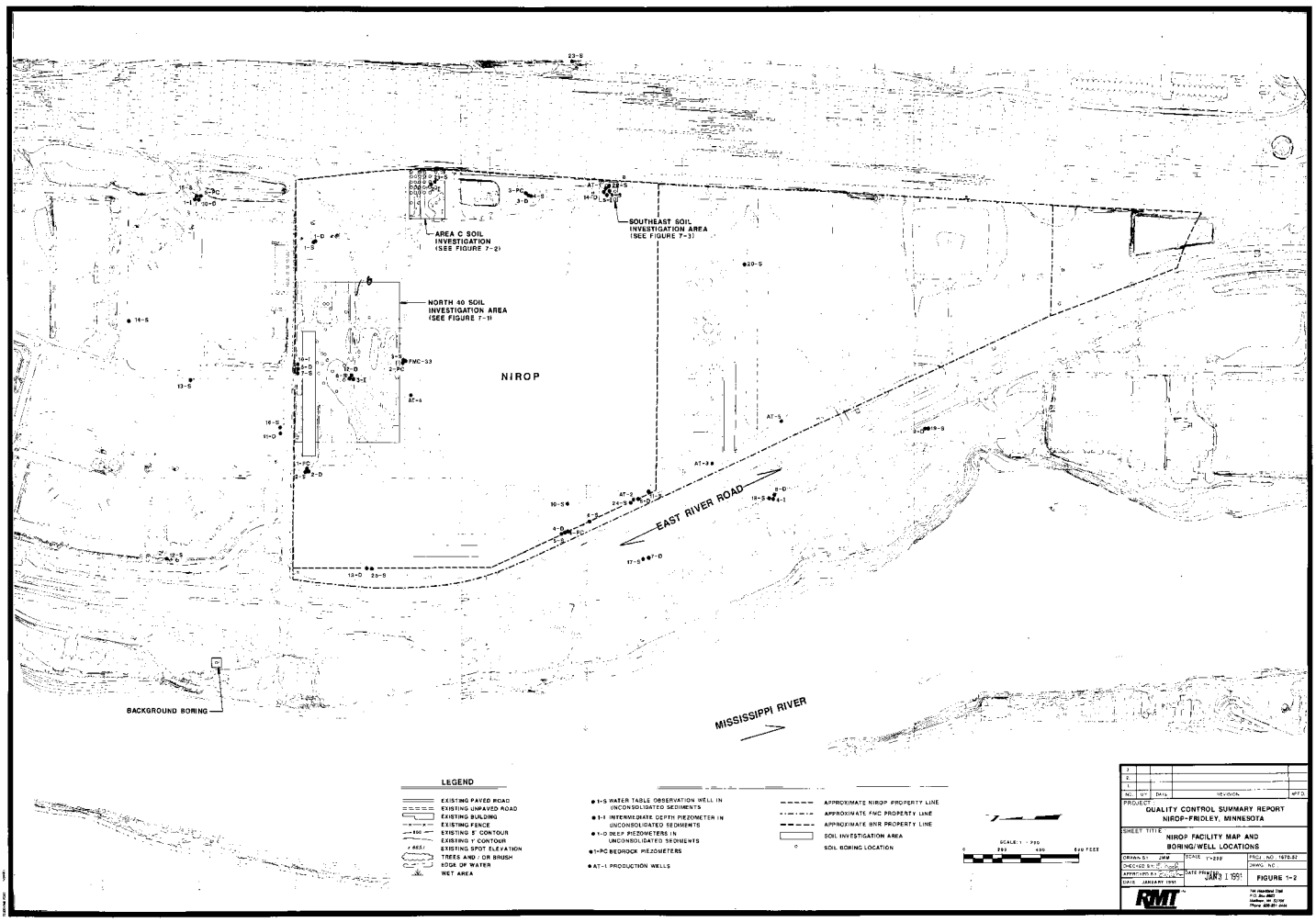
occupies about 83 acres. The plant is located in an industrial area which has a number of adjacent manufacturing facilities. A detailed facility map is included as Figure 1-2.

In previous years, the storage yard in the northern quarter of the site, known as the "north 40 area," had been used for the disposal of drummed waste by burial in 8- to 10-foot-deep trenches or pits. The materials disposed were thought to include waste oil, plating sludge, paint sludge, cleaning solvents, and degreasing solvents, which may contain hazardous chemicals, such as cyanide, trichloroethylene (TCE), methyl ethyl ketone (MEK), and 1,1,1-trichloroethane (RMT, 1987a).

Initial remedial action cleanup activities began in November 1983 under the direction of the USACE. Nine areas were excavated, and 43 drums and approximately 1,200 cubic yards of soil were removed. The majority of the drums contained inert solids; others contained PCB wastes, flammable solids, base solids, and inert liquids, and some were empty. The hazardous soil and drums were disposed in a United States Environmental Protection Agency (USEPA)-approved landfill. Samples were subsequently taken from the excavations and analyzed for volatile organic compounds (VOCs). Two trenches showed VOCs above one part per million (ppm); however, no further testing was done at that time. The trenches were backfilled with clean fill, and removal activities were completed in March 1984.

Fourteen monitoring wells were installed at the NIROP between May and August 1983. Seven additional on-site monitoring wells were installed in May and June 1985. Installation of 12 off-site monitoring wells was completed in February 1986. The USACE installed all monitoring wells through February 1986. The purpose of these wells was to determine ground water flow direction and the general extent of ground water contamination. Water level measurements and samples have been collected from these wells on an intermittent basis through October 1990.

In June 1986, RMT was initially retained by the USACE to provide consulting services related to completion of a remedial investigation and feasibility study (RI/FS) for the NIROP.



LEGEND

- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING BUILDING
- EXISTING FENCE
- 890 EXISTING 5' CONTOUR
- EXISTING 1' CONTOUR
- 865.1 EXISTING SPOT ELEVATION
- TREES AND / OR BRUSH
- EDGE OF WATER
- WET AREA
- ● 1-S WATER TABLE OBSERVATION WELL IN UNCONSOLIDATED SEDIMENTS
- ● 1-I INTERMEDIATE DEPTH PIEZOMETER IN UNCONSOLIDATED SEDIMENTS
- ● 1-D DEEP PIEZOMETERS IN UNCONSOLIDATED SEDIMENTS
- ● 1-PC BEDROCK PIEZOMETERS
- ● AT-1 PRODUCTION WELLS
- APPROXIMATE NIROP PROPERTY LINE
- APPROXIMATE FMC PROPERTY LINE
- APPROXIMATE BNR PROPERTY LINE
- SOIL INVESTIGATION AREA
- ○ SOIL BORING LOCATION

SCALE: 1" = 200'
0 200 400 800 FEET

NO.	BY	DATE	REVISION	APP'D
3.				
2.				
1.				

PROJECT: QUALITY CONTROL SUMMARY REPORT
NIROP-FRIDLEY, MINNESOTA

SHEET TITLE: NIROP FACILITY MAP AND BORING/WELL LOCATIONS

DRAWN BY: JWM | SCALE: 1"=200' | PROJ. NO. 1678-02
CHECKED BY: | DWG. NO.
APPROVED BY: | DATE PRINTED: JAN 3 1991 | FIGURE 1-2
DATE: JANUARY 1991

RMT
740 Hamilton Mall
P.O. Box 8867
Mankato, MN 56001
Phone 507-387-2446

A chronological summary of significant events and activities at the NIROP leading to the remedial action for ground water is as follows:

1940 - 1941	Naval ordnance manufacturing facility was constructed; owned by the government and Northern Pump Company.
1942 - 1964	Northern Ordnance, Inc., a subsidiary of Northern Pump Company, operated the naval ordnance manufacturing complex.
1964	FMC Corporation purchased the southern portion of the manufacturing facility property from Northern Pump Company, and has remained the operating contractor to the U.S. Navy for the entire facility from 1964 to the present.
Early 1970s	Limited on-site disposal of paint sludge and chlorinated solvents in pits and trenches was performed.
December 1980	Anonymous telephone call to the Minnesota Pollution Control Agency (MPCA) concerning past waste disposal practices at the NIROP.
March and April 1981	Trichloroethylene (TCE) identified at 0.035 to 0.200 mg/L in on-site water supply wells No. 2 and 3 and FMC Well No. 1.
April 24, 1981	On-site water supply wells shut down.
December 31, 1981	First quantifiable concentrations of TCE identified at the Minneapolis water treatment plant intake (0.0012 mg/L).

In response to these events, the following investigations, remedial actions, and CERCLA enforcement activities have taken place:

September 1980	U.S. Navy implemented the Navy Assessment and Control of Installation Pollutants (NACIP) program.
March 1982	The NACIP program was implemented at the NIROP.
May 1983	U.S. Navy authorized the current Installation Restoration (IR) program.

1983	Initial Assessment Study (IAS) at the NIROP was performed under NACIP. The IAS identified that drummed waste was disposed in the northern portion of the site in 8- to 10-foot-deep trenches or pits. Ground water monitoring wells were installed and sampling began.
November 1983 - March 1984	Approximately 1,200 cubic yards of contaminated soil and 43 drums were excavated and disposed off-site in a USEPA-approved landfill
May 22, 1984	The MPCA issued a Request for Response Action at the site to the U.S. Navy and FMC Corporation.
June 1986	A remedial investigation (RI) and feasibility study (FS) was initiated by the U.S. Army Corps of Engineers, for the U.S. Navy.
March 1987	All use of trichloroethylene at the NIROP was discontinued. 1,1,1-trichloroethane was put into use in place of trichloroethylene.
June 1987	Final RI report was issued. Additional investigations recommended.
November 1987 - February 1988	Additional site investigations performed.
July 1988	FS report and an Addendum to the RI report were issued.
August 1988	Addendum to the FS report was issued.
February 8, 1989	The U.S. Navy establishes the Technical Review Committee (TRC) for the project and convenes the first meeting. TRC membership includes the following: USEPA, MPCA, U.S. Navy, Corps of Engineers, Anoka County, City of Fridley, FMC Corp., Metropolitan Waste Control Commission, Minnesota Department of Natural Resources, and RMT, Inc.
April 13, 1989	TRC meeting #2 held.
May 22, 1989	Public meeting to present the RI/FS held in Fridley, Minnesota.
June 15, 1989	TRC meeting #3 held.

July 14, 1989	NIROP listed as a proposed site on the NPL by the USEPA.
September 13, 1989	TRC meeting #4 held.
November 21, 1989	NIROP listed as a final site on the NPL by the USEPA.
February 7, 1990	TRC Meeting #5 held.
May 1, 1990	U.S. Navy issues final Proposed Plan for ground water remediation after review by the MPCA and USEPA.
May 9, 1990	TRC Meeting #6 held.
May 9, 1990	Public meeting to present the Proposed Plan held in Fridley, Minnesota.
May 1, 1990 - May 30, 1990	Public comment period for the proposed ground water remedial action.
May 22, 1990	Special Notice letter from USEPA received at the NIROP.
August 23, 1990	TRC Meeting #7 held.
September 1990	Record of Decision for Ground Water Remediation signed by the U.S. Navy, the USEPA, and the MPCA.

The RI/FS work completed to date for the NIROP addressed both the soil and ground water media. During evaluation of alternatives, it was determined that the available data were not sufficient to determine an appropriate response, if any was required, for site soil. Additional investigative work for soil was requested by the USEPA and the MPCA. In response to this request, the U.S. Navy planned and organized site investigations for soil, which were performed at the site in October and November 1990. The results of this investigation are presented in this A-E QCSR, and will also be addressed in the subsequent Technical Memorandum No. 1 for Soil Investigation and Monitoring Well Sampling Round 1.

1.2 Purpose and Scope

The purpose of this report is to summarize a quality control (QC) assessment of well installation and sampling activities conducted at the NIROP in October and November 1990. This work consisted of the following tasks:

- Installation of one monitoring well.
- Water level measurements in all 53 previously existing monitoring wells plus one newly constructed well (54 total).
- Water quality analysis of samples from all 54 wells.
- Installation of 55 soil borings to approximately 25 feet in depth.
- Chemical analysis of soil samples from all 55 soil borings.

Generally, ground water quality at the NIROP was monitored to provide baseline data prior to the startup of the ground water pumpout and treatment system, which has been selected as the remedial alternative for ground water at the site. The additional ground water monitoring well was installed to supplement existing information on hydrogeology and to better characterize ground water quality, extent, and magnitude of ground water contamination at the intermediate depth of the aquifer in the unconsolidated deposit at the north end of the NIROP. Soil borings were advanced to the water table and soil samples were collected in four specific areas, to provide additional data regarding the vertical and horizontal nature and extent of soil contamination within each specific area.

This report includes the following information:

- Findings and conclusions.
- Recommendations.
- Summary of field activities and data collection procedures.
- Summary of water sample analysis procedures and presentation of results.
- Summary of soil sample analysis procedures and presentation of results.

- Summary of ground water levels in all 54 monitoring wells.
- Documentation of quality assurance and quality control (QA/QC) activities.

Upon completion of this Quality Control Summary Report (QCSR), a Technical Memorandum will be prepared which will evaluate the results of the first round of ground water sampling and the soil sampling. A second Technical Memorandum will be prepared following the second ground water sampling round and preparation of a second QCSR.

1.3 Report Organization

Well installation, ground water levels, water quality, and soil borings are the main topics discussed under separate sections of this report. Each section is further arranged to discuss the following:

- Planned procedures
- Quality control activities
- Implementation problems and corrective actions
- Data presentation

Daily Quality Control Reports (DQCRs) were prepared during the periods of field activity. These reports were written in the field office daily and mailed to the RMT office in Madison, Wisconsin, and to the USACE, on a weekly basis. The DQCRs are included in Appendix A for the periods coincident to well installation, testing, and sampling activities. Because this report incorporates information from the DQCRs, they are included for reference (Appendix A), but are not discussed or further summarized in this report.

The ground water and soil samples collected in October and November 1990 were analyzed by the RMT Laboratories, Inc., following USEPA Contract Laboratory Program (CLP) protocols. VOC results for ground water have been reported in µg/L units, as required by the CLP. Previous ground water sampling results have been reported in mg/L, in accordance with

the USACE protocols used at that time. Previous protocols also reported VOCs using common names, e.g., trichloroethylene and tetrachloroethylene. CLP procedures replace the common names with the International Union of Pure and Applied Chemistry nomenclature system, e.g., trichloroethene and tetrachloroethene, which have been used throughout this report.

2. FINDINGS AND CONCLUSIONS

With the limited exceptions noted below, data acquired through these investigations are suitable for further use in defining the extent and characteristics of ground water and soil contamination at the NIROP.

Ground water data for wells 18-S, 17-S, 7-D, 4-D, and 5-PC are questionable, since locks at these wells were found missing or broken.

VOC data for the soil sample collected at NB04C were determined to be potentially unreliable due to a failure to meet laboratory quality control criteria.

3. RECOMMENDATIONS

Preparation of Technical Memorandum No. 1 - Soils Investigation and Round 1 Monitoring Well Sampling should be completed, and the second round of ground water sampling should be conducted as planned.

4. WELL INSTALLATION

4.1 Planned Procedures

Three monitoring wells were to be installed by RMT during the field activities in October and November 1990. Well construction details as originally outlined in the Draft A-E Quality Control Plan and Sampling Plan for Soil Sampling and Monitoring Well Installation (A-E QCP-SP), Subsection 4.1 (RMT, 1990a), as modified by telephone conversations between the U.S. Navy, the USACE, RMT, the MPCA, and the USEPA, and incorporated herein by reference, are described in Table 4-1. Of the three wells to be installed, one was a water table well ("S" suffix), and two were intermediate-depth piezometers ("I" suffix).

Well installation procedures included the following activities:

- Setting up a decontamination zone.
- Decontaminating equipment and materials.
- Drilling and constructing wells.
- Collecting split-spoon soil samples.
- Performing plumbness and alignment tests.
- Developing the wells.
- Restoring the site.

Only one of the three wells (10-I) was installed. Deviations from the planned procedures are discussed in Subsection 4.3, Implementation Problems and Corrective Actions.

4.2 Quality Control Actions

The following actions were conducted during drilling and well construction:

- USACE specifications and the Draft A-E QCP-SP (RMT, 1990a) were frequently consulted during field operations so that proper procedures were being followed.

TABLE 4-1

CONSTRUCTION DATA FOR PLANNED MONITORING WELLS

Proposed Well Indentifier	Estimated Depth (feet)	Screen Length (feet)	Riser Length (feet)	Nominal Well Diameter (inches)	Depth Interval Requiring 5-Foot Samples	Filter Pack (feet)	Cement Bentonite Grout (feet)	Screen and Riser Material
26-S	35	10	25	2	0	12	16	Schedule 5 Stainless Steel
9-I	75	10	65	2	0 - 75	12	56	Schedule 5 Stainless Steel
10-I	75	10	65	2	0 - 75	12	56	Schedule 5 Stainless Steel

- All phases of drilling and well construction were supervised by an RMT geologist. Since two RMT field geologists were on-site during the well installation, they checked each other's field notes daily for completeness and accuracy.

- The newly constructed well 10-I was checked for plumbness and alignment in accordance with USACE specifications.

- A sample of the water used in drilling was collected by RMT and shipped to the RMT and USACE-MRD laboratories for analysis of parameters listed in the Draft A-E QCP-SP (RMT, 1990a). The sample was collected from a portable 4,000-gallon water tank which had been transported to the site and which served as the source of drilling water. A trip blank was included with the field sample sent to the RMT Laboratory.

- Soil samples and quality control duplicate samples were collected and sent to the appropriate laboratory for analysis as specified in the Draft A-E QCP-SP (RMT, 1990a).

- During well development, discharge water temperature, pH, and specific conductance were measured after every well volume for four successive hours. At the conclusion of well development, a water sample was collected, turbidity was visually evaluated, and the sample clarity was photographed.

4.3 Implementation Problems and Corrective Actions

Problem	Corrective Action
Heaving sands were encountered when the hollow-stemmed augers (HSA) were advanced below the water table.	Drilling water was added to the inside of the HSA to maintain a head of water.
The drilling subcontractor (Bergerson-Caswell) was not able to supply an adequate number of 3-inch stainless-steel split-spoons until the second day of drilling.	No corrective action was taken.
The USACE was not able to obtain access to the Burlington Northern Railroad (BNRR) property. For this reason, wells 26-S and 9-I could not be installed.	No corrective action was possible. Only one well (10-I) was installed on the NIROP property.

4.4 Data Presentation

One monitoring well (10-I) was installed by RMT between November 12 and November 15, 1990. Well construction data are presented in Table 4-2, and the well location is shown on Figure 1-2. The well installed was an intermediate-depth piezometer. The borehole log and well construction diagram are contained in Appendix B.

Table 4-3 summarizes grain-size distributions and natural moisture content of eight soil samples from the boring advanced for monitoring well 10-I. The samples were analyzed by the RMT Soils Laboratory for well 10-I. Atterberg limits were not determined for these samples because they were visually determined to be nonplastic or noncohesive. Grain-size distribution curves and other RMT Soils Laboratory data are shown in Appendix C.

TABLE 4-2

WELL CONSTRUCTION DATA
(all measurements in feet mean sea level)

Well Number	Installation Date	Grid Coordinates		Top of Well Casing Elevation	Top of Screen Elevation	Bottom of Screen Elevation	Well Depth
		North	East				
10-I	11-13-90	7503.803	5517.335	837.04	770.05	760.05	75.1

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TABLE 4-3

SUMMARY OF SOIL PHYSICAL ANALYSES AT WELL 10-I

Borehole Location	Sample Interval	Depth Below Ground (feet)	% Gravel	% Sand	% Silt	% Clay	% Natural Moisture	Unified Soil Classification System
10-I	A	3 - 5	11.2	68.0	11.6	9.2	10.4	SM
	C	13 - 15	2.2	95.3	0.9	1.6	3.4	SP
	E	23 - 25	0.8	95.8	1.4	2.0	18.5	SP
	G	33 - 35	0.7	96.7	1.2	1.4	19.2	SP
	I	43 - 45	2.0	94.0	2.4	1.6	17.9	SP
	K	53 - 55	0.5	96.3	1.2	2.0	18.0	SP
	M	63 - 65	2.9	95.2	1.0	0.9	17.4	SP
	O	73 - 75	3.6	94.8	0.5	1.1	16.6	SP

5. GROUND WATER LEVELS

5.1 Planned Procedures

The measurement of ground water levels in wells was conducted in conjunction with ground water sampling. The data from such measurements are needed to determine well purging requirements, to establish ground water gradients, and, ultimately, to determine the direction of ground water flow.

All ground water level measurements were made using the established reference point on the well casing. This reference point was documented in field records.

A battery-operated water level indicator was the primary device for water level measurements. The indicator is a self-contained transistorized instrument equipped with a cable and sensor which activates a buzzer and a light when it comes in contact with the water. The depth to water is read from permanent 1-foot and 0.01-foot increment markings on the cable.

In the event of instrument failure, depth to ground water was to be measured by a plopper tape, which is a bell- or cup-shaped weight attached to a measuring tape. When lowered into the well, a "plopping" or "popping" sound is made when the weight strikes the surface of the water. An accurate reading can then be determined by lifting and lowering the weight in short strokes, and reading the tape when the weight barely strikes the water. The plopper tape was not needed to collect ground water level measurements.

5.2 Quality Control Activities

Foot markers for the first 100 feet of cable from the water level measurement device were checked for accuracy against a steel tape prior to measuring water levels.

A single measuring device (electronic tape) was used to measure water levels, thereby avoiding potential discrepancies with the use of multiple measuring devices.

5.3 Implementation Problems and Corrective Actions

Problem	Corrective Action
Total depth of well 1-PC could not be measured with the water-level indicator or plopper tape.	No corrective action was taken. Total depth of the well was previously determined during well construction.

5.4 Data Presentation

Ground water elevations are listed in Table 5-1 for the 54 wells. Water level measurements were taken on October 1 and 2, 1990, for all wells except well 10-I, which was measured on December 6, 1990 (following the installation of the well 10-I on November 15, 1990).

TABLE 5-1

GROUND WATER ELEVATIONS

Well No.	Top of Well Casing Elevation (feet M.S.L.)	Depth to Water (feet)	Water Elevation (feet M.S.L.)
1-S	837.14	24.80	812.34
1-I	835.28	23.47	811.81
1-D	836.75	25.20	811.55
1-PC	837.63	25.14	812.49
2-S	836.07	23.93	812.14
2-I	838.05	26.96	811.09
2-D	836.04	23.92	812.12
2-PC	838.05	26.33	811.72
3-S	836.75	24.57	812.18
3-I	837.38	25.21	812.17
3-D	837.48	26.82	810.66
3-PC	839.21	28.01	811.20
4-S	837.45	25.45	812.00
4-I	833.46	29.03	804.43
4-D	834.79	30.24	804.55
4-PC	834.75	23.52	811.23
5-S	835.06	23.29	811.77
5-I	838.02	27.18	810.84
5-D	836.00	23.81	812.19
5-PC	834.49	22.80	811.69
6-S	835.73	24.04	811.69
6-D	835.69	30.33	805.36
7-S	835.97	23.75	812.22
7-D	835.63	33.69	801.94
8-S	835.76	23.55	812.21
8-D	834.02	29.83	804.19
9-S	836.68	25.14	811.54
9-D	834.30	34.70	799.60

TABLE 5-1 (CONTINUED)

GROUND WATER ELEVATIONS

Well No.	Top of Well Casing Elevation (feet M.S.L.)	Depth to Water (feet)	Water Elevation (feet M.S.L.)
10-S	835.89	23.89	812.00
10-I*	837.04	24.84	812.20
10-D	834.77	23.19	811.58
11-S	835.89	30.74	805.15
11-D	837.52	25.46	812.06
12-S	838.51	26.23	812.28
12-D	837.79	26.10	811.69
13-S	834.59	22.27	812.32
13-D	835.77	23.83	811.94
14-S	835.99	23.56	812.43
14-D	837.92	27.35	810.57
15-S	834.83	22.36	812.47
16-S	837.26	25.07	812.19
17-S	835.75	26.35	809.40
18-S	834.08	29.74	804.34
19-S	834.56	34.60	799.96
20-S	837.62	26.03	811.59
21-S	837.67	25.40	812.27
22-S	837.76	26.34	811.42
23-S	847.11	36.03	811.08
24-S	836.33	24.63	811.70
25-S	835.31	23.12	812.19
FMC-33	837.05	25.04	812.01
AT-1	838.53	27.63	810.90
AT-2	836.45	24.76	811.69
AT-3	836.39	31.23	805.16

* Water level for well 10-I measured on December 6, 1990.

6. WATER QUALITY

6.1 Planned Procedures

The first round of ground water samples collected during October 1990 included 53 existing wells. Newly constructed well 10-I, installed from November 12 through 15, 1990, was sampled on December 6, 1990. Ground water sample collection procedures used by RMT are contained in the Draft A-E Quality Control Plan and Sampling Plan for Monitoring Well Sampling Rounds, as modified by telephone agreements made between the Navy, the USACE, RMT, the MPCA, and the USEPA (A-E QCP-SP, RMT, 1990b). RMT also used methods outlined in the document titled Procedures for Ground Water Monitoring (MPCA, 1986).

Ground water was analyzed for the parameters shown in Table 6-1. Approximately 20 percent of the wells (total of 10) included pesticide/PCB analyses. Additionally, the new well (10-I) was also sampled for pesticide/PCB compounds.

Common elements of water quality sampling and analysis included the following:

- Record of the depth to water and bottom of each well to be sampled.
- Calculation of well volumes.
- Well stabilization test or well recovery test during well purging.
- In-field measurements of temperature, pH, and specific conductance.
- Sample collection.
- Sample filtration.
- Sample container, preservative, and holding-time criteria.
- Documentation and chain-of-custody procedures.
- Sample shipment.
- Sample analysis.

TABLE 6-1

CHEMICAL PARAMETERS ANALYZED IN GROUND WATER SAMPLES

Volatile Organic Compounds	Pesticides/PCBs*	Metals (dissolved)
Trichlorofluoromethane	Alpha-BHC	Barium
Vinyl chloride	Beta-BHC	Manganese
Methylene chloride	Delta-BHC	Selenium
1,1-Dichloroethene	Gamma-BHC (Lindane)	Zinc
1,1-Dichloroethane	Heptachlor	
1,2-Dichloroethene (Total)	Aldrin	
Chloroform	Heptachlor epoxide	
1,1,1-Trichloroethane	Endosulfan I	
Trichloroethene	Dieldrin	
Benzene	4,4′-DDE	
Tetrachloroethene	Endrin	
Toluene	Endosulfan II	
Ethylbenzene	4,4′-DDD	
Xylenes (Total)	Endosulfan sulfate	
	4,4′-DDT	
	Methoxychlor	
	Endrin ketone	
	Alpha-Chlordane	
	Gamma-Chlordane	
	Toxaphene	
	Aroclor-1016	
	Aroclor-1221	
	Aroclor-1232	
	Aroclor-1242	
	Aroclor-1248	
	Aroclor-1254	
	Aroclor-1260	

* Pesticides/PCBs were analyzed in 11 selected wells. Volatile organic compounds and dissolved metals were analyzed in ground water from all wells.

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6.2 Quality Control Activities

6.2.1 Field Measurements

Battery checks and field calibrations were performed periodically throughout each day on each instrument while in use, in accordance with the Draft A-E QCP-SP (RMT, 1990b). The pH meters and the conductivity meter were checked several times each day with fresh solutions. Calibration data were recorded in field log books.

6.2.2 Laboratory Data

Samples from 54 monitoring wells were sampled and shipped to RMT Laboratories, Inc., for analysis. In addition, trip blanks, field blanks, and field duplicates were submitted to RMT Laboratories for quality control (QC) purposes. Quality assurance (QA) trip blanks, field blanks, and field duplicates were submitted to the USACE-MRD Laboratory for quality assurance checks. Subsequent discussions focus on RMT QC activities.

Sample Tracking

Laboratory reports received from RMT Laboratories were first checked against sample collection and shipping records, to confirm that results were received for each sample that was shipped. Test results were also compared to the parameter list originally requested for analysis to check for completeness. All results for all sampling locations were received.

The sample identification system used for ground water samples was as follows (where "00" represents numeric values):

AT00	Production well
FMC00	Pre-existing monitoring well from FMC
M00D	Deep monitoring well
M00I	Intermediate monitoring well
M00S	Shallow monitoring well
QAD00	Blind field duplicate sent to the USACE-MRD Laboratory
QAF00	Field blank sent to the USACE-MRD Laboratory
QAT00	Trip blank sent to the USACE-MRD Laboratory
QCD00	Blind field duplicate
QCF00	Field blank
QCT00	Trip blank

Completed chain-of-custody forms for all well and QC samples are included in Appendix E. Laboratory data sheets include the sample identification code, as described above, as well as the laboratory sample tag number and case number.

Holding Times

The VOC analyses for all water samples were completed within 10 days of VTSR (validated time of sample receipt at the laboratory).

The semivolatile extractions for all water samples were completed within 5 days of VTSR, and the analyses were completed within 40 days of the VTSR.

No sample results were rejected based on holding times.

Trip Blanks

Nine trip blanks for water were submitted to RMT Laboratories with the samples and were analyzed for VOCs only, along with the samples. A trip blank was generated by adding deionized water to an empty sample container in the laboratory and transporting the sealed container with the other sample bottles to the field and back to the laboratory for analysis. Trip blanks are intended to define the cumulative contamination that samples are exposed to during transport, sampling, and analysis. Results for the trip blanks are shown in Table 6-2. Results were below the reporting limits for all constituents. In one blank, chloroform and toluene were identified, but the concentrations were below reporting limits. Based on the detected toluene in QCT06, the toluene reported in an associated sample (M11D) at an estimated concentration of 2 μg/L could be attributed to contamination during transport, sampling, or analysis.

Field Blanks

Field (rinsate) blanks were collected for each class of compounds. Field blanks consist of sampler rinsate and are intended to demonstrate the effectiveness of decontamination procedures for sampling equipment. Eight field blanks were collected for

TABLE 6-2

VOC TRIP BLANKS - WATER

Parameter	Units	QCT06	
Trichlorofluoromethane	µg/L	5	U
Vinyl chloride	µg/L	10	U
Methylene chloride	µg/L	5	U
1,1-Dichloroethene	µg/L	5	U
1,1-Dichloroethane	µg/L	5	U
1,2-Dichloroethene (Total)	µg/L	5	U
Chloroform	µg/L	0.2	J
1,1,1-Trichloroethane	µg/L	5	U
Trichloroethene	µg/L	5	U
Benzene	µg/L	5	U
Tetrachloroethene	µg/L	5	U
Toluene	µg/L	0.4	J
Ethylbenzene	µg/L	5	U
Xylenes (Total)	µg/L	5	U

U = Undetected J = Estimated concentration

All parameters for the following trip blanks were reported as undetected:

QCT01
QCT02
QCT03
QCT04
QCT05
QCT07
QCT08
QCT09

The following samples were included in the same shipment as QCT06:

M07S
M05D
M03I
M20S
M16S
M11D
QCF06
QCD05
M03S

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VOCs in water. Results were below the reporting limits for all constituents. In one blank, methylene chloride was identified, but at a concentration below the reporting limit. The VOC field blank information is shown in Table 6-3. Based on the detected methylene chloride in one field blank (QCF01) at an estimated concentration of 2 μg/L, concentrations in samples of up to 5 times the blank value (10 μg/L) could be attributed to cleaning procedures for sampling equipment, and may not be site-related.

Eight field blanks were collected for PCBs/pesticides in water. No PCBs/pesticides were detected in any field blank. Eight field blanks were collected for the short list of metals in water. For six of eight blanks, all results are below reporting limits. Two blanks contained zinc (Table 6-4). Based on detected zinc in field blanks at concentrations up to 108 μg/L, concentrations in samples of up to 5 times the blank value (540 μg/L) could be attributed to cleaning procedures for sampling equipment, and may not be site-related.

Method Blanks

Method blank results are included in the data packages for each class of compounds. Method blanks are intended to define the level of laboratory background contamination. Eleven method blanks were analyzed for VOCs in water. No VOCs were detected in any method blanks.

Six method blanks were analyzed for PCBs/pesticides in water. No PCBs/pesticides were detected in any method blanks.

Duplicate Samples

Blind field duplicate samples were collected and submitted for analysis. Analytical results were used to demonstrate cumulative laboratory precision and sample homogeneity. A total of six samples were duplicated. However, one of the duplicates, QCD06, was not used to compare data, because it was collected too soon after well 10-I was developed. Although well

TABLE 6-3

VOC FIELD BLANKS - WATER

Parameter	Units	QCF01	
Trichlorofluoromethane	µg/L	5	U
Vinyl chloride	µg/L	10	U
Methylene chloride	µg/L	2	J
1,1-Dichloroethene	µg/L	5	U
1,1-Dichloroethane	µg/L	5	U
1,2-Dichloroethene (Total)	µg/L	5	U
Chloroform	µg/L	5	U
1,1,1-Trichloroethane	µg/L	5	U
Trichloroethene	µg/L	5	U
Benzene	µg/L	5	U
Tetrachloroethene	µg/L	5	U
Toluene	µg/L	5	U
Ethylbenzene	µg/L	5	U
Xylenes (Total)	µg/L	5	U

U = Undetected J = Estimated concentration

All parameters for the following field blanks were reported as undetected:

QCF02
QCF03
QCF04
QCF05
QCF06
QCF07
QCF08

TABLE 6-4

METALS FIELD BLANKS - WATER

Parameter	Units	QCF02	QCF04
Barium	µg/L	50 U	50 U
Manganese	µg/L	5 U	5 U
Selenium	µg/L	3 U	3 U
Zinc	µg/L	108	49.9

U = Undetected

All four metals for the following field blanks were reported as undetected:

QCF01

QCF03

QCF05

QCF06

QCF07

QCF08

10-I was resampled at a later date, a duplicate was not collected. Table 6-5 shows a comparison of analyses for VOCs in field duplicates of water. Although 14 VOCs were analyzed in five pairs of duplicates, only four pairs of values exhibited concentrations greater than 5 times the reporting limits. These are shown in Table 6-5. For these pairs, all the calculated relative percent differences (RPD) were less than 10 percent. No sample results were rejected based on these comparisons.

A comparison of analyses for PCBs/pesticides in a blind field duplicate of water was also conducted. No detectable concentrations were reported in the original sample or the duplicate.

Table 6-6 shows a comparison of analyses for the metals in blind field duplicates of water. Only two metals, manganese and zinc, exhibited observed concentrations in which at least one value was greater than 5 times the method detection limit. All other pairs of values near the detection limits were not considered highly meaningful in a calculation of relative percent difference (RPD). Of the 8 pairs of values, all were within 20 percent RPD. No sample results were rejected based on these comparisons.

Matrix-Spiked Samples

The effect of the site matrices on the accuracy of the data was evaluated by analyzing percent recovery of spiked compounds in actual samples. (Precision was evaluated by analyzing matrix spike duplicates.) Matrix spikes were created by fortifying samples with known quantities of specific compounds and subjecting the samples to the entire analytical procedure. Matrix spike data indicated that laboratory procedures were appropriate for water samples.

Surrogate-Spiked Samples

Laboratory analytical accuracy was evaluated by analyzing percent recovery data for surrogate-spiked samples. A surrogate-spiked sample was created by adding known

TABLE 6-5

VOC BLIND FIELD DUPLICATES - WATER
(all concentrations in µg/L)

1,2-Dichloroethene (Total)		
Original	Duplicate	RPD (%)
M06S 83	QCD04 84	1.2
M03I 360 D	QCD05 370 D	2.7

Trichloroethene		
Original	Duplicate	RPD (%)
M06S 48	QCD04 50	4.1
M03I 2,700	QCD05 2,700 D	0

Tetrachloroethene		
Original	Duplicate	RPD (%)
M03I 28	QCD05 30	6.9

D - Reported value is from a second analytical run, because the value exceeded the calibration limit in the first run.

TABLE 6-6

METALS BLIND FIELD DUPLICATES - WATER
(All concentrations in µg/L)

Manganese		
Original	Duplicate	RPD (%)
M01S 1,650	QCD01 1,570	5.0
M03PC 38.1	QCD02 37.5	1.6
M06S 1,000	QCD04 1,040	3.9
M03I 438	QCD05 452	3.1

Zinc		
Original	Duplicate	RPD (%)
M01S 100	QCD01 85	16
M03PC 286	QCD02 281	1.8
M06D 98	QCD03 103	5.3
M06S 275	QCD04 337	20

quantities of compounds, not expected to be detected in the samples, to the samples, blanks, and matrix-spiked samples. Chronic or systematic errors were not observed, based on the recoveries for surrogate-spiked samples.

QC Data/Documentation Completeness

The following documentation was checked to verify that it was included in the data package and that appropriate flagging was used, out-of-control difficulties were noted, and QC failures were cited in the case narrative:

Organics	Inorganics
- Case narratives	- Cover pages
- Sample data forms (e.g., Form I, quant. report, mass spectra, etc.)	- Case narratives
- GC/MS tunes	- Sample I.D., units, completeness
- Blanks	- Calibrations
- Surrogate recoveries	- Blanks
- Matrix spikes	- Interference check
- Holding times	- Pre-digestion spike recoveries
- Initial calibrations	- Post-digestion spike recoveries
- Continuing calibrations	- Duplicates, recoveries
- Pesticide calibration analytical sequence for pesticide	- Laboratory control
- DDT/Endrin/DBC degradation check	- Standard additions
- Evaluation standards check	- ICP linear range
- Pesticide/PCB standards summary	- Preparation logs
- DDT retention time	
- Retention time windows	

6.3 Implementation Problems and Corrective Actions

Problem	Corrective Action
Locks found unlocked at wells 18 S, 17-S, 7-D, and 4-D.	Data for these wells may be questionable.
Lock broken at well 5-PC.	Replaced with new lock. Data for well 5-PC may be questionable.
Unable to unlock well FMC-33.	Lock was cut and replaced with new lock.

Problem (cont.)	Corrective Action (cont.)
pH meter 5176 malfunctioned during a calibration check.	Back-up meter was used.
pH meter 2054 battery connector broke.	Meter was repaired in the field. Meter was recalibrated and functioned normally.
pH meter 6057 malfunctioned during calibration check.	Replaced instrument probe, recalibrated, and meter functioned normally.
The measured depth of well AT02 was determined to be 66.28 feet on October 1, 1990. The installed depth of well AT02 was 88.0 feet. The difference between these two values was determined to be significant, and the depth of well AT02 was remeasured.	Well AT02 was still found to be 66.28 feet deep; thus, this value was used to calculate the volume of water in the well.
The 3-inch submersible pump seized during decontamination procedures.	Rented another 3-inch pump to finish the sampling job. Pump was repaired at RMT.

6.4 Data Presentation

All 54 monitoring wells shown on Figure 1-2 (AT-1, AT-2, and AT-3) were sampled and analyzed for the constituents listed in Table 6-1. Table 6-7 lists sampling dates and summarizes the results of in-field measurements. Laboratory results are summarized in Appendix F.

TABLE 6-7

SUMMARY OF SAMPLING DATES AND WATER QUALITY IN-FIELD MEASUREMENTS

Well No.	Sampling Date	pH (S.U.)	Temperature (°C)	SEC @ 25°C (μmho/cm)	Color[a]	Turbidity[b]	Odor[b]
1-S	10-3-90	6.9	12.0	1,008	None	Slight	None
1-I	10-2-90	7.6	12.5	1,187	None	None	None
1-D	10-3-90	7.5	11.0	704	None	None	None
1-PC	10-10-90	7.4	10.0	975	None	None	None
2-S	10-8-90	7.0	11.5	1,016	None	Slight	None
2-I	10-4-90	7.2	11.0	1,024	None	Slight	Slight
2-D	10-8-90	7.1	10.0	910	None	None	None
2-PC	10-10-90	7.5	11.0	960	None	None	None
3-S	10-9-90	7.0	10.5	903	None	Slight	Strong
3-I	10-9-90	7.1	10.5	968	None	Slight	None
3-D	10-4-90	7.2	12.0	945	None	Slight	None
3-PC	10-4-90	7.3	11.0	1,024	None	None	None
4-S	10-4-90	7.4	14.0	433	None	Slight	None
4-I	10-4-90	7.4	13.0	1,240	None	Slight	Slight
4-D	10-8-90	7.5	10.5	903	None	None	None
4-PC	10-8-90	7.4	10.0	910	None	None	None
5-S	10-8-90	6.8	11.0	1,152	None	Slight	None
5-I	10-10-90	6.9	12.0	1,512	None	Slight	Slight
5-D	10-9-90	7.5	11.0	896	None	Slight	None
5-PC	10-2-90	7.5	12.0	819	None	Slight	Yes
6-S	10-8-90	7.0	11.0	1,280	None	Moderate	None
6-D	10-5-90	7.4	13.0	992	None	None	None
7-S	10-9-90	6.8	11.0	1,088	None	Slight	None
7-D	10-4-90	7.4	11.0	1,152	None	None	None
8-S	10-10-90	6.9	10.5	903	None	Slight	None
8-D	10-4-90	7.4	12.0	945	None	None	None
9-S	10-10-90	6.9	12.0	1,197	None	Moderate	Slight
9-D	10-5-90	7.3	11.0	1,024	None	None	None
10-S	10-8-90	6.9	14.0	1,342	None	Slight	None

TABLE 6-7 (CONTINUED)

SUMMARY OF SAMPLING DATES AND WATER QUALITY IN-FIELD MEASUREMENTS

Well No.	Sampling Date	pH (S.U.)	Temperature (°C)	SEC @ 25°C (µmho/cm)	Color[a]	Turbidity[b]	Odor[b]
1-S	10-3-90	6.9	12.0	1,008	None	Slight	None
1-I	10-2-90	7.6	12.5	1,187	None	None	None
1-D	10-3-90	7.5	11.0	704	None	None	None
1-PC	10-10-90	7.4	10.0	975	None	None	None
2-S	10-8-90	7.0	11.5	1,016	None	Slight	None
2-I	10-4-90	7.2	11.0	1,024	None	Slight	Slight
2-D	10-8-90	7.1	10.0	910	None	None	None
2-PC	10-10-90	7.5	11.0	960	None	None	None
3-S	10-9-90	7.0	10.5	903	None	Slight	Strong
3-I	10-9-90	7.1	10.5	968	None	Slight	None
3-D	10-4-90	7.2	12.0	945	None	Slight	None
3-PC	10-4-90	7.3	11.0	1,024	None	None	None
4-S	10-4-90	7.4	14.0	433	None	Slight	None
4-I	10-4-90	7.4	13.0	1,240	None	Slight	Slight
4-D	10-8-90	7.5	10.5	903	None	None	None
4-PC	10-8-90	7.4	10.0	910	None	None	None
5-S	10-8-90	6.8	11.0	1,152	None	Slight	None
5-I	10-10-90	6.9	12.0	1,512	None	Slight	Slight
5-D	10-9-90	7.5	11.0	896	None	Slight	None
5-PC	10-2-90	7.5	12.0	819	None	Slight	Yes
6-S	10-8-90	7.0	11.0	1,280	None	Moderate	None
6-D	10-5-90	7.4	13.0	992	None	None	None
7-S	10-9-90	6.8	11.0	1,088	None	Slight	None
7-D	10-4-90	7.4	11.0	1,152	None	None	None
8-S	10-10-90	6.9	10.5	903	None	Slight	None
8-D	10-4-90	7.4	12.0	945	None	None	None
9-S	10-10-90	6.9	12.0	1,197	None	Moderate	Slight
9-D	10-5-90	7.3	11.0	1,024	None	None	None
10-S	10-8-90	6.9	14.0	1,342	None	Slight	None

TABLE 6-7 (CONTINUED)

SUMMARY OF SAMPLING DATES AND WATER QUALITY IN-FIELD MEASUREMENTS

Well No.	Sampling Date	pH (S.U.)	Temperature (°C)	SEC @ 25°C (μmho/cm)	Color[a]	Turbidity[b]	Odor[b]
10-I	12-6-90	7.2	10.9	1,080	None	Turbid	None
10-D	10-2-90	7.6	13.0	682	None	Slight	None
11-S	10-5-90	7.4	15.5	476	None	Slight	None
11-D	10-9-90	7.4	10.0	1,040	None	None	None
12-S	10-3-90	7.1	12.5	1,000	None	Slight	None
12-D	10-10-90	7.3	10.0	1,040	None	None	Slight
13-S	10-3-90	7.2	12.0	756	None	Turbid	None
13-D	10-3-90	7.6	11.0	896	None	Slight	Slight
14-S	10-3-90	7.0	12.0	945	None	Slight	None
14-D	10-10-90	7.4	12.0	1,071	None	None	None
15-S	10-2-90	7.2	12.0	693	None	Slight	None
16-S	10-9-90	7.0	11.0	896	None	Slight	None
17-S	10-4-90	7.1	13.0	1,364	None	Slight	None
18-S	10-4-90	7.6	13.0	1,302	None	Slight	Moderate
19-S	10-5-90	7.2	13.0	830	None	Slight	None
20-S	10-9-90	7.4	14.0	488	None	Slight	None
21-S	10-4-90	7.0	12.0	1,008	None	Slight	None
22-S	10-10-90	6.9	12.0	1,260	None	Turbid	Slight
23-S	10-3-90	7.3	12.0	630	None	Turbid	None
24-S	10-5-90	7.0	15.5	1,190	None	Slight	None
25-S	10-3-90	7.1	13.0	744	None	Slight	None
FMC-33	10-10-90	7.1	10.0	910	None	None	None
AT-1	10-10-90	6.9	12.5	1,250	None	None	None
AT-2	10-5-90	7.0	16.0	1,298	None	None	None
AT-3	10-8-90	7.2	13.0	992	None	None	Slight

Notes:

[a] Based on filtrate.
[b] Based on unfiltered portion.

7. SOIL BORINGS

7.1 Planned Procedures

A total of 55 soil borings were advanced to the water table in four specific areas (background area, north 40 area, Hazardous Waste Storage Area C, and the southeast area near well 9-S) as shown on Figure 1-2. The surveyed soil boring coordinates are shown in Table 7-1. The objective of the soil boring program was to provide additional data regarding the vertical and horizontal nature and extent of soil contamination within each specific area. Soil samples were analyzed for the chemical parameters shown in Table 7-2.

Common elements of soil borings, sampling, and analysis included the following:

- Surveying of proposed soil boring locations.
- Adjustment of boring location as required by representatives of FMC and local utility companies.
- Decontamination area set-up.
- Health and Safety meeting for on-site personnel.
- Sample collection.
- Sample description.
- Field Hnu headspace analysis.
- Sample selection.
- Documentation and chain-of-custody procedures.
- Sample shipment.
- Sample analysis.

Soil borings were advanced by two truck-mounted drill rigs. Drilling was performed using hollow-stemmed augers. Samples for chemical and geotechnical analysis were collected using a 3-inch outer diameter, stainless steel, split-barrel sampler (split-spoon).

When the auger was advanced to the top of the desired sampling interval, the decontaminated split-spoon was lowered into the hollow-stemmed auger on the end of an

TABLE 7-1

SUMMARY OF SURVEYED SOIL BORING COORDINATES

Boring No.	North	East	Elevation (feet M.S.L.)
North 40 Area			
NB-01	7402.886	5534.091	836.34
NB-02	7407.267	5637.504	836.13
NB-03	7377.784	5531.538	835.81
NB-04	7377.500	5577.930	835.88
NB-05	7359.083	5578.500	835.56
NB-06	7346.779	5547.799	835.34
NB-07	7366.893	5825.410	836.23
NB-08	7346.958	5827.758	835.98
NB-09	7326.845	5798.735	835.61
NB-10	7485.586	5163.242	835.15
NB-11	7364.011	5433.228	835.59
NB-12	7299.364	5394.439	835.17
NB-13	7254.520	5445.636	835.10
NB-14	7185.738	5588.019	834.82
NB-15	7364.951	5907.341	836.44
NB-16	7253.560	5786.125	834.91
NB-17	7132.549	5760.679	835.18
NB-18	7101.908(A)	5700.119(A)	835.28(A)
NB-19	7320.305	5493.945	834.94
NB-20	7351.850	5688.626	835.42
NB-21	7397.752	5473.091	835.99
NB-22	7258.615	5517.092	834.97
NB-23	7928.984	4044.939	835.54
Area "C"			
CB-01	6932.431	6461.522	837.04
CB-02	6932.604	6446.200	837.05
CB-03	6929.945	6416.026	835.95
CB-04	6928.238	6387.754	836.24
CB-05	6926.552	6358.815	836.32

(A) Approximate - NB-18 was graded and paved between drilling and surveying; SB02 and SB04 were covered with large snowpiles prior to surveying.

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TABLE 7-1 (CONTINUED)

SUMMARY OF SURVEYED SOIL BORING COORDINATES

Boring No.	North	East	Elevation (feet M.S.L.)
Area "C" (continued)			
CB-06	6923.468	6303.910	836.15
CB-07	6896.796	6360.870	835.16
CB-08	6896.736	6389.700	835.07
CB-09	6897.939	6418.696	835.40
CB-10	6899.722	6449.787	835.56
CB-11	6870.910	6472.602	835.81
CB-12	6869.655	6451.405	835.46
CB-13	6867.604	6421.282	835.17
CB-14	6865.018	6392.648	834.72
CB-15	6864.454	6368.063	834.74
CB-16	6858.256	6305.175	834.46
CB-17	6832.530	6372.820	834.88
CB-18	6835.727	6395.141	834.88
CB-19	6838.143	6423.789	834.91
CB-20	6840.827	6453.860	835.55
CB-21	6841.793	6474.137	835.66
CB-22	6810.431	6457.116	835.64
CB-23	6808.441	6426.891	835.04
CB-24	6803.796	6398.764	835.54
CB-25	6803.295	6377.448	835.59
CB-26	6769.184	6310.440	834.80
CB-27	6774.005	6402.431	835.40
CB-28	6780.939	6476.278	835.53
Southeast Area			
SB-01	5911.071	6465.647	835.53
SB-02	5899.333(A)	6451.975(A)	835.45(A)
SB-03	5878.831	6450.891	835.81
SB-04	5852.781(A)	6412.550(A)	834.92(A)

(A) Approximate - NB-18 was graded and paved between drilling and surveying; SB02 and SB04 were covered with large snowpiles prior to surveying.

TABLE 7-2

CHEMICAL PARAMETERS ANALYZED IN SOIL SAMPLES

Volatiles (all samples)

Trichlorofluoromethane
Vinyl chloride
Chloroethane
Methylene chloride
1,1-Dichloroethene
1,1-Dichloroethane
1,2-Dichloroethene (Total)
Chloroform
1,1,1-Trichloroethane
Trichloroethene
Benzene
Tetrachloroethene
Toluene
Chlorobenzene
Ethylbenzene
Xylenes (Total)

PCBs/Pesticides
(selected samples)

Alpha-BHC
Beta-BHC
Delta-BHC
Gamma-BHC (Lindane)
Heptachlor
Aldrin
Heptachlor epoxide
Endosulfan I
Dieldrin
4,4'-DDE
Endrin
Endosulfan II
4,4'-DDD
Endosulfan sulfate
4,4'-DDT
Methoxychlor
Endrin ketone
Alpha-Chlordane
Gamma-Chlordane
Toxaphene
Aroclor-1016
Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260

Semivolatiles
(selected samples)

Phenol
Bis(2-chloroethyl)ether
2-Chlorophenol
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Benzyl alcohol
1,2-Dichlorobenzene
2-Methylphenol
Bis(2-chloroisopropyl)ether
4-Methylphenol
N-Nitroso-di-n-propylamine
Hexachloroethane
Nitrobenzene
Isophorone
2-Nitrophenol
2,4-Dimethylphenol
Benzoic acid
Bis(2-Chloroethoxy)methane
2,4-Dichlorophenol
1,2,4-Trichlorobenzene
Naphthalene
4-Chloroaniline
Hexachlorobutadiene
4-Chloro-3-methylphenol
2-Methylnaphthalene
Hexachlorocyclopentadiene
2,4,6-Trichlorophenol
2,4,5-Trichlorophenol
2-Chloronaphthalene
2-Nitroaniline
Dimethylphthalate
Acenaphthylene
2,6-Dinitrotoluene
3-Nitroaniline
Acenaphthene
2,4-Dinitrophenol
4-Nitrophenol
Dibenzofuran
2,4-Dinitrotoluene
Diethylphthalate
4-Chlorophenyl-phenylether
Fluorene
4-Nitroaniline
4,6-Dinitro-2-methylphenol
N-nitrosodiphenylamine
4-Bromophenyl-phenylether
Hexachlorobenzene
Pentachlorophenol
Phenanthrene
Anthracene
Di-n-Butylphthalate
Fluoranthene
Pyrene

Semivolatiles (cont.)

Butylbenzylphthalate
3,3'-Dichlorobenzidine
Benzo(A)anthracene
Chrysene
Bis(2-ethylhexyl)phthalate
Di-n-Octylphthalate
Benzo(B)fluoranthene
Benzo(K)fluoranthene
Benzo(A)pyrene
Indeno(1,2,3-CD)pyrene
Dibenz(A,H)anthracene
Benzo(G,H,I)perylene

Inorganics
(selected samples)

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Nickel
Potassium
Selenium
Silver
Sodium
Thallium
Vanadium
Zinc
Cyanide (Total)

Metals (all samples)

Barium
Manganese
Selenium
Zinc

appropriate drill rod. The split-spoon was driven approximately 24 inches or to refusal (more than 60 blow counts per 6 inches) using a 140-pound weight. Once driven, the split-spoon and rod were withdrawn from the auger, and the split-spoon was removed from the rod. The split-spoon was immediately opened, and the amount of sample recovery was measured. Appropriate samples for chemical and physical analyses were taken from the split-spoon, and the necessary information for logging was taken.

Detailed procedures for these activities are contained in the Draft A-E QCP-SP (RMT, 1990a).

Deviations from the planned procedures are discussed in Subsection 7.3, Implementation Problems and Corrective Actions section.

7.2 Quality Control Activities

7.2.1 Field Measurements

The following steps were taken to maximize the possibility that data gathered in the field were both valid and unbiased:

- Field geologists were thoroughly trained in the use of each piece of equipment.
- Manufacturer's operation manuals accompanied each piece of equipment in the field.
- Preventive maintenance programs were carried out on a scheduled basis.
- Spare key components were taken into the field in the event of equipment failure or damage.
- Instruments were calibrated prior to initial use on a daily basis, and were rechecked periodically throughout the day.
- Duplicate measurements were taken.
- All readings and calibrations were documented in field log books.
- Daily QA/QC checks of field notes were performed.
- A-E Daily Quality Control Reports were completed at the end of daily field activities.

- Daily QA/QC checks of chain-of-custody forms were performed.
- Blind duplicate samples were collected for chemical analysis.
- The source water which was used for drilling operations was sampled and analyzed for the full list of constituents shown in Table 7-2.

7.2.2 Laboratory Data

A total of 55 soil samples were shipped to RMT Laboratories for analysis. In addition, trip blanks and field duplicates were submitted to RMT Laboratories for quality control purposes. Quality assurance trip blanks, field blanks, and field duplicates were submitted to the USACE-MRD Laboratory for quality assurance checks. Subsequent discussions focus on RMT QC activities.

Sample Tracking

Laboratory reports received from the RMT Laboratory were first checked against sample collection and shipping records to confirm that results were received for each sample that was shipped. Test results were compared to the parameter list originally requested for analysis to check for completeness. All results for all sampling locations were received.

The sample identification system used for soil samples subjected to chemical analysis was as follows (where "00" represents numeric values):

CB00 A through J	Hazardous waste storage area C
NB00 A through K	North 40 area and background
SB00 A through J	Southeast area
QCR00	Field blank.
QCT00	Trip blank.
QCD00	Blind field duplicate.

For the above codes, the suffix letters represent depth intervals as follows:

A	0 - 2 feet	G	16 - 18 feet
B	3 - 5 feet	H	18 - 20 feet
C	6 - 8 feet	I	20 - 22 feet
D	8 - 10 feet	J	23 - 25 feet
E	10 - 12 feet	K	26 - 28 feet
F	13 - 15 feet		

Samples from newly installed well 10-I were identified as S10IA, S10IB, etc. Completed chain-of-custody forms for all samples are included in Appendix E. Laboratory data sheets include the sample identification code, as described above, as well as the laboratory sample tag number and case number.

Holding Times

The original VOC analyses for soil samples were completed within 10 days of VTSR (validated time of sample receipt at the laboratory). Some of the reanalyses and diluted runs exceeded the holding times. The largest holding time for any dilution, reanalysis or matrix spike was 18 days.

The semivolatile extractions for soil samples were completed within 5 days of VTSR, and analyses were completed within 40 days of VTSR.

No sample results were rejected based on holding times.

Trip Blanks

Sixteen trip blanks for soil consisting of deionized water were submitted to RMT Laboratories and were analyzed for VOCs only, along with the samples. No VOCs were detected in any trip blank.

Field Blanks

Nine field blanks (rinsate blanks) were collected for VOCs in soil. Four field blanks were collected for semivolatiles in soils. Nine field blanks were collected for PCBs/pesticides in soils. No VOCs, semivolatile or PCBs/pesticides were detected in any field blank. Nine field blanks were collected for inorganics in soils. Results are shown in Table 7-3. Field blank data cannot be directly translated into expected impact on soil samples. However, no sample results were rejected based on the field blank data.

TABLE 7-3

INORGANICS FIELD BLANKS - SOIL
(All units in µg/L)

Aluminum		Iron		Zinc	
QCR53	103.00 N	QCR52	149.00 N	QCR51	38.80
QCR54	104.00	QCR53	241.00 N	QCR53	27.70
QCR56	439.00 N	QCR54	285.00 N	QCR54	32.20
		QCR55	165.00 N	QCR55	20.60
		QCR56	352.00 N		
		QCR57	157.00 N		
		QCR58	121.00 N		

Cadmium	
QCR53	5.30*

Calcium		Manganese		Chromium	
QCR51	716.00	QCR51	6.20 N	QCR55	10.30
QCR52	521.00	QCR52	15.50 N	QCR56	15.60
QCR53	1,220.00	QCR53	25.40 N		
QCR54	964.00 N	QCR54	8.80 N		
QCR55	556.00	QCR55	5.10		
QCR56	1,370.00	QCR56	15.00		

Mercury	
QCR53	0.30

Notes:

All other results were below reporting limits.

N = Spiked sample recovery not within control limits.

* = Duplicate analysis not within control limits.

TABLE 7-4

VOC METHOD BLANKS - SOIL

Parameter	Units	VBLKH06		VBLKH16		VBLKH25	
Trichlorofluoromethane	µg/kg	5	U	5	U	5	U
Vinyl chloride	µg/kg	10	U	10	U	10	U
Chloroethane	µg/kg	10	U	10	U	10	U
Methylene chloride	µg/kg	3	J	5	U	6	
1,1-Dichloroethene	µg/kg	5	U	3	J	5	U
1,1-Dichloroethane	µg/kg	5	U	5	U	5	U
1,2-Dichloroethene (Total)	µg/kg	5	U	5	U	5	U
Chloroform	µg/kg	5	U	5	U	5	U
1,1,1-Trichloroethane	µg/kg	5	U	5	U	5	U
Trichloroethene	µg/kg	5	U	5	U	5	U
Benzene	µg/kg	5	U	5	U	5	U
Tetrachloroethene	µg/kg	5	U	5	U	5	U
Toluene	µg/kg	5	U	5	U	5	U
Chlorobenzene	µg/kg	5	U	5	U	5	U
Ethylbenzene	µg/kg	5	U	5	U	5	U
Xylenes (Total)	µg/kg	5	U	5	U	5	U

U = Undetected. J = Estimated Concentration.

All parameters for the following method blanks were undetected:

VBLKH01	VBLKH14	VBLKH23
VBLKH03	VBLKH15	VBLKH24
VBLKH05	VBLKH17	VBLKH26
VBLKH07	VBLKH18	VBLKH27
VBLKH08	VBLKH19	VBLKH28
VBLKH10	VBLKH20	VBLKH29
VBLKH11	VBLKH21	VBLKH30
VBLKH12	VBLKH22	VBLKH31
VBLKH13		

Method Blanks

VBLK06	VBLK16	VBLKH25
Applicable Samples		
NB07C	QCT56	QCD66
NB07G	NB01B	QCR58
NB07I	NB10B	SB02E
NB08C	NB20B	SB02G
NB08G	QCD58	SB02I
NB08I	NB20BMSD	SB03C
NB09C	CB02J	SB03G
NB09G	QCD59	SB03I
NB09I	QCT58	SB04H
NB17G		SB04J

Method Blanks

Twenty-eight method blanks were analyzed for VOCs in soil. No VOCs were detected except for three blanks. Methylene chloride was identified in two of the blanks, and 1,1-dichloroethene was detected in one of the three (Table 7-4). No detectable methylene chloride or 1,1-dichloroethene was observed in any of the samples associated with these blanks. Fourteen method blanks were analyzed for semivolatiles in soil. No semivolatiles were detected in any method blanks. (For tentatively identified compounds, a tetrachloroethane, "Freon Contaminant," was identified in all blanks and samples as a byproduct of the acetone/methylene chloride extraction used for solids.)

Duplicate Samples

Table 7-5 shows a comparison of analyses for VOCs in blind field duplicates of soil. Although 14 VOCs were analyzed in 17 pairs of duplicates, only 9 pairs of values exhibited concentrations greater than 5 times the reporting limits. These pairs exhibited considerable variation, due to both sample heterogeneity and the difficulty of performing repeatable VOC extraction and analysis in soil.

Of particular note is the difference in reported trichloroethene concentrations between NB14A and the blind field duplicate (QCD52). Three separate subsamples of QCD52 exhibited measured trichloroethene concentrations much higher than NB14A. Matrix spike and matrix spike duplicate analyses of QCD52 exhibited negative recoveries. It appears that this sample matrix may pose unusual difficulties in extracting and analyzing trichloroethene precisely. The actual trichloroethene concentration may be higher than reported in the analytical results for NB14A. This problem did not appear systematically in the data set.

A comparison of analyses for PCBs/pesticides in blind field duplicates of soil was also conducted. Although 27 constituents were analyzed in seven pairs of blind duplicates, all values were within 5 times the reporting limit, so the comparisons are not highly meaningful. No data are shown.

TABLE 7-5

VOC BLIND FIELD DUPLICATES - SOIL
(all concentrations in µg/kg)

1,2-Dichloroethene (Total)		
Original	Duplicate	RPD (%)
NB06G 6	QCD56 53	160
NB20J < 6	QCD58 33	**140A**

Tetrachloroethene		
Original	Duplicate	RPD (%)
NB06G 110	QCD56 **600D**	140

Trichloroethene		
Original	Duplicate	RPD (%)
NB14A 37*	QCD52 26,000**D***	200*
NB16C 39	QCD54 10	120
NB06G 28	QCD56 110 **D**	120
NB20J 6 **J**	QCD58 63	170
CB24E 15	QCD60 43	97
CB22I 2 **J**	QCD61 32	180

A The RPD calculation is approximate because one data value is below the reporting limit.

D The reported value is from a second analytical run because in the first run, the value exceeded the calibration limit.

J Estimated concentration.

* See explanation in text.

A comparison of analyses for semivolatiles in blind field duplicates of soil was also conducted. Although 35 semivolatiles were analyzed in 14 pairs of duplicates, no values were above reporting limits. No data are shown.

Table 7-6 shows a comparison of analyses for inorganics in blind field duplicates of soil. These pairs exhibit considerable variation, due to both sample heterogeneity and difficulty in replicating laboratory digestion and analysis of small subsamples. For all constituents, relative percent difference values were calculated for only those pairs in which one or both values were at least 5 times the reporting limit.

Based on these comparisons, no sample results were rejected.

Matrix-Spiked Samples

In general, matrix spike data indicated that laboratory procedures were appropriate for soil samples. However, matrix spikes for trichloroethene warrant some explanation. One-third of the matrix spikes or matrix spike duplicates (10) were out of control limits for recovery of trichloroethene from soil. Of these 10 spikes, four represent analyses of samples whose trichloroethene concentrations were much greater than the spikes. Therefore, the ability to accurately measure a small increase due to the spike was rendered extremely difficult. In two of the other 6 spiked samples, the target compounds are distributed heterogeneously in the material contained in the sample vial, as evidenced by wide variations in target compound results from the original sample to the matrix spike to the matrix spike duplicate. The other four out-of-control spikes were about 10 percent below control limits. Therefore, the matrix spike difficulties do not appear to represent a significant or systematic laboratory procedural difficulty with these matrices. However, for one sample, NB046, a significant matrix effect is evident for VOC analysis. The VOC data may be unreliable.

TABLE 7-6

INORGANICS BLIND FIELD DUPLICATES - SOIL
(CLP METALS + CN; all units mg/kg)

Parameter	Sample CB06E	Blind Duplicate QCD51	RPD %	Sample NB14A	Blind Duplicate QCD52	RPD %
Aluminum	1,710. N	1,620. N	5.4	3,430. N	3,460. N	0.87
Barium	8.50	6.90	--	63.50	65.50	3.1
Calcium	3,960	3,230	20	21,900	33,500	42
Chromium	6.40	7.30	13	15.20	13.20	14
Copper	5.70	5.70	--	12.60	11.80	6.6
Iron	5,010. N	4,700. N	6.4	16,500. N	18,800. N	13
Lead	1.60	1.30	--	9.60	6.80	34
Magnesium	1,880	1,630	14	5,540	6,580	17
Manganese	64.70 N	59.50 N	8.4	1,750. N	2,750. N	44
Mercury	0.11 U	0.11 U	--	0.11 U	0.12 U	--
Nickel	4.30 U	7.80	--	14.40	11.30	--
Potassium	155.00	163.00	--	255	221	14
Vanadium	16.40	15.70	--	20.40	25.10	21
Zinc	9.70	9.50	--	33.20	26.50	22

Notes:

U = Undetected. Value shown is method detection limit.
N = Spiked sample recovery not within control limits.
-- = Both values are less than 5 times the reporting limit; therefore, an RPD calculation is of limited significance and was not done.

All values were less than 5 times the reporting limit for antimony, arsenic, beryllium, cadmium, cobalt, selenium, silver, thallium, and cyanide.

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TABLE 7-6 (CONTINUED)

INORGANICS BLIND FIELD DUPLICATES - SOIL
(CLP METALS + CN; all units mg/kg)

Parameter	Sample NB20J	Blind Duplicate QCD58	RPD %	Sample CB01G	Blind Duplicate QCD59	RPD %
Aluminum	1,150	1,120	2.6	1,280	1,530	18
Barium	6.50	6.30 U	--	6.60 U	7.50	--
Calcium	21,600. N	19,600. N	9.7	3,170. N	3,420. N	7.6
Chromium	4.00 *	4.10*	--	5.00 *	5.40 *	7.7
Copper	2.30 U	2.50 U	--	3.10	4.30	--
Iron	3,300. N	3,210. N	2.8	4,610. N	4,920. N	6.5
Lead	1.90	2.00	--	1.30	1.30	--
Magnesium	5,700. N*	4,730. N*	19	1,160. N*	1,330. N*	14
Manganese	283. N	273. N	3.6	59.10 N	69.00 N	15
Mercury	0.11 U	1.00	160 A	0.13 U	0.10 U	--
Nickel	4.80	9.30	--	5.30 U	4.20 U	--
Vanadium	5.90 *	6.30 U*	--	11.90 *	13.80 *	--
Zinc	8.80	8.90	--	7.80	7.30	--

Notes:

U = Undetected. Value shown is method detection limit.
N = Spiked sample recovery not within control limits.
A = The RPD calculation is approximate because one data value is below the reporting limit.
* = Duplicate analysis not within control limits.
-- = Both values are less than 5 times the reporting limit; therefore, an RPD calculation is of limited significance and was not done.

All values were less than 5 times the reporting limit for antimony, arsenic, beryllium, cadmium, cobalt, selenium, silver, thallium, and cyanide.

TABLE 7-6 (CONTINUED)

INORGANICS BLIND FIELD DUPLICATES - SOIL
(CLP METALS + CN; all units mg/kg)

Parameter	Sample CB24E	Blind Duplicate QCD60	RPD %	Sample SB03G	Blind Duplicate QCD66	RPD %
Aluminum	6,980. N	6,860. N	1.7	1,590. N	1,690. N	6.1
Barium	146	145	0.69	8.90	8.80	--
Calcium	10,600	15,600	38	6,390	5,930	7.5
Chromium	18.80	18.40	2.2	5.50	6.20	12
Copper	17.00	47.90	95	4.90	4.80	--
Iron	26,100. N	24,800. N	5.1	5,220. N	5,940. N	13
Lead	8.60	12.70	38	1.30	1.50	--
Magnesium	2,960	5,070	53	2,200	1,980	11
Manganese	2,050	2,690	27	52.70	53.40	1.3
Mercury	0.12 U	0.12 U	--	0.10 U	0.10 U	--
Nickel	21.90	17.00	25	6.30	4.20	--
Potassium	335	519	43	208	190	--
Vanadium	36.20	27.20	28	12.10	14.50	--
Zinc	30.60	42.10	32	9.80	9.80	--

Notes:

U = Undetected. Value shown is method detection limit.
N = Spiked sample recovery not within control limits.
-- = Both values are less than 5 times the reporting limit; therefore, an RPD calculation is of limited significance and was not done.

All values were less than 5 times the reporting limit for antimony, arsenic, beryllium, cadmium, cobalt, selenium, silver, thallium, and cyanide.

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TABLE 7-6 (CONTINUED)

INORGANICS BLIND FIELD DUPLICATES- SOIL
(CLP METALS + CN; all units mg/kg)

Parameter	Sample S101B	Blind Duplicate QCD67	RPD %
Aluminum	2,790. N	1,970. N	34
Barium	30.00	14.20	71
Calcium	22,500	25,300	12
Chromium	8.60	6.80	23
Copper	5.80	4.00	--
Iron	6,800. N	5,530. N	21
Lead	4.10	2.30	56
Magnesium	9,610	8,930	7.3
Manganese	494	410	19
Mercury	0.10 U	0.10 U	--
Nickel	11.00	7.80	--
Vanadium	10.20	9.40	--
Zinc	22.50	13.50	50

Notes:

U = Undetected. Value shown is method detection limit.
N = Spiked sample recovery not within control limits
-- = Both values are less than 5 times the reporting limit; therefore, an RPD calculation is of limited significance and was not done.

All values were less than 5 times the reporting limit for antimony, arsenic, beryllium, cadmium, cobalt, selenium, silver, thallium, and cyanide.

Surrogate-Spiked Samples

Chronic or systematic errors were not observed, based on the recoveries for surrogate-spiked samples. As is noted above, NB046 posed some analytical difficulty, which was also observed in surrogate recovery failure.

QC Data/Documentation Completeness

The following documentation was checked to verify that it was included in the data package and that appropriate flagging was used, out of control difficulties were noted, and QC failures were cited in the case narrative:

Organics

- Case narratives
- Sample data forms (e.g., Form I, quant. report, mass spectra, etc.)
- GC/MS tunes
- Blanks
- Surrogate recoveries
- Matrix spikes
- Holding times
- Initial calibrations
- Continuing calibrations
- Pesticide calibration analytical sequence for pesticide
- DDT/Endrin/DBC degradation check
- Evaluation standards check
- Pesticide/PCB standards summary
- DDT retention time
- Retention time windows

Inorganics

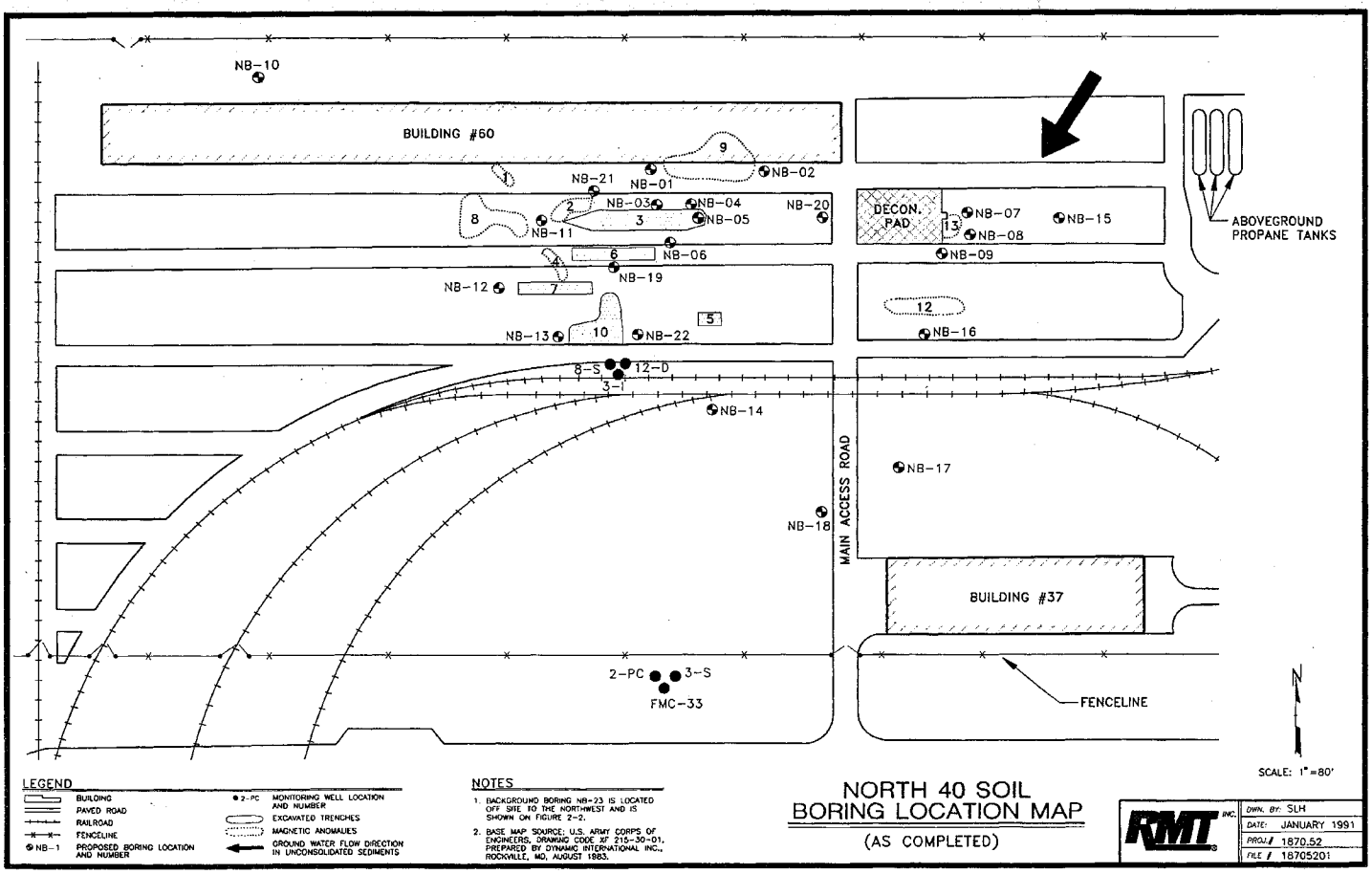
- Cover pages
- Case narratives
- Sample I.D., units, completeness
- Calibrations
- Blanks
- Interference check
- Pre-digestion spike recoveries
- Post-digestion spike recoveries
- Duplicates, recoveries
- Laboratory control
- Standard additions
- ICP linear range
- Preparation logs

7.3 Implementation Problems and Corrective Actions

Problem	Corrective Action
Some of the proposed borings could not be located as proposed, due to underground utilities, vehicle traffic, and/or manufacturing materials which were stockpiled in the proposed location of the boring.	Soil boring locations were adjusted to clear the obstruction, yet still fulfill the objective of the specific boring at each location.
The Hnu photoionizers were not getting fully recharged daily and would not last the entire field day.	Back-up Hnu was used to complete the day. It was determined that Hnu probes must be attached to the instrument in order to obtain a full charge. This was done and no further problems were noticed.
The sample interval depth which most frequently exhibited the highest Hnu reading was the interval which intersected the water table. By coincidence, this was an internal sampled only for physical analysis.	Began to alternate intervals designated for chemical analysis and physical analysis in order to more frequently include the interval intersecting the water table for chemical analysis.
Hnu #2 photoionizer continued to read a high value and, when exposed to a "background" environment, the instrument value would not decrease.	Replaced the probe with an existing on-site spare probe instrument; returned to normal operation.
Hnu #3 photoionizer began to read erratically during CB07.	Hnu #1 was substituted. A loose wire was subsequently found on Hnu #3 and was repaired.
Prior to drilling CB08, a hydraulic line broke on one of the drill rigs, spilling hydraulic fluid on the ground beneath the drill rig.	The spill was confined to a small area by constructing a small dike with surface soil. Hydraulic oil did not permeate the surface soil because the ground surface was frozen. Surface soil was excavated at the spill and stockpiled in two locations. One location was approximately 150 feet west of NB11. The other location is between CB05 and CB06. No contaminated soils came in contact with the soil boring area. The rig was repaired and steam-cleaned prior to drilling.

7.4 Data Presentation

All 55 soil boring locations shown on Figure 1-2 and detailed locations shown on Figures 7-1, 7-2, and 7-3 were sampled and analyzed for the constituents listed in Table 7-1. Appendix G lists the boring number, sample interval, and the corresponding in-field Hnu headspace value. Laboratory results are summarized in Appendix H.



LEGEND

- BUILDING
- PAVED ROAD
- RAILROAD
- FENCELINE
- NB-1 PROPOSED BORING LOCATION AND NUMBER
- 2-PC MONITORING WELL LOCATION AND NUMBER
- EXCAVATED TRENCHES
- MAGNETIC ANOMALIES
- GROUND WATER FLOW DIRECTION IN UNCONSOLIDATED SEDIMENTS

NOTES

1. BACKGROUND BORING NB-23 IS LOCATED OFF SITE TO THE NORTHWEST AND IS SHOWN ON FIGURE 2-2.
2. BASE MAP SOURCE: U.S. ARMY CORPS OF ENGINEERS, DRAWING CODE XF 215-30-01, PREPARED BY DYNAMIC INTERNATIONAL INC., ROCKVILLE, MD, AUGUST 1983.

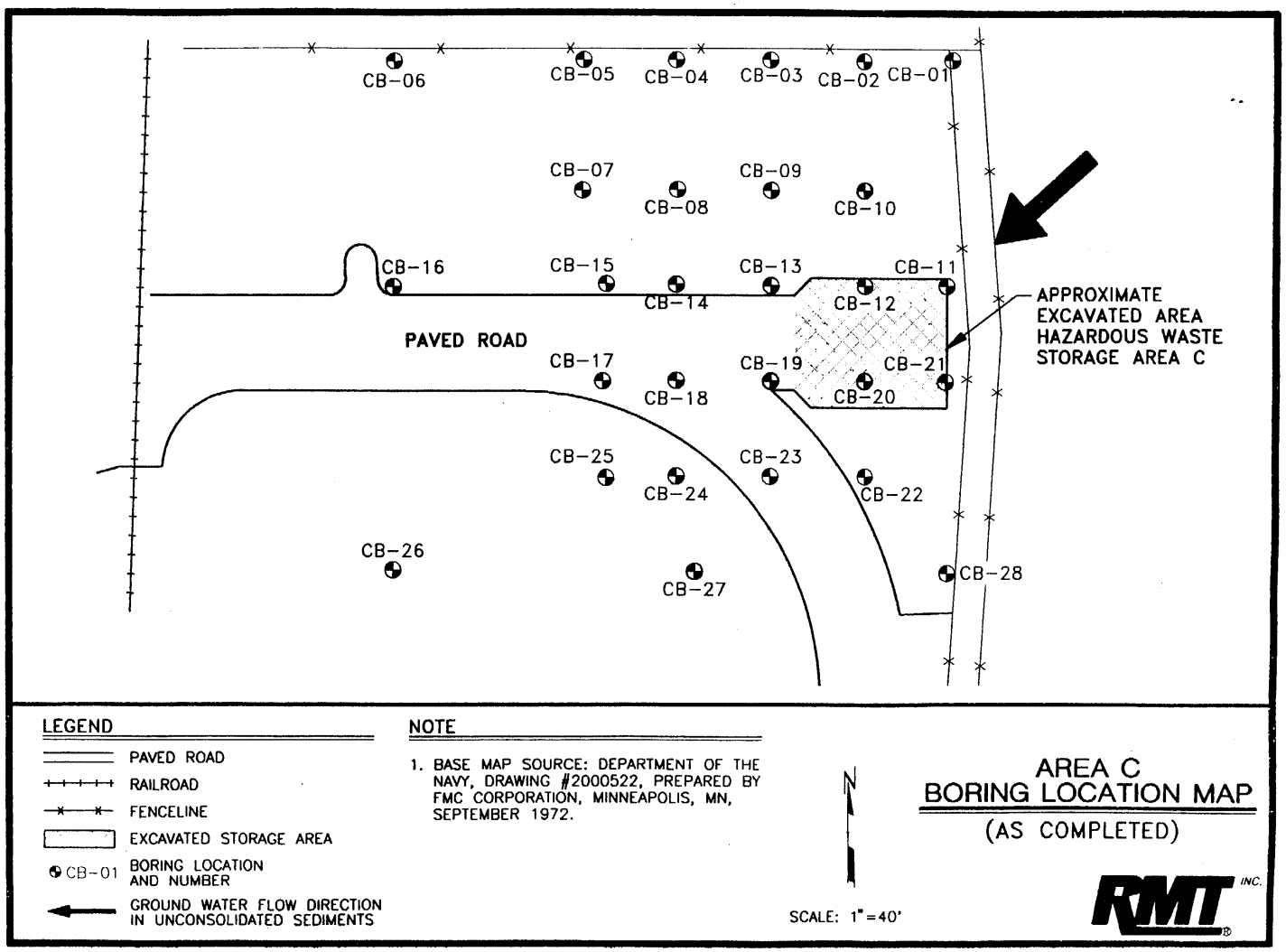
NORTH 40 SOIL BORING LOCATION MAP

(AS COMPLETED)

RMT INC.

DWN. BY:	SLH
DATE:	JANUARY 1991
PROJ. #	1870.52
FILE #	18705201

FIGURE 7-1



LEGEND

- PAVED ROAD
- RAILROAD
- FENCELINE
- EXCAVATED STORAGE AREA
- CB-01 BORING LOCATION AND NUMBER
- GROUND WATER FLOW DIRECTION IN UNCONSOLIDATED SEDIMENTS

NOTE

1. BASE MAP SOURCE: DEPARTMENT OF THE NAVY, DRAWING #2000522, PREPARED BY FMC CORPORATION, MINNEAPOLIS, MN, SEPTEMBER 1972.

N

SCALE: 1"=40'

AREA C
BORING LOCATION MAP
(AS COMPLETED)

RMT INC.

FIGURE 7-2

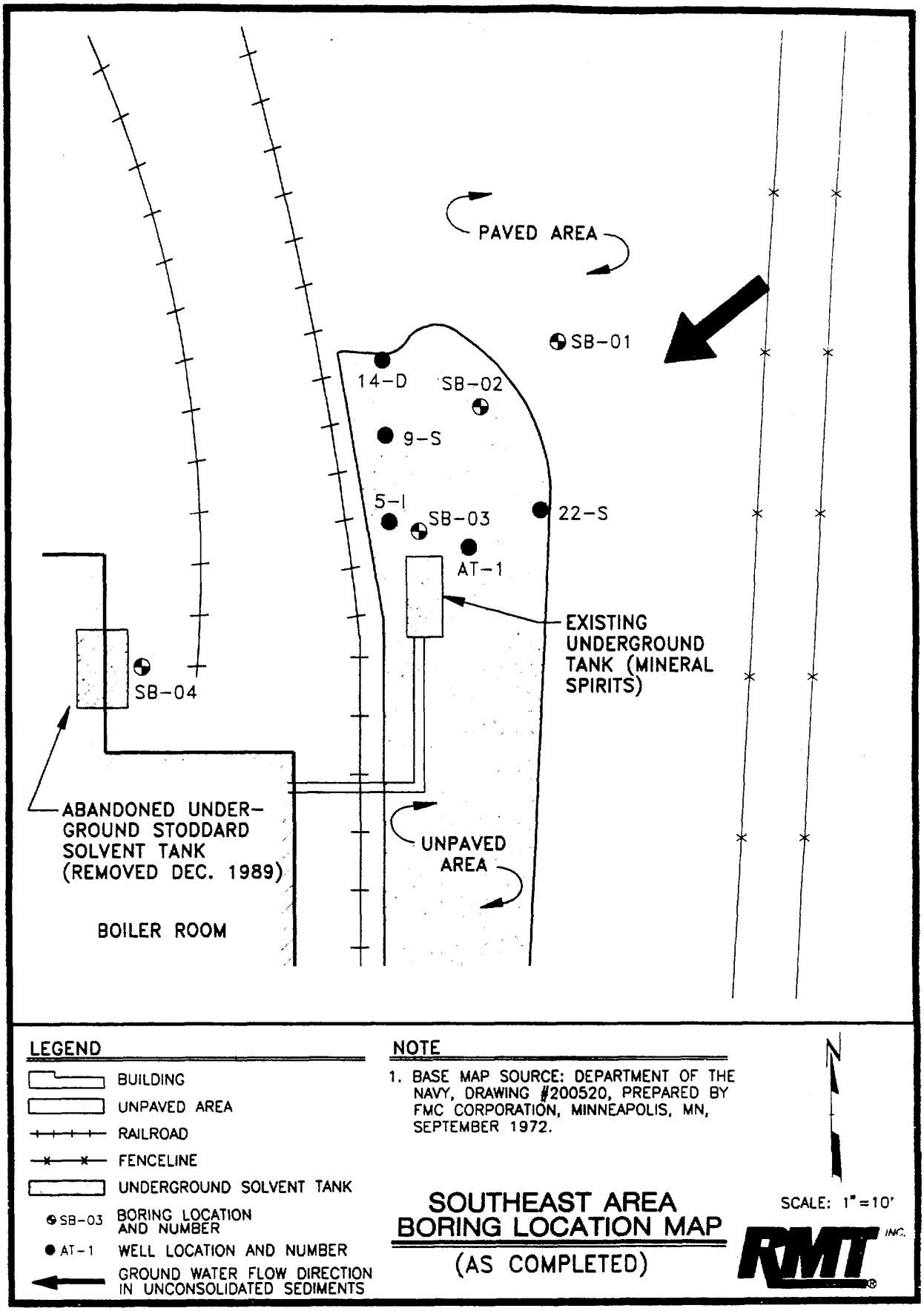

PAVED AREA
SB-01
14-D
SB-02
9-S
5-I
SB-03
22-S
AT-1
EXISTING UNDERGROUND TANK (MINERAL SPIRITS)
SB-04
ABANDONED UNDER-GROUND STODDARD SOLVENT TANK (REMOVED DEC. 1989)
UNPAVED AREA
BOILER ROOM
LEGEND
BUILDING
UNPAVED AREA
RAILROAD
FENCELINE
UNDERGROUND SOLVENT TANK
SB-03 BORING LOCATION AND NUMBER
AT-1 WELL LOCATION AND NUMBER
GROUND WATER FLOW DIRECTION IN UNCONSOLIDATED SEDIMENTS
NOTE
1. BASE MAP SOURCE: DEPARTMENT OF THE NAVY, DRAWING #200520, PREPARED BY FMC CORPORATION, MINNEAPOLIS, MN, SEPTEMBER 1972.
N
SCALE: 1"=10'
SOUTHEAST AREA BORING LOCATION MAP
(AS COMPLETED)
RMT INC.

FIGURE 7-3

8. REFERENCES

Minnesota Pollution Control Agency (MPCA). 1986. Procedures for ground water monitoring, Minnesota Pollution Control Agency Guideline, December, 1986.

RMT, Inc. 1987a. Remedial investigation report for remedial investigation/feasibility study at Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota. (June 1987).

RMT, Inc. 1987b. Interim report for remedial investigation/feasibility study at Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota.

RMT, Inc. 1988. Addendum to the remedial investigation report for the remedial investigation/feasibility study at the Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota. (July 1988).

RMT, Inc. 1990a. Draft A-E quality control plan and sampling plan for soil sampling and monitoring well installation at the Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota. August 1990.

RMT, Inc. 1990b. Draft A-E quality control plan and sampling plan for monitoring well sampling rounds at the Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota. September 1990.

U.S. Environmental Protection Agency. 1987a. Data quality objectives for remedial response activities. Washington, D.C.: U.S. Environmental Protection Agency - Office of Emergency and Remedial Response. EPA/540/G-87/003.

U.S. Environmental Protection Agency. 1987b. USEPA contract laboratory program - statement of work for organics analysis. Washington, D.C.: U.S. Environmental Protection Agency - Office of Emergency and Remedial Response.

APPENDIX A

A-E DAILY QUALITY CONTROL REPORTS

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.40 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: Oct 1, 1990 AUTHOR: Thomas E. Koch

WEATHER: Clear, sunny ~75°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Went over Health & Safety plan. Level D used for water levels. No problems.

WORK PERFORMED:
Setup trailer. Toured facility with Dick Hanson, R. Graham and G. Porus began water levels.

SAMPLING PERFORMED:
No sampling performed.

FIELD ANALYSIS PERFORMED:

HNU calibrated - NO problems. Other meters not used today. 31 of 53 water levels completed. NO HNU Readings ABOVE BACKGROUND.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

~~No Problems TK~~
Lock broken at 5PC. - Replaced lock with master Lock #0464.
Well 18S found unlocked - locked after water level taken.
Wells 17S and ~~17D~~ 70 unlocked - locked after water levels.

QUALITY CONTROL ACTIVITIES INITIATED:

No Action.

Site Coordinator Signature: Thomas E Kidd DATE: 10/1/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.40 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: Oct 2, 1990 AUTHOR: Thomas E. Koch

WEATHER:
Mostly cloudy approximately 65° in the morning changing to PARTLY CLOUDY approximately 75° in the afternoon.

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D used during purging of bailed wells.
Modified level D used during all other activities.
No Problems.

WORK PERFORMED:
GROUND WATER sampling was performed at 4 wells.
SURVEYING FOR the proposed locations of the SS soil borings began by bringing in known control points.
23 LOCATIONS WERE STAKED IN the NORTH 40 (includes the background boring in ANOKA County Park).
TERRY MARSH FROM WARZYN ENG. WAS ONSITE all DAY - SPENT MOST of The DAY with the GROUND WATER SAMPLING TEAM.
THE Remaining 22 of 53 wells were checked for STATIC water level.

SAMPLING PERFORMED:
SAMPLED wells with designations as follows: M15S (included pest/PCBS), M01T, M10D, M05PC. Also collected one QC field blank (QCF01) and shipped all of the above with TRIP blank QCT01.

FIELD ANALYSIS PERFORMED:

pH, electrical conductivity and temperature of ground water purged and samples were collected at each location. HNU Reading for wells where water levels were obtained were ~~at~~ background except at wells Ø3S (50 ppmv at well head; NOT detected in breathing zone); Ø7S (7 ppmv at well head); ~~Ø2~~ Ø2S (3 ppmv at well head); and 1ØS (10 ppmv at well head). No readings above background in breathing zone.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

No key was available on either the RMT key ring or the set of keys provided by Dick Hanson (DPRO) to open well FMC 33. The lock was cut and was replaced with lock # 0464. Well Ø4D was found unlocked - lock was closed after water level. pH meter 5176 malfunctioned during the buffer check being performed at the close of the day. The meter check had been performed at three other times during the day and was fine. meter 5176 had no apparent problems during the day. The meter had been calibrated at 4:40 PM - only one final sample (MØSA) was collected after that time and all readings were performed prior to the sample collection time. No field readings are suspect.

QUALITY CONTROL ACTIVITIES INITIATED:

Backup pH meter will be used beginning tomorrow.

Site Coordinator Signature: Thomas E Kal DATE: 10/2/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.40 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/3/90 AUTHOR: Thomas E. Koch

WEATHER: Rainy all morning changing to Partly cloudy and then to sunny by Late afternoon.

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D protection - used raingear as splash protection while bailing.

WORK PERFORMED:
Sampled 8 wells; calibrated pH conductivity meters throughout the day. Survey of proposed boring locations was completed. Five locations were adjusted as noted in the field notebook for surveying due to physical objects being in the way.

SAMPLING PERFORMED:
Wells sampled include: M13S; M14S; M12S, M23S, M13D, M23S, M01D, M01S. Quality control samples included, trip blank (QCT02), Field blank (QCF02) and duplicate QCD01.

FIELD ANALYSIS PERFORMED:
pH/conductivity and temperature were obtained after each well volume removed from sampled wells.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:
pH meter 2054 battery connector broke, however, Ron Vaughn was able to repair - meter ~~crapped~~ out fine after repair.

QUALITY CONTROL ACTIVITIES INITIATED:
· Purge water at wells MW15 and MW10 was being discharged too close to wells and was beginning to run back towards wells. Informed personnel to dump water further from wells

Site Coordinator Signature: Terry Kirk DATE: 10/3/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.40 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/4/90 AUTHOR: Thomas E. Kucl

WEATHER: Sunny - high about 70° - very windy

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D used during all purging by bailer. No problems encountered.

WORK PERFORMED:
Sampled 10 ~~PR~~ TGK 10/4/90 wells and collected 1 quality control field blank, 1 quality control duplicate and one quality control trip blank. Split VOC samples at wells 18S, Ø8D, and Ø4I with Tom Schaub of MPCA.

SAMPLING PERFORMED:
Sampled wells MØ4S, MØ8D, MØ4I, MØ7D, M17S, M18S, MØ1S, MØ2I, MØ3D, MØ3C.

FIELD ANALYSIS PERFORMED:
pH conductivity and temperature of all purge water was collected.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:
pH meter 6057 would not calibrate correctly at the midday check as the slope would not stabilize within the manufacturers limits. A new probe was installed and the problem was corrected.

QUALITY CONTROL ACTIVITIES INITIATED:
New probe installed on pH meter 6057

Site Coordinator Signature: Thomas G Kcal DATE: 10/11/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.40 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/5/90 AUTHOR: Thomas E. Koch

WEATHER: Sunny, slight wind, approximately 70°.

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D used to purge bailed wells.

WORK PERFORMED:
Sampled 6 ground water monitoring wells. Prepared bottles and equipment for next weeks work.

SAMPLING PERFORMED:
Sampled wells M090, AT02, M060, M115, M243, M195. Also prepared quality control field blank QCFB4, and quality control duplicate sample QCDP3.

FIELD ANALYSIS PERFORMED:

pH, temperature and electrical conductivity of purged water were measured.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

The measured depth of well AT02 was determined to be 66.28 feet on Monday October 1. The reported depth of well AT02 in the USACE Scope of Services was 88.0 feet. The difference between these two values was determined to be significant and the depth of well AT02 was remeasured and still found to be 66.3 feet. This value was used to calculate the volume of water for each well volume.

QUALITY CONTROL ACTIVITIES INITIATED:

A comparison of well depths measured and as reported by USACE Scope of Services was made. Wells 1SE, 1PC, 2PC and 3D will be remeasured on Monday 10/8/90 due to differences.

Site Coordinator Signature: J Lynnette Koch DATE: 10/5/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.40 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/4/90 AUTHOR: Thomas E. Koch

WEATHER: Clear to partly cloudy - high around 45°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D used during purging of wells with bailers.

WORK PERFORMED:
Sampled 8 ground water wells and prepared 3 quality control samples.
Remeasured 5 wells (depth to bottom) - AT2, S-I, 1PC, 2PC and 3D. Found bottom of well 1PC at 198.50 + 1.20 = 199.70, found bottom of well S-I at 60.45 + 1.20 = 61.65. Wells AT2 2PC and 3D were as reported in the water levels obtained on 10/1/90.

SAMPLING PERFORMED:
Wells sampled included M05S, M04PC, M04P, M06S, M10S, AT03, M02S, M02D. Quality control trip blank QCT05 was split for analysis. Also prepare quality control field blank QCF05 and quality control duplicate QCD04. Additional 40mL vials and 1-liter glass amber bottles were collected at well M06S for a matrix spike and matrix spike duplicate sample.

FIELD ANALYSIS PERFORMED:

pH, conductivity meters were calibrated throughout the day and found to meet operating criteria.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

The 3" submersible pump seized up during decon. We have found that the motor operates but the impellers on the pump will not rotate. May have to rent a 3" or 4" pump to complete the job.

QUALITY CONTROL ACTIVITIES INITIATED:

~~None~~ TGK 10/8/90. Corrected depth to bottom of wells 1PC and 5-E. New depths to bottom will be used during sampling.

Site Coordinator Signature: Thomas G Kelly DATE: 10/8/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.40 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/9/90 AUTHOR: Thomas E. Koch

WEATHER: Sunny - high around 50°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D used during purging of wells by bailing.

WORK PERFORMED:
Sampled 7 ground water monitoring wells and collected quality control duplicates + blanks. Also collected quality assurance duplicates and blanks for analysis by the USACE MRD Laboratory.

SAMPLING PERFORMED:
Wells sampled included: M075, M050, M43I, M205, M165, M110, & M035. Quality control samples collected were trip blank (QCT00), field blank (QCF06) and duplicate (QCD05) — Also collected matrix spike & matrix spike duplicate at M035.

Collected quality assurance samples QAD01, QAD02 QAD03, QAD04, and QAD05. Quality assurance trip blank (QAT01); quality assurance field blank (QAF01).

FIELD ANALYSIS PERFORMED:
analyzed pH, electrical conductivity and temperature of all purged waters.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:
None

QUALITY CONTROL ACTIVITIES INITIATED:
None

Site Coordinator Signature: Thomas G Kal DATE: 10/9/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.40 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/10/90 AUTHOR: Thomas E. Kock

WEATHER: Sunny - high about 55°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D used during purging of bailed wells.

WORK PERFORMED:
Sampled 10 wells as follows: m09S, AT01, m14D, FMC33, m02PC, m01PC, m08S, m12D, m22S and m05E. Also prepared field blank (QCF07) and trip blank (QCT07).

SAMPLING PERFORMED:
Sampled wells listed above. Also split volatile samples with MPCA (Tom Schaub) at wells m08S and m12D. MPCA also took a split sample of volatiles for the quality control field blank.

FIELD ANALYSIS PERFORMED:

Analyzed pH, conductivity and temperature of purged water.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

Borrowed 3" submersible pump from drilling company to replace existing pump. Completed last well of first sampling round after 9:00 PM.

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: [signature] DATE: 10/14/90.

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870Hu. Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/11/90 AUTHOR: Thomas E. Koch

WEATHER: Clear, sunny, approximately 50°.

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
NONE.

WORK PERFORMED:
Cleaned up trailer, packed vehicles and returned to Madison, WI

SAMPLING PERFORMED:
NONE

FIELD ANALYSIS PERFORMED:

None

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

None

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: Thomas E Koch DATE: 10/11/98

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870HU. Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/11/90 AUTHOR: Thomas E. Koch

WEATHER: Clear, sunny, appoximately 50°.

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
NONE.

WORK PERFORMED:
Cleaned up trailer, packed vehicles and returned to Madison, WI

SAMPLING PERFORMED:
None

FIELD ANALYSIS PERFORMED:

NONE

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

NONE

QUALITY CONTROL ACTIVITIES INITIATED:

NONE

Site Coordinator Signature: Thomas E Koch DATE: 10/11/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.40 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/10/90 AUTHOR: Thomas E. Kock

WEATHER: Sunny - high about 55°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D used during purging of bailed wells.

WORK PERFORMED:
Sampled 10 wells as follows: m095, AT01, m140, FMC33, m02AC, m01PC, m085, m120, m225 and m05E. Also prepared field blank (QCF07) and trip blank (QCT07).

SAMPLING PERFORMED:

Sampled wells listed above. Also split volatile samples with MPCA (Tom Schaub) at wells m085 and m120. MPCA also took a split sample of volatiles for the quality control field blank.

FIELD ANALYSIS PERFORMED:

Analyzed pH, conductivity and temperature of purged water.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

Borrowed 3" submersible pump from drilling company to replace existing pump. Completed last well of first sampling round after 9:00 PM.

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: [signature] DATE: 10/14/90.

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/22/90 AUTHOR: Thomas E. Koch

WEATHER: Partly cloudy; high about 50°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
NONE

WORK PERFORMED:
Arrived at site and began preparation of equipment. Driller arrived at 12:30 pm and set up staging area and decontaminated drilling rigs and equipment. Underground utilities also onsite to clear lines for us. Those companies which showed up from Gopher State 1 were US West (telephone) and Minnegasco. The only lines we need to watch for are in the Anoka Park (near background boring NB-33). Minnegasco staked their lines in the park. Will have to contact City of Fridley regarding the 20" water main on the northern part of the site.

SAMPLING PERFORMED:
None

FIELD ANALYSIS PERFORMED:

None

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

Spoke to Doug Hildre (FMC) regarding a 3" propane line which runs east-west through hazardous area C. Doug gave me a figure showing the line 14' south of the fence between area C and the NORTH 40. We used a Schoenstadt metal detector to locate the line and marked a magnetic line which runs east-west at the location shown on the figure. However, our line varies from 12' to 15' from the fence. We will drill one line of borings approximately 50'6' from the fence to avoid the line.

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: Thomas E Kidd DATE: 10/22/91

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/22/90 AUTHOR: Thomas E. Koch

WEATHER: Partly cloudy; high about 50°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
NONE

WORK PERFORMED:
Arrived at site and began preparation of equipment. Driller arrived at 12:30 pm and set up staging area and decontaminated drilling rigs and equipment. Underground utilities also onsite to clear lines for us. Those companies which showed up from Gopher State 1 were US West (telephone) and Minnegasco. The only lines we need to watch for are in the Anoka Park (near background boring NB-33). Minnegasco staked their lines in the park. Will have to contact City of Fridley regarding the 20" water main on the northern part of the site.

SAMPLING PERFORMED:
None

FIELD ANALYSIS PERFORMED:

None

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

Spoke to Doug Hildre (FMC) regarding a 3" propane line which runs east-west through hazardous area C. Doug gave me a figure showing the line 14' south of the fence between area C and the NORTH 40. We used a Schoenstadt metal detector to locate the line and marked a magnetic line which runs east-west at the location shown on the figure. However, our line varies from 12' to 15' from the fence. We will drill the line of borings approximately 50'6' from the fence to avoid the line.

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: Thomas E Kirk DATE: 10/22/91

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/22/90 AUTHOR: Thomas E. Koch

WEATHER: Partly cloudy; high about 50°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
NONE

WORK PERFORMED:
Arrived at site and began preparation of equipment. Driller arrived at 13:30 pm and set up staging area and decontaminated drilling rigs and equipment. Underground utilities also onsite to clear lines for us. Those companies which showed up from Gopher State 1 were US West (telephone) and Minnegasco. The only lines we need to watch for are in the Anoka Park (near background boring NB-23). Minnegasco staked their lines in the park. Will have to contact City of Fridley regarding the 30" water main on the northern part of the site.

SAMPLING PERFORMED:
None

FIELD ANALYSIS PERFORMED:

None

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

Spoke to Doug Hildre (FMC) regarding a 3" propane line which runs east-west through hazardous area C. Doug gave me a figure showing the line 14' south of the fence between area C and the NORTH 40. We used a Schoenstadt metal detector to locate the line and marked a magnetic line which runs east-west at the location shown on the figure. However, our line varies from 12' to 15' from the fence. We will drill one line of borings approximately 50ft from the fence to avoid the line.

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: Thomas E Kelly DATE: 10/22/91

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/23/90 AUTHOR: Thomas E. Kock

WEATHER: Cleary, sunny, high of 55°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyvek, Boots, gloves) - No problems.

WORK PERFORMED:
Drilled and sampled borings CB-06 and CB-16. Collected source water sample from first head of potable water.

SAMPLING PERFORMED:
Boring CB-06 selected samples CB06E (full analysis); CB06G (VOCs/4metals); CB06C (VOCs/4metals). QCDS1 (quality control duplicate) collected at CB06E. Boring CB-16 selected samples CB16A (PEST/PCBs only); CB16E (VOCs/4metals); CB16G (full analysis); CB16T (VOCs/4metals). Source water sample SRC01 sent for full analysis, AND TRIP blank QCT51 for VOCs.

FIELD ANALYSIS PERFORMED:
Ph, conductivity of source water sample obtained.
HNU headspace performed on each 2.5 foot sample interval at all borings. Readings between 10' and 22' at borings CB16 exceeded 10ppmv - soils will be stockpiled per AE QCP-SP.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:
NONE

QUALITY CONTROL ACTIVITIES INITIATED:
NONE

Site Coordinator Signature: Thomas E Kuel DATE: 10/23/99

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/24/90 AUTHOR: Thomas E. Koch

WEATHER: Party cloudy, 50°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyveks, Boots, Gloves) - No Problems.

WORK PERFORMED:
Drilled and sampled Borings NB14, NB18 and NB17.

John Betcher (MPCA) and Tom Schaub (MPCA) onsite to discuss splitting samples. They may return Friday 10/26. Arrived 2:00pm - left 2:35 pm.

SAMPLING PERFORMED:
Boring NB14 selected samples NB14A (full analysis); NB14C (VOCs & 4 metals); and NB14I (VOCs & 4 metals). Boring NB18 selected samples NB18C (VOCs & 4 metals); NB18G (VOCs & 4 metals); and NB18I (full analysis). Collected sample QC052 (NB14A) for full analysis and QC053 (NB18I) for VOCs & 4 metals - Both are QC Duplicates. Boring NB17 selected samples NB17G (full analysis); NB17C (VOCs & 4 metals); NB17E (VOCs & 4 metals). Also collected Rinsate blank ~~QCR52~~ TK 10/24 QCR51.

FIELD ANALYSIS PERFORMED:

HNU headspace performed on each 2.5 foot interval at all borings. All soils from NB17 were stockpiled as were soils between 20 and 25 feet AT NB18.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

None

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: Thomas E Kiel DATE: 10/24/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/25/90 AUTHOR: James E. Koch

WEATHER: Sunny, 50°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level 0 (Tyveks, Boots, Gloves) - No Problems

WORK PERFORMED:
Drilled and sampled Borings NB16, NB09, NB13, NB08, and NB07.

SAMPLING PERFORMED:
Boring NB16 selected samples NB16C (full analysis); NB16A and (4 metals & VOCs); NB16F (4 metals & VOCs). Boring NB09 selected NB09I (full analysis); NB09C (4 metals & VOCs); and NB09G (4 metals & VOCs). Boring NB13 selected NB13A (full analysis); NB13C (4 metals & VOCs); and NB13E (4 metals & VOCs). Boring NB08 selected NB08C (full analysis); NB08G (4 metals & VOCs); NB08I (4 metals & VOCs). NB07 selected NB07I (full analysis); NB07G (4 metals & VOCs); NB07C (4 metals & VOCs). Also sent QCT53 (Trip blank) and QCRS2 (Rinsate blank). Collected QCOS4 (NB16C) and QCOS5 (NB09I) both are QC Duplicates.

FIELD ANALYSIS PERFORMED:
HNU headspace performed on each 2.5 foot interval at all borings. All soils from all borings were stockpiled.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:
Both HNU 1 and HNU 3 experienced charging problems. HNU 2 was used to complete the last borings. Left both units 1 and 2 run all day to fully drain batteries in hope that a complete recharge of battery is the only problem.

QUALITY CONTROL ACTIVITIES INITIATED:
Reviewed field screening techniques with Ron Vaughn to assure we are both using similar methods.

Site Coordinator Signature: Thomas E Keel DATE: 10/25/94

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/26/90 AUTHOR: Thomas E. Koch

WEATHER: Clear sunny, 60°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level 0 (Tyveks, Boots, Gloves) No problems

WORK PERFORMED:
Drilled and sampled borings NB06 & NB19. Completed grouting all borings and placing monuments.

SAMPLING PERFORMED:
Boring NB06 selected samples NB06G (full analysis); NB06E (4 metals & VOCs); and NB06I (4 metals & VOCs). Boring NB19 selected samples NB19I (full analysis); NB19G (4 metals & VOCs); NB19C (4 metals & VOCs). Also prepared trip blank QCTS4 and insate blank QCRS3 (VOCs & 23 metals/CN). Collected duplicate sample QCDS6 (4 metals & VOCs) at sample interval NB06G.

FIELD ANALYSIS PERFORMED:

HNU headspace performed on each 2.5-foot interval at all borings. All soils from both borings were stockpiled (>10 ppmv headspace).

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

Problems with HNU charging continue. We will charge all 3 HNUs continuously over the weekend. Also, we will put HNUs on charge immediately after the last boring each day to allow ample charge time.

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: Thomas E Kiel DATE: 10/26/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/29/90 AUTHOR: Thomas E. Koch

WEATHER: Clear, Sunny ~65°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyvek, Boots, Gloves) no Problems

WORK PERFORMED:
Drilled and sampled borings NB03, NB04, NB11, NB12 and NB21.

SAMPLING PERFORMED:
Boring NB03 selected samples NB03C (full analysis); NB03I (partial analysis - VOCs & 4 metals); NB03E (4 metals & VOCs). Boring NB04 selected NB04G (full analysis); NB04C (4 metals & VOCs); NB04I (4 metals & VOCs). Boring NB11 selected NB11I (full analysis); NB11E (4 metals & VOCs); NB11G (4 metals & VOCs). Boring NB12 selected NB12G (full analysis) NB12I (4 metals & VOCs); NB12C (4 metals & VOCs). Boring NB21 selected NB21C (full analysis); NB21E (4 metals + VOCs); NB21I (4 metals & VOCs). Also submitted QCTSS (Trip Blank). Quality Assurance Duplicates sent to USAEC MRD Laboratory as follows:

QA051 - Full analysis = NB04G
QA052 - Full analysis = NB11I
QA053 - 4 metals & VOCs = NB04C
QA054 - 4 metals & VOCs = NB11E
QA055 - 4 metals & VOCs = NB12G
QA056 - 4 metals & VOCs = NB21C
QATS1 - Trip Blank
QARS1 - Rinsate Blank

FIELD ANALYSIS PERFORMED:

HNU headspace performed on each 2.5 foot interval at all borings. All soil piles were found to contain soils with measured headspace >10 ppmv and were subsequently stockpiled per the AE-QCP-SP.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

HNU charging problem has been solved - expect no further problems.

QUALITY CONTROL ACTIVITIES INITIATED:

Discussed logs with Ron Vaughn and to be consistent we will both include inches of recovered soils (not percent).

Site Coordinator Signature: Thomas P. Kral DATE: 10/09/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/30/90 AUTHOR: Thomas E Koel

WEATHER: Clear, sunny, high around 60°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyvek's, boots, gloves) used - No problems

WORK PERFORMED:
Drilled and sampled 2 borings (NB23 and NB02). Grouted 7 borings (5 from 10/29 and 2 from today).

SAMPLING PERFORMED:
Boring NB23 selected intervals NB03A (full analysis); NB23K (4 metals & VOCs); and NB23m (4 metals & VOCs). Boring NB02 selected intervals NB02I (full analysis); NB02E (4 metals & VOCs); and NB02G (4 metals & VOCs). Tom Schaub (MPCA) was on site during drilling of NB02. He collected VOCs from each interval and selected NB02I for VOC analysis based on headspace results. However, he did take all samples with him.

FIELD ANALYSIS PERFORMED:

HNU headspace performed on each 2.5 foot interval of all borings. Cuttings at NB23 (background boring in Anoka Park) were left at the boring in piles at the request of Tom Miesen of the Park Dist. Cuttings from NB02 were stockpiled.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

None

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: Thomas E. Kal DATE: 10/30/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.30 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 10/31/90 AUTHOR: Thomas E. Koch

WEATHER: Clear, sunny, 70°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyveks, boots, gloves used - no problems

WORK PERFORMED:
Drilled and sampled borings NB05, NB01, NB20, NB10 and NB15.

SAMPLING PERFORMED:
Boring NB05 selected intervals NB05C (full analysis); NB05G (4 metals & VOCs); NB05I (4 metals & VOCs). Boring NB01 selected NB01H (full analysis); NB01B (4 metals & VOCs) & NB01J (4 metals & VOCs). Boring NB20 selected NB20J (full analysis); NB20B (4 metals & VOCs); and NB20D (4 metals & VOCs). Boring NB10 selected NB10B (full analysis); NB10D (4 metals & VOCs) and NB10J (4 metals & VOCs). Boring NB15 selected NB15J (full analysis); NB15H (4 metals & VOCs) and NB15D (4 metals & VOCs). Replaced QC duplicate QA058 (NB20J). QC TRIP BLANK (QCTS7). MPCA was on site and split samples for analysis at NB15 and NB10.

FIELD ANALYSIS PERFORMED:

HNU headspace performed on each 2.5 foot interval at all borings. Cuttings from all borings were stockpiled (>10 ppmv).

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

None.

QUALITY CONTROL ACTIVITIES INITIATED:

Noted that some of the highest HNU headspace readings were constantly being measured at interval "J" (23-25') in many borings. Since interval J was an interval where only headspace analysis was being performed (NO VOCs collected) data was ~~bring~~ potentially being biased. Began alternating intervals where VOCs began being collected in order to include VOC analysis for interval J where HNU headspace analysis indicated elevated readings.

Site Coordinator Signature: Thomas Steel DATE: 10/31/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.80 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 11/1/90 AUTHOR: Thomas EKod

WEATHER: Cloudy high around 60°.

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyvek boots and gloves) used. No problems encountered.

WORK PERFORMED:
Drilled and sampled borings NB22, CB01, CB02 and CB03.

SAMPLING PERFORMED:
At boring NB22 selected intervals NB22J (full analysis); NB22H (4 metals & VOCs); NB22F (4 metals & VOCs). At boring CB02 selected intervals CB02J (full analysis); CB02H (4 metals & VOCs); CB02F (4 metals & VOCs). At Boring CB01 selected CB01G (full analysis); CB01E (4 metals & VOCs); and CB01I (4 metals & VOCs). At Boring CB03 selected CB03E (full analysis); CB03A (4 metals & VOCs); and CB03C (4 metals & VOCs). Also collected QC059 (QC duplicate at CB01G) and submitted trip blank QCT58.
MPCA split sample NB22J for VOCs.

FIELD ANALYSIS PERFORMED:

HNU headspace analysis performed on soils from each 1.5 foot interval. All soils at NBØ2 stockpiled. Soils at CBØ1, CBØ2 and CBØ3 were thinspread (HNU headspace <10ppmv).

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

None

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: Thomas G Kool DATE: 11/1/94

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870 20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 11/2/90 AUTHOR: Thomas E. Kock

WEATHER: Cool, cloudy, high around 55°.

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyvek, boots, gloves) worn during sample / collection activities.

WORK PERFORMED:
Drilled and sampled borings CB04, CB05 and CB10. Grouted all previously drilled borings and installed permanent monuments.

SAMPLING PERFORMED:
At boring CB04 selected intervals CB04I (full analysis); CB04G (4 metals & VOCs); CB04C (4 metals & VOCs). At Boring CB05 selected CB05J (full analysis); CB05H (4 metals & VOCs); CB05F (4 metals & VOCs). At Boring CB10 selected CB10C (full analysis); CB10G (4 metals & VOCs); and CB10E (4 metals & VOCs). Submitted trip blank QCTS9.

FIELD ANALYSIS PERFORMED:

HNU headspace performed at all borings. All cuttings were less than 10 ppm (HNU headspace) and were thinspread.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

HNU #3 began read irradically during CBØA. meter HNU #1 was substituted. A loose wire was subsequently found on #3 and was repaired.

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: Thomas E Kel DATE: 11/8/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 11/5/90 AUTHOR: Thomas E Kodl

WEATHER: cloudy, windy, high of 40°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyvecks, BOOTS, Gloves) worn during sample collection activities.

WORK PERFORMED:
Drilled and sampled borings CB09, CB12, CB15 CB19 AND CB20.

SAMPLING PERFORMED:
At Boring CB09 selected interval CB09C (full analysis); CB09I (4 metals & VOCs); and CB09G (4 metals & VOCs). At CB12 selected CB12H (full analysis); CB12J and CB12F (both VOCs and 4 metals). At boring CB15 selected CB15A (Post/ACB only); CB15I (full analysis); CB15E and CB15G both for VOCs & 4 metals. At boring CB19 selected CB19I (full analysis); CB19C AND CB19A for VOCs & 4 metals. At CB20 selected CB20J for full analysis; CB20H and CB20D for 4 metals & VOCs. Submitted QCT60 (QC Trip blank). Sent QA duplicates to MRO LAB in OMAHA as follows:

QAT52 – Trip Blank
QAR52 – Rinsate Blank
QAD57 – VOCs/4 metals – CB12J
QAD58 – Full analysis – CB12H
QAD59 – Full analysis – CB20J
QAD60 – Full analysis – CB15I
QAD61 – VOCs/4 metals – CB20D
QAD62 – VOCs/4 metals – CB19I
QAD63 – VOCs/4 metals – CB19C
QAD64 – VOCs/4 metals – CB09C
QAD65 – VOCs/4 metals – CB09I

FIELD ANALYSIS PERFORMED:
HNU headspace performed on each 2.5 ft. interval at all borings. Approximately 2/3 of Todays soil cuttings were stockpiled.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:
None

QUALITY CONTROL ACTIVITIES INITIATED:
None

Site Coordinator Signature: Thomas E Kral DATE: 11/5/96

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 11/6/90 AUTHOR: Thomas E. Koch

WEATHER: Cloudy, cold high of 35°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyveks, boots, gloves) worn during sample collection activities.

WORK PERFORMED:
Drilled and sampled CB22, CB23, CB24 and CB25.

SAMPLING PERFORMED:
At CB22 selected CB22I (full analysis); CB22E and CB22G for 4 metals and VOCs. At CB23 selected CB23D for full analysis; and CB23F and CB23J for 4 metals and VOCs. At CB24 selected intervals CB24E (full analysis); CB24G (4 metals and VOCs); and CB24C (4 metals and VOCs). At CB25 selected CB25J (full analysis); CB25H and CB25F for 4 metals and VOCs. Also collected QC duplicates QC060 (CB24E) for full analysis and QC061 (CB22I) for 4 metals and VOCs. Submitted trip blank (QCT61) and rinsate blank (QCR55).

FIELD ANALYSIS PERFORMED:

Headspace analysis performed at 2.5 foot intervals at all borings. Cuttings placed on stockpiles included all soils from CB23, lower 10 feet of CB22, lower 10 feet of CB24 and the lower 10 feet of CB25.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

NONE

QUALITY CONTROL ACTIVITIES INITIATED:

NONE

Site Coordinator Signature: Thomas P Keel DATE: 11/6/96

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 187020 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 11/7/90 AUTHOR: Thomas E. Koch

WEATHER: Clear, cold, high of 35°.

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D health and safety equipment worn during sample collection activities.

WORK PERFORMED:
Drilled and sampled CB07, CB08, CB11, and CB13.

SAMPLING PERFORMED:
At boring CB07 selected intervals CB07C (Full analysis); CB07G and CB07I (both 4 metals & VOCs). At CB08 selected intervals CB08J (Full analysis); CB08B and CB08F (4 metals and VOCs). At Boring CB11 selected CB11J (Full analysis); and CB11D and CB11F (both 4 metals and VOCs). At Boring CB13 selected CB13A (Pesticide/PCBs only); CB13I (Full analysis); CB13C and CB13G (VOCs & 4 metals). Also collected QC duplicates QC068 (CB13I) and QC063 (CB11J). Both were for analysis of VOCs and 4 metals. Also collected QC trip blank QCT62 and QC Rinsate blank QCR56.

FIELD ANALYSIS PERFORMED:

HNU headspace analysis performed at each 2.5 ft interval. Soils were stockpiled or thin spread based on being greater than or less than 10 ppmv.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

Prior to drilling CB08 a hydraulic line broke on one of the drill rigs. The spill was confined to a small area by diking with stockpiled sand. The ground surface was frozen due to low temperatures. The rig was repaired and steam cleaned prior to drilling. Soils were excavated at the spill and stockpiled. No contaminated soils came in contact with the soil boring area.

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: Thomas E Kiel DATE: 11/7/98

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.20 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 11/8/90 AUTHOR: Thomas E. Koch

WEATHER: Cloudy, windy and cold, high of 28°.

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyveks, Boots and Slops) worn during drilling and sampling activities.

WORK PERFORMED:
Drilled and sampled borings SB01, SB02, SB03 and SB04.

SAMPLING PERFORMED:
At boring SB01 selected intervals SB01J (full analysis); SB01B (4 metals & VOCs) and SB01D for 4 metals & VOCs). At boring SB02 selected intervals SB02G (full analysis); SB02I and SB02E (4 metals & VOCs). At boring SB03 selected intervals SB03G (full analysis); and SB03I and SB03C for 4 metals & VOCs). At SB04 selected SB04J (full analysis) and SB04B and SB04H for 4 metals and VOCs. Submitted QC trip blank QCT63, QC rinsate blank (QCRS8) for full analysis, and QCD66 (SB03I) for full analysis. Samples split with Tom Schraub (MPCA); included SB03G, SB02G and SB04J. He only collected VOC samples. Samples sent to the US Army CORPS Lab in Omaha included:

QAT53 - TRIP BLANK
QARS3 - Rinsate Blank
QAD66 - QC Duplicate for full analysis at SB02G

FIELD ANALYSIS PERFORMED:

HNU headspace performed at 2.5 foot intervals at each borings. All cuttings were thinspread except those from interval "J" at each boring which exceed 10 ppmv.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

Pin on HNU probe ~~#2~~ broke. Meter was replaced with backup. Probe will be sent for repair and meter will be kept at site for use as backup.

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: Thomas G Kiel **DATE:** 11/8/96

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 187020 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 11/9/90 AUTHOR: Thomas E. Koch

WEATHER: Clear, Cool, high of 45°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyveks, boots, gloves) worn during drilling and sampling activities.

WORK PERFORMED:
Drilled and sampled borings CB14, CB21 and CB28.

SAMPLING PERFORMED:
At boring CB14 selected CB14A (pesticides/PCBs only); CB14J (oil analysis); CB14F and CB14D (4 metals & VOCs). At boring CB21 selected samples CB21E (oil analysis); CB21G & CB21I (4 metals & VOCs). At boring CB28 selected CB28F (oil analysis); CB28B and CB28J (4 metals & VOCs). Collected QC duplicates QCDG4 (CB21E) and QCDG5 (CB14J). Also collected QCT04 (Trip blank) and QCR57 Rinsate blank.

FIELD ANALYSIS PERFORMED:

HNU headspace analysis performed at 2.5 ft intervals and cuttings were disposed of accordingly.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

None

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: [signature] DATE: 10/9/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.___ Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 11/12/90 AUTHOR: Thomas E. Koch

WEATHER: Sunny to partly cloudy; 40°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D safety (tyveks, boots and gloves) used during drilling and sampling activities.

WORK PERFORMED:
Drilled and sampled borings CB26 and CB27. Also drilled boring for well 10I to a depth of 50 ft. Collected samples at 10I from the ground surface to the water table. Continued to monitor HNU headspace and collect geotechnical samples at 10I.

SAMPLING PERFORMED:
At boring CB26 selected intervals CB26J (full analysis); CB26F and CB26H for partial analysis (4 metals and VOCs). At boring CB27 selected CB27A (full analysis); and CB27F and CB27G for 4 metals and VOCs. Collected QC duplicate (QCD67) at S10IB (New well) - also selected samples S10IB and S10IE for full analysis. Collected QA duplicate QAD67 (S10IE) for full analysis by the USACE laboratory. Collected QA and QC Rinsate blanks (full analysis) and submitted QA and QC trip blanks for analysis of VOCs.

FIELD ANALYSIS PERFORMED:

performed HNU headspace at 2.5 foot intervals at Borings CB26 and CB27. Performed HNU headspace at 5 foot intervals at SIDE.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

None

QUALITY CONTROL ACTIVITIES INITIATED:

None

Site Coordinator Signature: Thomas [illegible] DATE: 11/10/98

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.30 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 11/13/90

AUTHOR: Thomas E. Koch

WEATHER: Clear, sunny high of 45

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyvecks, boots, gloves) worn during drilling / and sampling activities.

WORK PERFORMED:
Completed drilling boring S10I to depth of 78 ft. Set well on top of 2-3 ft of sand pack. Well 10I partially completed.

SAMPLING PERFORMED:
NONE

FIELD ANALYSIS PERFORMED:

Analyzed soils headspace with HNU for 5 foot intervals between 50 and 75 feet at boring site. No Readings above 10 ppmv. were noted. All soils were thin spread

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

None

QUALITY CONTROL ACTIVITIES INITIATED:

NONE

Site Coordinator Signature: Thomas E Kel DATE: 11/13/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.30 Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 11/14/90 AUTHOR: Thomas E Koch

WEATHER: clear, sunny, 70°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (boots, gloves, tyvecks) worn during completion of well IOI.

WORK PERFORMED:
Completed well IOI and decontaminated equipment. Changed drill rig back to 4 1/4 inch ID augers in preparation of completing last two soil borings in area C.

SAMPLING PERFORMED:
None

FIELD ANALYSIS PERFORMED:

~~Well~~ None

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

None

QUALITY CONTROL ACTIVITIES INITIATED:

Well plumbness and alignment test performed. No problems.

Site Coordinator Signature: Thomas Ekel DATE: 11/14/90

A-E DAILY QUALITY CONTROL REPORT (DQCR)
NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT, FRIDLEY, MN
RMT, Inc., Project No. 1870.___ Contract No. DACA45-86-C-0015
(MOD NO. P00009)

DATE: 11/15/90 AUTHOR: Thomas E. Koch

WEATHER: Sunny, high of 50°

HEALTH AND SAFETY - LEVELS OF PROTECTION AND PROBLEMS/SOLUTIONS:
Level D (Tyvek, boots, gloves) worn during soil sampling activities.

WORK PERFORMED:
Drilled and sampled the last two soil borings (CB17 and CB18). Developed and sampled well M10I.

SAMPLING PERFORMED:
- At boring CB17 selected intervals CB17G (full analysis); CB17T and CB17F (4 metals & VOCs). At CB18 selected CB18H (full analysis); CB18T and CB18D (4 metals & VOCs). Also submitted trip blank (QCT66).
- Sampled well 10I for analysis of VOCs, 4 metals and pesticide/PCBs. Submitted duplicate QC sample (QCD06) and field blank (QCF08); as well as water trip blank (QCT08). Also submitted QA samples to MRD Laboratory in Omaha, Nebraska. Sent QA trip blank (QAT02); duplicate sample (QAD06); and QA field blank (QAF02).

FIELD ANALYSIS PERFORMED:

Performed HNU headspace analysis at 2.5 foot intervals during drilling of CB17 & CB18. Also monitored temperature, pH and conductivity of water during development/purging of well 1QI.

PROBLEMS ENCOUNTERED AND CORRECTIVE ACTIONS:

At well 1QI over 110 gallons of water were pumped prior to beginning field analysis of pH, conductivity and temperature. After seven additional volumes were removed, temperature and conductivity had stabilized but pH continued to vary more than 0.1 pH unit. The 4 hour development time was approaching as was our deadline for shipping samples to the USACE MRD laboratory. Called the USACE office and could not reach project personnel directly. Spoke to Mike Crain who directed me to remove two additional well volumes and sample the well. Removed the two volumes and pH stabilized at 7.4 and 7.5. Decided to remove 1 more volume and pH dropped to 7.1. Sampled well at that time per instructions.

QUALITY CONTROL ACTIVITIES INITIATED:

During headspace analysis of soils at CB17, HNU meter #1 began having paradic readings. Switched to meter #3 after calibration.

Site Coordinator Signature: Thomas E Koel DATE: 11/15/90

APPENDIX B

WELL 10-I BORING LOG AND WELL DIAGRAM

LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME	NIROP	BORING NO.	S10-1
LOCATION	Fridley, MN	SHEET NO.	1 OF 3
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.30
DRILLING METHOD	HSA 6 1/4"	INSTALLATION	11/13/90
		SURFACE ELEV.	835.0
		BOREHOLE DIA.	10 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.
INTERVAL		RECOVERY		MOISTURE			
NO.	TYPE	N	IN		DEPTH		
A	SS	17	22	10.4%	5	Fine SAND, some silt, trace gravel, black to dark brown 10YR 2/1, well graded, loose, moist, (SM) (Fill).	
B	SS	19	18		10	Fine to coarse SAND and GRAVEL, some silt, brown 10YR 5/3, well graded, loose, moist to wet, (SM) (Fill).	
C	SS	10	24	3.4%	15	Fine to medium SAND, trace gravel, trace silt, brown 10YR 5/3, loose, well graded, moist, (SW).	
D	SS	12	20		20	Fine SAND, trace gravel, trace silt, brown 10YR 5/3, poorly graded, loose, moist, (SP).	
E	SS	9	22	18.5%	25	Same as above, grades to fine to medium, gray 10YR 5/1, wet at 23 ft., (SP).	

GENERAL NOTES

DATE STARTED 12 NOV 90

DATE COMPLETED 13 NOV 90

RIG CME-75

CREW CHIEF C. Wilkens

LOGGED T. Koch CHECKED R. Vogel

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0

AT COMPLETION ▼

AFTER DRILLING

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. S10-I
SHEET NO. 2 OF 3
PROJECT NO. 1870.30
INSTALLATION 11/13/90
SURFACE ELEV. 835.0
BOREHOLE DIA. 10 IN.

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 6 1/4"

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.
INTERVAL		RECOVERY		MOISTURE			
NO.	TYPE	N	IN		DEPTH		
F	SS	9	12			Fine to medium SAND, trace gravel, gray 10YR 5/1, began adding water to control heaving sands, (SP).	
					30		
G	SS	5	12	19.2%		Same as above, little silt, (SP).	
					35		
H	SS	10	18				
					40	Same as above, grading to fine sand at 39.5', (SP).	
I	SS	9	14	17.9%		Fine to medium SAND, trace gravel, gray 10YR 5/1, poorly graded, loose, wet, (SP).	
					45		
J	SS	22	12			Same as above, little gravel.	
					50		
K	SS	25	12	18.0%		Same as above, to fine gravel, (SP).	
					55		

LOG OF TEST BORING

F-203 (R 01-87)

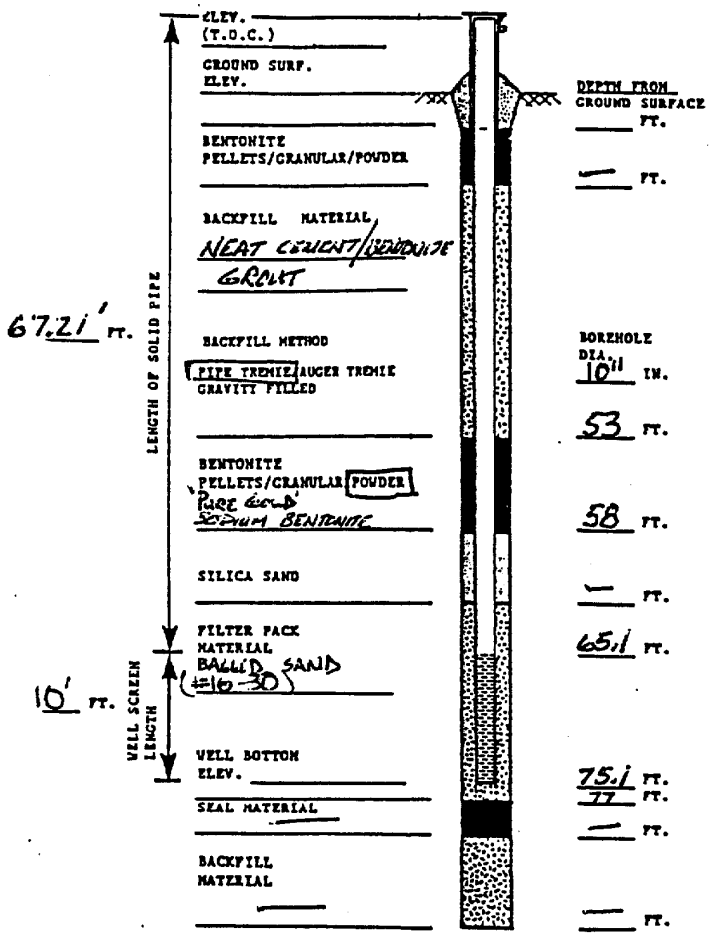
BORING NO. S10-I
SHEET NO. 3 OF 3
PROJECT NAME NIROP
PROJECT NO. 1870.30
LOCATION Fridley, MN
INSTALLATION 11/13/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 835.0
DRILLING METHOD HSA 6 1/4"
BOREHOLE DIA. 10 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.
INTERVAL		RECOVERY		MOISTURE			
NO.	TYPE	N	IN		DEPTH		
L	SS	16	11		60	Same as above, trace to little coarse sand, (SP-SW).	
M	SS	5	6	17.4%	65	Same as above, little coarse sand, (SW-SP).	
N	SS	10	8		70	Same as above, some coarse sand, little fine gravel, well graded, (SW).	
O	SS	5	5	16.6%	75	Same as above.	
					80	End of Boring at 77 Ft.	
					85		

RMT

Well Diagram
F-17 (R 11-85)

PROJECT NAME: NIROP NO. 1870.30
WELL NO. S10I
DATE INSTALLED 11-13-90



1) CASING DETAILS

A) TYPE OF PIPE:

PVC, STAINLESS, TEFLON, OTHER

PIPE SCHEDULE 5

B) TYPE OF PIPE JOINTS:

COUPLINGS, THREADED (W/TAPE?), OTHER ND w/O-RING

C) WAS SOLVENT USED? YES OR NO

D) TYPE OF WELL SCREEN:

PVC, STAINLESS, TEFLON, OTHER

E) WELL SCREEN SLOT SIZE 0.010"

F) PIPE DIA: ID IN. ____ OD IN. ____

G) INSTALLED PROTECTOR PIPE W/LOCK? YES OR NO

PROTECTOR PIPE DIA. 4 IN.

R.U. 11-30-90 #KEY: ~~3076~~ 0964

2) WELL DEVELOPMENT

A) METHOD

BAILING, PUMPING, SURGING, COMPRESSED AIR

OTHER

(NOTE ADDITIONAL COMMENTS BELOW)

B) TIME SPENT FOR DEVELOPMENT?

C) APPROXIMATE WATER VOLUME: REMOVED

ADDED

D) WATER CLARITY BEFORE DEVELOPMENT?

CLEAR, TURBID, OPAQUE

E) WATER CLARITY AFTER DEVELOPMENT?

CLEAR, SLIGHTLY TURBID, TURBID, OPAQUE

F) ODOR? YES OR NO

3) WATER LEVEL SUMMARY

A) DEPTH FROM TOP OF CASING AFTER DEVELOPMENT?

____ FT. OR DRY

B) OTHER MEASUREMENTS (T.O.C.):

DATE/TIME

DATE/TIME

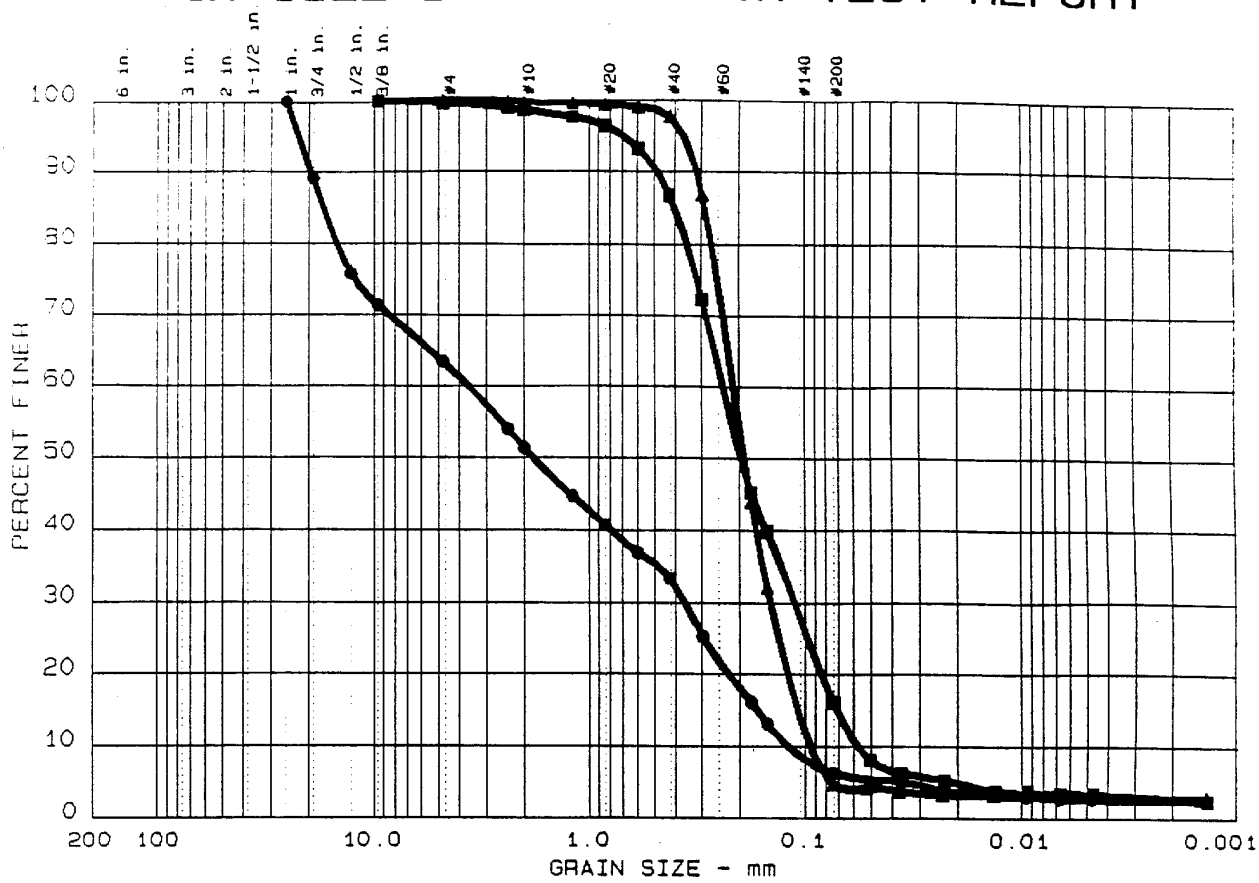
DATE/TIME

ADDITIONAL COMMENTS: FILTER PACK SAND: (#16-30) 8 BAGS; SEAL ABOVE SCREEN: PURE GOLD SODIUM BENTONITE by AMER. COLLOID COMPANY; 6.5 BAGS.
~~38~~ R.U. 11-14-90; BACKFILL: 28 BAGS of CEMENT, 4 BAGS OF POWDER BENTONITE and approx 500 gal WATER. WELL PASSED PLUMBNESS AND ALIGNMENT TEST. CENTRALIZERS INSTALLED AT 35' and 68' BELOW SURFACE.

APPENDIX C

GRAIN-SIZE AND SOIL MOISTURE REPORTS

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	11	0.0	36.6	57.1	3.6	2.7
▲	12	0.0	0.1	95.3	1.7	2.9
■	13	0.0	0.4	83.5	12.7	3.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	17.06	3.61	1.83	0.361	0.1667	0.1194	0.30	30.2
▲			0.29	0.21	0.19	0.144	0.1079	0.0940	1.04	2.3
■	NP	NP	0.40	0.24	0.20	0.111	0.0710	0.0571	0.91	4.2

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SM	

Project No.: 1870.20
Project: NIROP
● Location: CB03B 3-5'
▲ Location: CB03F 13-15'
■ Location: CB03J 23-25'
Date: 11-12-90

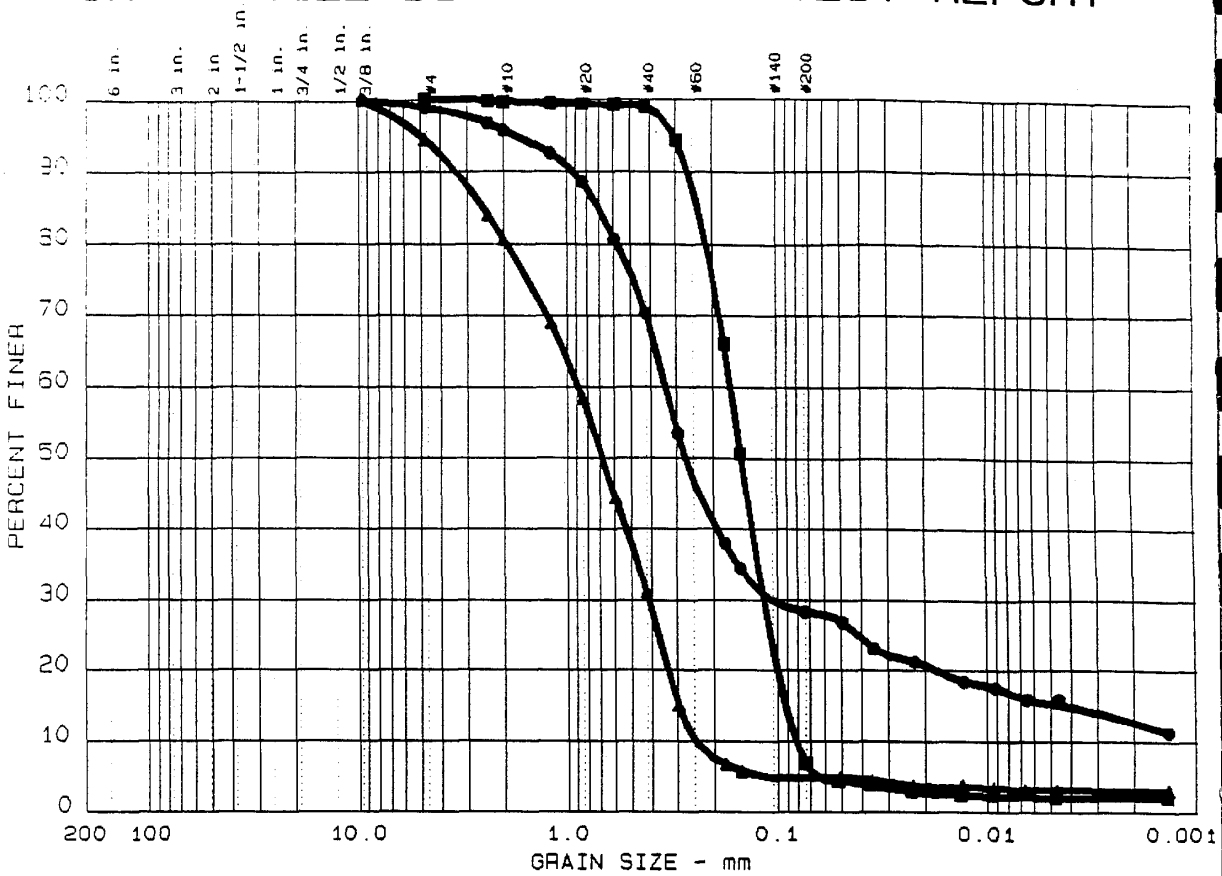
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	14	0.0	1.1	70.6	13.0	15.3
▲	15	0.0	5.5	89.7	1.8	3.0
■	16	0.0	0.0	93.1	4.8	2.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	27	7	0.70	0.34	0.27	0.105	0.0042			
▲			2.51	0.88	0.68	0.410	0.2972	0.2443	0.78	3.5
■	NP	NP	0.23	0.17	0.15	0.116	0.0916	0.0817	1.00	2.0

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: CB04B 3-4'
▲ Location: CB04B 4-5'
■ Location: CB04F 13-15'
Date: 11-12-90

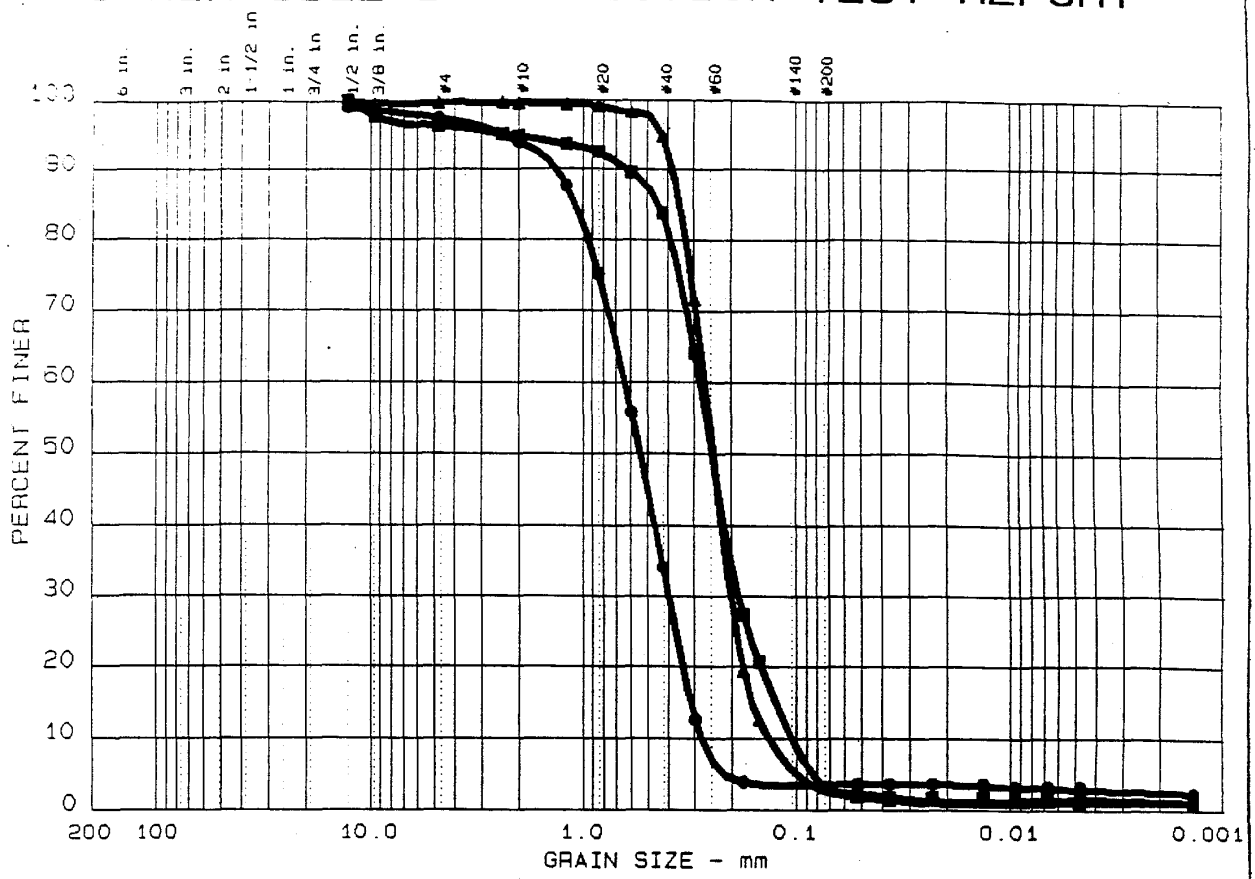
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	5	0.0	2.6	93.9	0.6	2.9
▲	6	0.0	0.5	96.8	1.7	1.0
■	7	0.0	3.7	93.1	1.8	1.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			1.08	0.63	0.54	0.396	0.3119	0.2780	0.89	2.3
▲			0.35	0.27	0.24	0.202	0.1607	0.1337	1.15	2.0
■			0.44	0.28	0.25	0.187	0.1247	0.1050	1.18	2.7

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB01B 3-5'
▲ Location: CB01F 13-15'
■ Location: CB01J 23-25'
Date: 11-12-90

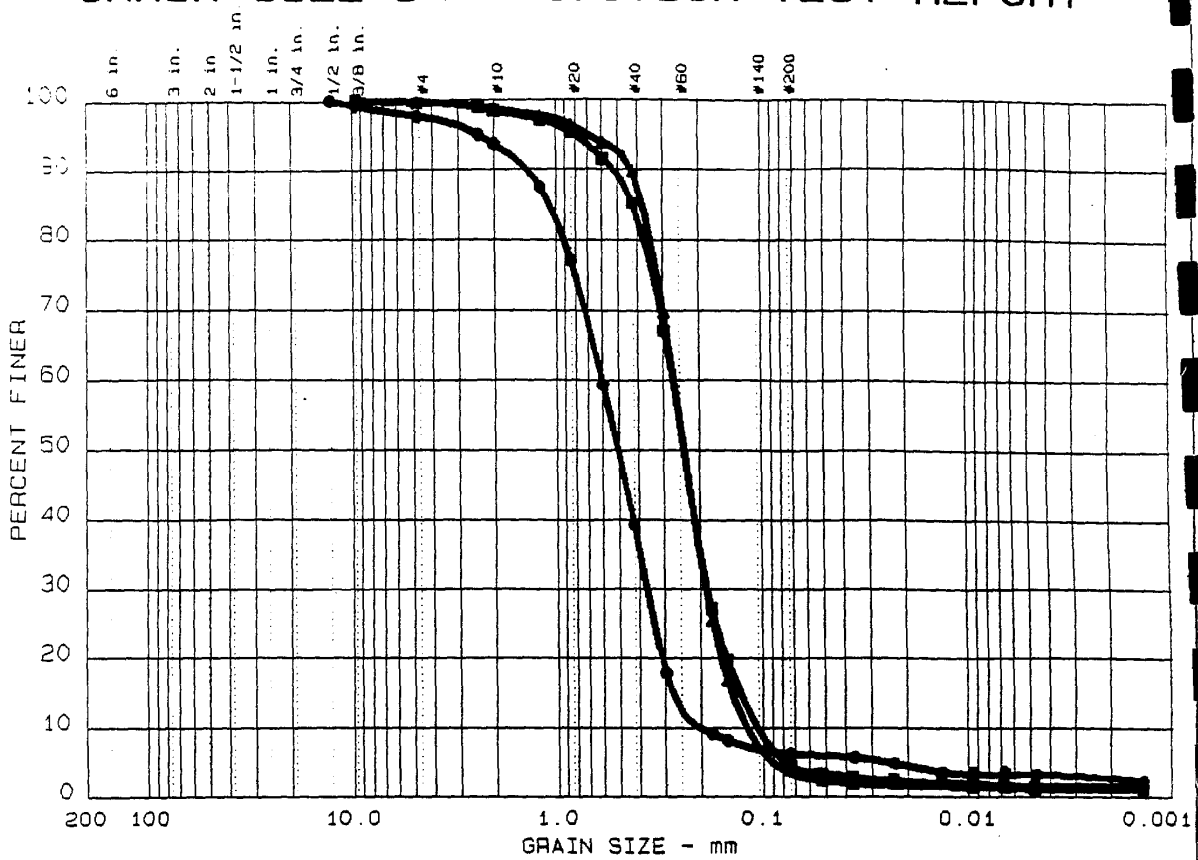
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	8	0.0	2.4	91.4	3.1	3.1
▲	9	0.0	0.4	96.4	2.2	1.0
■	10	0.0	0.5	95.1	2.8	1.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	1.07	0.60	0.50	0.366	0.2745	0.2058	1.09	2.9
▲			0.37	0.27	0.24	0.189	0.1417	0.1202	1.12	2.2
■			0.42	0.27	0.24	0.186	0.1285	0.1067	1.19	2.5

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB02B 3-5'
▲ Location: CB02F 13-15'
■ Location: CB02J 23-25'
Date: 11-12-90

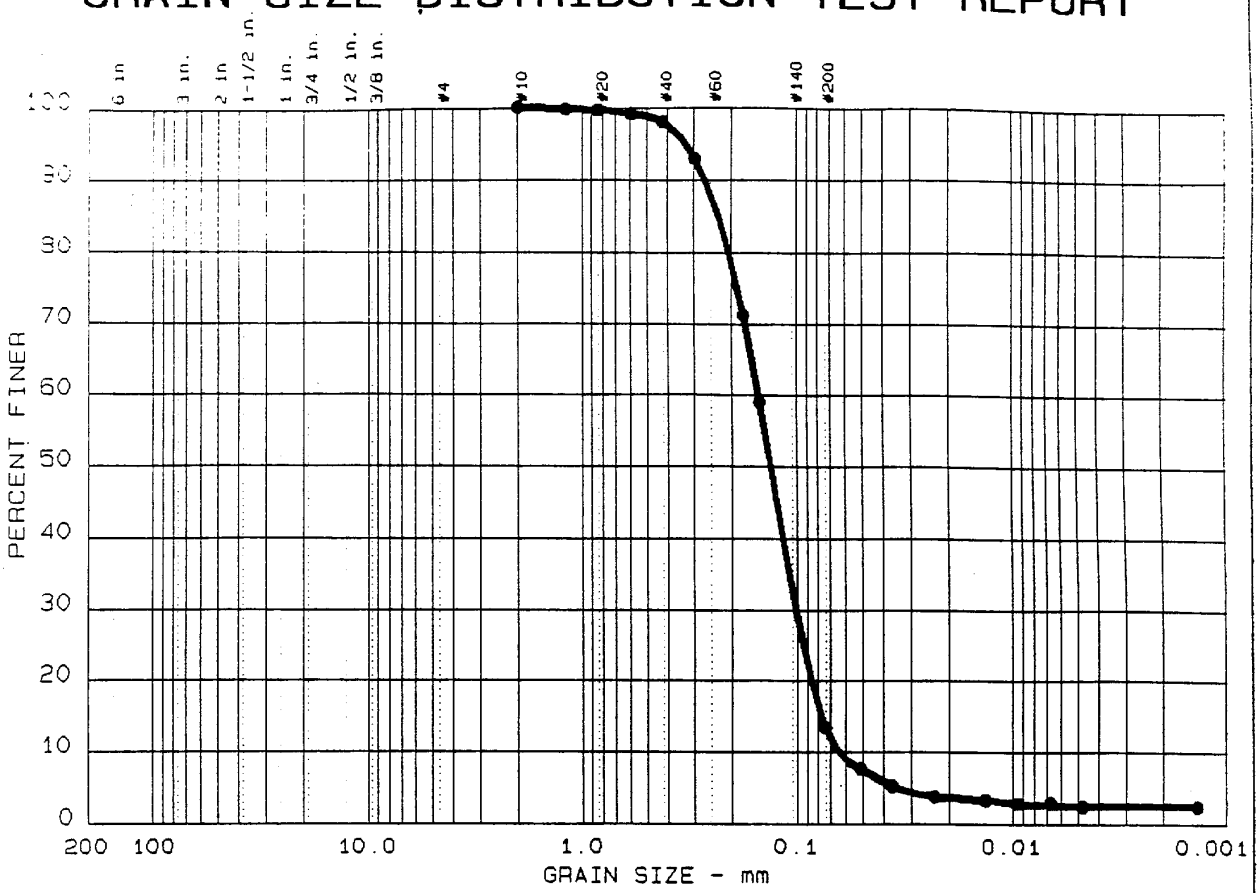
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	17	0.0	0.0	86.6	10.9	2.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.23	0.15	0.13	0.101	0.0773	0.0643	1.06	2.3

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	

Project No.: 1870.20
Project: 11-12-90
● Location: CB04J 23-25'

Date: 11-12-90

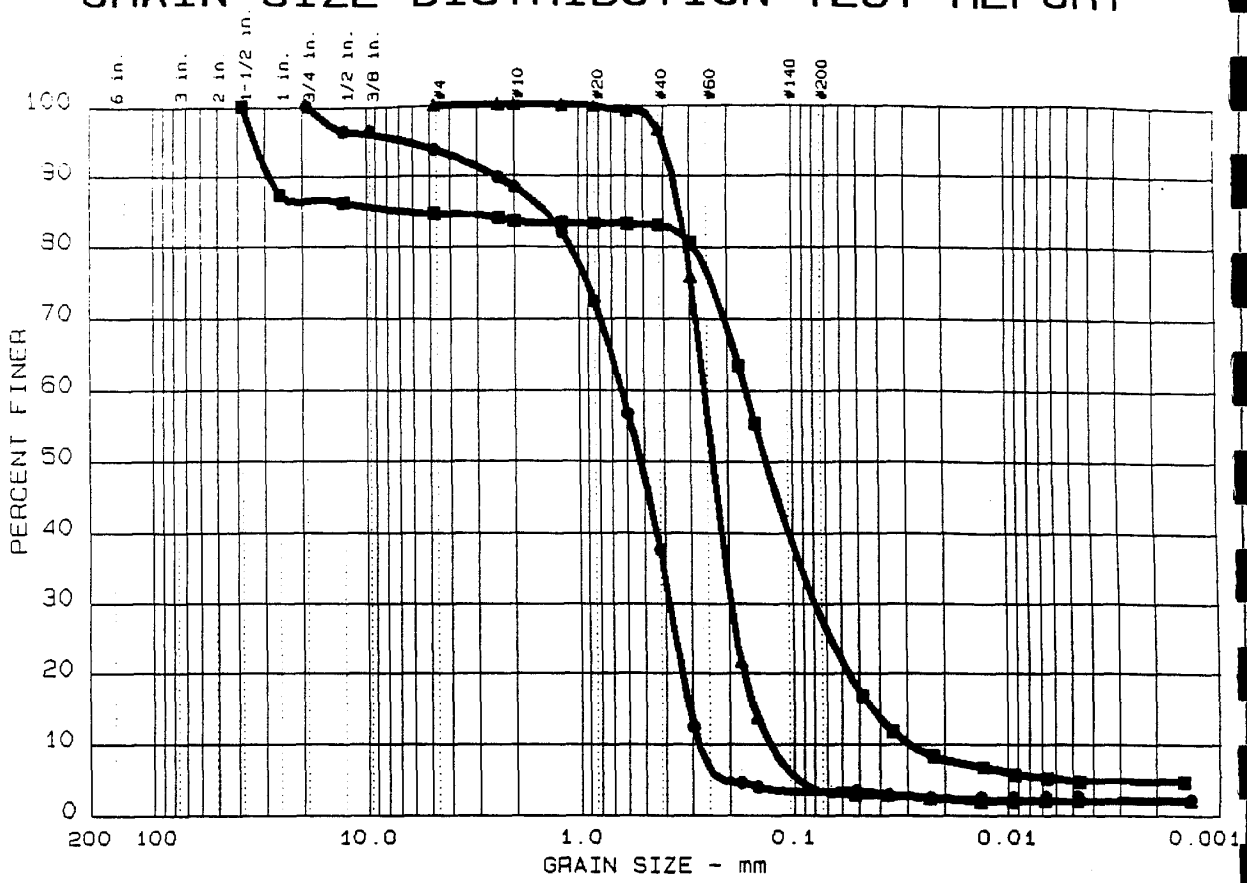
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT. INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	18	0.0	6.3	90.4	1.3	2.0
▲	19	0.0	0.0	96.7	1.4	1.9
■	20	0.0	15.3	56.9	23.0	4.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			1.41	0.63	0.52	0.380	0.3101	0.2812	0.81	2.2
▲			0.33	0.26	0.24	0.196	0.1538	0.1294	1.16	2.0
■	NP	NP	6.31	0.16	0.13	0.079	0.0430	0.0290	1.31	5.6

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SM	

Project No.: 1870.20
Project: NIROP
● Location: CB05B 3-5'
▲ Location: CB05F 13-15'
■ Location: CB05J 23-25'
Date: 11-12-90

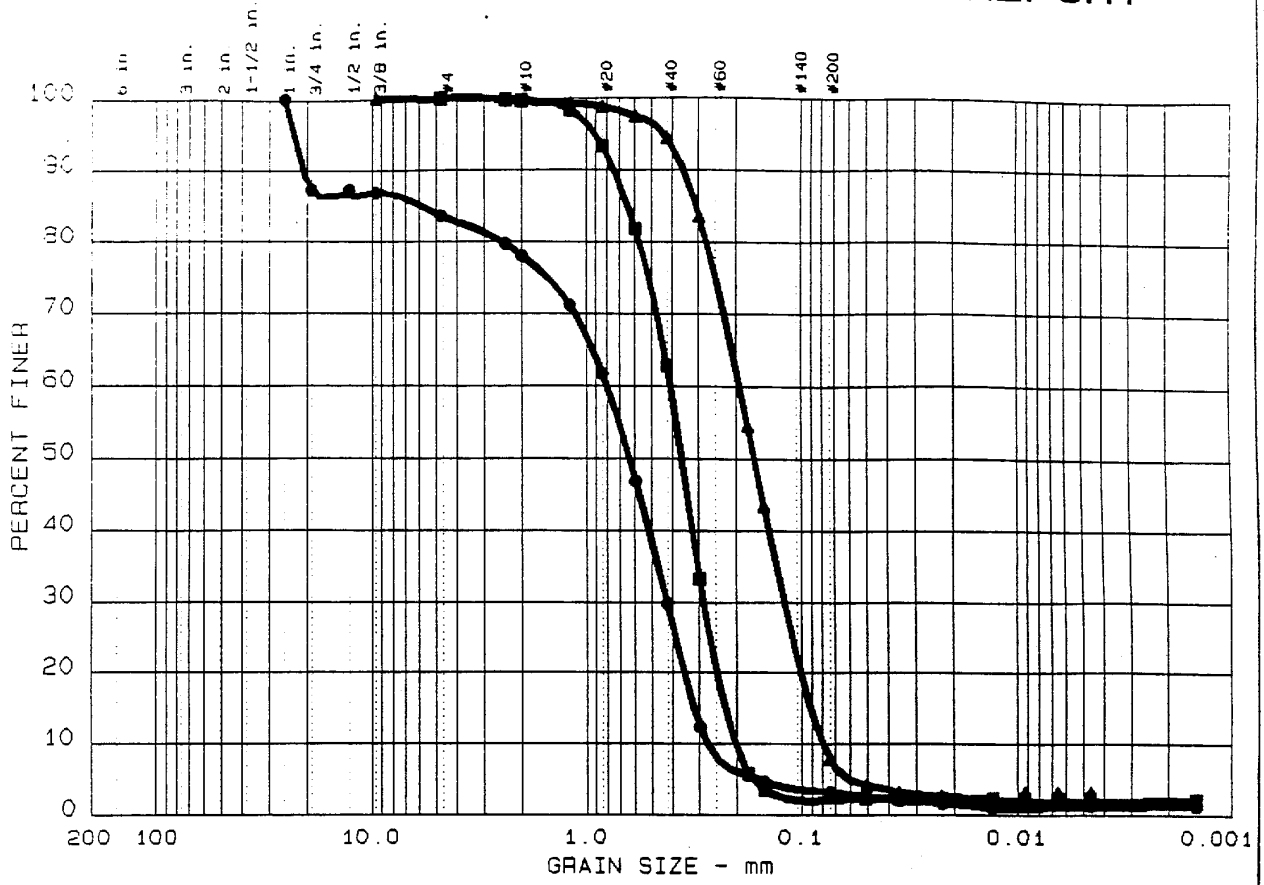
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	16.4	80.4	0.8	2.4
▲	2	0.0	0.1	92.1	6.0	1.8
■	3	0.0	0.0	98.0	0.2	1.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			5.89	0.80	0.63	0.421	0.3173	0.2732	0.81	2.9
▲	NP	NP	0.31	0.19	0.17	0.121	0.0911	0.0801	0.94	2.4
■			0.64	0.41	0.36	0.285	0.2267	0.2035	0.99	2.0

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	
▲ SEE BORING LOG	SP-SM	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB06B 3-5'
▲ Location: CB06F 13-15'
■ Location: CB06J 23-25'
Date: 10-31-90

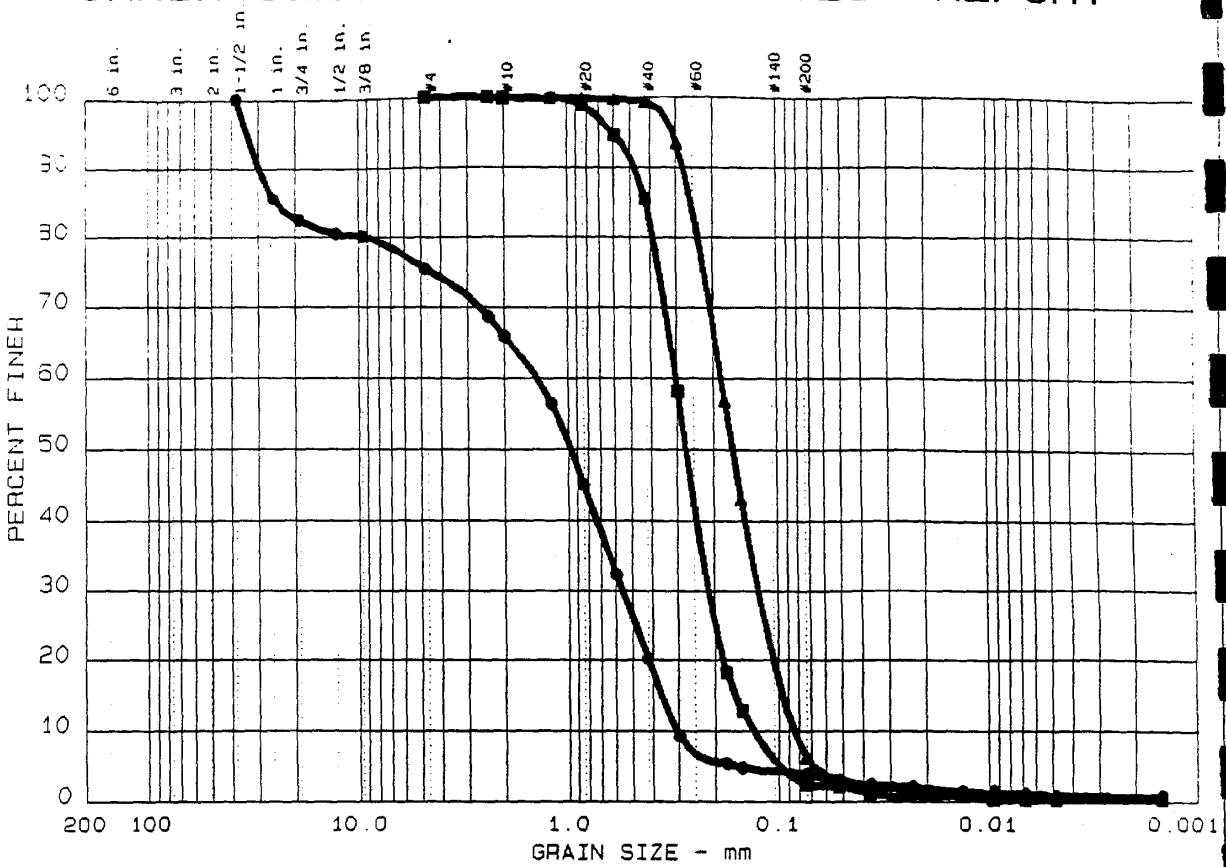
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	16	0.0	24.6	71.5	3.1	0.8
▲	17	0.0	0.0	93.8	5.5	0.7
■	18	0.0	0.0	97.6	2.2	0.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			24.55	1.40	0.97	0.555	0.3622	0.3048	0.72	4.6
▲	NP	NP	0.25	0.18	0.16	0.124	0.0955	0.0846	1.00	2.2
■			0.42	0.30	0.27	0.215	0.1613	0.1311	1.16	2.3

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	
▲ SEE BORING LOG	SP-SM	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB07B 3-5'
▲ Location: CB07F 13-15'
■ Location: CB07J 23-25'
Date: 11-16-90

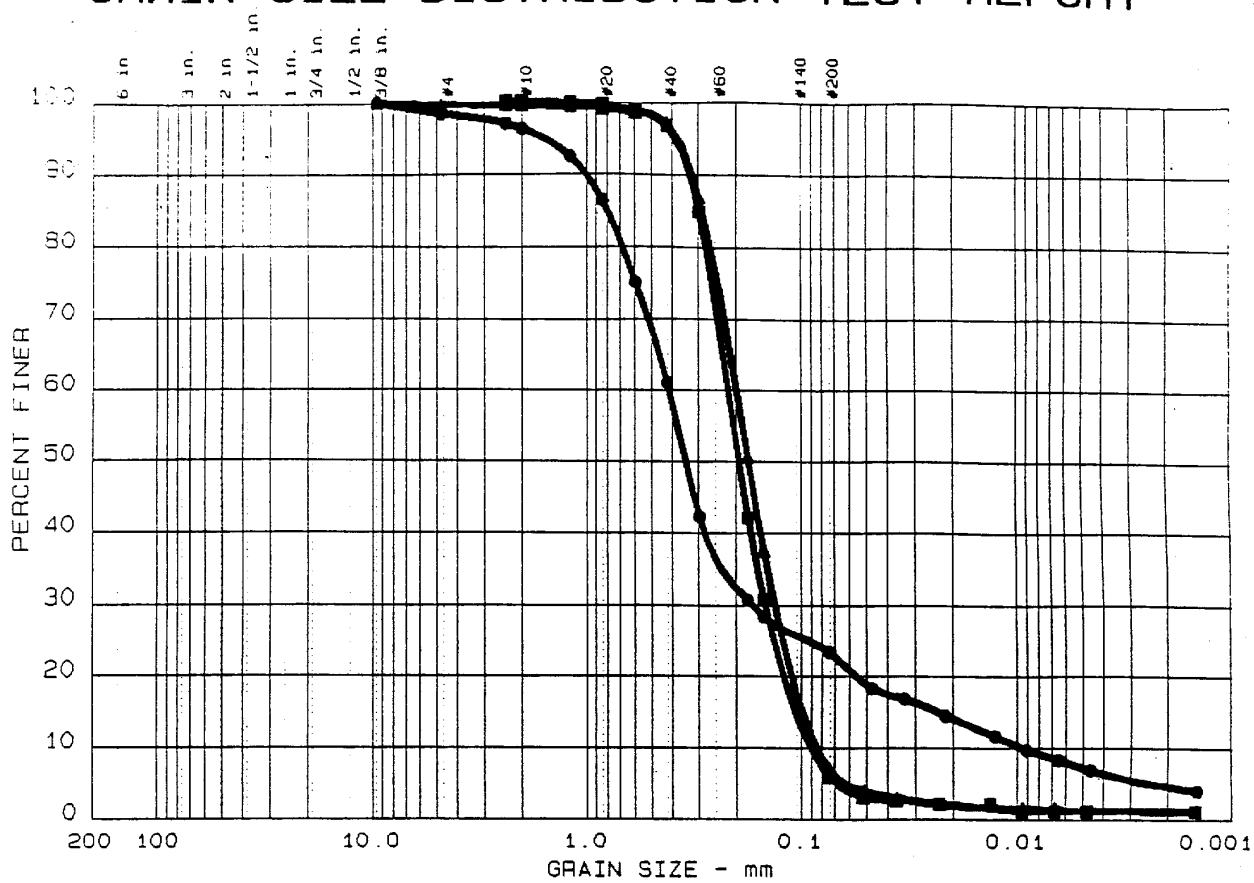
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	1.6	75.1	16.1	7.2
▲	2	0.0	0.4	92.7	5.8	1.1
■	3	0.0	0.0	94.1	4.7	1.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	32	8	0.79	0.41	0.35	0.167	0.0236	0.0096	7.06	42.8
▲	NP	NP	0.29	0.20	0.18	0.133	0.0986	0.0849	1.05	2.3
■	NP	NP	0.30	0.22	0.19	0.147	0.1064	0.0904	1.10	2.4

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP-SM	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: CB08B 3-5'
▲ Location: CB08F 13-15'
■ Location: CB08J 23-25'
Date: 11-16-90

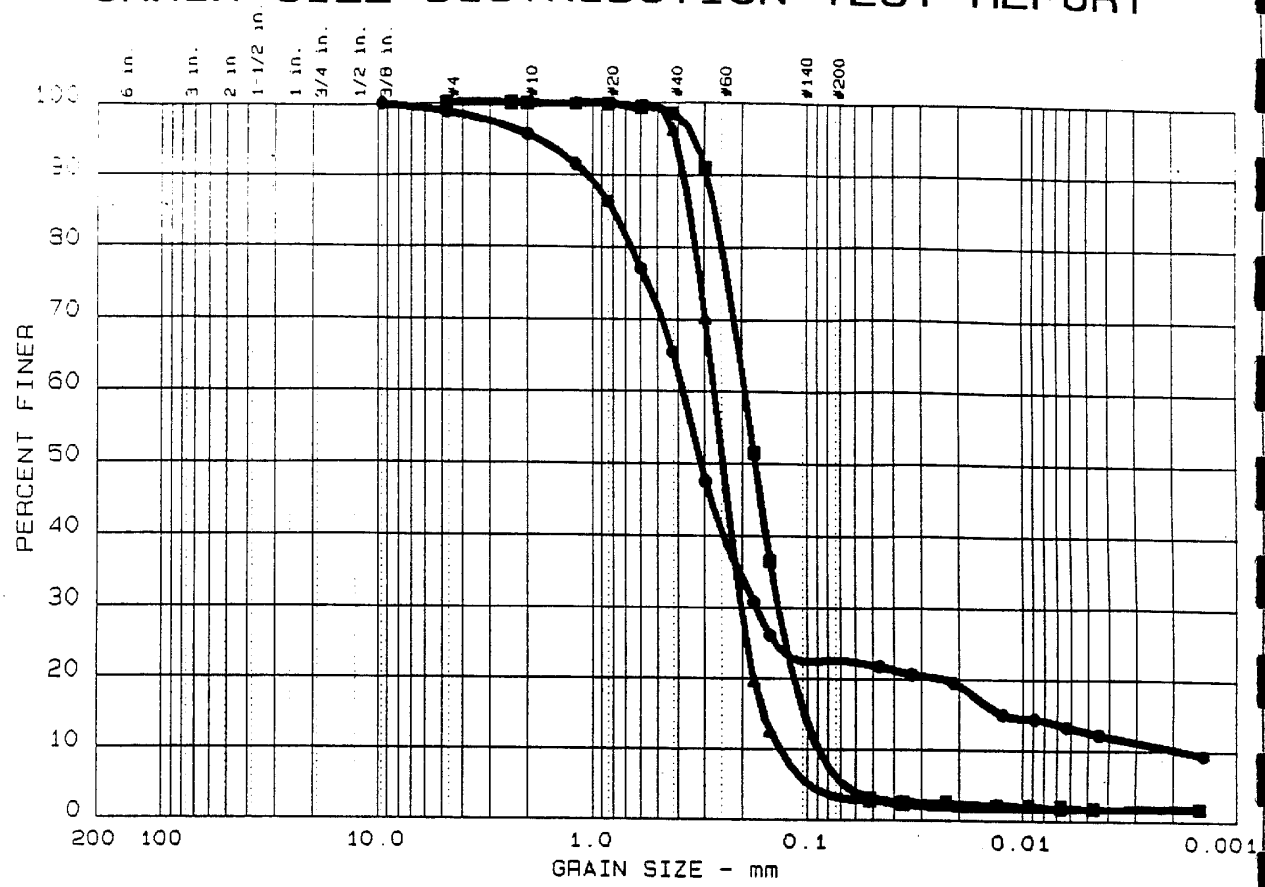
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	1.3	76.2	10.0	12.5
▲	2	0.0	0.0	96.8	1.4	1.8
■	3	0.0	0.0	93.9	4.4	1.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	25	5	0.79	0.38	0.31	0.172	0.0123	0.0018	44.00	212.1
▲			0.35	0.27	0.25	0.203	0.1594	0.1341	1.14	2.0
■	NP	NP	0.27	0.19	0.17	0.137	0.1032	0.0888	1.08	2.2

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: CB09B 3-5'
▲ Location: CB09F 13-15'
■ Location: CB09J 23-25'
Date: 11-12-90

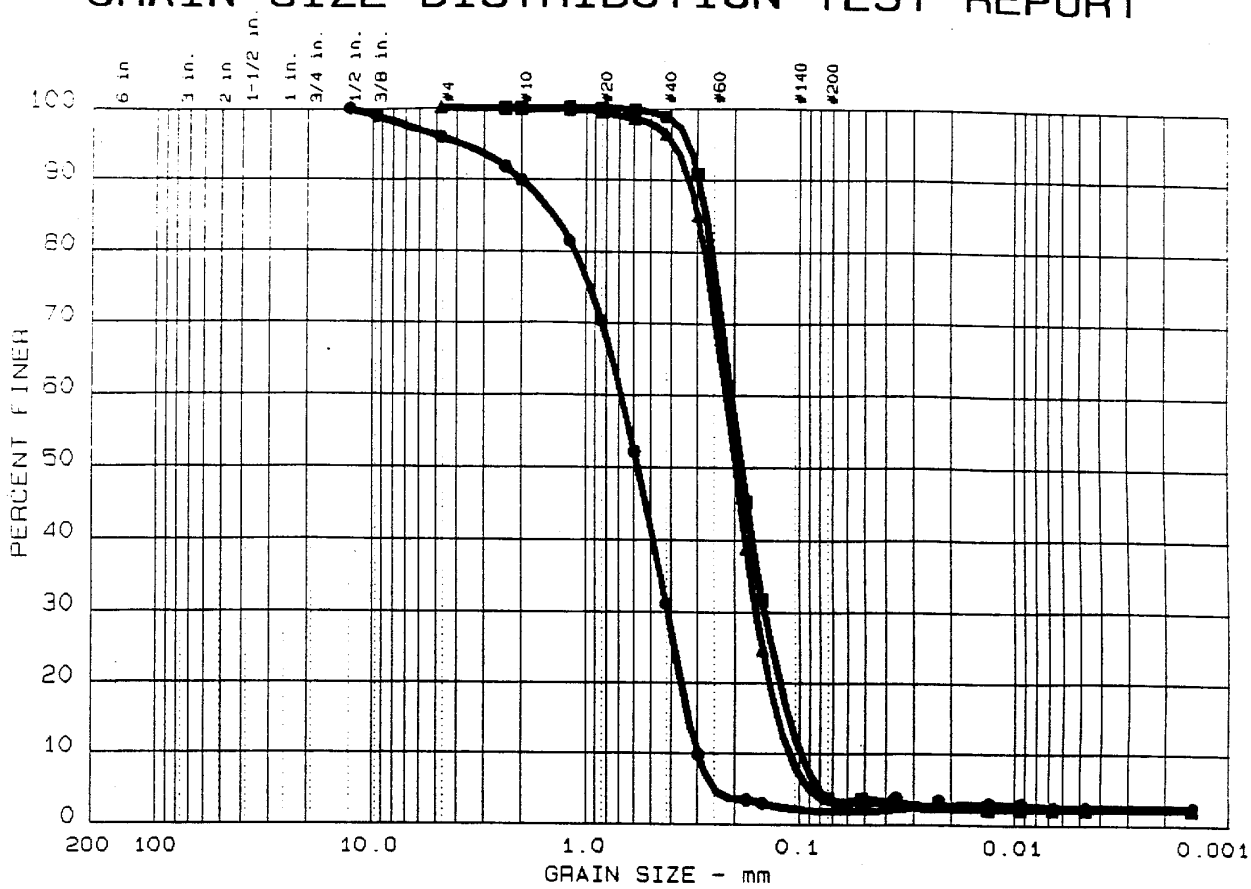
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	4.1	94.1	0.2	1.6
▲	5	0.0	0.0	96.8	1.0	2.2
■	6	0.0	0.0	96.4	1.5	2.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			1.40	0.68	0.57	0.414	0.3285	0.2970	0.85	2.3
▲			0.30	0.22	0.20	0.160	0.1263	0.1113	1.04	2.0
■			0.27	0.21	0.19	0.145	0.1116	0.0983	1.04	2.1

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB10B 3-5'
▲ Location: CB10F 13-15'
■ Location: CB10J 23-25'
Date: 11-12-90

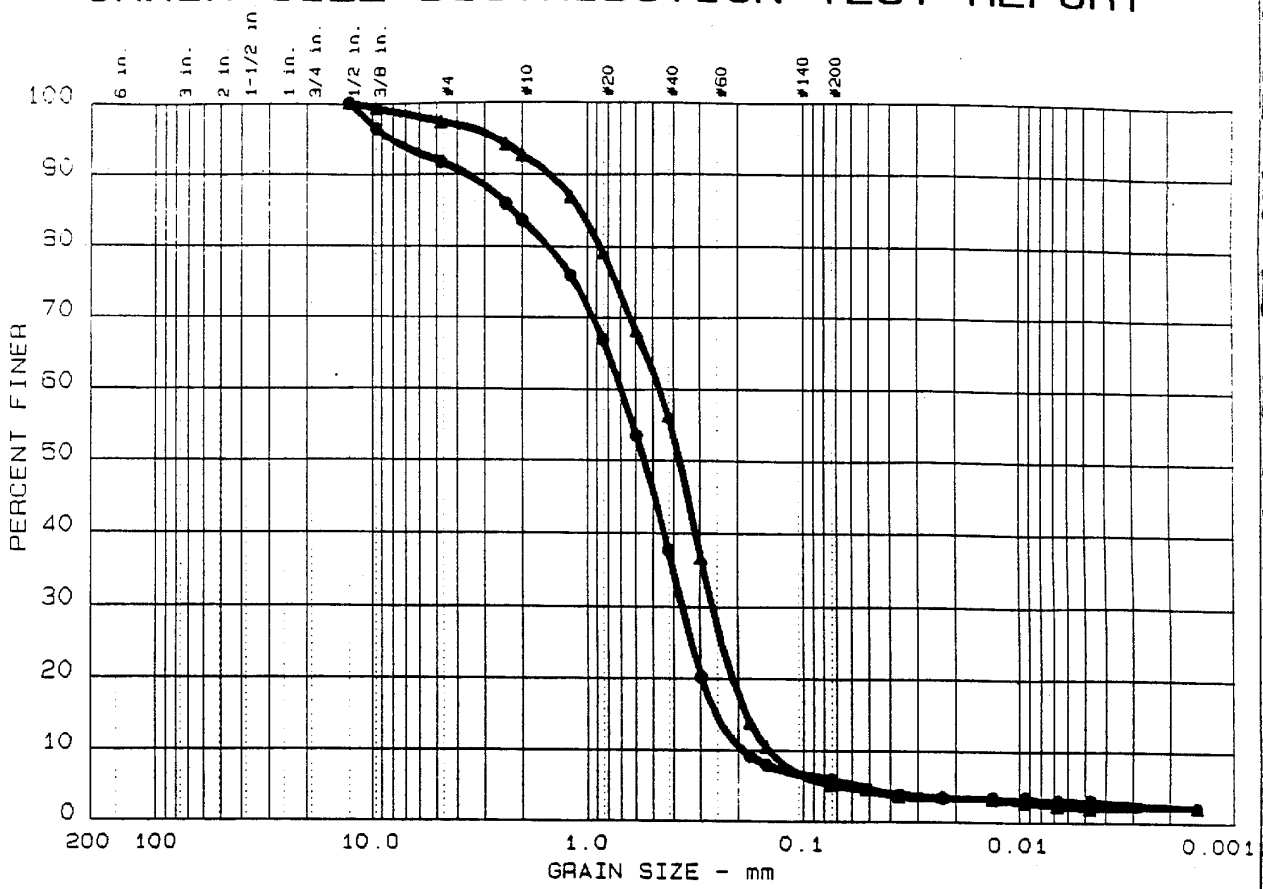
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	8.3	85.8	3.0	2.9
▲	5	0.0	2.7	92.1	3.3	1.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	2.21	0.69	0.54	0.363	0.2538	0.1903	1.00	3.6
▲	NP	NP	1.07	0.46	0.37	0.264	0.1841	0.1445	1.04	3.2

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP-SM	
▲ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: CB11B 3-5'
▲ Location: CB11F 13-15'

Date: 11-16-90

Remarks:

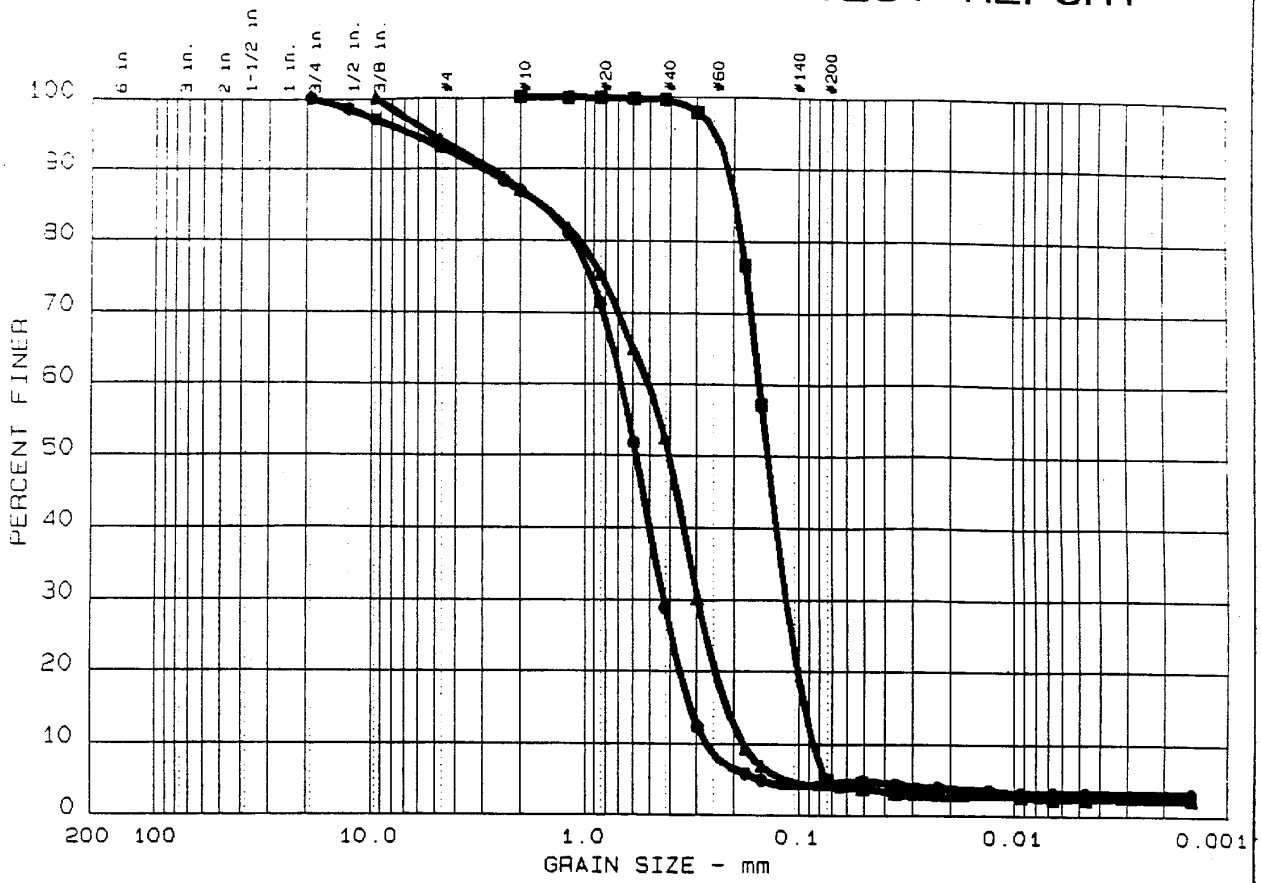
GRAIN SIZE DISTRIBUTION TEST REPORT

RMT. INC.

Figure No. _____

JJK 1-4-91

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	7.0	88.6	1.3	3.1
▲	8	0.0	5.9	90.1	1.8	2.2
■	9	0.0	0.0	95.1	2.2	2.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			1.60	0.67	0.58	0.428	0.3203	0.2695	1.01	2.5
▲			1.58	0.50	0.40	0.296	0.2173	0.1826	0.95	2.8
■			0.20	0.15	0.14	0.115	0.0942	0.0859	1.00	1.8

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB12C 6-8'
▲ Location: CB12F 13-15'
■ Location: CB12J 23-25'
Date: 11-12-90

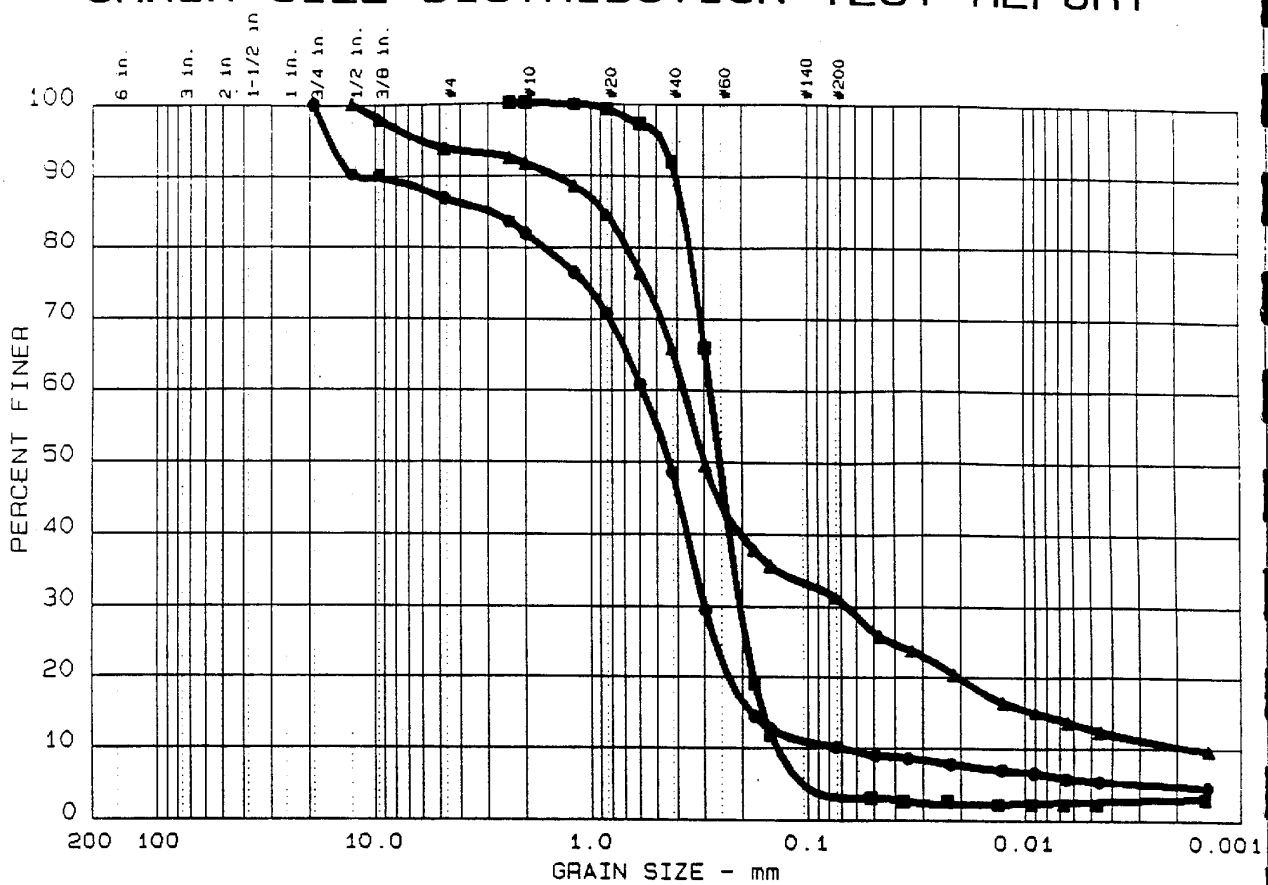
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	6	0.0	13.1	76.8	4.7	5.4
▲	7	0.0	6.2	62.7	18.4	12.7
■	8	0.0	0.0	97.0	0.8	2.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	2.88	0.58	0.43	0.301	0.1832	0.0713	2.20	8.1
▲	29	11	0.86	0.37	0.30	0.066	0.0090	0.0016	7.31	232.3
■			0.37	0.28	0.25	0.206	0.1629	0.1387	1.09	2.0

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SW-SM	
▲ SEE BORING LOG	SC	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB13B 3-4'
▲ Location: CB13B 4-5'
■ Location: CB13F 13-15'
Date: 11-16-90

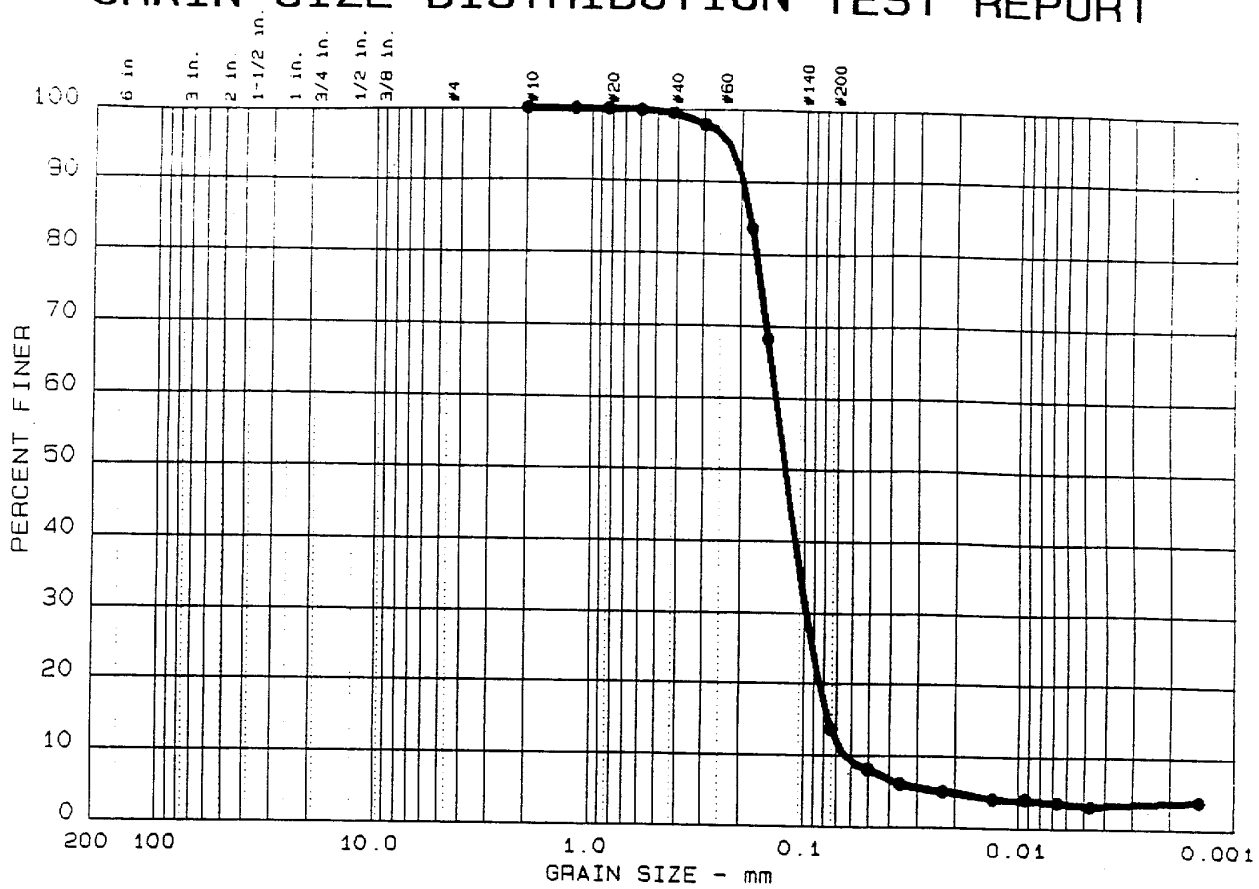
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	9	0.0	0.0	86.4	10.4	3.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.18	0.14	0.12	0.098	0.0766	0.0638	1.10	2.1

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	

Project No.: 1870.20
Project: NIROP
● Location: CB13J 23-25'

Date: 11-16-90

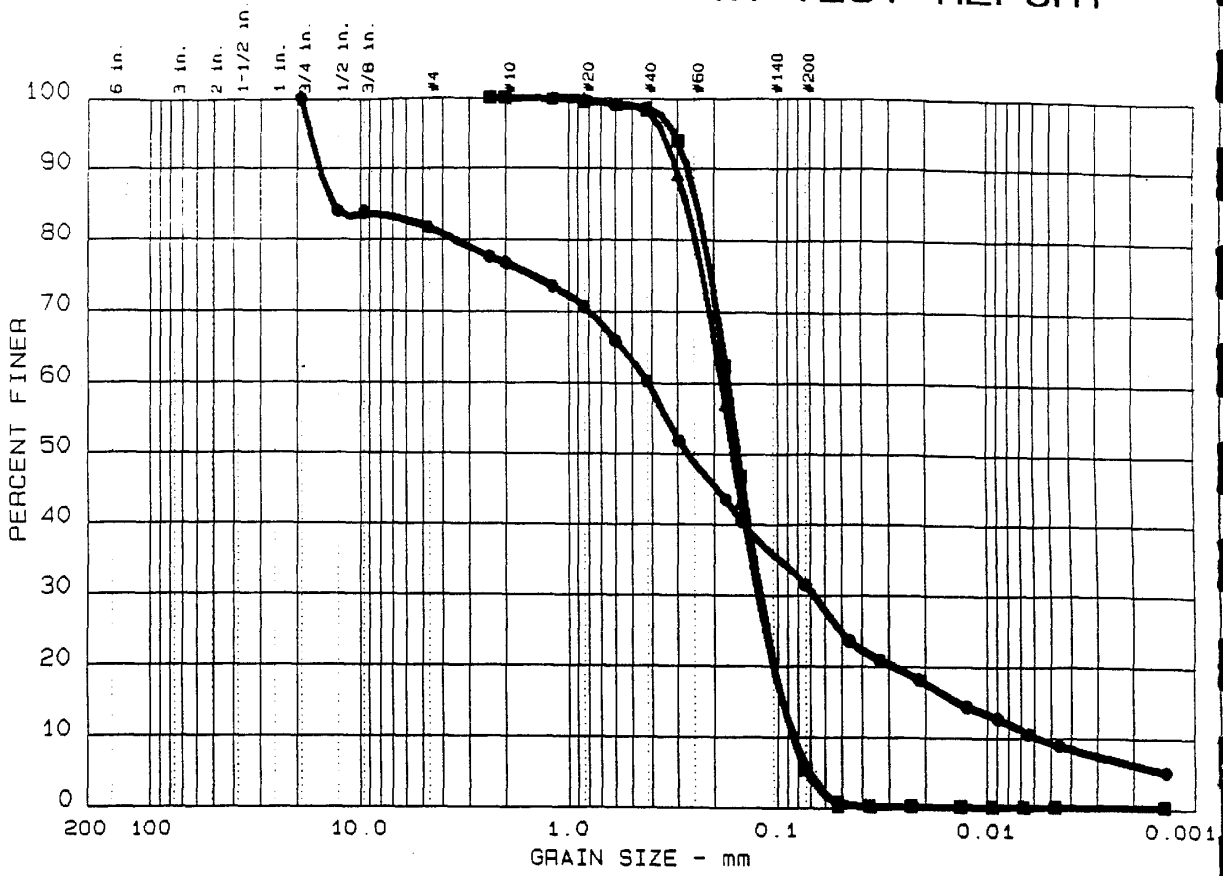
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT. INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	18.3	50.3	22.1	9.3
▲	2	0.0	0.0	93.8	6.0	0.2
■	3	0.0	0.0	94.6	5.2	0.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	28	10	13.34	0.42	0.27	0.068	0.0138	0.0057	1.93	73.3
▲	NP	NP	0.27	0.18	0.16	0.124	0.0947	0.0835	1.00	2.2
■	NP	NP	0.24	0.17	0.15	0.121	0.0950	0.0850	1.00	2.0

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC	
▲ SEE BORING LOG	SP-SM	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: CB14B 3-5'
▲ Location: CB14F 13-15'
■ Location: CB14J 23-25'
Date: 12-5-90

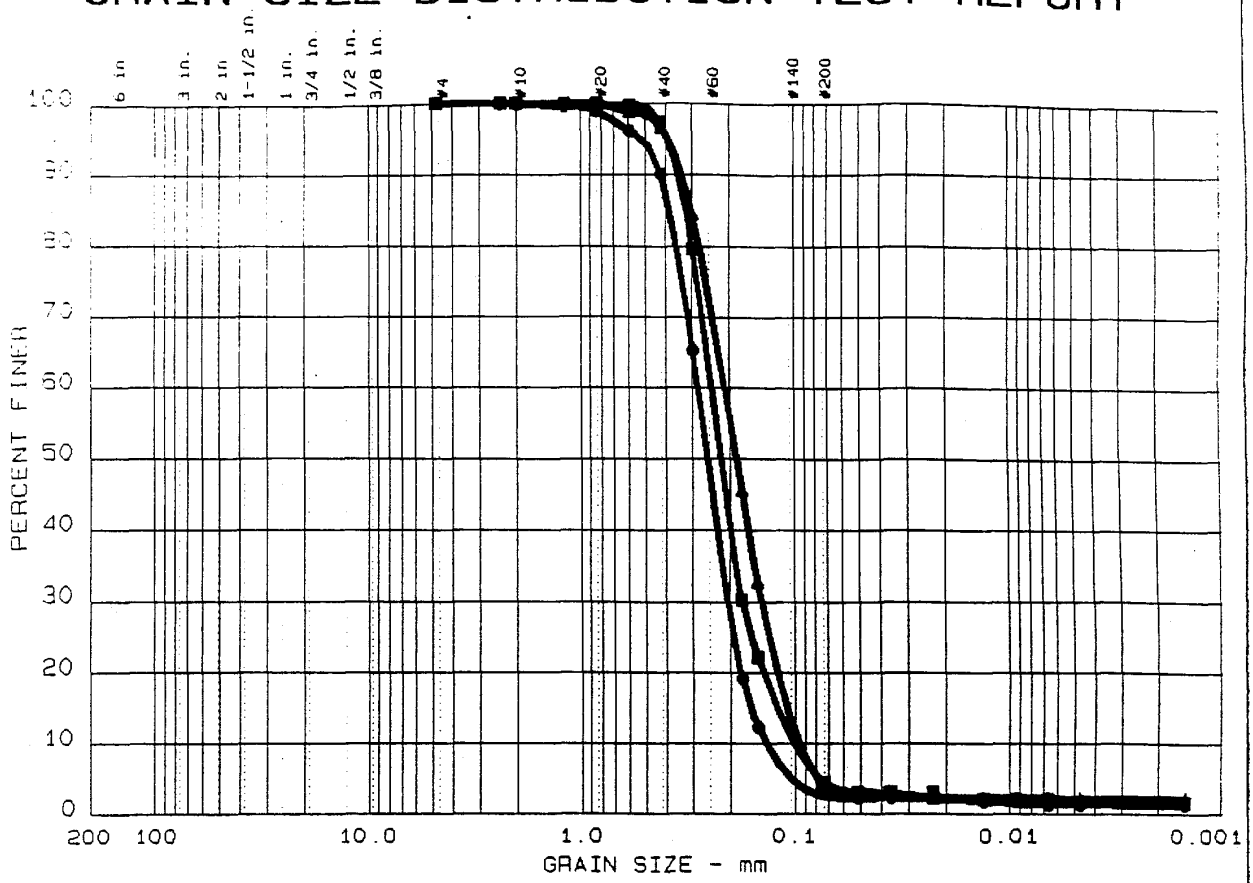
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	0.0	97.6	1.2	1.2
▲	11	0.0	0.0	96.0	1.8	2.2
■	12	0.0	0.0	95.5	2.8	1.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.38	0.28	0.25	0.206	0.1614	0.1371	1.10	2.1
▲			0.30	0.21	0.19	0.143	0.1085	0.0956	1.01	2.2
■			0.32	0.24	0.22	0.176	0.1211	0.1007	1.26	2.4

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB15C 6-8'
▲ Location: CB15F 13-15'
■ Location: CB15J 23-25'
Date: 11-12-90

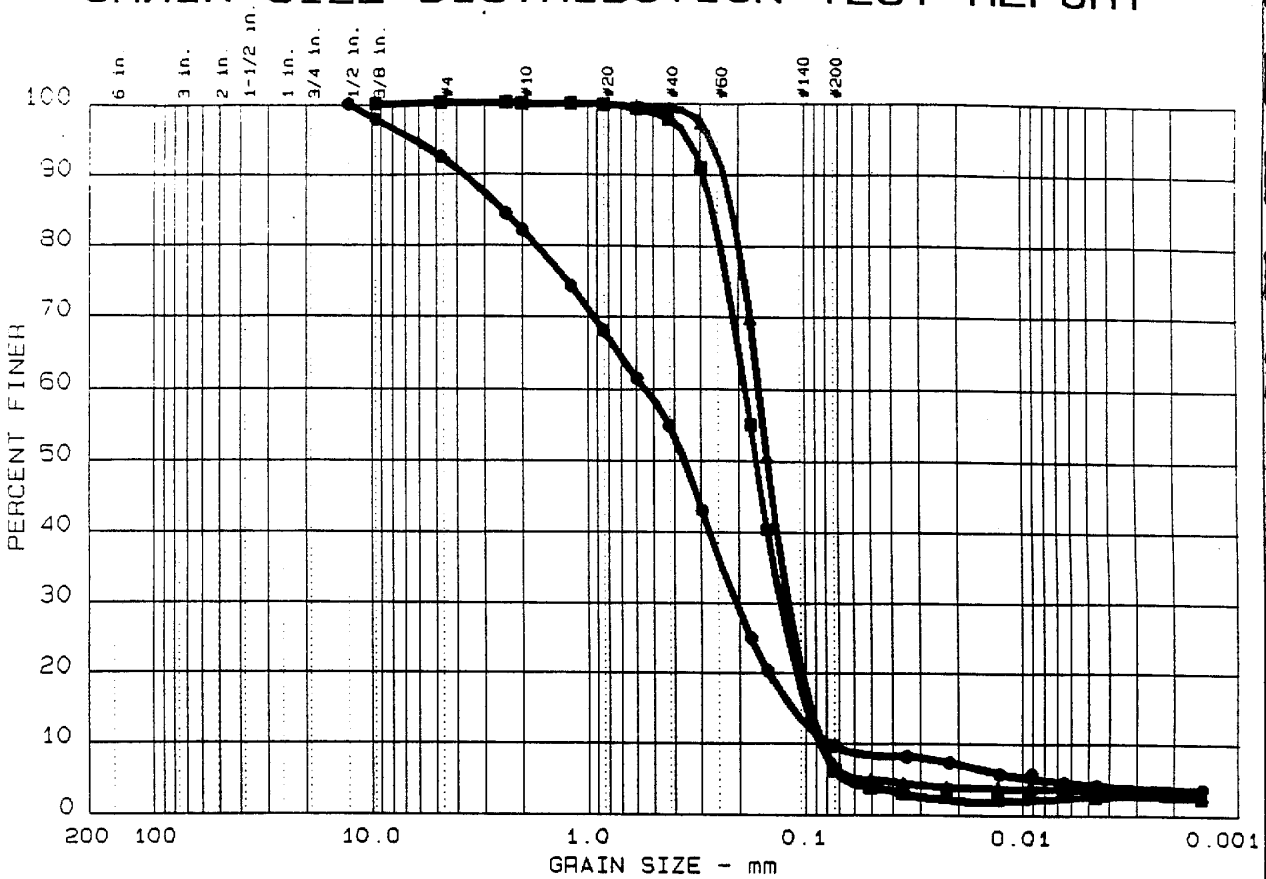
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	7.5	82.9	5.4	4.2
▲	5	0.0	0.0	93.2	3.3	3.5
■	6	0.0	0.0	93.8	3.7	2.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	2.45	0.54	0.36	0.208	0.1156	0.0773	1.04	7.0
▲	NP	NP	0.21	0.16	0.15	0.120	0.0946	0.0834	1.06	1.9
■	NP	NP	0.26	0.19	0.17	0.130	0.0992	0.0864	1.04	2.2

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SW-SM	
▲ SEE BORING LOG	SP-SM	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: CB16B 3-5'
▲ Location: CB16F 13-15'
■ Location: CB16I 20-22'
Date: 10-31-90

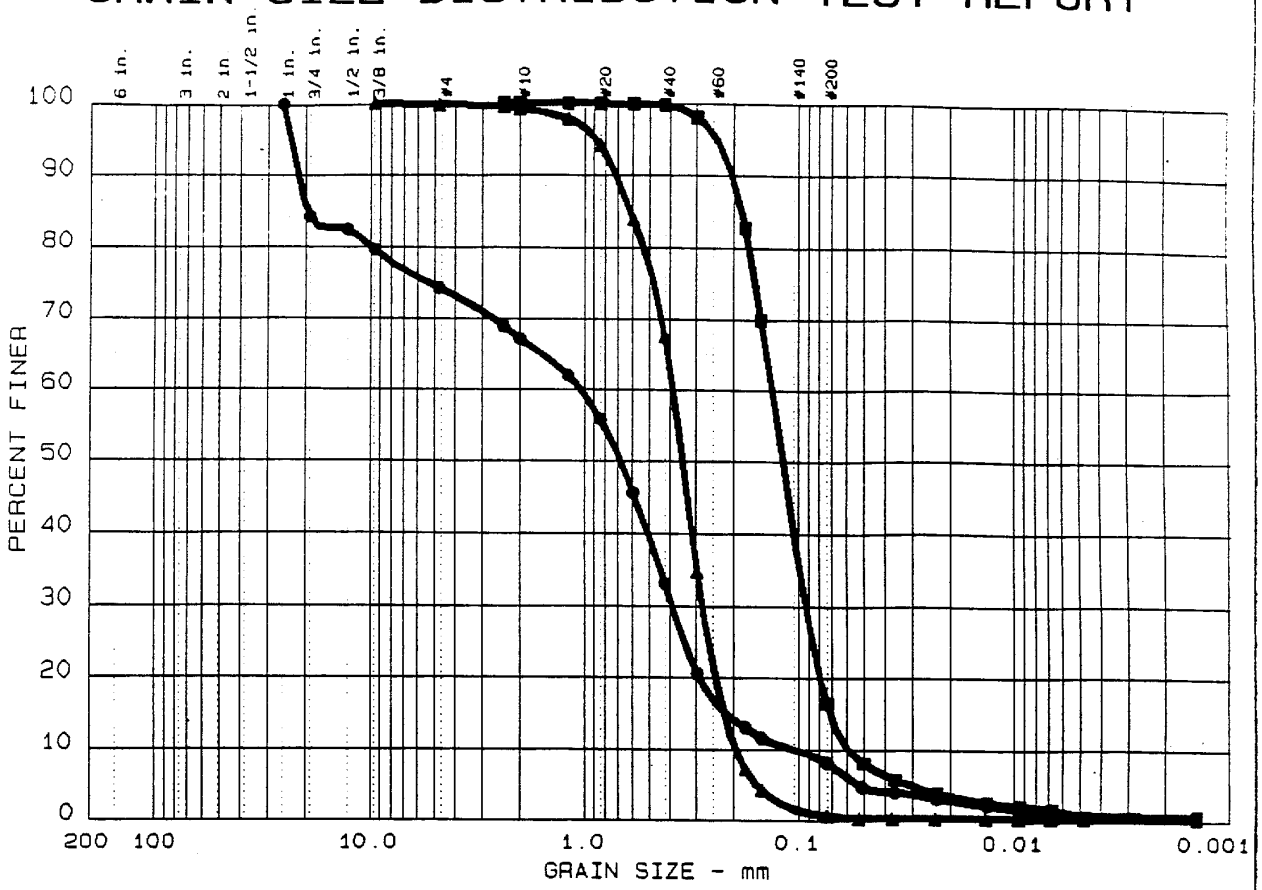
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	25.7	66.1	7.6	0.6
▲	5	0.0	0.3	99.1	0.4	0.2
■	6	0.0	0.0	83.6	15.6	0.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	19.50	1.04	0.68	0.389	0.2163	0.1047	1.40	9.9
▲			0.61	0.38	0.35	0.281	0.2223	0.1959	1.05	2.0
■	NP	NP	0.18	0.13	0.12	0.093	0.0714	0.0587	1.10	2.3

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SW-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SM	

Project No.: 1870.20
Project: NIROP
● Location: CB17B 3-5'
▲ Location: CB17F 13-15'
■ Location: CB17J 23-25'
Date: 12-5-90

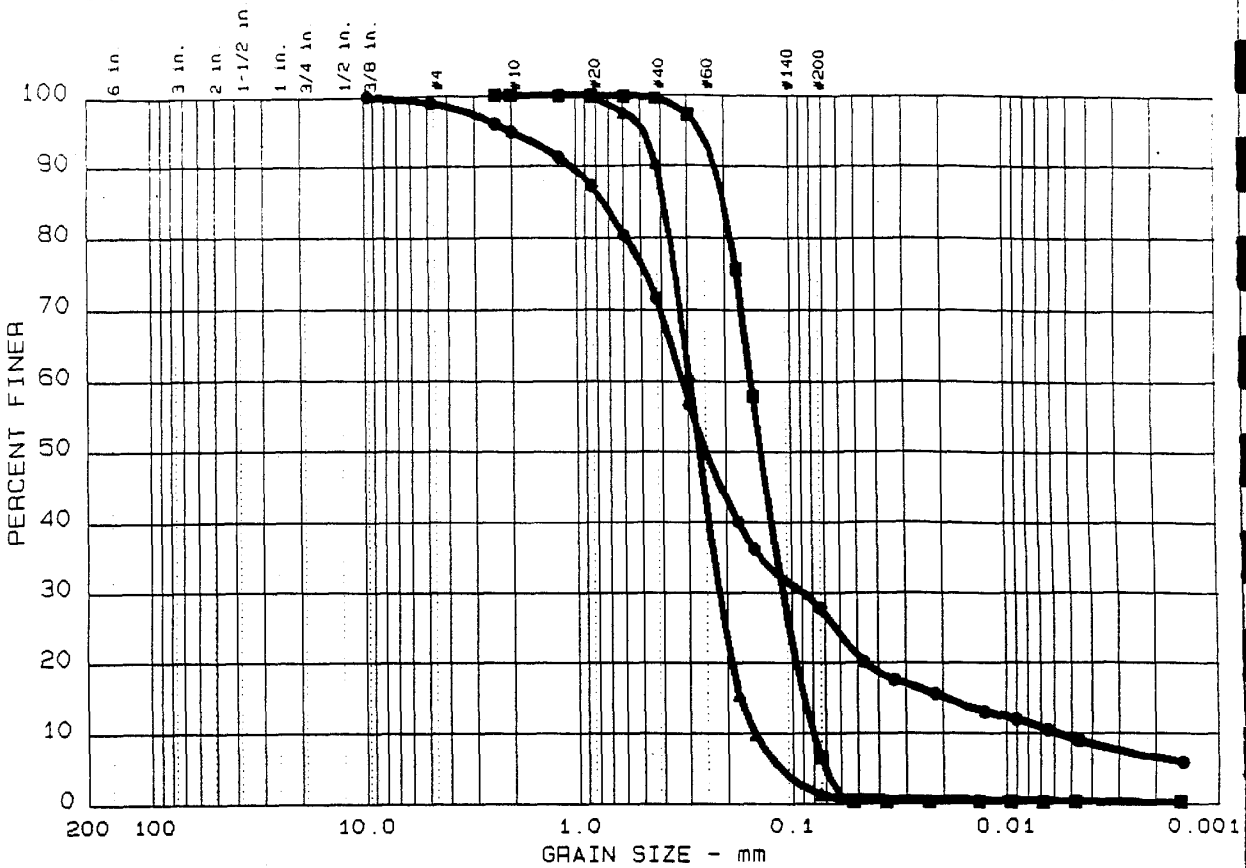
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	1.2	71.1	18.4	9.3
▲	8	0.0	0.0	98.7	1.1	0.2
■	9	0.0	0.0	93.4	6.4	0.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	25	7	0.74	0.32	0.25	0.089	0.0191	0.0057	4.37	56.2
▲			0.38	0.29	0.27	0.218	0.1754	0.1505	1.08	2.0
■	NP	NP	0.20	0.15	0.14	0.110	0.0882	0.0801	1.00	1.9

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: CB18B 3-5'
▲ Location: CB18F 13-15'
■ Location: CB18J 23-25'
Date: 12-5-90

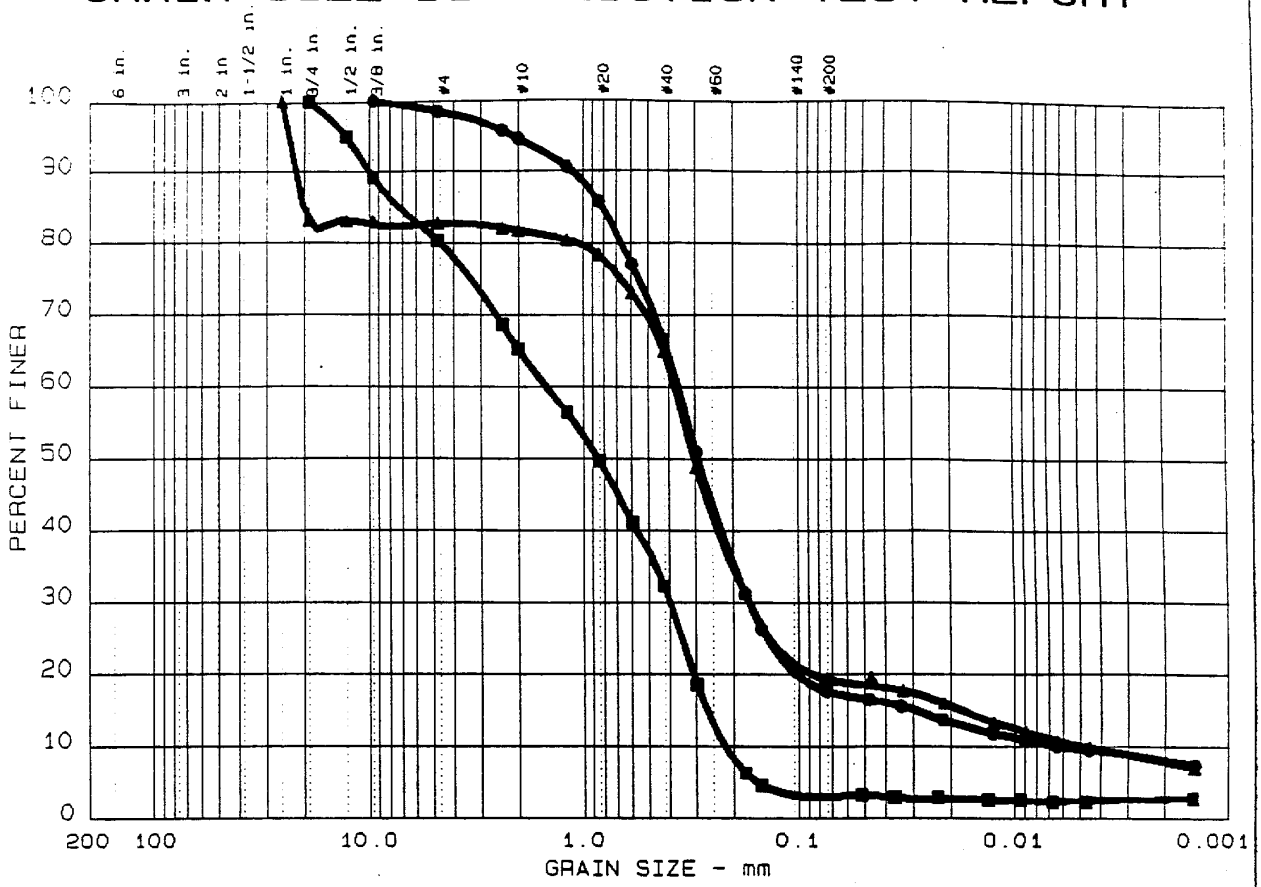
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT. INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	11	0.0	1.5	80.8	8.0	9.7
▲	10	0.0	17.3	63.4	9.3	10.0
■	12	0.0	19.7	77.3	0.7	2.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.80	0.36	0.29	0.169	0.0294	0.0065	12.27	55.1
▲	23	5	20.14	0.37	0.30	0.169	0.0175	0.0049	15.67	76.7
■			7.16	1.48	0.85	0.396	0.2673	0.2198	0.48	6.7

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SC-SM	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB19B 3-4'
▲ Location: CB19B 4-5'
■ Location: CB19F 13-15'
Date: 11-16-90

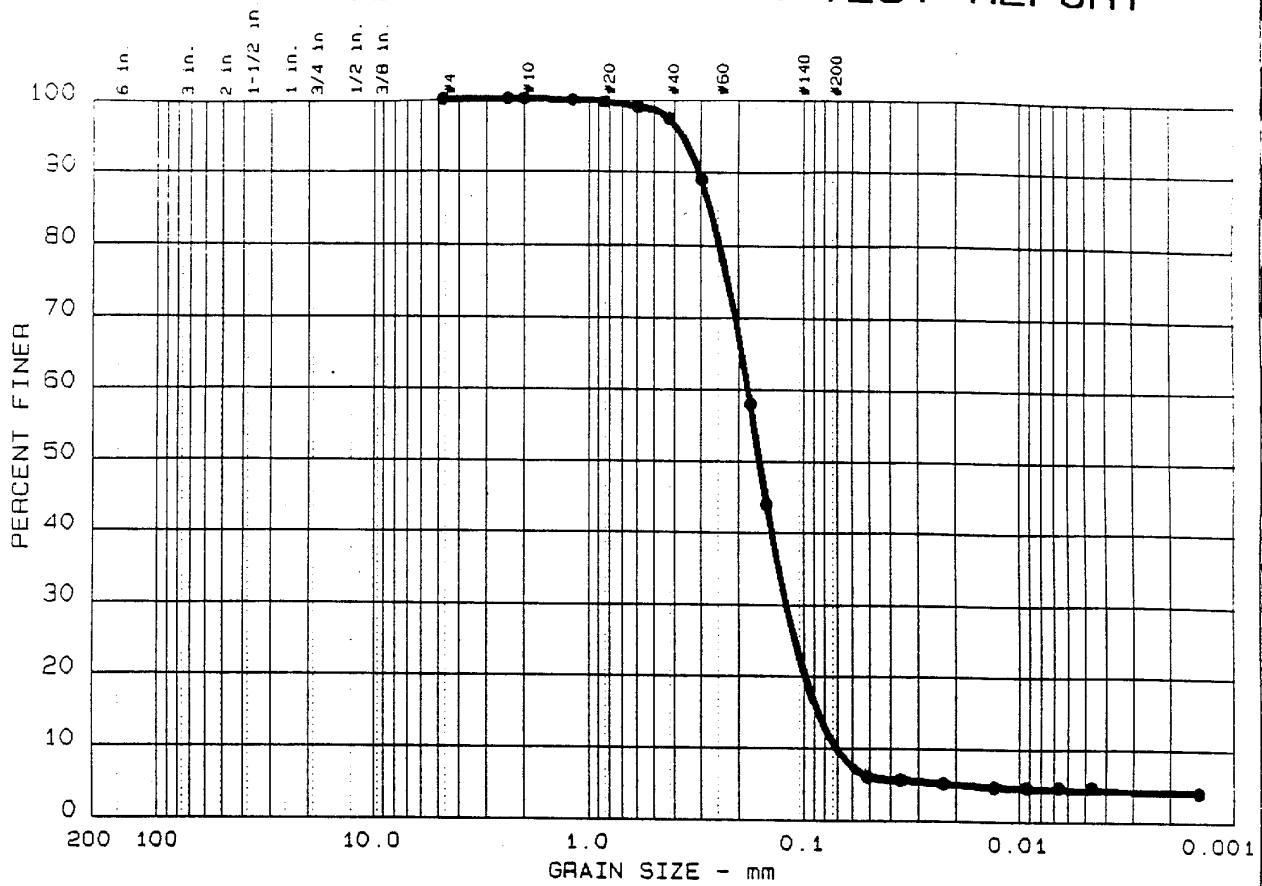
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	0.0	89.1	6.5	4.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.27	0.18	0.16	0.121	0.0864	0.0710	1.14	2.6

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: CB19J 23-25'

Date: 11-16-90

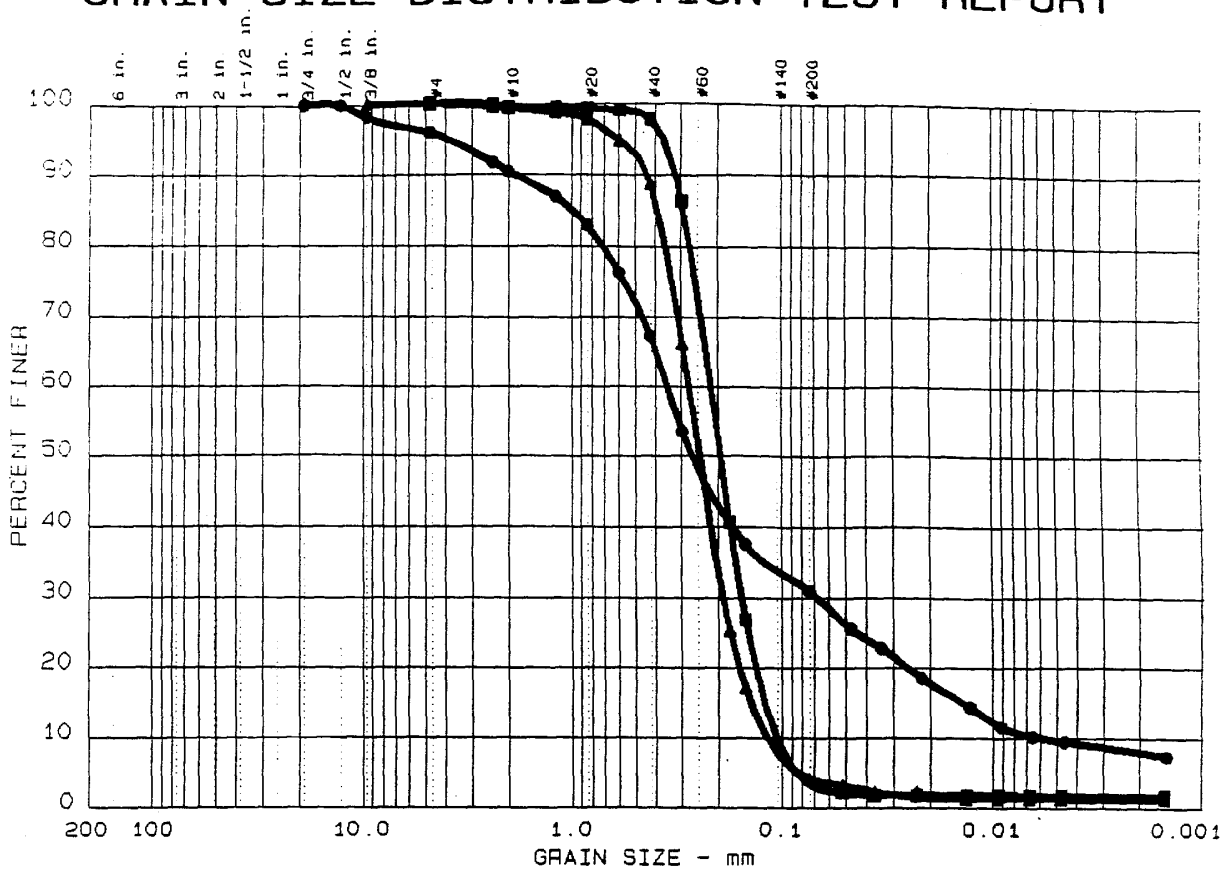
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	4.2	64.9	21.3	9.6
▲	14	0.0	0.1	95.7	2.9	1.3
■	15	0.0	0.0	96.7	1.6	1.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	16	3	0.98	0.35	0.27	0.068	0.0137	0.0058	2.29	60.4
▲			0.39	0.28	0.25	0.191	0.1404	0.1179	1.12	2.3
■			0.29	0.22	0.20	0.155	0.1206	0.1058	1.05	2.1

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB20B 3-5'
▲ Location: CB20F 13-15'
■ Location: CB20J 23-25'
Date: 11-12-90

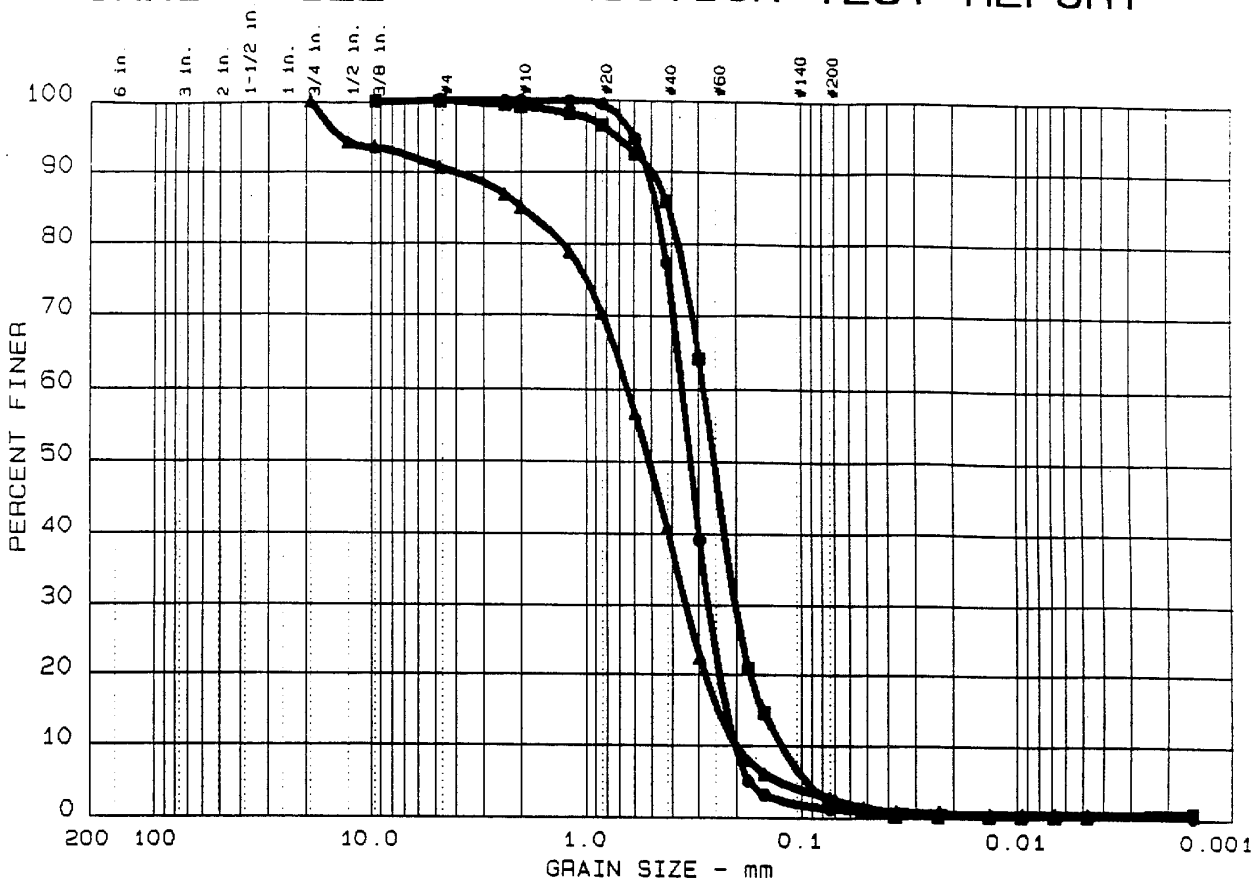
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	0.0	98.8	0.9	0.3
▲	11	0.0	9.4	87.9	2.1	0.6
■	12	0.0	0.1	97.7	1.9	0.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.47	0.36	0.33	0.271	0.2239	0.2042	1.01	1.7
▲			1.97	0.64	0.51	0.345	0.2443	0.2009	0.93	3.2
■			0.41	0.28	0.25	0.203	0.1507	0.1239	1.18	2.3

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB21B 3-5'
▲ Location: CB21F 13-15'
■ Location: CB21J 23-25'
Date: 12-5-90

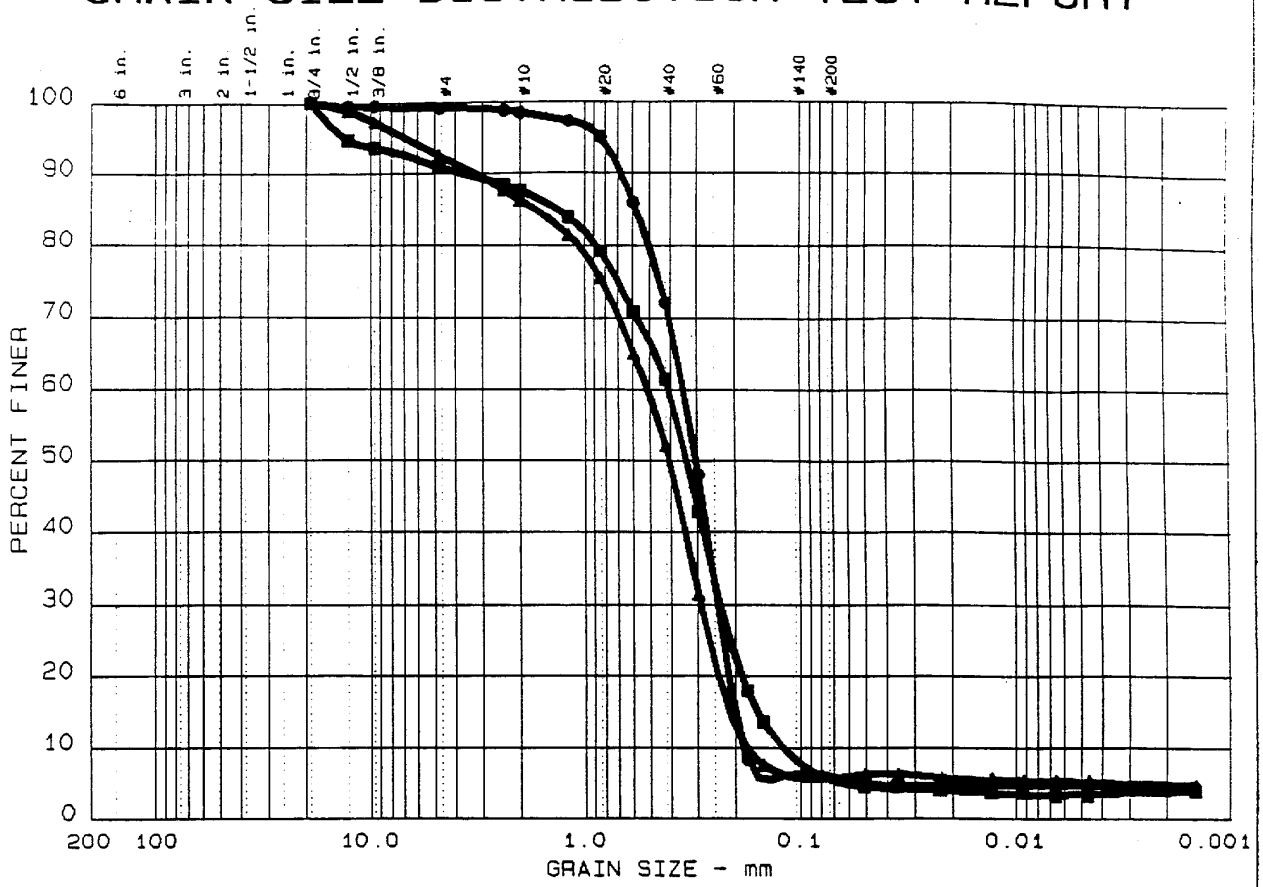
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	14	0.0	0.9	93.0	1.5	4.6
▲	15	0.0	7.5	86.8	0.5	5.2
■	16	0.0	9.1	85.4	2.3	3.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.57	0.35	0.30	0.243	0.2009	0.1841	0.93	1.9
▲	NP	NP	1.72	0.51	0.40	0.291	0.2128	0.1770	0.94	2.9
■	NP	NP	1.35	0.41	0.34	0.236	0.1578	0.1197	1.15	3.4

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP-SM	
▲ SEE BORING LOG	SP-SM	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: CB22B 3-5'
▲ Location: CB22F 13-15'
■ Location: CB22J 23-25'
Date: 11-16-90

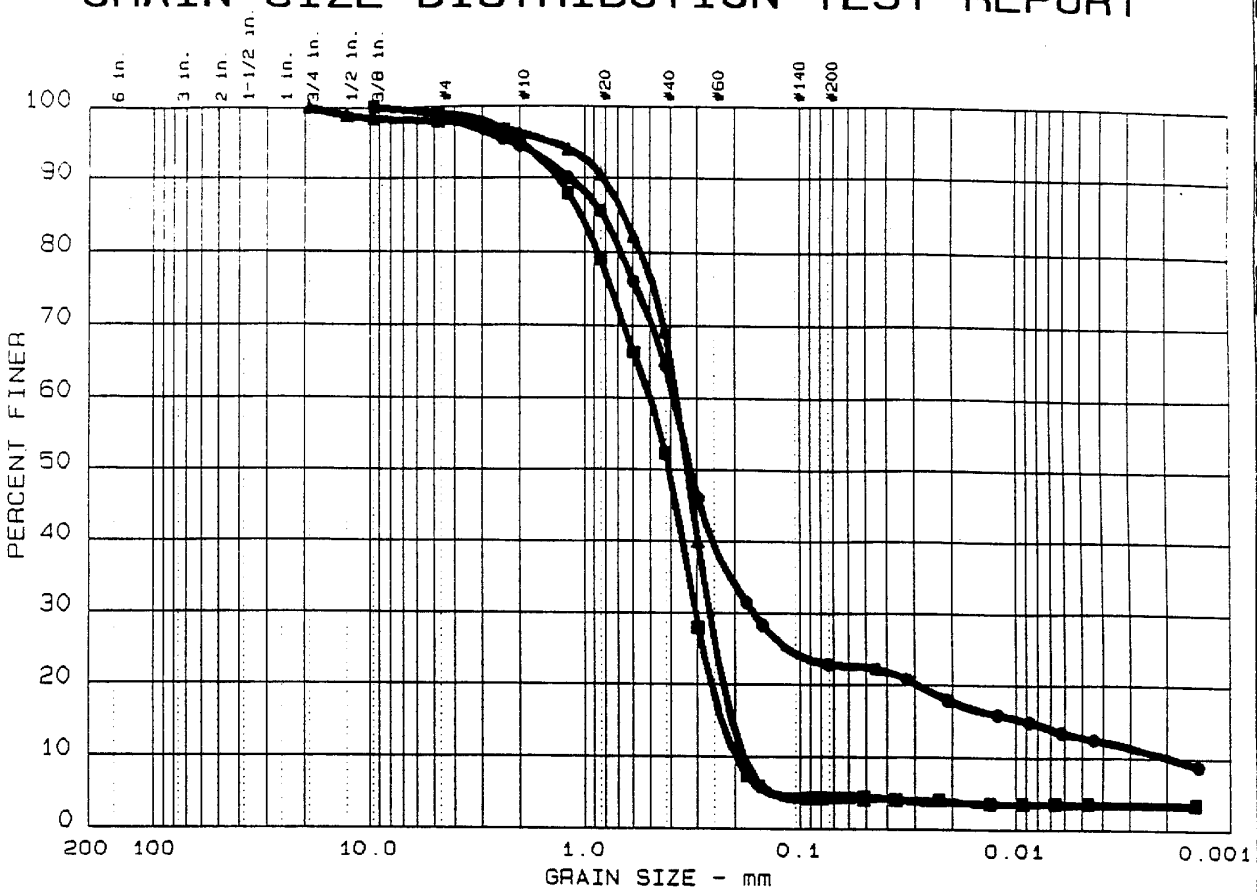
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	17	0.0	1.4	75.8	10.1	12.7
▲	18	0.0	2.2	93.9	0.6	3.3
■	19	0.0	1.0	94.4	1.1	3.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	22	5	0.82	0.38	0.32	0.165	0.0089	0.0020	36.14	195.9
▲			0.66	0.37	0.33	0.263	0.2077	0.1830	1.02	2.0
■			1.04	0.49	0.40	0.306	0.2320	0.1998	0.95	2.5

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB23B 3-5'
▲ Location: CB23F 13-15'
■ Location: CB23J 23-25'
Date: 11-16-90

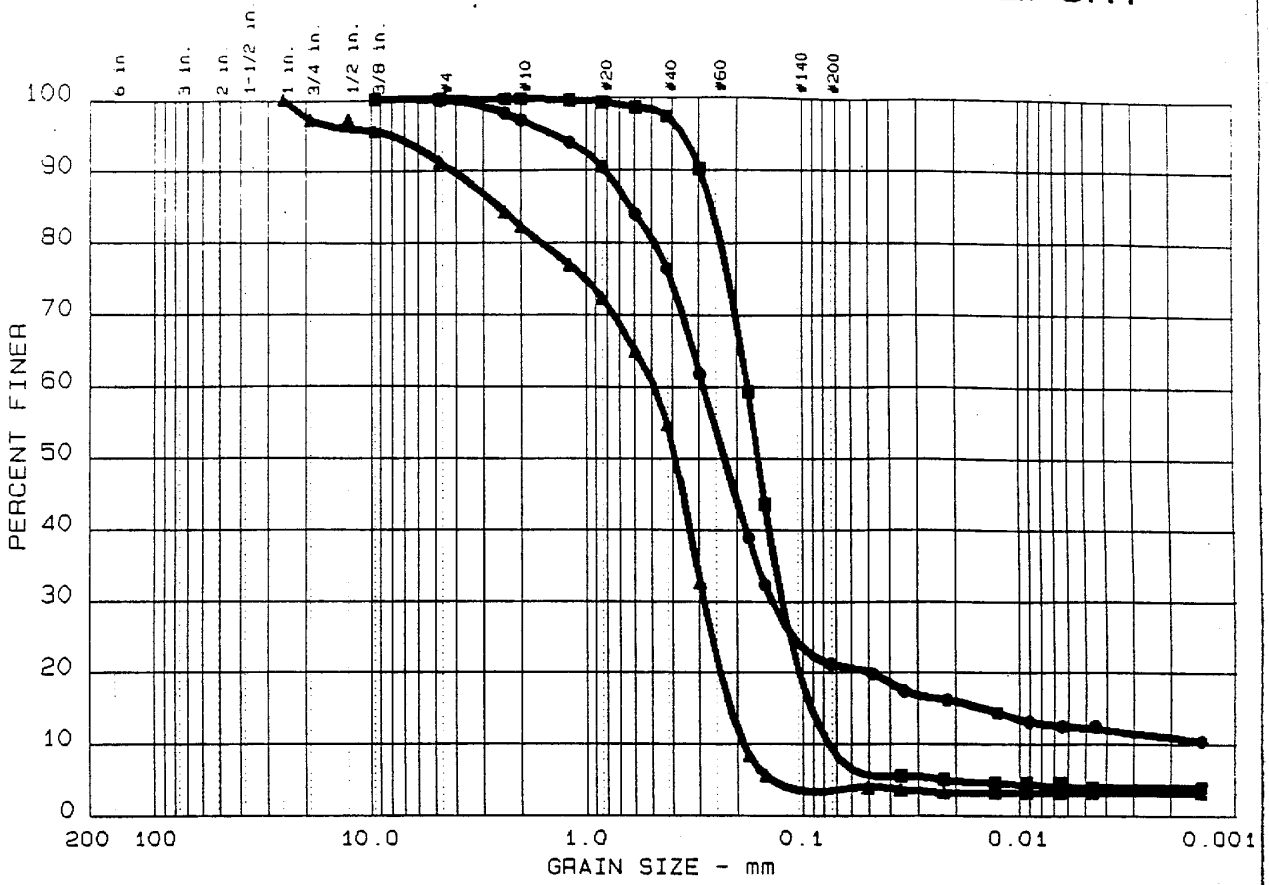
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT. INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	0.3	78.6	8.9	12.2
▲	2	0.0	8.8	87.7	0.3	3.2
■	3	0.0	0.1	90.7	5.3	3.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.62	0.28	0.23	0.138	0.0149			
▲			2.54	0.48	0.39	0.285	0.2165	0.1886	0.90	2.6
■	NP	NP	0.26	0.18	0.16	0.125	0.0918	0.0764	1.14	2.3

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: CB24B 3-5'
▲ Location: CB24F 13-15'
■ Location: CB24J 23-25'
Date: 11-16-90

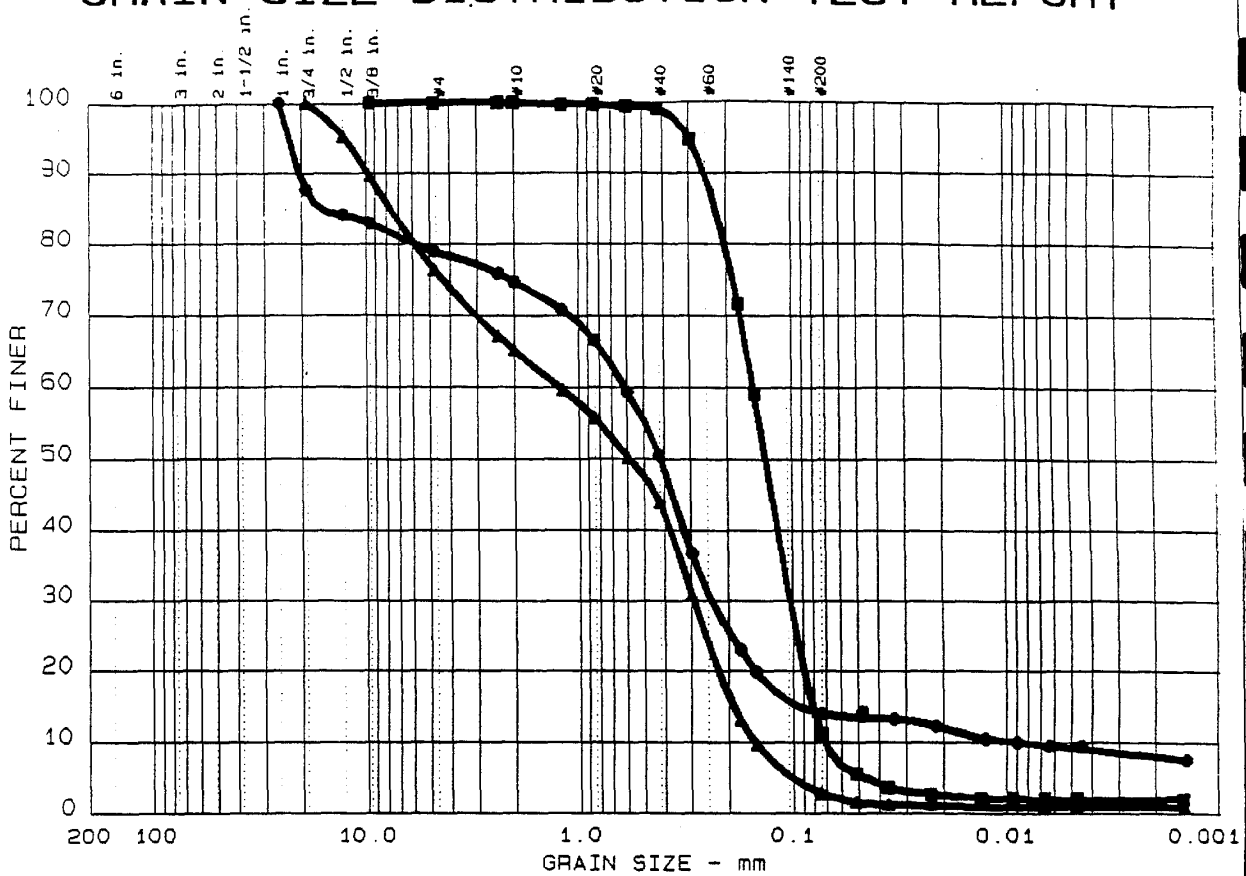
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	21.1	65.0	4.8	9.1
▲	5	0.0	23.6	73.6	2.0	0.8
■	6	0.0	0.1	88.8	9.3	1.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	16.41	0.60	0.41	0.241	0.0939	0.0089	10.90	68.0
▲			7.59	1.23	0.58	0.292	0.1905	0.1514	0.46	8.1
■	NP	NP	0.22	0.15	0.13	0.103	0.0809	0.0713	0.99	2.1

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SW	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: CB25B 3-5'
▲ Location: CB25F 13-15'
■ Location: CB25J 23-25'
Date: 11-16-90

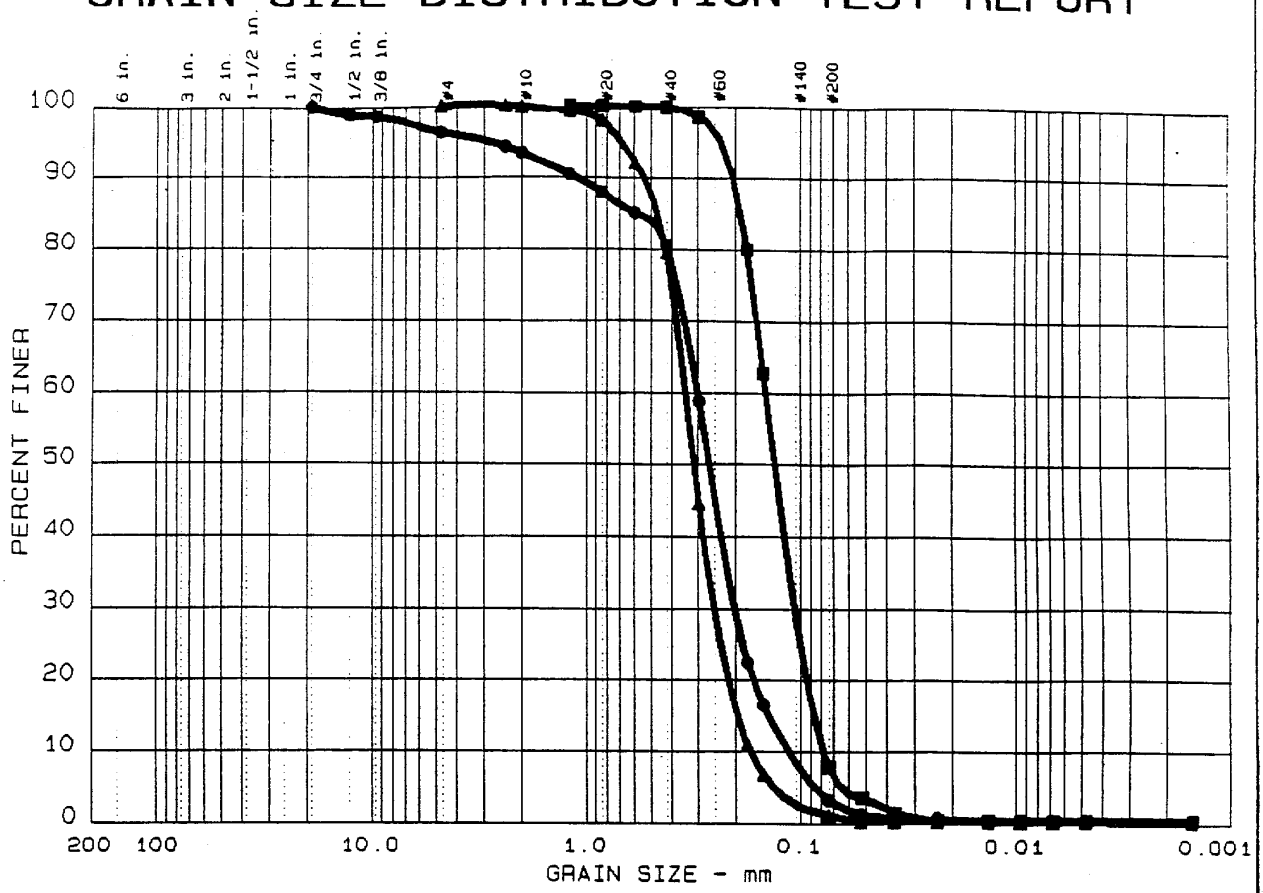
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	3.6	93.1	3.0 3.3	0.3
▲	14	0.0	0.0	98.9	0.9 1.1	0.2
■	15	0.0	0.0	92.1	7.6 7.9	0.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.58	0.30	0.27	0.203	0.1403	0.1138	1.21	2.6
▲			0.46	0.34	0.31	0.252	0.1968	0.1714	1.08	2.0
■	NP	NP	0.19	0.15	0.13	0.106	0.0865	0.0780	1.00	1.9

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: CB26B 3-5'
▲ Location: CB26F 13-15'
■ Location: CB26J 23-25'
Date: 12-5-90

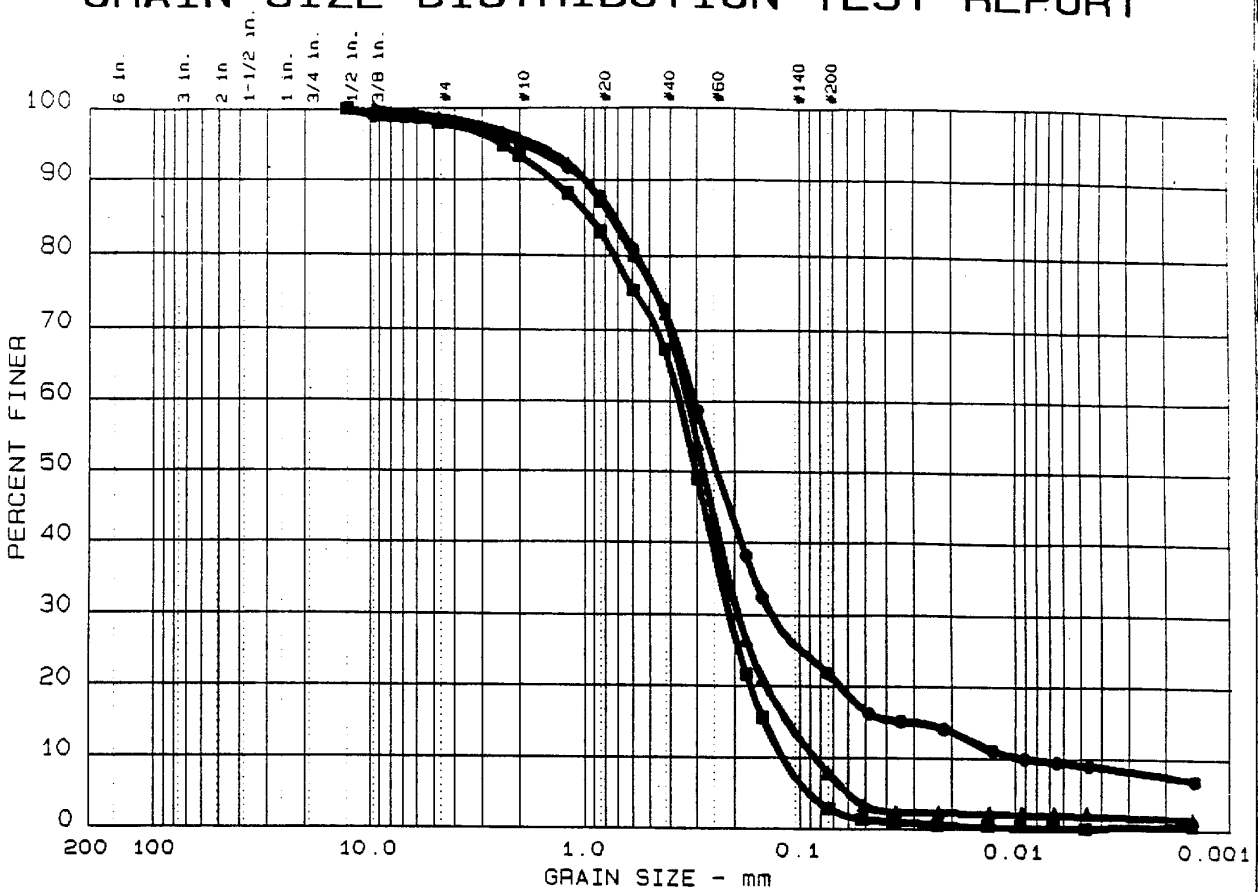
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	17	0.0	2.0	76.2	12.7	9.1
▲	18	0.0	1.4	90.7	6.0	1.9
■	19	0.0	2.1	95.1	2.6	0.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.72	0.30	0.24	0.136	0.0268	0.0090	6.75	34.0
▲	NP	NP	0.75	0.33	0.28	0.193	0.1136	0.0852	1.33	3.9
■			0.93	0.36	0.30	0.212	0.1460	0.1201	1.05	3.0

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP-SM	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: CB27B 3-5'
▲ Location: CB27F 13-15'
■ Location: CB27J 23-25'
Date: 12-5-90

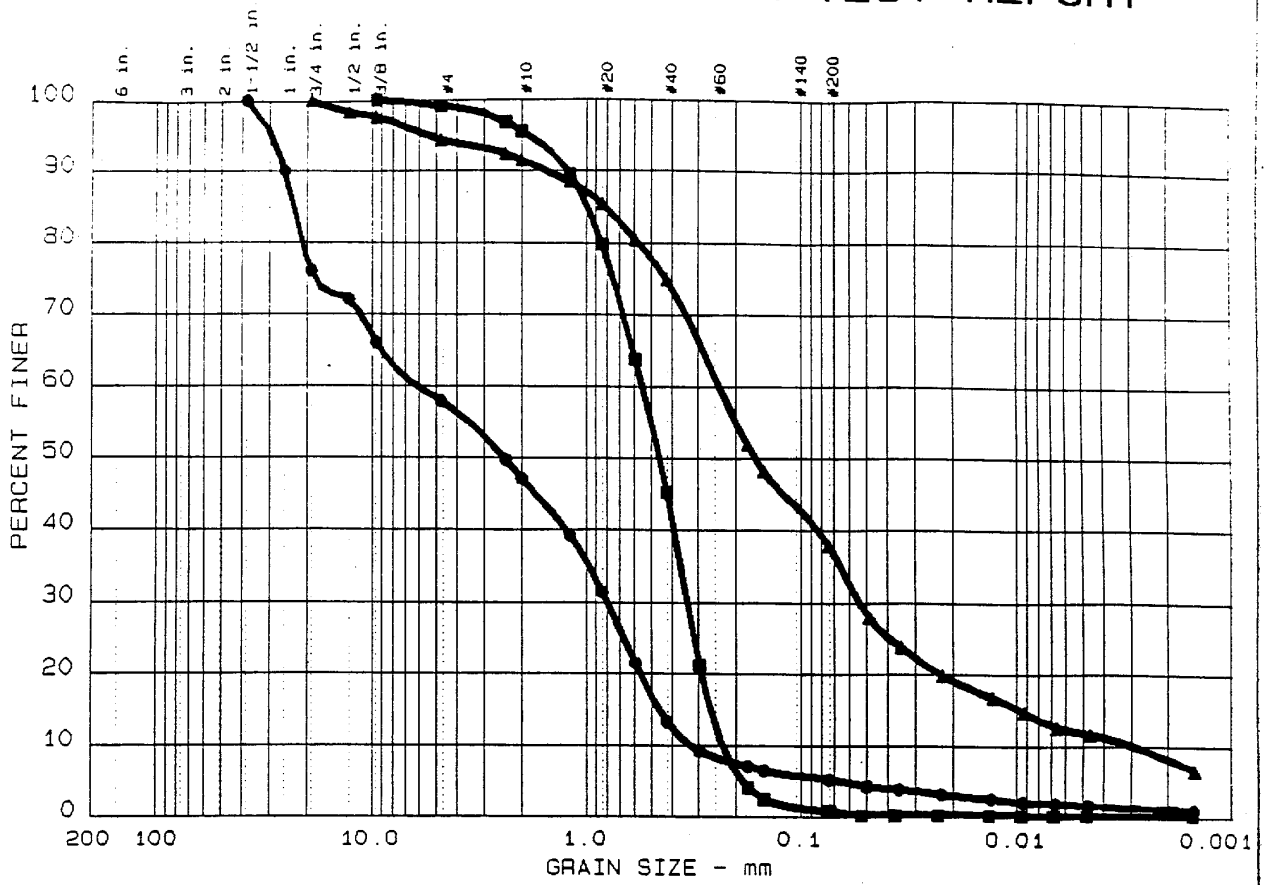
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	42.2	52.6	3.6	1.6
▲	2	0.0	5.7	56.6	25.9	11.8
■	3	0.0	0.9	98.3	0.6	0.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	22.99	6.19	2.44	0.797	0.4534	0.3247	0.32	19.1
▲	21	8	0.80	0.24	0.16	0.054	0.0096	0.0029	4.11	82.4
■			0.98	0.55	0.45	0.339	0.2630	0.2317	0.90	2.4

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP-SM	
▲ SEE BORING LOG	SC	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: C828B 3-5'
▲ Location: C828F 13-15'
■ Location: C828J 23-25'
Date: 12-5-90

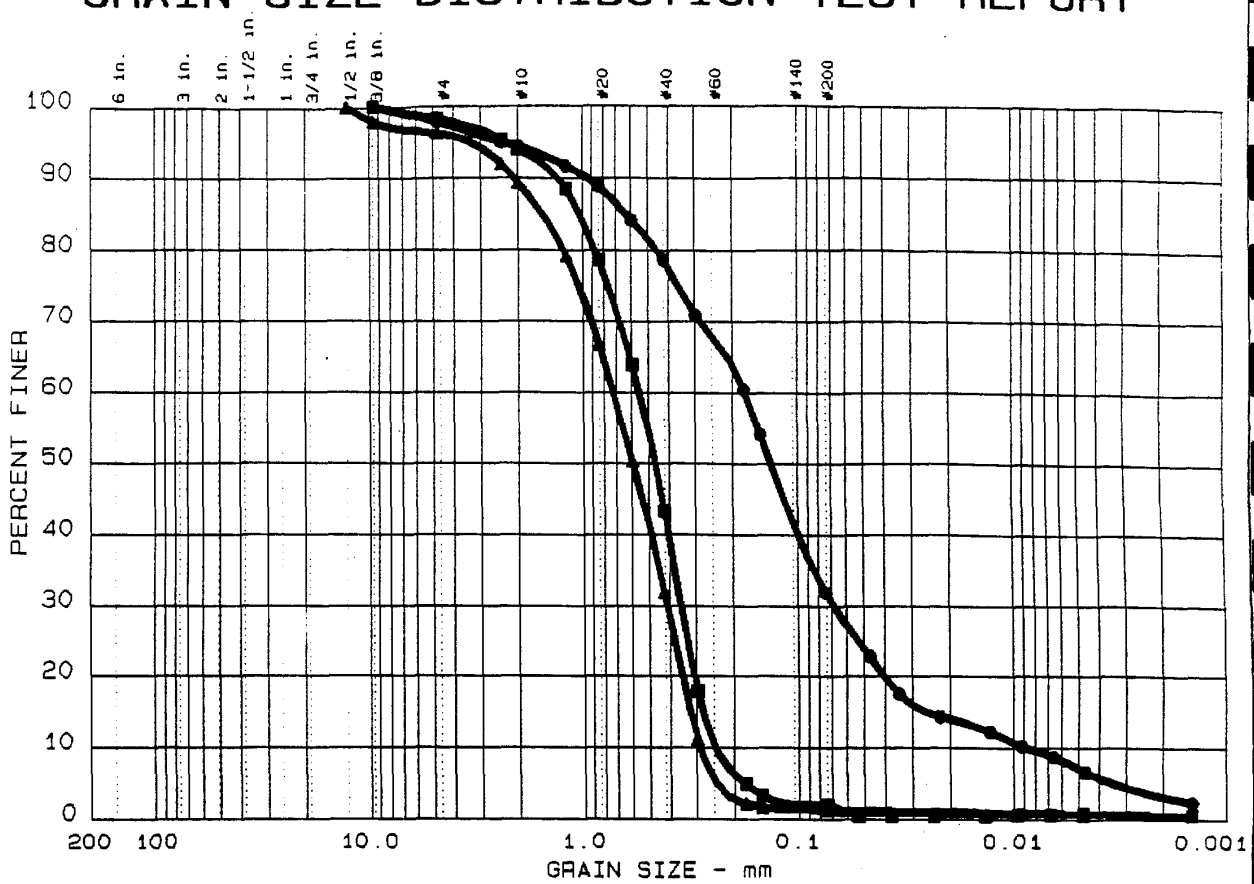
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	2.3	65.9	24.7	7.1
▲	14	0.0	3.9	95.0	0.6	0.5
■	16	0.0	1.8	96.3	1.3	0.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	26	6	0.62	0.17	0.13	0.068	0.0257	0.0088	3.05	19.7
▲			1.53	0.72	0.59	0.408	0.3206	0.2891	0.80	2.5
■			1.02	0.55	0.46	0.354	0.2805	0.2443	0.94	2.2

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB01B 3-5'
▲ Location: NB01F 13-15'
■ Location: NB01J 23-25'
Date: 11-06-90

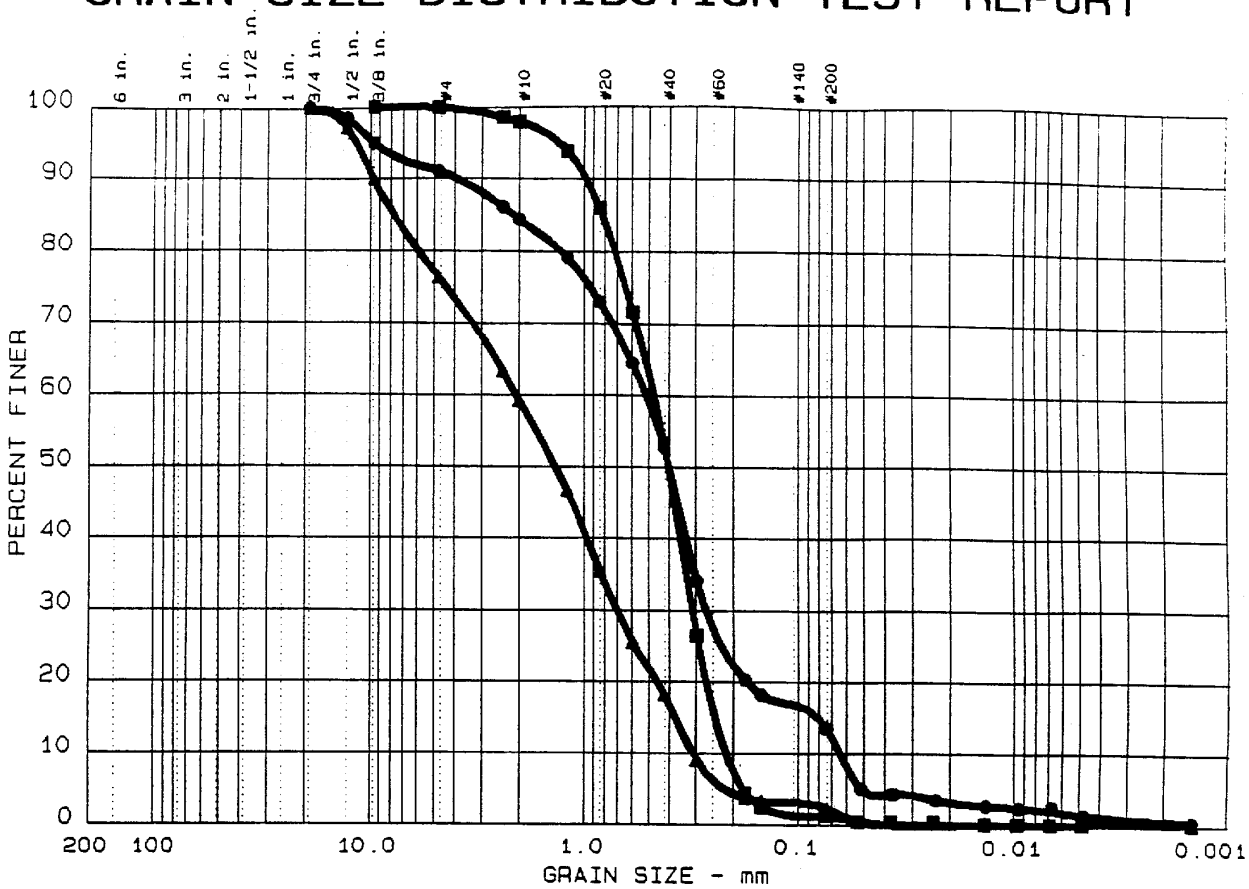
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	17	0.0	9.0	77.5	12.0	1.5
▲	18	0.0	23.7	74.0	2.0	0.3
■	19	0.0	0.2	98.6	0.7	0.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	2.11	0.51	0.40	0.269	0.0803	0.0638	2.24	7.9
▲			7.67	2.07	1.35	0.700	0.3715	0.3090	0.77	6.7
■			0.81	0.47	0.40	0.312	0.2449	0.2180	0.96	2.1

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB02B 3-5'
▲ Location: NB02F 13-15'
■ Location: NB02J 23-25'
Date: 11-06-90

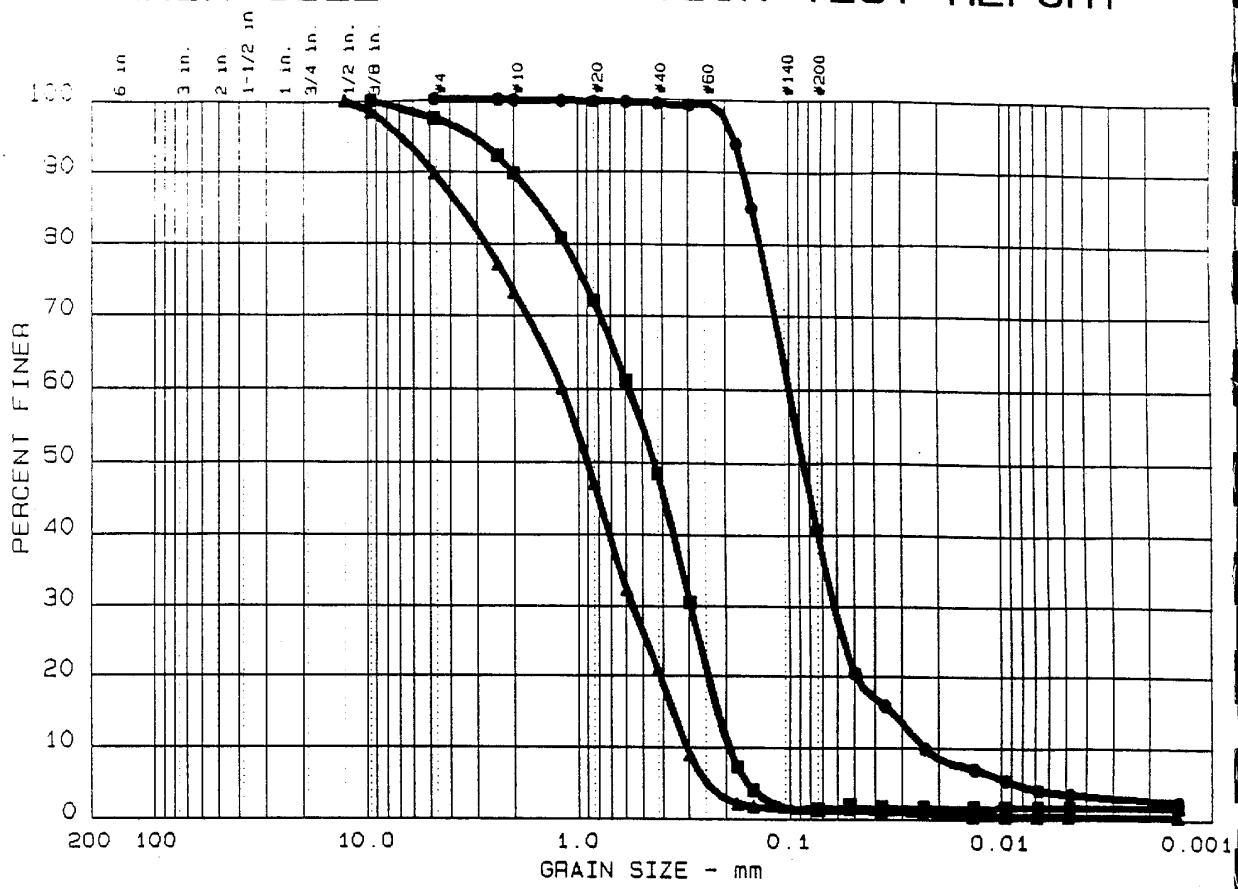
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	0.0	59.2	37.1	3.7
▲	2	0.0	10.2	88.6	0.8	0.4
■	3	0.0	2.6	95.9	0.1	1.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.15	0.10	0.09	0.062	0.0328	0.0232	1.65	4.3
▲			3.55	1.18	0.90	0.555	0.3573	0.3076	0.85	3.9
■			1.46	0.57	0.44	0.294	0.2198	0.1936	0.79	2.9

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB03B 3-5'
▲ Location: NB03F 13-15'
■ Location: NB03J 23-25'
Date: 11-06-90

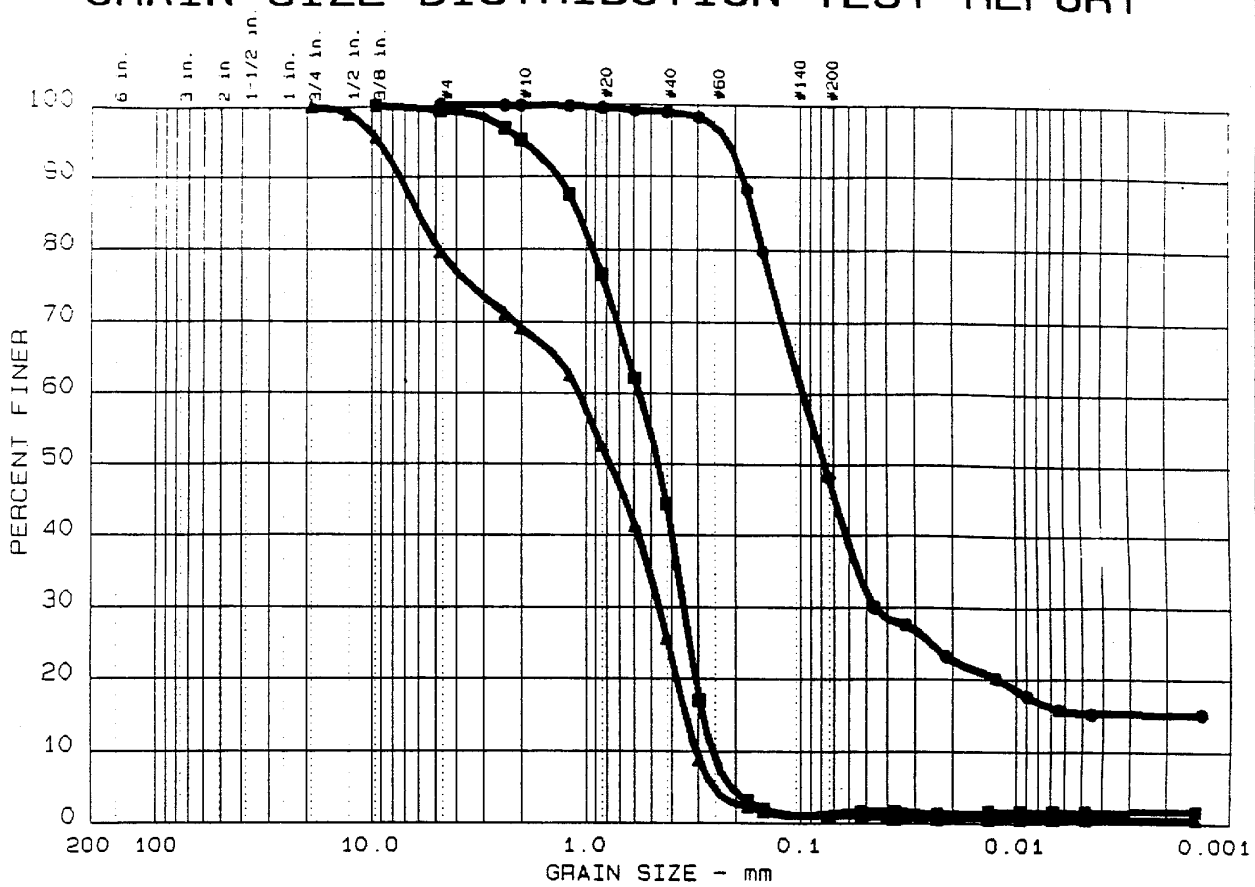
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	0.0	51.8	32.9	15.3
▲	8	0.0	20.3	78.7	0.1	0.9
■	9	0.0	0.7	98.0	0.0	1.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	24	5	0.17	0.10	0.08	0.046				
▲			6.03	1.07	0.77	0.456	0.3432	0.3058	0.63	3.5
■			1.08	0.56	0.46	0.352	0.2867	0.2579	0.85	2.2

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB04B 3-5'
▲ Location: NB04F 13-15'
■ Location: NB04J 23-25'
Date: 11-02-90

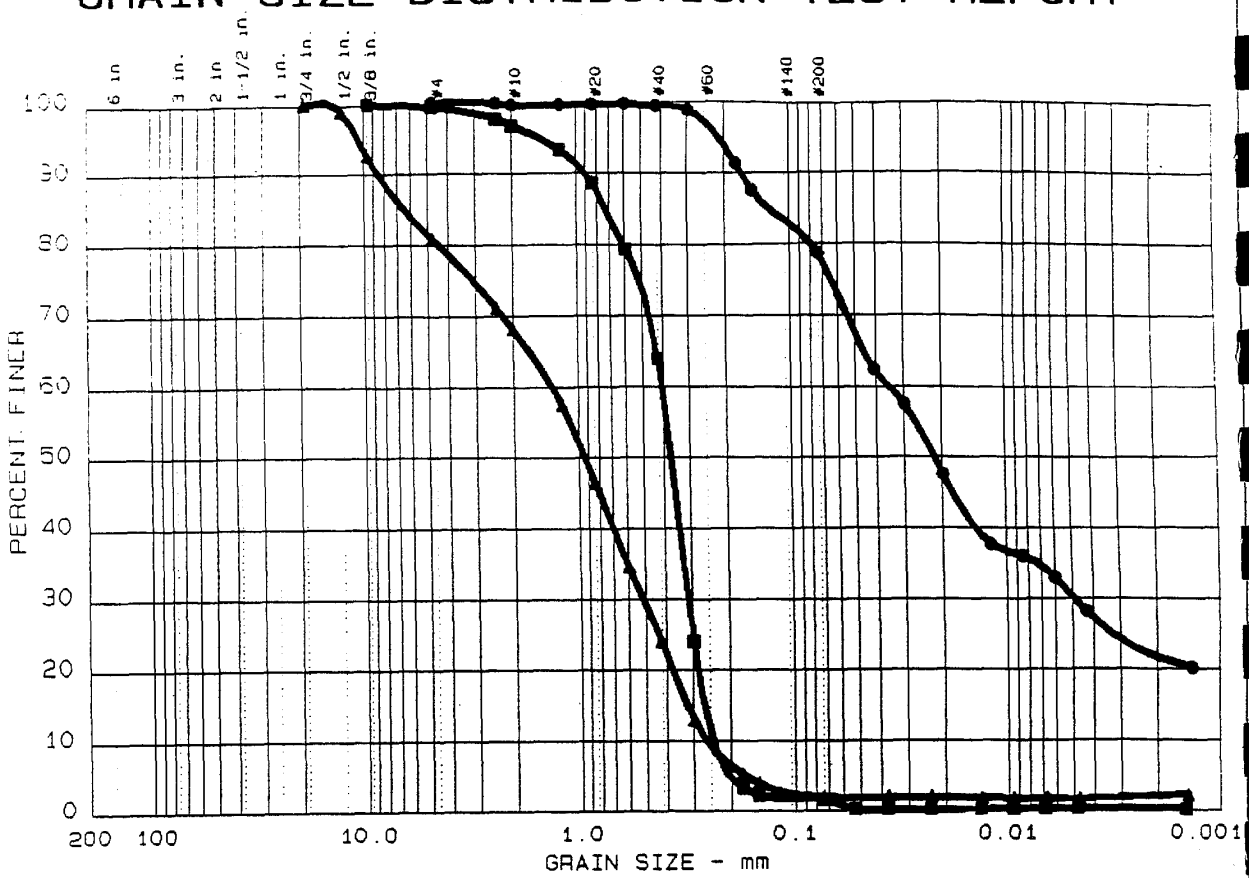
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	0.0	21.4	48.5	30.1
▲	5	0.0	19.2	78.8	0.4	1.6
■	6	0.0	0.5	97.9	1.4	0.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	41	20	0.12		0.02	0.005				
▲			6.38	1.32	0.93	0.511	0.3184	0.2588	0.76	5.1
■			0.72	0.40	0.37	0.314	0.2664	0.2429	1.01	1.7

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	CL	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB05B 3-5'
▲ Location: NB05F 13-15'
■ Location: NB05J 23-25'
Date: 11-06-90

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

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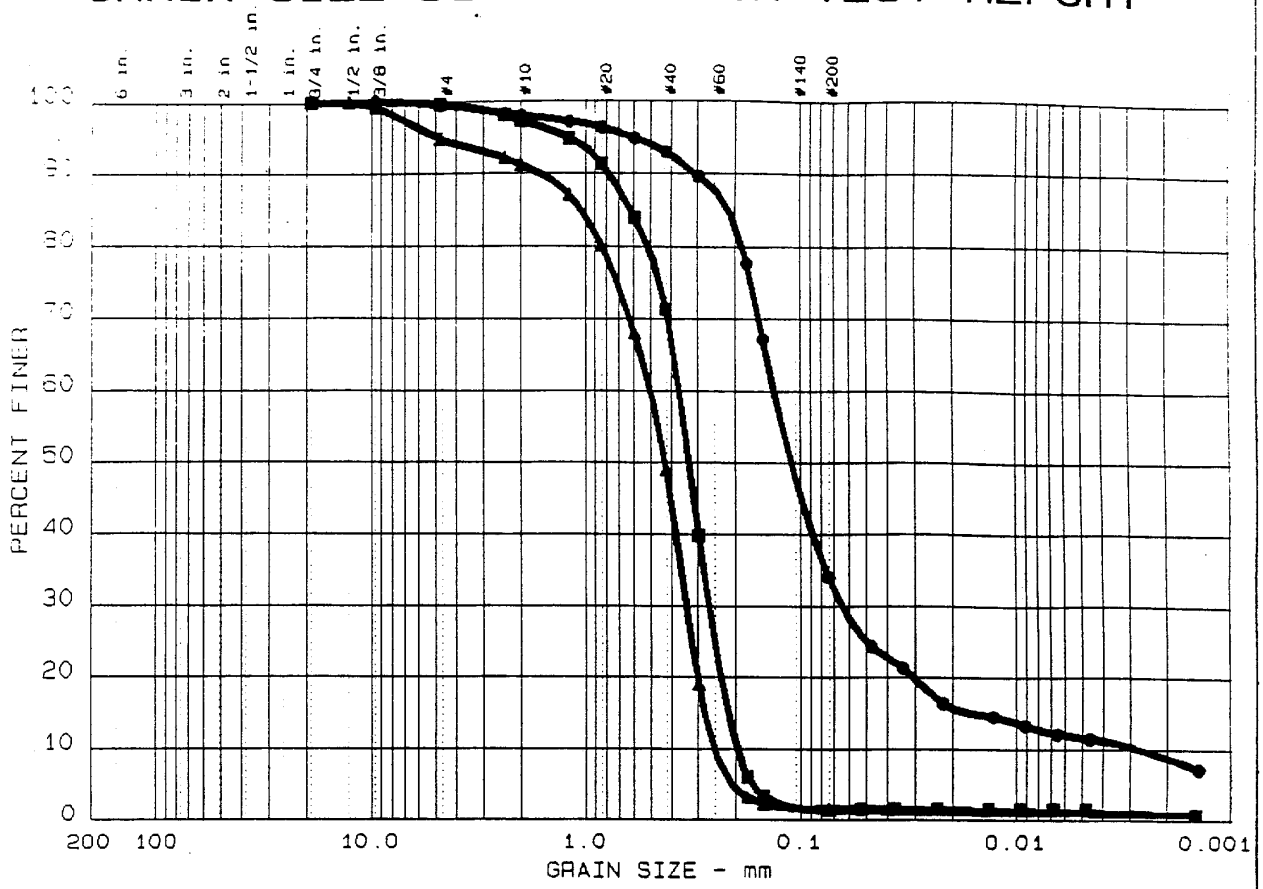
Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	0.6	65.5	22.3	11.6
▲	11	0.0	5.2	93.1	0.5	1.2
■	12	0.0	0.4	98.2	0.4	1.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.21	0.13	0.11	0.064	0.0156	0.0027	11.34	48.5
▲			1.04	0.50	0.43	0.340	0.2793	0.2518	0.92	2.0
■			0.62	0.37	0.33	0.267	0.2168	0.1977	0.98	1.8

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB06B 3-5'
▲ Location: NB06F 13-15'
■ Location: NB06J 23-25'
Date: 11-02-90

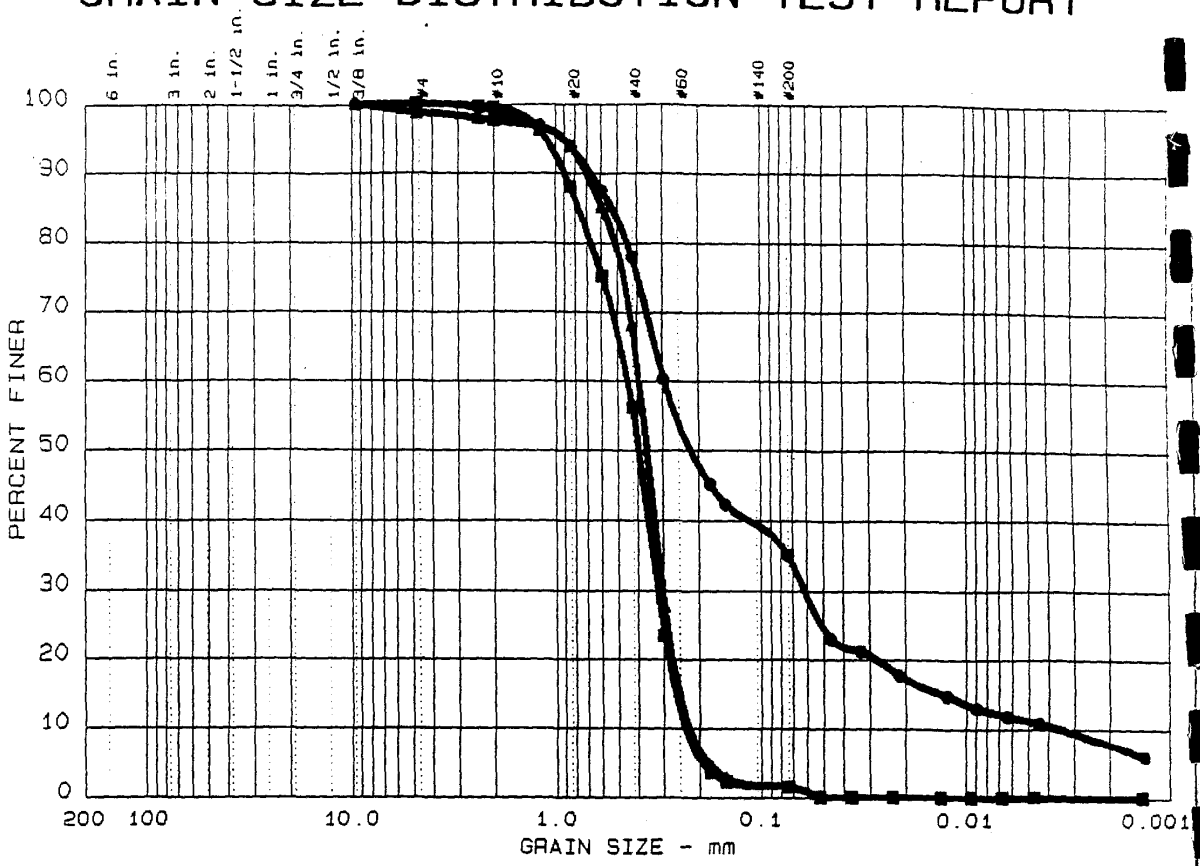
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	0.1	64.9	23.9	11.1
▲	2	0.0	1.2	97.2	1.5	0.1
■	3	0.0	0.0	98.5	1.4	0.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	29	14	0.52	0.29	0.22	0.061	0.0131	0.0035	3.61	83.6
▲			0.58	0.39	0.36	0.303	0.2523	0.2270	1.04	1.7
■			0.76	0.44	0.39	0.320	0.2621	0.2355	0.98	1.9

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB07B 3-5'
▲ Location: NB07F 13-15'
■ Location: NB07J 23-25'
Date: 10-30-90

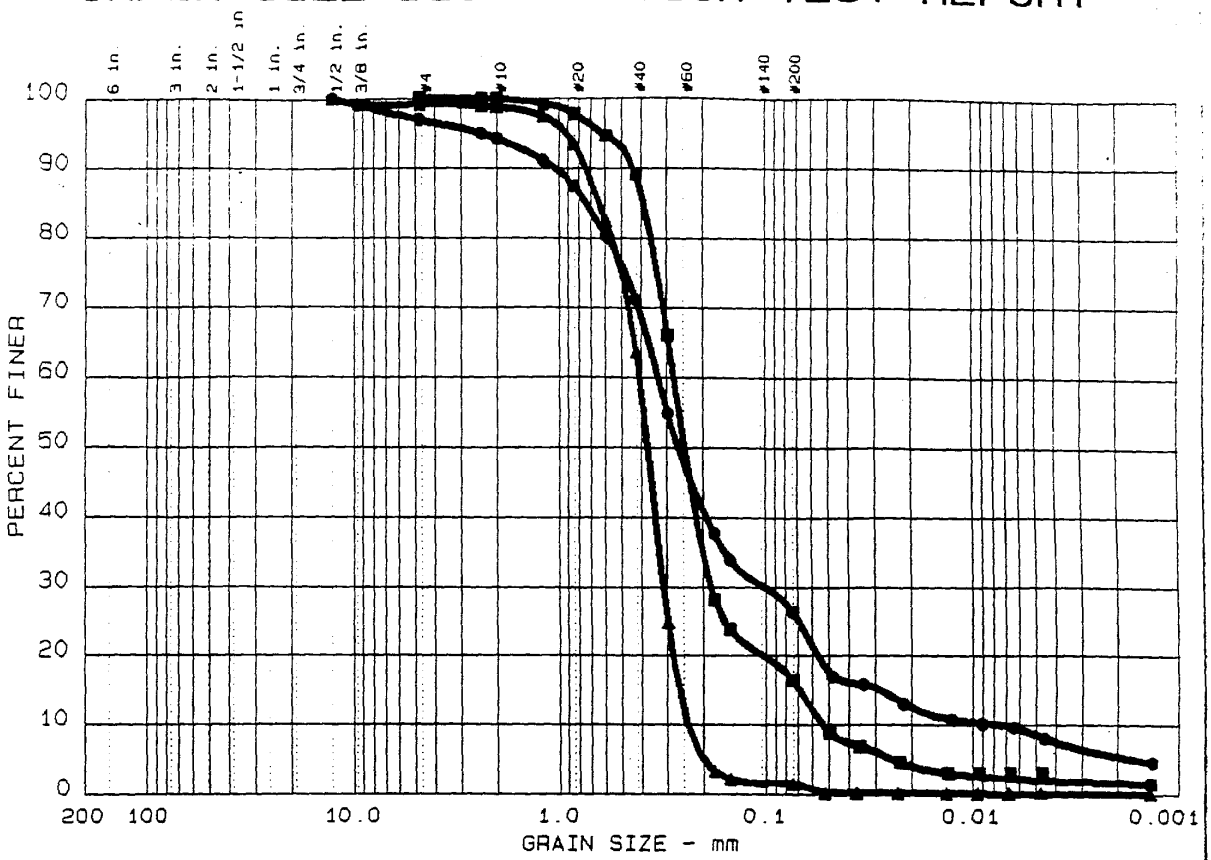
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	3.1	70.6	17.8	8.5
▲	5	0.0	0.9	97.7	1.3	0.1
■	6	0.0	0.0	83.7	14.2	2.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	24	6	0.73	0.33	0.27	0.102	0.0284	0.0071	4.41	46.3
▲			0.63	0.40	0.37	0.313	0.2627	0.2391	1.01	1.7
■			0.38	0.28	0.25	0.185	0.0686	0.0533	2.31	5.2

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB08B 3-5'
▲ Location: NB08F 13-15'
■ Location: NB08J 23-25'
Date: 10-31-90

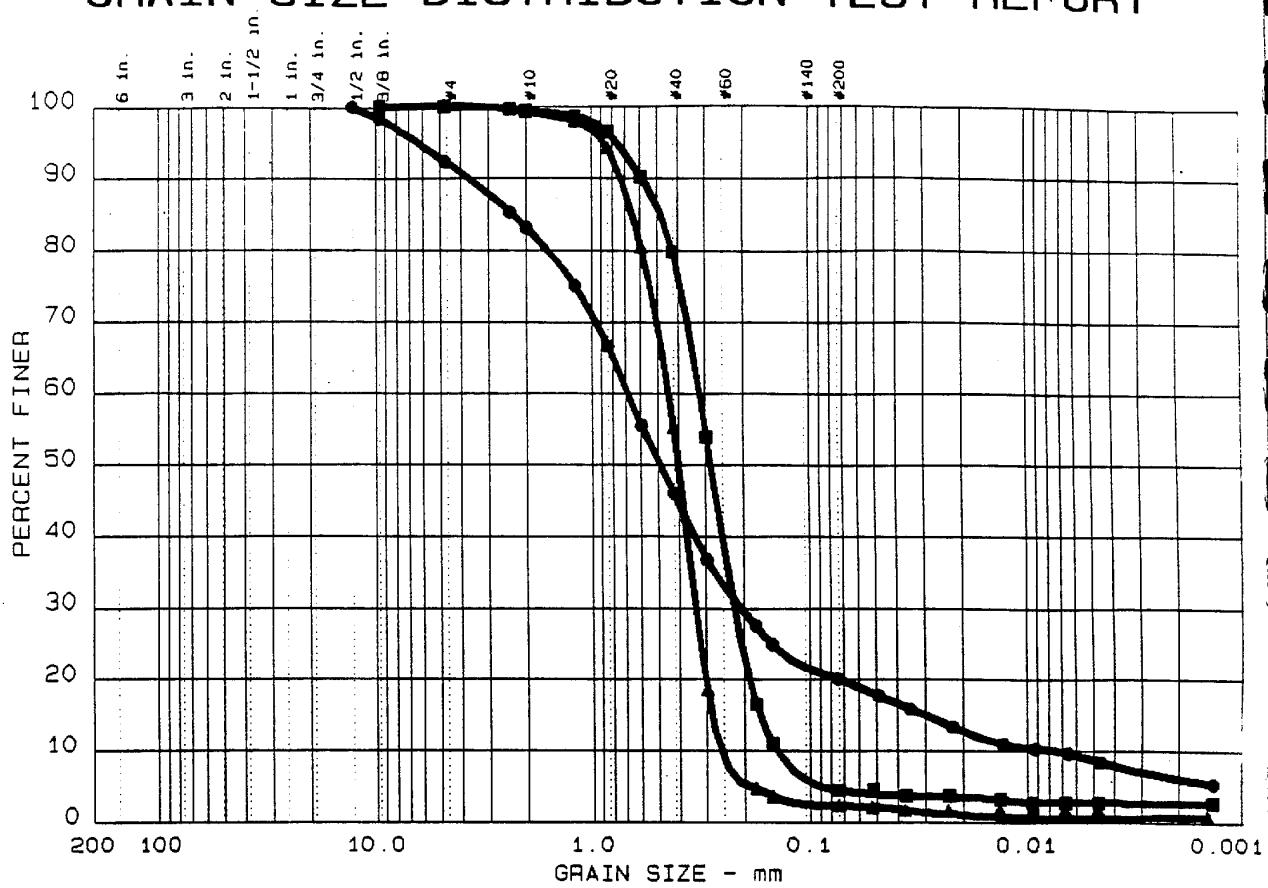
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	7.7	72.3	11.3	8.7
▲	14	0.0	0.0	97.7	1.8	0.5
■	15	0.0	0.1	95.4	0.0	4.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	26	6	2.32	0.68	0.49	0.206	0.0297	0.0073	8.50	93.4
▲			0.64	0.44	0.40	0.335	0.2831	0.2573	0.99	1.7
■			0.47	0.32	0.28	0.222	0.1704	0.1417	1.09	2.2

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB09B 3-5'
▲ Location: NB09F 13-15'
■ Location: NB09J 23-25'
Date: 11-02-90

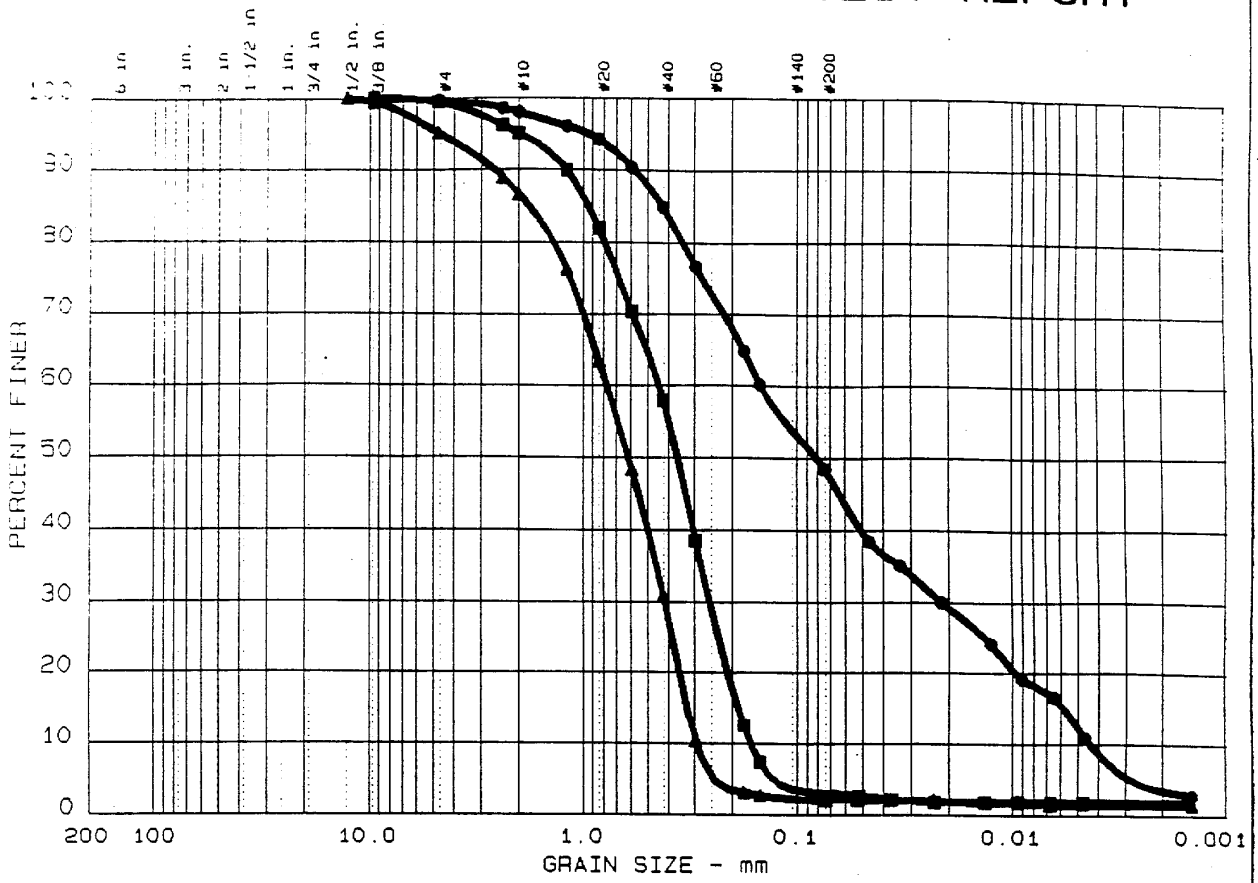
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	0.5	51.2	36.1	12.2
▲	8	0.0	4.9	93.0	0.7	1.4
■	9	0.0	0.7	96.3	1.2	1.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	60	14	0.42	0.15	0.08	0.022	0.0058	0.0044	0.73	33.5
▲			1.78	0.77	0.61	0.414	0.3251	0.2931	0.76	2.6
■			0.94	0.44	0.36	0.256	0.1879	0.1637	0.91	2.7

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB10B 3-5'
▲ Location: NB10F 13-15'
■ Location: NB10J 23-25'
Date: 11-06-90

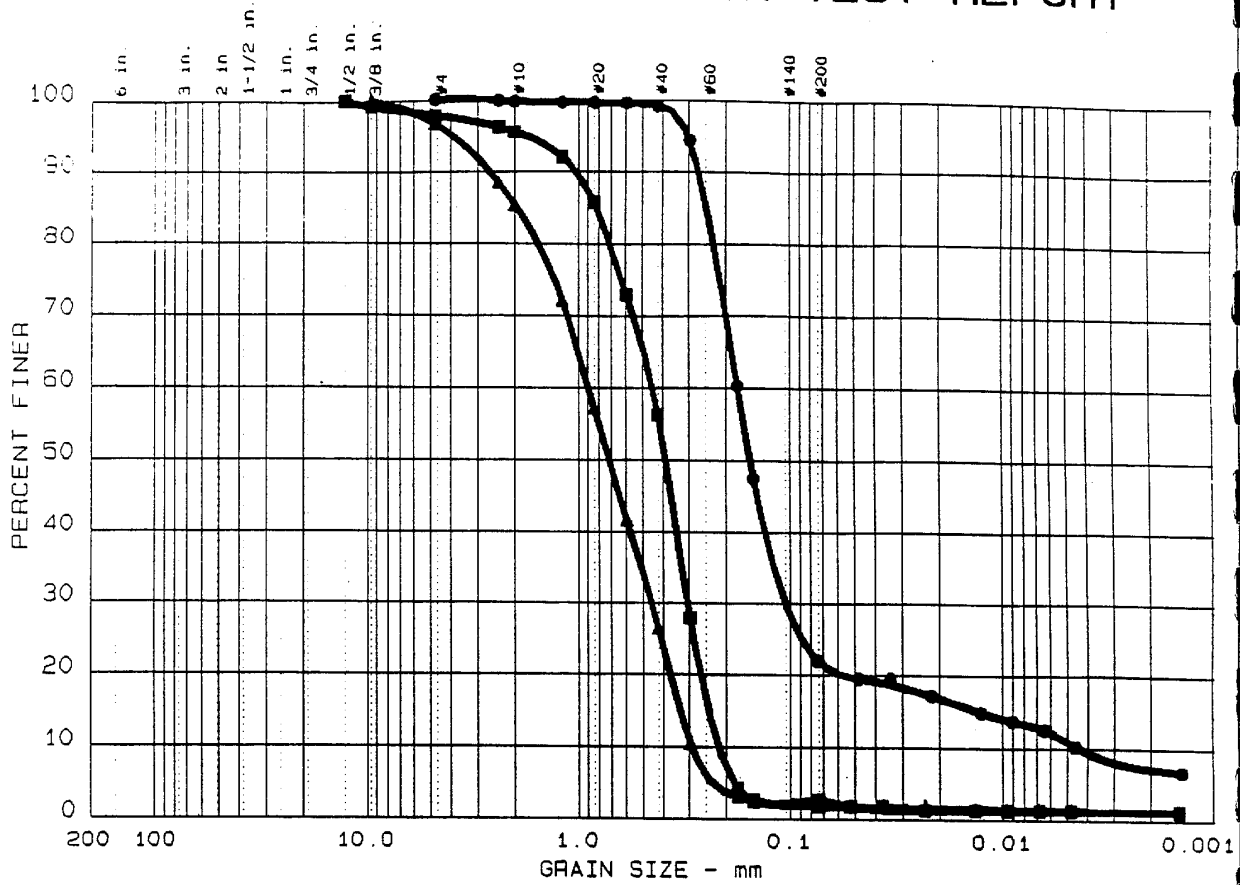
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	16	0.0	0.0	78.1	11.1	10.8
▲	17	0.0	3.3	95.0	0.4	1.3
■	18	0.0	2.2	95.3	0.8	1.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.25	0.18	0.15	0.105	0.0131	0.0044	14.34	40.1
▲			1.95	0.89	0.72	0.452	0.3327	0.2931	0.78	3.1
■			0.82	0.45	0.39	0.305	0.2432	0.2178	0.96	2.0

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB11B 3-5'
▲ Location: NB11F 13-15'
■ Location: NB11J 23-25'
Date: 11-02-90

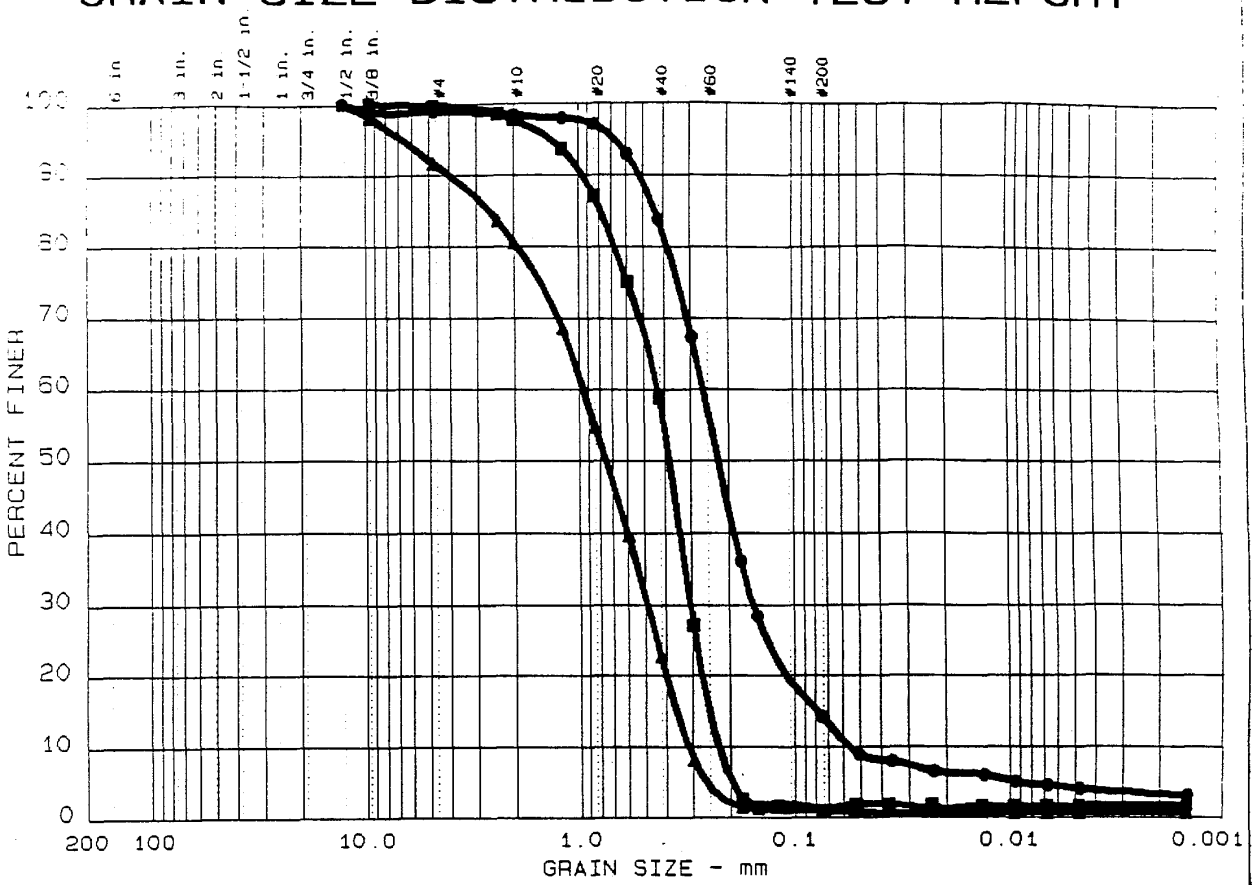
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	1.2	84.6	10.0	4.2
▲	2	0.0	8.4	90.7	0.2	0.7
■	3	0.0	0.4	98.3	0.0	1.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.43	0.26	0.22	0.155	0.0778	0.0557	1.65	4.7
▲			2.60	0.95	0.75	0.484	0.3569	0.3144	0.78	3.0
■			0.78	0.43	0.38	0.307	0.2512	0.2283	0.96	1.9

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB12B 3-5'
▲ Location: NB12F 13-15'
■ Location: NB12J 23-25'
Date: 11-02-90

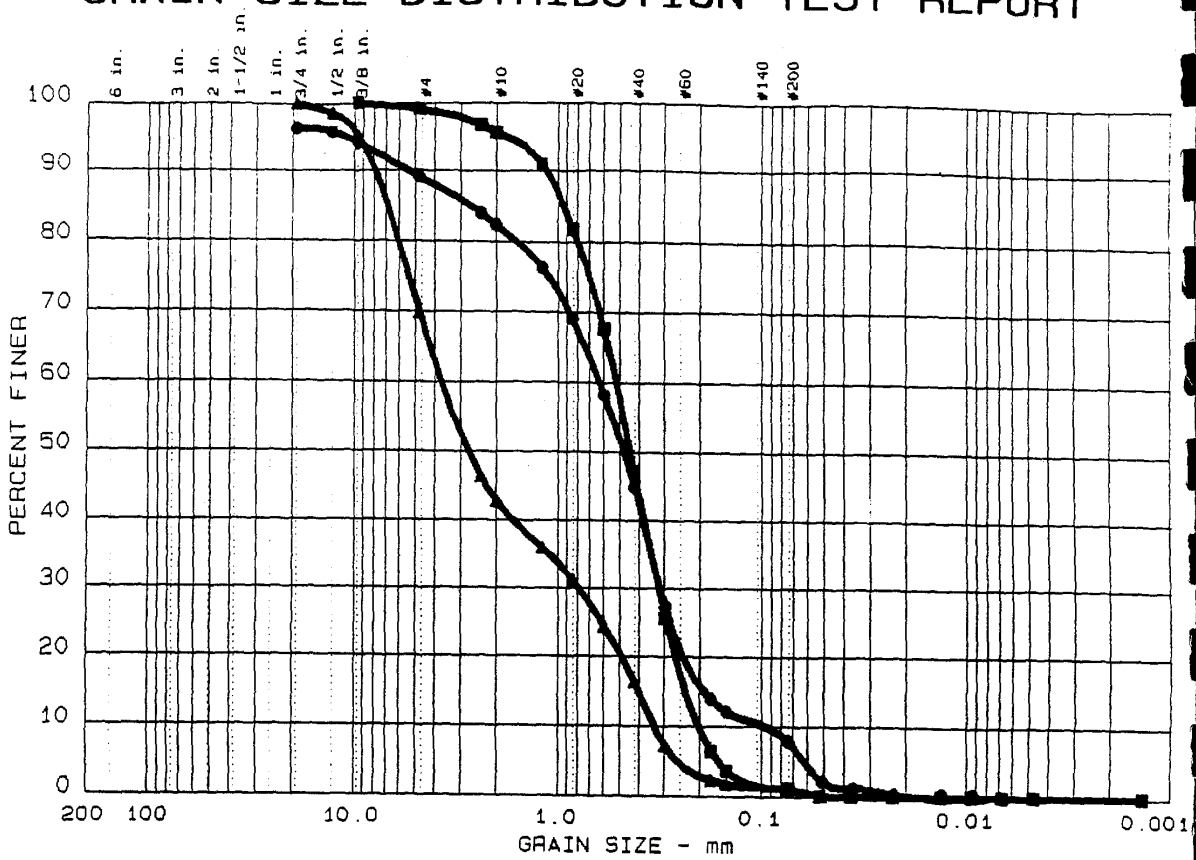
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	11.0	81.2	5.9	1.9
▲	8	0.0	30.2	68.8	1.0	0.0
■	9	0.0	1.0	97.9	1.0	0.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	2.66	0.62	0.47	0.316	0.1901	0.0931	1.72	6.7
▲			6.81	3.70	2.74	0.789	0.3999	0.3350	0.50	11.0
■			0.93	0.51	0.44	0.321	0.2363	0.2035	0.98	2.5

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SW-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB13B 3-5'
▲ Location: NB13F 13-15'
■ Location: NB13J 23-25'
Date: 10-31-90

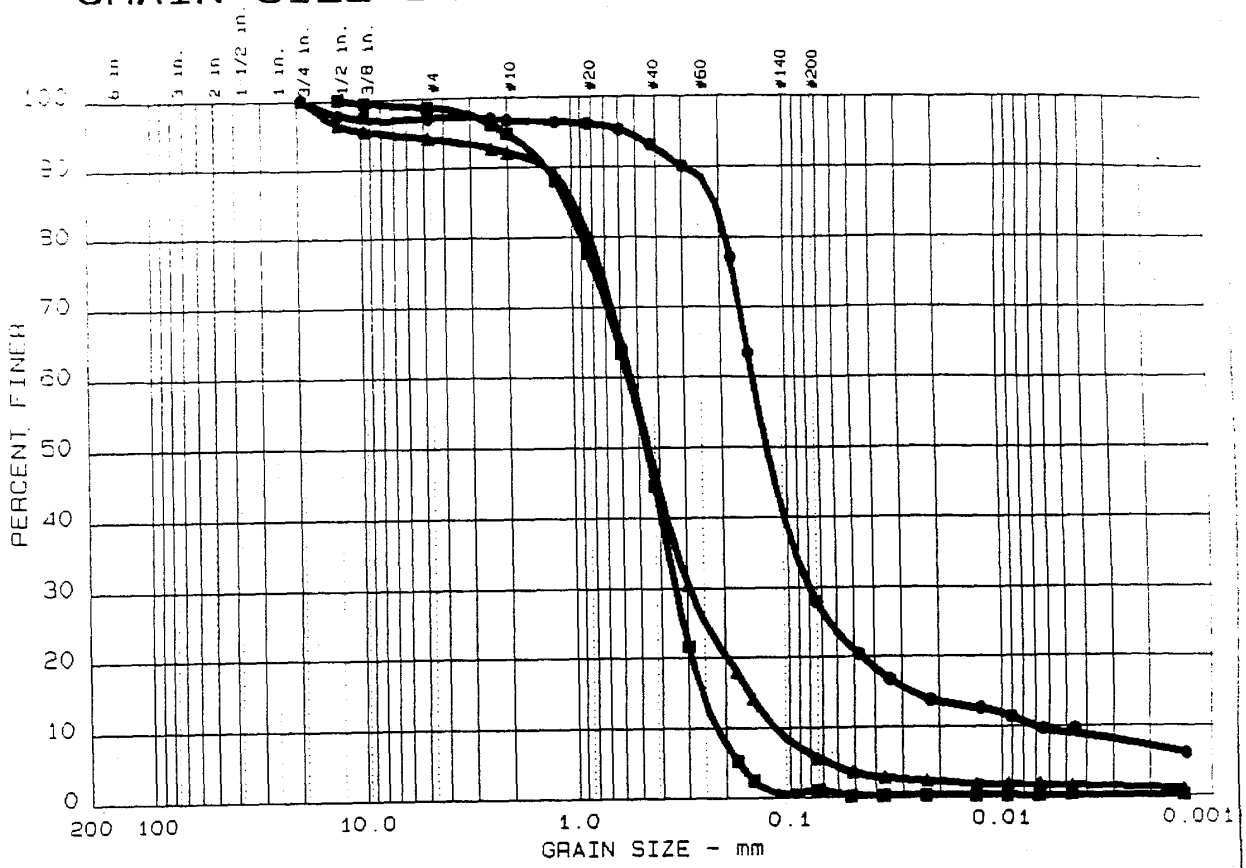
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	2.9	69.2	18.8	9.1
▲	11	0.0	5.8	88.6	4.1	1.5
■	12	0.0	1.4	97.7	0.8	0.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.21	0.14	0.12	0.080	0.0268	0.0070	6.43	20.5
▲	NP	NP	0.97	0.53	0.44	0.294	0.1554	0.1165	1.39	4.6
■			1.06	0.55	0.46	0.340	0.2576	0.2211	0.95	2.5

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP-SM	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: N814B 3-5'
▲ Location: N814F 13-15'
■ Location: N814J 23-25'
Date: 10-31-90

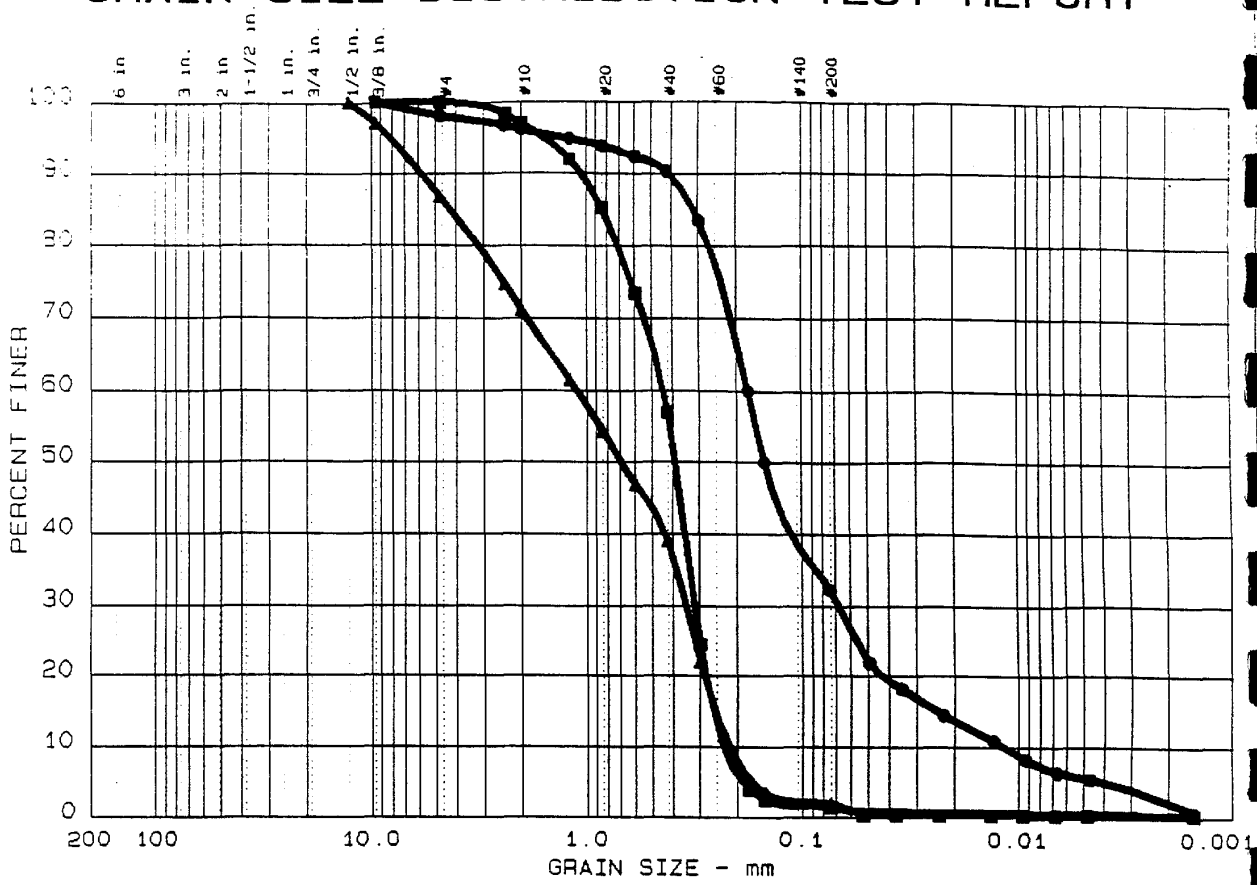
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	1.9	65.9	26.5	5.7
▲	11	0.0	13.2	84.9	1.7	0.2
■	12	0.0	0.1	98.4	1.2	0.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	41	9	0.31	0.18	0.15	0.068	0.0237	0.0116	2.23	15.2
▲			4.22	1.11	0.69	0.346	0.2532	0.2180	0.50	5.1
■			0.83	0.44	0.39	0.316	0.2585	0.2317	0.98	1.9

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB15B 3-5'
▲ Location: NB15F 13-15'
■ Location: NB15J 23-25'
Date: 11-06-90

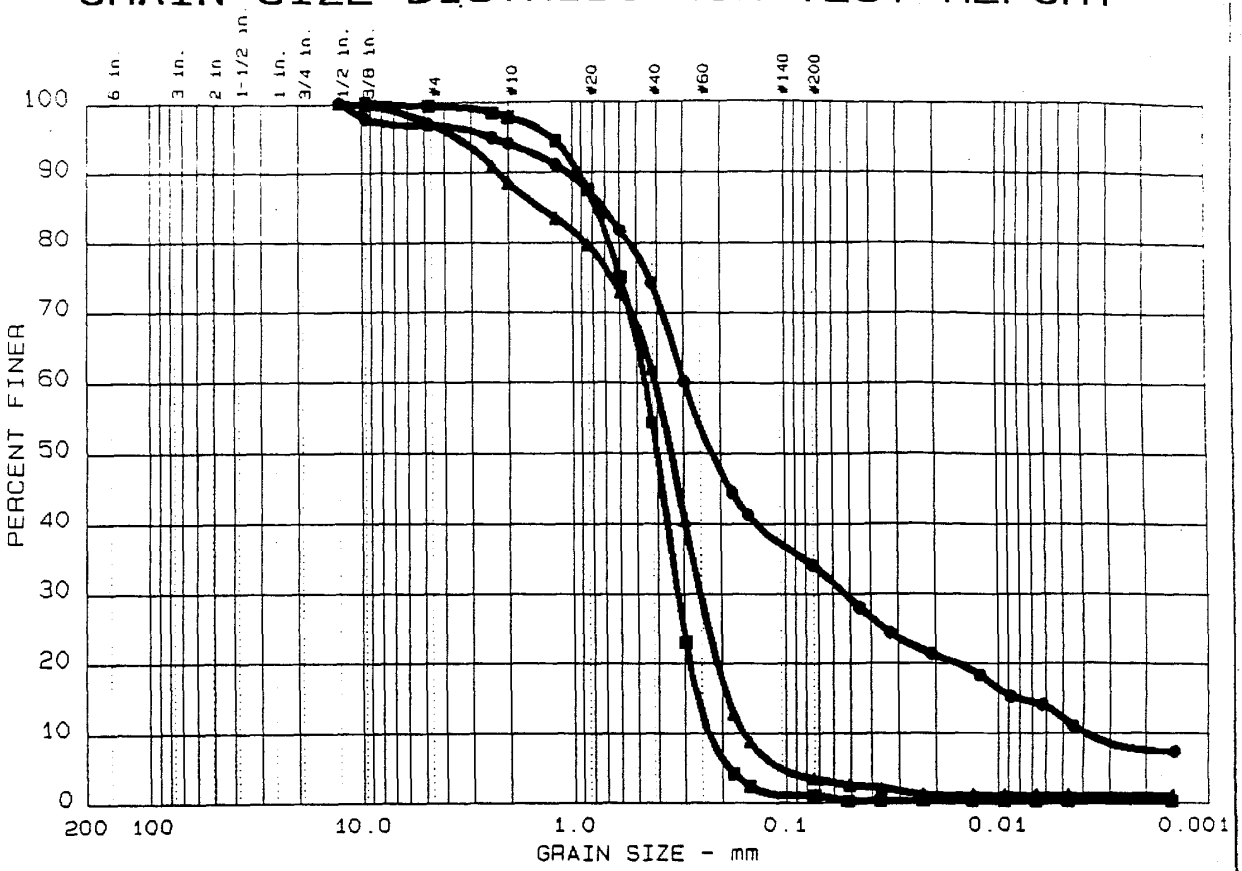
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	3.3	62.7	21.8	12.2
▲	14	0.0	3.0	93.6	1.0	2.4
■	15	0.0	0.6	98.4	0.8	0.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	28	11	0.71	0.30	0.22	0.052	0.0082	0.0039	2.37	75.0
▲			1.41	0.40	0.34	0.253	0.1884	0.1585	1.00	2.6
■			0.77	0.45	0.40	0.323	0.2615	0.2328	0.99	1.9

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB16B 3-5'
▲ Location: NB16F 13-15'
■ Location: NB16J 23-25'
Date: 10-31-90

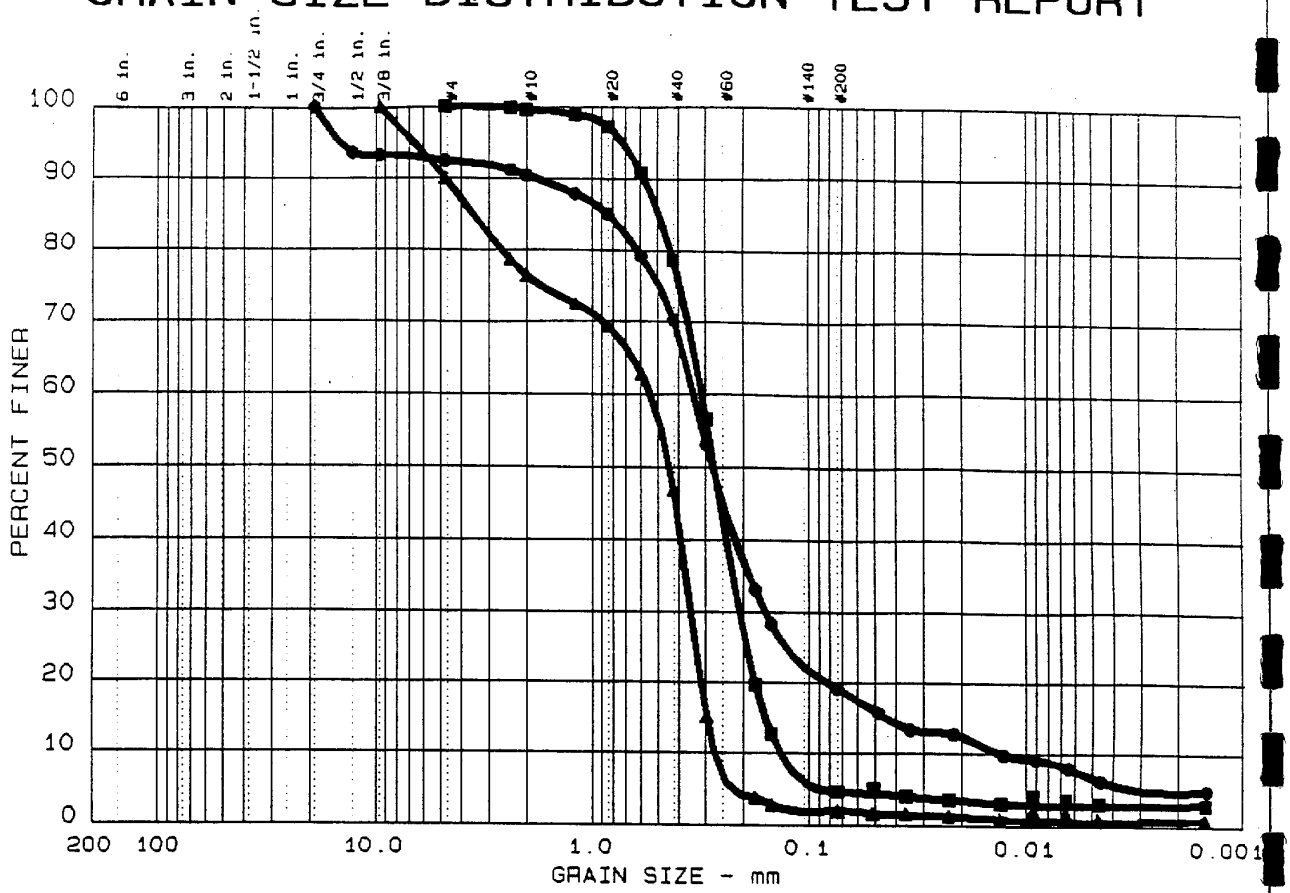
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT. INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	16	0.0	7.5	73.3	12.6	6.6
▲	17	0.0	10.0	88.0	1.4	0.6
■	18	0.0	0.0	95.4	1.8	2.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.83	0.34	0.28	0.160	0.0440	0.0136	5.53	24.9
▲			3.51	0.54	0.44	0.351	0.2968	0.2726	0.84	2.0
■			0.48	0.31	0.27	0.209	0.1587	0.1351	1.04	2.3

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB17B 3-5'
▲ Location: NB17F 13-15'
■ Location: NB17J 23-25'
Date: 10-31-90

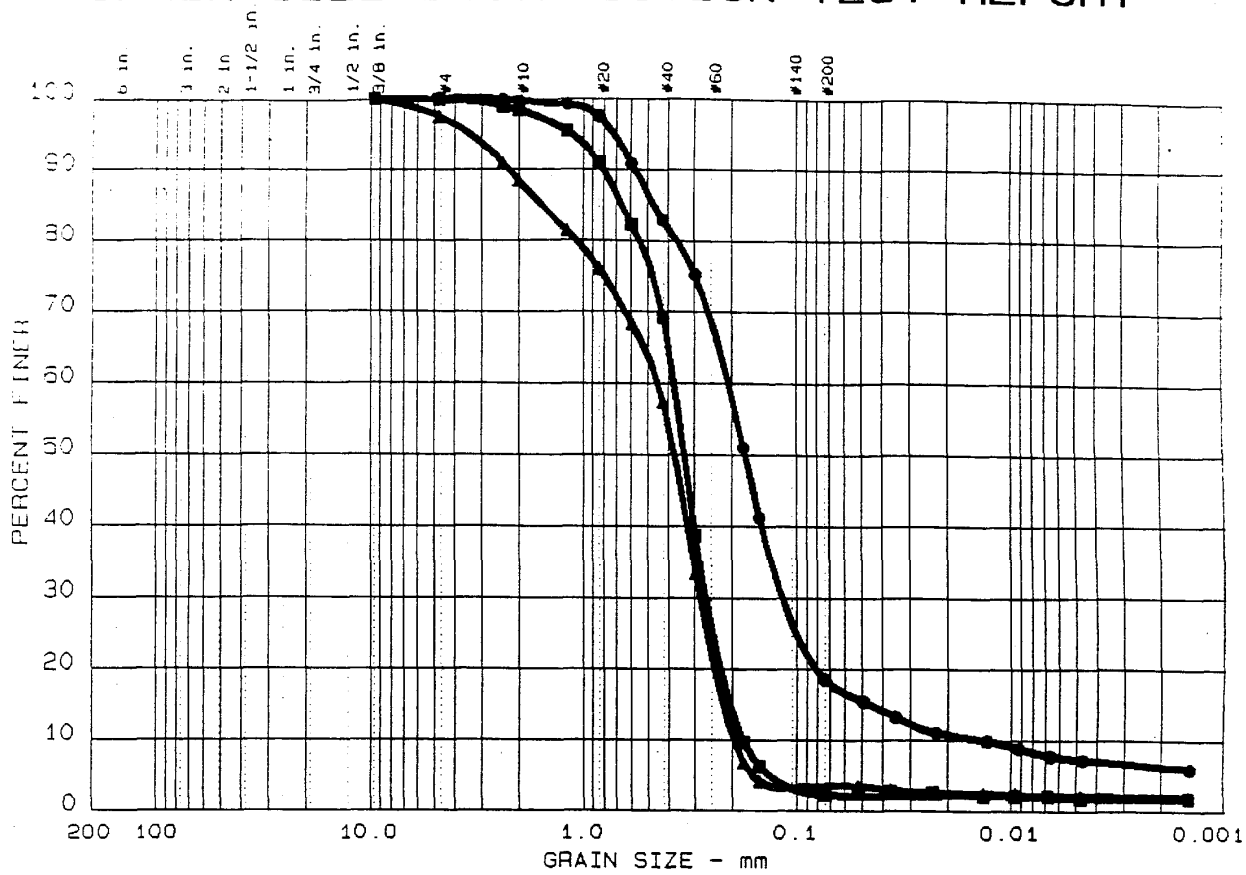
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	0.0	81.5	11.3	7.2
▲	5	0.0	2.6	94.0	0.0	3.0
■	6	0.0	0.1	97.7	0.4	1.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.46	0.21	0.17	0.117	0.0453	0.0135	4.81	15.4
▲			1.57	0.44	0.37	0.283	0.2211	0.1970	0.92	2.3
■			0.65	0.37	0.34	0.267	0.2063	0.1793	1.06	2.1

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB18B 3-5'
▲ Location: NB18F 13-15'
■ Location: NB18J 23-25'
Date: 11-02-90

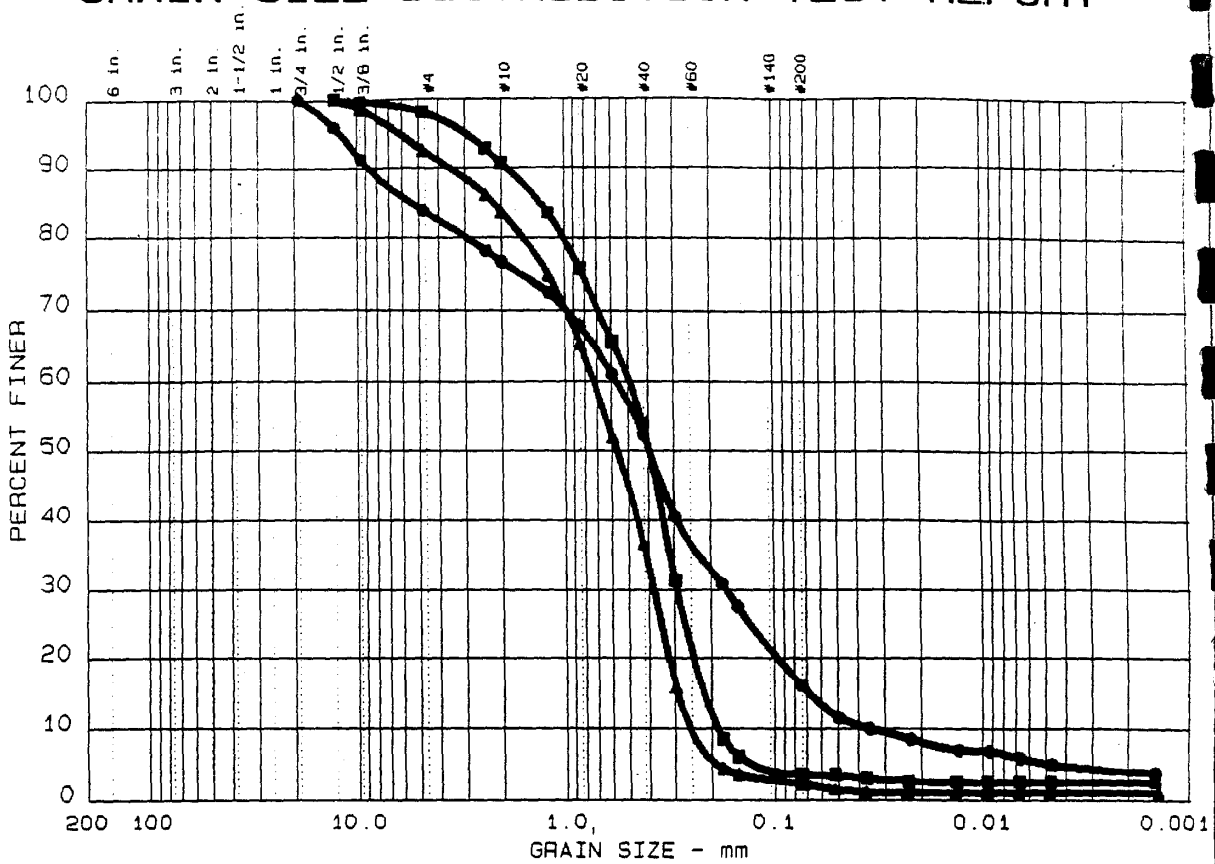
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	16.2	67.7	11.0	5.1
▲	8	0.0	7.5	90.2	0.9	1.4
■	9	0.0	2.0	94.5	0.1	3.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	5.50	0.56	0.39	0.169	0.0675	0.0350	1.46	16.1
▲			2.19	0.72	0.56	0.377	0.2914	0.2538	0.77	2.9
■			1.29	0.48	0.39	0.292	0.2188	0.1881	0.93	2.6

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB19B 3-5'
▲ Location: NB19F 13-15'
■ Location: NB19J 23-25'
Date: 11-02-90

Remarks:

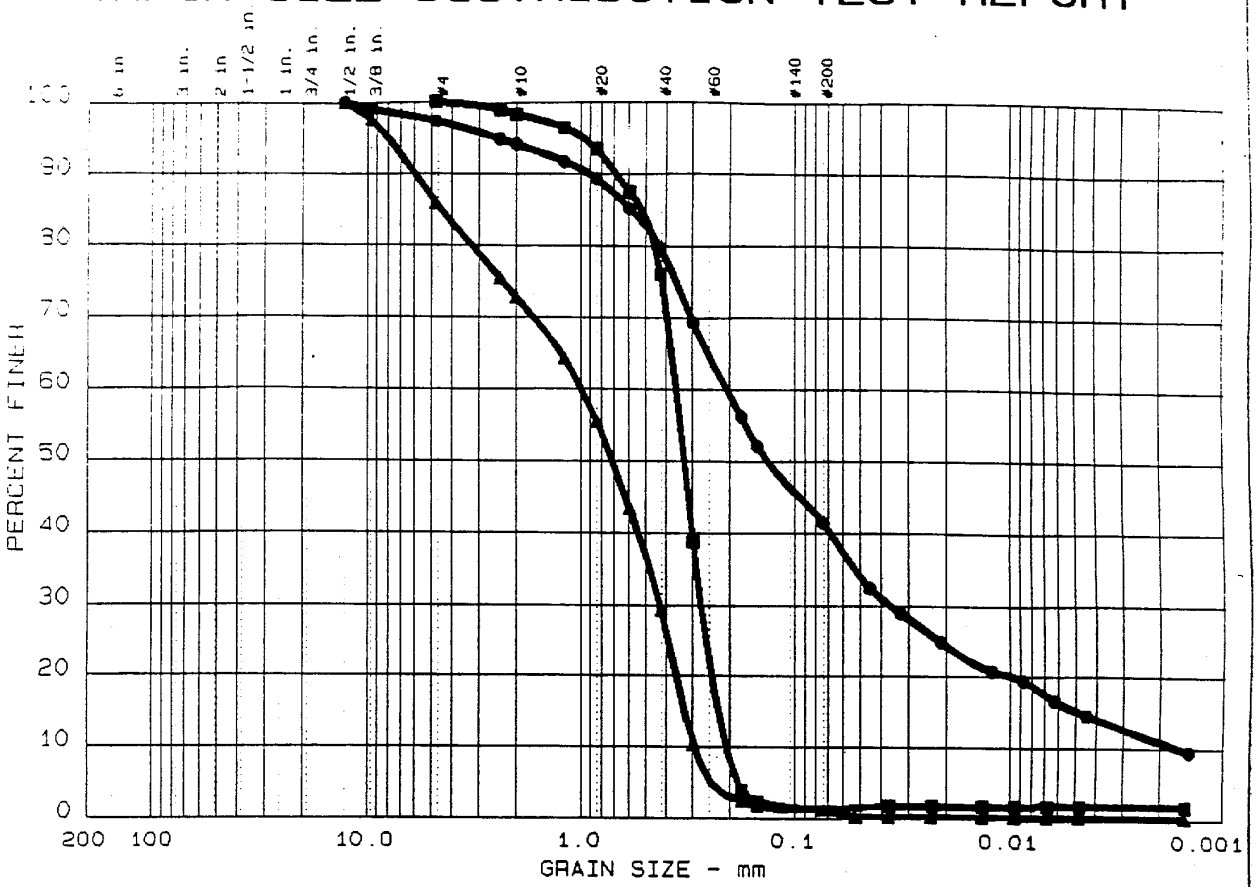
GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

✓ 1-7-91

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	2.7	56.0	26.2	15.1
▲	14	0.0	14.1	84.7	1.0	0.2
■	15	0.0	0.0	98.7	0.1	1.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	28	12	0.58	0.21	0.13	0.036	0.0049	0.0016	4.03	130.3
▲			4.47	0.99	0.71	0.426	0.3266	0.2941	0.62	3.4
■			0.51	0.36	0.33	0.273	0.2272	0.2094	1.00	1.7

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB20B 3-5'
▲ Location: NB20F 13-15'
■ Location: NB20J 23-25'
Date: 11-07-90

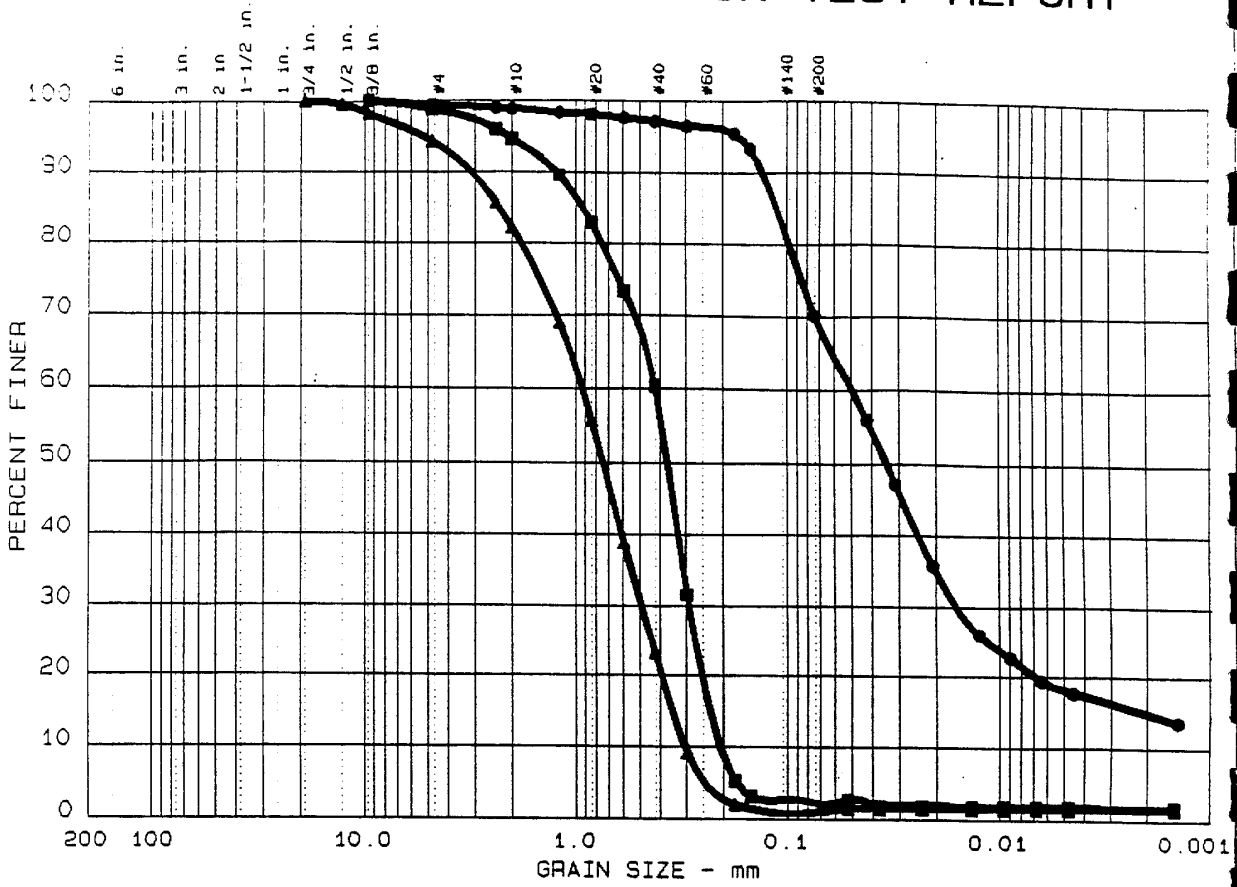
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	0.7	29.2	52.1	18.0
▲	11	0.0	5.7	93.3	0.0	1.0
■	12	0.0	1.3	96.6	0.0	2.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	28	8	0.11		0.03	0.016	0.0020			
▲			2.29	0.93	0.74	0.489	0.3487	0.3037	0.85	3.1
■			0.91	0.42	0.37	0.291	0.2315	0.2080	0.98	2.0

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	CL	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB21B 3-5'
▲ Location: NB21F 13-15'
■ Location: NB21J 23-25'
Date: 11-02-90

Remarks:

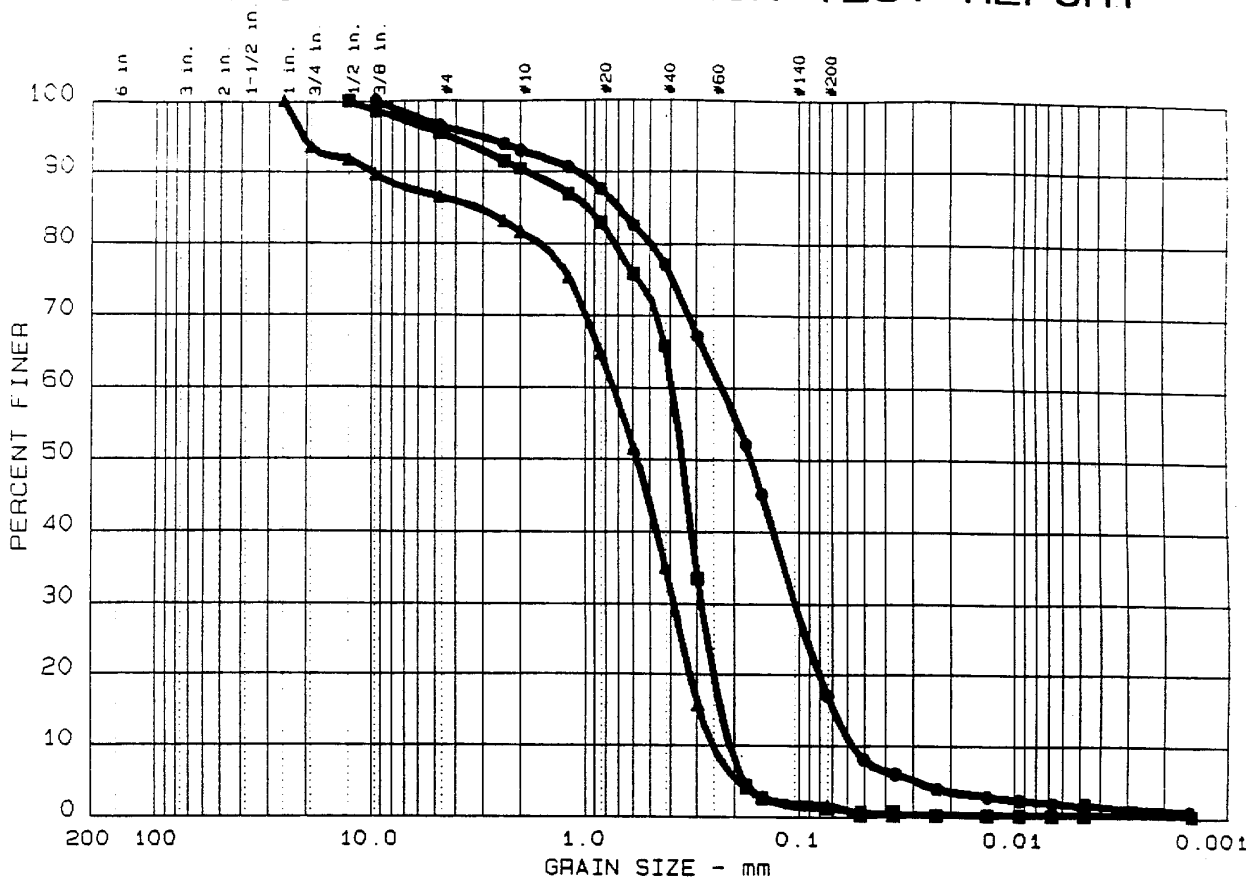
GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

✓ 1-4-91

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	16	0.0	3.6	79.4	15.2	1.8
▲	17	0.0	13.5	84.9	1.3	0.3
■	18	0.0	4.6	94.2	0.9	0.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.69	0.23	0.17	0.104	0.0690	0.0567	0.84	4.0
▲			3.24	0.74	0.57	0.385	0.2924	0.2535	0.80	2.9
■			0.95	0.39	0.35	0.285	0.2328	0.2113	0.99	1.8

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB22B 3-5'
▲ Location: NB22F 13-15'
■ Location: NB22J 23-25'
Date: 11-07-90

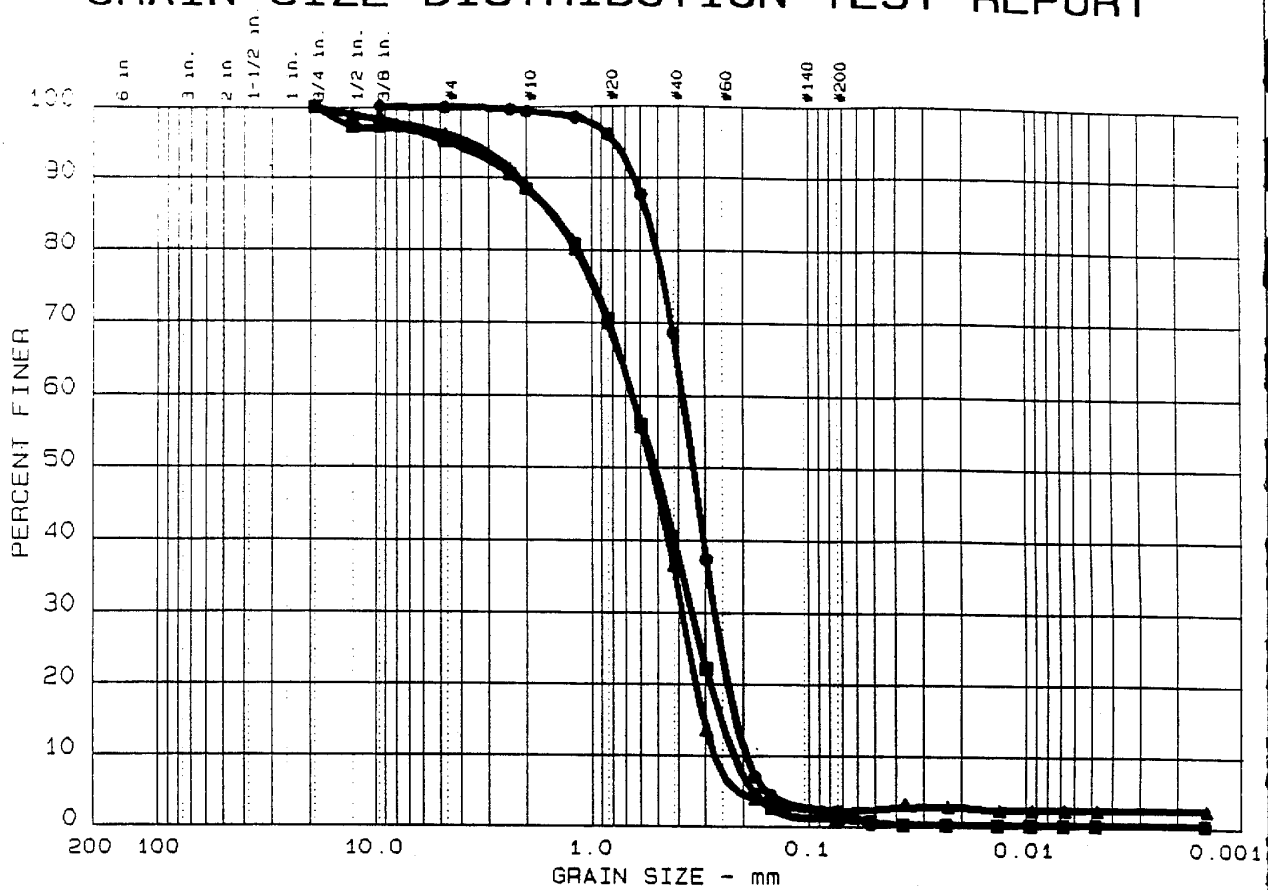
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	0.2	97.6	1.9	0.3
▲	2	0.0	3.9	93.8	0.1	2.2
■	3	0.0	5.0	93.9	0.8	0.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.55	0.38	0.34	0.272	0.2163	0.1941	1.01	2.0
▲			1.53	0.65	0.53	0.383	0.3051	0.2720	0.83	2.4
■			1.50	0.65	0.51	0.345	0.2529	0.2203	0.84	2.9

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB23B 3-5'
▲ Location: NB23F 13-15'
■ Location: NB23J 23-25'
Date: 11-07-90

Remarks:

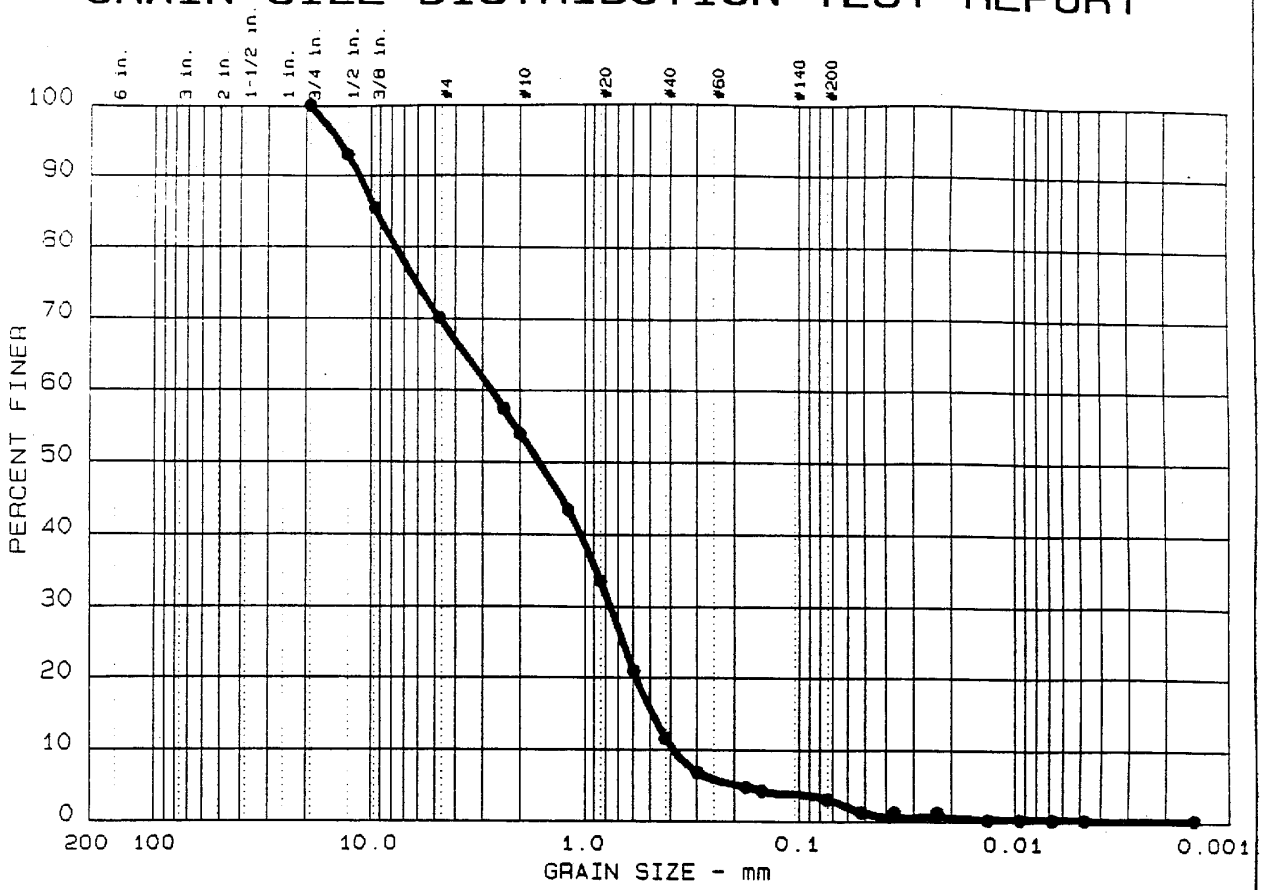
GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

✓ JMF 1-4-91

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	29.9	67.0	2.9	0.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			9.33	2.72	1.64	0.758	0.4836	0.3841	0.55	7.1

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	

Project No.: 1870.20
Project: NIROP
● Location: NB23N 33-35'

Date: 11-07-90

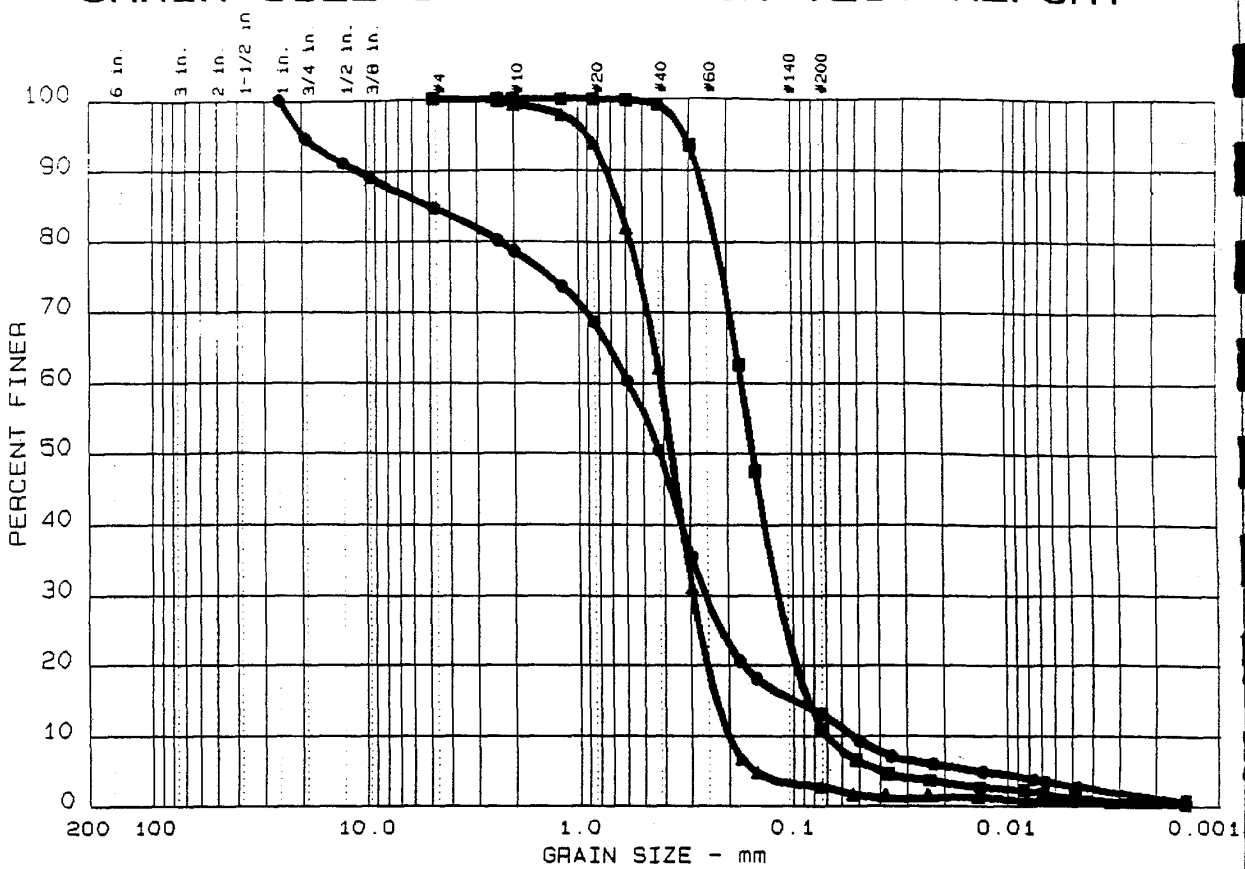
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	11	0.0	15.3	71.6	10.3	2.8
▲	12	0.0	0.0	97.3	2.3	0.4
■	13	0.0	0.0	89.0	9.9	1.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	5.01	0.58	0.42	0.257	0.0987	0.0530	2.14	11.0
▲			0.63	0.41	0.37	0.293	0.2301	0.2021	1.04	2.0
■	NP	NP	0.24	0.17	0.15	0.117	0.0854	0.0702	1.14	2.4

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: SB01B 3-5'
▲ Location: SB01F 13-15'
■ Location: SB01J 23-25'
Date: 12-5-90

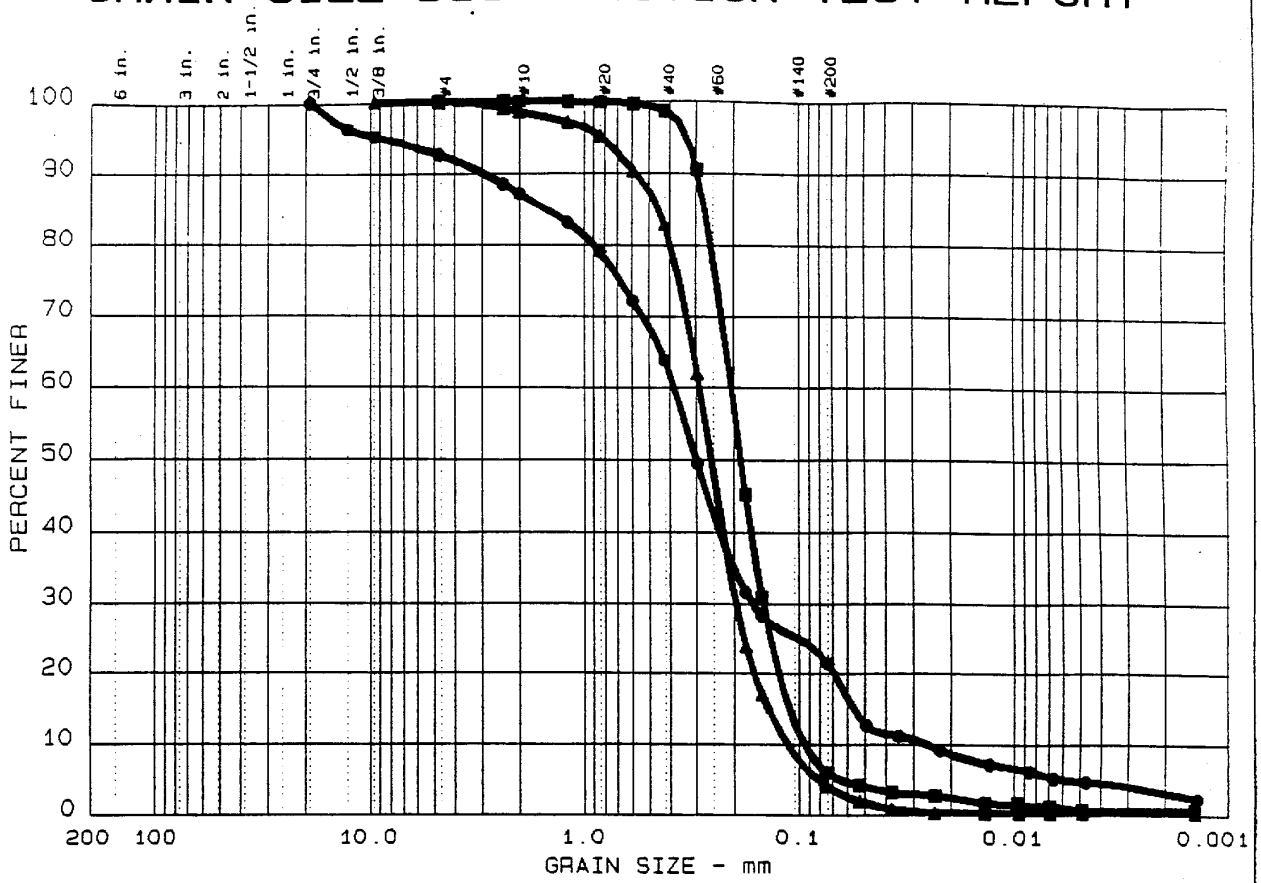
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	14	0.0	7.4	71.2	16.7	4.7
▲	15	0.0	0.1	95.9	3.7	0.3
■	16	0.0	0.0	94.0	5.2	0.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	20	5	1.50	0.38	0.30	0.164	0.0555	0.0259	2.72	14.6
▲			0.45	0.29	0.26	0.197	0.1392	0.1131	1.18	2.6
■	NP	NP	0.27	0.21	0.19	0.147	0.1112	0.0946	1.11	2.2

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SC-SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.2
Project: NIROP
● Location: SB02B 3-5'
▲ Location: SB02F 13-15'
■ Location: SB02J 23-25'
Date: 12/5/90

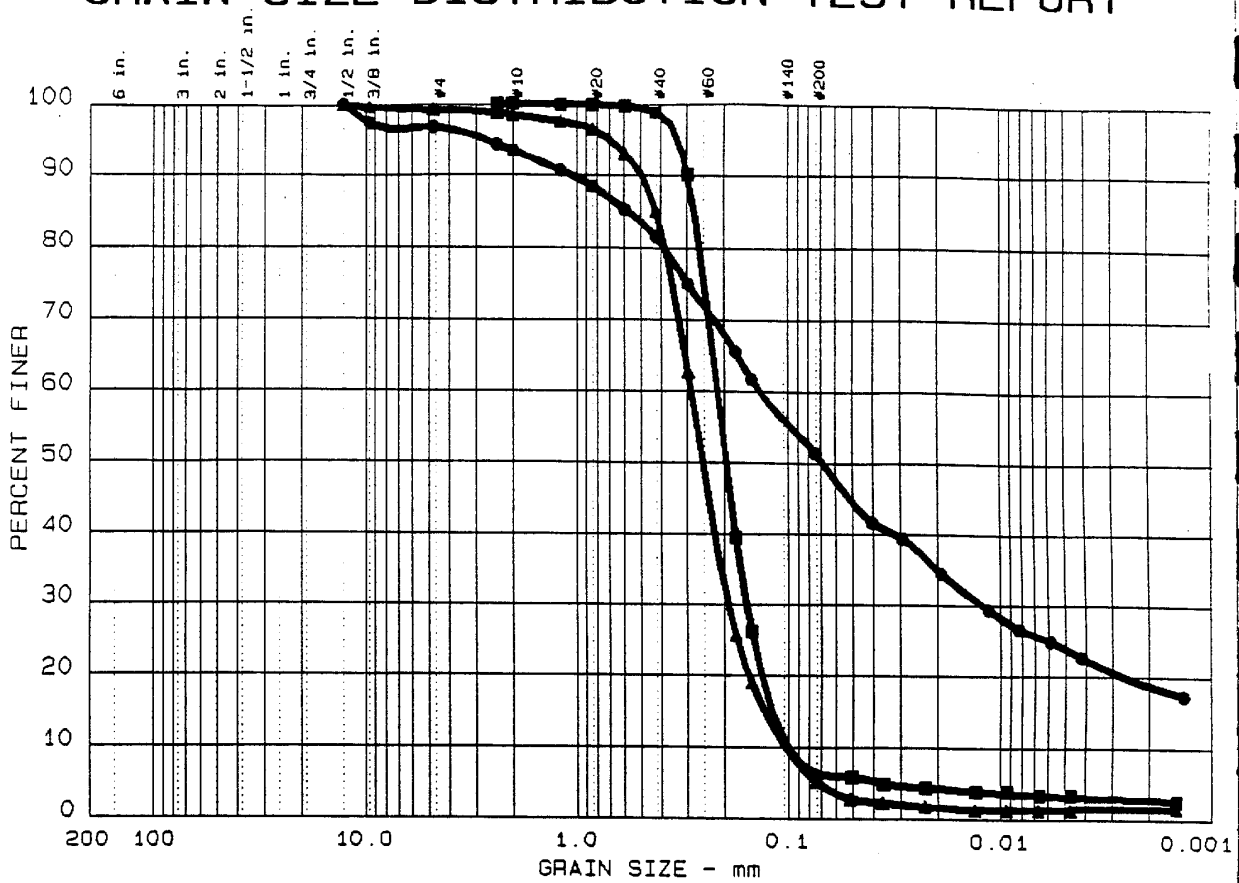
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	3.3	45.4	27.5	23.8
▲	8	0.0	0.8	94.0	4.0	1.2
■	10	0.0	0.0	93.6	3.2	3.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	31	16	0.57	0.14	0.07	0.012				
▲	NP	NP	0.42	0.29	0.25	0.192	0.1297	0.1030	1.25	2.8
■	NP	NP	0.28	0.22	0.20	0.158	0.1193	0.1003	1.15	2.1

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	CL	
▲ SEE BORING LOG	SP-SM	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
● Location: SB03B 3-5'
▲ Location: SB03F 13-15'
■ Location: SB03J 23-25'
Date: 11-16-90

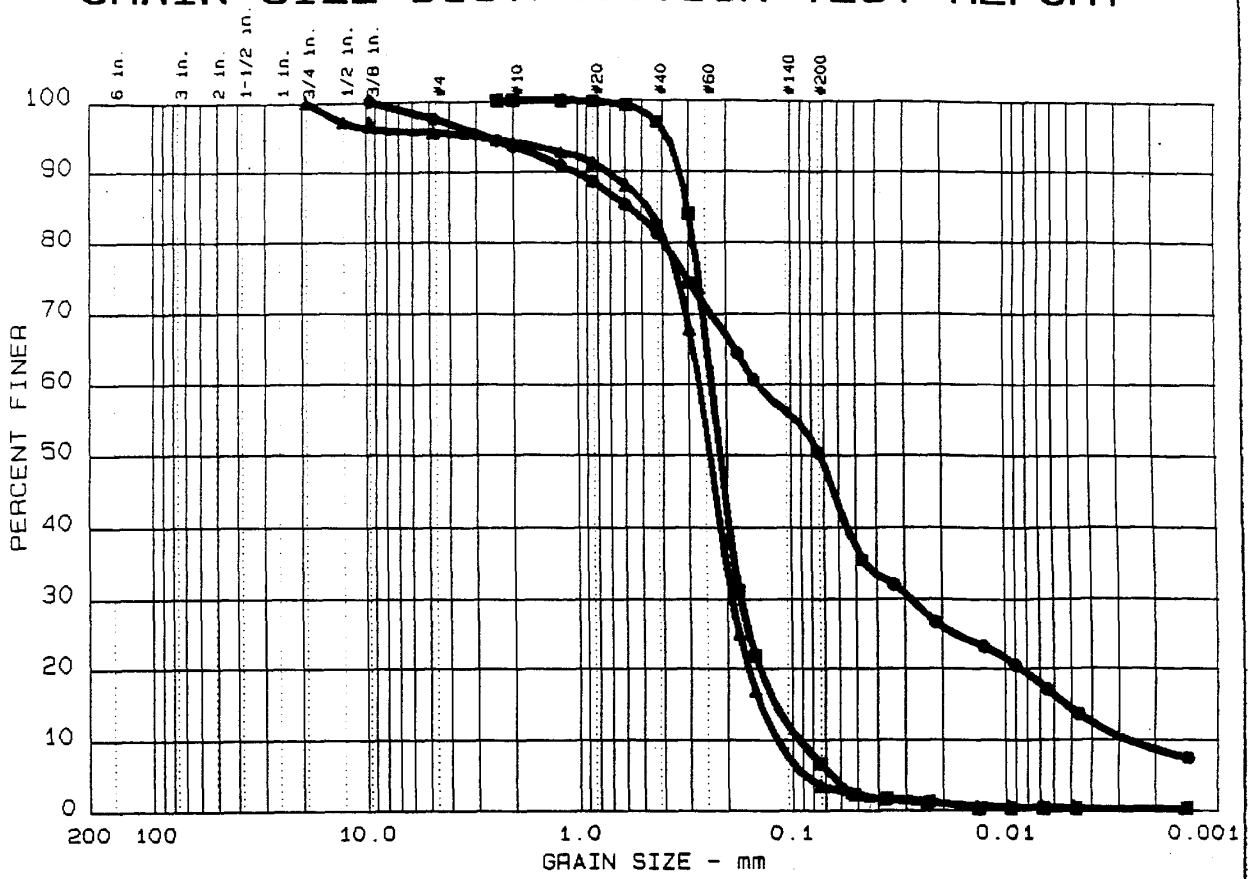
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	17	0.0	2.6	47.2	35.9	14.3
▲	18	0.0	4.4	92.1	3.4	0.1
■	19	0.0	0.0	93.4	6.4	0.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	30	14	0.57	0.14	0.07	0.028	0.0053	0.0028	1.97	51.9
▲			0.46	0.27	0.24	0.190	0.1411	0.1184	1.14	2.3
■	NP	NP	0.30	0.23	0.21	0.174	0.1204	0.0934	1.39	2.5

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	CL	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP-SM	

Project No.: 1870.20
Project: NIROP
◆ Location: SB04B 3-5'
▲ Location: SB04F 13-15'
■ Location: SB04J 23-25'
Date: 12-5-90

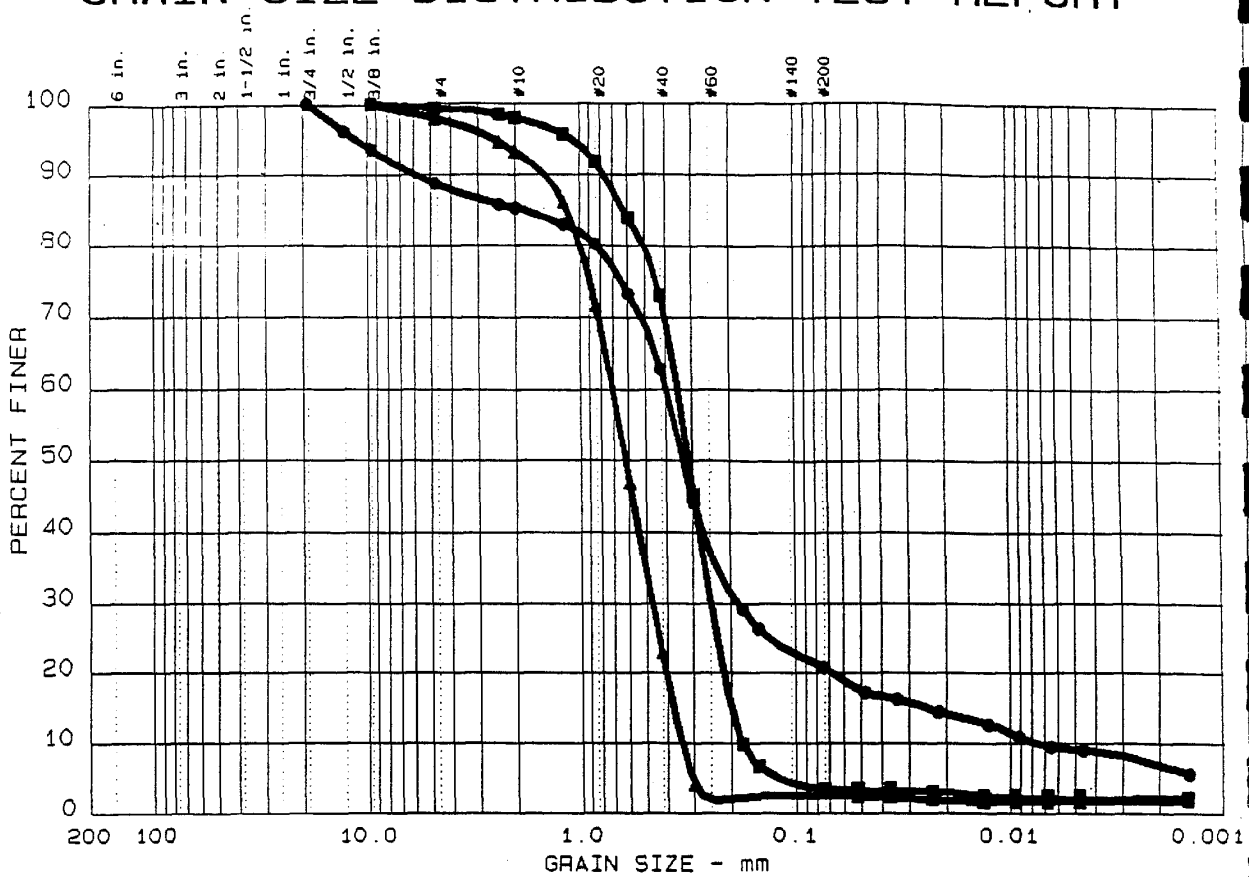
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	11.2	68.0	11.6	9.2
▲	5	0.0	2.2	95.3	0.9	1.6
■	6	0.0	0.8	95.8	1.4	2.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	19	2	1.78	0.40	0.33	0.186	0.0237	0.0076	11.53	52.2
▲			1.15	0.70	0.62	0.467	0.3733	0.3424	0.90	2.1
■			0.62	0.35	0.31	0.249	0.2002	0.1770	1.00	2.0

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SM	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.30
Project: NIROP
● Location: S10IA 3-5'
▲ Location: S10IC 13-15'
■ Location: S10IE 23-25'
Date: 12-5-90

Remarks:

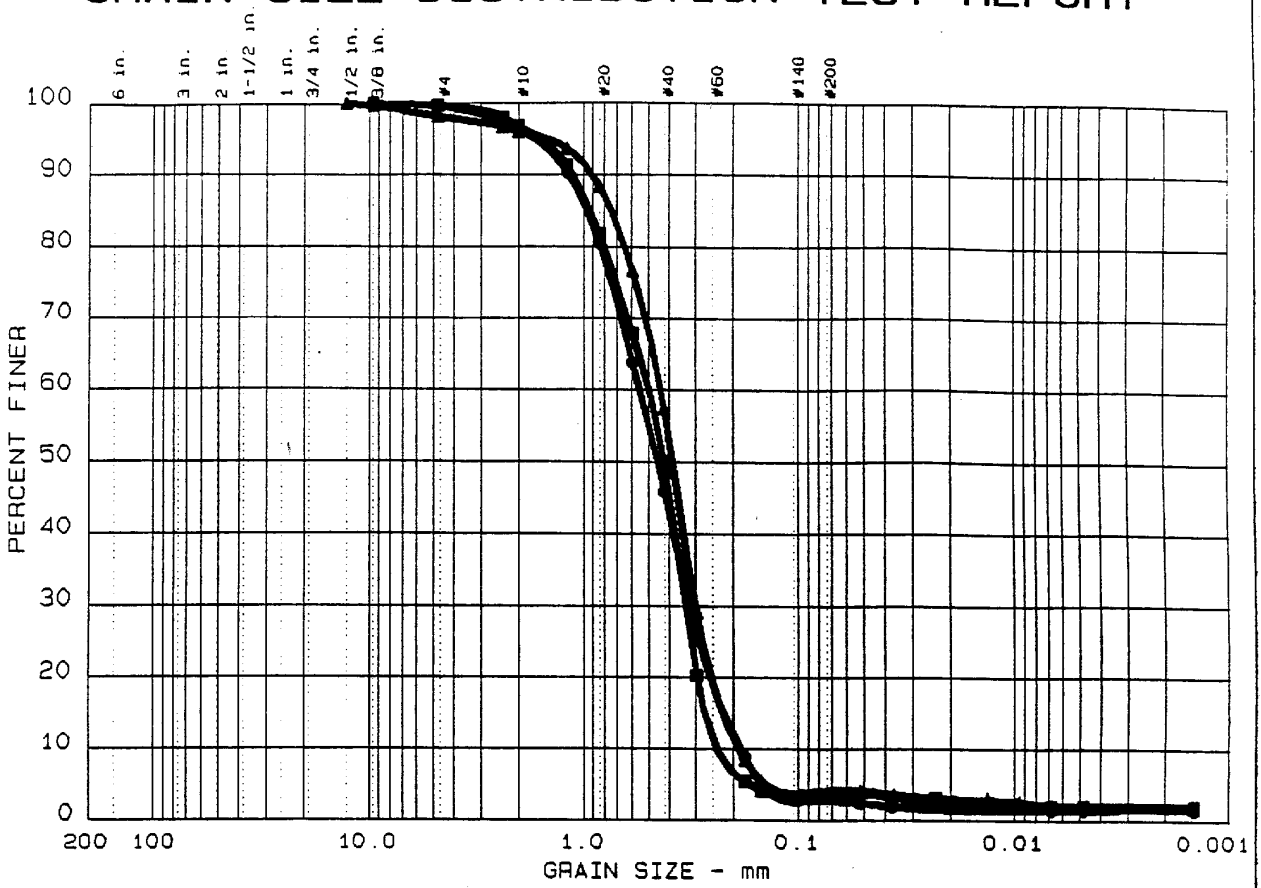
GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

Sept 12-91

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	0.7	96.7	1.2	1.4
▲	8	0.0	2.0	94.0	2.4	1.6
■	9	0.0	0.5	96.3	1.2	2.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.95	0.55	0.45	0.319	0.2208	0.1854	1.00	3.0
▲			0.74	0.44	0.38	0.301	0.2254	0.1897	1.10	2.3
■			0.92	0.49	0.42	0.335	0.2720	0.2396	0.95	2.1

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	
▲ SEE BORING LOG	SP	
■ SEE BORING LOG	SP	

Project No.: 1870.30
Project: NIROP
● Location: S10IG 33-35'
▲ Location: S10II 43-45'
■ Location: S10IK 53-55'
Date: 12-5-90

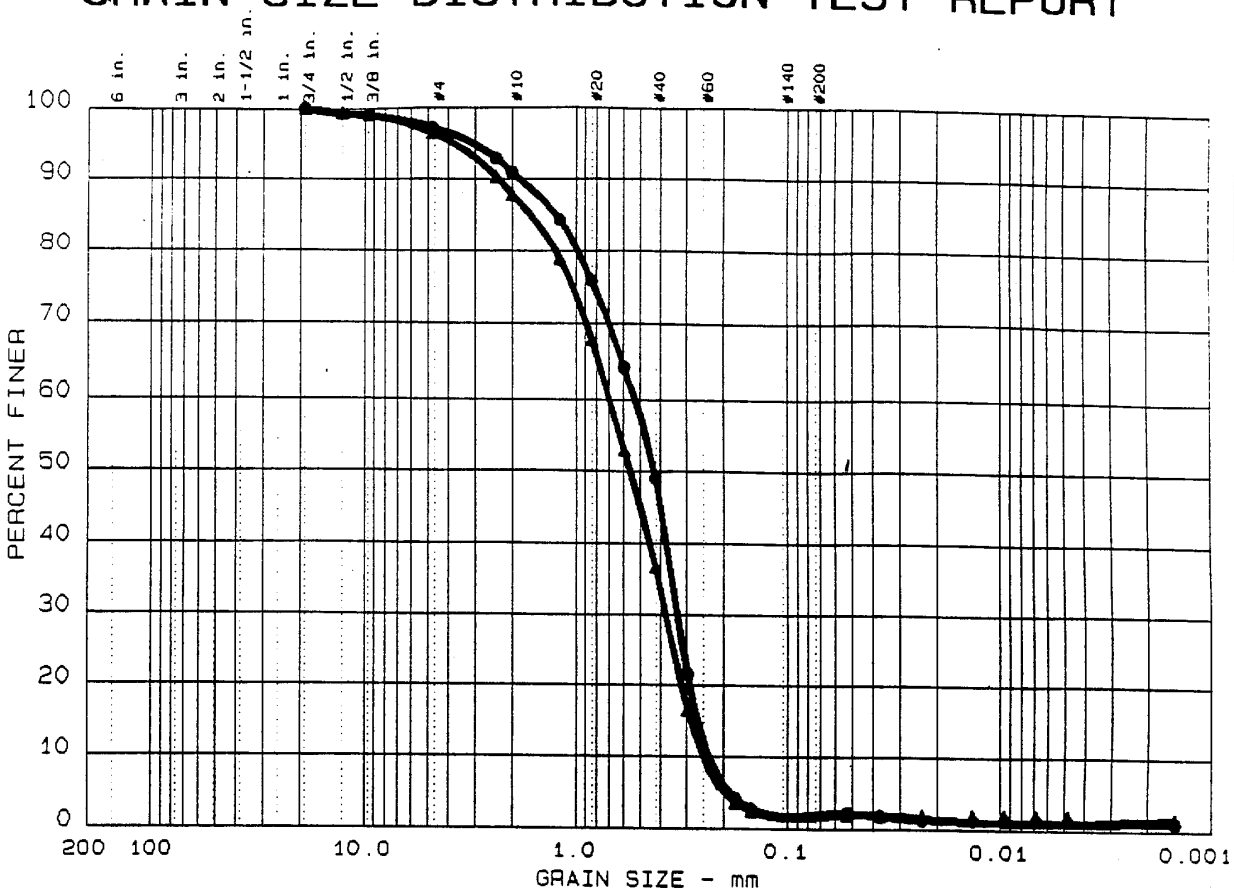
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	2.9	95.2	1.0	0.9
▲	11	0.0	3.6	94.8	0.5	1.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			1.23	0.52	0.43	0.331	0.2658	0.2355	0.89	2.2
▲			1.62	0.70	0.55	0.375	0.2871	0.2500	0.81	2.8

MATERIAL DESCRIPTION	USCS	AASHTO
● SEE BORING LOG	SP	
▲ SEE BORING LOG	SP	

Project No.: 1870.30
Project: NIROP
● Location: S10IM 63-65'
▲ Location: S10IO 73-75'

Date: 12-5-90

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

RMT, INC.

Figure No. _____

MOISTURE CONTENT DETERMINATION

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.20

				by	date
Tech.	JLO	10/30/90	QC	JLO	11/8/90
Input.	TMK	11/02/90	QA	JLO	11/8/90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
NB07	B	3'-5'	79.65	309.48	280.33	14.5
NB07	F	13-15'	79.36	586.80	566.63	4.1
NB07	J	23-25'	79.58	666.40	568.45	20.0
NB08	B	3-5'	77.43	307.24	280.72	13.0
NB08	F	13-15'	78.63	574.50	556.23	3.8
NB08	J	23-25'	78.25	583.10	496.90	20.6
NB13	B	3-5'	78.44	847.50	813.70	4.6
NB13	F	13-15'	77.90	891.70	869.50	2.8
NB13	J	23-25'	78.61	996.90	854.70	18.3
NB14	B	3-5'	80.69	625.50	553.27	15.3
NB14	F	13-15'	78.53	686.30	640.40	8.2
NB14	J	23-25'	76.80	651.60	563.07	18.2
NB16	B	3-5'	76.59	382.29	335.87	17.9
NB16	F	13-15'	76.36	737.90	706.90	4.9
NB16	J	23-25'	77.24	839.30	719.20	18.7

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.20

				by	date
Tech:	JLO	10/30/90	QC	JLH	11/9/90
Input:	TMK	11/02/90	QA	JH	11/8/90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
NB17B		3-5'	77.98	401.90	368.86	11.4
NB17F		13-15'	77.84	829.50	802.80	3.7
NB17J		23-25'	76.07	858.70	732.50	19.2
CB06B		3-5'	78.93	668.30	648.80	3.4
CB06F		13-15'	76.85	578.30	537.10	9.0
CB06J		23-25'	76.86	817.20	706.20	17.6
CB16B		3-5'	76.72	752.20	708.10	7.0
CB16F		13-15'	76.12	743.80	703.40	6.4
CB16I		20-22'	76.57	880.10	746.50	19.9

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870 20

			by	date
Tech:	HJW	11/09/90	QC	11-9-90
Input:	TMK	11/09/90	QA	11-9-90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
NB04B		3-5'	292 42	569.30	522.90	20.1
NB04F		13-15'	293.94	1093.60	1065.70	3.6
NB04J		23-25'	289.61	1066.60	954.40	16.9
NB06B		3-5'	296.28	607.80	565.50	15.7
NB06F		13-15'	296.80	998.10	969.70	4.2
NB06J		23-25'	299.01	1141.50	1004.70	19.4
NB09B		3-5'	305.44	630.30	595.50	12.0
NB09F		13-15'	298.35	891.00	875.60	2.7
NB09J		23-25'	303.50	1012.00	894.10	20.0
NB11B		3-5'	290.77	728.20	681.60	11.9
NB11F		13-15'	297.86	882.90	864.80	3.2
NB11J		23-25'	306.21	992.40	822.60	32.9
NB12B		3-5'	300.60	941.20	895.30	7.7
NB12F		13-15'	292.84	1054.60	1033.20	2.9
NB12J		23-25'	301.59	1035.70	913.30	20.0

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.20

			by	date
Tech:	HJW	11/09/90	QC	11-9-90
Input:	TMK	11/09/90	QA	11-9-90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
NB18B		3-5'	289.34	575.90	543.50	12.7
NB18F		13-15'	292.89	918.90	887.40	5.3
NB18J		23-25'	291.22	1128.80	986.50	20.5
NB19B		3-5'	291.77	734.60	699.00	8.7
NB19F		13-15'	270.53	994.70	967.20	3.9
NB19J		23-25'	269.55	1092.60	967.30	18.0
NB21B		3-5'	261.45	497.10	458.60	19.5
NB21F		13-15'	273.60	868.00	846.50	3.8
NB21J		23-25	262.81	871.20	776.20	18.5

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870 20

			by	date
Tech:	GTF	11/07/90	QC	11/8/90
Input:	GTF	11/07/90	QA	11/8/90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
NB01B		3-5'	276.17	466.60	441.60	15.1
NB01F		13-15'	281.16	763.80	748.90	3 2
NB01J		23-25'	267.77	824.40	740.50	17.7
NB02B		3-5'	277 51	942.10	893.10	8.0
NB02F		13-15'	280.93	1064.30	1035.30	3.8
NB02J		23-25'	277.58	1023.00	900.20	19.7
NB03B		3-5'	280.26	658.50	598.80	18.7
NB03F		13-15'	276.76	1018.70	993.30	3.5
NB03J		23-25'	275.47	1068.80	951.10	17.4
NB05B		3-5'	269.94	532.80	482.00	24.0
NB05F		13-15'	276.49	847.60	824.70	4.2
NB05J		23-25'	272.17	844.90	755.30	18.5
NB10B		3-5'	278.26	483.40	422.60	42.1
NB10F		13-15'	277.71	852.50	827.90	4.5
NB10J		23-25'	280.41	849.40	762.30	18.1

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.20

				by	date
Tech:	GTF	11/07/90	QC	JPH	11/9/90
Input:	GTF	11/07/90	QA	JPH	11/9/90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
NB15B		3-5'	280.62	603.90	534.10	27.5
NB15F		13-15'	270.89	1032.40	1005.80	3.6
NB15J		23-25'	271.30	971.60	855.60	19.9
NB20B		3-5'	277.24	612.50	568.60	15.1
NB20F		13-15'	272.70	979.50	949.50	4.4
NB20J		23-25'	279.65	854.60	757.90	20.2
NB22B		3-5'	266.82	936.80	872.00	10.7
NB22F		13-15'	271.11	965.10	936.80	4.3
NB22J		23-25'	272.71	1013.30	889.50	20.1
NB23B		3-5'	283.72	939.10	920.90	2.9
NB23F		13-15'	273.58	953.40	918.80	5.4
NB23J		23-25'	277.36	970.90	947.80	3.4
NB23N		33-35'	276.00	1153.50	1058.90	12.1

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: HJW 09/09/90
Input: TMK 11/17/90

	by	date
QC	GTE	11-21-90
QA	DL	12-3-90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
CB01B		3-5'	269.35	893.10	870.60	3.7
CB01F		13-15'	274.27	937.20	912.70	3.8
CB01J		23-25'	266.57	1055.10	941.20	16.9
CB02B		3-5'	263.64	860.00	831.80	5.0
CB02F		13-15'	268.93	914.30	883.50	5.0
CB02J		23-25'	280.09	1013.20	906.50	17.0
CB03B		3-5'	275.56	788.90	746.40	9.0
CB03F		13-15'	272.51	879.70	849.10	5.3
CB03J		23-25'	269.88	926.30	828.20	17.6
CB04B		3-4'	282.47	431.60	414.40	13.0
CB04B		4-5'	284.78	596.40	583.78	4.2
CB04F		13-15'	272.78	719.50	696.70	5.4
CB04J		23-25'	272.95	808.70	712.20	22.0

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.20

			by	date
Tech:	HJW	11/09/90	QC	GTF 11-21-90
Input:	TMK	11/17/90	QA	JDL 12/2/90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
CB05B		3-5'	268.81	760.00	741.10	4.0
CB05F		13-15'	278.25	800.90	785.30	3.1
CB05J		23-25'	270.84	655.20	587.94	21.2
CB09B		3-5'	271.47	680.20	630.20	13.9
CB09F		13-15'	283.43	906.70	885.30	3.6
CB09J		23-25'	280.40	1008.20	885.00	20.4
CB10B		3-5'	271.64	945.00	921.00	3.7
CB10F		13-15'	273.86	882.10	862.70	3.3
CB10J		23-25'	278.64	1010.00	889.90	19.6
CB12C		6-8'	275.55	836.10	813.10	4.3
CB12F		13-15'	275.34	785.90	774.80	2.2
CB12J		23-25'	277.83	671.10	600.60	21.8
CB15C		6-8'	278.44	769.80	752.60	3.6
CB15F		13-15'	276.58	878.70	847.60	5.4
CB15J		23-25'	280.51	977.80	863.40	19.6

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.20

				by	date
Tech:	HJW	11/09/90	QC	GTF	11-21-90
Input:	TMK	11/17/90	QA	JJA	11/30/90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
CB20B		3-5'	279.92	599.10	567.76	10.9
CB20F		13-15'	282.93	754.50	734.80	4.4
CB20J		23-25'	269.07	753.30	666.60	21.8

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.20

			by	date
Tech:	GTF	11/13/90	QC	11/24/90
Input:	TMK	11/15/90	QA	12/3/90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
CB07B		3-5'	79.88	808.90	785.90	3.3
CB07F		13-15'	79.41	708.50	665.50	7.3
CB07J		23-25'	80.51	832.90	715.30	18.5
CB08B		3-5'	79.48	378.94	340.49	14.7
CB08F		13-15'	80.19	690.00	665.40	4.2
CB08J		23-25'	76.62	789.80	695.80	15.2
CB11B		3-5'	76.99	571.00	549.00	4.7
CB11F		13-15'	77.07	508.50	492.30	3.9
CB13B		3-4'	76.98	345.93	330.58	6.1
CB13B		4-5'	77.41	169.30	156.38	16.4
CB13F		13-15'	78.68	580.90	567.00	2.8
CB13J		23-25'	87.17	672.40	569.80	21.3

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.20

				by	date
Tech:	GTF	11/13/90	QC	JLC	11/29/90
Input:	TMK	11/15/90	QA	JPL	12/3/90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
CB19B		3-4'	87.35	214.71	201.54	11.5
CB19B		4-5'	83.82	296.97	273.78	12.2
CB19F		13-15'	84.10	660.80	642.60	3.3
CB19J		23-25'	84.37	673.10	570.80	21.0
CB22B		3-5'	83.94	721.00	693.00	4.6
CB22F		13-15'	84.29	790.90	763.20	4.1
CB22J		23-25'	83.44	846.70	742.80	15.8
CB23B		3-5'	84.48	300.01	281.74	9.3
CB23F		13-15'	84.80	749.60	724.60	3.9
CB23J		23-25'	83.28	702.70	682.30	3.4
CB24B		3-5'	83.66	291.69	269.04	12.2
CB24F		13-15'	84.07	825.80	799.40	3.7
CB24J		23-25'	84.36	849.00	714.10	21.4

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.20

			by	date
Tech:	GTF	11/12/90	QC	JCO 11/29/90
Input:	TMK	11/15/90	QA	JK 12/3/90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
CB25B		3-5'	83.52	323.67	301.86	10.0
CB25F		13-15'	83.38	702.30	684.00	3.0
CB25J		23-25'	83.90	655.20	583.80	14.3
SB03B		3-5'	83.34	308.50	274.37	17.9
SB03F		13-15'	86.86	742.80	709.30	5.4
SB03J		23-25'	84.31	863.70	736.50	19.5

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: HJW 11/30/90 QC GTF 12-10-90
Input: JPH 12/09/90 QA [illegible] 12-10-90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
SB01B		3-5'	79.92	695.20	656.90	6.6
SB01F		13-15'	79.46	657.90	641.60	2.9
SB01J		23-25'	80.55	748.50	633.60	20.8
SB02B		3-5'	79.53	396.80	371.41	8.7
SB02F		13-15'	80.25	709.90	681.20	4.8
SB02J		23-25'	76.64	792.10	672.30	20.1
SB04B		3-5'	77.04	276.82	246.68	17.8
SB04F		13-15'	77.10	681.10	661.60	3.3
SB04J		23-25'	77.04	755.50	674.60	13.5
CB14B		3-5'	77.50	290.22	261.08	15.9
CB14F		13-15'	78.69	645.70	611.50	6.4
CB14J		23-25'	78.62	733.20	632.20	18.2
CB17B		3-5'	78.55	705.30	674.80	5.1
CB17F		13-15'	78.18	690.80	670.60	3.4
CB17J		23-25'	78.73	761.30	634.30	22.9

#6

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: HJW 11/30/90 QC GTP 12-10-90
Input: JPH 12/09/90 QA DH 12-10-90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
CB18B		3-5'	83.64	270.30	245.35	15.4
CB18F		13-15'	82.89	698.20	680.10	3.0
CB18J		23-25'	83.56	793.10	661.90	22.7
CB21B		3-5'	84.22	570.50	552.50	3.8
CB21F		13-15'	85.24	716.10	695.50	3.4
CB21J		23-25'	87.30	633.30	544.90	19.3
CB26B		3-5'	87.67	684.40	667.00	3.0
CB26F		13-15'	86.75	710.70	689.80	3.5
CB26J		23-25'	87.54	743.90	623.60	22.4
CB27B		3-5'	86.63	337.79	314.09	10.4
CB27F		13-15'	83.44	588.30	564.10	5.0
CB27J		23-25'	82.74	760.30	665.40	16.3
CB28B		3-5'	84.60	603.50	585.50	3.6
CB28F		13-15'	85.03	373.77	338.20	14.0
CB28J		23-25'	84.77	734.00	640.00	16.9

RMT Soils Laboratory - Moisture Content Determination

PROJECT: NIROP

JOB #: 1870.30

			by	date
Tech:	JLO	11/30/90	QC	12-11-90
Input:	GTF	12/11/90	QA	12-11-90

BORING	SAMPLE	DEPTH	TARE	WET WT	DRY WT	% MOISTURE
S10IA		3-5'	87.32	317.28	295.58	10.4
S10IC		13-15'	84.73	579.90	563.50	3.4
S10IE		23-25'	84.33	694.20	599.20	18.5
S10IG		33-35'	83.84	579.00	499.40	19.2
S10II		43-45'	83.76	660.50	573.10	17.9
S10IK		53-55'	88.16	856.00	738.80	18.0
S10IM		63-65'	87.84	843.00	731.20	17.4
S10IO		73-75'	84.57	777.20	678.70	16.6

ATTERBERG LIMIT DETERMINATION

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: JLO 01/08/91 QC

Input: GTF 01/09/91 QA

	By	Date
QC	JLO ✓	1-9-91
QA	JLO	1-9-91

BORING: CB02B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	CB02B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: JLO	01/08/91	QC GTF	1-9-91
JOB #: 1870.20	Input: TMK	01/09/91	QA [illegible]	1-9-91

BORING: CB03B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	CB03B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB03J DEPTH: 23-25'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	CB03J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: HJW	11/09/90	QC J.O	1-9-91
JOB #: 1870.20	Input: TMK	01/08/91	QA JOL	1-9-91

BORING: CB04B DEPTH: 3-4'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.43	115.39		115.33
BLOWS		24	27		
WET WT		134.84	136.50		138.73
DRY WT		130.70	132.02		134.89
% WATER		27.0	27.2		19.6

BORING	CB04B
DEPTH	3-4'
% WATER	
LL	27
PL	20
PI	7
CLASS	CL-ML

BORING: CB04F DEPTH: 13-15'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT		NON-PLASTIC			
DRY WT					
% WATER					

BORING	CB04F
DEPTH	13-15'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB04J DEPTH: 23-25'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT		NON-PLASTIC			
DRY WT					
% WATER					

BORING	CB04J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: JLO 01/08/91 QC

Input: GTF 01/09/91 QA

	By	Date
QC	JLO	1-9-91
QA	JLK	1-9-91

BORING: CB05J DEPTH: 23-25'

	Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE				
BLOWS				
WET WT		NON-PLASTIC MATERIAL		
DRY WT				
% WATER				

BORING	CB05J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

			By	Date
Tech: GTF	11/12/90	QC	JW	11/13/90
Input: TMK	11/13/90	QA	JW	11/13/90

BORING: CB06F DEPTH: 13-15'

	Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE				
BLOWS				
WET WT		NON-PLASTIC		
DRY WT				
% WATER				

BORING	CB06F
DEPTH	13-15'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: JLO 01/08/91 QC

Input: GTF 01/09/91 QA

	By	Date
QC	[illegible]	1-9-91
QA	[illegible]	1-9-91

BORING: CB07F DEPTH: 13-15'

	Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE				
BLOWS				
WET WT		NON-PLASTIC MATERIAL		
DRY WT				
% WATER				

BORING	CB07F
DEPTH	13-15'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
JOB #: 1870.20	Tech: GTF	11/20/90	QC	1-9-91
	Input: TMK	01/08/91	QA	1-9-91

BORING: CB08B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.27	114.70		115.19
BLOWS		22	21		
WET WT		143.64	142.56		142.06
DRY WT		136.65	135.72		136.81
% WATER		32.2	31.9		24.3

BORING	CB08B
DEPTH	3-5'
% WATER	
LL	32
PL	24
PI	8
CLASS	ML

BORING: CB08F DEPTH: 13-15'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT		NON-PLASTIC			
DRY WT					
% WATER					

BORING	CB08F
DEPTH	13-15'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB08J DEPTH: 23-25'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT		NON-PLASTIC			
DRY WT					
% WATER					

BORING	CB08J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: HJW	11/09/90	QC	1-9-
JOB #: 1870.20	Input: GTF	01/09/91	QA	1-9-91

BORING: CB09B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.48	115.25		115.45
BLOWS		24	25		
WET WT		147.50	140.92		140.66
DRY WT		141.00	135.72		136.49
% WATER		25.3	25.4		19.8

BORING	CB09B
DEPTH	3-5'
% WATER	
LL	25
PL	20
PI	5
CLASS	CL-ML

BORING: CB09J DEPTH: 23-25'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT		NON-PLASTIC MATERIAL			
DRY WT					
% WATER					

BORING	CB09J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: JLO	01/08/91 QC	GTP	1-9-91
JOB #: 1870.20	Input: TMK	01/09/91 QA	JDK	1-9-91

BORING: CB11B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	CB11B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB11F DEPTH: 13-15'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	CB11F
DEPTH	13-15'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 11/19/90 QC GTF 1-9-91
Input: TMK 01/09/91 QA [illegible] 1-9-91

BORING: CB13B DEPTH: 3-4'

BORING	CB13B
DEPTH	3-4'
% WATER	
LL	
PL	0
PI	
CLASS	NP

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT	NON-PLASTIC MATERIAL				
DRY WT					
% WATER					

BORING: CB13B DEPTH: 4-5'

BORING	CB13B
DEPTH	4-5'
% WATER	
LL	29
PL	18
PI	11
CLASS	CL

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		116.24	115.32		115.36
BLOWS		24	30		
WET WT		142.94	139.48		138.51
DRY WT		137.01	134.16		135.00
% WATER		28.4	28.9		17.9

BORING: CB13J DEPTH: 23-25'

BORING	CB13J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT	NON-PLASTIC MATERIAL				
DRY WT					
% WATER					

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 12/05/90 QC GTF 1-8-91
Input: TMK 01/08/91 QA JCH 1-8-91

BORING: CB14B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.21	115.05		114.89
BLOWS		21	20		
WET WT		142.28	141.72		141.86
DRY WT		136.17	135.73		137.68
% WATER		28.5	28.2		18.3

BORING	CB14B
DEPTH	3-5'
% WATER	
LL	28
PL	18
PI	10
CLASS	CL

BORING: CB14F DEPTH: 13-15'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT					
DRY WT					
% WATER		NON-PLASTIC			

BORING	CB14F
DEPTH	13-15'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB14J DEPTH: 23-25'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT					
DRY WT					
% WATER		NON-PLASTIC			

BORING	CB14J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

			By	Date
Tech: GTF	11/12/90	QC	JPH	11/13/90
Input: TMK	11/13/90	QA	JPH	11/13/90

BORING: CB16B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC		
DRY WT			
% WATER			

BORING	CB16B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB16F DEPTH: 13-15'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT			
DRY WT	NON-PLASTIC		
% WATER			

BORING	CB16F
DEPTH	13-15'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB16I DEPTH: 20-22'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT			
DRY WT	NON-PLASTIC		
% WATER			

BORING	CB16I
DEPTH	20-22'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP'

			By	Date
	Tech: JLO	01/08/91	QC GTF	1-9-91
JOB #: 1870.20	Input: TMK	01/09/91	QA JDL	1-9-91

BORING: CB17B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC		
DRY WT			
% WATER			

BORING	CB17B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB17J DEPTH: 23-25'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	CB17J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: GTF	12/05/90 QC	GTF	1-9-91
JOB #: 1870.20	Input: TMK	01/09/91 QA	JDH	1-9-91

BORING: CB18B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.26	113.41		113.83
BLOWS		21	21		
WET WT		141.88	145.64		140.98
DRY WT		136.49	139.13		136.83
% WATER		24.9	24.8		18.0

BORING	CB18B
DEPTH	3-5'
% WATER	
LL	25
PL	18
PI	7
CLASS	CL-ML

BORING: CB18J DEPTH: 23-25'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT		NON-PLASTIC MATERIAL			
DRY WT					
% WATER					

BORING	CB18J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

NIROP

			By	Date
	Tech: GTF	11/19/90	QC	1-9-91
JOB #: 1870.20	Input: TMK	01/08/91	QA	1-9-91

BORING: CB19B DEPTH: 3-4'

Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE				
BLOWS				
WET WT	NON-PLASTIC			
DRY WT				
% WATER				

BORING	CB19B
DEPTH	3-4'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB19B DEPTH: 4-5'

Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE	115.24	115.17		115.50
BLOWS	24	26		
WET WT	139.74	142.83		141.91
DRY WT	135.12	137.62		137.84
% WATER	23.1	23.3		18.2

BORING	CB19B
DEPTH	4-5'
% WATER	
LL	23
PL	18
PI	5
CLASS	CL-ML

BORING: CB19J DEPTH: 23-25'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC		
DRY WT			
% WATER			

BORING	CB19J
DEPTH	23-23'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

			By	Date
Tech:	HJW	11/09/90	QC GTF	11-21-90
Input:	TMK	11/15/90	QA hl	12-3-90

BORING: CB20B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.12	115.13		114.95
BLOWS		23	24		
WET WT		138.71	140.86		142.00
DRY WT		135.43	137.30		138.99
% WATER		16.0	16.0		12.5

BORING	CB20B
DEPTH	3-5'
% WATER	
LL	16
PL	13
PI	3
CLASS	ML

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: JLO	01/08/91	QC GF	1-9-91
JOB #: 1870.20	Input: TMK	01/09/91	QA JM	1-9-91

BORING: CB22B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	CB22B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB22F DEPTH: 13-15'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	CB22F
DEPTH	13-15'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB22J DEPTH: 23-25'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	CB22J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 11/19/90 QC GTI 11.21 90

Input: TMK 11/18/90 QA .114 12-3-90

BORING: CB23B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.17	116.22		115.23
BLOWS		22	20		
WET WT		142.92	143.02		139.77
DRY WT		137.82	138.09		136.23
% WATER		22.2	21.9		16.9

BORING	CB23B
DEPTH	3-5'
% WATER	
LL	22
PL	17
PI	5
CLASS	CL-ML

RMT Soils Laboratory - Atterberg Limit Determination

NIROP

			By	Date
	Tech: GTF	11/19/90	QC	1-7-91
JOB #: 1870.20	Input: TMK	01/08/91	QA	1-7-91

BORING: CB24B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC		
DRY WT			
% WATER			

BORING	CB24B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB24J DEPTH: 23-25'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC		
DRY WT			
% WATER			

BORING	CB24J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

NIROP

			By	Date
	Tech: GTF	11/19/90 QC	[illegible]	[illegible]
JOB #: 1870.20	Input: TMK	01/08/91 QA	[illegible]	1-7-91

BORING: CB25B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC		
DRY WT			
% WATER			

BORING	CB25B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB25J DEPTH: 23-25'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC		
DRY WT			
% WATER			

BORING	CB25J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: JLO	01/08/91	QC JP ✓	1-9-91
JOB #: 1870.20	Input: GTF	01/09/91	QA [illegible]	1-9-91

BORING: CB26J DEPTH: 23-25'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	CB26J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: GTF	12/05/90	QC GTC	1-9-91
JOB #: 1870.20	Input: TMK	01/09/91	QA JLL	1-9-91

BORING: CB27B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	CB27B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB27F DEPTH: 13-15'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	CB27F
DEPTH	13-15'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

			By	Date
Tech:	GTF	12/05/90	QC	1-8-91
Input:	TMK	01/08/91	QA	1-8-91

BORING: CB28B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT					
DRY WT					
% WATER		NON-PLASTIC			

BORING	CB28B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: CB28F DEPTH: 13-15'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.32	115.47		115.25
BLOWS		20	22		
WET WT		141.56	147.23		143.26
DRY WT		136.99	141.74		140.00
% WATER		20.5	20.6		13.2

BORING	CB28F
DEPTH	13-15'
% WATER	
LL	21
PL	13
PI	8
CLASS	CL

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GAP 11/12/90 QC

Input: GTF 11/12/90 QA

	By	Date
QC	[illegible]	11/13/90
QA	[illegible]	11/13/[illegible]

BORING: NB01B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		116.79	115.24	114.95	115.11
BLOWS		22	23	24.0	
WET WT		144.16	147.08	140.84	133.85
DRY WT		138.41	140.51	136.09	130.77
% WATER		26.2	25.7	22.4	19.7

BORING	NB01B
DEPTH	3-5'
% WATER	
LL	26
PL	20
PI	6
CLASS	CL-ML

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 11/14/90 QC JM 11/26/90
Input: TMK 11/15/90 QA JM 11/26/90

BORING. NB02B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT			
DRY WT	NON-PLASTIC		
% WATER			

BORING	NB02B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

			By	Date
Tech: GAP	11/09/90	QC	[illegible]	11/9/90
Input: TMK	11/09/90	QA	[illegible]	11/9/90

BORING: NB03B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NONPLASTIC		
DRY WT			
% WATER			

BORING	NB03B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

				By	Date
	Tech:	GTF	11/07/90	QC	11.90
JOB # 1870 20	Input	HJW	11/07/90	QA	11.90

BORING: NB04B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115 51	115 44		114.81
BLOWS		20	20		
WET WT		143.42	150.22		148.01
DRY WT		137 90	143.35		142.65
% WATER		24.0	24.0		19.3

BORING	NB04B
DEPTH	3-5'
% WATER	
LL	24
PL	19
PI	5
CLASS	CL-ML

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GAP 11/09/90 QC

Input: TMK 11/09/90 QA

	By	Date
QC	[illegible]	11/9/90
QA	[illegible]	11/9/90

BORING: NB05B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.42	115.41		115.12
BLOWS		24	25		
WET WT		145.74	147.27		149.19
DRY WT		136.86	137.93		143.37
% WATER		41.2	41.5		20.6

BORING	NB05B
DEPTH	3-5'
% WATER	
LL	41
PL	21
PI	20
CLASS	CL

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: GTF	11/07/90	QC	11/9/90
JOB #: 1870 20	Input HJW	11/07/90	QA	11/9/90

BORING: NB06B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS	NON-PLASTIC MATERIAL		
WET WT			
DRY WT			
% WATER			

BORING	NB06B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 11/09/90 QC DH 11/9/90

Input: TMK 11/09/90 QA HH 11/9/90

By Date

BORING: NB07B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.35	115.18	114.95	115.15
BLOWS		24	22	21.0	
WET WT		140.67	142.05	142.25	147.74
DRY WT		135.00	136.04	136.63	143.42
% WATER		28.7	28.4	25.4	15.3

BORING	NB07B
DEPTH	3-5'
% WATER	
LL	29
PL	15
PI	14
CLASS	CL

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

			By	Date
Tech: GTF	11/09/90	QC	[illegible]	11/9/90
Input: TMK	11/09/90	QA	[illegible]	11/9/90

BORING. NB08B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.35	115.21	115.46	115.05
BLOWS		26	29	20.0	
WET WT		149.77	146.84	139.72	140.07
DRY WT		143.19	140.83	135.33	136.27
% WATER		23.7	23.9	21.5	17.9

BORING	NB08B
DEPTH	3-5'
% WATER	
LL	24
PL	18
PI	6
CLASS	CL-ML

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

			By	Date
Tech: GTF	11/07/90	QC	[illegible]	11/9/90
Input: HJW	11/07/90	QA	[illegible]	11/9/90

BORING: NB09B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.93	115.51		115.34
BLOWS		20	20		
WET WT		143.89	141.13		141.25
DRY WT		138.06	135.81		136.86
% WATER		25.6	25.5		20.4

BORING	NB09B
DEPTH	3-5'
% WATER	
LL	26
PL	20
PI	6
CLASS	CL-ML

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT. NIROP

JOB #: 1870.20

			By	Date
Tech: GAP	11/12/90	QC	[illegible]	11/13/90
Input: GTF	11/12/90	QA	[illegible]	11/13/90

BORING NB10B DEPTH 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.38	115.32	115.46	115.38
BLOWS		20	27	21.0	
WET WT		144.55	140.78	138.89	137.52
DRY WT		133.57	131.19	131.00	130.59
% WATER		58.8	61.0	49.7	45.6

BORING	NB10B
DEPTH	3-5'
% WATER	
LL	60
PL	46
PI	14
CLASS	MH

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 11/12/90 QC

Input: TMK 11/13/90 QA

	By	Date
QC	JPL	11/13/90
QA	JPL	11/13/90

BORING: NB11B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC		
DRY WT			
% WATER			

BORING	NB11B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: GTF	11/14/90	QC JM	11/24/90
JOB #: 1870.20	Input: TMK	11/15/90	QA PH	11/26/90

BORING: NB12B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE				
BLOWS				
WET WT				
DRY WT		NON-PLASTIC		
% WATER				

BORING	NB12B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 11/12/90 QC

Input: TMK 11/13/90 QA

	By	Date
QC	[illegible]	11/13/90
QA	[illegible]	11/13/90

BORING: NB13B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC		
DRY WT			
% WATER			

BORING	NB13B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: GTF	11/12/90 QC	[illegible]	11/13/90
JOB #: 1870.20	Input: TMK	11/13/90 QA	[illegible]	11/13/90

BORING. NB14B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC		
DRY WT			
% WATER			

BORING	NB14B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: NB14F DEPTH: 13-15'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC		
DRY WT			
% WATER			

BORING	NB14F
DEPTH	13-15'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GAP 11/12/90 QC

Input: GTF 11/12/90 QA

	By	Date
QC	[illegible]	11/12/90
QA	[illegible]	11/13/90

BORING: NB15B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.92	115.48	115.42	114.94
BLOWS		26	26	25.0	
WET WT		144.70	147.60	144.26	143.28
DRY WT		136.40	138.29	137.32	136.40
% WATER		40.7	41.0	31.7	32.1

BORING	NB15B
DEPTH	3-5'
% WATER	
LL	41
PL	32
PI	9
CLASS	ML

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 11/07/90 QC

Input: HJW 11/07/90 QA

	By	Date
QC	JK	11/8/90
QA	JK	11/8/90

BORING: NB16B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		117.09	115.41		116.06
BLOWS		23	22		
WET WT		145.78	147.33		141.76
DRY WT		139.45	140.36		138.03
% WATER		28.0	27.5		17.0

BORING	NB16B
DEPTH	3-5'
% WATER	
LL	28
PL	17
PI	11
CLASS	CL

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 11/07/90 QC

Input: HJW 11/07/90 QA

	By	Date
QC	[illegible]	11/9/90
QA	[illegible]	11/9/90

BORING: NB17B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS	NON-PLASTIC MATERIAL		
WET WT			
DRY WT			
% WATER			

BORING	NB17B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 11/07/90 QC

Input: HJW 11/07/90 QA

	By	Date
QC	[illegible]	11/9/90
QA	[illegible]	11/9/90

BORING: NB18B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	NB18B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 11/07/90 QC

Input: GTF 11/07/90 QA

	By	Date
QC	[illegible]	11/9/90
QA	[illegible]	11/5/

BORING: NB19B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS	NON-PLASTIC MATERIAL		
WET WT			
DRY WT			
% WATER			

BORING	NB19B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: GTF	11/07/90	QC	11/9/90
JOB #: 1870.20	Input: HJW	11/07/90	QA	11/9/90

BORING: NB18B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	NB18B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 11/07/90 QC

Input: GTF 11/07/90 QA

	By	Date
QC	[illegible]	11/9/90
QA	[illegible]	11/5/

BORING: NB19B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT (LL)	OVEN	PLASTIC LIMIT
TARE			
BLOWS	NON-PLASTIC MATERIAL		
WET WT			
DRY WT			
% WATER			

BORING	NB19B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GAP 11/09/90 QC

Input: TMK 11/09/90 QA

	By	Date
QC	[illegible]	11/13/90
QA	[illegible]	11/13/90

BORING: NB20B DEPTH: 3-5

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.26	115.45		115.33
BLOWS		26	26		
WET WT		152.23	147.48		141.16
DRY WT		144.15	140.46		137.64
% WATER		28.1	28.2		15.8

BORING	NB20B
DEPTH	3-5
% WATER	
LL	28
PL	16
PI	12
CLASS	CL

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 11/07/90 QC

Input: HJW 11/07/90 QA

	By	Date
QC	[illegible]	11/9/90
QA	[illegible]	11/12/90

BORING: NB21B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.09	115.23		115.05
BLOWS		21	22		
WET WT		140.38	141.86		139.78
DRY WT		134.81	136.05		135.72
% WATER		27.7	27.5		19.6

BORING	NB21B
DEPTH	3-5'
% WATER	
LL	28
PL	20
PI	8
CLASS	CL

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: JLO	01/08/91	QC GTF	1-9-91
JOB #: 1870.20	Input: GTF	01/09/91	QA [illegible]	1-9-91

BORING: NB22B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT	OVEN LL	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	NB22B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: JLO	01/08/91	QC GTP	1-9-91
JOB #: 1870.20	Input: TMK	01/09/91	QA [illegible]	1-9-91

BORING: SB01B DEPTH: 3-5'

Natural Moisture	LIQUID LIMIT (LL)	OVEN	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	SB01B
DEPTH	3-5'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: SB01J DEPTH: 23-25'

Natural Moisture	LIQUID LIMIT (LL)	OVEN	PLASTIC LIMIT
TARE			
BLOWS			
WET WT	NON-PLASTIC MATERIAL		
DRY WT			
% WATER			

BORING	SB01J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: GTF	12/05/90	QC GTF	1-9-91
JOB #: 1870.20	Input: TMK	01/09/91	QA DL	1-9-91

BORING: SB02B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.94	115.52		115.35
BLOWS		24	22		
WET WT		144.71	142.38		140.34
DRY WT		139.93	137.91		137.16
% WATER		19.8	19.7		14.6

BORING	SB02B
DEPTH	3-5'
% WATER	
LL	20
PL	15
PI	5
CLASS	CL-ML

BORING: SB02J DEPTH: 23-25'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT		NON-PLASTIC MATERIAL			
DRY WT					
% WATER					

BORING	SB02J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

			By	Date
	Tech: GTF	11/19/90 QC	GTF	1-8-91
JOB #: 1870.20	Input: TMK	01/08/91 QA	JDL	1-8-91

BORING: SB03B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.35	115.17		115.13
BLOWS		20	21		
WET WT		142.57	142.83		143.87
DRY WT		135.96	136.16		140.13
% WATER		31.2	31.1		15.0

BORING	SB03B
DEPTH	3-5'
% WATER	
LL	31
PL	15
PI	16
CLASS	CL

BORING: SB03F DEPTH: 13-15'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT					
DRY WT					
% WATER		NON-PLASTIC			

BORING	SB03F
DEPTH	13-15'
% WATER	
LL	
PL	0
PI	
CLASS	NP

BORING: SB03J DEPTH: 23-25'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT					
DRY WT					
% WATER		NON-PLASTIC			

BORING	SB03J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.20

Tech: GTF 12/05/90 QC

Input: TMK 01/09/91 QA

	By	Date
QC	GTF	1-9-91
QA	JDL	1-9-91

BORING: SB04B DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.06	115.09		115.24
BLOWS		26	27		
WET WT		142.31	141.71		142.20
DRY WT		136.11	135.69		138.41
% WATER		29.6	29.5		16.4

BORING	SB04B
DEPTH	3-5'
% WATER	
LL	30
PL	16
PI	14
CLASS	CL

BORING: SB04J DEPTH: 23-25'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE					
BLOWS					
WET WT		NON-PLASTIC MATERIAL			
DRY WT					
% WATER					

BORING	SB04J
DEPTH	23-25'
% WATER	
LL	
PL	0
PI	
CLASS	NP

RMT Soils Laboratory - Atterberg Limit Determination

PROJECT: NIROP

JOB #: 1870.30

Tech: GTF 12/05/90 QC GTF 12-7-90

Input: JPH 12/07/90 QA JH 12-10-90

BORING: S10IA DEPTH: 3-5'

	Natural Moisture	LIQUID LIMIT		OVEN LL	PLASTIC LIMIT
TARE		115.10	115.11		114.94
BLOWS		22	20		
WET WT		144.14	150.10		138.82
DRY WT		139.46	144.56		135.40
% WATER		18.9	18.3		16.7

BORING	S10IA
DEPTH	3-5'
% WATER	
LL	19
PL	17
PI	2
CLASS	ML

APPENDIX D

SOIL BORING LOGS

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-01
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 11/01/90
SURFACE ELEV. 837.0
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	7	17			Fine SAND and SILT, little clay, dark gray 10YR 4/1, well graded, loose, nonplastic, dry to moist, (Fill).
B	SS	9	17	3.7%		Fine to medium SAND, trace fine gravel, brown 10YR 5/3, poorly graded, loose, moist, (SP).
					5	
C	SS	9	15			Same as above.
D	SS	17	18			Same as above, but little fine gravel, trace medium gravel.
					10	
E	SS	52	19			Same as above.
F	SS	20	20	3.8%		Fine SAND, brown 10YR 5/3, poorly graded, dense, moist, uniform, (SP).
					15	
G	SS	32	19			Same as above, very uniform.
H	SS	24	14			Same as above.
					20	
I	SS	27	14			Same as above.
J	SS	22	15	16.9%	▽	Same as above, but little silt and gravel, wet, (SP).
					25	
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 1 NOV 90
DATE COMPLETED 1 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED J. Kel

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 24.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-02
SHEET NO. 1 OF 1
PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 11/01/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 837.1
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	13	18			Fine SAND and SILT, little to some clay, trace fine gravel, dark gray 10YR 4/1, loose to soft, nonplastic, dry to moist, (Fill).
B	SS	9	18	5.0%		Fine to medium SAND, little silt, yellowish brown 10YR 5/8, poorly graded, loose, moist, (SP).
					5	
C	SS	10	19			Fine to medium SAND, little coarse sand, brown 10YR 5/3, poorly graded, loose, moist, (SP).
D	SS	8	18			Same as above.
					10	
E	SS	41	18			Fine to medium SAND, brown 10YR 5/3, poorly graded, loose, moist, very uniform, (SP).
F	SS	22	18	5.0%		Same as above.
					15	
G	SS	20	20			
H	SS	27	19			Same as above.
					20	
I	SS	29	19			Same as above, very uniform.
J	SS	26	18	17.0% ▽		Same as abovce, but 1" silty sand seam at 21.7', little silt throughout whole S.S.
						Same as above, but little silt, wet, (SP).
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 1 NOV 90
DATE COMPLETED 1 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED J. Kiel

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.7 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-03
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 11/01/90
SURFACE ELEV. 836.0
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	20	18			Fine SAND and SILT, little to some clay, trace fine gravel, black 10YR 2/1, poorly graded, loose, nonplastic, dry to moist, (SP-SM) (Fill).
B	SS	7	5	9.0%		Same as above, but trace brick, scrap metal, and wood.
					5	
C	SS	3	2			Same as above, plus foundry sand corks, glass, bottle caps, metal shavings (2 trys).
D	SS	16	8			
					10	
E	SS	30	10			Same as above, plus melted glass, slag, steel cable.
F	SS	24	14	5.3%		Same as above, little clay, trace silt and fine gravel, (SP).
					15	Fine SAND, little medium sand, brown 10YR 5/3, poorly graded, loose, moist, (SP).
G	SS	17	20			
H	SS	23	20			Same as above, but trace to medium sand, very uniform.
					20	
I	SS	23	16			Same as above, but little silt.
J	SS	26	17	17.6% ▽		Same as above, but some silt, wet, (SM).
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 1 NOV 90
DATE COMPLETED 1 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED D. Kick

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.3 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-04
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 11/02/90
SURFACE ELEV. 836.2
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	17	15			Fine SAND, some silt, trace gravel, black 10YR 2/1, roots, pieces of wood, (SC-SM) (Fill).
B	SS	20	18	13.0%		
				4.2%	5	Fine to medium SAND, trace gravel, brown 10YR 5/3, poorly graded, loose, moist, (SP).
C	SS	12	19			Same as above.
D	SS	10	20			Fine SAND, yellow brown 10YR 5/4, poorly graded, loose, moist, (SP).
E	SS	20	18		10	
						Same as above, grades to brown 10YR 5/3.
F	SS	20	18	5.4%		
					15	Fine SAND, trace silt, dark yellow brown 10YR 6/4, poorly graded, loose, moist, (SP).
G	SS	18	20			Same as above.
H	SS	18	20			Same as above.
I	SS	15	20		20	
J	SS	21	20	22.0%	▽	Same as above, some silt, wet at 24 ft., (SM).
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 2 NOV 90
DATE COMPLETED 2 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED T. Koch CHECKED R. Vogt

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 24.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-05
SHEET NO. 1 OF 1
PROJECT NO. 1870.20
INSTALLATION 11/02/90
SURFACE ELEV. 836.3
BOREHOLE DIA. 9 IN.

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	9	16			SILT, little fine sand, trace gravel, black 10YR 4/1, soft, loose, moist, (Fill).
B	SS	7	20	4.0%	5	Fine to coarse SAND, trace gravel, brown 10YR 5/3, poorly graded, loose, moist, (SP).
C	SS	14	20			Same as above to 7 ft. then grades to sand, fine, yellow brown 10YR 54/, poorly graded, loose, moist, (SP).
D	SS	22	20			
E	SS	25	18		10	Same as above.
F	SS	17	22	3.1%	15	Same as above.
G	SS	20	18			Same as above.
H	SS	19	20			Same as above.
I	SS	24	20		20	Same as above, little silt at 21.5 ft.
J	SS	19	16	21.2%		Same as above, some silt, wet at 23 ft., (SM)
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 2 NOV 90
DATE COMPLETED 2 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED T. Koch CHECKED R. [illegible]

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME ____ DEPTH ____
WATER: DATE/TIME ____ DEPTH ____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-06
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 10/23/90
SURFACE ELEV. 836.2
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	6	24			Black TOPSOIL to 1.0 ft.
						Fine SAND, trace silt, yellow brown 10YR 5/8, poorly graded, loose, moist, (SP).
B	SS	12	18	3.4%		
					5	Same as above, brown 10YR 5/3, trace gravel at 5.0 ft., medium dense, (SP).
C	SS	11	24			Same as above, trace clay, trace gravel, (SP).
D	SS	14	24			Same as above, no clay, no gravel, (SP).
					10	
E	SS	12	18			Same as above, little silt, (SP-SM).
F	SS	20	24	9.0%		
						Same as above, trace silt, (SP).
					15	
G	SS	20	24			
H	SS	23	24			
					20	
I	SS	32	24			Same as above, (SP).
						Same as above, 2" clayey silt layer at 21.0, dense, (SP).
J	SS	24	24	17.6% ▽		
					25	Same as above, grades to fine to medium, wet at 23.5 ft., (SP).
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 23 OCT 90
DATE COMPLETED 23 OCT 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED T. Koch CHECKED R.V.

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.5 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

RMT

PROJECT NAME	NIROP	BORING NO.	CB-07
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	11/07/90
		SURFACE ELEV.	835.2
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	16	20			CLAY and SILT, some fine sand, black 10YR 2/1, soft, nonplastic, moist, (Fill).
						Fine SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
B	SS	47	20	3.3%		
					5	Fine to coarse SAND, trace fine gravel, brown 10YR 5/3, poorly graded, loose, moist, (SP).
C	SS	21	20			Fine SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
D	SS	30	20			Same as above, but little to some silt, slight crossbedding structure, (SP-SM).
					10	
E	SS	43	22			
						Same as above.
F	SS	28	20	7.3%		
						Same as above.
					15	
G	SS	28	21			Same as above.
H	SS	34	21			Same as above, but little silt, (SP).
					20	
I	SS	40	22			
					▽	Same as above.
J	SS	53	21	18.5%		
						Same as above.
					25	
						End of Boring at 25 Ft.

GENERAL NOTES		WATER LEVEL OBSERVATIONS	
DATE STARTED	7 NOV 90	WHILE DRILLING ▽	22.5 Ft.
DATE COMPLETED	7 NOV 90	AT COMPLETION ▼	
RIG	CME-55	AFTER DRILLING	
CREW CHIEF	J. Schauer	CAVE-IN: DATE/TIME	DEPTH
LOGGED R. Vaughn	CHECKED J. Kuch	WATER: DATE/TIME	DEPTH

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-08
SHEET NO. 1 OF 1
PROJECT NO. 1870.20
INSTALLATION 11/07/90
SURFACE ELEV. 835.1
BOREHOLE DIA. 9 IN.

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	44	22			Fine to medium SAND and CLAY, some silt, yellowish brown 10YR 5/6 and black 10YR 2/1, well graded, loose and soft, very slightly plastic, moist, (Fill).
B	SS	21	21	14.7%		Find SAND, little clay, little to some silt, black 10YR 2/1, soft, nonplastic, moist, (SM) (Fill).
					5	
C	SS	41	0			Same as above, but no recovery, outside of spoon indicated.
D	SS	37	22			Fine SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
					10	
E	SS	52	22			Same as above, but little to some silt, slight crossbedding structure, (SP-SM).
F	SS	45	22	4.2%		Same as above.
					15	
G	SS	31	21			Same as above.
H	SS	36	22			Same as above.
					20	
I	SS	42	22			
					▽	Same as above, but some silt, (SP-SM).
J	SS	50	22	15.2%		Same as above, wet.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 7 NOV 90
DATE COMPLETED 7 NOV 90
RIG CME-55
CREW CHIEF J. Schauer
LOGGED R. Vaughn CHECKED T. Kiels

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 22.8 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-09
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 11/05/90
SURFACE ELEV. 835.4
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	55	24			Fine SAND, some SILT and CLAY, trace fine gravel, black 10YR 2/1, loose to soft, nonplastic, dry to moist, (trace concrete) (SC-SM) (Fill).
B	SS	15	22	13.9%		Same as above.
					5	
C	SS	6	5			Same as above, plus 8" of CLAY, yellowish brown 10YR 5/6, soft, plastic, moist, foundry slag, metal shavings, metal bands and nails, (Fill).
D	SS	18	24			Fine to little medium SAND, trace silt, brown 10YR 5/3, poorly graded, loose, moist, (SP).
					10	
E	SS	20	24			Same as above, trace to little silt.
F	SS	21	24	3.6%		Same as above.
					15	
G	SS	34	24			Same as above, but little coarse sand, but still poorly graded.
H	SS	42	24			Same as above, but no coarse sand, little silt.
					20	
I	SS	40	24			
J	SS	30	20	20.4% ▽		Same as above, but little to some silt, slight crossbedding structure, (SP-SM).
						Same as above, wet (SP-SM).
					25	
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 5 NOV 90
DATE COMPLETED 5 NOV 90
RIG CME-55
CREW CHIEF J. Schauer
LOGGED R. Vaughn CHECKED J. Kuel

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.3 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-10
SHEET NO. 1 OF 1
PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 11/02/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 835.6
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	14	20			Fine SAND and SILT and CLAY, trace fine gravel, black 10YR 2/1, loose and soft, nonplastic, dry to moist, (Fill).
B	SS	13	20	3.7%		CLAY, little silt, trace fine sand, yellowish brown 10YR 5/6, soft, plastic, moist, mottled.
					5	Fine SAND, little coarse sand, brown 10YR 5/3, poorly graded, loose, moist, (SP).
C	SS	12	20			Fine to coarse SAND, trace fine gravel, brown 10YR 5/3, poorly graded, loose, moist, (SP).
D	SS	33	22			Same as above, (SW).
					10	
E	SS	34	21			Fine SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
						Same as above, but trace to little medium sand.
F	SS	32	20	3.3%		
						Same as above.
					15	
G	SS	40	24			
						Same as above.
H	SS	56	22			
						Same as above.
					20	
I	SS	49	22			
						Same as above, but trace silt.
J	SS	50	21	19.6%	▽	
						Same as above, but little silt, wet, (SP).
					25	
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 2 NOV 90
DATE COMPLETED 2 NOV 90
RIG CME-55
CREW CHIEF M. Brase
LOGGED R. Vaughn CHECKED J. Kuel

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.9 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-11
SHEET NO. 1 OF 1
PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 11/07/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 835.8
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	20	12			Fine to coarse SAND, some silt, some gravel, brown to black, poorly graded, medium dense, moist, (SP-SM) (Fill). Hit rock at 2 ft.
B	SS	16	16	4.7%		Same as above, grades to trace gravel.
					5	
C	SS	7	18			Fine to coarse SAND, trace silt, trace gravel, brown 10YR 5/3, well graded, loose, moist, (SW).
D	SS	15	18			Same as above.
					10	
E	SS	21	19			Same as above, little silt, 4" silt layer at 11.5 ft.
F	SS	23	16	3.9%		
					15	Mostly fine SAND, little silt, trace coarse sand, trace gravel, brown 10YR 5/3, poorly graded, medium dense, moist, (SP-SM).
G	SS	22	18			Fine SAND, trace silt, brown 10YR 5/3, poorly graded, medium dense, moist, (SP).
H	SS	22	20			
					20	
I	SS	43	20			Same as above.
						Same as above, grades to little silt.
J	SS	17	18			
					25	Same as above, grades to some silt, wet at 23 ft., (SP-SM).
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 7 NOV 90
DATE COMPLETED 7 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED T. Koch CHECKED R. [illegible]

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-12
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 11/05/90
SURFACE ELEV. 835.5
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	15	12			SILT, some clay, trace gravel, brown to black, soft, slightly plastic, mist, (ML) (Fill).
B	SS	33	16			Fine SAND, little gravel, light yellow brown 10YR 6/4, poorly graded, medium dense, moist, (SP) (Fill).
					5	
C	SS	12	16	4.3%		Same as above, some gravel, brick, (SP) (Fill).
D	SS	16	20			Fine to medium SAND, little gravel, brown 10YR 5/3, well graded, loose, moist, (SW).
					10	
E	SS	20	22			Grades to fine sand, poorly graded at 9.5 ft. (SP). Fine SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
F	SS	20	22	2.2%		
					15	Same as above, little gravel, medium dense.
G	SS	25	22			Same as above, grades to trace gravel.
H	SS	29	22			
					20	
I	SS	29	20			Same as above, little silt, medium dense.
J	SS	33	22	21.8%	▽	Same as above, little silt, wet at 23 ft., (SP).
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 5 NOV 90
DATE COMPLETED 5 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED T. Koch CHECKED R.W.

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME	NIROP	BORING NO.	CB-13
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	11/07/90
		SURFACE ELEV.	835.2
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	27	14			Very fine SAND, little silt, trace clay, trace gravel, brown to black, well graded, stiff, nonplastic, moist, (SW-SM) (Fill).
B	SS	7	16	6.1%		Fine to coarse 6" sand, broken glass, same as "A" little clay, (SC) (Fill).
				16.4%	5	
C	SS	8	18			Same as above, grades to 7.5 ft.
D	SS	14	19			Fine SAND, trace silt, brown 10YR 5/3, poorly graded, loose, moist at 7.5 ft., (SP).
					10	
E	SS	23	20			Same as above, (SP). Same as above, medium dense, (SP).
F	SS	17	22	2.8%		Same as above.
					15	
G	SS	39	20			Same as above.
H	SS	30	22			Same as above.
					20	
I	SS	28	22			Same as above.
J	SS	28	22	21.3%	▽	Same as above, some silt, wet at 23 ft., (SM).
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 7 NOV 90

DATE COMPLETED 7 NOV 90

RIG CME-75

CREW CHIEF C. Wilkens

LOGGED T. Koch CHECKED R. [illegible]

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.

AT COMPLETION ▼

AFTER DRILLING

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-14
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 11/09/90
SURFACE ELEV. 834.7
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	62	20			CLAY and SILT, some fine to medium sand, black 10YR 2/1, soft to stiff, nonplastic, moist to dry to 1.0' (Fill).
B	SS	11	20	15.9%		Fine to coarse SAND and fine GRAVEL, yellowish brown 10YR 5/6, well graded, loose, moist to dry to 2.3' (Fill).
					5	CLAY and SILT and fine to medium sand, dark brown 10YR 2/2, soft, poorly graded, plastic, moist, (SC) (Fill).
C	SS	9	20			Same as above, trace fine to medium gravel.
D	SS	20	13			Same as above, poor recovery due to a rock (3").
					10	
E	SS	18	22			Fine SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
F	SS	29	22	6.4%		Same as above, but little silt, (SP-SM).
					15	
G	SS	28	21			Same as above, but little silt.
H	SS	29	20			Same as above, slight crossbedding structure.
					20	
I	SS	43	20			Same as above, but little to some silt (SP-SM).
J	SS	42	23	18.2%	▽	Same as above, wet.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 9 NOV 90
DATE COMPLETED 9 NOV 90
RIG CME-55
CREW CHIEF J. Schauer
LOGGED R. Vaughn CHECKED J. Kuel

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-15
SHEET NO. 1 OF 1
PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 11/5/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 834.7
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	45	24			Fine SAND and SILT and CLAY, trace fine gravel, black 10YR 2/1, loose to stiff, nonplastic, dry to moist, (Fill).
B	SS	31	3			Fine to coarse SAND, and fine gravel, yellowish brown 10YR 5/6, poorly graded, loose, dry, (concrete) (Fill).
					5	Fine to medium SAND, little silt, yellowish brown 10YR 5/6, poorly graded, loose, moist, (SP).
C	SS	18	22	3.6%		Same as above, trace fine gravel, well graded, (SW).
D	SS	24	19			Fine to medium SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
E	SS	34	24		10	Same as above, (SP).
F	SS	59	22	5.4%		Same as above.
					15	Same as above, very uniform.
G	SS	52	24			Same as above, but trace to little silt, slight crossbedding structure at bottom of spoon.
H	SS	51	20			Same as above, but little silt.
I	SS	48	20		20	
J	SS	53	24	19.6%	▽	Same as above, but little to some silt, still slight crossbedding structure, (SP).
						Same as above, no crossbedding structure, wet, (SM).
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 5 NOV 90
DATE COMPLETED 5 NOV 90
RIG CME-55
CREW CHIEF J. Schauer
LOGGED R. Vaughn CHECKED J. Kid

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 22.5 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME	NIROP	BORING NO.	CB-16
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	10/23/90
		SURFACE ELEV.	834.5
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	39	24			Asphalt.
						SAND and fine GRAVEL, yellowish brown 10YR 4/6, well graded, loose, dry, (Fill).
B	SS	17	18	7.0%		
					5	Fine to medium SAND, little silt, dark grayish brown 10YR 4/2, well graded, loose, dry, (slight black discoloring at 4.6') (SW-SM).
C	SS	7	8			Same as above, but trace fine gravel, (Fill).
D	SS	31	24			
					10	
E	SS	49	24			Fine SAND, grayish brown 10YR 5/2, poorly graded, loose, moist (SP).
						Same as above, little silt, very poorly graded, slight laminations, (SP-SM).
F	SS	63	24	6.4%		
						Same as above, becoming more dense.
					15	
G	SS	49	24			
H	SS	60	24			Same as above.
I	SS	54	24	19.9%	▽ 20	Same as above, wet, (SP-SM).
						End of Boring at 22 Ft.
					25	

GENERAL NOTES		WATER LEVEL OBSERVATIONS	
DATE STARTED	23 OCT 90	WHILE DRILLING ▽	20.5 Ft.
DATE COMPLETED	23 OCT 90	AT COMPLETION ▼	
RIG	CME-55	AFTER DRILLING	
CREW CHIEF	M. Brase	CAVE-IN: DATE/TIME	DEPTH
LOGGED R. Vaughn	CHECKED J. Kral	WATER: DATE/TIME	DEPTH

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-17
SHEET NO. 1 OF 1
PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 11/15/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 834.9
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	30	20			ASPHALT to 0.2 ft.
						Fine to coarse SAND and fine GRAVEL, yellowish brown 10YR 5/6, well graded, loose, moist to dry to 1.9 ft., (Fill).
B	SS	20	20	11.4%		SILT, some to little clay, trace fine sand, trace fine gravel, black 10YR 2/1, soft, nonplastic, moist to 4.2 ft, (SM) (Fill).
					5	
C	SS	11	17			Fine to coarse SAND, trace to little fine gravel, brown 10YR 5/3, well graded, loose, moist to dry to 5.5 ft., (SW).
D	SS	21	20			Fine SAND, trace silt, brown 10YR 5/3, poorly graded, loose, moist, (SP).
					10	Same as above.
E	SS	21	20			Same as above.
F	SS	16	18	3.7%		
					15	Same as above, little medium sand.
G	SS	28	13			
H	SS	39	12			Same as above, but three 2" zones of well graded with trace fine gravel.
					20	Fine SAND, trace silt, brown 10YR 5/3, poorly graded, loose, moist, (SP).
I	SS	24	18			Same as above, but little to some silt, (SP-SM).
J	SS	30	22	19.2%		Same as above, but some silt, wet, (SM).
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 15 NOV 90
DATE COMPLETED 15 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED D. Kuch

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 22.4 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-18
SHEET NO. 1 OF 1

PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 11/15/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 834.9
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	26	20			CONCRETE.
						Fine to coarse SAND and fine GRAVEL, yellowish brown 10YR 5/6, well graded, loose, dry to 1.1 ft.
B	SS	18	2	15.4%		CLAY and fine to medium SAND, black 10YR 2/1 and brown 10YR 5/3, poorly graded, loose, stiff, slightly plastic, moist, (SC-SM) (Fill).
					5	Same as above.
C	SS	13	2			
D	SS	23	18			Same as above, poor recovery due to a rock.
E	SS	22	16		10	Fine SAND, trace silt, brown 10YR 5/3, poorly graded, loose, moist, (SP).
						Same as above.
F	SS	23	19	3.0%		
						Same as above.
					15	
G	SS	21	18			Same as above, trace to little silt.
H	SS	45	18			Same as above.
I	SS	26	16		20	
						Same as above, but little to some silt, (SP-SM).
					▽	
J	SS	24	21	22.7%		Same as above, but some silt, wet.
					25	
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 15 NOV 90
DATE COMPLETED 15 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED T. Kirl

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 22.4 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME	NIROP	BORING NO.	CB-19
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	11/05/90
		SURFACE ELEV.	834.9
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	49	16			CONCRETE.
						Fine to coarse SAND, trace gravel, yellow brown 10YR 5/6, well graded, medium dense, moist, (SW) (Fill).
B	SS	10	14	11.5%		
				12.2%	5	Same as above, grades to some silt at 4.0 ft., (SM) (Fill).
C	SS	8	20			Same as above, trace clay, (SC-SM).
D	SS	12	20			Same as above, (Fill).
E	SS	23	22		10	Fine SAND, brown 10YR 5/3, poorly graded, medium dense, moist, (SP).
F	SS	35	20	3.3%		
					15	Fine to coarse SAND, some gravel, trace silt, brown 10YR 5/3, poorly graded, medium dense, moist, (SP).
G	SS	36	22			Same as above but fine, grades to trace gravel.
H	SS	39	20			Fine SAND, trace silt, brown 10YR 5/3, poorly graded, medium dense, moist, (SP).
					20	
I	SS	33	20			Same as above.
J	SS	19	22	21.0%		Same as above, little silt, wet at 22.5 ft., (SP-SM).
					25	End of Boring at 25 Ft.

GENERAL NOTES		WATER LEVEL OBSERVATIONS	
DATE STARTED	5 NOV 90	WHILE DRILLING ▽	22.5 Ft.
DATE COMPLETED	5 NOV 90	AT COMPLETION ▼	
RIG	CME-75	AFTER DRILLING	
CREW CHIEF	C. Wilkens	CAVE-IN: DATE/TIME	DEPTH
LOGGED T. Koch	CHECKED R. Uy	WATER: DATE/TIME	DEPTH

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-20
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 11/05/90
SURFACE ELEV. 835.6
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	15	20			Fine SAND, some silt, little clay, little gravel, brown to black, soft, nonplastic, moist, (SM) (Fill).
B	SS	16	10	10.9%		Same as above, little sand, cardboard, wood, drove extra SS, (Fill).
					5	
C	SS	8	14			Same as above, went through visquene at 7.5 ft.
D	SS	18	18			Alternating 6" layers of silty clay and fine to coarse sand, trace gravel, (Fill).
					10	
E	SS	19	18			Fine to coarse SAND, little silt, brown 10YR 5/3, well graded, medium dense, moist, (SW).
F	SS	35	22	4.4%		Fine SAND, trace silt, brown 10YR 5/3, poorly graded, medium dense, moist, (SP).
					15	
G	SS	31	22			Same as above.
H	SS	25	18			Same as above.
					20	
I	SS	27	16			Same as above, little gravel, trace silt.
J	SS	26	20	21.8%	▽	Same as above, trace silt, wet at 23 ft. (SP).
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 5 NOV 90
DATE COMPLETED 5 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED T. Koch CHECKED R.U.

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-21
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 11/09/90
SURFACE ELEV. 835.7
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	17	16			Fine to coarse SAND, some silt, trace gravel, black to brown, loose, moist, (Fill).
B	SS	13	15	3.8%		Fine SAND, trace silt, very pale brown 10YR 7/3, poorly graded, loose, moist, (SP) (Fill).
					5	
C	SS	22	18			Fine to coarse SAND and GRAVEL, some silt, well graded, loose, moist, (SW) (Fill).
D	SS	17	20			Fine SAND, trace silt, trace gravel, brown 10YR 5/3, poorly graded, loose, moist, (SP).
					10	
E	SS	23	20			Same as above.
F	SS	22	20	3.4%		Same as above.
					15	
G	SS	32	19			Same as above, medium dense.
H	SS	25	20			Same as above.
					20	
I	SS	25	18			Same as above.
J	SS	24	18	19.3%	▽	Same as above, little silt, wet at 23 ft., (SP).
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 9 NOV 90
DATE COMPLETED 9 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED T. Koch CHECKED P.W.

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-22
SHEET NO. 1 OF 1
PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 11/06/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 835.6
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	35	20			CLAY, some silt, little fine to coarse sand, trace fine gravel, black 10YR 2/1, soft, slightly plastic, moist, (Fill).
B	SS	18	22	4.6%		Fine to coarse SAND and fine GRAVEL, yellowish brown 10YR 5/6, well graded, loose, moist, (Fill).
					5	Fine to medium SAND, little silt, brown 10YR 5/3, poorly graded, loose, moist, (SP-SM).
C	SS	13	22			
D	SS	16	22			Same as above, but trace fine graded, little coarse sand, well graded, (SW).
					10	Same as above, trace to little silt.
E	SS	23	18			
						Same as above, but no gravel, no coarse sand, (SP-SM).
F	SS	22	18	4.1%		
					15	Same as above, but trace fine gravel, little coarse sand, poorly graded, (SP-SM).
G	SS	19	22			Same as above.
H	SS	19	18			
					20	Same as above, but less fine gravel, poorly graded, (SP).
I	SS	25	17			
						Same as above, little silt.
J	SS	26	20	15.8%		
					25	Same as above, but trace fine gravel, some coarse sand, poorly graded, (SP-SM).
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 6 NOV 90
DATE COMPLETED 6 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED J. Kuda

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-23
SHEET NO. 1 OF 1
PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 11/06/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 835.0
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	35	18			CONCRETE.
						Fine SAND and GRAVEL, little medium to coarse sand, yellowish brown 10YR 5/6, well graded, dry, (Fill).
B	SS	36	18	9.3%		CLAY and fine to coarse sand, some silt, little fine gravel, black 10YR 2/1 and yellowish brown 10YR 5/6, medium stiff, slightly plastic, well graded, loose, moist, (SC-SM) (Fill).
					5	
C	SS	12	18			
						Same as above.
D	SS	9	16			Same as above.
					10	
E	SS	9	18			
						Fine to medium SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
F	SS	22	22	3.9%		
						Same as above.
					15	
G	SS	18	22			
						Same as above, but trace coarse sand.
H	SS	28	22			
						Same as above, but fine to coarse sand, well graded, (SW).
					20	
I	SS	27	18			
						Same as above, but fine to medium sand, trace silt, poorly graded, (SP).
J	SS	18	19	3.4%	▽	Same as above, fine to coarse sand, trace fine gravel.
					25	
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 6 NOV 90
DATE COMPLETED 6 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED J. Kuel

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.2 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-24
SHEET NO. 1 OF 1
PROJECT NO. 1870.20
INSTALLATION 11/06/90
SURFACE ELEV. 835.5
BOREHOLE DIA. 9 IN.

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	36	22			TOPSOIL, black 10YR 2/1, soft, moist.
						Fine to coarse SAND, trace fine gravel, yellowish brown 10YR 5/6, well graded, loose, moist, (Fill).
B	SS	8	20	12.2%		SILT, and fine to medium SAND, black 10YR 2/1 and yellowish brown 10YR 5/6, soft and loose, slightly plastic, moist, (SM) (Fill).
					5	
C	SS	6	24			Same as above.
D	SS	9	20			Same as above.
					10	
E	SS	16	18			Same as above.
F	SS	23	18	3.7%		Fine to coarse SAND, trace fine gravel, brown 10YR 5/3, poorly graded, loose, moist, (SP).
					15	Same as above.
G	SS	26	16			
H	SS	19	16			Same as above, trace silt.
					20	
I	SS	30	14			Same as above.
J	SS	35	18	21.4%	▽	
						Same as above, little silt, (SP-SM).
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 6 NOV 90
DATE COMPLETED 6 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED J. Kuch

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.2 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-25
SHEET NO. 1 OF 1
PROJECT NO. 1870.20
INSTALLATION 11/06/90
SURFACE ELEV. 835.6
BOREHOLE DIA. 9 IN.

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	16	12			Fine to medium SAND, little clay, little fine gravel, trace silt, black 10YR 2/1 and yellowish brown 10YR 5/6, well graded, soft to loose, moist, (SW) (Fill).
B	SS	9	19	10.0%		Same as above.
					5	
C	SS	16	20			Fine to coarse SAND, trace fine gravel, brown 10YR 5/3, well graded, loose, moist, (SW).
D	SS	15	18			Same as above.
					10	
E	SS	22	16			Same as above, poorly graded, (SP).
F	SS	24	14	3.0%		Same as above.
					15	
G	SS	42	16			Same as above.
H	SS	29	18			Fine SAND, little silt, brown 10YR 5/3, poorly graded, loose, moist, (SP).
					20	
I	SS	38	18			Same as above, but some silt, slight crossbedding structure, (SP-SM).
J	SS	38	18	14.3%		Same as above.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 6 NOV 90
DATE COMPLETED 6 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED T. Kuch

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 22.8 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-26
SHEET NO. 1 OF 1
PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 11/12/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 834.8
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 8.9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	47	22			CLAY, some silt, little fine sand, black 10YR 2/1, soft, slightly plastic, moist to dry, topsoil to 1.1 ft. (Fill).
B	SS	46	21	3.0%		Fine SAND, trace fine gravel, yellowish brown 10YR 5/6, poorly graded, loose, moist, (SP).
					5	Same as above, but 3' to 4' is fine to coarse sand, trace fine gravel, well graded, (SW). 4' to 5' is poorly graded.
C	SS	44	21			Same as above, (SP).
D	SS	32	22			
					10	
E	SS	40	20			Same as above.
F	SS	40	22	3.5%		
					15	
G	SS	57	19			Same as above, trace silt to little silt.
H	SS	53	23			Same as above, to crossbedding structure, (SM).
					20	
I	SS	61	15			
J	SS	62	23	22.4%		Same as above, but little to some silt, no crossbedding structure, (SP-SM). Same as above, wet.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 12 NOV 90
DATE COMPLETED 12 NOV 90
RIG CME-55
CREW CHIEF M. Brase
LOGGED R. Vaughn CHECKED [illegible]

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 22.8 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. CB-27
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 11/12/90
SURFACE ELEV. 835.4
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	27	24			SILT, some clay, little to some fine sand, black 10YR 2/1, soft, nonplastic, moist to dry, trace slag, (Fill).
B	SS	30	18	10.4%		Fine SAND and SILT/CLAY, yellowish brown 10YR 5/6, and black 10YR 2/1, loose, soft, poorly graded, nonplastic to slight plastic, moist, (SM) (Fill).
					5	
C	SS	15	22			
D	SS	26	22			Same as above, but more clay than fine sand, trace gravel.
					10	
E	SS	37	4			Fine SAND, some clay/silt, gray 10YR 4/1, poorly graded, loose, moist, diesel fuel-like odor, poor recovery, (SM).
F	SS	91	14	5.0%		Same as above to 14.2', then 1/4" gray silt layer, possible product layer, fine sand, brown 10YR 5/3, poorly graded, loose, moist, odor (SP-SM).
					15	
G	SS	54	21			
H	SS	88	22			Fine to coarse SAND, trace fine gravel, brown 10YR 5/3, well graded, loose, moist to 17.2' (SW).
					20	
I	SS	71	22			Fine SAND, little silt, brown 10YR 5/3, poorly graded, loose, moist, 1/4" gray silt seam at 17.4' (SP). Same as above, little medium to coarse SAND, trace silt, (SW/SP).
J	SS	58	24	16.3% ▽		Same as above to 24.3'.
					25	Fine SAND, brown 10YR 5/3, poorly graded, loose, wet, (SP).
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 12 NOV 90
DATE COMPLETED 12 NOV 90
RIG CME-55
CREW CHIEF M. Brase
LOGGED R. Vaughn CHECKED J. Kodl

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.3 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME	NIROP	BORING NO.	CB-28
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	11/09/90
		SURFACE ELEV.	835.5
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	31	18			SILT, some gravel, some fine sand, brown to black, medium stiff, slight plastic, moist, (Fill).
B	SS	28	14	3.6%		Fine to coarse SAND and GRAVEL, some silt, brown 10YR 5/3, poorly graded, dense, moist, (SP-SM) (Fill).
					5	
C	SS	15	16		▽	Fine SAND, trace gravel, brown 10YR 5/3, poorly graded, loose, wet, (SP).
D	SS	10	18			Same as above to 9 ft.
E	SS	15	22		10	CLAY, some silt, little gravel, dark gray 10YR 4/1, stiff (qu=1.25) plastic, moist, (CL) (Till). Same as above, trace fine sand.
F	SS	9	24	14.0%		Same as above, some fine sand, (SC).
					15	
G	SS	11	20			Same as above, some fine sand to 17.5 ft.
H	SS	14	24			Grades to fine sand, some silt, brown 10YR 5/3, (SP). Same as above, wet.
I	SS	9	20		20	Same as above, some medium sand, wet.
J	SS	27	20	16.0%		Same as above, medium dense.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 9 NOV 90

DATE COMPLETED 9 NOV 90

RIG CME-75

CREW CHIEF C. Wilkens

LOGGED T. Koch CHECKED R.W.L

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 6.0 Ft.

AT COMPLETION ▼

AFTER DRILLING

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-01
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 10/31/90
SURFACE ELEV. 836.3
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	63	16			SAND and GRAVEL, trace to some silt, orange brown to dark brown, medium dense, moist, (Fill).
B	SS	38	12	15.1%		SILT, some clay, dark brown to orange brown, medium stiff, nonplastic, moist, (Fill).
					5	
C	SS	47	19			Fine SAND, some silt, grading to sand at 6.5'.
D	SS	30	20			Fine to coarse SAND, little gravel, medium dense, well graded, moist, (SW).
					10	
E	SS	17	20			Same as above.
F	SS	20	20	3.2%		Same as above, loose.
						Same as above.
					15	
G	SS	22	20			Fine to medium SAND, yellow brown 10YR 5/4, poorly graded, loose, moist, (SP).
H	SS	18	20			Same as above, 0.1 black organic layer at 19.5 ft.
					20	
I	SS	34	19			Same as above, medium dense.
J	SS	24	20	17.7%	▽	Same as above, grading to gray 10YR 5/1, wet at 23 ft.
					25	
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 31 OCT 90
DATE COMPLETED 31 OCT 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED T. Koch CHECKED R. [illegible]

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-02
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 10/30/90
SURFACE ELEV. 836.1
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	39	24			Fine to medium SAND, little fine gravel, 10YR 5/6, well graded, loose, dry, (concrete, metal) (Fill).
B	SS	17	20	8.0%	5	Fine to coarse SAND, little silt, little fine gravel, 10YR 4/4 dark yellowish brown, well graded, hard to loose, moist, (Fill).
C	SS	26	0			Silty CLAY, cuttings, black, plastic, soft, moist. (Collected sample at D interval)
D	SS	21	18			Fine to coarse SAND, trace fine gravel, yellowish brown 10YR 5/6, well graded, loose, moist, (SW).
E	SS	23	18		10	Same as above.
F	SS	14	24	3.8%		Same as above, but below 14.2' no fine gravel and poorly graded, (SP).
G	SS	11	20		15	Same as above, trace fine gravel, (SP).
H	SS	13	20			Same as above.
I	SS	11	20		20	Same as above.
J	SS	11	20	19.7%	▽	Same as above, wet.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 30 OCT 90
DATE COMPLETED 30 OCT 90
RIG CME-55
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED T. Kach

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

RMT

PROJECT NAME	NIROP	BORING NO.	NB-03
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	10/23/90
		SURFACE ELEV.	835.8
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	93	14			Fine to coarse SAND and GRAVEL, some silt, dark brown 10YR 4/1, medium dense, dry, (Fill).
B	SS	13	18	18.7%		Fine SAND, little to some silt, brown 10YR 5/3, poory graded, loose, moist, (SM).
					5	
C	SS	15	20			Fine to coarse SAND, trace gravel, brown 10YR 5/3, well graded, loose, (SW).
D	SS	16	18			
					10	
E	SS	19	18			Same as above, but poorly graded, (SP).
						Same as above.
F	SS	24	20	3.5%		
						Same as above.
					15	
G	SS	17	17			Same as above.
H	SS	19	18			
					20	
I	SS	17	19			Same as above, but color change at 21.2 ft., gray 10YR 5/1, (SP).
J	SS	6	19	17.4%	▽	
						Same as above, wet.
					25	
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 29 OCT 90

DATE COMPLETED 29 OCT 90

RIG CME-75

CREW CHIEF C. Wilkens

LOGGED T. Koch CHECKED R. [illegible]

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.

AT COMPLETION ▼

AFTER DRILLING

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME	NIROP	BORING NO.	NB-04
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	10/29/90
		SURFACE ELEV.	835.9
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	56	24			Fine to coarse SAND, some fine gravel, yellowish brown 10YR 5/6, well graded, loose, dry, (Fill).
B	SS	24	18	20.1%		CLAY, some silt, little fine medium sand, trace fine gravel, dark yellowish brown 10YR 3/4, soft to stiff, slightly plastic, moist, strong mottling, (Fill).
					5	
C	SS	12	19			Fine to medium SAND, some silt, yellowish brown 10YR 5/6, poorly graded, loose to dense, moist, (SC-SM).
D	SS	36	13			Same as above, but two 3" sandy SILT seams at 7.2' and 7.8'.
E	SS	40	18		10	Same as above, but no silt, fine to coarse SAND, trace to little fine gravel, (SP).
F	SS	19	18	3.6%		Same as above.
					15	Same as above.
G	SS	14	20			Same as above, but one piece of tree, also few pieces of gypsum.
H	SS	14	22			Same as above, no wood.
I	SS	17	22		20	
J	SS	17	22	16.9%		Same as above.
						Same as above, wet.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 29 OCT 90

DATE COMPLETED 29 OCT 90

RIG CME-55

CREW CHIEF M. Brase

LOGGED R. Vaughn CHECKED T. Kel

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 22.8 Ft.

AT COMPLETION ▼

AFTER DRILLING

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME	NIROP	BORING NO.	NB-05
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	10/31/90
		SURFACE ELEV.	835.6
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	12	18			Fine to coarse SAND, and fine gravel, yellowish brown 10YR 5/6, well graded, loose, dry, (Fill).
B	SS	10	18	24.0%		CLAY, little silt, trace fine to medium sand, trace fine gravel, dark brown 10YR 2/2, soft, plastic, moist, (CL).
					5	
C	SS	6	19			Fine SAND, some silt, very pale brown 10YR 7/4, grading from silt to trace fine sand at 7 ft., then to fine to coarse sand, little gravel, brown 10YR 5/3, well graded, loose, moist at 7.5 ft. (SW).
D	SS	17	20			
					10	
E	SS	4	14			Same as above.
						Same as above, little gravel, (SP).
F	SS	14	18	4.2%		
						Same as above.
					15	
G	SS	12	19			Same as above.
H	SS	10	19			
						Same as above.
					20	
I	SS	11	18			Same as above.
J	SS	10	19	18.5%	▽	
						Same as above, wet at 23 ft.
					25	
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 31 OCT 90

DATE COMPLETED 31 OCT 90

RIG CME-55

CREW CHIEF M. Brase

LOGGED R. Vaughn CHECKED J. Kich

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.

AT COMPLETION ▼

AFTER DRILLING

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-06
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 10/26/90
SURFACE ELEV. 835.3
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	24	19			Fine to coarse SAND and GRAVEL, yellowish brown 10YR 5/6, well graded, loose, dry, (Fill).
B	SS		4	15.7%		CLAY, some silt, some fine to coarse sand, some fine gravel, dark brown 10YR 2/3, stiff to soft, nonplastic, moist, (Fill).
					5	Fine to coarse SAND, trace fine gravel, yellowish brown 10YR 5/4, poorly graded, loose, moist, (SP).
C	SS	25	22			Same as above.
D	SS	20	24			Same as above.
E	SS	15	19		10	
F	SS	13	22	4.2%		Same as above.
					15	Same as above, but no trace fine gravel.
G	SS	13	19			
H	SS	12	19			Same as above.
I	SS	15	22		20	Same as above.
J	SS	13	22	19.4%	▽	Same as above.
					25	Same as above, but little silt, color change to gray 10YR 5/1, wet.
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 26 OCT 90
DATE COMPLETED 26 OCT 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED D. Koch

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-07
SHEET NO. 1 OF 1
PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 10/25/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 836.2
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	23	13			SILT, some clay, little gravel, black 10YR 2/1, medium stiff, nonplastic, moist, (Fill).
B	SS	17	14	14.5%		Fine SAND, some silt, little gravel, black 10YR 2/1, medium, dense, moist, (Fill).
					5	
C	SS	11	24			Fine SAND, yellow brown 10YR 5/4, poorly graded, loose, moist, (SP).
D	SS	34	22			Same as above, grading to fine to medium sand, trace silt, trace clay at 3.5 ft.
					10	
E	SS	28	22			Fine to coarse SAND, dark yellow brown 10YR 4/6, well graded, loose, moist, (SW).
F	SS	17	23	4.1%		Fine SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
					15	
G	SS	11	20			Same as above.
H	SS	15	20			Same as above, 0.2 silt layer at 19.5 ft.
					20	
I	SS	16	20			Same as above, trace gravel, 0.1 silt layer at 21.2 ft.
J	SS	15	20	20.0%	▽	Fine to medium SAND, gray 10YR 4/1, poorly graded, loose, wet at 23.0 ft., (SP).
					25	
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 25 OCT 90
DATE COMPLETED 25 OCT 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED T. Koch CHECKED R. Vaughn

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME	NIROP	BORING NO.	NB-08
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	10/25/90
		SURFACE ELEV.	836.0
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	18	12			CLAY, some silt, trace gravel, black 10YR 2/1, soft, dry, (CL) (Fill).
B	SS	10	14	13%		SAND, some silt, little clay, trace gravel, black 10YR 2/1, poorly graded, loose, dry, (SC-SM) (Fill).
					5	
C	SS	9	16			Same as above, little silt, light gray to black, (Fill).
D	SS	24	4			
					10	
E	SS	24	18			Same as above, some silt, some clay, black 10YR 2/1, bits of cloth, and metal, (Fill).
F	SS	12	20	3.8%		Fine to coarse SAND, trace gravel, yellow brown 10YR 5/6, well graded, loose, moist, (SW).
					15	Fine SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
G	SS	10	22			Same as above.
H	SS	9	24			Same as above.
					20	
I	SS	14	18			Same as above, gray 10YR 5/1, 2" silt layer at 20.4 ft.
J	SS	14	20	20.6%	▽	
					25	Same as above, gray, 4" silt layer at 24.0, wet at 23.0 ft.
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 25 OCT 90

DATE COMPLETED 25 OCT 90

RIG CME-75

CREW CHIEF C. Wilkens

LOGGED T. Koch CHECKED R.Ch

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.

AT COMPLETION ▼

AFTER DRILLING

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-09
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 10/25/90
SURFACE ELEV. 835.6
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	44	19			SILT, some fine to coarse sand, little clay, black to brown, stiff, nonplastic, wet, (Fill).
B	SS	35	6	12.0%		Fine to coarse SAND, some silt, little clay, brown 10YR 5/4, well graded, drove 2nd spoon for additional sample, (Fill).
					5	
C	SS	20	20			Same as above to 7.0 ft., grades to.
D	SS	21	18			Fine SAND, trace clay, yellow brown 10YR 5/4, poorly graded, loose, moist, (SP).
					10	
E	SS	21	18			Same as above, trace gravel.
F	SS	16	18	2.7%		Fine to coarse SAND, dark yellow brown 10YR 4/6, well graded, loose, moist, (SW).
					15	Fine SAND, yellow brown 10YR 5/4, poorly graded, loose, moist, (SP).
G	SS	13	18			Same as above.
H	SS	9	17			Fine SAND, trace silt, gray 10YR 5/1, poorly graded, with 2" silt, some clay layer at 19.5 ft.
					20	
I	SS	11	18			Same as above, definite odor.
J	SS	14	18	20.0%		Same as above, wet at 23 ft., definite odor.
					▽ 25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 25 OCT 90
DATE COMPLETED 25 OCT 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED T. Koch CHECKED [illegible]

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 25.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-10
SHEET NO. 1 OF 1
PROJECT NO. 1870.20
INSTALLATION 10/31/90
SURFACE ELEV. 835.2
BOREHOLE DIA. 9 IN.

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	108	18			SAND and GRAVEL, tan to black, dense, poorly graded, moist, (Fill).
B	SS	8	14	42.1%		Very fine SAND, some silt, little clay, black 10YR 2/1, soft, nonplastic, moist, (SM) (Fill).
					5	
C	SS	6	18			Same as above.
D	SS	14	20			Fine to coarse SAND, yellow brown 10YR 5/4, well graded, loose, moist, (SW).
					10	
E	SS	33	20			Same as above, little gravel.
F	SS	23	20	4.5%		Same as above, trace gravel, poorly graded, (SP).
					15	
G	SS	17	18			Same as above.
H	SS	22	18			
					20	
I	SS	25	20			Same as above.
J	SS	12	20	18.1%	▽	Same as above, wet at 23 ft.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 31 OCT 90
DATE COMPLETED 31 OCT 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED T. Koch CHECKED R.Uy

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

RMT

PROJECT NAME	NIROP	BORING NO.	NB-11
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	10/29/90
		SURFACE ELEV.	835.6
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	48	18			SAND and GRAVEL, some silt, black to brown, well graded, medium dense, dry, (SW) (Fill).
B	SS	14	20	11.9%		Fine SAND, little silt, little clay, light brownish gray 10YR 6/2, poorly graded, moist, with orange mottling, (SM).
					5	
C	SS	26	20			Fine to coarse SAND, trace gravel, brown 10YR 5/3, well graded, loose, moist, (SW).
D	SS	18	18			
					10	
E	SS	23	19			Same as above.
F	SS	21	19	3.2%		Same as above, poorly graded, (SP).
					15	
G	SS	15	18			Same as above.
H	SS	14	18			Same as above.
					20	
I	SS	13	18			Fine SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
J	SS	8	18	32.9%	▽	Same as above, wet at 23 ft.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 29 OCT 90

DATE COMPLETED 29 OCT 90

RIG CME-75

CREW CHIEF C. Wilkens

LOGGED T. Koch CHECKED R. [illegible]

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.

AT COMPLETION ▼

AFTER DRILLING

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-12
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 10/29/90
SURFACE ELEV. 835.2
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	49	24			Fine to coarse SAND and fine GRAVEL, yellowish brown 10YR 5/6, well graded, loose, dry, (Fill).
B	SS	27	20	7.7%		CLAY, some silt, some fine to coarse sand, little fine gravel, dark brown 10YR 3/3, stiff to soft, nonplastic, dry to moist, (Fill).
					5	Fine SAND, little silt, yellowish brown 10YR 5/4, poorly graded, loose to stiff, very slightly plastic, moist, very uniform, slight mottling at 6.2', (SP).
C	SS	79	18			
D	SS	38	18			Fine to coarse SAND, little fine gravel, yellowish brown 10YR 5/4, well graded, loose, moist, (SW).
E	SS	29	18		10	Same as above.
F	SS	28	18	2.9%		Same as above, poorly graded, (SP).
					15	Same as above.
G	SS	26	18			Same as above.
H	SS	28	24			Same as above.
I	SS	29	20		20	Same as above, sample contained slight crossbedding, trace silt.
J	SS	17	20	20.0%		Same as above, wet.
					25	End of Boring 25 Ft.

GENERAL NOTES

DATE STARTED 29 OCT 90
DATE COMPLETED 29 OCT 90
RIG CME-55
CREW CHIEF M. Brase
LOGGED R. Vaughn CHECKED J. Kick

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-13
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 10/25/90
SURFACE ELEV. 835.1
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	52	24			Fine to coarse SAND and GRAVEL, yellowish brown 10YR 5/6, well graded, loose and hard, dry, (Fill).
B	SS	15	24	4.6%		CLAY, some silt, some fine to coarse sand, some fine gravel, dark brown 10YR 3/3, hard/stiff, nonplastic, moist, (Fill).
					5	Fine to medium SAND, yellowish brown 10YR 5/4, well graded, loose, moist, (Fill).
C	SS	12	24			
						CLAY, some silt, some fine to coarse sand, some fine gravel, black 10YR 2/1, soft, nonplastic, moist, trace slag, (Fill).
D	SS	7	24			
					10	Fine to medium SAND, trace silt, yellowish brown 10YR 5/4, poorly graded, loose, moist, (SP).
E	SS	42	24			Same as above, but trace fine gravel.
						Same as above, but little coarse sand.
F	SS	57	14	2.8%		
					15	Same as above.
G	SS	27	22			
						Same as above.
H	SS	31	24			
					20	
I	SS	32	22			Same as above.
					▽	Same as above.
J	SS	25	22	18.3%		
						Same as above.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 25 OCT 90
DATE COMPLETED 25 OCT 90
RIG CME-55
CREW CHIEF M. Brase
LOGGED R. Vaughn CHECKED J. Kuel

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 22.6 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-14
SHEET NO. 1 OF 1
PROJECT NO. 1870.20
INSTALLATION 10/24/90
SURFACE ELEV. 834.8
BOREHOLE DIA. 9 IN.

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	28	14			Fine to coarse SAND, some silt, trace clay, trace gravel, black 10YR 2/1, well graded, loose, dry, (Fill).
B	SS	7	18	15.3%		Fine SAND, sone silt, trace clay, trace gravel, brown 10YR 5/3, well graded, loose, moist, with orange mottling, (Fill).
					5	
C	SS	5	24			Same as above, grades to trace silt, brown 10YR 5/3, poorly graded at 7.0 ft., (SP).
D	SS	10	24			Same as above, (SP).
					10	
E	SS	12	20			Fine SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
F	SS	8	20	8.7%		Same as above, trace silt, trace clay at 15.0 ft., (SP-SM).
					15	
G	SS	12	24			Same as above, trace silt, trace clay at 17.5 ft.
H	SS	12	24			Same as above, grading to medium at 19.5 ft.
					20	
I	SS	21	16			Same as above, fine.
J	SS	12	24	18.2%		Same as above, wet at 23 ft.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 24 OCT 90
DATE COMPLETED 24 OCT 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED T. Koch CHECKED R. [illegible]

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME DEPTH
WATER: DATE/TIME DEPTH

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-15
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 10/31/90
SURFACE ELEV. 836.4
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	25	17			Fine to coarse SAND and fine GRAVEL, yellowish brown 10YR 5/6, well graded, loose, dry, (Fill).
B	SS	16	17	27.5%		CLAY, little silt, little fine to coarse sand and fine gravel, dark brown 10YR 3/3, soft to stiff, slightly plastic, moist, (Fill).
					5	SAND, little silt, black 10YR 2/1, soft, nonplastic, moist, (SM).
C	SS	13	18			Fine to medium SAND, little silt, dark yellowish brown 10YR 4/6, poorly graded, loose to hard, moist, (SP).
D	SS	24	17			Fine SAND, pale brown 10YR 6/3, very poorly graded, loose, moist, very uniform, (SP).
					10	Same as above.
E	SS	22	17			
F	SS	28	17	3.6%		
					15	Same as above.
G	SS	11	17			Same as above.
H	SS	12	18			Same as above.
					20	
I	SS	13	20			Same as above.
J	SS	12	20	19.9%	▽	Same as above, wet.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 31 OCT 90
DATE COMPLETED 31 OCT 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED J. Kuh

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.2 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-16
SHEET NO. 1 OF 1
PROJECT NO. 1870.20
INSTALLATION 10/25/90
SURFACE ELEV. 834.9
BOREHOLE DIA. 9 IN.

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	54	24			Fine to coarse SAND and GRAVEL, yellowish brown 10YR 5/6, well graded, loose and hard, dry, (Fill).
B	SS	17	24	17.9%		CLAY, some silt, some sand and fine gravel, dark brown 10YR 3/5, stiff, nonplastic, moist.
					5	Same as above, but trace medium gravel, dark yellowish brown 10YR 4/6, trace mottling, (Fill).
C	SS	8	22			Fine to medium SAND, yellowish brown 10YR 5/4, poorly graded, loose, moist, trace silt intervals, (SP).
D	SS	18	24			
E	SS	14	24		10	Same as above, but less silt.
						Same as above.
F	SS	15	24	4.9%		
					15	Same as above.
G	SS	13	24			
H	SS	19	24			Same as above.
I	SS	19	22		20	Same as above, but a 2" silty sand seam at 19.1 ft.
					▽	Same as above.
J	SS	18	24	18.7%		
					25	SAND, like above but 10YR 4/1 gray, wet.
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 25 OCT 90
DATE COMPLETED 25 OCT 90
RIG CME-55
CREW CHIEF M. Brase
LOGGED R. Vaughn CHECKED J. Kiel

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 22.6 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-17
SHEET NO. 1 OF 1
PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 10/24/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 835.2
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	60	19			SAND and GRAVEL, yellowish brown 10YR 5/8, well graded, loose, dry, (Fill).
B	SS	15	16	11.4%		Fine to medium SAND, some silt, black 10YR 2/1, well graded, loose, hard, dry to moist.
					5	Same as above, sample wet at 4.9', (Fill).
C	SS	18	22			CLAY, little silt, trace fine sand, dark grayish brown 10YR 4/2, soft, plastic, moist, moderately mottled, (CL).
D	SS	42	22			
E	SS	43	22		10	Fine to medium SAND, yellowish brown 10YR 5/4, poorly graded, loose, moist, (SP).
						Same as above, medium dense.
						Same as above.
F	SS	31	22	3.7%		
					15	Same as above.
G	SS	36	22			Same as above.
H	SS	40	24			Same as above.
I	SS	41	24		20	Same as above.
J	SS	49	24	19.2% ▽		
						Same as above, but change to gray 10YR 4/1, wet.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 24 OCT 90
DATE COMPLETED 24 OCT 90
RIG CME-55
CREW CHIEF M. Brase
LOGGED R. Vaughn CHECKED J. Koch

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.5 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME	NIROP	BORING NO.	NB-18
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	10/24/90
		SURFACE ELEV.	835.3
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	133	14	12.7%		Fine to coarse SAND, some silt, trace gravel, dark brown 10YR 3/3, well graded, medium dense, moist, (SW) (Fill).
B	SS	17	20		5	Fine SAND, little silt, light gray 10YR 7/1, poorly graded, moist, with orange mottling, (SP).
C	SS	20	24			Fine SAND, trace gravel, yellow brown 10YR 5/4, poorly graded, moist, (SP).
D	SS	16	17			
E	SS	21	20		10	Same as above, fine to coarse, trace gravel, well graded, moist, (SW).
						Same as above.
F	SS	13	24	5.3%		
					15	Same as above, grading to fine at 14.5 ft., poorly graded, (SP).
G	SS	14	22			Fine SAND, brown 10YR 5/3, poorly graded, loose, moist, (SP).
H	SS	9	24			
I	SS	17	24		20	Same as above.
J	SS	19	24	20.5% ▽		
					25	Same as above, trace silt, grading to gray 10YR 5/1 at 24 ft., wet at 23.5 ft.
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 24 OCT 90

DATE COMPLETED 24 OCT 90

RIG CME-75

CREW CHIEF C. Wilkens

LOGGED T. Koch CHECKED R. [illegible]

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.5 Ft.

AT COMPLETION ▼

AFTER DRILLING

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-19
SHEET NO. 1 OF 1

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

PROJECT NO. 1870.20
INSTALLATION 10/26/90
SURFACE ELEV. 834.9
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	21	22			Fine to medium SAND, dark gray 10YR 4/1, poorly graded, loose, hard, wet, (Fill).
B	SS	12	22	8.7%		CLAY, some silt, little fine to coarse sand, and fine gravel, dark brown 10YR 3/3, stiff, moist, (Fill).
					5	Fine to medium SAND, trace fine gravel, yellowish brown 10YR 3/3, poorly graded, loose, moist, (SP).
C	SS	17	22			
D	SS	17	22			Same as above.
E	SS	17	22		10	Same as above, but some coarse sand, little fine gravel and well graded, (SW).
						Same as above, but no fine gravel, (SW).
F	SS	22	22	3.9%		
					15	Same as above, but trace fine gravel, poorly graded (SP).
G	SS	19	22			
H	SS	23	22			Same as above.
					20	Same as above, but below 19.2' changes to poorly graded, no fine gravel, little coarse sand, (SP).
I	SS	24	22			
					▽	Same as above (SP).
J	SS	12	19	18.0%		
					25	Same as above, but little silt, wet.
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 26 OCT 90
DATE COMPLETED 26 OCT 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED J. Kuch

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 22.8 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME	NIROP	BORING NO.	NB-20
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	10/31/90
		SURFACE ELEV.	835.4
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	49	21			Fine to coarse SAND and fine GRAVEL, yellowish brown 10YR 5/6, well graded, loose, dry, (Fill).
B	SS	21	20	15.1%		CLAY, some silt, little fine to coarse sand and fine gravel, dark brown 10YR 2/2, stiff, moist, trace slag, (Fill) (SC).
					5	
C	SS	9	20			Same as above, 2 silty SAND seams (3") at 7.4' and 7.8', (Fill).
D	SS	18	18			Fine to coarse SAND, trace fine gravel, brown 10YR 5/3, well graded, loose, moist, (SW).
					10	
E	SS	11	20			Same as above.
F	SS	34	19	4.4%		Same as above, poorly graded, (SP).
					15	
G	SS	26	20			Same as above, but less fine gravel.
H	SS	25	20			Same as above.
					20	
I	SS	27	20			Same as above.
J	SS	24	20	20.2%	▽	Same as above, but trace wood, wet.
					25	End of Boring at 25 Ft.

GENERAL NOTES		WATER LEVEL OBSERVATIONS	
DATE STARTED	31 OCT 90	WHILE DRILLING ▽	23.2 Ft.
DATE COMPLETED	31 OCT 90	AT COMPLETION ▼	
RIG	CME-55	AFTER DRILLING	
CREW CHIEF	J. Schauer	CAVE-IN: DATE/TIME	DEPTH
LOGGED R. Vaughn	CHECKED T. Kuel	WATER: DATE/TIME	DEPTH

LOG OF TEST BORING

F-203 (R 01-87)

RMT

PROJECT NAME	NIROP	BORING NO.	NB-21
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	10/29/90
		SURFACE ELEV.	836.0
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	N/A				CONCRETE.
B	SS	19	20	19.5%		Fine to coarse SAND, some silt, little clay, brown to gray, loose, dry, (Fill).
					5	
C	SS	12	14			Same as above, hit large solid metal object at 8.0 ft. (refusal), moved boring 8.0 ft. NW, continued sampling at 8.0 ft.
D	SS	21	20			Fine SAND, grading to fine to coarse at 9.0 ft., trace gravel, brown 10YR 5/3, well graded, loose, moist, (SW).
					10	
E	SS	16	20			Same as above, poorly graded, (SP).
F	SS	22	18	3.8%		Same as above.
					15	
G	SS	13	20			Same as above.
H	SS	15	19			
					20	
I	SS	19	20			Same as above.
J	SS	17	19	18.5%	▽	Same as above, wet at 23 ft.
					25	End of Boring at 25 Ft.

GENERAL NOTES		WATER LEVEL OBSERVATIONS	
DATE STARTED	29 OCT 90	WHILE DRILLING ▽	23.0 Ft.
DATE COMPLETED	29 OCT 90	AT COMPLETION ▼	
RIG	CME-75	AFTER DRILLING	
CREW CHIEF	C. Wilkens	CAVE-IN: DATE/TIME	DEPTH
LOGGED T. Koch	CHECKED	WATER: DATE/TIME	DEPTH

LOG OF TEST BORING

F-203 (R 01-87)

RMT

PROJECT NAME	NIROP	BORING NO.	NB-22
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	11/01/90
		SURFACE ELEV.	835.0
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	57	18			Fine to coarse SAND and fine GRAVEL, yellowish brown 10YR 5/6, well graded, loose, dry, (Fill).
						CLAY, some silt, little fine to coarse sand and fine gravel, dark brown 10YR 2/2, soft, moist, (Fill).
B	SS	16	18	10.7%		
					5	Fine to coarse SAND, some silt, trace fine gravel, brown 10YR 5/3, well graded, loose, moist, (SM).
C	SS	30	18			
D	SS	17	17			Same as above, no silt.
					10	
E	SS	32	18			Same as above, but increase in grain size from 10.8' to 11.3', then same as above.
F	SS	17	17	4.3%		
					15	Same as above, but fine to medium SAND, poorly graded, (SP).
G	SS	17	18			
H	SS	20	18			Fine to coarse SAND, well graded, (SW).
					20	
I	SS	25	18			Same as above, but fine to medium SAND, poorly graded, (SP).
J	SS	19	17	20.1%	▽	Same as above, but fine to coarse SAND, wet.
						Same as above, but fine to coarse SAND, wet.
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 1 NOV 90

DATE COMPLETED 1 NOV 90

RIG CME-75

CREW CHIEF C. Wilkens

LOGGED R. Vaughn CHECKED D. Kuck

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.0 Ft.

AT COMPLETION ▼

AFTER DRILLING

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. NB-23
SHEET NO. 1 OF 2
PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 10/30/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 835.5
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	18	20			Top soil, grass roots, leave litter.
						Fine to medium SAND, trace fine gravel, some silt, very dark brown 10YR 2/2, poorly graded, loose, moist.
B	SS	8	19	2.9%		
					5	Fine to medium SAND, brownish yellow 10YR 6/6, poorly, graded, loose, moist, (SP).
C	SS	8	19			Same as above, little coarse sand, yellowish brown 10YR 5/6.
D	SS	17	19			
					10	
E	SS	20	19			Same as above, trace fine gravel.
F	SS	16	19	5.4%		
					15	Same as above, parts are well graded, mostly poorly graded, (SP).
G	SS	26	18			Same as above, (SP).
H	SS	18	18			
					20	
I	SS	29	18			Same as above.
J	SS	27	18	3.4%		
						Same as above.
					25	
K	SS	18	20			

GENERAL NOTES

DATE STARTED 30 OCT 90
DATE COMPLETED 30 OCT 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED T. Kuh

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 34.0 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME	NIROP	BORING NO.	NB-23
LOCATION	Fridley, MN	SHEET NO.	2 OF 2
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	10/30/90
		SURFACE ELEV.	835.5
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
L	SS	34	24			Same as above.
M	SS	31	18		30	Same as above.
N	SS	47	3	12.1%		Same as above.
						Same as above, but little fine gravel, wet. 2nd attempt = 0.6' recovery.
					35	End of Boring at 35 Ft.
					40	
					45	
					50	
					55	

LOG OF TEST BORING

F-203 (R 01-87)

RMT

PROJECT NAME	NIROP	BORING NO.	SB-01
LOCATION	Fridley, MN	SHEET NO.	1 OF 1
CONTRACTOR	Bergerson Caswell	PROJECT NO.	1870.20
DRILLING METHOD	HSA 4 1/4"	INSTALLATION	11/08/90
		SURFACE ELEV.	835.5
		BOREHOLE DIA.	9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	35	19			CONCRETE.
						Fine to coarse SAND, fine gravel, little clay, yellowish brown 10YR 5/6, well graded, loose, parts plastic, moist, (Fill).
B	SS	9	19	6.6%		
						Same as above, some silt, but trace clay, (SM).
					5	
C	SS	22	19			
						Same as above, but some clay to 7.1'.
D	SS	25	20			Fine to coarse SAND, trace fine gravel, brown 10YR 5/3, well graded, loose, moist to 7.6', grading to fine to medium sand, brown 10YR 5/3, poorly graded, loose, moist, (SP).
					10	
E	SS	24	21			Same as above, but trace silt, little orange mottling.
						Same as above, but well graded from 10.3' to 11.1' (SP).
F	SS	17	22	2.9%		
					15	
G	SS	20	20			
						Same as above, but trace to little silt, two 1" silt seams at 17.2' and 16.6 ft.
H	SS	13	21			Same as above, but little silt.
					20	
I	SS	26	22			
J	SS	22	14	20.8% ▽		
						Same as above, wet, little to some silt, (SP-SM).
					25	
						End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 8 NOV 90

DATE COMPLETED 8 NOV 90

RIG CME-75

CREW CHIEF C. Wilkens

LOGGED R. Vaughn CHECKED J. Kral

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.6 Ft.

AT COMPLETION ▼

AFTER DRILLING

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. SB-02
SHEET NO. 1 OF 1
PROJECT NAME NIROP
PROJECT NO. 1870.20
LOCATION Fridley, MN
INSTALLATION 11/08/90
CONTRACTOR Bergerson Caswell
SURFACE ELEV. 835.5
DRILLING METHOD HSA 4 1/4"
BOREHOLE DIA. 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	23	17			Topsoil, silty CLAY, to 1.1'. CINDERS and silty CLAY, some fine to coarse sand, dark yellowish brown 10YR 4/2, soft, plastic, moist to 3.2', (Fill).
B	SS	13	20	8.7%	5	Fine to coarse SAND, little clay and silt, trace fine gravel, yellowish brown 10YR 5/6, well graded, loose, moist to 6.3', (SC-SM).
C	SS	26	19			Fine to medium SAND, trace fine gravel, brown 10YR 5/3, poorly graded, loose, moist, 2" silty sand at 6.8' (SP).
D	SS	30	20			
E	SS	33	19		10	Same as above, trace to little silt.
						Same as above, few orange mottling seams.
F	SS	31	19	4.8%	15	
G	SS	32	20			Same as above, 2" silty sand seam at 16.8'.
H	SS	34	19			Same as above, but less orange mottling odors.
I	SS	42	19		20	
						Same as above, 3" sand silt seam at 21.1'.
J	SS	32	17	20.1% ▽		Same as above, wet, (SP-SM).
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 8 NOV 90
DATE COMPLETED 8 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED J. Kel

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 23.4 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME: NIROP
LOCATION: Fridley, MN
CONTRACTOR: Bergerson Caswell
DRILLING METHOD: HSA 4 1/4"

BORING NO.: SB-03
SHEET NO. 1 OF 1
PROJECT NO.: 1870.20
INSTALLATION: 11/08/90
SURFACE ELEV.: 835.8
BOREHOLE DIA.: 9 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	24	21			Topsoil, silty CLAY, trace fine gravel to 1', (Fill).
B	SS	13	20	17.9%		CINDERS, some silt and clay, black 10YR 2/1, loose, nonplastic, mosit to 3.1', (Fill).
					5	CLAY, trace little silt, trace fine gravel, trace fine to coarse sand, dark grayish brown 10YR 5/2, soft to stiff, plastic, moist, (CL).
C	SS	35	18			Fine to coarse SAND, little fine gravel, dark yellowish brown 10YR 4/6, well graded, loose, moist to 7.3', grading to fine to medium sand, brown 10YR 5/3, poorly graded, loose, moist, (SP).
D	SS	26	19			Same as above, but trace to little silt.
E	SS	26	18		10	
						Same as above, little silt, (SP-SM).
F	SS	27	18	5.4%		
					15	Same as above, but little reddish orange mottling.
G	SS	30	19			Same as above, but little silt, no mottling.
H	SS	33	19			Same as above, but 2" sand seam at 19.6', orange mottling.
I	SS	42	19		20	
						Same as above.
J	SS	37	19	19.5%		
						Same as above, little to some silt, wet, (SP-SM)
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED: 8 NOV 90
DATE COMPLETED: 8 NOV 90
RIG: CME-75
CREW CHIEF: C. Wilkens
LOGGED: R. Vaughn CHECKED: J. Kral

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. SB-04
SHEET NO. 1 OF 1
PROJECT NO. 1870.20
INSTALLATION 11/08/90
SURFACE ELEV. 834.9
BOREHOLE DIA. 9 IN.

PROJECT NAME NIROP
LOCATION Fridley, MN
CONTRACTOR Bergerson Caswell
DRILLING METHOD HSA 4 1/4"

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY		MOISTURE		
NO.	TYPE	N	IN		DEPTH	
A	SS	33	3			CONCRETE.
						Wood railroad tie to 1.2, (Fill).
B	SS	16	24	17.8%		CLAY, little silt, little fine to medium sand, gray 10YR 5/1, soft, plastic, moist to 2.5', (Fill).
					5	CLAY, little silt, little fine to coarse sand, trace fine gravel, dark grayish brown 10YR 4/2, soft to stiff, plastic, moist, (CL).
C	SS	12	21			
D	SS	35	22			Fine to coarse SAND, trace to little fine gravel, brown 10YR 5/3, well graded, loose, moist, (SW).
E	SS	15	15		10	Fine to medium SAND, trave fine gravel, brown 10YR 5/3, poorly graded, loose, moist, (SP).
F	SS	18	18	33%		Same as above, but trace silt.
					15	
G	SS	22	21			Same as above, trace to little silt, little orange mottling with slight crossbedding structure.
H	SS	22	22			
I	SS	18	22		20	Same as above, slight stronger mottling after 21.3', little silt.
					▽	
J	SS	18	21	13.5%		Same as above, wet, (SP-SM).
					25	End of Boring at 25 Ft.

GENERAL NOTES

DATE STARTED 8 NOV 90
DATE COMPLETED 8 NOV 90
RIG CME-75
CREW CHIEF C. Wilkens
LOGGED R. Vaughn CHECKED C. Kral

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 22.5 Ft.
AT COMPLETION ▼
AFTER DRILLING
CAVE-IN: DATE/TIME _____ DEPTH _____
WATER: DATE/TIME _____ DEPTH _____

APPENDIX E

CHAIN-OF-CUSTODY RECORDS

RMT INC LABORATORIES
Madison, WI 53717
744 Heartland Trail
Phone (608) 831-4444
FAX (608) 831-7530
Washington, D.C. | Santa Monica, CA | Grand Ledge, MI | Nashville, TN | Greenville, SC | Schaumburg, IL

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other) **№ 020364**

Bottles Prepared by: T. Koch
Date/Time: 10/2/90 6:00 Am
Office Code: (State) WI

Project No.: 1870.40
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	Container Inventory: 40 ML Vial	1-Liter Plastic	1-Liter Glass Amber						Comments:
						Filtered (Yes/No)	NO	YES	NO				
						Preserved (Code)	E	B	A				
						Refrigerated (Yes/No)	Y	Y	Y				
56488	10/2	10:56	M15S	6	3	1	2						
56489	10/2	1:02	M01I	4	3	1	—						
56490	10/2	3:26	M10D	4	3	1	—						
56491	10/2	4:43	M05PC	4	3	1	—						
56492	10/2	—	QCT01	3	3	—	—						
56493	10/2	5:47	QCF01	6	3	1	2						

Code: A - None
B - HNO3
C - H_2SO_4
D - NaOH
E - HCL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch, Ronald H. Vaughn	10/2/90, 10-2-90	② Federal Express, Shipper Name & # 174 333 63350	10/2/90 7:00 pm
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/3/90 10:00	Received by (Sig.) ⑥ Shipper Name & # 10/18/90 MJC	Date/Time 10/3/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good Receipt pH Good
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by ◯ Recvd. intact by ◯ Seal # at'chd by ◯ Recvd. intact by ◯

LABORATORIES INC
Madison, WI 53717
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Grand Ledge, MI
Nashville, TN
Greenville, SC
Schaumburg, IL

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020359

Bottles Prepared by: Thomas Koch
Date/Time: 10/3/90 6:30P
Office Code: (State) WI
Project No.: 1870.40
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40 ML VIAL	1 Liter Plastic	1 Liter Amber Glass					Comments:
Filtered (Yes/No)					NO	YES	NO					
Preserved (Code)					E	B	A					
Refrigerated (Yes/No)					YES	YES	YES					
56527	10/3	4:50	MOIS	6	3	1	2					
56528	10/3	—	QCD01	6	3	1	2					
56529	10/3	4:50	QCF02	6	3	1	2					

Code: A - None
B - HNO3
C - H_2SO_4
D - NaOH
E - HCL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Koch	10/3/90 6:40P	② Federal Express Shipper Name & # 7568502761 0	10/3/90 6:45P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/4/90 10:00	Received by (Sig.) ⑥ Shipper Name & #	Date/Time 10/4/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp OK Receipt pH OK
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by Recvd. intact by Seal # at'chd by Recvd. intact by

RMT INC LABORATORIES

Madison, WI 53717
744 Heartland Trail
Phone (608) 831-4444
FAX (608) 831-7530

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F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other) — Nº 020360

Bottles Prepared by: T. Koch — Date/Time 10/3/90 6:00P — Office Code: (State) WI

Project No. 1870.40 — Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40 ML VIAL	1 Liter PLASTIC	1 Liter Amber Glass							Comments:
					NC	YES	NO							Filtered (Yes/No)
					E	B	A							Preserved (Code)
					YES	YES	YES							Refrigerated (Yes/No)
56552	10/3	10:09	M13S	4	3	1	Ø							
56553	10/3	10:12	M14S	4	3	1	Ø							
56554	10/3	11:30	M12S	4	3	1	Ø							
56555	10/3	11:51	M23S	4	3	1	Ø							
56556	10/3	2:02	M13D	4	3	1	Ø							
56557	10/3	2:20	M25S	4	3	1	Ø							
56558	10/3	3:29	MØ1D	4	3	1	Ø							
56559	10/3	—	QCTØ2	3	3	Ø	Ø							

Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - HCL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Koch, Richard C. Sahl, Ronald H. Van	10/3/90 6:15P	② Fedral Express — Shipper Name & # 7568507610	10/3/90 6:20
③		④ Shipper Name & #	
⑤ Fed Ex	10/4/90 10:00	⑥ Luis A Ruiz — Shipper Name & # MAC 10/15/90	10/4/90 10:00

Seal # ___ at'chd by ◯ Recvd. intact by ◯ Seal # ___ at'chd by ◯ Recvd. intact by ◯

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good — Receipt pH good
Client P.O. Number ___
Subsequent Analysis: ___ (Check)
Date Resubmitted ___

RMT INC LABORATORIES

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F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020370

Bottles Prepared by: Thomas E Koch
Date/Time: 10/4/90
Office Code: (State) WI

Project No.: 1874.40
Client: NIROP

Filtered (Yes/No): NO YES NO
Preserved (Code): E B A
Refrigerated (Yes/No): YES YES YES

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - HCL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40ML VIA	1-liter Plastic	1-liter Amberglass					Comments:
56599	10/4	1:30P	M04S	6	3	1	2					
56600	10/4	2:14P	M08D	4	3	1	0					SPLIT VOCs w/MPCA
56601	10/4	4:15P	M04I	4	3	1	0					Split VOCs w/MPCA
56602	10/4	5:47P	M07D	4	3	1	0					
56603	10/4	5:40P	M17S	4	3	1	0					
56604	10/4	4:45P	M18S	6	3	1	2					SPLIT VOCs w/MPCA

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E Koch, Donald W. Lloyd, Gary Troyer, Richard J. Hulka	TK 10/4 10/4/90 6:40P	② Federal Express Shipper Name & # 7568527643	10/4 ~7:45P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/5/90 10:25	Received by (Sig.) ⑥ Matt Lahr Shipper Name & #	Date/Time 10/5/90 10:25

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH good
Client P.O. Number _____
Subsequent Analysis: _____ (Check)
Date Resubmitted _____

Seal # at'chd by ◯ Recvd. intact by ◯ Seal # at'chd by ◯ Recvd. intact by ◯

RMT INC LABORATORIES

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744 Heartland Trail
Phone (608) 831-4444
FAX (608) 831-7530

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F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020369

Bottles Prepared by: Thomas Koch
Date/Time: 10/4/90
Office Code: (State) WI

Project No.: 1870.40
Client: NIROP

Filtered (Yes/No): NO / YES / NO
Preserved (Code): E / B / A
Refrigerated (Yes/No): YES / YES / YES

Code: A - None; B - HNO_3; C - H_2SO_4; D - NaOH; E - HCL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40ml Vial	1-Liter Plastic	1-Liter Amber Glass						Comments:
56606	10/4	9:30A	M21S	6	3	1	2						
56607	10/4	9:42A	M02I	6	3	1	2						
56608	10/4	11:50A	M03D	4	3	1	0						
56609	10/4	11:41A	M03PC	4	3	1	0						
56610	10/4	—	QCT03	3	3	0	0						
56611	10/4	11:MA	QCF03	6	3	1	2						
56612	10/4	—	QCD02	4	3	1	0						

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Koch, Richard Stephan, Ronald Wiley, Dale Jones	10/4/90 6:10P	② Federal Express; Shipper Name & # 7568527643	10/4/90 ~7:15P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/5/90 16:30	Received by (Sig.) ⑥ Matthew Shipper Name & #	Date/Time 10/5/90 16:30

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH good
Client P.O. Number _____
Subsequent Analysis: _____ (Check)

Seal # ____ at'chd by ◯ Recvd. intact by ◯ Seal # ____ at'chd by ◯ Recvd. intact by ◯

Date Resubmitted _____

ME

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Greenville, SC
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F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020367

Bottles Prepared by: R. VAUGHN
Date/Time: 10-5-90 / 7:30A
Office Code: (State) WI

Project No.: 1870.40
Client: NIROP

Filtered (Yes/No): N Y N
Preserved (Code): E B A
Refrigerated (Yes/No): Y Y Y

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - HCl

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40ml VIAL	1000ml PLASTIC	1000ml AMBER							Comments:
56656	10-5	11:26A	M09D	4	3	1	—							
56657	10-5	3:15P	AT02	4	3	1	—							
56658	10-5	1:43P	M06D	4	3	1	—							
56659	10-5	—	QCD03	4	3	1	—							
56660	10-5	2:40P	M11S	4	3	1	—							

Container Inventory: R. Vaughn 10-5-90

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Robert J. [illegible] Gunar Porus (RCG)	10-5-90 6:30P	② FEDERAL EXPRESS Shipper Name & # 7568527621	10-5-90 6:30P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ [illegible]	Date/Time 10/8/90 10:30	Received by (Sig.) ⑥ Shipper Name & # [illegible]	Date/Time 10/8/90 10:00A

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp _____ Receipt pH _____
Client P.O. Number _____
Subsequent Analysis: _____ (Check)
Date Resubmitted _____

Seal # ___ at'chd by ___ Recvd. intact by ___ Seal # ___ at'chd by ___ Recvd. intact by ___

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R

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, Soil, Other)

№ 020366

Bottles Prepared by: R. Vaughn
Date/Time: 10-5-90 7:30A
Office Code: (State) WI

Project No.: 187040
Client: NIROP

Filtered (Yes/No): N Y N
Preserved (Code): E B A
Refrigerated (Yes/No): Y Y Y

Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - HCl

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40ml VIAL	1000ml PLASTIC	1000ml AMBER					Comments:
56661	10-5	11:00A	MZ4S	6	3	1	2					organics
56662	10-5	9:52A	MI9S	4	3	1	—					metals
56663	10-5	11:15A	QCF04	6	3	1	2					VOA
56664	10-5	—	QCT04	3	3	—	—					

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Richard C. Graham Guam Porus (RCG)	10-5-90 6:30P	② FEDERAL EXPRESS Shipper Name & # 7568527621	10-5-90 6:30P
Relinquished by (Sig.) ③ Fed	10/6/90 10:00	Received by (Sig.) ④ Walk in cooler Shipper Name & #	10/6/90 10:00
Relinquished by (Sig.) ⑤ Fed Ex Walk in cooler	10/8/90 9:00	Received by (Sig.) ⑥ Shipper Name & #	10/8/90 9:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp: Receipt pH:
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by Recvd. intact by Seal # at'chd by Recvd. intact by

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F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other) **№ 009950**

Bottles Prepared by: Thomas Koch
Date/Time: 10/8/90 3:00P
Office Code: (State) WI

Project No.: 1870.40
Client: NIROP

Filtered (Yes/No): NO YES NO
Preserved (Code): E B A
Refrigerated (Yes/No): YES YES YES

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - HCL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40ML VOA	1L PLASTIC	1L AMBER GLASS					Comments
56786	10/8	8:55A	MØSS	4	3	1	Ø					
56787	10/8	9:57A	MØ4PC	4	3	1	Ø					
56788	10/8	10:15A	MØ4D	4	3	1	Ø					
56789	10/8	11:25A	MØ6S	11	6	1	4					INCLUDES MS/MSD
56790	10/8	—	QCDØ4	4	3	1	Ø					
—	10/8	—	QCTØ5	4	3	1	Ø					R. Vaught 10-8-90
56791	10/8	11:1ØA	MIØS	4	3	1	Ø					
56792	10/8	—	QCTØ5	3	3	Ø	Ø					

SAMPLER

Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Koch, Richard Vaught	10/8/90 6:30P	② Federal Express, Shipper Name & # 7568527650	10/9/90 6:15P
③		④ Shipper Name & #	
⑤ Fed Ex	10/9/90 10:00	⑥ Shipper Name & #	10/9/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good Receipt pH Good
Client P.O. Number
Subsequent Analysis. (Check)
Date Resubmitted

Seal # at chd by Recvd. intact by Seal # at'chd by Recvd. intact by

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F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other) — (GW)

№ 009954

Bottles Prepared by: Thomas E. Koch — Date/Time 10/8/90 8:30 AM 10/9/90 6:15P — Office Code: (State) WI

Project No.: 1870.40

Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40ML VIAL	1-Liter Plastic	1-Liter Amber Glass					Comments:
Filtered (Yes/No)					NO	YES	NO					
Preserved (Code)					E	B	A					
Refrigerated (Yes/No)					YES	YES	YES					
56793	10/8	1:20P	AT03	4	3	1	0					Metals / ~~[illegible]~~ / VOA H2O / org Prep H2O
56794	10/8	3:45P	M02S	4	3	1	0					
56795	10/8	4:09P	M02D	4	3	1	0					
56796	10/8	2:45P	QCF05	6	3	1	2					

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - HCL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch, Ronald H. [illegible], Richard J. [illegible]	10/8/90 6:00P	② FEDERAL EXPRESS Shipper Name & # 7568527680	
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/9/90 11:00	Received by (Sig.) ⑥ Shipper Name & # [illegible]	Date/Time 10/9/90 [illegible]

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good — Receipt pH Good
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # — at'chd by — Recvd. Intact by — Seal # — at'chd by — Recvd. Intact by

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Cooler 1 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type (GW, WW, SW, Soil, Other) — № 020361

Bottles Prepared by: Thomas E. Koch — Date/Time 10/9/90 — Office Code: (State) WI

Project No. 1870.40 — Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40 ml Vial	1-Liter Plastic	1 Liter Amber Glass							
					NO	NO	NO							Filtered (Yes/No)
					E	B	A							Preserved (Code)
					YES	YES	YES							Refrigerated (Yes/No)
56814	10/9	9:41A	M07S	4	3	1	0							
56815	10/9	10:30A	M05D	4	3	1	0							
56816	10/9	12:00P	M03I	4	3	1	0							
56817	10/9	12:40P	M20S	4	3	1	0							
56818	10/9	2:55P	M16S	4	3	1	0							
56819	10/9	4:10P	M11D	4	3	1	0							
56820	10/9	—	QCT06	3	3	0	0							
56821	10/9	5:01P	QCF06	6	3	1	2							

Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - HCL

Comments:

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch (signature) Richard L. Graham	10/9/90 6:30P	② Federal Express Shipper Name & # 7568 5287676	10/9/90 7:00P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/10/90 10:30	Received by (Sig.) ⑥ Shipper Name & #	Date/Time 10/10/90 10:30

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good — Receipt pH Good
Client P.O. Number
Subsequent Analysis: (Check)

Seal # — at'chd by — Recvd. intact by — Seal # — at'chd by — Recvd. intact by — Date Resubmitted

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COOLER 20 P2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, Soil, Other)

№ 020362

Bottles Prepared by: Thomas E. Koch
Date/Time 10/9/90 6:30P
Office Code: (State) WI

Project No. 1870.40
Client: NIROP

Filtered (Yes/No): NO / YES / NO
Preserved (Code): E / B / A
Refrigerated (Yes/No): YES / YES / YES

Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - HCL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40ml VIAL	1-Liter PLASTIC	1-Liter Glass Amber						Comments:
56812	10/9	—	QCD05	4	3	1	0						
	~~10/9~~	~~5:01P~~	~~QCF06~~	~~6~~	~~3~~	~~1~~	~~2~~		TCK 10/9/90				
56813	10/9	4:50P	M035	11	6	1	4						ms/msD

SAMPLER

Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch, Richard L. [illegible]	10/9/90 6:40P	② Federal Express Shipper Name & # 7568527676	10/9/90 7:00P
③		④ Shipper Name & #	
⑤ Fed Ex	10:30 10/10/90	⑥ [illegible] Shipper Name & #	10/10/90 10:30

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good Receipt pH Good
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by ◯ Recvd. intact by ◯ Seal # at'chd by ◯ Recvd. Intact by ◯

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Cooler 1 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, Soil, Other)

№ 009955

Bottles Prepared by: Thomas E. Koch
Date/Time: 10/10/90
Office Code: (State) WI

Project No.: 1870.40
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40 mL Vial	1-liter Plastic	1-liter Amber Glass							Comments:
Filtered (Yes/No)					NO	YES	NO							
Preserved (Code)					E	B	A							
Refrigerated (Yes/No)					YES	YES	YES							
56892	10/10	0915A	M08S	6	3	1	2							
56893	10/10	1005A	M12D	4	3	1	0							
56894	10/10	945A	QCF07	6	3	1	2							
56895	10/10	1219P	M22S	4	3	1	0							
56896	10/10	1:13P	M05I	4	3	1	0							
56897	10/10	—	QCT07	3	3	0	0							

Code: A - None
B - HNO_3
C - H_2SO_4
D - NaOH
E - HCL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Richard C. Graham, Ronald N. Day, Thomas E. Koch	10/11/90	② Richard C. Graham; ~~Federal Express~~ Shipper Name & # ~~7568527694~~ TCK 10/11/90	10/11/90
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Richard C. Graham	Date/Time 10/11/90 1:10P	Received by (Sig.) ⑥ Shipper Name & #	Date/Time 10/11/90 1:00 pm

Seal # at'chd by ◯ Recvd. intact by ◯ Seal # at'chd by ◯ Recvd. intact by ◯

HAZARDS ASSOCIATED WITH SAMPLES

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Receipt Temp Good Receipt pH Good
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

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Cooler 2 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020215

Bottles Prepared by: Thomas Ekoch
Date/Time: 10/10/90
Office Code: (State) WI

Project No.: 1870.40
Client: NIROP

Container Inventory: 40 ml VOA | 1-liter PLASTIC | 1-liter Amber glass

Filtered (Yes/No): NO | YES | NO
Preserved (Code): E | B | A
Refrigerated (Yes/No): YES | NO | YES

Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - HCL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40 ml VOA	1-liter PLASTIC	1-liter Amber glass						Comments:
56898	10/10	3:14P	MØ9S	4	3	1	Ø						
56899	10/10	3:55P	~~MT9F~~ ATØ1	4	3	1	Ø						
56900	10/10	2:34P	M14D	4	3	1	Ø						
56901	10/10	6:40P	FMC33	4	3	1	Ø						
56902	10/10	6:40P	~~MØ2PC~~ MØ2PC	4	3	1	Ø						
56903	10/10	9:02P	MØ1PC	4	3	1	Ø						

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Ronald H. Koch, Richard L. Sroka, Thomas Ekoch	10/10/90	② Richard L. Sroka — Shipper Name & #	10/10/90
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ — Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Richard L. Sroka	Date/Time 10.11.90 1:10P	Received by (Sig.) ⑥ Matt Ch — Shipper Name & #	Date/Time 10/11/90 1:10 pm

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp 5.0°C
Receipt pH 5.0
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # | at'chd by ◯ | Recvd. intact by ◯ | Seal # | at'chd by ◯ | Recvd. intact by ◯

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F-268 (R2/88)
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Cooler 1 of 3

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, Soil, Other)

№ 020962

Bottles Prepared by: Thomas E. Koch
Date/Time: 10/23/90
Office Code: (State) WI

Project No. 1870.20
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40 ml Vials	1-Liter Amber Glass	1-Liter Plastic	1-Liter Plastic				Comments:
Filtered (Yes/No)					NO	NO	NO	NO				
Preserved (Code)					E	A	B	D				
Refrigerated (Yes/No)					YES	YES	YES	YES				
50215	10/23	11:02A	SRC01	9	3	4	1	1				Source Water Sample
50216	10/23	—	QCT51	3	3	0	0	0				Trip Blank

Code: A - None
B - HNO3
C - H_2SO_4
D - NaOH
E - HCL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch	10/23/90 7:15P	② Federal Express Shipper Name & # 7433361456	10/23/90 7:20P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Federal Express	Date/Time 10/24/90 10:15	Received by (Sig.) ⑥ Matt [illegible] Shipper Name & #	Date/Time 10/24/90 1015

Seal # at'chd by ◯ Recvd. intact by ◯ Seal # at'chd by ◯ Recvd. Intact by ◯

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good Receipt pH
Client P.O. Number
Subsequent Analysis:
Date Resubmitted

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Cooler 2 of 3

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020963

Bottles Prepared by: Thomas E. Koch
Date/Time: 10/23/90
Office Code: (State) WI

Project No.: 187020
Client: NIROP

Filtered (Yes/No): NO NO
Preserved (Code): NO NO
Refrigerated (Yes/No): Yes Yes

Code: A - None, B - HNO3, C - H_2SO4, D - NaOH, E - _____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	Container Inventory: 120 mL VIALS	250 mL GLASS						Comments:
57217	10/23		CB06E	7	2	5						HNU = 8.0
57218	10/23		CB06G	3	2	1						HNU = 3.0
57219	10/23		CB06C	3	2	1						HNU = 3.6
	10/23		QCD51 TRK 10/23	7	2	5						

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch	10/23/90 7:15P	② Federal Express Shipper Name & # 7433361456	10/23/90 7:20
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/24/90 1015	Received by (Sig.) ⑥ [illegible] Shipper Name & #	Date/Time 10/24/90 1015

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH good
Client P.O. Number _____
Subsequent Analysis: _____ (Check)
Date Resubmitted _____

Seal # ____ at'chd by ◯ Recvd. intact by ◯ Seal # ____ at'chd by ◯ Recvd. intact by ◯

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Cooler 3 of 3

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020964

Bottles Prepared by: [illegible] | Date/Time: 10/23/90 | Office Code: (State) WI

Project No.: 187020 | Client: NIROP

Container Inventory: 120 mL VIAL | 250 mL GLASS

Filtered (Yes/No): NO/NO | NO/NO

Preserved (Code): | Refrigerated (Yes/No): YES/YES

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - _____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL VIAL	250 mL GLASS						Comments:
57220	10/23		QCD51	7	2	5						+
57221	10/23		CB16I	3	2	1						HNU = 42
57222	10/23		CB16A	2	0	2						HNU = 0.8
57223	10/23		CB16G	7	2	5						HNU = 100
57224	10/23		CB16E	3	2	1						HNU = 19.4

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① [illegible]	10/23/90 7:00 p	② Federal Express Shipper Name & # 7433361456	10/23/90 7:20 p
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/24/90 10:15	Received by (Sig.) ⑥ [illegible] Shipper Name & #	Date/Time 10/24/90 10:15

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)

Receipt Temp Good | Receipt pH Good

Client P.O. Number _____

Subsequent Analysis: _____ (Check)

Date Resubmitted _____

Seal # | at'chd by ◯ | Recvd. intact by ◯ | Seal # | at'chd by ◯ | Recvd. intact by ◯

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Cooler 1 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, (Soil), Other RDL 10-24-90

№ 020965

Bottles Prepared by: T. Koch
Date/Time: 10/24/90 11:40A
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID		Total Number Of Containers	120 ml Vial	250 ml Bottles		40 ml Vial	1-liter Plastic	1-liter Brown Plastic	1-liter Amber Glass	Comments
			Container Inventory										
			Filtered (Yes/No)			No	No		No	No	No	No	
			Preserved (Code)			No	No		RE	B	D	A	
			Refrigerated (Yes/No)			Yes	Yes		Yes	Yes	Yes	Yes	
57242	10/24		QCT52	W	3	Ø	Ø		3	Ø	Ø	Ø	TRIP BLANK
57243	10/24		QCRS1	W	10	Ø	Ø		3	1	1	5	RINSATE
57244	10/24		NB17G	S	7	2	5		Ø	Ø	Ø	Ø	HNU = 141
57245	10/24		NB17C	S	3	2	1		Ø	Ø	Ø	Ø	HNU = 138
57246	10/24		NB17E	S	3	2	1		Ø	Ø	Ø	Ø	HNU = 98

Code: A - None
B - HNO_3
C - H_2SO_4
D - NaOH
E - HCl

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas H. Koch	10/24 630	② Federal Express Shipper Name & # 7433361390	10/24 700P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/25/90 9:45	Received by (Sig.) ⑥ Matt Shipper Name & #	Date/Time 10/25/90 9:45

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH good
Client P.O. Number _____
Subsequent Analysis: _____ (Check)
Date Resubmitted _____

Seal # at'chd by ◯ Recvd. intact by ◯ Seal # at'chd by ◯ Recvd. intact by ◯

RMT INC LABORATORIES

F-268 (R2/88)
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Cooler 2 of 2

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020966

Bottles Prepared by: T. Koch
Date/Time: 10/24/90 11:40A
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Filtered (Yes/No): NO NO
Preserved (Code): NO NO
Refrigerated (Yes/No): YES YES

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - _____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 ml VIAL	250 ml GLASS						Comments:
57247	10/24		NB14A · S	7	2	5						HNU = 4.8
57248	10/24		QCD52 · S	7	2	5						QC DUPLICATE
57249	10/24		NB14C · S	3	2	1						HNU = 1.4
57250	10/24		NB14I · S	3	2	1						HNU = 0.8
57251	10/24		QCD53 · S	3	2	1						
57252	10/24		NB18C · S	3	2	1						HNU = 8.0
57253	10/24		NB18G · S	3	2	1						HNU = 0.2
57254	10/24		~~0TEK~~ NB18I · S	7	2	5						HNU = 11.8

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Koch	10/24 5:30P	② Federal Express Shipper Name & # 7433361390	10/24 6:00P
③		④ Shipper Name & #	
⑤ Fed Ex	10/25/90 9:45	⑥ [illegible] Shipper Name & #	10/25/90 9:45

Seal # at'chd by Recvd. intact by Seal # at'chd by Recvd. intact by

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH good
Client P.O. Number _____
Subsequent Analysis: _____ (Check)
Date Resubmitted _____

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Cooler 1 of 3

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, Soil, Other) 020962

Bottles Prepared by: Thomas E. Koch | Date/Time 10/23/90 | Office Code: (State) WI

Project No. 1870.20 | Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40 mL Vials	1-Liter Amber Glass	1-Liter Plastic	1-Liter Plastic				Comments:
Filtered (Yes/No)					NO	NO	NO	NO				
Preserved (Code)					E	A	B	D				
Refrigerated (Yes/No)					YES	YES	YES	YES				
57215	10/23	11:02A	SRC01	9	3	4	1	1				Source Water Sample
57216	10/23	—	QCT51	3	3	0	0	0				TRIP BLANK

Code: A = None, B = HNO_3, C = H_2SO_4, D = NaOH, E = HCL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E Koch	10/23/90 7:15P	② Federal Express Shipper Name & # 7433316456	10/23/90 7:20P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Federal Express	Date/Time 10/24/90 10:15	Received by (Sig.) ⑥ Shipper Name & #	Date/Time 10/24/90 10:15

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp 3.0 | Receipt pH 7.0
Client P.O. Number
Subsequent Analysis: (Check)

Seal # at'chd by Recvd. Intact by | Seal # at'chd by Recvd. Intact by | Date Resubmitted

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Cooler 2 of 3

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

020963

Bottles Prepared by: Thomas E. Koch
Date/Time: 10/23/90
Office Code: (State) WI

Project No.: 187020
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL VIALS	250 mL GLASS						Comments:
Filtered (Yes/No)					NO	NO						
Preserved (Code)					NO	NO						
Refrigerated (Yes/No)					YES	YES						
57217	10/23		CB06E	7	2	5						HNU = 8.0
57218	10/23		CB06G	3	2	1						HNU = 3.0
[illegible]	10/23		CB06C	3	2	1						HNU = 3.6
	10/23		QCD51 TK 10/23	7	2	5						

Code: A = None, B = HNO3, C = H_2SO_4, D = NaOH, E = _____

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E Koch	10/23/90 7:15P	② Federal Express Shipper Name & # 7433 36456	10/23/90 7:20
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ F-J Ex	Date/Time 10/24/90 10:15	Received by (Sig.) ⑥ [illegible] Shipper Name & #	Date/Time 10/24/90 10:15

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp [illegible] Receipt pH [illegible]
Client P.O. Number _____
Subsequent Analysis: _____ (Check)
Date Resubmitted _____

Seal # ___ at'chd by ___ Recvd. Intact by ___ Seal # ___ at'chd by ___ Recvd. Intact by ___

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COOLER 3 of 3

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

NO 020964

Bottles Prepared by: Thomas E Kral
Date/Time: 10/23/90
Office Code: (State) WI

Project No.: 187020
Client: NIROP

Container Inventory: 120 mL VIAL, 250 mL Glass
Filtered (Yes/No): NO, NO
Preserved (Code): NO, NO
Refrigerated (Yes/No): YES, YES

Code: A = None, B = HNO3, C = H_2SO_4, D = NaOH, E = _____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL VIAL	250 mL Glass							Comments:
57220	10/23		QCD51	7	2	5							+
57221	10/23		CB16I	3	2	1							HNU = 42
57222	10/23		CB16A	2	0	2							HNU = 0.8
57223	10/23		CB16G	7	2	5							HNU = 100
57224	10/23		CB16E	3	2	1							HNU = 19.4

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E Kral, Ronald N. Vogel	10/23/90 7:00 p	② Federal Express, Shipper Name & # 7433361456	10/23/90 7:20 p
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/24/90 1015	Received by (Sig.) ⑥ Ward Lab, Shipper Name & #	Date/Time 10/24/90 1015

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp 2.0°C Receipt pH N.A.
Client P.O. Number _____
Subsequent Analysis: _____ (Check)

Seal # _____ at'chd by ( ) Recvd. Intact by ( ) Seal # _____ at'chd by ( ) Recvd. Intact by ( )

Date Resubmitted _____

RMT INC LABORATORIES

F-268 (R2/88)
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Cooler 1 of 2

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, (Soil), Other RUSH 10-24-90 NO 020965

Bottles Prepared by: T. Koch
Date/Time: 10/24/90 11:40P
Office Code: (State) WI
Project No.: 1870.20
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40 ml Vial	250 ml Glass		40 ml Vial	1-litre Plastic	1-litre Brown Plastic	1-litre Amber Glass	Comments:
Filtered (Yes/No)					NO	NO		NO	NO	NO	NO	
Preserved (Code)					NO	NO		A E	B	D	A	
Refrigerated (Yes/No)					YES	YES		YES	YES	YES	YES	
57242	10/24		QCT52	3	Ø	Ø		3	Ø	Ø	Ø	TRIP BLANK
57243	10/24		QCR51	10	Ø	Ø		3	1	1	5	RINSATE
57244	10/24		NB17G	7	2	5		Ø	Ø	Ø	Ø	HNU = 141
57245	10/24		NB17C	3	2	1		Ø	Ø	Ø	Ø	HNU = 138
57246	10/24		NB17E	3	2	1		Ø	Ø	Ø	Ø	HNU = 98

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - HCl

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Koch	10/24 630	② Federal Express Shipper Name & # 7433361390	10/24 700P
③		④ Shipper Name & #	
⑤ Fed Ex	10/25/90 945	⑥ Matt Shipper Name & #	10/25/90 945

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH good
Client P.O. Number
Subsequent Analysis: (Check)

Seal # at'chd by Recvd. Intact by Seal # at'chd by Recvd. Intact by Date Resubmitted

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Cooler 2 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other) 020966

Bottles Prepared by: T. Koch
Date/Time: 10/24/96 11:96A
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Container Inventory: 120 ml Vial; 250 ml Glass
Filtered (Yes/No): NO NO
Preserved (Code): NO NO
Refrigerated (Yes/No): YES YES

Code: A - None; B - HNO_3; C - H_2SO_4; D - NaOH; E -

RMT Lab NO.	Yr. 96 Date	Time	Sample Station ID	Total Number Of Containers	120 ml Vial	250 ml Glass						Comments:
57247	10/24		NB14A	7	2	5						HNU = 4.8
57248	10/24		QCD52	7	2	5						QC DUPLICATE
57249	10/24		NB14C	3	2	1						HNU = 1.4
57250	10/24		NB14I	3	2	1						HNU = 0.8
57251	10/24		QCD53	3	2	1						
57252	10/24		NB18C	3	2	1						HNU = 8.0
57253	10/24		NB18G	3	2	1						HNU = 0.2
57254	10/24		~~QTR~~ NB18I	7	2	5						HNU = 11.8

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Koch	10/24 5:30P	② Federal Express Shipper Name & # 7433361390	10/24 6:00P
③		④ Shipper Name & #	
⑤ Fed Ex	10/25/96 9:45	⑥ Shipper Name & #	10/25/96 9:45

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp: cool
Receipt pH: cool
Client P.O. Number
Subsequent Analysis: (Check)

Seal # at'chd by Recvd. intact by
Seal # at'chd by Recvd. intact by
Date Resubmitted

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Cooler 1 of 3

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, (Soil) Other)

№ 020945

Bottles Prepared by: T. Koch
Date/Time: 10/25/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 ML VIAL (Filtered NO, Preserved A, Refrigerated YES)	250 ML GLASS (Filtered NO, Preserved A, Refrigerated YES)		40 ML VIAL (Filtered NO, Preserved E, Refrigerated YES)	1-Liter Plastic (Filtered NO, Preserved B, Refrigerated YES)	1-Liter Glass (Filtered NO, Preserved D, Refrigerated YES)		Comments
57295	10/25		QCT53	3	0	0		3	0	0		TRIP BLANK VOA WATER
57296	10/25		QCR52	5	0	0		3	1	1		RINSATE BLANK UDP GW METAL VOA WATER
57297	10/25		NB08C	7	2	5		0	0	0		HNU = 300 VOA SOIL ORG SOIL
57298	10/25		NB08G	3	2	1		0	0	0		HNU = 100
57299	10/25		NB08I	3	2	1		0	0	0		HNU = 210
57300	10/25		NB07I	7	2	5		0	0	0		HNU = 210
57301	10/25		NB07G	3	2	1		0	0	0		HNU = 70
57302	10/25		NB07C	3	2	1		0	0	0		HNU = 150

Filtered (Yes/No)
Preserved (Code)
Refrigerated (Yes/No)

Code: A - None
B - HNO3
C - H_2SO_4
D - NaOH
E - HCL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thoms Koch	10/25/90 6:45	② Federal Express Shipper Name & # 7433361401	10/25/90 7:00
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/26/90 MAL 10/25/90 10:00	Received by (Sig.) ⑥ Matt Shipper Name & #	Date/Time 10/26/90 MAL 10/25/90 10:50

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good
Receipt pH Good
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by ◯ Recvd. intact by ◯ Seal # at'chd by ◯ Recvd. Intact by ◯

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Cooler 2 of 3

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020944

Bottles Prepared by: Tom Koch
Date/Time: 10/25/90
Office Code: (State) WI
Project No.: 1870.20
Client: NIROP

Filtered (Yes/No): NO NO
Preserved (Code): A A
Refrigerated (Yes/No): YES YES

Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - ____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	100 ML VIAL	250 ML GLASS						Comments:
57303	10/25		NB09I	7	2	5						HNU = 210 ORG SOIL
57304	10/25		NB09C	3	2	1						HNU = 180 VOA SOIL
57305	10/25		NB09G	3	2	1						HNU = 60
57306	10/25		QC055	3	2	1						QC Duplicate
57307	10/25		NB13A	7	2	5						HNU = 240
57308	10/25		NB13C	3	2	1						HNU = 62
57309	10/25		NB13E	3	2	1						HNU = 30

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Kyle, Ronald H. Vaughn	10/25/90 630P 615P TRK	② Federal Express, Shipper Name & # 7433361401	10/25/90 715P 700P TRK
Relinquished by (Sig.) ③	Date/Time 10/	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/25/90 MAC 10/26/90 10:00	Received by (Sig.) ⑥ Matthew Shipper Name & #	Date/Time 10/25/90 10:00 10/26/90 MAC

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp: good
Receipt pH: good
Client P.O. Number: ____
Subsequent Analysis: ____ (Check)
Date Resubmitted: ____

Seal # ____ at'chd by ◯ Recvd. intact by ◯ Seal # ____ at'chd by ◯ Recvd. intact by ◯

ME

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Cooler 3 of 3

F-268 (R2/88)
Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020946

Bottles Prepared by: T. Koch
Date/Time: 10/25/90 5:34
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Container Inventory: 40 ml VIAL, 250 ml GLASS

Filtered (Yes/No): No, No
Preserved (Code): A, A
Refrigerated (Yes/No): Yes, Yes

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - ____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40 ml VIAL	250 ml GLASS						Comments:
57310	10/25		NB16A	3	2	1						HNU = 176 ORG SOILS
~~5732~~	10/25		NB16C	7	2	5						HNU = 280 UOA SOIL
57312	10/25		NB16F	3	2	1						HNU = 280 ↓
57313	10/25		QC054	3	2	1						Puplicate ↓

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Koch, Ronald N. Vogel	10/25/90 6:15P	② Federal Express, Shipper Name & # 7433361401	10/26/90 7:00AM
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④, Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/26/90 mc 10/25/90 10:00	Received by (Sig.) ⑥ Matt Ch, Shipper Name & #	Date/Time 10/26/90 mc 10/25/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH good
Client P.O. Number ____
Subsequent Analysis: ____ (Check)
Date Resubmitted ____

Seal # [redacted] at'chd by [redacted] Recvd. intact by [redacted] Seal # [redacted] at'chd by [redacted] Recvd. intact by [redacted]

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Cooler 1 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, (Soil) Other)

№ 020947

Bottles Prepared by: T. Koch
Date/Time: 10/26/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Filtered (Yes/No): NO NO NO NO NO
Preserved (Code): A A E B D
Refrigerated (Yes/No): YES YES YES YES YES

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - HCL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 ML VIAL	250 ML GLASS		40 ML VIAL	1 Liter Plastic	1 Liter Brown Plastic		Comments:
57334	10/26		QCT54	3	0	0		3	0	0		TRIP BLANK
57335	10/26		NB06G	7	2	5		0	0	0		HNU = 240
57336	10/26		NB06E	3	2	1		0	0	0		HNU = 36
57337	10/26		NB06I	3	2	1		0	0	0		HNU = 118
57338	10/26		QCD56	3	2	1		0	0	0		QC Duplicate
57339	10/26		QCR53	5	0	0		3	1	1		RINSATE BLANK

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① [signature]	10/26/90 4:00p	② Federal Express Shipper Name & # 7433361412	10/26/90 4:15p
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥ [signature] Shipper Name & #	Date/Time 10/27/90 11:00

Seal # at'chd by ◯ Recvd. intact by ◯ Seal # at'chd by ◯ Recvd. intact by ◯

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good Receipt pH
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

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Cooler 2 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020948

Bottles Prepared by: T. Koch
Date/Time: 10/26/90
Office Code: (State) WI

Project No.: 1870.2P
Client: NIROP

Filtered (Yes/No): NO NO
Preserved (Code): A A
Refrigerated (Yes/No): YES YES

Container Inventory: 100 ML VIAL / 250 ML GLASS

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - ____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	100 ML VIAL	250 ML GLASS						Comments:
57340	10/26		NB19I	7	2	5						HNU = 64
57341	10/26		NB19G	3	2	1						HNU = 28
57342	10/26		NB19C	3	2	1						HNU = 42
												Leach Fridge / org soil Gst. Fridge
												Soil VOA Fridge /

SAMPLER

Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas J. Koch / Ronald H. Vogt	10/26/90 4:00P	② Federal Express Shipper Name & # 7433361412	10/26/90 4:15P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥ Shipper Name & #	Date/Time 10/27/90 11:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good Receipt pH ____
Client P.O. Number ____
Subsequent Analysis: ____ (Check)
Date Resubmitted ____

Seal # [redacted] at'chd by [redacted] Recvd. Intact by [redacted] Seal # [redacted] at'chd by [redacted] Recvd. Intact by [redacted]

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Coder 1 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020952

Bottles Prepared by: T. Koch
Date/Time: 10/29/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Filtered (Yes/No): NO NO NO
Preserved (Code): A A E
Refrigerated (Yes/No): YES YES YES

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - HCL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	150 ml VIAL	250 ml GLASS		40 ml VIAL				Comments:
57404	10/29		QCT55	3	0	0		3				TRIP BLANK
57405	10/29		NB04G	7	2	5		0				HNU=63
57406	10/29		NB04C	3	2	1		0				HNU=57 No VOA
57407	10/29	1040	~~NB04E~~ NB04I	3	2	1		0				HNU=29 Org Prep Soil
57408	10/29		NB11I	7	2	5		0				HNU=45
57409	10/29		NB11E	3	2	1		0				HNU=35
57410	10/29		NB11G	3	2	1		0				HNU=34
57411	10/29		NB21E	3	2	1		0				HNU=36
57412	10/29		NB21I	3	2	1		0				HNU=47

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① [signature]	10/29/90 1630P	② Federal Express Shipper Name & # 7730988226	10/29 7:00P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/30/90 10:30	Received by (Sig.) ⑥ [signature] Shipper Name & #	Date/Time 10/30/90 10:30

Seal # at'chd by ◯ Recvd. intact by ◯ Seal # at'chd by ◯ Recvd. intact by ◯

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good Receipt pH Good
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

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Cooler 2 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020953

Bottles Prepared by: T. Koch
Date/Time: 10-29-90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Filtered (Yes/No): NO NO
Preserved (Code): A A
Refrigerated (Yes/No): YES YES

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - ____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL Vial	250 mL Glass						Comments:
57413	10/29		NB03C	7	2	5						HNU = 154
57414	10/29		NB03I	3	2	1						HNU = 77
57415	10/29		NB03E	3	2	1						HNU = 67
57416	10/29		NB12G	7	2	5						HNU = 14.6
57417	10/29		NB12I	3	2	1						HNU = 14.4
57418	10/29		NB12C	3	2	1						HNU = 14.0
57419	10/29		NB21C	7	2	5						HNU = 84

SAMPLER

Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch / Ronald N. Vogel	10/29/90 6:30P	② Federal Express Shipper Name & # 7730988226	10/30/90 7:00A
③		④ Shipper Name & #	
⑤ Fed Ex	10/30/90 10:30	⑥ Mead Cal Shipper Name & #	10/30 10:30

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH good
Client P.O. Number ____
Subsequent Analysis: ____ (Check)
Date Resubmitted ____

Seal # ____ at'chd by ◯ Recvd. intact by ◯ Seal # ____ at'chd by ◯ Recvd. intact by ◯

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Cooler 1 of 1

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, (Soil) Other)

№ 020955

Bottles Prepared by: T. Koch
Date/Time: 10/30/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Filtered (Yes/No): NO NO NO NO NO
Preserved (Code): E
Refrigerated (Yes/No): YES YES YES

Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - HCL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL Vial	250 mL Glass		40 mL Vial				Comments:	
57514	10/30		QCT56 (gw)	3	0	0		3				TRIP BLANK	(w)
57515	10/30		NB23A	7	2	5		0				HNU = 2.6	(S)
57516	10/30		NB23K	3	2	1		0				HNU = 0.3	(S)
57517	10/30		NB23M	3	2	1		0				HNU = 0.2	(S)
57518	10/30		QCD57	3	2	1		0				QC Duplicate	(S)
57519	10/30		NB02I	7	2	5		0				HNU = 27	(S)
57520	10/30		NB02E	3	2	1		0				HNU = 15.4	(S)
57521	10/30		NB02G	3	2	1		0				HNU = 21	(S)
												VOA, ORG	

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① [signature] Ronald N. [signature]	10/30/90 5:30P	② Federal Express Shipper Name & # 743336121	10/30/90 6:00P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 10/31/90 10:00	Received by (Sig.) ⑥ [signature] Shipper Name & #	Date/Time 10/31/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good
Receipt pH —
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by Recvd. intact by Seal # at'chd by Recvd. intact by

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Cooler 1 of 2

268 (R2/88)
se Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (SW, WW, SW, Soil, Other)

№ 009956

Bottles Prepared by: T. Koch
Date/Time: 10/31/90
Office Code: (State) WI

oject No. 1870.20
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40ml Vial	250ml Glass		40ml Vial				Comments:
Filtered (Yes/No)					NO	NO		NO				
Preserved (Code)					A	A		E				
Refrigerated (Yes/No)					YES	YES		YES				
57642	10/31		QCT57	3	0	0		3				TRIP BLANK (WATER)
57643	10/31		NB05C	7	2	5		0				HNU = 102
57644	10/31		NB05G	3	2	1		0				HNU = 53
57645	10/31		NB05I	3	2	1		0				HNU = 37
57646	10/31		NB01H	7	2	5		0				HNU = 138
57647	10/31		NB01B	3	2	1		0				HNU = 54
57648	10/31		NB01J	3	2	1		0				HNU = 74
57649	10/31		NB20J	7	2	5		0				HNU = 46
57650	10/31		NB20B	3	2	1		0				HNU = 24
57651	10/31		NB20D	3	2	1		0				HNU = 16
												ORG, VOA

Comments: Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - HCL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① [signature]	10/31/90 6:30P	② Federal Express Shipper Name & # 7433361143	10/31/90 7:00P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 11/1/90 10:30	Received by (Sig.) ⑥ [signature] Shipper Name & #	Date/Time 11/1/90 10:30

Seal # | at'chd by | Recvd. intact by | Seal # | at'chd by | Recvd. intact by

HAZARDS ASSOCIATED WITH SAMPLES

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Receipt Temp good Receipt pH —
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

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Cooler 2 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 009957

Bottles Prepared by:	Date/Time	Office Code: (State)
T. Kocl	10/31/90	WI

Project No.	Client:
1870.20	NIROP

Container Inventory	40ml Vial	250ml Glass						
Filtered (Yes/No)	No	No						
Preserved (Code)	A	A						
Refrigerated (Yes/No)	Yes	Yes						

Code: A - None
B - HNO3
C - H_2SO_4
D - NaOH
E - _____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40ml Vial	250ml Glass						Comments:
57652	10/31		QCD58	7	2	5						QC Duplicate
57653	10/31		NB10B	7	2	5						HNU=78
57654	10/31		NB10D	3	2	1						HNU = 30
57655	10/31		NB10J	3	2	1						HNU = 42
57656	10/31		NB15J	7	2	5						HNU = 40
57657	10/31		NB15H	3	2	1						HNU = 18.4
57658	10/31		NB15D	3	2	1						HNU = 12.1
												ORG, VOA

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Kocl, Ronald N. Vang	10/31/90 6:30P	② Federal Express Shipper Name & # 7433361143	10/31/90 7:00P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 11/1/90 10:30	Received by (Sig.) ⑥ Mad Lab Shipper Name & #	Date/Time 11/1/90 10:30

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)

Receipt Temp good Receipt pH _____

Client P.O. Number _____

Subsequent Analysis: _____ (Check)

Date Resubmitted _____

Seal # ____ at'chd by ◯ Recvd. intact by ◯ Seal # ____ at'chd by ◯ Recvd. intact by ◯

ME

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Cooler 1 of 3

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, (Soil), Other)

№ 020368

Bottles Prepared by: T. Koch
Date/Time: 11/1/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Filtered (Yes/No): NO NO NO NO NO NO
Preserved (Code): A A E B D A
Refrigerated (Yes/No): YES YES YES YES YES YES

Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - HCL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	100mL Vial	250mL Glass		40mL Vial	1-Liter Plastic	1-Liter Brown Plastic	1-Liter Amber Glass	Comments:
57695	11/1		QCT58 GW	3	0	0		3	0	0	0	TRIP BLANK
57696	11/1		QCR54 GW	9	0	0		3	1	1	4	Rinsate BLANK
57697	11/1		CB01G	7	2	5		0	0	0	0	HNU = 1.9
57698	11/1		CB01E	3	2	1		0	0	0	0	HNU = 1.6
57699	11/1		CB01I	3	2	1		0	0	0	0	HNU = 0.3
												UNPCW, METALS, GR&, VOA

SAMPLER

Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch, Ronald N. Vang	11/1/90 5:30P	② Federal Express, Shipper Name & # 7433361154	11/1/90 6:00P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 11/2/90 10:00	Received by (Sig.) ⑥ Matt [illegible] Shipper Name & #	Date/Time 11/2/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good Receipt pH
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by Recvd. intact by Seal # at'chd by Recvd. intact by

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Cooler 2 of 3

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, (Soil) Other) **№ 020950**

Bottles Prepared by:	Date/Time	Office Code: (State)
T. Koch	11/1/90	WI

Project No.	Client:
1870.20	NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL Vial	850 mL Glass							Comments:
Filtered (Yes/No)					No	No							
Preserved (Code)					A	A							
Refrigerated (Yes/No)					Yes	Yes							
57723	11/1		NB22J	7	2	5							HNU = 39
57724	11/1		NB22H	3	2	1							HNU = 10.2
57725	11/1		NB22F	3	2	1							HNU = 9.8
57726	11/1		QCD59	7	2	5							QC Duplicate
57727	11/1		CB02J	7	2	5							HNU = 2.7
57728	11/1		CB02H	3	2	1							HNU = 0.6
57729	11/1		CB02F	3	2	1							HNU = 0.9
													ORG Soil, VOA soil

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Kraft / Ronald N. Vang	11/1/90 5:30P	② Federal Express Shipper Name & # 743336 1154	11/1/90 6:00P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed	Date/Time 11/2/90 10:00	Received by (Sig.) ⑥ Matt Shipper Name & #	Date/Time 11/2/90 12:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH —
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by ◯ Recvd. intact by ◯ Seal # at'chd by ◯ Recvd. intact by ◯

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Cooler 3 of 3

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020961

Bottles Prepared by: T-Koch
Date/Time: 11/1/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Filtered (Yes/No): NO NO
Preserved (Code): A A
Refrigerated (Yes/No): NO NO

Container Inventory: 250ML GLASS, 120ML VIAL

Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - _____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers								Comments:
57730	11/1		CB03E	7	5	2						HNU = 12.6
57731	11/1		CB03A	3	1	2						HNU = 1.4
57732	11/1		CB03C	3	1	2						HNU = 7.2
												GRG SOIL
												VOA SOIL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Koch, Ronald N. Lloyd	11/1/90 5:30P	② Federal Express, Shipper Name & # 9433361154	11/1 6:00P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 11/2/90 10:00	Received by (Sig.) ⑥ Mad Rl, Shipper Name & #	Date/Time 11/2/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp 8 ooc Receipt pH ~~7.0~~
Client P.O. Number _____
Subsequent Analysis: _____ (Check)
Date Resubmitted _____

Seal # ___ at'chd by ◯ Recvd. intact by ◯ Seal # ___ at'chd by ◯ Recvd. intact by ◯

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Cooler 1 of 1

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020956

Bottles Prepared by: T. Koch
Date/Time: 11/2/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120ml Vial	250ml Glass		40ml Vial				Comments:
Filtered (Yes/No)					ND	ND		ND				
Preserved (Code)					A	A		E				
Refrigerated (Yes/No)					Yes	Yes		Yes				
57760	11/2		QCT59	3	0	0		3				TRIP BLANK
57761	11/2		CB04I	7	2	5		0				HNU = 2.2
57762	11/2		CB04G	3	2	1		0				HNU = 0.4
57763	11/2		CB04C	3	2	1		0				HNU = 0.1
57764	11/2		CB05J	7	2	5		0				HNU = 0.3
57765	11/2		CB05H	3	2	1		0				HNU = 0.1
57766	11/2		CB05F	3	2	1		0				HNU = 0.1
57767	11/2		CB10C	7	2	5		0				HNU = 1.6
57768	11/2		CB10G	3	2	1		0				HNU = 1.6
57769	11/2		CB10E	3	2	1		0				HNU = 1.2

Container Inventory

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch, Ronald N. Dougherty	11/2/90 2000p	② Federal Express Shipper Name & #: 7433361460	11/2/90 2300p
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 11/3/90 1245	Received by (Sig.) ⑥ Walt [illegible] Shipper Name & #	Date/Time 11/3/90 11:45

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH —
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by Recvd. intact by Seal # at'chd by Recvd. intact by

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F-268 (R2/88)
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Copy 1 of 3

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020959

Bottles Prepared by: T. Koch
Date/Time: 11/5/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	12 ML VIAL	250 ML GLASS		40 ML VIAL				Comments:
Filtered (Yes/No)					NO	NO		NO				
Preserved (Code)					A	A		E				
Refrigerated (Yes/No)					YES	YES		YES				
57887	11/5		QCT60 (GW)	3	0	0		3				TRIP BLANK
57888	11/5		CB19E (SOIL)	7	2	5		0				HNU=27
57889	11/5		CB19C	3	2	1		0				HNU=21
57890	11/5		CB19A	3	2	1		0				HNU=14.4
57891	11/5		CB12H	7	2	5		0				HNU=9.6
57892	11/5		CB12J	3	2	1		0				HNU=8.6
57893	11/5		CB12F	3	2	1		0				HNU=5.0

Code: A - None
B - HNO3
C - H_2SO_4
D - NaOH
E - HCL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas G Kopal, Ronald H. Vogel	11/5/90 5:30P	② Federal Express, Shipper Name & # 7453361202	11/5/90 6:00P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 11/6/90 10:00	Received by (Sig.) ⑥ Matt [illegible] Shipper Name & #	Date/Time 11/6/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp 8.0°C Receipt pH —
Client P.O. Number
Subsequent Analysis: (Check)

Seal # at'chd by Recvd. intact by Seal # at'chd by Recvd. intact by Date Resubmitted

RMT LABORATORIES

F-268 (R2/88)
(Use Black Ink Only)

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Copy 2 of 3

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020960

Bottles Prepared by:	Date/Time	Office Code: (State)
T. Koch	11/5/90	WI

Project No.	Client:
187020	NIROP

Container Inventory: 120 mL Vial, 250 mL Glass

Filtered (Yes/No): NO, NO
Preserved (Code): A, A
Refrigerated (Yes/No): YES, YES

Code: A - None; B - HNO_3; C - H_2SO_4; D - NaOH; E - ____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL Vial	250 mL Glass						Comments:
57907	11/5		CB20J	7	2	5						HNU = 35
57908	11/5		CB20H	3	2	1						HNU = 14.8
57909	11/5		CB20D	3	2	1						HNU = 24
57910	11/5		CB09C	7	2	5						HNU = 9.6
57911	11/5		CB09I	3	2	1						HNU = 60.0
57912	11/5		CB09G	3	2	1						HNU = 2.2
	11/5		~~CB15I~~	7	2	5						~~HNU = 19.6~~ TEK 11/5/90
												IN cooler 3 of 3

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas J. Koch, Ronald N. Vogel	11/5/90	② Federal Express; Shipper Name & # 7433361202	11/5/90
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 11/6/90 10:00	Received by (Sig.) ⑥ Matt Lab; Shipper Name & #	Date/Time 11/6/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)

Receipt Temp good Receipt pH ____

Client P.O. Number ____

Subsequent Analysis: ____ (Check)

Date Resubmitted ____

Seal # ____ at'chd by ____ Recvd. intact by ____ Seal # ____ at'chd by ____ Recvd. intact by ____

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Cooler 3 of 3

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other) C

№ 020967

Bottles Prepared by: T. Koch
Date/Time: 11/5
Office Code: (State) WI

Project No.: 1870 20
Client: ~~NIROP~~ R. Vogt 11-5-90 NIROP

Container Inventory: 120 mL Vial, 250 mL Glass

Filtered (Yes/No): NN NN
Preserved (Code): A A
Refrigerated (Yes/No): Y Y

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - _____

RMT Lab No.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL Vial	250 mL Glass						Comments:
57913	11/5		CB15G	3	2	1						HNV = 9.8
57914	11/5		CB15E	3	2	1						HNV = 6.2
57915	11/5		CB15A	2	0	2						NNV = 6.2 Pink
57916	11/5		CB15I	7	2	5						HNV = 19.6

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas C. Koch, Ronald H. Vogt	11/5/90 5:30P	② Federal Express; Shipper Name & # 7433360 1202	11/5/90 6:00P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 11/6/90 10:00	Received by (Sig.) ⑥ Mark Ce; Shipper Name & #	Date/Time 11/6/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH —
Client P.O. Number _____
Subsequent Analysis: _____ (Check)

Seal # [redacted] at'chd by [redacted] Recvd. intact by [redacted] Seal # [redacted] at'chd by [redacted] Recvd. intact by [redacted] Date Resubmitted [redacted]

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Cooler 1 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, (Soil) Other)

№ 020969

Bottles Prepared by: T. Koch
Date/Time: 11/6/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL VIAL (A)	250 mL GLASS (A)		40 mL VIAL (E)	1-liter Plastic (B)	1-liter Brown Plastic (D)	1-liter Amber Glass (A)	Comments:
			Filtered (Yes/No)		NO	NO		NO	NO	NO	NO	
			Preserved (Code)		A	A		E	B	D	A	
			Refrigerated (Yes/No)		YES	YES		YES	YES	YES	YES	
57962	11/6		QCT61 (GW)	3	0	0		3	0	0	0	TRIP BLANK
57963	11/6		QCR55 (GW)	7	0	0		3	1	1	2	Rinsate (VOCs, 23 metals & CN, Pest/PCBs)
57964	11/6		CB23D	7	2	5		0	0	0	0	HNU = 18.2
57965	11/6		CB23F	3	2	1		0	0	0	0	HNU = 4.3
57966	11/6		CB23J	3	2	1		0	0	0	0	HNU = 16.9
57967	11/6		CB22I	7	2	5		0	0	0	0	HNU = 11.2
57968	11/6		CB22E	3	2	1		0	0	0	0	HNU = 6.8
57969	11/6		CB22G	3	2	1		0	0	0	0	HNU = 4.2
57970	11/6		QCD61	3	2	1		0	0	0	0	QC Duplicate

Container Inventory: 120 mL VIAL; 250 mL GLASS; 40 mL VIAL; 1-liter Plastic; 1-liter Brown Plastic; 1-liter Amber Glass

Code: A - None; B - HNO_3; C - H_2SO_4; D - NaOH; E - HCL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas G. Kal / Ronald W. Vogt	11/6/90 5:30p	② Federal Express Shipper Name & # 7433361224	11/6/90 6:00p
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed EX	Date/Time 11/7/90 9:30	Received by (Sig.) ⑥ Shipper Name & #	Date/Time 11/7/90 9:30

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good
Receipt pH Good
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by Recvd. intact by Seal # at'chd by Recvd. intact by

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Cooler 2 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020968

Bottles Prepared by: T. Koch
Date/Time: 11/6/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Container Inventory: 120 ML VIAL / 250 ML GLASS

Filtered (Yes/No): NO / NO
Preserved (Code): A / A
Refrigerated (Yes/No): YES / YES

Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - _____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers								Comments:
57971	11/6		CB24E	7	2	5						HNV = 4.6
57972	11/6		CB24G	3	2	1						HNV = 0.6
57973	11/6		CB24C	3	2	1						HNV = 0.4
57974	11/6		QC060	7	2	5						QC Duplicate
57975	11/6		CB25J	7	2	5						HNV = 14.2
57976	11/6		CB25H	3	2	1						HNV = 0.9
57977	11/6		CB25F	3	2	1						HNV = 0.9

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① [signature]	11/6/90 1530P	② Federal Express Shipper Name & # 7433361224	11/6/90 1600P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed EX.	Date/Time 11/7/90 9:30A	Received by (Sig.) ⑥ Shipper Name & # [signature]	Date/Time 11/7/90 9:30A

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good Receipt pH Good
Client P.O. Number _____
Subsequent Analysis: _____ (Check)
Date Resubmitted _____

Seal # | at'chd by | Recvd. intact by | Seal # | at'chd by | Recvd. intact by

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Cooler 1 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020971

Bottles Prepared by: T. Koch
Date/Time: 11/7/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	1-40mL VIAL	2-50mL GLASS		4-40mL VIAL	1-Liter PLASTIC	1-Liter Brown Plastic	1-Liter Amber Glass	Comments:
					NO	NO		NO	NO	NO	NO	Filtered (Yes/No)
					A	A		E	B	D	A	Preserved (Code)
					YS	YS		YS	YS	YS	YS	Refrigerated (Yes/No)
58025	11/7		QCT62 (GW)	3	Ø	Ø		3	Ø	Ø	Ø	TRIP BLANK
58026	11/7		QCR56 (GW)	7	Ø	Ø		3	1	1	2	Rinsate Blank (NO semi vol)
58027	11/7		CB11J	7	2	5		Ø	Ø	Ø	Ø	HNU=16.6
58028	11/7		CB11D	3	2	1		Ø	Ø	Ø	Ø	HNU=7.9
58029	11/7		CB11F	3	2	1		Ø	Ø	Ø	Ø	HNU=8.7
58030	11/7		QCD63	3	2	1		Ø	Ø	Ø	Ø	QC Duplicate
58031	11/7		CBØ7C	7	2	5		Ø	Ø	Ø	Ø	HNU=1.8
												ORG, SOIL VOA
												METALS, UNF GW

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch	11/7/90 5:15P	② Federal Express Shipper Name & # 743336 1246	11/7/90 5:45P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ FED EX	Date/Time 11/8/90 9:45	Received by (Sig.) ⑥ Shipper Name & #	Date/Time 11/8/90 9:45

Seal # at'chd by ◯ Recvd. intact by ◯ Seal # at'chd by ◯ Recvd. intact by ◯

HAZARDS ASSOCIATED WITH SAMPLES

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Receipt Temp good Receipt pH good
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

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Cobler 2 of 2

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020970

Bottles Prepared by: T. Koch
Date/Time: 11/7/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Container Inventory: 40 ml VIAL, 250 ml GLASS

Filtered (Yes/No): NO NO
Preserved (Code): A A
Refrigerated (Yes/No): YS YS

Code: A - None, B - HNO3, C - H2SO4, D - NaOH, E - _____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40 ml VIAL	250 ml GLASS						Comments:
58015	11/7		CB13A	2	0	2						Pest/PCB Only; HNU=0.3
58016	11/7		CB13C	3	2	1						HNU=27.4
58017	11/7		CB13G	3	2	1						HNU=10.0
58018	11/7		CB13E	7	2	5						HNU=32.0
58019	11/7		QCD62	3	2	1						QC Duplicate
58020	11/7		CB08J	7	2	5						HNU=38.0
58021	11/7		CB08B	3	2	1						HNU=1.2
58022	11/7		CB08F	3	2	1						HNU=0.8
58023	11/7		CB07G	3	2	1						HNU=0.6
58024	11/7		CB07F	3	2	1						HNU=0.8
												SOIL VOA, ORG

SAMPLER

Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas J. Koch / Ronald A. Vogt	11/7/90 5:15P	② Federal Express, Shipper Name & # 7433361246	11/7/90 5:45P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ FED EX	Date/Time 11/8/90 9:15	Received by (Sig.) ⑥ Matt Lahr, Shipper Name & #	Date/Time 11/8/90 9:45

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good Receipt pH _____
Client P.O. Number _____
Subsequent Analysis: _____ (Check)
Date Resubmitted _____

Seal # at'chd by Recvd. Intact by Seal # at'chd by Recvd. Intact by

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Cooler 1 of 3

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW), WW, SW, (Soil), Other)

№ 020973

Bottles Prepared by: Tom Koch
Date/Time: 11/8/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID		Total Number Of Containers	100 mL VIAL	250 mL GLASS		40 mL VIAL	1-liter PLASTIC	1-liter Brown Plastic	1-liter Amber Glass	Comments
			Container Inventory			N/A	N/A		N/E	N/B	N/D	N/A	Filtered (Yes/No) / Preserved (Code)
						No	No		No	No	No	No	Refrigerated (Yes/No)
58093	11/8		QCT63	GW	3	Ø	Ø		3	Ø	Ø	Ø	TRIP BLANK
58094	11/8		QCR58	GW	9	Ø	Ø		3	1	1	4	Rinsate BLANK
58095	11/8		QCD66		17	2	5		Ø	Ø	Ø	Ø	QC Duplicate
58096	11/8		SB03G		7	2	5		Ø	Ø	Ø	Ø	HNU = 3.4

Code: A - None
B - HNO3
C - H_2SO_4
D - NaOH
E - HCL

Comments:

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch / Ronald N. Cary	11/8/90 5:30P	② Federal Express Shipper Name & # 7433361261	11/8/90 6:00P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ FED EX	Date/Time 11/8/90 11/9/90 MNL 10:30	Received by (Sig.) ⑥ Mitchell Shipper Name & #	Date/Time 11/9/90 10:30

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good
Receipt pH good
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by Recvd. intact by Seal # at'chd by Recvd. intact by

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Cooler 2 of 3

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 020974

Bottles Prepared by: T. Koch
Date/Time: 11/8/90
Office Code: (State) WI

Project No.: 187020
Client: NIROP

Container Inventory: 120 mL Vial / 250 mL Glass
Filtered (Yes/No): NO / NO
Preserved (Code): A / A
Refrigerated (Yes/No): YES / YES

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - _____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL Vial	250 mL Glass						Comments:
58098	11/8		SB03I	3	2	1						HNU = 1.7
58099	11/8		SB03C	3	2	1						HNU = 1.4
58100	11/8		SB02G	7	2	5						HNU = 3.7
58101	11/8		SB02I	3	2	1						HNU = 3.2
58102	11/8		SB02E	3	2	1						HNU = 2.6
58103	11/8		SB04J	7	2	5						HNU = 21
58104	11/8		SB04B	3	2	1						HNU = 1.7
58105	11/8		SB04H	3	2	1						HNU = 1.6

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① [signature]	11/8/90 5:30p	② Federal Express Shipper Name & # 7433361261	11/8/90 6:00p
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 11/9/90 10:30	Received by (Sig.) ⑥ [signature] Shipper Name & #	Date/Time 11/9/90 10:30

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp Good
Receipt pH —
Client P.O. Number _____
Subsequent Analysis: _____ (Check)
Date Resubmitted _____

Seal # ___ at'chd by ◯ Recvd. intact by ◯ Seal # ___ at'chd by ◯ Recvd. intact by ◯

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Cooler 3 of 3

F-268 (R2/88)
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CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 021100

Bottles Prepared by: T. Koch
Date/Time: 11/8/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Container Inventory: 40 ml Vial / 250 mL Glass

Filtered (Yes/No): No / No
Preserved (Code): A / A
Refrigerated (Yes/No): Yes / Yes

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - ____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers								Comments:
58106	11/8		SB01J	7	2	5						HNV = 7.2
58107	11/8		SB01B	3	2	1						HNV = 8.0
58108	11/8		SB01D	3	2	1						HNV = 4.1

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Kegel, Ronald N. [illegible]	11/8/90 5:30P	② Federal Express; Shipper Name & # 7433361261	11/8/90 6:00P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④; Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ FED EX	Date/Time 11/9/90 10:30	Received by (Sig.) ⑥ [illegible]; Shipper Name & #	Date/Time 11/9/90 10:30

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH ____
Client P.O. Number ____
Subsequent Analysis: ____ (Check)
Date Resubmitted ____

Seal # ____ at'chd by ◯ Recvd. intact by ◯ Seal # ____ at'chd by ◯ Recvd. Intact by ◯

MK

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Cooler 1 of 2

F-268 (R2/88)
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CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 021098

Bottles Prepared by: Tom Koch
Date/Time: 11/9/90
Office Code: (State) WI
Project No.: 1870.20
Client: NIROP

Filtered (Yes/No): NO NO NO NO NO NO
Preserved (Code): A A E B D
Refrigerated (Yes/No): YES YES YES YES YES

Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - HCL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL Vial	250 mL Glass		40 mL Vial	1-Liter Plastic	1-Liter Brown Plastic		Comments:
58152	11/9		QCT64 GW	3	0	0		3	0	0		TRIP BLANK
58153	11/9		QCR57 GW	5	0	0		3	1	1		Rinsate BLANK
58154	11/9		CB14A	2	0	2		0	0	0		HNU=ND (PEST/PCB only)
58155	11/9		CB14J	7	2	5		0	0	0		HNU=60
58156	11/9		CB14F	3	2	1		0	0	0		HNU=3.8
58157	11/9		CB14D	3	2	1		0	0	0		HNU=10.0
58158	11/9		QCD65	3	2	1		0	0	0		QC Duplicate
												SOIL VOA, VOAG

SAMPLER

Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch / Ronald N. [illegible]	11/9/90 2:15P	② Federal Express Shipper Name & # 7433361165	11/9/90 2:30P
③ Fed. Express	11/10/90 10:00	④ Walk in cooler Shipper Name & #	11/10/90 10:00
⑤ Walk in cooler	11/12/90 7:15	⑥ Matt [illegible] Shipper Name & #	11/12/90 7:15

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp 5.0°C
Receipt pH
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # | at'chd by | Recvd. intact by | Seal # | at'chd by | Recvd. intact by

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Cooler 2 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 021099

Bottles Prepared by:	Date/Time	Office Code: (State)
T. Koch	11/9/90	WI

Project No.	Client:
1870.20	NIROP

Container Inventory: 120 ML VIAL, 250 ML GLASS

Filtered (Yes/No): NO NO
Preserved (Code): A A
Refrigerated (Yes/No): YES YES

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - ____

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number of Containers (TONG 11/9)	120 ML VIAL	250 ML GLASS						Comments:
58159	11/9		CB28F	7.5	2	5						HNV = 0.4
58160	11/9		CB28B	3	2	1						HNV = 0.2
58161	11/9		CB28J	3	2	1						HNV = 0.4
58162	11/9		CB21E	7	2	5						HNV = 8.9
58163	11/9		CB21G	3	2	1						HNV = 4.6
58164	11/9		CB21I	3	2	1						HNV = 5.1
58165	11/9		QC064	3	2	1						QC Duplicate
												SUC VOA, GNG

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Terry Koch, Ronald H. Vaughn	11/9/90 2:15P	② Federal Express Shipper Name & # 7433361165	11/9/90 2:30P
Relinquished by (Sig.) ③ Federal Express	11/10/90 10:00	Received by (Sig.) ④ Walk-in cooler Shipper Name & #	11/10/90 10:00
Relinquished by (Sig.) ⑤ Walk in cooler	11/12/90 7:15	Received by (Sig.) ⑥ Mark [illegible] Shipper Name & #	11/12/90 7:15

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH ____
Client P.O. Number ____
Subsequent Analysis: ____ (Check)

Seal # ____ at'chd by ◯ Recvd. intact by ◯ Seal # ____ at'chd by ◯ Recvd. intact by ◯ Date Resubmitted ____

RMT INC LABORATORIES

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Cooler 1 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 021101

Bottles Prepared by: T. Koch
Date/Time: 11/12/90
Office Code: (State) WI

Project No.: 1870.20
Client: NIROP

Container Inventory: 120 mL Vial, 250 mL Glass, 40 mL Vial, 1-liter Plastic, 1-liter Brown Plastic, 1-liter Amber Glass

Filtered (Yes/No): N N N N N N N
Preserved (Code): A A E B D A
Refrigerated (Yes/No): Y Y Y Y Y Y

Code: A - None, B - HNO_3, C - H_2SO_4, D - NaOH, E - HCL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL Vial	250 mL Glass		40 mL Vial	1-liter Plastic	1-liter Brown Plastic	1-liter Amber Glass	Comments:	
59036	11/12		QCT65	3	0	0		3	0	0	0	TRIP BLANK	GW
59037	11/12		QCR59	9	0	0		3	1	1	4	Rinsate BLANK	GW
59038	11/12		QCD67	7	2	5		0	0	0	0	QC Duplicate	SOIL
59039	11/12		S10IB	7	2	5		0	0	0	0	HNV=6.0	SOIL
59040	11/12		S10IE	7	2	5		0	0	0	0	HNV=1.4	SOIL
												SOIL VOA, OLG, WATER VOA	
												METALS	

SAMPLER

Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E. Koch, Ronald W. Lyle	11/12/90 600P	② Federal Express, Shipper Name & # 7433361272	11/12/90 630P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	11/13/90 10:00	Received by (Sig.) ⑥ Ward Labs, Shipper Name & #	11/13/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH —
Client P.O. Number
Subsequent Analysis: (Check)

Seal # | at'chd by | Recvd. intact by | Seal # | at'chd by | Recvd. intact by | Date Resubmitted

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Cooler 2 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW, WW, SW, Soil, Other)

№ 021102

Bottles Prepared by: T. Koch
Date/Time: 11/12/90
Office Code: (State) WI

Project No.: 1870:20
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID (R.D. 11-12-90)	Total Number Of Containers	120 mL VIAL	250 mL GLASS						Comments:
			Container Inventory									
			Filtered (Yes/No)		NO	NO						
			Preserved (Code)		A	A						
			Refrigerated (Yes/No)		YES	YES						
59041	11/12		CB26J	7	2	5						HNU=3.2 TEK 11/12/90
	~~11/12~~		~~CB26F TEK 11/12~~	~~3~~	~~2~~	~~1~~						~~HNU=88 INSUFFICIENT VOLUME FOR COMPLETE ANALYSIS~~
59042	11/12		CB26F	3	2	1						HNU=0.4 ~~INSUFFICIENT VOLUME 4 vials~~
59043	11/12		CB26H	3	2	1						HNU=0.4
59044	11/12		CB27A	7	2	5						HNU=320
59045	11/12		CB27F	3	2	1						HNU=88
59046	11/12		CB27G	3	2	1						HNU=5.8
												SOIL VOA, ORG

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas Koch	11/12/90 600P	② Federal Express Shipper Name & # 7433361272	11/12/90 630P
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 11/13/90 10:00	Received by (Sig.) ⑥ Shipper Name & #	Date/Time 11/13/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp 5.0°C Receipt pH
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by Recvd. intact by Seal # at'chd by Recvd. intact by

RMT INC LABORATORIES

F-268 (R2/88)
(Use Black Ink Only)

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Cooper 1 of 2

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW, Soil, Other)

№ 021104

Bottles Prepared by: T. Koch
Date/Time: 11/15/90
Office Code: (State) WI

Project No.: 1870.40
Client: NIROP

Container Inventory: BROWN

	40mL Vial	1-liter Plastic	1-liter Amber Glass				
Filtered (Yes/No)	No	No	No				
Preserved (Code)	E	B	A				
Refrigerated (Yes/No)	Yes	Yes	Yes				

Code: A - None; B - HNO_3; C - H_2SO_4; D - NaOH; E - HCL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	40mL Vial	1-liter Plastic	1-liter Amber Glass					Comments:
59182	11/15	500	QCT08	3	3	0	0					TRIP Blank-Ground Water
59183	11/15	615	QCF08	6	3	1	2					Rinsate-Field Blank
59184	11/15	550	M10I	6	3	1	2					
59185	11/15	555	QCD06	6	3	1	2					QC Duplicate

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
①		② ~~Federal Express~~ TEK 11/16 Shipper Name & # ~~7133361305~~	
③ Thomas E Koch	11/16/90 1200	④ Laurie Dunn Shipper Name & #	11/16/90 1:00
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥ Shipper Name & #	Date/Time

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good Receipt pH —
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # at'chd by Recvd. intact by Seal # at'chd by Recvd. intact by

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Cooler 2 of 2

F-268 (R2/88)
(Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW) WW, SW (Soil) Other)

№ 021108

Bottles Prepared by: T. Koch
Date/Time: 11/15/90
Office Code: (State) WI

Project No.: 187020
Client: NIROP

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers	120 mL Vial	250 mL Glass		40 mL Vial				Comments:
Filtered (Yes/No)					NO	NO		NO				
Preserved (Code)					A	A		E				
Refrigerated (Yes/No)					YES	YES		YES				
59186	11/15		QCT66 (GW)	3	0	0		3				TRIP BLANK FOR SOILS
59187	11/15		CB18H	7	2	5		0				HNU = 154
59188	11/15		CB18J	3	2	1		0				HNU = 30
59189	11/15		CB18A	3	2	1		0				HNU = 50
59190	11/15		CB17G	7	2	5		0				HNU = 2.8
59191	11/15		CB17I	3	2	1		0				HNU = 2.0
59192	11/15		CB17E	3	2	1		0				HNU = 0.3

Comments: Code: A - None, B - HNO3, C - H_2SO_4, D - NaOH, E - HCL

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E Koch TEK	11/15/90	② Federal Express Shipper Name & # 7733936 3005	
③ Thomas E Koch	11/16/90 1:00	④ Laurie Dunn Shipper Name & #	11/16/90 1:00
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥ Shipper Name & #	Date/Time

Seal # at'chd by ◯ Recvd. intact by ◯ Seal # at'chd by ◯ Recvd. intact by ◯

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp _____ Receipt pH _____
Client P.O. Number _____
Subsequent Analysis: _____ (Check)
Date Resubmitted _____

RMT INC ABORATORIES

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Cooler 1 of 1

-268 (R2/88)
Use Black Ink Only)

CHAIN OF CUSTODY RECORD

Sample Type: (GW), WW, SW, Soil, Other)

№ 021117

Bottles Prepared by: E. Putnam | Date/Time: 12/4/90 | Office Code: (State) WI

Project No.: 1870-40 (90) | Client: NIROP

Container Inventory: 40 ml Vials; 1L Pl Am.; 1L Am. Gl

Filtered (Yes/No): NO NO NO
Preserved (Code): E B A
Refrigerated (Yes/No): YES YES YES

Code: A - None; B - HNO3; C - H_2SO_4; D - NaOH; E - HSL

RMT Lab NO.	Yr. 90 Date	Time	Sample Station ID	Total Number Of Containers							Comments:
59849	12/6	1150A	~~TB~~ BLK QCT09	3	3	0	0				TRIP BLANK
59850	12/6	1150P	MI0T	6	3	1	2				WATER VOA, METALS, VAP CW

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① Thomas E Kock	12/6/90 200	② Federal Express Shipper Name & # 7433360126	12/6/90 215
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤ Fed Ex	Date/Time 12/7/90 10:00	Received by (Sig.) ⑥ Mark Shipper Name & #	Date/Time 12/7/90 10:00

HAZARDS ASSOCIATED WITH SAMPLES

(For Lab Use Only)
Receipt Temp good | Receipt pH good
Client P.O. Number
Subsequent Analysis: (Check)
Date Resubmitted

Seal # | at'chd by | Recvd. intact by | Seal # | at'chd by | Recvd. intact by

APPENDIX F

SUMMARY OF LABORATORY RESULTS OF GROUND WATER SAMPLES

WATER VOLATILES

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	AT01		AT02		AT03		FMC33		M01D		M01I	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	5	J	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	1	J	3	J	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5		7		5	U	6		5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	63		69		980	D	160		5	U	5	U
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/L	21		9		6200	E	96		5	U	5	U
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	11		5	U	5	U	5	U	5	U	5	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	2	J	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	1	J

U = Undetected
B = Present in Method Blank
J = Estimated Concentration
E = Exceeds Calibration Limit
D = Reported value is from a second analytical run because the value exceeded the calibration limit in the first run

Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M01PC		M01S		M02D		M02I		M02PC		M02S	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	2	J	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	2	J	5	U	2	J	5	U	5	U
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	1	J
TRICHLOROETHENE	UG/L	5	U	0.5	J	9		21		6		72	
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

U = Undetected
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J = Estimated Concentration
E = Exceeds Calibration Limit
D = Reported value is from a second analytical run because the value exceeded the calibration limit in the first run

Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M03D		M03I		M03PC		M03S		M04D		M04I	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	250	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
1,1-DICHLOROETHENE	UG/L	5	U	4	J	5	U	5	U	5	U	120	U
1,1-DICHLOROETHANE	UG/L	5	U	6		5	U	5	U	5	U	120	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	360	D	5	U	140		5	U	870	
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
TRICHLOROETHENE	UG/L	20		2700	D	2	J	230	D	5	U	7200	D
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
TETRACHLOROETHENE	UG/L	5	U	28		5	U	5	U	5	U	120	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
XYLEMES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	120	U

U = Undetected
B = Present in Method Blank
J = Estimated Concentration
E = Exceeds Calibration Limit
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Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M04PC		M04S		M05D		M05I		M05PC		M05S	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	410	D	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	2	J	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	12		170		1	J
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U	5	U	31		5	U	5	U
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	6		5	U	5	U
TRICHLOROETHENE	UG/L	3	J	7		5	U	330	D	5	U	7	
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	11		5	U	5	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

U = Undetected
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J = Estimated Concentration
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D = Reported value is from a second analytical run because the value exceeded the calibration limit in the first run

Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M06D		M06S		M07D		M07S		M08D		M08S	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	250	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	500	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	250	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	250	U	1	J
1,1-DICHLOROETHANE	UG/L	5	U	2	J	4	J	5	U	250	U	4	J
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	83		13		3	J	66	J	120	
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	250	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	2	J	250	U	6	
TRICHLOROETHENE	UG/L	2	J	48		45		59		14000	D	2600	D
BENZENE	UG/L	5	U	5	U	5	U	5	U	250	U	5	U
TETRACHLOROETHENE	UG/L	5	U	3	J	5	U	5	U	250	U	16	
TOLUENE	UG/L	5	U	5	U	5	U	5	U	250	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	250	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	250	U	5	U

U = Undetected
B = Present in Method Blank
J = Estimated Concentration
E = Exceeds Calibration Limit
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Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M09D		M09S		M10D		M10I		M10IR		M10S	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	10		5	U	5	U	5	U	3	J
1,1-DICHLOROETHANE	UG/L	2	J	50		5	U	5	U	5	U	20	
1,2-DICHLOROETHENE (TOTAL)	UG/L	8		940	D	5	U	5	U	5	U	3800	D
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	2	J	130		5	U	5	U	5	U	25	
TRICHLOROETHENE	UG/L	60		2100	D	5	U	2	J	0.9	J	640	D
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	2	J	350	D	5	U	5	U	5	U	71	
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

U = Undetected
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J = Estimated Concentration
E = Exceeds Calibration Limit
D = Reported value is from a second analytical run because the value exceeded the calibration limit in the first run

Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M11D		M11S		M12D		M12S		M13D		M13S	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	1	J	5	U	1	J
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	3	J	4	J	5	U	5	U	5	U
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/L	5	U	22		5		5	U	5	U	5	U
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TOLUENE	UG/L	2	J	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

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Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M14D		M14S		M15S		M16S		M17S		M18S	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	250	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U	5	U	5	U	130		1400	
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	1	J	5	U	120	U
TRICHLOROETHENE	UG/L	5	U	5	U	2	J	150		72		4400	
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	1	J	8		120	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	120	U

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Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M14D		M14S		M15S		M16S		M17S		M18S	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	250	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U	5	U	5	U	130		1400	
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	1	J	5	U	120	U
TRICHLOROETHENE	UG/L	5	U	5	U	2	J	150		72		4400	
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	1	J	8		120	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	120	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	120	U

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Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M11D		M11S		M12D		M12S		M13D		M13S	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	1	J	5	U	1	J
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	3	J	4	J	5	U	5	U	5	U
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/L	5	U	22		5		5	U	5	U	5	U
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TOLUENE	UG/L	2	J	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

U = Undetected
B = Present in Method Blank
J = Estimated Concentration
E = Exceeds Calibration Limit
D = Reported value is from a second analytical run because the value exceeded the calibration limit in the first run

Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M19S		M20S		M21S		M22S		M23S		M24S	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	14		5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	3	J	40		5	U	1	J
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U	19		1300	D	5	U	49	
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	22		200	DJ	1	J	5	U
TRICHLOROETHENE	UG/L	2	J	1	J	1200	D	2400	D	4	J	5	U
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	63		360	D	2	J	5	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5		5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	24		5	U	5	U

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Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M25S		QCD01		QCD02		QCD03		QCD04		QCD05	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	2	J	6	
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	2	J	5	U	5	U	84		370	D
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/L	5	U	0.5	J	2	J	1	J	50		2700	D
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	3	J	30	
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

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SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M25S		QCD01		QCD02		QCD03		QCD04		QCD05	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	2	J	6	
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	2	J	5	U	5	U	84		370	D
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/L	5	U	0.5	J	2	J	1	J	50		2700	D
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	3	J	30	
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

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SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M19S		M20S		M21S		M22S		M23S		M24S	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	14		5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	3	J	40		5	U	1	J
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U	19		1300	D	5	U	49	
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	22		200	DJ	1	J	5	U
TRICHLOROETHENE	UG/L	2	J	1	J	1200	D	2400	D	4	J	5	U
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	63		360	D	2	J	5	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5		5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	24		5	U	5	U

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Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCD06		QCF01		QCF02		QCF03		QCF04		QCF05	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	2	J	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/L	2	J	5	U	5	U	5	U	5	U	5	U
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

U = Undetected
B = Present in Method Blank
J = Estimated Concentration
E = Exceeds Calibration Limit
D = Reported value is from a second analytical run because the value exceeded the calibration limit in the first run

Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCF06		QCF07		QCF08		QCT01		QCT02		QCT03	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

U = Undetected
B = Present in Method Blank
J = Estimated Concentration
E = Exceeds Calibration Limit
D = Reported value is from a second analytical run because the value exceeded the calibration limit in the first run

Report Generated 01/18/91 Project # : 1870.52 WVOC

SUMMARY OF ANALYTICAL RESULTS
WATER VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCT04		QCT05		QCT06		QCT07		QCT08		QCT09	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROFORM	UG/L	5	U	5	U	0.2	J	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TOLUENE	UG/L	5	U	5	U	0.4	J	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

U = Undetected
B = Present in Method Blank
J = Estimated Concentration
E = Exceeds Calibration Limit
D = Reported value is from a second analytical run because the value exceeded the calibration limit in the first run

Report Generated 01/18/91 Project # : 1870.52 WVOC

WATER METALS

SUMMARY OF ANALYTICAL RESULTS
WATER METALS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	AT01		AT02		AT03		FMC33		M01D		M01I	
BARIUM	UG/L	50.00	U	50.00	U	67.10		50.00	U	50.00	U	145.00	
MANGANESE	UG/L	127.00		1590.00		1000.00		805.00		7.60		788.00	
SELENIUM	UG/L	3.00	U	3.00	UW	3.00	UW	3.00	U	3.00	UW	3.00	UW
ZINC	UG/L	20.00	U	532.00		69.10		35.60		211.00		20.20	

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
* = Lab duplicate analysis not within control limits

Report Generated 01/18/91 Project # : 1870.52 WMET

SUMMARY OF ANALYTICAL RESULTS
WATER METALS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M01PC	M01S	M02D	M02I	M02PC	M02S
BARIUM	UG/L	80.60	65.30	50.00 U	121.00	50.00 U	89.30
MANGANESE	UG/L	12.40	1650.00	53.90	959.00	13.70	521.00
SELENIUM	UG/L	3.00 U	3.00 U	3.00 U	3.00 UW	3.00 U	3.00 U
ZINC	UG/L	1820.00	100.00	90.90	20.00 U	251.00	226.00

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
* = Lab duplicate analysis not within control limits

Report Generated 01/18/91 Project # : 1870.52 WMET

SUMMARY OF ANALYTICAL RESULTS
WATER METALS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M03D	M03I	M03PC	M03S	M04D	M04I
BARIUM	UG/L	55.50	50.00 U	50.00 U	79.00	76.80	62.00
MANGANESE	UG/L	42.50	438.00	38.10	830.00	5.00 U	263.00
SELENIUM	UG/L	3.00 UW	3.00 U	3.00 U	3.00 U	3.00 U	3.00 UW
ZINC	UG/L	1320.00	20.00 U	286.00	265.00	36.20	20.00 U

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
* = Lab duplicate analysis not within control limits

Report Generated 01/18/91 Project # : 1870.52 WMET

SUMMARY OF ANALYTICAL RESULTS
WATER METALS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M04PC	M04S	M05D	M05I	M05PC	M05S
BARIUM	UG/L	59.80	50.70	50.00 U	50.00 U	50.00 U	50.00 U
MANGANESE	UG/L	76.40	48.10	106.00	1140.00	56.80	1480.00
SELENIUM	UG/L	3.00 UW	8.90 S	3.00 UW	3.00 U	3.00 UW	3.00 U
ZINC	UG/L	1420.00	488.00	759.00	29.80	658.00	300.00

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
* = Lab duplicate analysis not within control limits

Report Generated 01/18/91 Project # : 1870.52 WMET

SUMMARY OF ANALYTICAL RESULTS
WATER METALS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M06D		M06S		M07D		M07S		M08D		M08S	
BARIUM	UG/L	54.00		50.00	U	105.00		50.00	U	52.30		65.50	
MANGANESE	UG/L	16.50		1000.00		494.00		4520.00		311.00		1840.00	
SELENIUM	UG/L	3.00	UW	4.00		3.00	UW	3.00	U	3.00	UW	3.00	UW
ZINC	UG/L	97.70		275.00		679.00		142.00		447.00		265.00	

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
* = Lab duplicate analysis not within control limits

Report Generated 01/18/91 Project # : 1870.52 WMET

SUMMARY OF ANALYTICAL RESULTS
WATER METALS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M09D		M09S	M10D		M10I		M10IR		M10S	
BARIUM	UG/L	50.00	U	56.90	50.00	U	64.50		50.00	U	50.00	U
MANGANESE	UG/L	53.40		144.00	101.00		808.00		1120.00		396.00	
SELENIUM	UG/L	3.00	U	107.00	3.00	U	3.00	U	3.00	U	3.00	U
ZINC	UG/L	2680.00		167.00	20.00	U	147.00	*	20.00	U*	713.00	

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
* = Lab duplicate analysis not within control limits

Report Generated 01/18/91 Project # : 1870.52 WMET

SUMMARY OF ANALYTICAL RESULTS
WATER METALS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M11D		M11S		M12D		M12S		M13D		M13S	
BARIUM	UG/L	50.00	U	50.00	U	50.00	U	50.00	U	50.00	U	88.60	
MANGANESE	UG/L	199.00		6.30		154.00		2370.00		94.20		1570.00	
SELENIUM	UG/L	3.00	U	5.60		3.00	UW	4.70		3.00	UW	3.00	UW
ZINC	UG/L	20.00	U	540.00		20.00	U	621.00		20.00	U	2020.00	

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
* = Lab duplicate analysis not within control limits

Report Generated 01/18/91 Project # : 1870.52 WMET

SUMMARY OF ANALYTICAL RESULTS
WATER METALS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M14D		M14S		M15S		M16S		M17S		M18S	
BARIUM	UG/L	50.00	U	247.00		58.50		50.00	U	50.00	U	88.90	
MANGANESE	UG/L	132.00		1350.00		1080.00		1780.00		701.00		1100.00	
SELENIUM	UG/L	3.00	UW	16.90	S	3.00	U	3.00	U	3.00	U	3.00	UW
ZINC	UG/L	20.00	U	1990.00		2040.00		2660.00		1750.00		866.00	

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
* = Lab duplicate analysis not within control limits

Report Generated 01/18/91 Project # : 1870.52 WMET

SUMMARY OF ANALYTICAL RESULTS
WATER METALS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M19S		M20S		M21S		M22S		M23S		M24S	
BARIUM	UG/L	50.00	U	62.70		63.00		125.00		50.00	U	56.80	
MANGANESE	UG/L	12.00		155.00		1130.00		463.00		17.20		1000.00	
SELENIUM	UG/L	3.00	U	4.20		16.40	S	93.10		58.10	S	3.00	UW
ZINC	UG/L	2320.00		200.00		20.00	U	24.90		46.90		33.00	

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
* = Lab duplicate analysis not within control limits

Report Generated 01/18/91 Project # : 1870.52 WMET

SUMMARY OF ANALYTICAL RESULTS
WATER METALS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	M25S		QCD01		QCD02		QCD03		QCD04		QCD05	
BARIUM	UG/L	50.00	U	67.50		50.00	U	50.00	U	50.00	U	50.00	U
MANGANESE	UG/L	494.00		1570.00		37.50		18.00		1040.00		452.00	
SELENIUM	UG/L	3.00	U	3.00	UW	3.00	UW	3.00	UW	4.90		3.00	UW
ZINC	UG/L	34.30		84.80		281.00		103.00		337.00		26.30	

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
* = Lab duplicate analysis not within control limits

Report Generated 01/18/91 Project # : 1870.52 WMET

SUMMARY OF ANALYTICAL RESULTS
WATER METALS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCD06		QCF01		QCF02		QCF03		QCF04		QCF05	
BARIUM	UG/L	62.20		50.00	U	50.00	U	50.00	U	50.00	U	50.00	U
MANGANESE	UG/L	829.00		5.00	U	5.00	U	5.00	U	5.00	U	5.00	U
SELENIUM	UG/L	3.00	UW	3.00	U	3.00	U	3.00	U	3.00	U	3.00	U
ZINC	UG/L	146.00	*	20.00	U	108.00		20.00	U	49.90		20.00	U

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
* = Lab duplicate analysis not within control limits

Report Generated 01/18/91 Project # : 1870.52 WMET

SUMMARY OF ANALYTICAL RESULTS
WATER METALS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCF06		QCF07		QCF08	
BARIUM	UG/L	50.00	U	50.00	U	50.00	U
MANGANESE	UG/L	5.00	U	5.00	U	5.00	U
SELENIUM	UG/L	3.00	U	3.00	U	3.00	U
ZINC	UG/L	20.00	U	20.00	U	20.00	U*

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
* = Lab duplicate analysis not within control limits

Report Generated 01/18/91 Project # : 1870.52 WMET

WATER PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

SUMMARY OF ANALYTICAL RESULTS
WATER PESTICIDES/PCBs

PARAMETER	UNITS	M10I	M10IR	M15S	M18S	M21S	M24S
ALPHA-BHC	UG/L	0.050 U	0.050 U	0.050 U	0.50 U	0.050 U	0.050 U
BETA-BHC	UG/L	0.050 U	0.050 U	0.050 U	0.50 U	0.050 U	0.050 U
DELTA-BHC	UG/L	0.050 U	0.050 U	0.050 U	0.50 U	0.050 U	0.050 U
GAMMA-BHC (LINDANE)	UG/L	0.050 U	0.050 U	0.050 U	0.50 U	0.050 U	0.050 U
HEPTACHLOR	UG/L	0.050 U	0.050 U	0.050 U	0.50 U	0.050 U	0.050 U
ALDRIN	UG/L	0.050 U	0.050 U	0.050 U	0.50 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	UG/L	0.050 U	0.050 U	0.050 U	0.50 U	0.050 U	0.050 U
ENDOSULFAN I	UG/L	0.050 U	0.050 U	0.050 U	0.50 U	0.050 U	0.050 U
DIELDRIN	UG/L	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U
4,4'-DDE	UG/L	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U
ENDRIN	UG/L	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U
ENDOSULFAN II	UG/L	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U
4,4'-DDD	UG/L	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U
ENDOSULFAN SULFATE	UG/L	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U
4,4'-DDT	UG/L	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U
METHOXYCHLOR	UG/L	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U
ENDRIN KETONE	UG/L	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U
ALPHA-CHLORDANE	UG/L	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U
GAMMA-CHLORDANE	UG/L	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U
TOXAPHENE	UG/L	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
AROCLOR-1016	UG/L	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U
AROCLOR-1221	UG/L	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U
AROCLOR-1232	UG/L	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U
AROCLOR-1242	UG/L	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U
AROCLOR-1248	UG/L	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U
AROCLOR-1254	UG/L	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
AROCLOR-1260	UG/L	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U

U = Undetected
B = Present in Method Blank
J = Estimated Concentration
E = Exceeds Calibration Limit

Report Generated 01/18/91 Project # : 1870.52 WPCB

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

SUMMARY OF ANALYTICAL RESULTS
WATER PESTICIDES/PCBs

PARAMETER	UNITS	M01S	M02I	M03S	M04S	M06S	M08S
ALPHA-BHC	UG/L	0.050 U	0.50 U	0.050 U	0.050 U	0.050 U	0.050 U
BETA-BHC	UG/L	0.050 U	0.50 U	0.050 U	0.050 U	0.050 U	0.050 U
DELTA-BHC	UG/L	0.050 U	0.50 U	0.050 U	0.050 U	0.050 U	0.050 U
GAMMA-BHC (LINDANE)	UG/L	0.050 U	0.50 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR	UG/L	0.050 U	0.50 U	0.050 U	0.050 U	0.050 U	0.050 U
ALDRIN	UG/L	0.050 U	0.50 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	UG/L	0.050 U	0.50 U	0.050 U	0.050 U	0.050 U	0.050 U
ENDOSULFAN I	UG/L	0.050 U	0.50 U	0.050 U	0.050 U	0.050 U	0.050 U
DIELDRIN	UG/L	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	UG/L	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN	UG/L	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN II	UG/L	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDD	UG/L	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN SULFATE	UG/L	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	UG/L	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U
METHOXYCHLOR	UG/L	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U
ENDRIN KETONE	UG/L	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U
ALPHA-CHLORDANE	UG/L	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U
GAMMA-CHLORDANE	UG/L	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U
TOXAPHENE	UG/L	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1016	UG/L	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U
AROCLOR-1221	UG/L	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U
AROCLOR-1232	UG/L	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U
AROCLOR-1242	UG/L	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U
AROCLOR-1248	UG/L	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U
AROCLOR-1254	UG/L	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1260	UG/L	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U

U = Undetected
B = Present in Method Blank
J = Estimated Concentration
E = Exceeds Calibration Limit

Report Generated 01/18/91 Project # : 1870.52 WPCB

APPENDIX G

RESULTS OF SOILS HNU HEADSPACE ANALYSIS

TABLE G-1 (CONTINUED)

AREA "C" BORINGS, p. 2 of 3

Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)	
	Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2
CB13A			**CB14**			**CB15**			**CB16**			**CB17**			**CB18**		
A	0.3	0.2	A	ND	ND	A	0.2	0.2	A	ND	2.8	A	ND	0.1	A	1.4	1.5
B	18.0	15.9	B	2.6	2.2	B	24	8.4	B	0.4	0.4	B	1.0	1.1	B	–	–
C	22	27	C	6.4	5.2	C	0.8	0.8	C	4.8	2.2	C	0.1	0.2	C	8.0	54
D	12.4	5.4	D	5.8	10.0	D	1.0	1.0	D	1.0	0.5	D	0.6	0.8	D	5.0	4.6
E	4.6	3.6	E	1.8	1.4	E	6.2	3.8	E	8.8	19.4	E	0.2	0.3	E	0.8	0.8
F	7.4	7.3	F	3.8	2.4	F	10.2	4.6	F	200	180	F	1.8	1.6	F	0.8	2.4
G	10.0	4.6	G	4.8	4.8	G	9.8	6.4	G	80	100	G	1.8	2.0	G	3.0	2.6
H	9.6	5.7	H	2.2	2.2	H	2.8	2.8	H	48	52	H	1.2	1.4	H	154	60
I	5.7	3.2	I	10.0	11.2	I	19.6	11.0	I	42	36	I	2.0	1.8	I	16	9.8
J	61.0	40.0	J	60	44	J	8.0	12.0				J	16	18	J	24	30

Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)	
	Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2
CB19A			**CB20A**			**CB21A**			**CB22A**			**CB23A**			**CB24A**		
A	8.9	14.4	A	0.2	0.1	A	0.6	1.3	A	2.8	3.9	A	0.2	0.1	A	0.2	0.3
B	23	26	B	1.2	0.9	B	10.2	5.9	B	1.7	1.3	B	3.8	3.3	B	0.2	0.2
C	21	11.2	C	19.6	11.4	C	2.5	2.2	C	2.1	2.5	C	11.6	13.4	C	0.4	0.3
D	29	44	D	24	17.5	D	5.0	2.8	D	4.2	6.6	D	18.2	16.7	D	1.2	1.9
E	9.6	12.9	E	26	29	E	2.4	8.9	E	6.6	6.8	E	24	16.2	E	4.6	4.4
F	8.6	10.8	F	10.0	13.3	F	4.4	3.5	F	3.7	4.6	F	4.3	2.5	F	2.2	1.6
G	24	8.8	G	21	14.2	G	4.6	3.7	G	4.2	2.3	G	2.3	2.1	G	0.4	0.6
H	27	16.1	H	8.7	14.8	H	7.3	5.9	H	3.4	4.4	H	1.5	3.1	H	0.7	1.3
I	19.8	16.5	I	15.8	9.7	I	5.1	2.4	I	11.2	7.0	I	2.1	2.2	I	ND	0.2
J		28	J	24	35	J	6.9	61	J	6.7	5.8	J	13.6	16.9	J	35	46

TABLE G-1 (CONTINUED)

AREA "C" BORINGS, p. 3 of 3

Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)	
	Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2
CB25A			**CB26**			**CB27**			**CB28A**		
A	ND	ND	A	ND	ND	A	180	320	A	ND	0.2
B	ND	0.2	B	0.2	0.2	B	24	12	B	0.2	0.2
C	0.3	0.2	C	0.2	ND	C	3.8	2.0	C	0.3	0.2
D	0.4	0.5	D	0.2	0.3	D	5.6	8.0	D	0.2	0.2
E	0.7	0.8	E	0.3	0.3	E	–	–	E	0.4	0.3
F	0.5	0.9	F	0.3	0.4	F	80	88	F	0.3	0.4
G	0.4	1.1	G	0.8	1.2	G	2.4	5.8	G	ND	0.2
H	0.2	0.9	H	0.4	0.4	H	0.9	1.8	H	ND	0.4
I	2.8	2.1	I	0.6	0.6	I	1.2	3.8	I	0.3	0.3
J	12.9	14.2	J	2.6	3.2	J	9.2	11.8	J	0.4	0.2

TABLE G-2

NORTH 40 BORINGS, p. 1 of 2

Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)	
	Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2
NB01A			**NB02**			**NB03A**			**NB04**			**NB05**			**NB06**		
A	13.8	11.5	A	0.8	0.7	A	1.5	1.1	A	3.8	1.5	A	1.1	3.0	A	3.8	2.6
B	54	48	B	84	82	B	184	176	B	39	48	B	42	28	B	34	36
C	67	54	C	--	--	C	110	154	C	57	55	C	102	93	C	24	22
D	35	36	D	19.8	19.2	D	51	45	D	37	39	D	25	20	D	48	52
E	74	42	E	14.3	15.4	E	67	40	E	18.8	17.5	E	18.6	9.3	E	36	28
F	32	24	F	22	11.8	F	86	48	F	23	24	F	43	42	F	54	64
G	65	49	G	21	19	G	50	38	G	63	44	G	44	53	G	220	240
H	107	138	H	21	19.8	H	57	56	H	45	34	H	41	84	H	86	90
I	106	75	I	27	23	I	77	63	I	29	22	I	37	31	I	118	110
J	74	54	J	108	95	J	340	350	J	98	92	J	128	146	J	240	240

Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)	
	Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2
NB07A			**NB08A**			**NB09A**			**NB10A**			**NB11A**			**NB12**		
A	1.0	1.2	A	13.4	3.0	A	41	30	A	21	24	A	10.2	1.4	A	3	5
B	18.0	32.0	B	220	240	B	74	68	B	78	28	B	42	38	B	24	22
C	150	120	C	220	300	C	130	180	C	52	52	C	18.4	17.4	C	7.8	14
D	140	90	D	340	ins.vol.	D	120	90	D	30	22	D	40.0	30	D	9.2	6.0
E	60	56	E	80	120	E	48	46	E	10.4	19.6	E	35	28	E	8.2	3.5
F	30	120	F	220	180	F	110	106	F	24	22	F	62	54	F	7.4	6.6
G	70	54	G	200	70	G	60	48	G	28	36	G	19.8	34	G	12.5	14.6
H	160	190	H	300	220	H	260	260	H	23	17.8	H	54	92	H	14.2	17
I	180	200	I	90	210	I	180	210	I	27	22	I	45	36	I	10.5	14.4
J	210	220	J	240	220	J	440	440	J	42	38	J	135	138	J	115	133

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TABLE G-2 (CONTINUED)

NORTH 40 BORINGS, p. 2 of 2

Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)	
	Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2
NB13A			**NB14A**			**NB15**			**NB16**			**NB17**			**NB18A**		
A	240	200	A	3.4	4.8	A	ND	ND	A	170	176	A	24	64	A	0.2	0.2
B	34	32	B	1.4	2.2	B	56	59	B	198	198	B	96	146	B	0.2	0.2
C	62	58	C	1.4	1.4	C	6.6	10.4	C	280	270	C	138	20	C	8.0	3.0
D	10	16	D	0.7	0.8	D	5.2	12.1	D	200	170	D	48	104	D	ND	ND
E	30	28	E	0.2	0.3	E	6.2	6.0	E	220	200	E	98	6.8	E	ND	ND
F	6.2	8.8	F	0.8	1.2	F	11.9	9.0	F	150	190	F	1.0	13.2	F	ND	ND
G	8.6	11.2	G	1.0	0.9	G	14.5	14.8	G	180	150	G	82	141	G	0.2	0.2
H	15.4	20.0	H	1.4	1.8	H	18.4	17.8	H	200	170	H	48	16.0	H	0.2	0.2
I	5.0	4.8	I	0.8	0.7	I	9.5	14.3	I	178	52	I	38	43	I	11.8	5.8
J	19.0	19.0	J	5.0	5.4	J	40	32	J	32	32	J	2.8	3.3	J	1.2	1.8

Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)	
	Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2
NB19A			**NB20**			**NB21A**			**NB22**			**NB23**			**S10IA**		
A	0.6	0.8	A	0.8	0.6	A	--	--	A	0.3	ND	A	2.6	1.2	A	ND	ND
B	52	38	B	24	22	B	24	31	B	3.8	5.0	B	ND	ND	B	5.0	6.0
C	38	42	C	28	52	C	70	84	C	2.5	4.2	C	ND	ND	C	0.8	1.4
D	24	28	D	14	16	D	28	41	D	1.4	1.7	D	ND	ND	D	1.4	1.0
E	18	20	E	6.0	6.0	E	7.1	36	E	2.2	3.7	E	ND	ND	E	1.4	1.2
F	28	22	F	4.8	3.6	F	36	36	F	9.8	5.4	F	ND	ND	F	ND	ND
G	28	28	G	7.4	6.2	G	24	13.8	G	13.2	17.1	G	0.2	0.1	G	ND	ND
H	38	32	H	10.6	7.6	H	75	58	H	10.2	6.7	H	0.5	0.2	H	ND	ND
I	24	64	I	17.2	14.6	I	38	47	I	22	14.6	I	ND	ND	I	0.1	ND
J	166	148	J	42	46	J	130	134	J	34	39	J	0.3	0.1	J	ND	ND
												K	0.3	0.2	K	ND	ND
												L	0.2	0.2	L	0.2	0.3
												M	0.2	ND	M	0.2	0.2
												N	0.8	0.6	N	0.5	0.6
															O	0.1	0.1

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TABLE G-3

SOUTH BORINGS, p. 1 of 1

Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)		Boring Name/ Interval	Hnu Reading (ppm)	
	Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2		Jar #1	Jar #2
SB01			**SB02**			**SB03**			**SB04**		
A	3.1	3.5	A	0.4	0.6	A	0.1	0.1	A	7.9	9.4
B	6.4	8.0	B	1.5	1.4	B	3.5	3.7	B	1.3	1.7
C	5.6	5.3	C	1.0	1.9	C	1.4	0.5	C	3.1	2.6
D	4.1	3.8	D	8.2	2.5	D	1.8	1.3	D	1.1	0.9
E	3.4	1.9	E	2.6	1.2	E	0.7	0.6	E	1.2	1.4
F	2.0	2.3	F	3.2	2.5	F	0.9	0.7	F	1.4	0.5
G	3.2	3.8	G	3.7	2.2	G	3.4	2.2	G	0.7	1.9
H	1.9	1.5	H	2.1	1.7	H	1.1	1.7	H	1.0	1.6
I	3.4	2.4	I	2.6	3.2	I	1.5	1.7	I	2.3	1.4
J	46	72	J	39	39	J	38	23	J	21	19.2

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APPENDIX H

SUMMARY OF LABORATORY RESULTS OF SOIL FROM SOIL BORING SAMPLES

SOIL VOLATILES

SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB01E		CB01G		CB01I		CB02F		CB02H		CB02J	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
VINYL CHLORIDE	UG/KG	11	U	10	U	10	U	11	U	11	U	12	U
CHLOROETHANE	UG/KG	11	U	10	U	10	U	11	U	11	U	12	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
CHLOROFORM	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
TRICHLOROETHENE	UG/KG	3	J	5	U	5	U	5	U	5	U	6	U
BENZENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
TOLUENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
CHLOROBENZENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
ETHYLBENZENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U

U = Undetected
B = Present in Method Blank
J = Estimated Concentration
E = Exceeds Calibration Limit
D = Reported value is from a second analytical run because the value exceeded the calibration limit in the first run

Report Generated 01/10/91 Project # : 1870.52 SVOC

SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB03A		CB03C		CB03E		CB04C		CB04G		CB04I	
TRICHLOROFLUOROMETHANE	UG/KG	8	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/KG	15	U	11	U	10	U	10	U	11	U	10	U
CHLOROETHANE	UG/KG	15	U	11	U	10	U	10	U	11	U	10	U
METHYLENE CHLORIDE	UG/KG	8	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/KG	8	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/KG	8	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	8	U	5	U	5	U	5	U	5	U	5	U
CHLOROFORM	UG/KG	8	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	8	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/KG	7	J	100		5	U	5	U	5	U	5	U
BENZENE	UG/KG	8	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/KG	8	U	16		5	U	5	U	5	U	5	U
TOLUENE	UG/KG	8	U	5	U	5	U	5	U	5	U	5	U
CHLOROBENZENE	UG/KG	8	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/KG	8	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/KG	8	U	5	U	5	U	5	U	5	U	5	U

U = Undetected
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Report Generated 01/10/91 Project # : 1870.52 SVOC

SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB05F		CB05H		CB05J		CB06C		CB06E		CB06G	
TRICHLOROFLUOROMETHANE	UG/KG	7		6	U	6	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/KG	13	U	12	U	12	U	10	U	10	U	10	U
CHLOROETHANE	UG/KG	13	U	12	U	12	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
CHLOROFORM	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
BENZENE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
TOLUENE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
CHLOROBENZENE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
ETHYLBENZENE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U

U = Undetected
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J = Estimated Concentration
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Report Generated 01/10/91 Project # : 1870.52 SVOC

SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB07C		CB07G		CB07I		CB08B		CB08F		CB08J	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
VINYL CHLORIDE	UG/KG	10	U	10	U	11	U	12	U	11	U	12	U
CHLOROETHANE	UG/KG	10	U	10	U	11	U	12	U	11	U	12	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
CHLOROFORM	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	5	U	5	U	3	J	5	U	6	U
TRICHLOROETHENE	UG/KG	5	U	5	U	5	U	30		0.7	J	7	
BENZENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	5	U	5	U	5	U	9		5	U	2	J
TOLUENE	UG/KG	5	U	5	U	5	U	6	U	5	U	1	J
CHLOROBENZENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
ETHYLBENZENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U

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J = Estimated Concentration
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Report Generated 01/10/91 Project # : 1870.52 SVOC

SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB09C		CB09G		CB09I		CB10C		CB10E		CB10G	
TRICHLOROFLUOROMETHANE	UG/KG	6	U	5	U	6	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/KG	12	U	10	U	11	U	10	U	10	U	10	U
CHLOROETHANE	UG/KG	12	U	10	U	11	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/KG	6	U	5	U	6	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/KG	6	U	5	U	6	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/KG	6	U	5	U	6	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	6	U	5	U	6	U	5	U	5	U	5	U
CHLOROFORM	UG/KG	6	U	5	U	6	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	6	U	5	U	6	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/KG	64		2	J	6	U	5	U	5	U	5	U
BENZENE	UG/KG	6	U	5	U	6	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/KG	16		5	U	6	U	5	U	5	U	5	U
TOLUENE	UG/KG	6	U	5	U	6	U	5	U	5	U	5	U
CHLOROBENZENE	UG/KG	6	U	5	U	6	U	5	U	5	U	5	U
ETHYLBENZENE	UG/KG	6	U	5	U	6	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/KG	6	U	5	U	6	U	5	U	5	U	5	U

U = Undetected
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J = Estimated Concentration
E = Exceeds Calibration Limit
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Report Generated 01/10/91 Project # : 1870.52 SVOC

SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB11D		CB11F		CB11J		CB12F		CB12H		CB12J	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
VINYL CHLORIDE	UG/KG	10	U	11	U	12	U	10	U	11	U	12	U
CHLOROETHANE	UG/KG	10	U	11	U	12	U	10	U	11	U	12	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
CHLOROFORM	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
TRICHLOROETHENE	UG/KG	1	J	1	J	7		5	U	5	U	23	
BENZENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	5	U	5	U	2	J	5	U	5	U	7	
TOLUENE	UG/KG	5	U	0.7	J	6	U	5	U	5	U	6	U
CHLOROBENZENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
ETHYLBENZENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U

U = Undetected
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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB13C		CB13G		CB13I		CB14D		CB14F		CB14J	
TRICHLOROFLUOROMETHANE	UG/KG	36	U	5	U	5	U	6	U	5	U	6	U
VINYL CHLORIDE	UG/KG	72	U	10	U	11	U	11	U	10	U	12	U
CHLOROETHANE	UG/KG	72	U	10	U	11	U	11	U	10	U	12	U
METHYLENE CHLORIDE	UG/KG	36	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	36	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	36	U	5	U	5	U	6	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	36	U	5	U	5	U	6	U	5	U	6	U
CHLOROFORM	UG/KG	36	U	5	U	5	U	6	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	32	J	5	U	5	U	6	U	5	U	6	U
TRICHLOROETHENE	UG/KG	6300	D	0.7	J	2	J	4	J	5	U	17	
BENZENE	UG/KG	36	U	5	U	5	U	6	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	500		5	U	0.6	J	2	J	5	U	5	J
TOLUENE	UG/KG	36	U	5	U	5	U	6	U	5	U	6	U
CHLOROBENZENE	UG/KG	36	U	5	U	5	U	6	U	5	U	6	U
ETHYLBENZENE	UG/KG	36	U	5	U	5	U	6	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	36	U	5	U	5	U	6	U	5	U	6	U

U = Undetected
B = Present in Method Blank
J = Estimated Concentration
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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
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PARAMETER	UNITS	CB15E		CB15G		CB15I		CB16E		CB16G		CB16I	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
VINYL CHLORIDE	UG/KG	10	U	11	U	11	U	11	U	10	U	12	U
CHLOROETHANE	UG/KG	10	U	11	U	11	U	11	U	10	U	12	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
CHLOROFORM	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
TRICHLOROETHENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
BENZENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
TOLUENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
CHLOROBENZENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
ETHYLBENZENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
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PARAMETER	UNITS	CB17E		CB17G		CB17I		CB18D		CB18H		CB18J	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
VINYL CHLORIDE	UG/KG	10	U	12	U	11	U	11	U	10	U	12	U
CHLOROETHANE	UG/KG	10	U	12	U	11	U	11	U	10	U	12	U
METHYLENE CHLORIDE	UG/KG	5	U	6	U	7		6	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
CHLOROFORM	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
TRICHLOROETHENE	UG/KG	5	U	6	U	1	J	33		5	U	57	
BENZENE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	5	U	6	U	6	U	9		5	U	8	
TOLUENE	UG/KG	5	U	2	J	6	U	3	J	5	U	6	U
CHLOROBENZENE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
ETHYLBENZENE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB19A		CB19C		CB19I		CB20D		CB20H		CB20J	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
VINYL CHLORIDE	UG/KG	11	U	11	U	12	U	12	U	10	U	12	U
CHLOROETHANE	UG/KG	11	U	11	U	12	U	12	U	10	U	12	U
METHYLENE CHLORIDE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	6	U	6	U	5	J	5	U	6	U
CHLOROFORM	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	6	U	6	U	3	J	5	U	6	U
TRICHLORDETHENE	UG/KG	5	U	14		3	J	680	D	4	J	56	
BENZENE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	5	U	9		6	U	130	D	2	J	18	
TOLUENE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
CHLOROBENZENE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
ETHYLBENZENE	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	5	U	6	U	6	U	6	U	5	U	6	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB21E		CB21G		CB21I		CB22E		CB22G		CB22I	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/KG	10	U	10	U	10	U	11	U	10	U	11	U
CHLOROETHANE	UG/KG	10	U	10	U	10	U	11	U	10	U	11	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROFORM	UG/KG	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/KG	1	J	2	J	2	J	2	J	2	J	2	J
BENZENE	UG/KG	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/KG	5	U	5	U	5	U	0.9	J	0.6	J	5	U
TOLUENE	UG/KG	5	U	5	U	5	U	1	J	5	U	5	U
CHLOROBENZENE	UG/KG	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/KG	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	5	U	5	J	5	U	5	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB23D		CB23F		CB23J		CB24C		CB24E		CB24G	
TRICHLOROFLUOROMETHANE	UG/KG	6	U	5	U	6	U	6	U	6	U	5	U
VINYL CHLORIDE	UG/KG	11	U	10	U	11	U	11	U	13	U	10	U
CHLOROETHANE	UG/KG	11	U	10	U	11	U	11	U	13	U	10	U
METHYLENE CHLORIDE	UG/KG	6	U	5	U	6	U	6	U	6	U	5	U
1,1-DICHLOROETHENE	UG/KG	6	U	5	U	6	U	6	U	6	U	5	U
1,1-DICHLOROETHANE	UG/KG	6	U	5	U	6	U	6	U	6	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	6	U	5	U	6	U	6	U	6	U	5	U
CHLOROFORM	UG/KG	6	U	5	U	6	U	6	U	6	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	6	U	5	U	6	U	6	U	6	U	5	U
TRICHLOROETHENE	UG/KG	120		5	J	14		3	J	15		2	J
BENZENE	UG/KG	6	U	5	U	6	U	6	U	6	U	5	U
TETRACHLOROETHENE	UG/KG	35		2	J	3	J	6	U	3	J	5	U
TOLUENE	UG/KG	6	U	5	U	6	U	2	J	2	J	5	U
CHLOROBENZENE	UG/KG	6	U	5	U	6	U	6	U	6	U	5	U
ETHYLBENZENE	UG/KG	6	U	5	U	6	U	6	U	6	U	5	U
XYLENES (TOTAL)	UG/KG	6	U	5	U	6	U	2	J	6	U	5	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB25F		CB25H		CB25J		CB26F		CB26H		CB26J	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
VINYL CHLORIDE	UG/KG	10	U	10	U	12	U	10	U	11	U	12	U
CHLOROETHANE	UG/KG	10	U	10	U	12	U	10	U	11	U	12	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
CHLOROFORM	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
TRICHLOROETHENE	UG/KG	2	J	3	J	88		5	U	5	U	9	
BENZENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	5	U	5	U	25		5	U	5	U	6	U
TOLUENE	UG/KG	5	U	5	U	1	J	5	U	5	U	6	U
CHLOROBENZENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
ETHYLBENZENE	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	6	U	5	U	5	U	6	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB27A		CB27F		CB27G		CB28B		CB28F		CB28J	
TRICHLOROFLUOROMETHANE	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
VINYL CHLORIDE	UG/KG	11	U	1300	U	10	U	10	U	11	U	12	U
CHLOROETHANE	UG/KG	11	U	1300	U	10	U	10	U	11	U	12	U
METHYLENE CHLORIDE	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
1,1-DICHLOROETHENE	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
1,1-DICHLOROETHANE	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
CHLOROFORM	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
TRICHLOROETHENE	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
BENZENE	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
TETRACHLOROETHENE	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
TOLUENE	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
CHLOROBENZENE	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
ETHYLBENZENE	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U
XYLENES (TOTAL)	UG/KG	6	U	660	U	5	U	5	U	6	U	6	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB01B		NB01H		NB01J		NB02E		NB02G		NB02I	
TRICHLOROFLUOROMETHANE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/KG	12	U	11	U	11	U	10	U	11	U	10	U
CHLOROETHANE	UG/KG	12	U	11	U	11	U	10	U	11	U	10	U
METHYLENE CHLORIDE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	6	U	69		19		5	U	5	U	5	U
CHLOROFORM	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/KG	45		220	E	38		5	U	5	U	5	J
BENZENE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/KG	6	U	9		6	U	5	U	5	U	5	U
TOLUENE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
CHLOROBENZENE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
ETHYLBENZENE	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/KG	6	U	6	U	6	U	5	U	5	U	5	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB03C		NB03E		NB03I		NB04C[1]		NB04G		NB04I	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
VINYL CHLORIDE	UG/KG	10	U	10	U	10	U	12	U	10	U	12	U
CHLOROETHANE	UG/KG	10	U	10	U	10	U	12	U	10	U	12	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	5	U	7		6	U	5	U	130	
CHLOROFORM	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
TRICHLOROETHENE	UG/KG	5	U	5	U	13		4	J	2	J	230	
BENZENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	5	U	5	U	3	J	6	U	5	U	13	
TOLUENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
CHLOROBENZENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
ETHYLBENZENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U

(1) Sample NB04C failed several QC criteria. This particular matrix appears to pose significant analytical difficulty and the data may not be reliable.

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
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PARAMETER	UNITS	NB05C		NB05G		NB05I		NB06E		NB06G		NB06I	
TRICHLOROFLUOROMETHANE	UG/KG	7	U	5	U	6	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/KG	14	U	10	U	12	U	10	U	10	U	10	U
CHLOROETHANE	UG/KG	14	U	10	U	12	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/KG	7	U	5	U	6	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/KG	7	U	5	U	6	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/KG	7	U	5	U	6	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	760	D	5	U	33		8		6		20	
CHLOROFORM	UG/KG	7	U	5	U	6	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	7	U	5	U	6	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/KG	380	D	7		49		7		28		38	
BENZENE	UG/KG	7	U	5	U	6	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/KG	25		5	U	3	J	5	U	110		7	
TOLUENE	UG/KG	7	U	5	U	6	U	5	U	5	U	5	U
CHLOROBENZENE	UG/KG	7	U	5	U	6	U	5	U	5	U	5	U
ETHYLBENZENE	UG/KG	7	U	5	U	6	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/KG	7	U	5	U	6	U	5	U	5	U	5	U

U = Undetected
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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB07C		NB07G		NB07I		NB08C[1]		NB08G		NB08I	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	5	U	2600	U	5	U	5	U
VINYL CHLORIDE	UG/KG	11	U	10	U	11	U	5200	U	10	U	10	U
CHLOROETHANE	UG/KG	11	U	10	U	11	U	5200	U	10	U	10	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	5	U	2600	U	5	U	5	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	5	U	2600	U	5	U	5	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	5	U	3300	D	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	5	U	50		62000	D	3	J	5	U
CHLOROFORM	UG/KG	5	U	5	U	5	U	2600	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	5	U	4	J	14000	D	5	U	5	U
TRICHLOROETHENE	UG/KG	7		6		160		52000	D	6		6	
BENZENE	UG/KG	5	U	5	U	5	U	2600	U	5	U	5	U
TETRACHLOROETHENE	UG/KG	4	J	5	U	39		10000	D	5	U	5	U
TOLUENE	UG/KG	5	U	5	U	4	J	2600	U	5	U	5	U
CHLOROBENZENE	UG/KG	5	U	5	U	5	U	2600	U	5	U	5	U
ETHYLBENZENE	UG/KG	5	U	5	U	5	U	2600	U	5	U	5	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	5	U	2600	U	5	U	5	U

(1) The medium level analysis apparently recovered the target compounds from the sample matrix better than the low level analysis. Only the medium level values are reported here.

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB09C		NB09G		NB09I		NB10B		NB10D		NB10J	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
VINYL CHLORIDE	UG/KG	11	U	10	U	10	U	12	U	10	U	12	U
CHLOROETHANE	UG/KG	11	U	10	U	10	U	12	U	10	U	12	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	65		9		4	J	6	U	5	U	6	U
CHLOROFORM	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	2	J	5	U	5	U	6	U	5	U	6	U
TRICHLOROETHENE	UG/KG	92		13		8		4	J	5	U	17	
BENZENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	74		7		2	J	6	U	5	U	6	U
TOLUENE	UG/KG	3	J	5	U	5	U	6	U	5	U	6	U
CHLOROBENZENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
ETHYLBENZENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB11E		NB11G		NB11I		NB12C		NB12G		NB12I	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
VINYL CHLORIDE	UG/KG	10	U	10	U	10	U	10	U	10	U	11	U
CHLOROETHANE	UG/KG	10	U	10	U	10	U	10	U	10	U	11	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
CHLOROFORM	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
TRICHLOROETHENE	UG/KG	2	J	5	U	7		5	U	5	U	6	U
BENZENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
TOLUENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
CHLOROBENZENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
ETHYLBENZENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB13A		NB13C		NB13E		NB14A		NB14C		NB14I	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
VINYL CHLORIDE	UG/KG	11	U	11	U	10	U	11	U	12	U	10	U
CHLOROETHANE	UG/KG	11	U	11	U	10	U	11	U	12	U	10	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	1300	DJ	5	U	5	U	6	U	5	U
CHLOROFORM	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	3	J	5	U	5	U	6	U	5	U
TRICHLOROETHENE	UG/KG	24		54000	D	5	U	37[2]		6	U	5	U
BENZENE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
TETRACHLOROETHENE	UG/KG	5	U	17		5	U	5	U	6	U	5	U
TOLUENE	UG/KG	5	U	5	J	5	U	5	U	6	U	5	U
CHLOROBENZENE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
ETHYLBENZENE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U

[2] The reported trichloroethene concentration for NB14A is probably low. Three subsamples of a blind field duplicate for NB14A (QCD52) were also analyzed. In each case, the measured trichloroethene concentration was much higher. In addition, a matrix spike and matrix spike duplicate analysis was performed on the blind duplicate. The spikes exhibited negative recoveries. This sample matrix may contain high trichloroethene concentrations which are difficult to extract and analyze precisely.

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
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PARAMETER	UNITS	NB15D		NB15H		NB15J		NB16A		NB16C		NB16E	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
VINYL CHLORIDE	UG/KG	10	U	11	U	11	U	11	U	13	U	10	U
CHLOROETHANE	UG/KG	10	U	11	U	11	U	11	U	13	U	10	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	5	U	10		3	J	16		5	U
CHLOROFORM	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	5	U	5	U	2	J	10		5	U
TRICHLOROETHENE	UG/KG	5	U	2	J	19		2	J	39		5	U
BENZENE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
TETRACHLOROETHENE	UG/KG	5	U	5	U	5	U	5	U	14		5	U
TOLUENE	UG/KG	5	U	5	U	5	U	3	J	3	J	5	U
CHLOROBENZENE	UG/KG	5	U	5	U	5	U	5	U	6	U	5	U
ETHYLBENZENE	UG/KG	5	U	5	U	5	U	1	J	6	U	5	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	5	U	8		11		5	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB17C		NB17E		NB17G		NB18C		NB18G		NB18I	
TRICHLOROFLUOROMETHANE	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/KG	11	U	11	U	11	U	10	U	11	U	11	U
CHLOROETHANE	UG/KG	11	U	11	U	11	U	10	U	11	U	11	U
METHYLENE CHLORIDE	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
CHLOROFORM	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
BENZENE	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
TOLUENE	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
CHLOROBENZENE	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/KG	6	U	5	U	5	U	5	U	5	U	5	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB19C		NB19G		NB19I		NB20B		NB20D		NB20J	
TRICHLOROFLUOROMETHANE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
VINYL CHLORIDE	UG/KG	13	U	10	U	10	U	11	U	10	U	12	U
CHLOROETHANE	UG/KG	13	U	10	U	10	U	11	U	10	U	12	U
METHYLENE CHLORIDE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	6	J	5	U	5	U	32		5	U	6	U
CHLOROFORM	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	6	U	5	U	5	U	7		5	U	6	U
TRICHLOROETHENE	UG/KG	11		5		6		110	D	9		6	J
BENZENE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	6	U	5	U	5	U	4	J	5	U	6	U
TOLUENE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
CHLOROBENZENE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
ETHYLBENZENE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
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PARAMETER	UNITS	NB21C		NB21E		NB21I		NB22F		NB22H		NB22J	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
VINYL CHLORIDE	UG/KG	10	U	10	U	10	U	12	U	10	U	12	U
CHLOROETHANE	UG/KG	10	U	10	U	10	U	12	U	10	U	12	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
CHLOROFORM	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
TRICHLOROETHENE	UG/KG	5	U	5	U	10		45		5	U	20	
BENZENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
TOLUENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
CHLOROBENZENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
ETHYLBENZENE	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	5	U	6	U	5	U	6	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

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PARAMETER	UNITS	NB23A		NB23K		NB23M		QCD51		QCD52		QCD53	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
VINYL CHLORIDE	UG/KG	11	U	10	U	10	U	10	U	11	U	11	U
CHLOROETHANE	UG/KG	11	U	10	U	10	U	10	U	11	U	11	U
METHYLENE CHLORIDE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
CHLOROFORM	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
TRICHLOROETHENE	UG/KG	5	U	5	U	5	U	5	U	26000	D	6	U
BENZENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	5	U	5	U	5	U	5	U	3	J	6	U
TOLUENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
CHLOROBENZENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
ETHYLBENZENE	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	5	U	5	U	5	U	5	U	5	U	6	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

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PARAMETER	UNITS	QCD54		QCD55		QCD56		QCD57		QCD58		QCD59	
TRICHLOROFLUOROMETHANE	UG/KG	6	U	6	U	5	U	5	U	6	U	5	U
VINYL CHLORIDE	UG/KG	11	U	12	U	10	U	11	U	13	U	10	U
CHLOROETHANE	UG/KG	11	U	12	U	10	U	11	U	13	U	10	U
METHYLENE CHLORIDE	UG/KG	6	U	6	U	5	U	5	U	6	U	5	U
1,1-DICHLOROETHENE	UG/KG	6	U	6	U	5	U	5	U	6	U	5	U
1,1-DICHLOROETHANE	UG/KG	6	U	6	U	5	U	5	U	6	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	J	4	J	53		5	U	33		5	U
CHLOROFORM	UG/KG	6	U	6	U	5	U	5	U	6	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	6	U	6	U	5	U	5	U	3	J	5	U
TRICHLOROETHENE	UG/KG	10		12		110	D	5	U	63		5	U
BENZENE	UG/KG	6	U	6	U	5	U	5	U	6	U	5	U
TETRACHLOROETHENE	UG/KG	4	J	5	J	600	D	5	U	6	U	5	U
TOLUENE	UG/KG	6	U	6	U	2	J	5	U	6	U	5	U
CHLOROBENZENE	UG/KG	6	U	6	U	5	U	5	U	6	U	5	U
ETHYLBENZENE	UG/KG	6	U	6	U	5	U	5	U	6	U	5	U
XYLENES (TOTAL)	UG/KG	6	U	6	U	5	U	5	U	6	U	5	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
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PARAMETER	UNITS	QCD60		QCD61		QCD62		QCD63		QCD64		QCD65	
TRICHLOROFLUOROMETHANE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
VINYL CHLORIDE	UG/KG	11	U	10	U	11	U	12	U	10	U	12	U
CHLOROETHANE	UG/KG	11	U	10	U	11	U	12	U	10	U	12	U
METHYLENE CHLORIDE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHENE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
1,1-DICHLOROETHANE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
CHLOROFORM	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
1,1,1-TRICHLOROETHANE	UG/KG	1	J	5	U	5	U	6	U	5	U	6	U
TRICHLOROETHENE	UG/KG	43		32		2	J	2	J	2	J	10	
BENZENE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
TETRACHLOROETHENE	UG/KG	10		8		5	U	6	U	5	U	2	J
TOLUENE	UG/KG	6	U	5	U	0.9	J	6	U	5	U	6	U
CHLOROBENZENE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
ETHYLBENZENE	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U
XYLENES (TOTAL)	UG/KG	6	U	5	U	5	U	6	U	5	U	6	U

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Report Generated 01/10/91 Project # : 1870.52 SVOC

SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCD66		QCD67		S10IB		S10IE		SB01B		SB01D	
TRICHLOROFLUOROMETHANE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
VINYL CHLORIDE	UG/KG	11	U	10	U	11	U	12	U	10	U	11	U
CHLOROETHANE	UG/KG	11	U	10	U	11	U	12	U	10	U	11	U
METHYLENE CHLORIDE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
1,1-DICHLOROETHENE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
1,1-DICHLOROETHANE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
CHLOROFORM	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
TRICHLOROETHENE	UG/KG	6	U	5	U	5	U	6	U	1	J	18	
BENZENE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
TETRACHLOROETHENE	UG/KG	6	U	5	U	5	U	6	U	5	U	4	J
TOLUENE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
CHLOROBENZENE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
ETHYLBENZENE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
XYLENES (TOTAL)	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U

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Report Generated 01/10/91 Project # : 1870.52 SVOC

SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	SB01J		SB02E		SB02G		SB02I		SB03C		SB03G	
TRICHLOROFLUOROMETHANE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
VINYL CHLORIDE	UG/KG	12	U	10	U	11	U	11	U	11	U	11	U
CHLOROETHANE	UG/KG	12	U	10	U	11	U	11	U	11	U	11	U
METHYLENE CHLORIDE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
1,1-DICHLOROETHENE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
1,1-DICHLOROETHANE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	3	J	5	U	5	U	6	U	5	U	5	U
CHLOROFORM	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
TRICHLOROETHENE	UG/KG	9		5	U	5	U	6	U	0.6	J	5	U
BENZENE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
TETRACHLOROETHENE	UG/KG	3	J	5	U	5	U	6	U	5	U	5	U
TOLUENE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
CHLOROBENZENE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
ETHYLBENZENE	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U
XYLENES (TOTAL)	UG/KG	6	U	5	U	5	U	6	U	5	U	5	U

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Report Generated 01/10/91 Project # : 1870.52 SVOC

SUMMARY OF ANALYTICAL RESULTS
SOIL VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	SB03I		SB04B		SB04H		SB04J	
TRICHLOROFLUOROMETHANE	UG/KG	5	U	6	U	5	U	5	U
VINYL CHLORIDE	UG/KG	10	U	12	U	10	U	10	U
CHLOROETHANE	UG/KG	10	U	12	U	10	U	10	U
METHYLENE CHLORIDE	UG/KG	5	U	6	U	5	U	5	U
1,1-DICHLOROETHENE	UG/KG	5	U	6	U	5	U	5	U
1,1-DICHLOROETHANE	UG/KG	5	U	6	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	5	U	6	U	5	U	7	
CHLOROFORM	UG/KG	5	U	6	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/KG	5	U	9		5	U	1	J
TRICHLOROETHENE	UG/KG	5	U	85		5	U	20	
BENZENE	UG/KG	5	U	6	U	5	U	5	U
TETRACHLOROETHENE	UG/KG	5	U	6	U	5	U	5	J
TOLUENE	UG/KG	5	U	6	U	5	U	5	U
CHLOROBENZENE	UG/KG	5	U	6	U	5	U	5	U
ETHYLBENZENE	UG/KG	5	U	6	U	5	U	5	U
XYLENES (TOTAL)	UG/KG	5	U	6	U	5	U	5	U

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Report Generated 01/10/91 Project # : 1870.52 SVOC

SOIL QUALITY CONTROL - VOLATILES

SUMMARY OF ANALYTICAL RESULTS
SOIL QUALITY CONTROL - VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCR51		QCR52		QCR53		QCR54		QCR55		QCR56	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
CHLOROETHANE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

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Report Generated 01/10/91 Project # : 1870.52 SQCVOC

SUMMARY OF ANALYTICAL RESULTS
SOIL QUALITY CONTROL - VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCR57		QCR58		QCR59		QCT51		QCT52		QCT53	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
CHLOROETHANE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

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Report Generated 01/10/91 Project # : 1870.52 SQCVOC

SUMMARY OF ANALYTICAL RESULTS
SOIL QUALITY CONTROL - VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCT54		QCT55		QCT56		QCT57		QCT58		QCT59	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
CHLOROETHANE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

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B = Present in Method Blank
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Report Generated 01/10/91 Project # : 1870.52 SQCVOC

SUMMARY OF ANALYTICAL RESULTS
SOIL QUALITY CONTROL - VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCT60		QCT61		QCT62		QCT63		QCT64		QCT65	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
CHLOROETHANE	UG/L	10	U	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROFORM	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
BENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
TOLUENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
CHLOROBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U	5	U	5	U	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U	5	U	5	U	5	U	5	U

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B = Present in Method Blank
J = Estimated Concentration
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Report Generated 01/10/91 Project # : 1870.52 SQCVOC

SUMMARY OF ANALYTICAL RESULTS
SOIL QUALITY CONTROL - VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCT66		SRC01	
TRICHLOROFLUOROMETHANE	UG/L	5	U	5	U
VINYL CHLORIDE	UG/L	10	U	10	U
CHLOROETHANE	UG/L	10	U	10	U
METHYLENE CHLORIDE	UG/L	5	U	5	U
1,1-DICHLOROETHENE	UG/L	5	U	5	U
1,1-DICHLOROETHANE	UG/L	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	5	U	5	U
CHLOROFORM	UG/L	5	U	5	U
1,1,1-TRICHLOROETHANE	UG/L	5	U	5	U
TRICHLOROETHENE	UG/L	5	U	5	U
BENZENE	UG/L	5	U	5	U
TETRACHLOROETHENE	UG/L	5	U	5	U
TOLUENE	UG/L	5	U	5	U
CHLOROBENZENE	UG/L	5	U	5	U
ETHYLBENZENE	UG/L	5	U	5	U
XYLENES (TOTAL)	UG/L	5	U	5	U

U = Undetected
B = Present in Method Blank
J = Estimated Concentration
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Report Generated 01/10/91 Project # : 1870.52 SQCVOC

SOIL METALS (SHORT LIST)

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB01E	CB01I	CB02F	CB02H	CB03A	CB03C
BARIUM	MG/KG	10.60	10.00	5.20 U	9.90	69.30	30.50
MANGANESE	MG/KG	104.00 EN	89.70 EN	58.60 EN	84.10 EN	417.00 EN	301.00 EN
SELENIUM	MG/KG	0.63 U	0.78 UW	0.62 U	0.62 U	0.71 UW	0.67 UW
ZINC	MG/KG	16.70	12.20	8.90	11.40	121.00	1170.00

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
N = Spiked sample recovery not within control limits
E = The reported value is estimated because of the presence of interference
* = Laboratory duplicate analysis not within control limits

Report Generated 01/10/91 Project # : 1870.52 SMET4

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB04C	CB04G	CB05F	CB05H	CB06C	CB06G
BARIUM	MG/KG	8.90	7.30	5.90	7.50	33.90	6.20
MANGANESE	MG/KG	58.30	62.00	42.70	65.20	220.00	53.00
SELENIUM	MG/KG	0.62 U	0.65 U	0.62 U	0.74 U	0.65 U	0.62 U
ZINC	MG/KG	12.70	10.70	8.60	12.70	18.60	8.20

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
N = Spiked sample recovery not within control limits
E = The reported value is estimated because of the presence of interference
* = Laboratory duplicate analysis not within control limits

Report Generated 01/10/91 Project # : 1870.52 SMET4

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB07G	CB07I	CB08B	CB08F	CB09G	CB09I
BARIUM	MG/KG	6.50	6.60	116.00	7.90	10.30	10.10
MANGANESE	MG/KG	74.90 EN	74.60 EN	875.00 EN	100.00 EN	86.40 N	80.40 N
SELENIUM	MG/KG	0.62 U	0.66 U	0.70 U	0.63 U	0.62 U	0.69 UW
ZINC	MG/KG	8.30 N	7.50 N	49.60 N	11.00 N	12.80	12.20

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
N = Spiked sample recovery not within control limits
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Report Generated 01/10/91 Project # : 1870.52 SMET4

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB10E	CB10G	CB11D	CB11F	CB12F	CB12J
BARIUM	MG/KG	5.90	7.40	7.10	6.20	9.20	9.20
MANGANESE	MG/KG	59.60	60.10	77.30 EN	73.30 EN	87.80	71.00
SELENIUM	MG/KG	0.62 U	0.62 U	0.62 UW	0.62 U	0.61 U	0.72 U
ZINC	MG/KG	10.60	7.80	16.00 N	12.30 N	11.50	9.20

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
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Report Generated 01/10/91 Project # : 1870.52 SMET4

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB13C	CB13G	CB14D	CB14F	CB15E	CB15G
BARIUM	MG/KG	119.00	6.90	74.00	7.70	5.50	10.70
MANGANESE	MG/KG	956.00 EN	74.90 EN	973.00 EN*	110.00 EN*	54.90 N	103.00 N
SELENIUM	MG/KG	0.74 UW	0.61 U	0.69 U	0.63 U	0.62 UW	0.65 U
ZINC	MG/KG	19.50 N	10.20 N	21.00	10.10	8.30	11.60

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N = Spiked sample recovery not within control limits
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Report Generated 01/10/91 Project # : 1870.52 SMET4

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB16E	CB16I	CB17E	CB17I	CB18D	CB18J
BARIUM	MG/KG	6.40	9.20	6.30	9.70	77.50	8.50
MANGANESE	MG/KG	73.40	84.30	97.10	101.00	720.00	82.40
SELENIUM	MG/KG	0.63 U	0.71 U	0.62 U	0.69 U	0.71 U	0.75 U
ZINC	MG/KG	8.50	9.00	8.60	12.20	13.90	8.80

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
S = The reported value was determined by the Method of Standard Additions (MSA)
N = Spiked sample recovery not within control limits
E = The reported value is estimated because of the presence of interference
* = Laboratory duplicate analysis not within control limits

Report Generated 01/10/91 Project # : 1870.52 SMET4

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB19A	CB19C	CB20D	CB20H	CB21G	CB21I
BARIUM	MG/KG	19.80	69.80	55.50	6.70	6.10	8.00
MANGANESE	MG/KG	319.00	656.00	412.00	74.90	63.10 EN*	57.40 EN*
SELENIUM	MG/KG	0.63 U	0.67 U	0.65 U	0.62 U	0.62 U	0.62 U
ZINC	MG/KG	19.30	309.00	60.30	9.70	9.60	8.60

U = Undetected
W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
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E = The reported value is estimated because of the presence of interference
* = Laboratory duplicate analysis not within control limits

Report Generated 01/10/91 Project # : 1870.52 SMET4

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB22E	CB22G	CB23F	CB23J	CB24C	CB24G
BARIUM	MG/KG	13.10	10.40	8.60	6.00	129.00	13.60
MANGANESE	MG/KG	175.00 N	107.00 N	81.00 N	81.70 N	1220.00 N	138.00 N
SELENIUM	MG/KG	0.64 U	0.62 UW	0.62 U	0.69 U	0.85 UW	0.62 U
ZINC	MG/KG	17.90	11.60	35.60	9.50	22.30	19.60

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* = Laboratory duplicate analysis not within control limits

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SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB25F	CB25H	CB26F	CB26H	CB27F	CB27G
BARIUM	MG/KG	11.50	8.10	6.30 U	5.40	12.70	8.60
MANGANESE	MG/KG	160.00 EN	78.70 EN	63.20	67.60	117.00	86.90
SELENIUM	MG/KG	0.62 UW	0.62 U	0.76 U	0.62 U	0.63 U	0.62 U
ZINC	MG/KG	21.60 N	38.00 N	7.50	7.20	11.60	8.90

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S = The reported value was determined by the Method of Standard Additions (MSA)
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E = The reported value is estimated because of the presence of interference
* = Laboratory duplicate analysis not within control limits

Report Generated 01/10/91 Project # : 1870.52 SMET4

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB28B	CB28J	NB01B	NB01J	NB02E	NB02G
BARIUM	MG/KG	30.70	9.60	86.40	5.70 U	9.00	6.30
MANGANESE	MG/KG	258.00 EN*	76.30 EN*	1040.00 N	305.00 N	373.00 N	226.00 N
SELENIUM	MG/KG	0.62 U	0.68 UW	0.68 UW	0.69 UW	0.62 U	0.62 U
ZINC	MG/KG	16.20	11.60	45.70 *	21.10 *	10.90	8.40

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E = The reported value is estimated because of the presence of interference
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Report Generated 01/10/91 Project # : 1870.52 SMET4

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB03E	NB03I	NB04C	NB04I	NB05G	NB05I
BARIUM	MG/KG	6.50	6.40	14.90	8.20	6.20 U	6.80
MANGANESE	MG/KG	170.00 N	363.00 N	345.00 EN	201.00 EN	238.00 N	358.00 N
SELENIUM	MG/KG	0.62 U	0.62 U	0.68 U	0.63 U	0.74 U	0.76 U
ZINC	MG/KG	11.50	10.90	15.50	9.40	11.70 *	13.60 *

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SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB06E	NB06I	NB07C	NB07G	NB08G	NB08I
BARIUM	MG/KG	5.20 U	7.00	8.90 *	7.20 *	6.80 *	11.90 *
MANGANESE	MG/KG	191.00 EN	343.00 EN	105.00 N*	362.00 N*	369.00 N*	464.00 N*
SELENIUM	MG/KG	0.62 U	0.64 U	0.64 U	0.62 U	0.62 U	0.65 U
ZINC	MG/KG	10.90	10.20	9.60 *	10.00 *	8.60 *	14.00 *

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* = Laboratory duplicate analysis not within control limits

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SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB09C	NB09G	NB10D	NB10J	NB11E	NB11G
BARIUM	MG/KG	27.20 *	6.90 *	5.20 U	6.70	5.20 U	5.20 U
MANGANESE	MG/KG	290.00 N*	405.00 N*	207.00 N	239.00 N	231.00 EN	179.00 EN
SELENIUM	MG/KG	0.68 UW	0.62 U	0.62 U	0.69 U	0.62 U	0.62 U
ZINC	MG/KG	17.40 *	11.80 *	9.30 *	12.00 *	11.30	9.20

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E = The reported value is estimated because of the presence of interference
* = Laboratory duplicate analysis not within control limits

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SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB12C	NB12I	NB13C	NB13E	NB14C	NB14I
BARIUM	MG/KG	14.70	6.10	47.30 *	5.10 U*	19.10	7.00
MANGANESE	MG/KG	365.00 N	423.00 N	427.00 N*	143.00 N*	416.00	272.00
SELENIUM	MG/KG	0.62 UW	0.62 U	0.67 U	0.61 U	0.67 U	0.63 U
ZINC	MG/KG	17.60	11.60	26.60 *	9.30 *	12.90	9.70

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E = The reported value is estimated because of the presence of interference
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SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB15D	NB15H	NB16A	NB16E	NB17C	NB17E
BARIUM	MG/KG	7.00	7.00	48.10	11.20	12.60 *	15.30 *
MANGANESE	MG/KG	247.00 N	426.00 N	619.00 EN	377.00 EN	204.00 N*	1460.00 N*
SELENIUM	MG/KG	0.62 U	0.62 U	0.65 U	0.63 U	0.63 U	0.63 U
ZINC	MG/KG	13.00 *	10.30 *	75.30	11.80	14.20 *	7.70 *

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SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB18C	NB18G	NB19C	NB19G	NB20B	NB20D
BARIUM	MG/KG	12.40	8.10	10.40	6.50	55.60	10.60
MANGANESE	MG/KG	570.00	225.00	314.00 EN	208.00 EN	386.00 N	414.00 N
SELENIUM	MG/KG	0.62 U	0.63 U	0.67 U	0.62 U	0.67 U	0.63 U
ZINC	MG/KG	14.60	9.90	9.00	8.80	27.00 *	11.80 *

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SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB21E	NB21I	NB22F	NB22H	NB23K	NB23M
BARIUM	MG/KG	5.80	7.70	6.70	10.30	12.10	20.50
MANGANESE	MG/KG	261.00 N	373.00 N	395.00 EN	330.00 EN	184.00 N	301.00 N
SELENIUM	MG/KG	0.62 U	0.62 U	0.68 U	0.73 U	0.62 U	0.63 U
ZINC	MG/KG	12.70	11.50	11.20	12.40	10.10	18.30

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SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCD53	QCD54	QCD55	QCD56	QCD57	QCD61
BARIUM	MG/KG	6.80	24.00 *	7.40 *	8.20	157.00	6.30
MANGANESE	MG/KG	421.00	180.00 N*	348.00 N*	615.00 EN	1440.00 N	78.80 N
SELENIUM	MG/KG	0.69 U	0.67 UW	0.65 U	0.62 U	0.65 U	0.63 U
ZINC	MG/KG	10.70	20.50 *	10.50 *	9.60	29.00	10.20

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SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCD62	QCD63	QCD64	QCD65	SB01B	SB01D
BARIUM	MG/KG	6.50	5.90 U	9.00	11.50	27.30	6.10
MANGANESE	MG/KG	75.30 EN	52.70 EN	82.30 EN*	86.70 EN*	227.00 *	67.80 *
SELENIUM	MG/KG	0.65 U	0.71 U	0.62 U	0.72 U	0.61 U	0.65 U
ZINC	MG/KG	7.70 N	8.10 N	12.70	10.70	81.80	9.60

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SUMMARY OF ANALYTICAL RESULTS
SOIL METALS (SHORT LIST)

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	SB02E	SB02I	SB03C	SB03I	SB04B	SB04H
BARIUM	MG/KG	5.50	14.40	22.30	8.70	46.20	7.40
MANGANESE	MG/KG	51.50 *	98.60 *	181.00 *	54.40 *	283.00 *	59.70 *
SELENIUM	MG/KG	0.62 U	1.30	0.65 U	0.63 U	0.71 U	0.62 U
ZINC	MG/KG	10.00	17.50	21.40	9.80	44.20	10.10

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Report Generated 01/10/91 Project # : 1870.52 SMET4

SOIL METALS AND CYANIDE

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS AND CYANIDE

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB01G		CB02J		CB03E		CB04I		CB05J		CB06E	
ALUMINUM	MG/KG	1280.00		1580.00		2030.00		1690.00	N	2640.00	N	1710.00	N
ANTIMONY	MG/KG	2.60	UN	2.30	UN	11.30	N	2.10	UN	2.30	UN	2.10	UN
ARSENIC	MG/KG	0.79	UW	0.69	UW	4.10		1.10		0.85		1.00	
BARIUM	MG/KG	6.60	U	7.60		86.20		8.20		13.60		8.50	
BERYLLIUM	MG/KG	0.66	U	0.57	U	0.62	U	0.52	U	0.58	U	0.53	U
CADMIUM	MG/KG	0.66	U	0.57	U	5.20		0.52	U	0.58	U	0.53	U*
CALCIUM	MG/KG	3170.00	N	4120.00	N	3000.00	N	3750.00		9360.00		3960.00	
CHROMIUM	MG/KG	5.00	*	6.40	*	33.30	*	6.80		10.50		6.40	
COBALT	MG/KG	6.60	U*	5.70	U*	9.00	*	5.20	U	5.80	U	5.30	U
COPPER	MG/KG	3.10		5.50		3650.00		4.20		7.20		5.70	
IRON	MG/KG	4610.00	N	5480.00	N	36700.00	N	5250.00	N	7930.00	N	5010.00	N
LEAD	MG/KG	1.30		1.20		2330.00		1.50		1.70		1.60	
MAGNESIUM	MG/KG	1160.00	N*	1600.00	N*	1160.00	N*	1440.00		3510.00		1880.00	
MANGANESE	MG/KG	59.10	N	72.00	N	1250.00	N	61.40		123.00		64.70	N
MERCURY	MG/KG	0.13	U	0.11	U	0.12	U	0.22		0.12	U	0.11	U
NICKEL	MG/KG	5.30	U	4.60	U	89.00		4.10	U	6.20		4.30	U
POTASSIUM	MG/KG	78.20		183.00		320.00		160.00		279.00		155.00	
SELENIUM	MG/KG	0.79	U	0.69	U	0.75	U	0.62	U	0.70	U	0.64	U
SILVER	MG/KG	1.30	U	1.10	U	3.10		5.20	U	5.80	U	1.10	U
SODIUM	MG/KG	74.70		60.10		296.00		80.40		140.00		78.10	
THALLIUM	MG/KG	0.79	U	0.69	U	0.75	U	0.62	U	0.70	U	0.64	U
VANADIUM	MG/KG	11.90	*	15.00	*	17.50	*	14.70		26.00		16.40	
ZINC	MG/KG	7.80		9.10		1680.00		9.80		12.00		9.70	
CYANIDE, TOTAL	MG/KG	3.30	U	2.90	U	3.10	U	2.60	U	2.90	U	2.70	U

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* = Duplicate analysis not within control limits

Report Generated 01/10/91 Project # : 1870.52 SCLP

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS AND CYANIDE

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB07C		CB08J		CB09C		CB10C		CB11J		CB12H	
ALUMINUM	MG/KG	1820.00	N	1650.00	N	2010.00	N	1470.00	N	1710.00	N	2420.00	N
ANTIMONY	MG/KG	2.10	UN	2.30	UN	2.10	UN	2.10	UN	2.40	UN	2.20	UN
ARSENIC	MG/KG	1.00		1.10		1.90		1.10		1.00		1.10	
BARIUM	MG/KG	6.90		9.30		8.80		9.00		7.70		9.70	
BERYLLIUM	MG/KG	0.53	U	0.57	U	0.52	U	0.52	U	0.60	U	0.54	U
CADMIUM	MG/KG	0.53	U	0.57	U	0.52	U	0.52	U	0.60	U	0.54	U
CALCIUM	MG/KG	2680.00		5800.00		2490.00		866.00		3390.00		4710.00	
CHROMIUM	MG/KG	7.40		5.20		8.50		6.20		7.50		10.50	
COBALT	MG/KG	5.30	U	5.70	U	5.20	U	7.40		6.00	U	5.40	U
COPPER	MG/KG	6.50		4.70		5.30		4.60		5.80		5.40	
IRON	MG/KG	5590.00	N	47900.00	N	6280.00	N	3770.00	N	5760.00	N	8310.00	N
LEAD	MG/KG	1.10		1.40		1.50		2.20		0.90		1.10	
MAGNESIUM	MG/KG	1650.00		2070.00		1740.00		967.00		1620.00		2190.00	
MANGANESE	MG/KG	60.40		80.40		57.70		38.00		73.10		102.00	
MERCURY	MG/KG	0.11	U	0.11	U	0.10	U	0.10	U	0.12	U	0.11	U
NICKEL	MG/KG	8.20		6.60		6.30		7.00		4.80	U	5.60	
POTASSIUM	MG/KG	115.00		211.00		164.00		78.30		175.00		244.00	
SELENIUM	MG/KG	0.63	U	0.69	UW	0.62	U	0.62	U	0.71	U	0.65	U
SILVER	MG/KG	5.30	U	1.10	U	5.20	U	5.20	U	6.00	U	5.40	U
SODIUM	MG/KG	93.60		83.80		110.00		51.50	U	94.50		150.00	
THALLIUM	MG/KG	0.63	U	0.69	U	0.62	U	0.62	U	0.71	U	0.65	U
VANADIUM	MG/KG	18.10		13.70		21.80		12.00		16.20		25.60	
ZINC	MG/KG	9.60		9.40		10.50		9.40		9.30		12.50	
CYANIDE, TOTAL	MG/KG	2.60	U	2.90	U	2.60	U	2.60	U	3.00	U	2.70	U

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Report Generated 01/10/91 Project # : 1870.52 SCLP

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS AND CYANIDE

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB13I		CB14J		CB15I		CB16G		CB17G		CB18H	
ALUMINUM	MG/KG	1880.00	N	1990.00	N	1730.00	N	1740.00	N	1620.00	N	1690.00	N
ANTIMONY	MG/KG	2.10	UN	2.30	UN	2.40	UN	2.00	UN	2.00	UN	2.00	UN
ARSENIC	MG/KG	0.97		0.74		0.85		0.74		0.80		1.20	
BARIUM	MG/KG	7.90		12.10		9.20		6.30		6.30		8.50	
BERYLLIUM	MG/KG	0.53	U	0.57	U	0.60	U	0.51	U	0.50	U	0.51	U
CADMIUM	MG/KG	0.53	U	0.57	U	0.60	U	0.58	*	0.50	U	0.51	U
CALCIUM	MG/KG	4110.00		6120.00		5770.00		3180.00		2970.00		3950.00	
CHROMIUM	MG/KG	8.20		7.00		8.30		6.50		7.50		5.30	
COBALT	MG/KG	5.30	U	5.70	U	6.00	U	5.10	U	5.00	U	5.10	U
COPPER	MG/KG	5.60		5.30		5.10		7.10		4.70		4.40	
IRON	MG/KG	6320.00	N	5530.00	N	5680.00	N	5150.00	N	4810.00	N	5090.00	N
LEAD	MG/KG	1.10		1.30		1.20		1.40		1.10		1.00	
MAGNESIUM	MG/KG	1590.00		2400.00		2190.00		1370.00		1600.00		1550.00	
MANGANESE	MG/KG	82.10		93.20		83.30		68.40	N	70.00		71.80	
MERCURY	MG/KG	0.38		0.11	U	0.12	U	0.10	U	0.10	U	0.10	U
NICKEL	MG/KG	4.30	U	7.60		4.80	U	5.60		5.40		5.50	
POTASSIUM	MG/KG	179.00		198.00		210.00		146.00		140.00		191.00	
SELENIUM	MG/KG	0.64	U	0.69	U	0.71	U	0.61	UW	0.60	U	0.61	U
SILVER	MG/KG	5.30	U	1.10	U	6.00	U	1.00	U	1.00	U	1.00	U
SODIUM	MG/KG	128.00		86.30		94.00		82.40		59.00		88.00	
THALLIUM	MG/KG	0.64	U	0.69	U	0.71	U	0.61	U	0.60	U	0.61	U
VANADIUM	MG/KG	18.90		15.60		17.50		15.40		14.40		15.30	
ZINC	MG/KG	9.60		10.30		8.80		8.80		8.20		8.80	
CYANIDE, TOTAL	MG/KG	2.70	U	2.90	U	3.00	U	2.60	U	2.50	U	2.50	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL METALS AND CYANIDE

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB19I		CB20J		CB21E		CB22I		CB23D		CB24E	
ALUMINUM	MG/KG	1790.00	N	2100.00	N	2330.00	N	1780.00	N	5310.00	N	6980.00	N
ANTIMONY	MG/KG	2.20	UN	2.20	UN	2.00	UN	2.10	UN	2.50	UN	2.40	UN
ARSENIC	MG/KG	0.76		0.74		3.00		0.98		4.60		5.20	
BARIUM	MG/KG	7.10		7.60		11.60		7.70		108.00		146.00	
BERYLLIUM	MG/KG	0.56	U	0.56	U	0.50	U	0.52	U	0.63	U	0.60	U
CADMIUM	MG/KG	0.56	U	0.56	U	0.50	U	0.52	U	0.63	U	0.60	U
CALCIUM	MG/KG	3560.00		3780.00		2930.00		2840.00		16300.00		10600.00	
CHROMIUM	MG/KG	8.90		9.20		11.60		8.70		16.30		18.80	
COBALT	MG/KG	5.60	U	5.60	U	9.00		5.20	U	9.90		12.00	
COPPER	MG/KG	6.80		8.90		11.90		7.10		86.60		17.00	
IRON	MG/KG	6050.00	N	6790.00	N	7370.00	N	6140.00	N	20000.00	N	26100.00	N
LEAD	MG/KG	0.91		1.20		1.50		1.10		13.40		8.60	
MAGNESIUM	MG/KG	1440.00		1610.00		2580.00		1510.00		3370.00		2960.00	
MANGANESE	MG/KG	77.40		81.20		83.40		77.50		1160.00		2050.00	
MERCURY	MG/KG	0.11	U	0.11	U	0.10	U	0.10	U	0.13	U	0.12	U
NICKEL	MG/KG	4.50	U	6.90		21.50		6.10		15.20		21.90	
POTASSIUM	MG/KG	139.00		173.00		155.00		119.00		462.00		335.00	
SELENIUM	MG/KG	0.67	U	0.67	U	0.60	U	0.62	U	0.76	UW	0.71	UW
SILVER	MG/KG	5.60	U	5.60	U	1.00	U	5.20	U	1.30	U	6.00	U
SODIUM	MG/KG	111.00		116.00		74.70		83.50		109.00		81.80	
THALLIUM	MG/KG	0.67	U	0.67	U	0.60	U	0.62	U	0.76	UW	0.71	U
VANADIUM	MG/KG	18.20		18.50		23.00		16.30		20.20		36.20	
ZINC	MG/KG	9.60		10.00		15.00		9.80		72.20		30.60	
CYANIDE, TOTAL	MG/KG	2.80	U	2.80	U	2.50	U	2.60	U	3.20	U	3.00	U

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SOIL METALS AND CYANIDE

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB25J		CB26J		CB27A		CB28F		NB01H		NB02I	
ALUMINUM	MG/KG	2310.00	N	2060.00	N	4780.00	N	4260.00	N	1230.00		1120.00	
ANTIMONY	MG/KG	2.40	UN	2.40	UN	10.60	UN	2.20	UN	2.10	UN	2.10	UN
ARSENIC	MG/KG	0.87		0.79		4.20		2.00		2.20		1.00	
BARIUM	MG/KG	12.60		13.40		128.00		53.80		6.30		6.30	
BERYLLIUM	MG/KG	0.60	U	0.59	U	0.53	U	0.55	U	0.53	U	0.52	U
CADMIUM	MG/KG	0.60	U	0.59	U	0.53	U	0.55	U	0.53	U	0.52	U
CALCIUM	MG/KG	7490.00		8560.00		8290.00		33300.00		30100.00	N	24200.00	N
CHROMIUM	MG/KG	9.50		6.60		13.40		11.00		5.20	*	6.00	*
COBALT	MG/KG	6.00	U	5.90	U	9.70		5.50	U	5.30	U*	5.20	U*
COPPER	MG/KG	6.30		5.10		95.20		8.60		2.50		2.20	
IRON	MG/KG	7360.00	N	5550.00	N	20700.00	N	10800.00	N	3400.00	N	3900.00	N
LEAD	MG/KG	1.20		1.30		24.40		4.00		2.10		2.20	
MAGNESIUM	MG/KG	2640.00		2860.00		2100.00		9430.00		5590.00	N*	6810.00	N*
MANGANESE	MG/KG	122.00		108.00		935.00		426.00		336.00	N	249.00	N
MERCURY	MG/KG	0.12	U	0.12	U	0.11	U	0.11	U	0.11	U	0.10	U
NICKEL	MG/KG	5.00		5.50		17.50		13.00		15.50		6.20	
POTASSIUM	MG/KG	266.00		255.00		320.00		720.00		113.00		108.00	
SELENIUM	MG/KG	0.72	U	0.71	U	0.64	U	0.66	U	0.63	U	0.62	U
SILVER	MG/KG	6.00	U	1.20	U	1.10	U	1.10	U	1.10	U	1.00	U
SODIUM	MG/KG	135.00		108.00		63.20		148.00		52.60	U	52.10	U
THALLIUM	MG/KG	0.72	U	0.71	U	0.64	U	0.66	UW	0.63	U	0.62	U
VANADIUM	MG/KG	21.80		16.40		17.40		18.60		5.90	*	6.40	*
ZINC	MG/KG	11.80		9.30		57.20		24.80		9.30		8.50	
CYANIDE, TOTAL	MG/KG	3.00	U	2.90	U	2.70	U	2.70	U	2.60	U	2.60	U

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SOIL METALS AND CYANIDE

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB03C		NB04G		NB05C		NB06G		NB07I		NB08C	
ALUMINUM	MG/KG	1930.00		1270.00		2410.00		1180.00	N	1470.00	N	4160.00	N
ANTIMONY	MG/KG	2.10	UN	2.10	UN	2.40	UN	2.10	UN	2.10	UNW	2.20	UN
ARSENIC	MG/KG	0.62	U	2.40		3.60		1.50		2.70		2.70	
BARIUM	MG/KG	6.60		7.00		26.40		6.40		8.10		62.50	
BERYLLIUM	MG/KG	0.52	U	0.53	U	0.60	U	0.52	U	0.53	U	0.56	U
CADMIUM	MG/KG	0.52	U	0.53	U	0.60	U	0.68	*	0.57	*	1.00	*
CALCIUM	MG/KG	20400.00	N	20500.00	N	27700.00	N	24500.00		23700.00		10100.00	
CHROMIUM	MG/KG	6.90	*	6.20	*	8.30	*	4.50		6.40		15.00	
COBALT	MG/KG	5.20	U*	5.30	U*	6.00	U*	5.20	U	8.90		5.60	U
COPPER	MG/KG	4.00		2.40		4.20		2.30		3.00		98.40	
IRON	MG/KG	6050.00	N	4110.00	N	6660.00	N	4430.00	N	4210.00	N	8710.00	N
LEAD	MG/KG	1.90		1.90		5.60		2.40		2.30		27.80	
MAGNESIUM	MG/KG	8450.00	N*	6120.00	N*	6360.00	N*	6750.00		6050.00		4490.00	
MANGANESE	MG/KG	193.00	N	161.00	N	451.00	N	394.00	N	295.00	N	434.00	N
MERCURY	MG/KG	0.14		0.19		0.12	U	0.10	U	0.11	U	0.11	U
NICKEL	MG/KG	5.80		7.40		7.60		11.00		15.10		20.40	
POTASSIUM	MG/KG	77.20		114.00		200.00		108.00		142.00		372.00	
SELENIUM	MG/KG	0.62	U	0.63	U	0.72	U	0.62	U	0.63	U	0.67	U
SILVER	MG/KG	1.00	U	1.10	U	1.20	U	1.00	U	1.10	U	1.10	U
SODIUM	MG/KG	65.60		52.60	U	87.80		52.10	U	66.30		56.20	U
THALLIUM	MG/KG	0.62	UW	0.63	U	0.72	U	0.62	U	0.63	U	0.67	U
VANADIUM	MG/KG	14.90	*	6.60	*	15.30	*	6.70		9.40		13.80	
ZINC	MG/KG	15.70		9.80		15.30		9.20		10.90		45.30	
CYANIDE, TOTAL	MG/KG	2.60	U	2.60	U	3.00	U	2.60	U	2.60	U	2.80	U

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SOIL METALS AND CYANIDE

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB09I		NB10B		NB11I		NB12G		NB13A		NB14A	
ALUMINUM	MG/KG	1660.00	N	4340.00		1250.00		1260.00		2990.00	N	3430.00	N
ANTIMONY	MG/KG	2.10	UN	2.90	UN	2.20	UN	2.10	UN	2.10	UN	2.20	UN
ARSENIC	MG/KG	2.50		10.00		0.74		0.87		3.40		1.60	
BARIUM	MG/KG	9.90		256.00		5.40	U	5.20	U	43.00		63.50	
BERYLLIUM	MG/KG	0.53	U	0.71	U	0.54	U	0.52	U	0.52	U	0.56	U
CADMIUM	MG/KG	0.53	U*	0.71	U	0.54	U	0.52	U	0.94	*	0.56	U*
CALCIUM	MG/KG	18100.00		21500.00	N	28700.00	N	14900.00	N	74700.00		21900.00	
CHROMIUM	MG/KG	9.30		12.10	*	6.20	*	4.90	*	10.30		15.20	
COBALT	MG/KG	6.40		7.10	U*	5.40	U*	5.20	U*	5.20	U	5.70	
COPPER	MG/KG	3.40		9.30		2.70		2.10	U	37.90		12.60	
IRON	MG/KG	5110.00	N	18600.00	N	3670.00	N	3780.00	N	10900.00	N	16500.00	N
LEAD	MG/KG	1.70		6.70		2.10		1.30		23.50		9.60	
MAGNESIUM	MG/KG	5630.00		1800.00	N*	11600.00	N*	4920.00	N*	32200.00		5540.00	
MANGANESE	MG/KG	563.00	N	2080.00	N	252.00	N	182.00	N	1100.00	N	1750.00	N
MERCURY	MG/KG	0.11	U	0.14	U	0.11	U	0.10	U	0.18		0.11	U
NICKEL	MG/KG	8.10		13.20		13.20		7.00		9.80		14.40	
POTASSIUM	MG/KG	130.00		212.00		120.00		100.00		521.00		255.00	
SELENIUM	MG/KG	0.63	U	0.86	U	0.65	U	0.62	U	0.62	UW	0.67	U
SILVER	MG/KG	1.10	U	1.40	U	1.10	U	1.00	U	1.00	U	1.10	U
SODIUM	MG/KG	68.60		71.40	U	53.80	U	51.50	U	116.00		71.10	
THALLIUM	MG/KG	0.63	U	0.86	U	0.65	UW	0.62	UW	0.62	U	0.67	U
VANADIUM	MG/KG	10.60		15.30	*	5.80	*	5.20	U*	16.10		20.40	
ZINC	MG/KG	9.90		21.70		9.30		9.30		40.90		33.20	
CYANIDE, TOTAL	MG/KG	2.60	U	3.60	U	2.70	U	2.60	U	2.60	U	2.80	U

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SOIL METALS AND CYANIDE

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB15J		NB16C		NB17G		NB18I		NB19I		NB20J	
ALUMINUM	MG/KG	1360.00		5180.00	N	1430.00	N	1300.00	N	1390.00	N	1150.00	
ANTIMONY	MG/KG	2.30	UN	2.30	UN	2.10	UN	2.30	UN	2.10	UN	2.30	UN
ARSENIC	MG/KG	0.69	UW	3.00		0.97		2.40		1.00		1.20	
BARIUM	MG/KG	5.70	U	70.20		7.10		8.90		7.10		6.50	
BERYLLIUM	MG/KG	0.57	U	0.57	U	0.52	U	0.58	U	0.52	U	0.57	U
CADMIUM	MG/KG	0.57	U	0.57	U*	0.52	U*	0.58	U*	0.63	*	0.57	U
CALCIUM	MG/KG	24500.00	N	8230.00		18800.00		26800.00		22900.00		21600.00	N
CHROMIUM	MG/KG	5.00	*	14.10		3.90		5.80		7.90		4.00	*
COBALT	MG/KG	5.70	U*	8.40		5.20	U	9.10		6.00		5.70	U*
COPPER	MG/KG	2.30	U	7.70		2.10	U	3.60		4.70		2.30	U
IRON	MG/KG	3590.00	N	9890.00	N	4360.00	N	4040.00	N	4150.00	N	3300.00	N
LEAD	MG/KG	2.00		8.40		2.10		2.10		2.40		1.90	
MAGNESIUM	MG/KG	6260.00	N*	4270.00		4540.00		5690.00		6120.00		5700.00	N*
MANGANESE	MG/KG	256.00	N	662.00	N	260.00	N	407.00	N	315.00	N	283.00	N
MERCURY	MG/KG	0.11	U	0.11	U	0.10	U	0.12	U	0.10	U	0.11	U
NICKEL	MG/KG	7.80		14.00		5.50		13.60		10.50		4.80	
POTASSIUM	MG/KG	103.00		309.00		112.00		157.00		156.00		97.10	
SELENIUM	MG/KG	0.69	U	0.69	U	0.62	U	0.70	U	0.62	U	0.68	U
SILVER	MG/KG	1.10	U	1.10	U	1.00	U	1.20	U	1.00	U	1.10	U
SODIUM	MG/KG	57.50	U	71.00		52.10	U	58.80		59.10		58.30	
THALLIUM	MG/KG	0.69	U	0.69	U	0.62	U	0.70	UW	0.62	U	0.68	U
VANADIUM	MG/KG	5.70	U*	20.30		8.70		10.10		7.40		5.90	*
ZINC	MG/KG	8.10		25.90		10.80		10.50		10.60		8.80	
CYANIDE, TOTAL	MG/KG	2.90	U	2.90	U	2.60	U	2.90	U	2.60	U	2.80	U

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OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB21C		NB22J		NB23A		QCD51		QCD52		QCD58	
ALUMINUM	MG/KG	3950.00		1040.00		4860.00		1620.00	N	3460.00	N	1120.00	
ANTIMONY	MG/KG	2.40	UN	2.30	UN	2.50	UN	2.10	UN	2.40	UN	2.50	UN
ARSENIC	MG/KG	0.71	U	0.69	UW	4.00		0.88		1.20		1.10	
BARIUM	MG/KG	22.40		5.70	U	102.00		6.90		65.50		6.30	U
BERYLLIUM	MG/KG	0.60	U	0.57	U	0.62	U	0.53	U	0.59	U	0.63	U
CADMIUM	MG/KG	0.60	U	0.57	U	0.62	U	0.53	U*	0.59	U*	0.63	U
CALCIUM	MG/KG	24300.00	N	26900.00	N	14000.00	N	3230.00		33500.00		19600.00	N
CHROMIUM	MG/KG	16.30	*	4.80	*	10.60	*	7.30		13.20		4.10	*
COBALT	MG/KG	6.40	*	5.70	U*	6.20	U*	5.30	U	6.10		6.30	U*
COPPER	MG/KG	5.60		2.30	U	7.10		5.70		11.80		2.50	U
IRON	MG/KG	16300.00	N	3370.00	N	10900.00	N	4700.00	N	18800.00	N	3210.00	N
LEAD	MG/KG	4.00		2.20		15.10		1.30		6.80		2.00	
MAGNESIUM	MG/KG	10300.00	N*	5310.00	N*	3170.00	N*	1630.00		6580.00		4730.00	N*
MANGANESE	MG/KG	1420.00	N	278.00	N	1180.00	N	59.50	N	2750.00	N	273.00	N
MERCURY	MG/KG	0.12	U	0.11	U	0.12	U	0.11	U	0.12	U	1.00	
NICKEL	MG/KG	8.30		8.60		8.00		7.80		11.30		9.30	
POTASSIUM	MG/KG	200.00		101.00		405.00		163.00		221.00		103.00	
SELENIUM	MG/KG	0.71	U	0.69	U	0.74	U	0.63	U	0.71	U	0.76	U
SILVER	MG/KG	1.20	U	1.10	U	1.20	U	1.10	U	1.20	U	1.30	U
SODIUM	MG/KG	116.00		57.50	U	82.90		69.90		78.30		63.30	U
THALLIUM	MG/KG	3.60	UW	0.69	U	0.74	U	0.63	U	0.71	UW	0.76	U
VANADIUM	MG/KG	23.30	*	6.00	*	15.40	*	15.70		25.10		6.30	U*
ZINC	MG/KG	18.70		7.60		22.30		9.50		26.50		8.90	
CYANIDE, TOTAL	MG/KG	3.00	U	2.90	U	3.10	U	2.60	U	2.90	U	3.20	U

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PARAMETER	UNITS	QCD59		QCD60		QCD66		QCD67		S10IB		S10IE	
ALUMINUM	MG/KG	1530.00		6860.00	N	1690.00	N	1970.00	N	2790.00	N	1260.00	N
ANTIMONY	MG/KG	2.10	UN	2.40	UN	2.00	UN	2.00	UN	2.00	UN	2.20	UN
ARSENIC	MG/KG	0.86		4.60		0.66		2.50		2.50		1.10	
BARIUM	MG/KG	7.50		145.00		8.80		14.20		30.00		9.70	
BERYLLIUM	MG/KG	0.52	U	0.61	U	0.51	U	0.50	U	0.51	U	0.54	U
CADMIUM	MG/KG	0.52	U	0.61	U	0.51	U	0.50	U	0.51	U	0.54	U
CALCIUM	MG/KG	3420.00	N	15600.00		5930.00		25300.00		22500.00		21400.00	
CHROMIUM	MG/KG	5.40	*	18.40		6.20		6.80		8.60		4.00	
COBALT	MG/KG	5.20	U*	8.90		5.10	U	5.00	U	5.10	U	5.40	U
COPPER	MG/KG	4.30		47.90		4.80		4.00		5.80		2.30	
IRON	MG/KG	4920.00	N	24800.00	N	5940.00	N	5530.00	N	6800.00	N	3700.00	N
LEAD	MG/KG	1.30		12.70		1.50		2.30		4.10		1.90	
MAGNESIUM	MG/KG	1330.00	N*	5070.00		1980.00		8930.00		9610.00		5770.00	
MANGANESE	MG/KG	69.00	N	2690.00		53.40		410.00		494.00		272.00	
MERCURY	MG/KG	0.10	U	0.12	U	0.10	U	0.10	U	0.10	U	0.11	U
NICKEL	MG/KG	4.20	U	17.00		4.20		7.80		11.00		10.10	
POTASSIUM	MG/KG	157.00		519.00		190.00		140.00		175.00		116.00	
SELENIUM	MG/KG	0.62	U	0.73	UW	0.61	U	0.60	U	0.61	U	0.65	U
SILVER	MG/KG	1.00	U	6.10	U	1.00	U	1.00	U	1.00	U	1.10	U
SODIUM	MG/KG	81.90		99.30		87.80		55.30		100.00		53.80	U
THALLIUM	MG/KG	0.62	U	0.73	U	0.61	U	0.60	U	0.61	U	0.65	U
VANADIUM	MG/KG	13.80	*	27.20		14.50		9.40		10.20		6.20	
ZINC	MG/KG	7.30		42.10		9.80		13.50		22.50		9.00	
CYANIDE, TOTAL	MG/KG	2.60	U	3.00	U	2.60	U	2.50	U	2.60	U	2.70	U

U = Undetected
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W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance
* = Duplicate analysis not within control limits

Report Generated 01/10/91 Project # : 1870.52 SCLP

SUMMARY OF ANALYTICAL RESULTS
SOIL METALS AND CYANIDE

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	SB01J		SB02G		SB03G		SB04J	
ALUMINUM	MG/KG	1670.00	N	2160.00	N	1590.00	N	2190.00	N
ANTIMONY	MG/KG	2.10	UN	2.00	UN	2.00	UN	2.20	UN
ARSENIC	MG/KG	0.69		0.61	U	0.61	UW	0.71	
BARIUM	MG/KG	9.70		9.70		8.90		14.70	
BERYLLIUM	MG/KG	0.53	U	0.51	U	0.51	U	0.56	U
CADMIUM	MG/KG	0.53	U	0.51	U	0.51	U	0.56	U
CALCIUM	MG/KG	6890.00		6090.00		6390.00		5060.00	
CHROMIUM	MG/KG	6.80		6.30		5.50		7.50	
COBALT	MG/KG	5.30	U	5.10	U	5.10	U	5.60	U
COPPER	MG/KG	4.10		4.90		4.90		5.60	
IRON	MG/KG	5540.00	N	5730.00	N	5220.00	N	7010.00	N
LEAD	MG/KG	1.60		1.40		1.30		1.40	
MAGNESIUM	MG/KG	2150.00		2020.00		2200.00		2140.00	
MANGANESE	MG/KG	52.50		65.10		52.70		67.20	
MERCURY	MG/KG	0.11	U	0.10	U	0.10	U	0.11	U
NICKEL	MG/KG	6.00		6.70		6.30		6.20	
POTASSIUM	MG/KG	190.00		187.00		208.00		240.00	
SELENIUM	MG/KG	0.64	U	0.61	U	0.61	U	0.67	U
SILVER	MG/KG	1.10	U	1.00	U	1.00	U	1.10	U
SODIUM	MG/KG	74.00		120.00		73.20		78.60	
THALLIUM	MG/KG	0.64	U	0.61	U	0.61	UW	0.67	U
VANADIUM	MG/KG	12.90		12.70		12.10		15.10	
ZINC	MG/KG	9.80		10.50		9.80		11.80	
CYANIDE, TOTAL	MG/KG	2.70	U	2.50	U	2.60	U	2.80	U

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SOIL QUALITY CONTROL - METALS AND CYANIDE

SUMMARY OF ANALYTICAL RESULTS
SOIL QUALITY CONTROL - METALS AND CYANIDE

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCR51		QCR52		QCR53		QCR54		QCR55		QCR56	
ALUMINUM	UG/L	100.00	UN	100.00	UN	103.00	N	104.00		100.00	UN	439.00	N
ANTIMONY	UG/L	10.00	UN	10.00	UN	10.00	UNW	10.00	UN	10.00	UN	10.00	UN
ARSENIC	UG/L	3.00	U	3.00	U	3.00	U	3.00	U	3.00	U	3.00	U
BARIUM	UG/L	50.00	U	50.00	U	50.00	U	50.00	U	50.00	U	50.00	U
BERYLLIUM	UG/L	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U
CADMIUM	UG/L	5.00	U*	5.00	U*	5.30	*	5.00	U	5.00	U	5.00	U
CALCIUM	UG/L	716.00		521.00		1220.00		964.00	N	556.00		1370.00	
CHROMIUM	UG/L	10.00	U	10.00	U	10.00	U	10.00	U*	10.30		15.60	
COBALT	UG/L	50.00	U	50.00	U	50.00	U	50.00	U*	50.00	U	50.00	U
COPPER	UG/L	20.00	U	20.00	U	20.00	U	20.00	U	20.00	U	20.00	U
IRON	UG/L	100.00	UN	149.00	N	241.00	N	285.00	N	165.00	N	352.00	N
LEAD	UG/L	3.00	U	3.00	U	3.00	U	3.00	UW	3.00	U	3.00	U
MAGNESIUM	UG/L	500.00	U	500.00	U	500.00	U	500.00	UN*	500.00	U	500.00	U
MANGANESE	UG/L	6.20	N	15.50	N	25.40	N	8.80	N	5.10		15.00	
MERCURY	UG/L	0.20	U	0.20	U	0.30		0.20	U	0.20	U	0.20	U
NICKEL	UG/L	40.00	U	40.00	U	40.00	U	40.00	U	40.00	U	40.00	U
POTASSIUM	UG/L	500.00	U	500.00	U	500.00	U	500.00	U	500.00	U	500.00	U
SELENIUM	UG/L	3.00	U	3.00	U	3.00	U	3.00	U	3.00	U	3.00	U
SILVER	UG/L	10.00	U	10.00	U	10.00	U	10.00	U	10.00	U	10.00	U
SODIUM	UG/L	500.00	U	500.00	U	500.00	U	500.00	U	500.00	U	500.00	U
THALLIUM	UG/L	3.00	U	3.00	U	3.00	U	3.00	U	3.00	U	3.00	U
VANADIUM	UG/L	50.00	U	50.00	U	50.00	U	50.00	U*	50.00	U	50.00	U
ZINC	UG/L	38.80		20.00	U	27.70		32.20		20.60		20.00	U
CYANIDE, TOTAL	UG/L	10.00	U	10.00	U	10.00	U	10.00	U	10.00	U	10.00	U

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Report Generated 01/10/91 Project # : 1870.52 SQCCLP

SUMMARY OF ANALYTICAL RESULTS
SOIL QUALITY CONTROL - METALS AND CYANIDE

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCR57		QCR58		QCR59		SRC01	
ALUMINUM	UG/L	100.00	UN	100.00	UN	100.00	UN	100.00	UN
ANTIMONY	UG/L	10.00	UN	10.00	UN	10.00	UN	10.00	UN
ARSENIC	UG/L	3.00	U	3.00	U	3.00	U	3.00	U
BARIUM	UG/L	50.00	U	50.00	U	50.00	U	163.00	
BERYLLIUM	UG/L	5.00	U	5.00	U	5.00	U	5.00	U
CADMIUM	UG/L	5.00	U	5.00	U	5.00	U	6.20	*
CALCIUM	UG/L	500.00	U	500.00	U	500.00	U	50200.00	
CHROMIUM	UG/L	10.00	U	10.00	U	10.00	U	10.00	U
COBALT	UG/L	50.00	U	50.00	U	50.00	U	50.00	U
COPPER	UG/L	20.00	U	20.00	U	20.00	U	20.00	U
IRON	UG/L	157.00	N	121.00	N	100.00	UN	1040.00	N
LEAD	UG/L	3.00	U	3.00	U	3.00	U	3.00	U
MAGNESIUM	UG/L	500.00	U	500.00	U	500.00	U	14600.00	
MANGANESE	UG/L	5.00	U	5.00	U	5.00	U	29.70	N
MERCURY	UG/L	0.20	U	0.20	U	0.20	U	0.20	U
NICKEL	UG/L	40.00	U	40.00	U	40.00	U	40.00	U
POTASSIUM	UG/L	500.00	U	500.00	U	500.00	U	1880.00	
SELENIUM	UG/L	3.00	U	3.00	U	3.00	U	3.00	U
SILVER	UG/L	10.00	U	10.00	U	10.00	U	10.00	U
SODIUM	UG/L	500.00	U	500.00	U	500.00	U	4080.00	
THALLIUM	UG/L	3.00	U	3.00	U	3.00	U	3.00	U
VANADIUM	UG/L	50.00	U	50.00	U	50.00	U	50.00	U
ZINC	UG/L	20.00	U	20.00	U	20.00	U	73.40	
CYANIDE, TOTAL	UG/L	10.00	U	10.00	U	10.00	U	10.00	U

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* = Duplicate analysis not within control limits

Report Generated 01/10/91 Project # : 1870.52 SQCCLP

SOIL PESTICIDES/PCBs

SUMMARY OF ANALYTICAL RESULTS
SOIL PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB01G		CB02J		CB03E		CB04I		CB05J		CB06E	
ALPHA-BHC	UG/KG	10	U	9.2	U	9.5	U	8.2	U	9.6	U	8.3	U
BETA-BHC	UG/KG	10	U	9.2	U	9.5	U	8.2	U	9.6	U	8.3	U
DELTA-BHC	UG/KG	10	U	9.2	U	9.5	U	8.2	U	9.6	U	8.3	U
GAMMA-BHC (LINDANE)	UG/KG	10	U	9.2	U	9.5	U	8.2	U	9.6	U	8.3	U
HEPTACHLOR	UG/KG	10	U	9.2	U	9.5	U	8.2	U	9.6	U	8.3	U
ALDRIN	UG/KG	10	U	9.2	U	9.5	U	8.2	U	9.6	U	8.3	U
HEPTACHLOR EPOXIDE	UG/KG	10	U	9.2	U	9.5	U	8.2	U	9.6	U	8.3	U
ENDOSULFAN I	UG/KG	10	U	9.2	U	9.5	U	8.2	U	9.6	U	8.3	U
DIELDRIN	UG/KG	20	U	18	U	19	U	16	U	19	U	17	U
4,4'-DDE	UG/KG	20	U	18	U	19	U	16	U	19	U	17	U
ENDRIN	UG/KG	20	U	18	U	19	U	16	U	19	U	17	U
ENDOSULFAN II	UG/KG	20	U	18	U	19	U	16	U	19	U	17	U
4,4'-DDD	UG/KG	20	U	18	U	19	U	16	U	19	U	17	U
ENDOSULFAN SULFATE	UG/KG	20	U	18	U	19	U	16	U	19	U	17	U
4,4'-DDT	UG/KG	20	U	18	U	19	U	16	U	19	U	17	U
METHOXYCHLOR	UG/KG	100	U	92	U	95	U	82	U	96	U	83	U
ENDRIN KETONE	UG/KG	20	U	18	U	19	U	16	U	19	U	17	U
ALPHA-CHLORDANE	UG/KG	100	U	92	U	95	U	82	U	96	U	83	U
GAMMA-CHLORDANE	UG/KG	100	U	92	U	95	U	82	U	96	U	83	U
TOXAPHENE	UG/KG	200	U	180	U	190	U	160	U	190	U	170	U
AROCLOR-1016	UG/KG	100	U	92	U	95	U	82	U	96	U	83	U
AROCLOR-1221	UG/KG	100	U	92	U	95	U	82	U	96	U	83	U
AROCLOR-1232	UG/KG	100	U	92	U	95	U	82	U	96	U	83	U
AROCLOR-1242	UG/KG	100	U	92	U	95	U	82	U	96	U	83	U
AROCLOR-1248	UG/KG	100	U	92	U	95	U	82	U	96	U	83	U
AROCLOR-1254	UG/KG	200	U	180	U	190	U	160	U	190	U	170	U
AROCLOR-1260	UG/KG	200	U	180	U	190	U	160	U	190	U	170	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SPCB

SUMMARY OF ANALYTICAL RESULTS
SOIL PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB07C		CB08J		CB09C		CB10C		CB11J		CB12H	
ALPHA-BHC	UG/KG	8.3	U	9.5	U	8.4	U	8.2	U	9.4	U	8.5	U
BETA-BHC	UG/KG	8.3	U	9.5	U	8.4	U	8.2	U	9.4	U	8.5	U
DELTA-BHC	UG/KG	8.3	U	9.5	U	8.4	U	8.2	U	9.4	U	8.5	U
GAMMA-BHC (LINDANE)	UG/KG	8.3	U	9.5	U	8.4	U	8.2	U	9.4	U	8.5	U
HEPTACHLOR	UG/KG	8.3	U	9.5	U	8.4	U	8.2	U	9.4	U	8.5	U
ALDRIN	UG/KG	8.3	U	9.5	U	8.4	U	8.2	U	9.4	U	8.5	U
HEPTACHLOR EPOXIDE	UG/KG	8.3	U	9.5	U	8.4	U	8.2	U	9.4	U	8.5	U
ENDOSULFAN I	UG/KG	8.3	U	9.5	U	8.4	U	8.2	U	9.4	U	8.5	U
DIELDRIN	UG/KG	17	U	19	U	17	U	16	U	19	U	17	U
4,4'-DDE	UG/KG	17	U	19	U	17	U	16	U	19	U	17	U
ENDRIN	UG/KG	17	U	19	U	17	U	16	U	19	U	17	U
ENDOSULFAN II	UG/KG	17	U	19	U	17	U	16	U	19	U	17	U
4,4'-DDD	UG/KG	17	U	19	U	17	U	16	U	19	U	17	U
ENDOSULFAN SULFATE	UG/KG	17	U	19	U	17	U	16	U	19	U	17	U
4,4'-DDT	UG/KG	17	U	19	U	17	U	16	U	19	U	17	U
METHOXYCHLOR	UG/KG	83	U	95	U	84	U	82	U	94	U	85	U
ENDRIN KETONE	UG/KG	17	U	19	U	17	U	16	U	19	U	17	U
ALPHA-CHLORDANE	UG/KG	83	U	95	U	84	U	82	U	94	U	85	U
GAMMA-CHLORDANE	UG/KG	83	U	95	U	84	U	82	U	94	U	85	U
TOXAPHENE	UG/KG	170	U	190	U	170	U	160	U	190	U	170	U
AROCLOR-1016	UG/KG	83	U	95	U	84	U	82	U	94	U	85	U
AROCLOR-1221	UG/KG	83	U	95	U	84	U	82	U	94	U	85	U
AROCLOR-1232	UG/KG	83	U	95	U	84	U	82	U	94	U	85	U
AROCLOR-1242	UG/KG	83	U	95	U	84	U	82	U	94	U	85	U
AROCLOR-1248	UG/KG	83	U	95	U	84	U	82	U	94	U	85	U
AROCLOR-1254	UG/KG	170	U	190	U	170	U	160	U	190	U	170	U
AROCLOR-1260	UG/KG	170	U	190	U	170	U	160	U	190	U	170	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB13A		CB13I		CB14A		CB14J		CB15A		CB15I	
ALPHA-BHC	UG/KG	44	U	8.5	U	44	U	9.5	U	44	U	9.5	U
BETA-BHC	UG/KG	44	U	8.5	U	44	U	9.5	U	44	U	9.5	U
DELTA-BHC	UG/KG	44	U	8.5	U	44	U	9.5	U	44	U	9.5	U
GAMMA-BHC (LINDANE)	UG/KG	44	U	8.5	U	44	U	9.5	U	44	U	9.5	U
HEPTACHLOR	UG/KG	44	U	8.5	U	44	U	9.5	U	44	U	9.5	U
ALDRIN	UG/KG	44	U	8.5	U	44	U	9.5	U	44	U	9.5	U
HEPTACHLOR EPOXIDE	UG/KG	44	U	8.5	U	44	U	9.5	U	44	U	9.5	U
ENDOSULFAN I	UG/KG	44	U	8.5	U	44	U	9.5	U	44	U	9.5	U
DIELDRIN	UG/KG	89	U	17	U	88	U	19	U	88	U	19	U
4,4'-DDE	UG/KG	89	U	17	U	160		19	U	210		19	U
ENDRIN	UG/KG	89	U	17	U	88	U	19	U	88	U	19	U
ENDOSULFAN II	UG/KG	89	U	17	U	88	U	19	U	88	U	19	U
4,4'-DDD	UG/KG	89	U	17	U	88	U	19	U	88	U	19	U
ENDOSULFAN SULFATE	UG/KG	89	U	17	U	88	U	19	U	88	U	19	U
4,4'-DDT	UG/KG	89	U	17	U	140		19	U	160		19	U
METHOXYCHLOR	UG/KG	440	U	85	U	440	U	95	U	440	U	95	U
ENDRIN KETONE	UG/KG	89	U	17	U	88	U	19	U	88	U	19	U
ALPHA-CHLORDANE	UG/KG	440	U	85	U	440	U	95	U	440	U	95	U
GAMMA-CHLORDANE	UG/KG	440	U	85	U	440	U	95	U	440	U	95	U
TOXAPHENE	UG/KG	890	U	170	U	880	U	190	U	880	U	190	U
AROCLOR-1016	UG/KG	440	U	85	U	440	U	95	U	440	U	95	U
AROCLOR-1221	UG/KG	440	U	85	U	440	U	95	U	440	U	95	U
AROCLOR-1232	UG/KG	440	U	85	U	440	U	95	U	440	U	95	U
AROCLOR-1242	UG/KG	440	U	85	U	440	U	95	U	440	U	95	U
AROCLOR-1248	UG/KG	440	U	85	U	440	U	95	U	440	U	95	U
AROCLOR-1254	UG/KG	890	U	170	U	880	U	190	U	880	U	190	U
AROCLOR-1260	UG/KG	890	U	170	U	880	U	190	U	880	U	190	U

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Report Generated 01/10/91 Project # : 1870.52 SPCB

SUMMARY OF ANALYTICAL RESULTS
SOIL PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB16A		CB16G		CB17G		CB18H		CB19I		CB20J	
ALPHA-BHC	UG/KG	84	U	8.2	U	8.2	U	8.6	U	9.1	U	8.9	U
BETA-BHC	UG/KG	84	U	8.2	U	8.2	U	8.6	U	9.1	U	8.9	U
DELTA-BHC	UG/KG	84	U	8.2	U	8.2	U	8.6	U	9.1	U	8.9	U
GAMMA-BHC (LINDANE)	UG/KG	84	U	8.2	U	8.2	U	8.6	U	9.1	U	8.9	U
HEPTACHLOR	UG/KG	84	U	8.2	U	8.2	U	8.6	U	9.1	U	8.9	U
ALDRIN	UG/KG	84	U	8.2	U	8.2	U	8.6	U	9.1	U	8.9	U
HEPTACHLOR EPOXIDE	UG/KG	84	U	8.2	U	8.2	U	8.6	U	9.1	U	8.9	U
ENDOSULFAN I	UG/KG	84	U	8.2	U	8.2	U	8.6	U	9.1	U	8.9	U
DIELDRIN	UG/KG	170	U	16	U	16	U	17	U	18	U	18	U
4,4'-DDE	UG/KG	170		16	U	16	U	17	U	18	U	18	U
ENDRIN	UG/KG	170	U	16	U	16	U	17	U	18	U	18	U
ENDOSULFAN II	UG/KG	170	U	16	U	16	U	17	U	18	U	18	U
4,4'-DDD	UG/KG	170	U	16	U	16	U	17	U	18	U	18	U
ENDOSULFAN SULFATE	UG/KG	170	U	16	U	16	U	17	U	18	U	18	U
4,4'-DDT	UG/KG	170	U	16	U	16	U	17	U	18	U	18	U
METHOXYCHLOR	UG/KG	840	U	82	U	82	U	86	U	91	U	89	U
ENDRIN KETONE	UG/KG	170	U	16	U	16	U	17	U	18	U	18	U
ALPHA-CHLORDANE	UG/KG	840	U	82	U	82	U	86	U	91	U	89	U
GAMMA-CHLORDANE	UG/KG	840	U	82	U	82	U	86	U	91	U	89	U
TOXAPHENE	UG/KG	1700	U	160	U	160	U	170	U	180	U	180	U
AROCLOR-1016	UG/KG	840	U	82	U	82	U	86	U	91	U	89	U
AROCLOR-1221	UG/KG	840	U	82	U	82	U	86	U	91	U	89	U
AROCLOR-1232	UG/KG	840	U	82	U	82	U	86	U	91	U	89	U
AROCLOR-1242	UG/KG	840	U	82	U	82	U	86	U	91	U	89	U
AROCLOR-1248	UG/KG	840	U	82	U	82	U	86	U	91	U	89	U
AROCLOR-1254	UG/KG	1700	U	160	U	160	U	170	U	180	U	180	U
AROCLOR-1260	UG/KG	1700	U	160	U	160	U	170	U	180	U	180	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SPCB

SUMMARY OF ANALYTICAL RESULTS
SOIL PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB21E		CB22I		CB23D		CB24E		CB25J		CB26J	
ALPHA-BHC	UG/KG	8.3	U	8.3	U	9.4	U	9.9	U	9.6	U	9.6	U
BETA-BHC	UG/KG	8.3	U	8.3	U	9.4	U	9.9	U	9.6	U	9.6	U
DELTA-BHC	UG/KG	8.3	U	8.3	U	9.4	U	9.9	U	9.6	U	9.6	U
GAMMA-BHC (LINDANE)	UG/KG	8.3	U	8.3	U	9.4	U	9.9	U	9.6	U	9.6	U
HEPTACHLOR	UG/KG	8.3	U	8.3	U	9.4	U	9.9	U	9.6	U	9.6	U
ALDRIN	UG/KG	8.3	U	8.3	U	9.4	U	9.9	U	9.6	U	9.6	U
HEPTACHLOR EPOXIDE	UG/KG	8.3	U	8.3	U	9.4	U	9.9	U	9.6	U	9.6	U
ENDOSULFAN I	UG/KG	8.3	U	8.3	U	9.4	U	9.9	U	9.6	U	9.6	U
DIELDRIN	UG/KG	17	U	17	U	19	U	20	U	19	U	19	U
4,4'-DDE	UG/KG	17	U	17	U	19	U	20	U	19	U	19	U
ENDRIN	UG/KG	17	U	17	U	19	U	20	U	19	U	19	U
ENDOSULFAN II	UG/KG	17	U	17	U	19	U	20	U	19	U	19	U
4,4'-DDD	UG/KG	17	U	17	U	19	U	20	U	19	U	19	U
ENDOSULFAN SULFATE	UG/KG	17	U	17	U	19	U	20	U	19	U	19	U
4,4'-DDT	UG/KG	17	U	17	U	19	U	20	U	19	U	19	U
METHOXYCHLOR	UG/KG	83	U	83	U	94	U	99	U	96	U	96	U
ENDRIN KETONE	UG/KG	17	U	17	U	19	U	20	U	19	U	19	U
ALPHA-CHLORDANE	UG/KG	83	U	83	U	94	U	99	U	96	U	96	U
GAMMA-CHLORDANE	UG/KG	83	U	83	U	94	U	99	U	96	U	96	U
TOXAPHENE	UG/KG	170	U	170	U	190	U	200	U	190	U	190	U
AROCLOR-1016	UG/KG	83	U	83	U	94	U	99	U	96	U	96	U
AROCLOR-1221	UG/KG	83	U	83	U	94	U	99	U	96	U	96	U
AROCLOR-1232	UG/KG	83	U	83	U	94	U	99	U	96	U	96	U
AROCLOR-1242	UG/KG	83	U	83	U	94	U	99	U	96	U	96	U
AROCLOR-1248	UG/KG	83	U	83	U	94	U	99	U	96	U	96	U
AROCLOR-1254	UG/KG	170	U	170	U	190	U	200	U	190	U	190	U
AROCLOR-1260	UG/KG	170	U	170	U	190	U	200	U	190	U	190	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB27A		CB28F		NB01H		NB02I		NB03C		NB04G	
ALPHA-BHC	UG/KG	89	U	9.2	U	8.4	U	8.3	U	8.3	U	8.4	U
BETA-BHC	UG/KG	89	U	9.2	U	8.4	U	8.3	U	8.3	U	8.4	U
DELTA-BHC	UG/KG	89	U	9.2	U	8.4	U	8.3	U	8.3	U	8.4	U
GAMMA-BHC (LINDANE)	UG/KG	89	U	9.2	U	8.4	U	8.3	U	8.3	U	8.4	U
HEPTACHLOR	UG/KG	89	U	9.2	U	8.4	U	8.3	U	8.3	U	8.4	U
ALDRIN	UG/KG	89	U	9.2	U	8.4	U	8.3	U	8.3	U	8.4	U
HEPTACHLOR EPOXIDE	UG/KG	89	U	9.2	U	8.4	U	8.3	U	8.3	U	8.4	U
ENDOSULFAN I	UG/KG	89	U	9.2	U	8.4	U	8.3	U	8.3	U	8.4	U
DIELDRIN	UG/KG	180	U	18	U	17	U	17	U	17	U	17	U
4,4'-DDE	UG/KG	590		18	U	17	U	17	U	17	U	17	U
ENDRIN	UG/KG	180	U	18	U	17	U	17	U	17	U	17	U
ENDOSULFAN II	UG/KG	180	U	18	U	17	U	17	U	17	U	17	U
4,4'-DDD	UG/KG	230		18	U	17	U	17	U	17	U	17	U
ENDOSULFAN SULFATE	UG/KG	180	U	18	U	17	U	17	U	17	U	17	U
4,4'-DDT	UG/KG	180	U	18	U	17	U	17	U	17	U	17	U
METHOXYCHLOR	UG/KG	890	U	92	U	84	U	83	U	83	U	84	U
ENDRIN KETONE	UG/KG	180	U	18	U	17	U	17	U	17	U	17	U
ALPHA-CHLORDANE	UG/KG	890	U	92	U	84	U	83	U	83	U	84	U
GAMMA-CHLORDANE	UG/KG	890	U	92	U	84	U	83	U	83	U	84	U
TOXAPHENE	UG/KG	1800	U	180	U	170	U	170	U	170	U	170	U
AROCLOR-1016	UG/KG	890	U	92	U	84	U	83	U	83	U	84	U
AROCLOR-1221	UG/KG	890	U	92	U	84	U	83	U	83	U	84	U
AROCLOR-1232	UG/KG	890	U	92	U	84	U	83	U	83	U	84	U
AROCLOR-1242	UG/KG	890	U	92	U	84	U	83	U	83	U	84	U
AROCLOR-1248	UG/KG	890	U	92	U	84	U	83	U	83	U	84	U
AROCLOR-1254	UG/KG	1800	U	180	U	170	U	170	U	170	U	170	U
AROCLOR-1260	UG/KG	1800	U	180	U	170	U	170	U	170	U	170	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB05C		NB06G		NB07I		NB08C		NB09I		NB10B	
ALPHA-BHC	UG/KG	9.6	U	8.3	U	8.5	U	43	U	8.8	U	11	U
BETA-BHC	UG/KG	9.6	U	8.3	U	8.5	U	43	U	8.8	U	11	U
DELTA-BHC	UG/KG	9.6	U	8.3	U	8.5	U	43	U	8.8	U	11	U
GAMMA-BHC (LINDANE)	UG/KG	9.6	U	8.3	U	8.5	U	43	U	8.8	U	11	U
HEPTACHLOR	UG/KG	9.6	U	8.3	U	8.5	U	43	U	8.8	U	11	U
ALDRIN	UG/KG	9.6	U	8.3	U	8.5	U	43	U	8.8	U	11	U
HEPTACHLOR EPOXIDE	UG/KG	9.6	U	8.3	U	8.5	U	43	U	8.8	U	11	U
ENDOSULFAN I	UG/KG	9.6	U	8.3	U	8.5	U	43	U	8.8	U	11	U
DIELDRIN	UG/KG	19	U	17	U	17	U	87	U	18	U	23	U
4,4'-DDE	UG/KG	19	U	17	U	17	U	110		18	U	23	U
ENDRIN	UG/KG	19	U	17	U	17	U	87	U	18	U	23	U
ENDOSULFAN II	UG/KG	19	U	17	U	17	U	87	U	18	U	23	U
4,4'-DDD	UG/KG	19	U	17	U	17	U	88		18	U	23	U
ENDOSULFAN SULFATE	UG/KG	19	U	17	U	17	U	87	U	18	U	23	U
4,4'-DDT	UG/KG	19	U	17	U	17	U	92		18	U	23	U
METHOXYCHLOR	UG/KG	96	U	83	U	85	U	430	U	88	U	110	U
ENDRIN KETONE	UG/KG	19	U	17	U	17	U	87	U	18	U	23	U
ALPHA-CHLORDANE	UG/KG	96	U	83	U	85	U	430	U	88	U	110	U
GAMMA-CHLORDANE	UG/KG	96	U	83	U	85	U	430	U	88	U	110	U
TOXAPHENE	UG/KG	190	U	170	U	170	U	870	U	180	U	230	U
AROCLOR-1016	UG/KG	96	U	83	U	85	U	430	U	88	U	110	U
AROCLOR-1221	UG/KG	96	U	83	U	85	U	430	U	88	U	110	U
AROCLOR-1232	UG/KG	96	U	83	U	85	U	430	U	88	U	110	U
AROCLOR-1242	UG/KG	96	U	83	U	85	U	430	U	88	U	110	U
AROCLOR-1248	UG/KG	96	U	83	U	85	U	430	U	88	U	110	U
AROCLOR-1254	UG/KG	190	U	170	U	170	U	870	U	180	U	230	U
AROCLOR-1260	UG/KG	190	U	170	U	170	U	870	U	180	U	230	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB11I		NB12G		NB13A		NB14A		NB15J		NB16C	
ALPHA-BHC	UG/KG	8.5	U	8.3	U	86	U	9.4	U	9.3	U	9.0	U
BETA-BHC	UG/KG	8.5	U	8.3	U	86	U	9.4	U	9.3	U	9.0	U
DELTA-BHC	UG/KG	8.5	U	8.3	U	86	U	9.4	U	9.3	U	9.0	U
GAMMA-BHC (LINDANE)	UG/KG	8.5	U	8.3	U	86	U	9.4	U	9.3	U	9.0	U
HEPTACHLOR	UG/KG	8.5	U	8.3	U	86	U	9.4	U	9.3	U	9.0	U
ALDRIN	UG/KG	8.5	U	8.3	U	86	U	9.4	U	9.3	U	9.0	U
HEPTACHLOR EPOXIDE	UG/KG	8.5	U	8.3	U	86	U	9.4	U	9.3	U	9.0	U
ENDOSULFAN I	UG/KG	8.5	U	8.3	U	86	U	9.4	U	9.3	U	9.0	U
DIELDRIN	UG/KG	17	U	17	U	170	U	19	U	19	U	18	U
4,4'-DDE	UG/KG	17	U	17	U	170	U	31		19	U	18	U
ENDRIN	UG/KG	17	U	17	U	170	U	19	U	19	U	18	U
ENDOSULFAN II	UG/KG	17	U	17	U	170	U	19	U	19	U	18	U
4,4'-DDD	UG/KG	17	U	17	U	170	J	19	U	19	U	18	U
ENDOSULFAN SULFATE	UG/KG	17	U	17	U	680		19	U	19	U	18	U
4,4'-DDT	UG/KG	17	U	17	U	500		47		19	U	18	U
METHOXYCHLOR	UG/KG	85	U	83	U	860	U	94	U	93	U	90	U
ENDRIN KETONE	UG/KG	17	U	17	U	170	U	19	U	19	U	18	U
ALPHA-CHLORDANE	UG/KG	85	U	83	U	860	U	94	U	93	U	90	U
GAMMA-CHLORDANE	UG/KG	85	U	83	U	860	U	94	U	93	U	90	U
TOXAPHENE	UG/KG	170	U	170	U	1700	U	190	U	190	U	180	U
AROCLOR-1016	UG/KG	85	U	83	U	860	U	94	U	93	U	90	U
AROCLOR-1221	UG/KG	85	U	83	U	860	U	94	U	93	U	90	U
AROCLOR-1232	UG/KG	85	U	83	U	860	U	94	U	93	U	90	U
AROCLOR-1242	UG/KG	85	U	83	U	860	U	94	U	93	U	90	U
AROCLOR-1248	UG/KG	85	U	83	U	860	U	94	U	93	U	90	U
AROCLOR-1254	UG/KG	170	U	170	U	1700	U	190	U	190	U	180	U
AROCLOR-1260	UG/KG	170	U	170	U	1700	U	190	U	190	U	180	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB17G		NB18I		NB19I		NB20J		NB21C		NB22J	
ALPHA-BHC	UG/KG	8.2	U	9.3	U	8.4	U	9.1	U	8.9	U	9.4	U
BETA-BHC	UG/KG	8.2	U	9.3	U	8.4	U	9.1	U	8.9	U	9.4	U
DELTA-BHC	UG/KG	8.2	U	9.3	U	8.4	U	9.1	U	8.9	U	9.4	U
GAMMA-BHC (LINDANE)	UG/KG	8.2	U	9.3	U	8.4	U	9.1	U	8.9	U	9.4	U
HEPTACHLOR	UG/KG	8.2	U	9.3	U	8.4	U	9.1	U	8.9	U	9.4	U
ALDRIN	UG/KG	8.2	U	9.3	U	8.4	U	9.1	U	8.9	U	9.4	U
HEPTACHLOR EPOXIDE	UG/KG	8.2	U	9.3	U	8.4	U	9.1	U	8.9	U	9.4	U
ENDOSULFAN I	UG/KG	8.2	U	9.3	U	8.4	U	9.1	U	8.9	U	9.4	U
DIELDRIN	UG/KG	16	U	19	U	17	U	18	U	18	U	19	U
4,4'-DDE	UG/KG	16	U	19	U	17	U	18	U	18	U	19	U
ENDRIN	UG/KG	16	U	19	U	17	U	18	U	18	U	19	U
ENDOSULFAN II	UG/KG	16	U	19	U	17	U	18	U	18	U	19	U
4,4'-DDD	UG/KG	16	U	19	U	17	U	18	U	18	U	19	U
ENDOSULFAN SULFATE	UG/KG	16	U	19	U	17	U	18	U	18	U	19	U
4,4'-DDT	UG/KG	16	U	19	U	17	U	18	U	18	U	19	U
METHOXYCHLOR	UG/KG	82	U	93	U	84	U	91	U	89	U	94	U
ENDRIN KETONE	UG/KG	16	U	19	U	17	U	18	U	18	U	19	U
ALPHA-CHLORDANE	UG/KG	82	U	93	U	84	U	91	U	89	U	94	U
GAMMA-CHLORDANE	UG/KG	82	U	93	U	84	U	91	U	89	U	94	U
TOXAPHENE	UG/KG	160	U	190	U	170	U	180	U	180	U	190	U
AROCLOR-1016	UG/KG	82	U	93	U	84	U	91	U	89	U	94	U
AROCLOR-1221	UG/KG	82	U	93	U	84	U	91	U	89	U	94	U
AROCLOR-1232	UG/KG	82	U	93	U	84	U	91	U	89	U	94	U
AROCLOR-1242	UG/KG	82	U	93	U	84	U	91	U	89	U	94	U
AROCLOR-1248	UG/KG	82	U	93	U	84	U	91	U	89	U	94	U
AROCLOR-1254	UG/KG	160	U	190	U	170	U	180	U	180	U	190	U
AROCLOR-1260	UG/KG	160	U	190	U	170	U	180	U	180	U	190	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB23A		QCD51		QCD52		QCD58		QCD59		QCD60	
ALPHA-BHC	UG/KG	43	U	8.3	U	9.2	U	10	U	8.3	U	93	U
BETA-BHC	UG/KG	43	U	8.3	U	9.2	U	10	U	8.3	U	93	U
DELTA-BHC	UG/KG	43	U	8.3	U	9.2	U	10	U	8.3	U	93	U
GAMMA-BHC (LINDANE)	UG/KG	43	U	8.3	U	9.2	U	10	U	8.3	U	93	U
HEPTACHLOR	UG/KG	43	U	8.3	U	9.2	U	10	U	8.3	U	93	U
ALDRIN	UG/KG	43	U	8.3	U	9.2	U	10	U	8.3	U	93	U
HEPTACHLOR EPOXIDE	UG/KG	43	U	8.3	U	9.2	U	10	U	8.3	U	93	U
ENDOSULFAN I	UG/KG	43	U	8.3	U	9.2	U	10	U	8.3	U	93	U
DIELDRIN	UG/KG	86	U	17	U	18	U	20	U	17	U	190	U
4,4'-DDE	UG/KG	430		17	U	48		20	U	17	U	190	U
ENDRIN	UG/KG	86	U	17	U	18	U	20	U	17	U	190	U
ENDOSULFAN II	UG/KG	86	U	17	U	18	U	20	U	17	U	190	U
4,4'-DDD	UG/KG	86	U	17	U	18	U	20	U	17	U	190	U
ENDOSULFAN SULFATE	UG/KG	86	U	17	U	18	U	20	U	17	U	190	U
4,4'-DDT	UG/KG	400		17	U	68		20	U	17	U	190	U
METHOXYCHLOR	UG/KG	430	U	83	U	92	U	100	U	83	U	930	U
ENDRIN KETONE	UG/KG	86	U	17	U	18	U	20	U	17	U	190	U
ALPHA-CHLORDANE	UG/KG	430	U	83	U	92	U	100	U	83	U	930	U
GAMMA-CHLORDANE	UG/KG	430	U	83	U	92	U	100	U	83	U	930	U
TOXAPHENE	UG/KG	860	U	170	U	180	U	200	U	170	U	1900	U
AROCLOR-1016	UG/KG	430	U	83	U	92	U	100	U	83	U	930	U
AROCLOR-1221	UG/KG	430	U	83	U	92	U	100	U	83	U	930	U
AROCLOR-1232	UG/KG	430	U	83	U	92	U	100	U	83	U	930	U
AROCLOR-1242	UG/KG	430	U	83	U	92	U	100	U	83	U	930	U
AROCLOR-1248	UG/KG	430	U	83	U	92	U	100	U	83	U	930	U
AROCLOR-1254	UG/KG	860	U	170	U	180	U	200	U	170	U	1900	U
AROCLOR-1260	UG/KG	860	U	170	U	180	U	200	U	170	U	1900	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCD66		QCD67		S101B		S101E		SB01J		SB02G	
ALPHA-BHC	UG/KG	8.6	U	8.3	U	8.6	U	8.7	U	8.6	U	8.6	U
BETA-BHC	UG/KG	8.6	U	8.3	U	8.6	U	8.7	U	8.6	U	8.6	U
DELTA-BHC	UG/KG	8.6	U	8.3	U	8.6	U	8.7	U	8.6	U	8.6	U
GAMMA-BHC (LINDANE)	UG/KG	8.6	U	8.3	U	8.6	U	8.7	U	8.6	U	8.6	U
HEPTACHLOR	UG/KG	8.6	U	8.3	U	8.6	U	8.7	U	8.6	U	8.6	U
ALDRIN	UG/KG	8.6	U	8.3	U	8.6	U	8.7	U	8.6	U	8.6	U
HEPTACHLOR EPOXIDE	UG/KG	8.6	U	8.3	U	8.6	U	8.7	U	8.6	U	8.6	U
ENDOSULFAN I	UG/KG	8.6	U	8.3	U	8.6	U	8.7	U	8.6	U	8.6	U
DIELDRIN	UG/KG	17	U	17	U	17	U	17	U	17	U	17	U
4,4'-DDE	UG/KG	17	U	17	U	17	U	17	U	17	U	17	U
ENDRIN	UG/KG	17	U	17	U	17	U	17	U	17	U	17	U
ENDOSULFAN II	UG/KG	17	U	17	U	17	U	17	U	17	U	17	U
4,4'-DDD	UG/KG	17	U	17	U	17	U	17	U	17	U	17	U
ENDOSULFAN SULFATE	UG/KG	17	U	17	U	17	U	17	U	17	U	17	U
4,4'-DDT	UG/KG	17	U	17	U	21		17	U	17	U	17	U
METHOXYCHLOR	UG/KG	86	U	83	U	86	U	87	U	86	U	86	U
ENDRIN KETONE	UG/KG	17	U	17	U	17	U	17	U	17	U	17	U
ALPHA-CHLORDANE	UG/KG	86	U	83	U	86	U	87	U	86	U	86	U
GAMMA-CHLORDANE	UG/KG	86	U	83	U	86	U	87	U	86	U	86	U
TOXAPHENE	UG/KG	170	U	170	U	170	U	170	U	170	U	170	U
AROCLOR-1016	UG/KG	86	U	83	U	86	U	87	U	86	U	86	U
AROCLOR-1221	UG/KG	86	U	83	U	86	U	87	U	86	U	86	U
AROCLOR-1232	UG/KG	86	U	83	U	86	U	87	U	86	U	86	U
AROCLOR-1242	UG/KG	86	U	83	U	86	U	87	U	86	U	86	U
AROCLOR-1248	UG/KG	86	U	83	U	86	U	87	U	86	U	86	U
AROCLOR-1254	UG/KG	170	U	170	U	170	U	170	U	170	U	170	U
AROCLOR-1260	UG/KG	170	U	170	U	170	U	170	U	170	U	170	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SPCB

SUMMARY OF ANALYTICAL RESULTS
SOIL PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	SB03G		SB04J	
ALPHA-BHC	UG/KG	8.5	U	9.2	U
BETA-BHC	UG/KG	8.5	U	9.2	U
DELTA-BHC	UG/KG	8.5	U	9.2	U
GAMMA-BHC (LINDANE)	UG/KG	8.5	U	9.2	U
HEPTACHLOR	UG/KG	8.5	U	9.2	U
ALDRIN	UG/KG	8.5	U	9.2	U
HEPTACHLOR EPOXIDE	UG/KG	8.5	U	9.2	U
ENDOSULFAN I	UG/KG	8.5	U	9.2	U
DIELDRIN	UG/KG	17	U	18	U
4,4'-DDE	UG/KG	17	U	18	U
ENDRIN	UG/KG	17	U	18	U
ENDOSULFAN II	UG/KG	17	U	18	U
4,4'-DDD	UG/KG	17	U	18	U
ENDOSULFAN SULFATE	UG/KG	17	U	18	U
4,4'-DDT	UG/KG	17	U	18	U
METHOXYCHLOR	UG/KG	85	U	92	U
ENDRIN KETONE	UG/KG	17	U	18	U
ALPHA-CHLORDANE	UG/KG	85	U	92	U
GAMMA-CHLORDANE	UG/KG	85	U	92	U
TOXAPHENE	UG/KG	170	U	180	U
AROCLOR-1016	UG/KG	85	U	92	U
AROCLOR-1221	UG/KG	85	U	92	U
AROCLOR-1232	UG/KG	85	U	92	U
AROCLOR-1242	UG/KG	85	U	92	U
AROCLOR-1248	UG/KG	85	U	92	U
AROCLOR-1254	UG/KG	170	U	180	U
AROCLOR-1260	UG/KG	170	U	180	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SPCB

SOIL QUALITY CONTROL - PESTICIDES/PCBs

SUMMARY OF ANALYTICAL RESULTS
SOIL QUALITY CONTROL - PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCR51	QCR54	QCR55	QCR56	QCR58	QCR59
ALPHA-BHC	UG/L	0.025 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
BETA-BHC	UG/L	0.025 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DELTA-BHC	UG/L	0.025 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
GAMMA-BHC (LINDANE)	UG/L	0.025 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR	UG/L	0.025 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ALDRIN	UG/L	0.025 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	UG/L	0.025 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ENDOSULFAN I	UG/L	0.025 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DIELDRIN	UG/L	0.050 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	UG/L	0.050 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN	UG/L	0.050 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN II	UG/L	0.050 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDD	UG/L	0.050 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN SULFATE	UG/L	0.050 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	UG/L	0.050 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
METHOXYCHLOR	UG/L	0.25 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
ENDRIN KETONE	UG/L	0.050 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ALPHA-CHLORDANE	UG/L	0.25 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GAMMA-CHLORDANE	UG/L	0.25 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TOXAPHENE	UG/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1016	UG/L	0.25 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
AROCLOR-1221	UG/L	0.25 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
AROCLOR-1232	UG/L	0.25 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
AROCLOR-1242	UG/L	0.25 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
AROCLOR-1248	UG/L	0.25 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
AROCLOR-1254	UG/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1260	UG/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SQCPCB

SUMMARY OF ANALYTICAL RESULTS
SOIL QUALITY CONTROL - PESTICIDES/PCBs

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	SRC01
ALPHA-BHC	UG/L	0.025 U
BETA-BHC	UG/L	0.025 U
DELTA-BHC	UG/L	0.025 U
GAMMA-BHC (LINDANE)	UG/L	0.025 U
HEPTACHLOR	UG/L	0.025 U
ALDRIN	UG/L	0.025 U
HEPTACHLOR EPOXIDE	UG/L	0.025 U
ENDOSULFAN I	UG/L	0.025 U
DIELDRIN	UG/L	0.050 U
4,4'-DDE	UG/L	0.050 U
ENDRIN	UG/L	0.050 U
ENDOSULFAN II	UG/L	0.050 U
4,4'-DDD	UG/L	0.050 U
ENDOSULFAN SULFATE	UG/L	0.050 U
4,4'-DDT	UG/L	0.050 U
METHOXYCHLOR	UG/L	0.25 U
ENDRIN KETONE	UG/L	0.050 U
ALPHA-CHLORDANE	UG/L	0.25 U
GAMMA-CHLORDANE	UG/L	0.25 U
TOXAPHENE	UG/L	0.50 U
AROCLOR-1016	UG/L	0.25 U
AROCLOR-1221	UG/L	0.25 U
AROCLOR-1232	UG/L	0.25 U
AROCLOR-1242	UG/L	0.25 U
AROCLOR-1248	UG/L	0.25 U
AROCLOR-1254	UG/L	0.50 U
AROCLOR-1260	UG/L	0.50 U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SQCPCB

SOIL SEMI-VOLATILES

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB01G		CB02J		CB03E		CB04I		CB05J		CB06E	
PHENOL	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
2-CHLOROPHENOL	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
1,3-DICHLOROBENZENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
1,4-DICHLOROBENZENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
BENZYL ALCOHOL	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
1,2-DICHLOROBENZENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
2-METHYLPHENOL	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
BIS(2-CHLOROISOPROPYL)ETHER	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
4-METHYLPHENOL	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
HEXACHLOROETHANE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
NITROBENZENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
ISOPHORONE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
2-NITROPHENOL	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
2,4-DIMETHYLPHENOL	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
BENZOIC ACID	UG/KG	2000	U	1800	U	1900	U	1600	U	1900	U	1700	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
2,4-DICHLOROPHENOL	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
1,2,4-TRICHLOROBENZENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
NAPHTHALENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
4-CHLOROANILINE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
HEXACHLOROBUTADIENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
4-CHLORO-3-METHYLPHENOL	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
2-METHYLNAPHTHALENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
2,4,6-TRICHLOROPHENOL	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
2,4,5-TRICHLOROPHENOL	UG/KG	2000	U	1800	U	1900	U	1600	U	1900	U	1700	U
2-CHLORONAPHTHALENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
2-NITROANILINE	UG/KG	2000	U	1800	U	1900	U	1600	U	1900	U	1700	U
DIMETHYLPHTHALATE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
ACENAPHTHYLENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
2,6-DINITROTOLUENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
3-NITROANILINE	UG/KG	2000	U	1800	U	1900	U	1600	U	1900	U	1700	U
ACENAPHTHENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB01G		CB02J		CB03E		CB04I		CB05J		CB06E	
2,4-DINITROPHENOL	UG/KG	2000	U	1800	U	1900	U	1600	U	1900	U	1700	U
4-NITROPHENOL	UG/KG	2000	U	1800	U	1900	U	1600	U	1900	U	1700	U
DIBENZOFURAN	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
2,4-DINITROTOLUENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
DIETHYLPHTHALATE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
FLUORENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
4-NITROANILINE	UG/KG	2000	U	1800	U	1900	U	1600	U	1900	U	1700	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	2000	U	1800	U	1900	U	1600	U	1900	U	1700	U
N-NITROSODIPHENYLAMINE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
HEXACHLOROBENZENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
PENTACHLOROPHENOL	UG/KG	2000	U	1800	U	1900	U	1600	U	1900	U	1700	U
PHENANTHRENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
ANTHRACENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
DI-N-BUTYLPHTHALATE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
FLUORANTHENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
PYRENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
BUTYLBENZYLPHTHALATE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
3,3'-DICHLOROBENZIDINE	UG/KG	820	U	760	U	790	U	680	U	800	U	690	U
BENZO(A)ANTHRACENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
CHRYSENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
DI-N-OCTYLPHTHALATE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
BENZO(B)FLUORANTHENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
BENZO(K)FLUORANTHENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
BENZO(A)PYRENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
INDENO(1,2,3-CD)PYRENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
DIBENZ(A,H)ANTHRACENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U
BENZO(G,H,I)PERYLENE	UG/KG	410	U	380	U	390	U	340	U	400	U	340	U

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Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB07C		CB08J		CB09C		CB10C		CB11J		CB12H	
PHENOL	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
2-CHLOROPHENOL	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
1,3-DICHLOROBENZENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
1,4-DICHLOROBENZENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
BENZYL ALCOHOL	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
1,2-DICHLOROBENZENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
2-METHYLPHENOL	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
BIS(2-CHLOROISOPROPYL)ETHER	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
4-METHYLPHENOL	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
HEXACHLOROETHANE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
NITROBENZENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
ISOPHORONE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
2-NITROPHENOL	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
2,4-DIMETHYLPHENOL	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
BENZOIC ACID	UG/KG	1700	U	1900	U	1700	U	1600	U	1900	U	1700	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
2,4-DICHLOROPHENOL	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
1,2,4-TRICHLOROBENZENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
NAPHTHALENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
4-CHLOROANILINE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
HEXACHLOROBUTADIENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
4-CHLORO-3-METHYLPHENOL	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
2-METHYLNAPHTHALENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
2,4,6-TRICHLOROPHENOL	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
2,4,5-TRICHLOROPHENOL	UG/KG	1700	U	1900	U	1700	U	1600	U	1900	U	1700	U
2-CHLORONAPHTHALENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
2-NITROANILINE	UG/KG	1700	U	1900	U	1700	U	1600	U	1900	U	1700	U
DIMETHYLPHTHALATE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
ACENAPHTHYLENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
2,6-DINITROTOLUENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
3-NITROANILINE	UG/KG	1700	U	1900	U	1700	U	1600	U	1900	U	1700	U
ACENAPHTHENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB07C		CB08J		CB09C		CB10C		CB11J		CB12H	
2,4-DINITROPHENOL	UG/KG	1700	U	1900	U	1700	U	1600	U	1900	U	1700	U
4-NITROPHENOL	UG/KG	1700	U	1900	U	1700	U	1600	U	1900	U	1700	U
DIBENZOFURAN	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
2,4-DINITROTOLUENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
DIETHYLPHTHALATE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
FLUORENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
4-NITROANILINE	UG/KG	1700	U	1900	U	1700	U	1600	U	1900	U	1700	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	1700	U	1900	U	1700	U	1600	U	1900	U	1700	U
N-NITROSODIPHENYLAMINE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
HEXACHLOROBENZENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
PENTACHLOROPHENOL	UG/KG	1700	U	1900	U	1700	U	1600	U	1900	U	1700	U
PHENANTHRENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
ANTHRACENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
DI-N-BUTYLPHTHALATE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
FLUORANTHENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
PYRENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
BUTYLBENZYLPHTHALATE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
3,3'-DICHLOROBENZIDINE	UG/KG	690	U	790	U	690	U	680	U	780	U	700	U
BENZO(A)ANTHRACENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
CHRYSENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	340	U	390	U	350	U	270	J	390	U	350	U
DI-N-OCTYLPHTHALATE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
BENZO(B)FLUORANTHENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
BENZO(K)FLUORANTHENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
BENZO(A)PYRENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
INDENO(1,2,3-CD)PYRENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
DIBENZ(A,H)ANTHRACENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U
BENZO(G,H,I)PERYLENE	UG/KG	340	U	390	U	350	U	340	U	390	U	350	U

U = Undetected
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Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB13I		CB14J		CB15I		CB16G		CB17G		CB18H	
PHENOL	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
2-CHLOROPHENOL	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
1,3-DICHLOROBENZENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
1,4-DICHLOROBENZENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
BENZYL ALCOHOL	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
1,2-DICHLOROBENZENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
2-METHYLPHENOL	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
BIS(2-CHLOROISOPROPYL)ETHER	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
4-METHYLPHENOL	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
HEXACHLOROETHANE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
NITROBENZENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
ISOPHORONE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
2-NITROPHENOL	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
2,4-DIMETHYLPHENOL	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
BENZOIC ACID	UG/KG	1700	U	1900	U	1900	U	1600	U	1600	U	1700	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
2,4-DICHLOROPHENOL	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
1,2,4-TRICHLOROBENZENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
NAPHTHALENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
4-CHLOROANILINE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
HEXACHLOROBUTADIENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
4-CHLORO-3-METHYLPHENOL	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
2-METHYLNAPHTHALENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
2,4,6-TRICHLOROPHENOL	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
2,4,5-TRICHLOROPHENOL	UG/KG	1700	U	1900	U	1900	U	1600	U	1600	U	1700	U
2-CHLORONAPHTHALENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
2-NITROANILINE	UG/KG	1700	U	1900	U	1900	U	1600	U	1600	U	1700	U
DIMETHYLPHTHALATE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
ACENAPHTHYLENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
2,6-DINITROTOLUENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
3-NITROANILINE	UG/KG	1700	U	1900	U	1900	U	1600	U	1600	U	1700	U
ACENAPHTHENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U

U = Undetected
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Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB13I		CB14J		CB15I		CB16G		CB17G		CB18H	
2,4-DINITROPHENOL	UG/KG	1700	U	1900	U	1900	U	1600	U	1600	U	1700	U
4-NITROPHENOL	UG/KG	1700	U	1900	U	1900	U	1600	U	1600	U	1700	U
DIBENZOFURAN	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
2,4-DINITROTOLUENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
DIETHYLPHTHALATE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
FLUORENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
4-NITROANILINE	UG/KG	1700	U	1900	U	1900	U	1600	U	1600	U	1700	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	1700	U	1900	U	1900	U	1600	U	1600	U	1700	U
N-NITROSODIPHENYLAMINE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
HEXACHLOROBENZENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
PENTACHLOROPHENOL	UG/KG	1700	U	1900	U	1900	U	1600	U	1600	U	1700	U
PHENANTHRENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
ANTHRACENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
DI-N-BUTYLPHTHALATE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
FLUORANTHENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
PYRENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
BUTYLBENZYLPHTHALATE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
3,3'-DICHLOROBENZIDINE	UG/KG	700	U	790	U	790	U	670	U	670	U	710	U
BENZO(A)ANTHRACENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
CHRYSENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
DI-N-OCTYLPHTHALATE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
BENZO(B)FLUORANTHENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
BENZO(K)FLUORANTHENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
BENZO(A)PYRENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
INDENO(1,2,3-CD)PYRENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
DIBENZ(A,H)ANTHRACENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U
BENZO(G,H,I)PERYLENE	UG/KG	350	U	390	U	390	U	340	U	340	U	350	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB19I		CB20J		CB21E		CB22I		CB23D		CB24E	
PHENOL	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
2-CHLOROPHENOL	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
1,3-DICHLOROBENZENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
1,4-DICHLOROBENZENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
BENZYL ALCOHOL	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
1,2-DICHLOROBENZENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
2-METHYLPHENOL	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
BIS(2-CHLOROISOPROPYL)ETHER	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
4-METHYLPHENOL	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
HEXACHLOROETHANE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
NITROBENZENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
ISOPHORONE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
2-NITROPHENOL	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
2,4-DIMETHYLPHENOL	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
BENZOIC ACID	UG/KG	1800	U	1800	U	1700	U	1700	U	1900	U	2000	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
2,4-DICHLOROPHENOL	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
1,2,4-TRICHLOROBENZENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
NAPHTHALENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
4-CHLOROANILINE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
HEXACHLOROBUTADIENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
4-CHLORO-3-METHYLPHENOL	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
2-METHYLNAPHTHALENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
2,4,6-TRICHLOROPHENOL	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
2,4,5-TRICHLOROPHENOL	UG/KG	1800	U	1800	U	1700	U	1700	U	1900	U	2000	U
2-CHLORONAPHTHALENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
2-NITROANILINE	UG/KG	1800	U	1800	U	1700	U	1700	U	1900	U	2000	U
DIMETHYLPHTHALATE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
ACENAPHTHYLENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
2,6-DINITROTOLUENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
3-NITROANILINE	UG/KG	1800	U	1800	U	1700	U	1700	U	1900	U	2000	U
ACENAPHTHENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB19I		CB20J		CB21E		CB22I		CB23D		CB24E	
2,4-DINITROPHENOL	UG/KG	1800	U	1800	U	1700	U	1700	U	1900	U	2000	U
4-NITROPHENOL	UG/KG	1800	U	1800	U	1700	U	1700	U	1900	U	2000	U
DIBENZOFURAN	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
2,4-DINITROTOLUENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
DIETHYLPHTHALATE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
FLUORENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
4-NITROANILINE	UG/KG	1800	U	1800	U	1700	U	1700	U	1900	U	2000	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	1800	U	1800	U	1700	U	1700	U	1900	U	2000	U
N-NITROSODIPHENYLAMINE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
HEXACHLOROBENZENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
PENTACHLOROPHENOL	UG/KG	1800	U	1800	U	1700	U	1700	U	1900	U	2000	U
PHENANTHRENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
ANTHRACENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
DI-N-BUTYLPHTHALATE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
FLUORANTHENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
PYRENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
BUTYLBENZYLPHTHALATE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
3,3'-DICHLOROBENZIDINE	UG/KG	750	U	730	U	690	U	690	U	780	U	820	U
BENZO(A)ANTHRACENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
CHRYSENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	370	U	370	U	340	U	340	J	390	U	410	U
DI-N-OCTYLPHTHALATE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
BENZO(B)FLUORANTHENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
BENZO(K)FLUORANTHENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
BENZO(A)PYRENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
INDENO(1,2,3-CD)PYRENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
DIBENZ(A,H)ANTHRACENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U
BENZO(G,H,I)PERYLENE	UG/KG	370	U	370	U	340	U	340	U	390	U	410	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB25J		CB26J		CB27A		CB28F		NB01H		NB02I	
PHENOL	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
2-CHLOROPHENOL	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
1,3-DICHLOROBENZENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
1,4-DICHLOROBENZENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
BENZYL ALCOHOL	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
1,2-DICHLOROBENZENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
2-METHYLPHENOL	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
BIS(2-CHLOROISOPROPYL)ETHER	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
4-METHYLPHENOL	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
HEXACHLOROETHANE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
NITROBENZENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
ISOPHORONE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
2-NITROPHENOL	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
2,4-DIMETHYLPHENOL	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
BENZOIC ACID	UG/KG	1900	U	1900	U	1800	U	1800	U	1700	U	1700	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
2,4-DICHLOROPHENOL	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
1,2,4-TRICHLOROBENZENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
NAPHTHALENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
4-CHLOROANILINE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
HEXACHLOROBUTADIENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
4-CHLORO-3-METHYLPHENOL	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
2-METHYLNAPHTHALENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
2,4,6-TRICHLOROPHENOL	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
2,4,5-TRICHLOROPHENOL	UG/KG	1900	U	1900	U	1800	U	1800	U	1700	U	1700	U
2-CHLORONAPHTHALENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
2-NITROANILINE	UG/KG	1900	U	1900	U	1800	U	1800	U	1700	U	1700	U
DIMETHYLPHTHALATE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
ACENAPHTHYLENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
2,6-DINITROTOLUENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
3-NITROANILINE	UG/KG	1900	U	1900	U	1800	U	1800	U	1700	U	1700	U
ACENAPHTHENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	CB25J		CB26J		CB27A		CB28F		NB01H		NB02I	
2,4-DINITROPHENOL	UG/KG	1900	U	1900	U	1800	U	1800	U	1700	U	1700	U
4-NITROPHENOL	UG/KG	1900	U	1900	U	1800	U	1800	U	1700	U	1700	U
DIBENZOFURAN	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
2,4-DINITROTOLUENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
DIETHYLPHTHALATE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
FLUORENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
4-NITROANILINE	UG/KG	1900	U	1900	U	1800	U	1800	U	1700	U	1700	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	1900	U	1900	U	1800	U	1800	U	1700	U	1700	U
N-NITROSODIPHENYLAMINE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
HEXACHLOROBENZENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
PENTACHLOROPHENOL	UG/KG	1900	U	1900	U	1800	U	1800	U	1700	U	1700	U
PHENANTHRENE	UG/KG	400	U	400	U	170	J	380	U	350	U	340	U
ANTHRACENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
DI-N-BUTYLPHTHALATE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
FLUORANTHENE	UG/KG	400	U	400	U	370		380	U	350	U	340	U
PYRENE	UG/KG	400	U	400	U	280	J	380	U	350	U	340	U
BUTYLBENZYLPHTHALATE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
3,3'-DICHLOROBENZIDINE	UG/KG	800	U	800	U	730	U	760	U	690	U	690	U
BENZO(A)ANTHRACENE	UG/KG	400	U	400	U	150	J	380	U	350	U	340	U
CHRYSENE	UG/KG	400	U	400	U	210	J	380	U	350	U	340	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
DI-N-OCTYLPHTHALATE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
BENZO(B)FLUORANTHENE	UG/KG	400	U	400	U	190	J	380	U	350	U	340	U
BENZO(K)FLUORANTHENE	UG/KG	400	U	400	U	150	J	380	U	350	U	340	U
BENZO(A)PYRENE	UG/KG	400	U	400	U	160	J	380	U	350	U	340	U
INDENO(1,2,3-CD)PYRENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
DIBENZ(A,H)ANTHRACENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U
BENZO(G,H,I)PERYLENE	UG/KG	400	U	400	U	370	U	380	U	350	U	340	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB03C		NB04G		NB05C		NB06G		NB071		NB08C	
PHENOL	UG/KG	340	U	350	U	400	U	3400	U	350	U	10000	
BIS(2-CHLOROETHYL)ETHER	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
2-CHLOROPHENOL	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
1,3-DICHLOROBENZENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
1,4-DICHLOROBENZENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
BENZYL ALCOHOL	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
1,2-DICHLOROBENZENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
2-METHYLPHENOL	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
BIS(2-CHLOROISOPROPYL)ETHER	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
4-METHYLPHENOL	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
HEXACHLOROETHANE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
NITROBENZENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
ISOPHORONE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
2-NITROPHENOL	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
2,4-DIMETHYLPHENOL	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
BENZOIC ACID	UG/KG	1700	U	1700	U	1900	U	17000	U	1700	U	17000	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
2,4-DICHLOROPHENOL	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
1,2,4-TRICHLOROBENZENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
NAPHTHALENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
4-CHLOROANILINE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
HEXACHLOROBUTADIENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
4-CHLORO-3-METHYLPHENOL	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
2-METHYLNAPHTHALENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
2,4,6-TRICHLOROPHENOL	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
2,4,5-TRICHLOROPHENOL	UG/KG	1700	U	1700	U	1900	U	17000	U	1700	U	17000	U
2-CHLORONAPHTHALENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
2-NITROANILINE	UG/KG	1700	U	1700	U	1900	U	17000	U	1700	U	17000	U
DIMETHYLPHTHALATE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
ACENAPHTHYLENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
2,6-DINITROTOLUENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
3-NITROANILINE	UG/KG	1700	U	1700	U	1900	U	17000	U	1700	U	17000	U
ACENAPHTHENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U

U = Undetected
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Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB03C		NB04G		NB05C		NB06G		NB07I		NB08C	
2,4-DINITROPHENOL	UG/KG	1700	U	1700	U	1900	U	17000	U	1700	U	17000	U
4-NITROPHENOL	UG/KG	1700	U	1700	U	1900	U	17000	U	1700	U	17000	U
DIBENZOFURAN	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
2,4-DINITROTOLUENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
DIETHYLPHTHALATE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
FLUORENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
4-NITROANILINE	UG/KG	1700	U	1700	U	1900	U	17000	U	1700	U	17000	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	1700	U	1700	U	1900	U	17000	U	1700	U	17000	U
N-NITROSODIPHENYLAMINE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
HEXACHLOROBENZENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
PENTACHLOROPHENOL	UG/KG	1700	U	1700	U	1900	U	17000	U	1700	U	17000	U
PHENANTHRENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
ANTHRACENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
DI-N-BUTYLPHTHALATE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
FLUORANTHENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
PYRENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
BUTYLBENZYLPHTHALATE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
3,3'-DICHLOROBENZIDINE	UG/KG	690	U	690	U	800	U	6900	U	700	U	7200	U
BENZO(A)ANTHRACENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
CHRYSENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
DI-N-OCTYLPHTHALATE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
BENZO(B)FLUORANTHENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
BENZO(K)FLUORANTHENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
BENZO(A)PYRENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
INDENO(1,2,3-CD)PYRENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
DIBENZ(A,H)ANTHRACENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U
BENZO(G,H,I)PERYLENE	UG/KG	340	U	350	U	400	U	3400	U	350	U	3600	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB09I		NB10B		NB11I		NB12G		NB13A		NB14A	
PHENOL	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
2-CHLOROPHENOL	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
1,3-DICHLOROBENZENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
1,4-DICHLOROBENZENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
BENZYL ALCOHOL	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
1,2-DICHLOROBENZENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
2-METHYLPHENOL	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
BIS(2-CHLOROISOPROPYL)ETHER	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
4-METHYLPHENOL	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
HEXACHLOROETHANE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
NITROBENZENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
ISOPHORONE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
2-NITROPHENOL	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
2,4-DIMETHYLPHENOL	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
BENZOIC ACID	UG/KG	1800	U	2300	U	1700	U	1700	U	86000	U	1900	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
2,4-DICHLOROPHENOL	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
1,2,4-TRICHLOROBENZENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
NAPHTHALENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
4-CHLOROANILINE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
HEXACHLOROBUTADIENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
4-CHLORO-3-METHYLPHENOL	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
2-METHYLNAPHTHALENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
2,4,6-TRICHLOROPHENOL	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
2,4,5-TRICHLOROPHENOL	UG/KG	1800	U	2300	U	1700	U	1700	U	86000	U	1900	U
2-CHLORONAPHTHALENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
2-NITROANILINE	UG/KG	1800	U	2300	U	1700	U	1700	U	86000	U	1900	U
DIMETHYLPHTHALATE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
ACENAPHTHYLENE	UG/KG	360	U	460	U	350	U	340	U	8000	J	390	U
2,6-DINITROTOLUENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
3-NITROANILINE	UG/KG	1800	U	2300	U	1700	U	1700	U	86000	U	1900	U
ACENAPHTHENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB09I		NB10B		NB11I		NB12G		NB13A		NB14A	
2,4-DINITROPHENOL	UG/KG	1800	U	2300	U	1700	U	1700	U	86000	U	1900	U
4-NITROPHENOL	UG/KG	1800	U	2300	U	1700	U	1700	U	86000	U	1900	U
DIBENZOFURAN	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
2,4-DINITROTOLUENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
DIETHYLPHTHALATE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
FLUORENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
4-NITROANILINE	UG/KG	1800	U	2300	U	1700	U	1700	U	86000	U	1900	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	1800	U	2300	U	1700	U	1700	U	86000	U	1900	U
N-NITROSODIPHENYLAMINE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
HEXACHLOROBENZENE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
PENTACHLOROPHENOL	UG/KG	1800	U	2300	U	1700	U	1700	U	86000	U	1900	U
PHENANTHRENE	UG/KG	360	U	460	U	350	U	340	U	54000		390	U
ANTHRACENE	UG/KG	360	U	460	U	350	U	340	U	12000	J	390	U
DI-N-BUTYLPHTHALATE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
FLUORANTHENE	UG/KG	360	U	460	U	350	U	340	U	180000		390	U
PYRENE	UG/KG	360	U	460	U	350	U	340	U	170000		390	U
BUTYLBENZYLPHTHALATE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
3,3'-DICHLOROBENZIDINE	UG/KG	730	U	930	U	700	U	690	U	35000	U	780	U
BENZO(A)ANTHRACENE	UG/KG	360	U	460	U	350	U	340	U	69000		390	U
CHRYSENE	UG/KG	360	U	460	U	350	U	340	U	69000		390	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
DI-N-OCTYLPHTHALATE	UG/KG	360	U	460	U	350	U	340	U	18000	U	390	U
BENZO(B)FLUORANTHENE	UG/KG	360	U	460	U	350	U	340	U	100000		390	U
BENZO(K)FLUORANTHENE	UG/KG	360	U	460	U	350	U	340	U	110000		390	U
BENZO(A)PYRENE	UG/KG	360	U	460	U	350	U	340	U	100000		390	U
INDENO(1,2,3-CD)PYRENE	UG/KG	360	U	460	U	350	U	340	U	66000		390	U
DIBENZ(A,H)ANTHRACENE	UG/KG	360	U	460	U	350	U	340	U	19000		390	U
BENZO(G,H,I)PERYLENE	UG/KG	360	U	460	U	350	U	340	U	76000		390	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB15J		NB16C		NB17G		NB18I		NB19I		NB20J	
PHENOL	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
2-CHLOROPHENOL	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
1,3-DICHLOROBENZENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
1,4-DICHLOROBENZENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
BENZYL ALCOHOL	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
1,2-DICHLOROBENZENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
2-METHYLPHENOL	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
BIS(2-CHLOROISOPROPYL)ETHER	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
4-METHYLPHENOL	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
HEXACHLOROETHANE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
NITROBENZENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
ISOPHORONE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
2-NITROPHENOL	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
2,4-DIMETHYLPHENOL	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
BENZOIC ACID	UG/KG	1900	U	1800	U	1600	U	1900	U	1700	U	1800	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
2,4-DICHLOROPHENOL	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
1,2,4-TRICHLOROBENZENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
NAPHTHALENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
4-CHLOROANILINE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
HEXACHLOROBUTADIENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
4-CHLORO-3-METHYLPHENOL	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
2-METHYLNAPHTHALENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
2,4,6-TRICHLOROPHENOL	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
2,4,5-TRICHLOROPHENOL	UG/KG	1900	U	1800	U	1600	U	1900	U	1700	U	1800	U
2-CHLORONAPHTHALENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
2-NITROANILINE	UG/KG	1900	U	1800	U	1600	U	1900	U	1700	U	1800	U
DIMETHYLPHTHALATE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
ACENAPHTHYLENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
2,6-DINITROTOLUENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
3-NITROANILINE	UG/KG	1900	U	1800	U	1600	U	1900	U	1700	U	1800	U
ACENAPHTHENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB15J		NB16C		NB17G		NB18I		NB19I		NB20J	
2,4-DINITROPHENOL	UG/KG	1900	U	1800	U	1600	U	1900	U	1700	U	1800	U
4-NITROPHENOL	UG/KG	1900	U	1800	U	1600	U	1900	U	1700	U	1800	U
DIBENZOFURAN	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
2,4-DINITROTOLUENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
DIETHYLPHTHALATE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
FLUORENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
4-NITROANILINE	UG/KG	1900	U	1800	U	1600	U	1900	U	1700	U	1800	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	1900	U	1800	U	1600	U	1900	U	1700	U	1800	U
N-NITROSODIPHENYLAMINE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
HEXACHLOROBENZENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
PENTACHLOROPHENOL	UG/KG	1900	U	1800	U	1600	U	1900	U	1700	U	1800	U
PHENANTHRENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
ANTHRACENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
DI-N-BUTYLPHTHALATE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
FLUORANTHENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
PYRENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
BUTYLBENZYLPHTHALATE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
3,3'-DICHLOROBENZIDINE	UG/KG	770	U	740	U	680	U	770	U	690	U	750	U
BENZO(A)ANTHRACENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
CHRYSENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
DI-N-OCTYLPHTHALATE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
BENZO(B)FLUORANTHENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
BENZO(K)FLUORANTHENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
BENZO(A)PYRENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
INDENO(1,2,3-CD)PYRENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
DIBENZ(A,H)ANTHRACENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U
BENZO(G,H,I)PERYLENE	UG/KG	380	U	370	U	340	U	380	U	350	U	370	U

U = Undetected
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Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB21C		NB22J		NB23A		QCD51		QCD52		QCD58	
PHENOL	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
2-CHLOROPHENOL	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
1,3-DICHLOROBENZENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
1,4-DICHLOROBENZENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
BENZYL ALCOHOL	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
1,2-DICHLOROBENZENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
2-METHYLPHENOL	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
BIS(2-CHLOROISOPROPYL)ETHER	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
4-METHYLPHENOL	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
HEXACHLOROETHANE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
NITROBENZENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
ISOPHORONE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
2-NITROPHENOL	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
2,4-DIMETHYLPHENOL	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
BENZOIC ACID	UG/KG	1800	U	1900	U	1700	U	1700	U	1800	U	2000	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
2,4-DICHLOROPHENOL	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
1,2,4-TRICHLOROBENZENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
NAPHTHALENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
4-CHLOROANILINE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
HEXACHLOROBUTADIENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
4-CHLORO-3-METHYLPHENOL	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
2-METHYLNAPHTHALENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
2,4,6-TRICHLOROPHENOL	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
2,4,5-TRICHLOROPHENOL	UG/KG	1800	U	1900	U	1700	U	1700	U	1800	U	2000	U
2-CHLORONAPHTHALENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
2-NITROANILINE	UG/KG	1800	U	1900	U	1700	U	1700	U	1800	U	2000	U
DIMETHYLPHTHALATE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
ACENAPHTHYLENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
2,6-DINITROTOLUENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
3-NITROANILINE	UG/KG	1800	U	1900	U	1700	U	1700	U	1800	U	2000	U
ACENAPHTHENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U

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Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	NB21C		NB22J		NB23A		QCD51		QCD52		QCD58	
2,4-DINITROPHENOL	UG/KG	1800	U	1900	U	1700	U	1700	U	1800	U	2000	U
4-NITROPHENOL	UG/KG	1800	U	1900	U	1700	U	1700	U	1800	U	2000	U
DIBENZOFURAN	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
2,4-DINITROTOLUENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
DIETHYLPHTHALATE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
FLUORENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
4-NITROANILINE	UG/KG	1800	U	1900	U	1700	U	1700	U	1800	U	2000	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	1800	U	1900	U	1700	U	1700	U	1800	U	2000	U
N-NITROSODIPHENYLAMINE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
HEXACHLOROBENZENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
PENTACHLOROPHENOL	UG/KG	1800	U	1900	U	1700	U	1700	U	1800	U	2000	U
PHENANTHRENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
ANTHRACENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
DI-N-BUTYLPHTHALATE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
FLUORANTHENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
PYRENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
BUTYLBENZYLPHTHALATE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
3,3'-DICHLOROBENZIDINE	UG/KG	730	U	780	U	710	U	690	U	760	U	820	U
BENZO(A)ANTHRACENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
CHRYSENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
DI-N-OCTYLPHTHALATE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
BENZO(B)FLUORANTHENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
BENZO(K)FLUORANTHENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
BENZO(A)PYRENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
INDENO(1,2,3-CD)PYRENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
DIBENZ(A,H)ANTHRACENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U
BENZO(G,H,I)PERYLENE	UG/KG	370	U	390	U	350	U	340	U	380	U	410	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCD59		QCD60		QCD66		QCD67		S101B		S101E	
PHENOL	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
2-CHLOROPHENOL	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
1,3-DICHLOROBENZENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
1,4-DICHLOROBENZENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
BENZYL ALCOHOL	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
1,2-DICHLOROBENZENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
2-METHYLPHENOL	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
BIS(2-CHLOROISOPROPYL)ETHER	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
4-METHYLPHENOL	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
HEXACHLOROETHANE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
NITROBENZENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
ISOPHORONE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
2-NITROPHENOL	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
2,4-DIMETHYLPHENOL	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
BENZOIC ACID	UG/KG	1700	U	1900	U	1700	U	1700	U	1700	U	1700	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
2,4-DICHLOROPHENOL	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
1,2,4-TRICHLOROBENZENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
NAPHTHALENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
4-CHLOROANILINE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
HEXACHLOROBUTADIENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
4-CHLORO-3-METHYLPHENOL	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
2-METHYLNAPHTHALENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
2,4,6-TRICHLOROPHENOL	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
2,4,5-TRICHLOROPHENOL	UG/KG	1700	U	1900	U	1700	U	1700	U	1700	U	1700	U
2-CHLORONAPHTHALENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
2-NITROANILINE	UG/KG	1700	U	1900	U	1700	U	1700	U	1700	U	1700	U
DIMETHYLPHTHALATE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
ACENAPHTHYLENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
2,6-DINITROTOLUENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
3-NITROANILINE	UG/KG	1700	U	1900	U	1700	U	1700	U	1700	U	1700	U
ACENAPHTHENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U

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Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCD59		QCD60		QCD66		QCD67		S101B		S101E	
2,4-DINITROPHENOL	UG/KG	1700	U	1900	U	1700	U	1700	U	1700	U	1700	U
4-NITROPHENOL	UG/KG	1700	U	1900	U	1700	U	1700	U	1700	U	1700	U
DIBENZOFURAN	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
2,4-DINITROTOLUENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
DIETHYLPHTHALATE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
FLUORENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
4-NITROANILINE	UG/KG	1700	U	1900	U	1700	U	1700	U	1700	U	1700	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	1700	U	1900	U	1700	U	1700	U	1700	U	1700	U
N-NITROSODIPHENYLAMINE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
HEXACHLOROBENZENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
PENTACHLOROPHENOL	UG/KG	1700	U	1900	U	1700	U	1700	U	1700	U	1700	U
PHENANTHRENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
ANTHRACENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
DI-N-BUTYLPHTHALATE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
FLUORANTHENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
PYRENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
BUTYLBENZYLPHTHALATE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
3,3'-DICHLOROBENZIDINE	UG/KG	690	U	770	U	710	U	690	U	710	U	720	U
BENZO(A)ANTHRACENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
CHRYSENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
DI-N-OCTYLPHTHALATE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
BENZO(B)FLUORANTHENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
BENZO(K)FLUORANTHENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
BENZO(A)PYRENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
INDENO(1,2,3-CD)PYRENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
DIBENZ(A,H)ANTHRACENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U
BENZO(G,H,I)PERYLENE	UG/KG	340	U	380	U	350	U	340	U	350	U	360	U

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SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	SB01J		SB02G		SB03G		SB04J	
PHENOL	UG/KG	350	U	350	U	350	U	380	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	350	U	350	U	350	U	380	U
2-CHLOROPHENOL	UG/KG	350	U	350	U	350	U	380	U
1,3-DICHLOROBENZENE	UG/KG	350	U	350	U	350	U	380	U
1,4-DICHLOROBENZENE	UG/KG	350	U	350	U	350	U	380	U
BENZYL ALCOHOL	UG/KG	350	U	350	U	350	U	380	U
1,2-DICHLOROBENZENE	UG/KG	350	U	350	U	350	U	380	U
2-METHYLPHENOL	UG/KG	350	U	350	U	350	U	380	U
BIS(2-CHLOROISOPROPYL)ETHER	UG/KG	350	U	350	U	350	U	380	U
4-METHYLPHENOL	UG/KG	350	U	350	U	350	U	380	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	350	U	350	U	350	U	380	U
HEXACHLOROETHANE	UG/KG	350	U	350	U	350	U	380	U
NITROBENZENE	UG/KG	350	U	350	U	350	U	380	U
ISOPHORONE	UG/KG	350	U	350	U	350	U	380	U
2-NITROPHENOL	UG/KG	350	U	350	U	350	U	380	U
2,4-DIMETHYLPHENOL	UG/KG	350	U	350	U	350	U	380	U
BENZOIC ACID	UG/KG	1700	U	1700	U	1700	U	1800	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	350	U	350	U	350	U	380	U
2,4-DICHLOROPHENOL	UG/KG	350	U	350	U	350	U	380	U
1,2,4-TRICHLOROBENZENE	UG/KG	350	U	350	U	350	U	380	U
NAPHTHALENE	UG/KG	350	U	350	U	350	U	380	U
4-CHLOROANILINE	UG/KG	350	U	350	U	350	U	380	U
HEXACHLOROBUTADIENE	UG/KG	350	U	350	U	350	U	380	U
4-CHLORO-3-METHYLPHENOL	UG/KG	350	U	350	U	350	U	380	U
2-METHYLNAPHTHALENE	UG/KG	350	U	350	U	350	U	380	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	350	U	350	U	350	U	380	U
2,4,6-TRICHLOROPHENOL	UG/KG	350	U	350	U	350	U	380	U
2,4,5-TRICHLOROPHENOL	UG/KG	1700	U	1700	U	1700	U	1800	U
2-CHLORONAPHTHALENE	UG/KG	350	U	350	U	350	U	380	U
2-NITROANILINE	UG/KG	1700	U	1700	U	1700	U	1800	U
DIMETHYLPHTHALATE	UG/KG	350	U	350	U	350	U	380	U
ACENAPHTHYLENE	UG/KG	350	U	350	U	350	U	380	U
2,6-DINITROTOLUENE	UG/KG	350	U	350	U	350	U	380	U
3-NITROANILINE	UG/KG	1700	U	1700	U	1700	U	1800	U
ACENAPHTHENE	UG/KG	350	U	350	U	350	U	380	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	SB01J		SB02G		SB03G		SB04J	
2,4-DINITROPHENOL	UG/KG	1700	U	1700	U	1700	U	1800	U
4-NITROPHENOL	UG/KG	1700	U	1700	U	1700	U	1800	U
DIBENZOFURAN	UG/KG	350	U	350	U	350	U	380	U
2,4-DINITROTOLUENE	UG/KG	350	U	350	U	350	U	380	U
DIETHYLPHTHALATE	UG/KG	350	U	350	U	350	U	380	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	350	U	350	U	350	U	380	U
FLUORENE	UG/KG	350	U	350	U	350	U	380	U
4-NITROANILINE	UG/KG	1700	U	1700	U	1700	U	1800	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	1700	U	1700	U	1700	U	1800	U
N-NITROSODIPHENYLAMINE	UG/KG	350	U	350	U	350	U	380	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	350	U	350	U	350	U	380	U
HEXACHLOROBENZENE	UG/KG	350	U	350	U	350	U	380	U
PENTACHLOROPHENOL	UG/KG	1700	U	1700	U	1700	U	1800	U
PHENANTHRENE	UG/KG	350	U	350	U	350	U	380	U
ANTHRACENE	UG/KG	350	U	350	U	350	U	380	U
DI-N-BUTYLPHTHALATE	UG/KG	350	U	350	U	350	U	380	U
FLUORANTHENE	UG/KG	350	U	350	U	350	U	380	U
PYRENE	UG/KG	350	U	350	U	350	U	380	U
BUTYLBENZYLPHTHALATE	UG/KG	350	U	350	U	350	U	380	U
3,3'-DICHLOROBENZIDINE	UG/KG	710	U	710	U	700	U	760	U
BENZO(A)ANTHRACENE	UG/KG	350	U	350	U	350	U	380	U
CHRYSENE	UG/KG	350	U	350	U	350	U	380	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	350	U	350	U	350	U	380	U
DI-N-OCTYLPHTHALATE	UG/KG	350	U	350	U	350	U	380	U
BENZO(B)FLUORANTHENE	UG/KG	350	U	350	U	350	U	380	U
BENZO(K)FLUORANTHENE	UG/KG	350	U	350	U	350	U	380	U
BENZO(A)PYRENE	UG/KG	350	U	350	U	350	U	380	U
INDENO(1,2,3-CD)PYRENE	UG/KG	350	U	350	U	350	U	380	U
DIBENZ(A,H)ANTHRACENE	UG/KG	350	U	350	U	350	U	380	U
BENZO(G,H,I)PERYLENE	UG/KG	350	U	350	U	350	U	380	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SBNA

SOIL QUALITY CONTROL - SEMI-VOLATILES

SUMMARY OF ANALYTICAL RESULTS
SOIL QUALITY CONTROL - SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCR51		QCR54		QCR58		QCR59		SRC01	
PHENOL	UG/L	10	U	10	U	10	U	10	U	10	U
BIS(2-CHLOROETHYL)ETHER	UG/L	10	U	10	U	10	U	10	U	10	U
2-CHLOROPHENOL	UG/L	10	U	10	U	10	U	10	U	10	U
1,3-DICHLOROBENZENE	UG/L	10	U	10	U	10	U	10	U	10	U
1,4-DICHLOROBENZENE	UG/L	10	U	10	U	10	U	10	U	10	U
BENZYL ALCOHOL	UG/L	10	U	10	U	10	U	10	U	10	U
1,2-DICHLOROBENZENE	UG/L	10	U	10	U	10	U	10	U	10	U
2-METHYLPHENOL	UG/L	10	U	10	U	10	U	10	U	10	U
BIS(2-CHLOROISOPROPYL)ETHER	UG/L	10	U	10	U	10	U	10	U	10	U
4-METHYLPHENOL	UG/L	10	U	10	U	10	U	10	U	10	U
N-NITROSO-DI-N-PROPYLAMINE	UG/L	10	U	10	U	10	U	10	U	10	U
HEXACHLOROETHANE	UG/L	10	U	10	U	10	U	10	U	10	U
NITROBENZENE	UG/L	10	U	10	U	10	U	10	U	10	U
ISOPHORONE	UG/L	10	U	10	U	10	U	10	U	10	U
2-NITROPHENOL	UG/L	10	U	10	U	10	U	10	U	10	U
2,4-DIMETHYLPHENOL	UG/L	10	U	10	U	10	U	10	U	10	U
BENZOIC ACID	UG/L	50	U	50	U	50	U	50	U	50	U
BIS(2-CHLOROETHOXY)METHANE	UG/L	10	U	10	U	10	U	10	U	10	U
2,4-DICHLOROPHENOL	UG/L	10	U	10	U	10	U	10	U	10	U
1,2,4-TRICHLOROBENZENE	UG/L	10	U	10	U	10	U	10	U	10	U
NAPHTHALENE	UG/L	10	U	10	U	10	U	10	U	10	U
4-CHLOROANILINE	UG/L	10	U	10	U	10	U	10	U	10	U
HEXACHLOROBUTADIENE	UG/L	10	U	10	U	10	U	10	U	10	U
4-CHLORO-3-METHYLPHENOL	UG/L	10	U	10	U	10	U	10	U	10	U
2-METHYLNAPHTHALENE	UG/L	10	U	10	U	10	U	10	U	10	U
HEXACHLOROCYCLOPENTADIENE	UG/L	10	U	10	U	10	U	10	U	10	U
2,4,6-TRICHLOROPHENOL	UG/L	10	U	10	U	10	U	10	U	10	U
2,4,5-TRICHLOROPHENOL	UG/L	50	U	50	U	50	U	50	U	50	U
2-CHLORONAPHTHALENE	UG/L	10	U	10	U	10	U	10	U	10	U
2-NITROANILINE	UG/L	50	U	50	U	50	U	50	U	50	U
DIMETHYLPHTHALATE	UG/L	10	U	10	U	10	U	10	U	10	U
ACENAPHTHYLENE	UG/L	10	U	10	U	10	U	10	U	10	U
2,6-DINITROTOLUENE	UG/L	10	U	10	U	10	U	10	U	10	U
3-NITROANILINE	UG/L	50	U	50	U	50	U	50	U	50	U
ACENAPHTHENE	UG/L	10	U	10	U	10	U	10	U	10	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SQCBNA

SUMMARY OF ANALYTICAL RESULTS
SOIL QUALITY CONTROL - SEMI-VOLATILES

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

PARAMETER	UNITS	QCR51		QCR54		QCR58		QCR59		SRC01	
2,4-DINITROPHENOL	UG/L	50	U	50	U	50	U	50	U	50	U
4-NITROPHENOL	UG/L	50	U	50	U	50	U	50	U	50	U
DIBENZOFURAN	UG/L	10	U	10	U	10	U	10	U	10	U
2,4-DINITROTOLUENE	UG/L	10	U	10	U	10	U	10	U	10	U
DIETHYLPHTHALATE	UG/L	10	U	10	U	10	U	10	U	10	U
4-CHLOROPHENYL-PHENYLETHER	UG/L	10	U	10	U	10	U	10	U	10	U
FLUORENE	UG/L	10	U	10	U	10	U	10	U	10	U
4-NITROANILINE	UG/L	50	U	50	U	50	U	50	U	50	U
4,6-DINITRO-2-METHYLPHENOL	UG/L	50	U	50	U	50	U	50	U	50	U
N-NITROSODIPHENYLAMINE	UG/L	10	U	10	U	10	U	10	U	10	U
4-BROMOPHENYL-PHENYLETHER	UG/L	10	U	10	U	10	U	10	U	10	U
HEXACHLOROBENZENE	UG/L	10	U	10	U	10	U	10	U	10	U
PENTACHLOROPHENOL	UG/L	50	U	50	U	50	U	50	U	50	U
PHENANTHRENE	UG/L	10	U	10	U	10	U	10	U	10	U
ANTHRACENE	UG/L	10	U	10	U	10	U	10	U	10	U
DI-N-BUTYLPHTHALATE	UG/L	10	U	10	U	10	U	10	U	10	U
FLUORANTHENE	UG/L	10	U	10	U	10	U	10	U	10	U
PYRENE	UG/L	10	U	10	U	10	U	10	U	10	U
BUTYLBENZYLPHTHALATE	UG/L	10	U	10	U	10	U	10	U	10	U
3,3'-DICHLOROBENZIDINE	UG/L	20	U	20	U	20	U	20	U	20	U
BENZO(A)ANTHRACENE	UG/L	10	U	10	U	10	U	10	U	10	U
CHRYSENE	UG/L	10	U	10	U	10	U	10	U	10	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/L	10	U	10	U	10	U	10	U	10	U
DI-N-OCTYLPHTHALATE	UG/L	10	U	10	U	10	U	10	U	10	U
BENZO(B)FLUORANTHENE	UG/L	10	U	10	U	10	U	10	U	10	U
BENZO(K)FLUORANTHENE	UG/L	10	U	10	U	10	U	10	U	10	U
BENZO(A)PYRENE	UG/L	10	U	10	U	10	U	10	U	10	U
INDENO(1,2,3-CD)PYRENE	UG/L	10	U	10	U	10	U	10	U	10	U
DIBENZ(A,H)ANTHRACENE	UG/L	10	U	10	U	10	U	10	U	10	U
BENZO(G,H,I)PERYLENE	UG/L	10	U	10	U	10	U	10	U	10	U

U = Undetected
J = Estimated Concentration

Report Generated 01/10/91 Project # : 1870.52 SQCBNA

SOIL TENTATIVELY IDENTIFIED COMPOUNDS

SUMMARY OF ANALYTICAL RESULTS
SOIL TENTATIVELY IDENTIFIED COMPOUNDS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

Parameter	Sample ID	Conc	Qualifiers	Units
UNKNOWN	CB01G	370	BJ	UG/KG
UNKNOWN	CB01G	490	BJ	UG/KG
FREON CONTAMINANT	CB02J	600	BJ	UG/KG
UNKNOWN	CB02J	260	BJ	UG/KG
UNKNOWN	CB02J	570	BJ	UG/KG
FREON CONTAMINANT	CB03E	600	BJ	UG/KG
UNKNOWN	CB03E	500	BJ	UG/KG
UNKNOWN	CB03E	1300	BJ	UG/KG
UNKNOWN ALKANE	CB03E	190	J	UG/KG
BENZENE, 1-BROMO-4-CHLORO-	CB04I	190	J	UG/KG
FREON CONTAMINANT	CB04I	520	BJ	UG/KG
UNKNOWN	CB04I	340	BJ	UG/KG
UNKNOWN	CB04I	710	BJ	UG/KG
UNKNOWN	CB05J	220	BJ	UG/KG
UNKNOWN	CB05J	470	BJ	UG/KG
UNKNOWN	CB05J	560	BJ	UG/KG
2-PENTANONE, 4-HYDROXY-4-MET	CB06E	930	BJ	UG/KG
UNKNOWN	CB06E	240	BJ	UG/KG
FREON CONTAMINANT	CB07C	410	BJ	UG/KG
UNKNOWN	CB07C	220	J	UG/KG
UNKNOWN	CB08J	340	J	UG/KG
UNKNOWN	CB08J	430	BJ	UG/KG
BENZENE, 1-BROMO-4-CHLORO-	CB09C	240	J	UG/KG
UNKNOWN	CB09C	220	BJ	UG/KG
UNKNOWN	CB09C	510	BJ	UG/KG
UNKNOWN	CB09C	510	BJ	UG/KG
UNKNOWN	CB10C	470	BJ	UG/KG
UNKNOWN	CB10C	480	BJ	UG/KG
UNKNOWN	CB10C	560	BJ	UG/KG
FREON CONTAMINANT	CB11J	410	BJ	UG/KG
UNKNOWN	CB11J	240	J	UG/KG
UNKNOWN	CB12H	200	BJ	UG/KG
UNKNOWN	CB12H	470	BJ	UG/KG
UNKNOWN	CB12H	580	BJ	UG/KG
FREON CONTAMINANT	CB13I	380	BJ	UG/KG
UNKNOWN	CB13I	150	J	UG/KG
FREON CONTAMINANT	CB14J	650	BJ	UG/KG
UNKNOWN	CB14J	300	BJ	UG/KG
UNKNOWN	CB15I	260	BJ	UG/KG
UNKNOWN	CB15I	570	BJ	UG/KG
UNKNOWN	CB15I	610	BJ	UG/KG
2-PENTANONE, 4-HYDROXY-4-MET	CB16G	960	BJ	UG/KG
UNKNOWN	CB16G	290	BJ	UG/KG
FREON CONTAMINANT	CB17G	310	BJ	UG/KG
UNKNOWN	CB17G	180	BJ	UG/KG
FREON CONTAMINANT	CB18H	390	BJ	UG/KG
UNKNOWN	CB18H	180	BJ	UG/KG
BENZENE, 1-BROMO-2-CHLORO-	CB19I	260	J	UG/KG
UNKNOWN	CB19I	170	J	UG/KG
UNKNOWN	CB19I	180	J	UG/KG
UNKNOWN	CB19I	390	BJ	UG/KG
UNKNOWN	CB19I	590	BJ	UG/KG
UNKNOWN	CB19I	910	BJ	UG/KG
FREON CONTAMINANT	CB20J	540	BJ	UG/KG
UNKNOWN	CB20J	240	BJ	UG/KG
UNKNOWN	CB20J	510	BJ	UG/KG
BENZENE, 1-BROMO-4-CHLORO-	CB21E	210	J	UG/KG

U = Undetected
B = Present in Method Blank
J = Estimated Concentration

SUMMARY OF ANALYTICAL RESULTS
SOIL TENTATIVELY IDENTIFIED COMPOUNDS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

Parameter	Sample ID	Conc	Qualifiers	Units
FREON CONTAMINANT	CB21E	670	BJ	UG/KG
UNKNOWN	CB21E	340	J	UG/KG
UNKNOWN	CB21E	780	BJ	UG/KG
FREON CONTAMINANT	CB22I	650	BJ	UG/KG
UNKNOWN	CB22I	300	J	UG/KG
UNKNOWN	CB22I	540	BJ	UG/KG
EICOSANE	CB23D	650	J	UG/KG
FREON CONTAMINANT	CB23D	740	BJ	UG/KG
PENTANE, 2-METHYL-	CB23D	290	J	UG/KG
TETRACOSANE, 3-ETHYL-	CB23D	280	J	UG/KG
UNKNOWN	CB23D	170	J	UG/KG
UNKNOWN	CB23D	220	J	UG/KG
UNKNOWN	CB23D	620	BJ	UG/KG
UNKNOWN	CB23D	780	J	UG/KG
UNKNOWN	CB23D	910	J	UG/KG
UNKNOWN	CB23D	1200	J	UG/KG
DODECANE	CB24E	330	J	UG/KG
HEXANAL, 3,3-DIMETHYL-	CB24E	410	J	UG/KG
HEXATRIACONTANE	CB24E	310	J	UG/KG
PENTANE, 2-METHYL-	CB24E	190	J	UG/KG
UNKNOWN	CB24E	220	J	UG/KG
UNKNOWN	CB24E	590	BJ	UG/KG
UNKNOWN	CB24E	590	J	UG/KG
UNKNOWN	CB24E	700	J	UG/KG
UNKNOWN	CB24E	720	BJ	UG/KG
UNKNOWN	CB24E	860	J	UG/KG
UNKNOWN	CB24E	2600	J	UG/KG
UNKNOWN	CB25J	380	BJ	UG/KG
UNKNOWN	CB25J	550	BJ	UG/KG
FREON CONTAMINANT	CB26J	340	BJ	UG/KG
UNKNOWN	CB26J	190	BJ	UG/KG
2-PENTANONE, 3-METHYL-	CB27A	260	J	UG/KG
BENZENE, 1,1'-(DICHLOROETHEN	CB27A	380	J	UG/KG
FREON CONTAMINANT	CB27A	330	BJ	UG/KG
P,P'-DDD	CB27A	170	J	UG/KG
UNKNOWN	CB27A	170	J	UG/KG
UNKNOWN	CB27A	360	J	UG/KG
UNKNOWN	CB27A	430	BJ	UG/KG
UNKNOWN	CB27A	670	J	UG/KG
UNKNOWN	CB28F	300	J	UG/KG
UNKNOWN	CB28F	560	BJ	UG/KG
UNKNOWN	CB28F	860	BJ	UG/KG
FREON CONTAMINANT	NB01H	490	BJ	UG/KG
UNKNOWN	NB01H	190	BJ	UG/KG
UNKNOWN	NB01H	350	BJ	UG/KG
FREON CONTAMINANT	NB02I	450	BJ	UG/KG
UNKNOWN	NB02I	270	BJ	UG/KG
FREON CONTAMINANT	NB03C	520	BJ	UG/KG
UNKNOWN	NB03C	210	J	UG/KG
FREON CONTAMINANT	NB04G	530	BJ	UG/KG
PENTANE, 2-METHYL-	NB04G	150	J	UG/KG
UNKNOWN	NB04G	160	J	UG/KG
UNKNOWN	NB04G	180	J	UG/KG
UNKNOWN	NB04G	490	J	UG/KG
FREON CONTAMINANT	NB05C	520	BJ	UG/KG
UNKNOWN	NB05C	340	BJ	UG/KG

U = Undetected
B = Present in Method Blank
J = Estimated Concentration

SUMMARY OF ANALYTICAL RESULTS
SOIL TENTATIVELY IDENTIFIED COMPOUNDS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

Parameter	Sample ID	Conc	Qualifiers	Units
UNKNOWN	NB05C	420	BJ	UG/KG
UNKNOWN	NB05C	450	J	UG/KG
UNKNOWN	NB05C	460	J	UG/KG
CYCLOHEXANE, EICOSYL-	NB06G	3200	J	UG/KG
CYCLOHEXANE, OCTYL-	NB06G	3600	J	UG/KG
EICOSANE	NB06G	6500	J	UG/KG
EICOSANE, 10-METHYL-	NB06G	4700	J	UG/KG
HEPTACOSANE	NB06G	2900	J	UG/KG
HEPTADECANE	NB06G	3500	J	UG/KG
HEXADECANE	NB06G	1700	J	UG/KG
HEXADECANE, 2,6,10,14-TETRAM	NB06G	3600	J	UG/KG
HEXATRIACONTANE	NB06G	2500	J	UG/KG
OCTANE, 4-ETHYL-	NB06G	2300	J	UG/KG
OCTANE, 4-METHYL-	NB06G	1800	J	UG/KG
PENTACOSANE	NB06G	3600	J	UG/KG
TRIDECANE	NB06G	1900	J	UG/KG
UNKNOWN	NB06G	2300	J	UG/KG
UNKNOWN ALIPHATIC	NB06G	1900	J	UG/KG
UNKNOWN ALIPHATIC	NB06G	1900	J	UG/KG
UNKNOWN ALIPHATIC	NB06G	2100	J	UG/KG
UNKNOWN ALIPHATIC	NB06G	2200	J	UG/KG
UNKNOWN ALIPHATIC	NB06G	2300	J	UG/KG
UNKNOWN ALIPHATIC	NB06G	3000	J	UG/KG
FREON CONTAMINANT	NB07I	350	BJ	UG/KG
UNKNOWN	NB07I	420	BJ	UG/KG
BENZENE, (1-METHYLPROPYL)-	NB08C	1800	J	UG/KG
BENZENE, 1,1'-METHYLENEBIS[4	NB08C	1800	J	UG/KG
BENZENE, 1,2,3-TRIMETHYL-	NB08C	4400	J	UG/KG
BENZENE, 1,2,4-TRIMETHYL-	NB08C	5100	J	UG/KG
BENZENE, 1-ETHYL-2-METHYL-	NB08C	1500	J	UG/KG
BENZENE, 1-ETHYL-4-METHYL-	NB08C	3000	J	UG/KG
BENZENE, 1-METHYL-4-(1-METHY	NB08C	3300	J	UG/KG
PYRIDINE, 4-(3-PHENYLPROPYL)	NB08C	3400	J	UG/KG
UNKNOWN	NB08C	3500	J	UG/KG
FREON CONTAMINANT	NB09I	320	BJ	UG/KG
UNKNOWN	NB09I	450	BJ	UG/KG
FREON CONTAMINANT	NB10B	650	BJ	UG/KG
UNKNOWN	NB10B	410	BJ	UG/KG
UNKNOWN	NB10B	420	J	UG/KG
UNKNOWN	NB10B	490	J	UG/KG
UNKNOWN	NB10B	540	J	UG/KG
UNKNOWN	NB10B	560	BJ	UG/KG
FREON CONTAMINANT	NB11I	490	BJ	UG/KG
UNKNOWN	NB11I	560	J	UG/KG
FREON CONTAMINANT	NB12G	510	BJ	UG/KG
UNKNOWN	NB12G	350	J	UG/KG
11H-BENZO[B]FLUORENE	NB13A	13000	J	UG/KG
4H-CYCLOPENTA[DEF]PHENANTHRE	NB13A	14000	J	UG/KG
7H-BENZ[DE]ANTHRACEN-7-ONE	NB13A	14000	J	UG/KG
BENZO[B]NAPHTHO[2,1-D]THIOPH	NB13A	14000	J	UG/KG
BENZO[GHI]FLUORANTHRENE	NB13A	18000	J	UG/KG
BENZO[J]FLUORANTHRENE	NB13A	87000	J	UG/KG
PYRENE, 1-METHYL-	NB13A	14000	J	UG/KG
UNKNOWN	NB13A	11000	J	UG/KG
UNKNOWN AROMATIC	NB13A	13000	J	UG/KG
UNKNOWN AROMATIC	NB13A	32000	J	UG/KG
UNKNOWN	NB14A	200	J	UG/KG

U = Undetected
B = Present in Method Blank
J = Estimated Concentration

SUMMARY OF ANALYTICAL RESULTS
SOIL TENTATIVELY IDENTIFIED COMPOUNDS

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

Parameter	Sample ID	Conc	Qualifiers	Units
UNKNOWN	NB14A	240	J	UG/KG
UNKNOWN	NB14A	990	J	UG/KG
FREON CONTAMINANT	NB15J	550	BJ	UG/KG
UNKNOWN	NB15J	230	J	UG/KG
UNKNOWN	NB15J	240	BJ	UG/KG
UNKNOWN	NB15J	480	BJ	UG/KG
FREON CONTAMINANT	NB16C	260	BJ	UG/KG
UNKNOWN	NB16C	190	J	UG/KG
UNKNOWN	NB16C	430	BJ	UG/KG
2-PENTANONE, 4-HYDROXY-4-MET	NB17G	980	BJ	UG/KG
UNKNOWN	NB17G	150	BJ	UG/KG
UNKNOWN	NB17G	220	J	UG/KG
BENZENE, 1-BROMO-2-CHLORO-	NB18I	240	J	UG/KG
FREON CONTAMINANT	NB18I	640	BJ	UG/KG
UNKNOWN	NB18I	200	J	UG/KG
UNKNOWN	NB18I	450	BJ	UG/KG
FREON CONTAMINANT	NB19I	470	BJ	UG/KG
PENTANE, 2-METHYL-	NB19I	160	J	UG/KG
UNKNOWN	NB19I	260	J	UG/KG
UNKNOWN	NB19I	320	J	UG/KG
UNKNOWN	NB19I	470	J	UG/KG
BENZENE, 1-BROMO-2-CHLORO-	NB20J	230	J	UG/KG
FREON CONTAMINANT	NB20J	530	BJ	UG/KG
UNKNOWN	NB20J	280	BJ	UG/KG
UNKNOWN	NB20J	630	BJ	UG/KG
FREON CONTAMINANT	NB21C	500	BJ	UG/KG
UNKNOWN	NB21C	350	J	UG/KG
BENZENE, 1-BROMO-2-CHLORO-	NB22J	180	J	UG/KG
UNKNOWN	NB22J	280	J	UG/KG
UNKNOWN	NB22J	360	BJ	UG/KG
UNKNOWN	NB22J	550	BJ	UG/KG
UNKNOWN	NB22J	820	BJ	UG/KG
BENZENE, 1-CHLORO-2-[2,2-DIC	NB23A	150	J	UG/KG
FREON CONTAMINANT	NB23A	490	BJ	UG/KG
TRIACONTANE, 11,20-DIDECYL-	NB23A	240	J	UG/KG
UNKNOWN	NB23A	510	BJ	UG/KG
UNKNOWN	NB23A	520	BJ	UG/KG
UNKNOWN	NB23A	900	J	UG/KG
UNKNOWN	NB23A	940	J	UG/KG
UNKNOWN	NB23A	1100	J	UG/KG
2-PENTANONE, 4-HYDROXY-4-MET	QCD51	830	BJ	UG/KG
UNKNOWN	QCD51	230	BJ	UG/KG
HEXADECANE	QCD52	200	J	UG/KG
UNKNOWN	QCD52	220	J	UG/KG
UNKNOWN	QCD52	450	BJ	UG/KG
UNKNOWN	QCD52	640	BJ	UG/KG
UNKNOWN	QCD58	170	J	UG/KG
UNKNOWN	QCD58	250	BJ	UG/KG
UNKNOWN	QCD58	520	BJ	UG/KG
UNKNOWN	QCD58	590	BJ	UG/KG
FREON CONTAMINANT	QCD59	560	BJ	UG/KG
UNKNOWN	QCD59	210	BJ	UG/KG
UNKNOWN	QCD59	490	BJ	UG/KG
2H-PYRAN-2,3-DIOL, TETRAHYDR	QCD60	570	J	UG/KG
EICOSANE	QCD60	370	J	UG/KG
PENTANE, 2-METHYL-	QCD60	230	J	UG/KG

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SUMMARY OF ANALYTICAL RESULTS
SOIL TENTATIVELY IDENTIFIED COMPOUNDS .

NIROP
OCTOBER/NOVEMBER 1990 SAMPLING

Parameter	Sample ID	Conc	Qualifiers	Units
PENTATRIACONTANE	QCD60	270	J	UG/KG
UNKNOWN	QCD60	160	J	UG/KG
UNKNOWN	QCD60	270	J	UG/KG
UNKNOWN	QCD60	310	J	UG/KG
UNKNOWN	QCD60	640	BJ	UG/KG
UNKNOWN	QCD60	680	BJ	UG/KG
UNKNOWN	QCD60	690	J	UG/KG
UNKNOWN	QCD60	1100	J	UG/KG
UNKNOWN	QCD60	2300	J	UG/KG
FREON CONTAMINANT	QCD66	460	BJ	UG/KG
PIPERIDINE, 1-METHYL-	QCD66	170	J	UG/KG
UNKNOWN	QCD66	150	J	UG/KG
UNKNOWN	QCD66	500	J	UG/KG
FREON CONTAMINANT	QCD67	340	BJ	UG/KG
UNKNOWN	QCD67	160	J	UG/KG
UNKNOWN	QCD67	170	J	UG/KG
UNKNOWN	QCD67	180	J	UG/KG
UNKNOWN	QCD67	230	J	UG/KG
UNKNOWN	QCD67	350	BJ	UG/KG
UNKNOWN	QCR54	36	J	UG/L
UNKNOWN	QCR59	4.9	J	UG/L
FREON CONTAMINANT	S10IB	300	BJ	UG/KG
UNKNOWN	S10IB	160	J	UG/KG
UNKNOWN	S10IB	290	BJ	UG/KG
UNKNOWN	S10IB	300	J	UG/KG
FREON CONTAMINANT	S10IE	350	BJ	UG/KG
UNKNOWN	S10IE	370	BJ	UG/KG
FREON CONTAMINANT	SB01J	380	BJ	UG/KG
UNKNOWN	SB01J	280	J	UG/KG
FREON CONTAMINANT	SB02G	420	BJ	UG/KG
UNKNOWN	SB02G	310	J	UG/KG
FREON CONTAMINANT	SB03G	410	BJ	UG/KG
UNKNOWN	SB03G	140	J	UG/KG
UNKNOWN	SB03G	370	J	UG/KG
UNKNOWN	SB03G	460	J	UG/KG
FREON CONTAMINANT	SB04J	440	BJ	UG/KG
UNKNOWN	SB04J	260	J	UG/KG
2-PROPANOL, 1,1'-OXYBIS-	SRC01	11	J	UG/L
2-PROPANOL, 1-(2-METHOXYPROP	SRC01	8	J	UG/L
BENZOTHIAZOLE	SRC01	8	J	UG/L
UNKNOWN	SRC01	6	J	UG/L
UNKNOWN	SRC01	6	J	UG/L
UNKNOWN	SRC01	14	J	UG/L
UNKNOWN PHTHALATE	SRC01	13	J	UG/L

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