SUPPLEMENTAL HYDROGEOLOGIC INVESTIGATION REPORT

VOLUME 1 OF 2

REPORT AND APPENDICES A & B

Synthetic Products Company
Stratford, Connecticut

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1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) was retained by Kraft Foods Inc. (Kraft) to conduct a supplemental hydrogeologic investigation at the Synthetic Products Company (SynPro) facility (Site) located in Stratford, Connecticut. The Site, formerly known as Ware Chemical (DART Industries, Inc.) is currently owned and operated by Synthetic Products Company. Kraft merged with DART in 1980 and then subsequently divested the property to SynPro in 1983. Kraft has maintained environmental liability associated with the Site.

In the 1970's, Ware Chemical discharged unreacted and/or partially reacted chemicals generated in a polymer manufacturing batch process, to a dry well leaching system located on site. This practice was discontinued, reportedly in the late 1970's. Previous investigations by others have confirmed the presence of organic and inorganic compounds and light non-aqueous phase liquids (LNAPL) in soils and groundwater on site. Additionally, corrective measures have been undertaken at the Site including excavation and disposal of the dry well leaching system and contaminated soil; groundwater extraction and treatment; and free product recovery.

As part of the property transfer between Kraft and SynPro, a Work Plan for a supplemental hydrogeologic investigation was prepared by CRA on behalf of Kraft, to conform to the data objectives of a Phase III site investigation. These data objectives are consistent with the guidance document published by the State of Connecticut Department of Environmental Protection (CTDEP) entitled "Transfer Act Site Assessment Guidance Document" (November 1991 Revision). The primary objectives included:

- determination of the nature and extent of contamination remaining on-Site;
- evaluation of the potential for upgradient (off-Site) contribution to any contamination detected on-Site; and

- definition of potential contaminant migration pathways, both on and off Site.

CTDEP approved the Work Plan on March 1, 1995. This document has been prepared to facilitate CTDEP review of the investigation activities and summarizes the results of the Supplemental Hydrogeologic Investigation. The report is divided into seven sections. Section 2.0 presents the Site background and setting. Section 3.0 presents an outline of the scope of work. Section 4.0 describes the field investigation and methodology. Section 5.0 presents physical Site conditions. Section 6.0 summarizes the laboratory analytical data and Section 7.0 presents the nature and extent of contamination including current contaminant distribution. Section 8.0 presents the summary and conclusions of the investigation.

2.0 SITE BACKGROUND AND SETTING

2.1 SITE LOCATION AND DESCRIPTION

SynPro is located in Stratford, Connecticut at 375 Barnum Avenue adjacent to the intersection of Barnum Avenue and Ferry Boulevard (Figure 2.1). The Site (Figure 2.2), approximately one acre in size, is located in an industrially-developed area. The triangular shaped parcel is bounded to the north by Barnum Avenue, to the south by Ferry Boulevard, and to the west by Hampford Research, Inc., a chemical manufacturer. North of Barnum Avenue lies a vacant industrial facility formerly occupied by Raymark Industries, Inc. (Raymark). Raymark has been listed by the United States Environmental Protection Agency (USEPA) on the National Priorities List and is currently undergoing remedial action.

The topography of the area surrounding the Site slopes generally to the south. Immediately to the south-southeast of the Site is a 10 to 15 foot high road embankment for Ferry Boulevard. Another embankment approximately 20 feet high, for I-95, is located approximately 60 feet southeast and parallel to Ferry Boulevard.

Surface drainage is provided by storm drains located along Barnum Avenue and Ferry Boulevard that collect runoff and discharge it to the Housatonic River which flows into Long Island Sound.

A sanitary sewer trunkline installed in 1971, approximately five feet in diameter and three feet below grade, crosses the Raymark property, Barnum Avenue and the Site, sloping to the south. The sewer discharges to the Town of Stratford publicly owned treatment works (POTW).

2.2 MANUFACTURING PROCESS INFORMATION

Ware Chemical produced reactive monomers at the Site from approximately 1965 until the late 1970's using an esterification process.

The reactive monomers were esters of methyl acrylic acid and acrylic acid, specifically TMPTMA (trimethylolpropane, trimethylacrylate) and TMPTA (trimethylolpropane, triacrylate). A solvent mixture containing primarily heptane, benzene and toluene was used to keep the reactants in solution during the esterification process. During operation of the batch reactor, overhead vapor containing the solvents was recovered and recycled. After the reaction was completed, partially reacted batches of monomer mixed with solvent were discharged to a dry well leaching system on site. The production of reactive monomers and discharge to the dry well system was discontinued and the manufacture of mixed-metal PVC heat stabilizers was initiated in the late 1970's. The dry well system and contaminated soils were excavated and disposed of in 1992.

SynPro currently continues the manufacture of mixed-metal PVC heat stabilizers consisting of intermediate metallic salts of barium, cadmium, zinc and antimony in the building located on the northern portion of the Site. Office, warehouse space and a small tool shop are located in the building on the southwest portion of the Site. Five 5,000-gallon underground storage tanks (USTs) containing feed stock chemicals currently listed as ink oil solvent (octilic acid), isooctanol (a mild alcohol) and mineral oil are located just west of the production building. Several aboveground storage tanks used in the manufacturing process are located along the southern wall within the production building.

2.3 PREVIOUS INVESTIGATION ACTIVITIES

2.3.1 Chronology of Site Activities

The following listing is a chronology of Site investigation activities from 1980 to the present. Activities through 1992 are largely excerpted from the Summary of Hydrogeologic Investigation and Corrective Action report, prepared by IT Corporation dated March 1993:

Date	*Activity*
May, 1980	Wehran Engineering Corporation (Wehran) was retained by Dart Industries to perform a preliminary hydrogeological investigation to assess the extent of free product. Wehran excavated four test pits and installed one 2-inch diameter monitoring well in each test pit. Wehran also sampled and analyzed the groundwater in the four monitoring wells on May 28, 1980. Groundwater samples were analyzed for total organic carbon (TOC), chemical oxygen demand, pH, specific conductance, total recoverable phenolics, soluble copper and nickel, and volatile organics.
June, 1980	On June 21, 1980, Wehran performed a groundwater pump test for 2.5 hours at flow rates ranging from 7.5 to 10.5 gallons per minute (gpm). Because this pump test did not create measurable drawdown in neighboring monitoring wells, slug tests were performed in each of the four wells to determine hydraulic conductivity.
November, 1982	During the period of November 15 through 19, 1982, NEPCCO (now owned by IT Corporation) installed eight new monitoring wells. The 4-inch diameter stainless steel wells were installed to a depth ranging from 16 to 30 feet.
December, 1982	In December, 1982, NEPCCO collected groundwater samples from the eight newly installed monitoring wells for laboratory analyses of benzene and toluene.
May, 1983	A 24-inch diameter recovery well was installed by NEPCCO in May, 1983 to a depth of thirty feet to recover total fluids and control potential off-Site migration of free product and dissolved-phase contaminants. A groundwater treatment system consisting of pretreatment with acrylic acid for iron and sodium hypochlorite for biological fouling, an oil/water separator, and an air

	stripping tower (36 inch by 20 feet) with discharge to the sanitary sewer was installed.
April, 1986	A lateral trench was installed to intersect with the recovery well previously installed by NEPCCO to enhance free product recovery. Two additional monitoring wells were installed in the recovery trench during construction. During the construction of a recovery trench , one of the eight wells installed in 1982 was removed.
April, 1987	On April 11, 1987, three additional monitoring wells were installed at the Site.
April, 1988	After installation of the groundwater recovery and treatment system, weekly monitoring was established. Monitoring on a weekly basis continued until the system was shut down in July, 1990.
April, 1988-July, 1988	On April 23 and July 13, 1988, IT Corporation tested the groundwater in all existing on-Site wells for purgeable volatile organics by EPA Method 624.
June, 1988	On June 29, 1988, IT performed a six-hour pump test to evaluate the aquifer's hydraulic characteristics using the recovery well.
June, 1990	Twenty exploratory soil borings to an average depth of ten feet below grade were advanced to delineate the most highly contaminated unsaturated zone soils and to assess the vertical and horizontal extent of free-phase hydrocarbons.
July, 1990	A second recovery well was installed by IT to further enhance recovery of free-phase hydrocarbons discovered to be migrating in the gravel subbase of the sanitary sewer trunkline that crosses the Site. The recovery well was 24 inches in diameter and eight to ten feet deep and was

	installed adjacent to the gravel subbase of the sanitary sewer line.
July, 1990-August, 1990	IT excavated the dry well leaching system and unsaturated zone soil in the area between the two buildings. This material was disposed at the Envirosafe landfill located in Oregon, Ohio. The groundwater treatment system was shut down during excavation.
March, 1991	On March 15, 1991, IT performed a file search at CTDEP of the neighboring Raymark property to identify any past spills or hazardous releases at the site. The following sections were examined in the CTDEP Hazardous Materials Unit: i) Hazardous Waste ii) Underground Storage Tanks iii) Oil and Chemical Spills
March, 1991	Raymark Industries, Inc. submitted a draft work plan for an additional investigation of soil and groundwater contamination at their site.
May, 1991	Conestoga-Rovers & Associates completed a review of the draft report entitled "Excavation and Disposal of Degraded Soil - Synthetic Products - JTS 530029," dated November 21, 1990 and prepared by IT Corporation.
January - February, 1992	IT performed monthly monitoring of the wells for depth to groundwater and free product thickness.
August, 1992	IT conducted a regulatory file search at USEPA Region I RCRA Division files on the Raymark Site.
June, 1993	Conestoga-Rovers & Associates submitted a Work Plan to CTDEP for a supplemental hydrogeologic investigation at the site.

March, 1995 Conestoga Rovers & Associates received Work Plan approval from CTDEP.

2.3.2 Results of Previous Investigations

In 1982, NEPCCO installed a groundwater recovery and treatment system which was primarily directed towards the recovery of floating free product. This system consisted of a 24-inch diameter recovery well screened from 4 to 30 feet below ground surface, a "filter scavenger" double diaphragm pump for the collection of free product, a 550-gallon recovery tank for storage of free product, and an air stripping tower for treatment of groundwater prior to discharge to the sanitary sewer system. In 1986, an attempt was made to enhance free product recovery by excavating a 100 foot long recovery trench which intersected the recovery well. The excavated trench was filled with porous backfill material. The recovery trench measured approximately four feet in width, ten feet in depth and 100 feet in length. Available information indicates that approximately 2,500 gallons of free product were removed during operation of the recovery system.

Groundwater monitoring data reported in 1988 indicated detectable levels of VOCs in eight of the ten wells sampled. Table 2.1 summarizes the data from two sampling events, April 1988 and July 1988. Benzene, toluene, ethylbenzene or xylenes were detected in eight of the 10 monitoring wells sampled. The two most prominent aromatic compounds detected were benzene and toluene. Benzene concentrations ranged from 0.188 mg/L to 184.875 mg/L. Toluene concentrations ranged from 0.010 mg/L to 55.75 mg/L. Chlorinated solvents including chloroform, 1,1-dichloroethene, trans-1,2-dichloroethane, 1,1,1-trichloroethene and trichloroethene were detected at concentrations less than 1 mg/L in seven of the 10 monitoring wells.

In 1990, IT conducted a subsurface soil investigation in the vicinity of the dry well and leaching field. Elevated levels of VOCs were detected in a composite soil sample collected from the vicinity of the dry well

and leaching field. In July 1990, closure of the dry well and leaching field and excavation and disposal of contaminated soil were conducted by IT. Approximately 3,000 tons of contaminated soil were removed from the Site. Additionally, two USTs (one 4,000-gallon fuel oil UST and one 1,000-gallon septic tank) and four buried 55-gallon drums were encountered during soil excavation and were removed. Material from the drums was characterized as containing primarily benzene and toluene. Excavated soils were transported to the Envirosafe Services of Ohio landfill facility in Oregon, Ohio for disposal. Following soil removal, the area was backfilled with a fine to coarse grained sand. The confirmation samples obtained from the sidewalls of the excavation showed the presence of benzene, toluene, ethylbenzene and total xylenes (BTEX), and chlorinated solvents including trichloroethene (TCE), tetrachloroethene (PCE), 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethene (1,1-DCE) and 1,2-dichloroethane (1,2-DCA) in 11 of the 12 sample locations. These sample results indicate soil contamination existed beyond the limits of the completed excavation.

During dry well and leach field closure activities at the Site, free product was observed in the backfill that surrounds the sanitary sewer trunkline crossing the Site. A test pit was excavated further north adjacent to the sewer line near Barnum Avenue and free product was also observed at this location. A recovery sump was temporarily installed adjacent to the sewer line to facilitate removal of free product. Analytical data indicated that the free product encountered in the sewer backfill resembled fuel oil in chemical composition.

2.3.3 Results of 1991 IT Regulatory File Search on Raymark

The file review performed by IT Corporation in March, 1991 at CTDEP indicated that the Raymark property is under a CTDEP order to investigate and clean up the site due to soil and groundwater contamination resulting from improper oil and chemical storage, handling and disposal activities. Toluene, naphtha and other solvents including chlorinated solvents were used in product manufacturing. Groundwater analyses from the Raymark facility indicated the presence of vinyl chloride, 1,1-DCA, 1,1-DCE, trans-1,2-DCA, TCE, chlorobenzene, chloroethane,

chloroform, methylene chloride, ethylbenzene, 1,1,1-TCA, benzene and toluene.

3.0 SCOPE OF WORK

3.1 SUPPLEMENTAL HYDROGEOLOGIC INVESTIGATION OBJECTIVES

Specific objectives for the Supplemental Hydrogeologic Investigation included the following:

i) characterize post-remediation Site conditions;

ii) determine the potential for upgradient (off-Site) contribution to any contamination detected on-Site; and

iii) determine potential routes of exposure and pathways for potential contaminant migration both on and off-Site.

3.2 SUPPLEMENTAL HYDROGEOLOGIC INVESTIGATION TASKS

The existing database provided conflicting information on the groundwater flow direction across the Site and did not adequately define the lateral continuity of a potential clay layer identified by IT during previous investigations. Moreover, post-remediation Site conditions had not been fully characterized.

To complete the characterization of Site hydrogeologic conditions, CRA completed the following tasks:

i) abandonment of the six existing monitoring wells and two recovery wells on Site because most are constructed entirely of screen, with minimal if any surface seal, allowing potentially impacted surface runoff to directly infiltrate groundwater;

ii) installation of three pilot borings to bedrock (SB-1, SB-6 and SB-9) across the Site to confirm the presence or absence of any laterally continuous clay layer and determine Site stratigraphy prior to installing new monitoring wells;

iii) collection of soil samples for select chemical and geotechnical analysis from soil boring locations across the Site;

iv) installation of 13 new monitoring wells at eight locations across the Site;

v) hydraulic response testing following monitoring well installation and development at selected locations to independently assess in-situ hydraulic conductivity;

vi) collection of water levels at the new monitoring wells on two occasions to determine groundwater flow direction and assess hydrogeologic conditions;

vii) collection of two rounds of groundwater samples from all new monitoring wells for laboratory analyses of select chemical parameters; and

viii) collection of a composite soil sample of the 11 soil drums and discrete samples of both wastewater storage tanks for investigation-derived waste characterization.

4.0 FIELD INVESTIGATION PROGRAM AND METHODOLOGY

4.1 GENERAL

The main portion of the field investigation program was conducted from May 8, 1995 to June 15, 1995. The second round of groundwater sampling took place between September 12 and September 15, 1995 and investigation-derived waste was disposed on October 26, 1995. All activities were conducted in accordance with the Hydrogeologic Investigation Work Plan and addendum, dated February 24, 1995. In some instances, it was necessary to modify the program outlined in the Work Plan due to changed conditions in the field. All modifications to the Work Plan are discussed in detail within this section of the report.

Concrete coring activities, subsurface drilling and monitoring well abandonments and new installations were conducted by Warren George Inc. (WGI) of Jersey City, New Jersey. Surveying services were provided by The Huntington Company of Fairfield, Connecticut. Analytical laboratory services for chemical analysis were provided by Quanterra, Inc. (Quanterra) of North Canton, Ohio. Geotechnical services were subcontracted through Quanterra to Applied Construction Technologies, Inc. of Cleveland, Ohio.

4.2 ANALYTICAL LABORATORY METHODS

The hydrogeologic investigation included the collection of soil and groundwater samples for chemical and geotechnical analyses. Selected soil samples were analyzed for target compound list volatile organic compounds (TCL VOCs), TCL semi volatile organic compounds (SVOCs), selected target analyte list (TAL) metals (arsenic, barium, cadmium, chromium, copper, lead, nickel, selenium, silver and zinc), selected toxicity characteristic leaching procedure (TCLP) metals, total organic carbon (TOC), grain size distribution, bulk density and moisture content. Groundwater samples were collected and analyzed for TCL VOCs and selected TAL metals.

A summary of the analytical methods for the hydrogeologic investigation is provided in Table 4.1.

4.2.1 Quality Assurance/Quality Control

Quality Assurance/Quality Control samples consisting of field rinsate blanks, trip blanks, blind duplicates (groundwater only) and matrix spike/matrix spike duplicate (MS/MSD) samples were collected and analyzed to assess the quality of data resulting from the field sampling program. All samples were analyzed according to protocols as specified in the Agency-approved Work Plan, including QA/QC requirements under USEPA document SW-846.

4.3 DECONTAMINATION AND CONTAINMENT PROCEDURES

In accordance with the protocols described in Section A.2.1 of the Work Plan, upon mobilization of the drill rig to the Site and prior to commencing drilling, the rig and all associated equipment were thoroughly steam cleaned to remove oil, grease, mud and other foreign matter. Before initiating drilling at each subsequent borehole location, the augers, cutting bits, sampling devices, drill rod and associated equipment were decontaminated to prevent cross-contamination.

All sampling equipment was decontaminated prior to field use and after each sample was collected to prevent cross-contamination. Duplicate samples were collected concurrently with original samples; therefore, sampling equipment was not decontaminated before collection of the duplicate.

All wash water, rinse water, monitoring well development and purge water, and cleaning fluids were containerized in 1,500-gallon polyethylene tanks. All soil cuttings were containerized in 55-gallon DOT-approved drums, labelled, and placed on pallets. Both tanks and drums were stored on Site pending disposal.

4.4 PILOT BORINGS

Three pilot borings, SB-1, SB-6 and SB-9, were advanced at the locations depicted in Figure 4.1 utilizing the procedures outlined in Section A.3.3 of the Work Plan. These locations were selected to evaluate the subsurface stratigraphy beneath the Site and to allow correlation across the Site between major stratigraphic units encountered at each location. Stratigraphic and instrumentation logs for all borings and monitoring wells are presented in Appendix A.

4.4.1 Borehole Advancement

The borehole for each of the pilot borings was advanced using hollow-stem auger drilling methods and continuous spilt spoon samples until a clay unit or bedrock was encountered. Since a significant clay unit was not encountered in any of the pilot borings, samples were collected continuously until bedrock was encountered.

Soil samples collected were described and classified according to the Unified Soil Classification System (USCS) by the CRA geologist. The samples collected were placed in glass jars and stored on Site for the geologic record. Upon completion of each pilot boring, samples from the upper and intermediate portion of the water bearing unit corresponding to potential screened intervals of proposed monitoring wells, were selected for TOC, grain size distribution, moisture content and bulk density analyses.

4.4.2 Bedrock Coring

A thinly laminated, almost vertically foliated, fine to medium grained garnet-biotite-chlorite-plagioclase-quartz-muscovite schist bedrock was encountered at 51.5 feet below ground surface at SB-1, 70 feet below ground surface at SB-6 and 43 feet below ground surface at SB-9.

Samples of bedrock were obtained using a five-foot NX core barrel. The bedrock cores were placed in a wooden box, labeled, and visually inspected by the geologist. Core recovery, modified core recovery and calculated rock quality designation (RQD) as well as geologic description are recorded in the stratigraphic and instrumentation logs (presented in Appendix A). The logged cores are stored on-Site.

4.4.3 Geophysical Logging

Since a significant clay layer was not encountered in any of the pilot borings the geophysical logging to determine confining layer (clay) thickness was not conducted as originally proposed in the CTDEP-approved Work Plan. Verbal approval to delete geophysical logging from the field program was obtained on May 12, 1995 from CTDEP.

4.4.4 Borehole Abandonment

The pilot borings were abandoned by tremie-grouting each borehole with a low permeability grout and capping with concrete. All abandonment activities were conducted in accordance with Section A.3.3.3 of the Work Plan.

4.5 SUBSURFACE SOIL INVESTIGATION

The vertical and areal extent of soil contamination at the Site was investigated through the advancement of soil borings and the collection of soil samples from discrete intervals for TCL VOC, TCL SVOC, select TAL metals and select TCLP metals analyses. The work was conducted in accordance with Section A.3.2 of the CTDEP-approved Work Plan.

Soil borings were advanced using a rotary drilling rig equipped with 4 1/4-inch inside-diameter (ID) hollow stem augers and split-spoon sampling techniques. Concrete was cored as necessary and each

boring location was cleared for subsurface utilities prior to the advancement of the borings. Upon retrieval, headspace measurements were taken using a photoionization detector (PID) equipped with an 11.7 electron volt lamp. Field screening was utilized to select an appropriate sample interval for laboratory analysis.

Soil samples were collected continuously in two-foot intervals. Field screening of soil samples began at the surface or immediately below the asphalt pavement and subgrade and continued in each soil boring until the water table was encountered. Soil samples were described and classified according to the USCS by the CRA geologist.

Initially, soil borings were advanced at the 13 locations proposed in the Work Plan. Three additional soil borings, CRA-3A, CRA-4A and CRA-5A, were installed based on information obtained from the initial 13 borings. One additional soil boring, CRA-13A, was installed to collect a soil sample from beneath the sewer line.

One soil sample was collected from each soil boring for TCL VOC and selected TAL metals analyses. Selection of soil samples for laboratory analyses was based on the maximum organic vapor concentration or visual/olfactory evidence of impact. Samples were collected in laboratory-supplied containers and labeled with a unique sample identification number, placed on ice and shipped via overnight courier to the project laboratory under standard chain-of-custody protocol.

A portion of each sample was archived by the laboratory for potential TCLP metals analysis. Once TAL metals analyses were evaluated, the five samples with the highest selected TAL metals results were also analyzed by TCLP.

In the course of installing a borehole at the CRA1 monitoring well nest an underground storage tank (UST) was encountered which appeared to have been filled with sand and abandoned in place. Based on information received in telephone conversations with CTDEP on May 17 and 18, 1995, three 15-foot borings (SB-1A, SB-1B and SB-1C) were installed in the vicinity of the UST. Samples were collected from the five to seven foot

depth, immediately above the water table. The three borings were sampled for total recoverable petroleum hydrocarbons (TRPH). Based on the TRPH analyses, boring SB-1B was also analyzed for TCL SVOCs.

4.6 HYDROGEOLOGIC INVESTIGATION

CRA collected water levels from the existing monitoring wells prior to new monitoring well installation and confirmed that groundwater flow direction is to the south toward the Housatonic River. Each new monitoring well location includes a shallow well straddling the water table. At five of the eight well locations a deeper well was also installed. A detailed discussion of monitoring well installation, development and sampling is provided in Sections A.3.4 and A.4.2 of the Work Plan.

4.6.1 Monitoring Well Installation

Monitoring wells are constructed of 2-inch diameter 0.01-inch slotted stainless steel screen and stainless steel riser pipe. The sand pack extends a minimum of three feet above the screen and the bentonite pellet seal, which was allowed to hydrate for an hour prior to grouting, extends at least three feet above the sand pack in all deep wells. A cement/bentonite grout was used to seal the remaining annular space in all deep wells. The shallow wells, which straddle the water table, have varying thicknesses of sand pack and bentonite seals based on their proximity to the ground surface and in accordance with the Draft Connecticut Department of Environmental Protection Monitoring Well Construction Guidelines dated February 1990. Flush mount protective well covers were installed over all the wells and sealed in concrete. Monitoring well construction details are presented in Table 4.2.

4.6.2 Monitoring Well Development Procedures

The newly installed wells were allowed to stabilize for a minimum of 24 hours prior to development to allow the bentonite seal and grout to set. Each well was then surged for 10 minutes using a surge block. A submersible pump was then used to purge the well. Temperature, pH. conductivity, dissolved oxygen and turbidity were measured at regular intervals. Development continued until three consistent and consecutive readings of pH, temperature and conductivity were recorded (within five percent) or a minimum of ten well volumes were removed. The instrument calibration was checked daily against standard solutions and recalibrated as necessary. The volume and characteristics of water removed from each well during development are presented in Table 4.3.

All purged groundwater was containerized in 1,500-gallon polyethylene tanks pending receipt and review of analytical results.

4.6.3 Groundwater Sampling Procedures

One round of groundwater sampling was collected in June 1995, immediately after construction and development of the monitoring wells. A second round of groundwater sampling was collected in September 1995.

Water level measurements were collected to the nearest 0.01 foot from each well prior to sampling. As each well was opened, a photoionization detector (PID) was used to monitor for organic vapors at the well head. Depth to water and total depth was then measured using an oil/water interface probe.

Prior to sampling, each deep well was purged using a submersible pump and then sampled with a disposable Teflon™ bailer. Each shallow well was purged and sampled with a disposable Teflon™ bailer.

A new bailer, rope and nitrile gloves were used at each well location. Field measurements of pH, conductivity, temperature,

dissolved oxygen and turbidity were recorded following the removal of each standing well volume. Field instruments were calibrated daily prior to use as discussed previously. Well purging continued until three consecutive and consistent readings (± five percent of each other for pH, conductivity and temperature) were obtained or a maximum of five standing well volumes were removed. When wells were purged dry prior to achieving three well volumes, groundwater was allowed to recover and the wells were purged dry three times prior to sample collection. All purged groundwater was containerized for disposal pending receipt and review of analytical results.

Groundwater samples were collected for TCL VOCs and selected TAL metals analyses. Samples were collected in laboratory-supplied containers and labeled with a unique sample identification number, placed on ice and shipped via Federal Express priority overnight to the project laboratory under chain-of-custody protocol.

Tables 4.4 and 4.5 provide monitoring well purging parameters for the June 1995 and September 1995 sampling events, respectively.

4.6.4 Hydraulic Response Testing

Single well response tests were conducted on monitoring wells CRA4D and CRA5D using a pneumatic response method. Traditional rising head response tests were conducted on monitoring wells CRA4S and CRA5S.

The field procedure for the pneumatic single well response test is very similar to response methods employed for traditional tests. The difference between the tests is the method for bringing about the instantaneous change in hydraulic head. In the case of the pneumatic method the water level is depressed by pressurizing air in the monitoring well casing. The amount of drawdown is dependent on the pressure applied to the well. The relationship is roughly one pound per square inch (psi) equals 2.3 feet of head change. Water level data was acquired by a downhole pressure transducer.

The setup for the pneumatic response test involves using an air tight well head assembly as shown on Figure 4.2. The well head assembly is constructed of Schedule 40 PVC and consists of a port for the transducer, pressure inlet, and pressure gauge. In addition, a ball valve the size of the well diameter or larger is also part of the well head assembly. The well head assembly is attached to the top of the monitoring well by a thick rubber coupling and sealed with hose clamps.

The water level in the well is lowered several feet by pressurizing the well. The amount of depression of the water table is measured by the pressure gauge that reads in inches of water. This allows for a direct conversion of the pressure reading to the amount of displacement of the water table. Once the desired water column displacement has been achieved, the ball valve is opened and the water level stabilization (rise) is recorded by the pressure transducer and data logger. The test is generally repeated two or three times in order to ensure reliability of data.

Standard rising head tests conducted on monitoring wells CRA4S and CRA5S, were conducted by pumping with a submersible pump to depress the water table until the rate of pumping equaled the rate of recharge or the well pumped dry. The pump was then shut off and recovery was monitored with a data logger.

4.6.5 Analysis of Hydraulic Response

A commercially available computer program (AQTESOLV) was used to analyze the data using the Bouwer and Rice method, which is applicable to unconfined aquifers. Response test data and plots are included in Appendix B.

4.7 SURVEYING

All newly installed monitoring wells, soil borings and pilot borings were located with respect to horizontal and vertical control by a registered surveyor. Vertical elevations were established to the nearest 0.01 foot and referenced to National Geodetic Vertical Datum (NGVD) at the ground surface and the top of the monitoring well casing.

4.8 HYDRAULIC MONITORING

Hydraulic head in each of the existing monitoring wells was recorded on May 9, 1995 and in each of the newly installed monitoring wells on June 13, 1995 and September 12, 1995 using the protocols outlined in Section A.3.4.4 of the Work Plan. Depth to water measurements were recorded to the nearest 0.01 foot using an electronic tape. Hydraulic head data gathered from the existing monitoring wells prior to abandonment, were used to provide an indication of groundwater flow direction prior to installing new monitoring wells. Hydraulic head data gathered from the new monitoring wells were used to assess groundwater flow direction and horizontal and vertical groundwater flow gradients.

4.9 WELL ABANDONMENTS

Monitoring wells and recovery wells were abandoned in accordance with the protocols outlined in Section 4.7 of the Work Plan.

4.9.1 Monitoring Wells

Existing information indicated seven monitoring wells were present at the Site. Prior to conducting the Supplemental Hydrogeologic Investigation, CRA could only locate six of these monitoring wells. The seventh was presumed destroyed or paved over. Construction information indicated that many or all of the former Site monitoring wells were

constructed entirely out of screen with little or no surface seal and could have acted as conduits for the downward migration of surface run off and shallow impacted groundwater. Therefore, the six monitoring wells were abandoned in accordance with the draft Connecticut Department of Environmental Protection - Monitoring Well Construction Guidelines, dated February 1990.

Each of the existing wells were abandoned by overdrilling to a depth of at least one foot below the bottom of the well using a 6 1/4-inch inside diameter hollow stem auger. Each monitoring well was extracted from the borehole and the annular space filled to within six inches of the surface using cement/bentonite grout. A concrete cap was then placed flush with the existing grade.

Extracted monitoring wells were thoroughly cleaned using a high pressure hot water wash and removed from the Site as scrap metal. Table 4.6 provides former monitoring well details.

4.9.2 Recovery Wells

Two 24-inch diameter recovery wells utilized by the former remediation system were abandoned with the existing monitoring wells. One recovery well was 30 feet in depth while the other well was 10 feet in depth. Each of the recovery wells were screened throughout their entire length and may have acted as a conduit for the vertical migration of surface runoff to groundwater.

These two recovery wells were abandoned by perforating the entire length of the well and pressure injecting a cement/sand grout through the entire length of the well in accordance with the Agency-approved Work Plan.

After the pressure injection of grout was completed, cement/sand grout was used to fill the concrete access vaults. The access vault covers were then sealed with concrete.

5.0 SITE CONDITIONS

5.1 REGIONAL GEOLOGY

The Site lies within the southeastern part of the Western Highland Physiographic Region of Connecticut. The surficial soil is classified as Udorthenets, which consist of fine sandy loams and sandy loams on gravely outwash with rock fragments ranging from zero to 45 percent. The surficial soils have formed from an underlying glacial till derived from gneiss and schist. Glacial till overlies the bedrock at a depth ranging from a few inches to 100 feet or more. The soil minerals are mainly quartz, feldspar, microcline, and biotite and muscovite micas.[1] The bedrock geology consists of a sequence of metasedimentary and metavolcanic rocks of paleozonic age. The bedrock has been mapped as the Derby Hill Schist[2], and was encountered during on-Site drilling. The bedrock has been classified as a fine to medium grained, thinly laminated, greenish-gray, chlorite-mica schist.

5.2 SITE GEOLOGY

Geological information gathered from the stratigraphic delineation and monitoring well borings on Site indicate that the overburden is composed of two distinct units. The surficial unit is made up of sand and some gravel and silt and is approximately four feet to ten feet thick. Under this surficial unit is a glacial till consisting of a brown to gray medium sand with trace gravel and cobbles which ranges in thickness from 35 to 65 feet based on the pilot borings (SB-1, SB-6 and SB-9). Thin seams of peat were encountered in borings SB-1 and SB-6, and a two inch lens of silty clay was encountered in boring SB-8 in the surficial unit. The fill material used for the dry well excavation backfill encountered at borings SB-7, SB-8 and SB-9, as well as the sewer backfill encountered at borings SB-9A, SB-13 and SB-13A, is similar to the surficial unit stratigraphy encountered elsewhere on Site. In

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[1]"Soil Survey of Fairfield County Connecticut" United States Department of Agriculture, Soil Conservation Service, 1981.

[2]W.P. Crowley, "The Bedrock Geology of the Long Hill and Bridgeport Quadrangles" State Geological and Natural History Survey of Connecticut, Quadrangle Report No. 24, 1981.

general, a clay unit of significant thickness and lateral continuity was not encountered during the Supplemental Hydrogeologic Investigation.

Bedrock under the Site is a thinly laminated, almost vertically foliated fine to medium grained garnet-biotite-chlorite-plagioclase-quartz-muscovite schist, consistent with the Derby Hill formation. Visual descriptions, and Rock Quality Designation (RQD) valves ranging from 90.7% to 100% and visual assessment, indicate that bedrock beneath the Site is competent with few, if any, fractures.

The geologic units are illustrated in geologic cross sections A-A', B-B', and C-C' presented as Figures 5.1, 5.2 and 5.3, respectively.

5.3 SITE HYDROGEOLOGY

5.3.1 Groundwater Flow Direction and Gradients

Water level data from the 13 newly installed monitoring wells obtained during June and September 1995 are presented in Table 5.1. Shallow wells are installed to straddle the water table in the surficial unit and average in depth approximately 10 feet below grade. Deep wells are installed in the underlying till at an average depth of approximately 25 feet below grade.

During the June round of water levels, the elevation of the water table ranged from 3.13 to 3.33 feet above mean sea level (AMSL) and averaged 3.25 feet AMSL. The average water table elevation in the deep wells of 3.23 feet AMSL, did not vary much from that of the shallow wells of 3.26 feet AMSL.

Connecticut experienced less precipitation than usual during the summer and the water level in the monitoring wells was lower in September than in June. The decrease in the water table elevation did not occur uniformly across the Site, with the greater decrease occurring at the north to northwest portion of the Site, at CRA8 (0.75 foot decrease) and

CRA1S (0.70 foot decrease), and the smaller decrease occurring at the east to southeast portion, at CRA3 and CRA4D (0.64 foot decrease). During the September round of water levels, the water table elevation ranged from 2.46 to 2.60 feet AMSL and averaged 2.57 feet AMSL, 0.68 feet less than the June average. The water table elevation averaged 2.56 feet AMSL in the deep wells and 2.57 feet AMSL in the shallow wells.

The general direction of groundwater flow at the Site is to the south. Figures 5.4 and 5.5 present June 1995 and September 1995 groundwater contours for the shallow monitoring wells, respectively. Groundwater contours for the deep monitoring wells show a similar configuration. Groundwater contours for September 1995 indicate a zone of stagnation or minimal flow in the northern portion of the plant.

Horizontal hydraulic gradients were calculated from shallow monitoring well data from both June and September 1995. The average horizontal hydraulic gradient was 1.1×10^{-3} ft/ft in June and 5.1×10^{-4} ft/ft in September. Gradients calculated from deep wells were essentially the same order of magnitude.

June 1995 and September 1995 data from monitoring well nests CRA1, CRA2, CRA4, CRA5 and CRA6 were used to calculate vertical hydraulic gradients, presented in Table 5.2. Two well nests exhibit an upward gradient and two well nests exhibit a downward gradient. One well nest exhibited a downward gradient in June and an upward gradient in September. All of the measured vertical hydraulic gradients were less than one percent indicating the Site is not located in an area of significant groundwater recharge or discharge. Groundwater flow is essentially horizontal.

5.3.2 Hydraulic Conductivity

Monitoring wells CRA4S, CRA4D, CRA5S and CRA5D were selected for response testing in order to characterize hydraulic conductivity within the aquifer. A commercially available computer program (AQTESOLV) was used to analyze the data using the Bouwer and Rice method, which is applicable to unconfined aquifers. A data plot and

response test data for each monitoring well tested are included in Appendix B.

In-situ hydraulic conductivity of the overburden was calculated from the rising head test data. Since an arithmetic mean tends to give more weight to the more permeable values, the geometric mean is more representative of the average hydraulic conductivity. The arithmetic mean of the hydraulic conductivity is estimated to be 95.9 ft/day and the geometric mean of the hydraulic conductivity is estimated to be 43.2 ft/day.

Grain size analysis was conducted on soil samples collected from intervals within selected borings (SB-1, SB-2, SB-7, SB-8 and SB-9) corresponding to portions of screened zone intervals of monitoring well nests CRA1, CRA2, CRA4, CRA5 and CRA6. Grain size distribution curves were utilized to calculate approximate hydraulic conductivities by the Hazen method. Hydraulic conductivities calculated from grain size analysis compare well to the response test data.

Hydraulic conductivity values are summarized in Table 5.3 and Table 5.4.

5.3.3 Groundwater Flow Velocity

The groundwater flow velocity through the Site was calculated using a modified form of Darcy's law:

$$V = \frac{k \bullet i}{n}$$

where
- V = average linear velocity of groundwater flow (ft/day)
- k = hydraulic conductivity (ft/day)
- i = horizontal hydraulic gradient (ft/ft)
- n = effective porosity (percent)

The effective porosity of the overburden was estimated to be 30 percent (Walton, 1985). Using an average hydraulic conductivity of approximately 43 ft/day as determined from response tests, the average horizontal hydraulic gradient of 0.0008 ft/ft (for June and September), and the

estimate of effective porosity, groundwater flow velocity was estimated to be 0.12 ft/day through the overburden. This equates to a groundwater flow velocity of approximately 42 ft/year.

6.0 ANALYTICAL RESULTS

6.1 GENERAL

Soil and groundwater samples were collected during the field program to determine the nature and extent of site-related chemical presence. Analyses of collected samples were performed by Quanterra. All analyses for chemical parameters were conducted in accordance with analytical methods presented in Table 5.1 of the Work Plan Addendum dated February 24, 1995. Analytical Data Reports are presented in Appendix C.

Data summary tables presented in this section compare all detected parameters with Connecticut Remediation Standard Regulations for a GB industrial/commercial area. The text of this section describes only those parameters detected above the GB industrial/commercial regulatory criteria. The GB industrial/commercial criteria include direct exposure and pollutant mobility for soil; and surface water protection and volatilization for groundwater. The regulations are contained in the document "Remediation Standard Regulations" dated December 13, 1995. This information was provided to CRA by the Connecticut Department of Environmental Protection, Bureau of Water Management.

6.1.1 Site Classification/Basis for Criteria

The Connecticut Remediation Standard Regulations for soil and groundwater are tied into the Water Quality Classification of the area in which a Site is located. The SynPro facility is located in a "GB" area. This area is defined as "Groundwater within highly urbanized areas of intense industrial activity and where public water supply is available. May not be suitable for direct human consumption due to waste discharges, spills or leaks of chemicals or land impacts. The goal is to prevent future degradation by preventing any additional discharges which could cause irreversible contamination".[3]

[3]Murphy, James E., "Water Quality Classification Map of Connecticut", Connecticut Natural Resources Atlas Series, Connecticut Department of Environmental Protection, Water Compliance Unit, 1987.

6.1.2 Data Validation

An analytical data quality assessment and validation of the results obtained by Quanterra for the samples collected was conducted by CRA's quality assurance officer. The evaluation of the analytical data was based on the information provided by Quanterra, including laboratory blank data, as well as recovery data from matrix and surrogate spikes and check samples. The analytical data were assessed for accuracy and precision based on the review of the spike recovery data. Based on the results of the data quality assessment and validation, the analytical data are valid and suitable for quantitative purposes with limited qualifications noted. Analytical data quality assessment and validations are presented in Appendix D.

6.2 SOIL ANALYTICAL RESULTS

Soil samples collected during May 1995 from 17 boreholes were analyzed for TCL VOCs and selected TAL metals. Figure 6.1 and Table 6.1 present detected analytical results.

Soil samples collected during May 1995 from three boreholes in the buried tank area near soil boring SB-1 were analyzed for TRPH. In addition, the sample from boring SB-1B was analyzed for TCL SVOCs. Figure 6.2 and Table 6.2 present detected analytical results.

The five soil samples collected during May 1995 with the highest selected TAL metals results (SB-1, SB-3, SB-5, SB-6 and SB-11) were analyzed for TCLP concentrations. Results are presented on Figure 6.3 and in Table 6.3.

Soil samples collected during May 1995 from two depth intervals from five boreholes (SB-1, SB-2, SB-7, SB-8 and SB-9) were analyzed for TOC, bulk density and percent moisture. Results are presented in Tables 6.4 and 6.5, respectively.

6.2.1 Volatile Organic Compounds

Benzene was detected above the Connecticut Pollutant Mobility Criteria level of 0.2 mg/kg at soil borings:

- SB-3 (1.50 mg/kg); and
- SB-4 (0.210 mg/kg).

Toluene was detected above the Connecticut Pollutant Mobility Criteria level of 67 mg/kg at soil boring:

- SB-5A (160 mg/kg).

6.2.2 TRPH and SVOC Results

TRPH was detected at concentrations of 30 mg/kg (SB-1A) and 120 mg/kg (SB-1B). TRPH was not detected in the soil sample from boring SB-1C. Two SVOCs were detected above the Connecticut Direct Exposure Criteria for Soil in boring SB-1B. Benzo(a)anthracene was detected above the Criterion of 1.0 mg/kg at an estimated concentration of 1.10 mg/kg and benzo(b)anthracene was detected above the Criterion of 1.0 mg/kg at an estimated concentration of 1.20 mg/kg.

6.2.3 Selected TAL Metals

Arsenic was detected at or above the Connecticut Industrial/Commercial Direct Exposure Criteria level of 10 mg/kg at soil borings:

- SB-3A (12.8 mg/kg); and
- SB-5 (10.0 mg/kg).

Other metals were detected throughout the Site but at levels below their respective Criterion.

6.2.4 TCLP Results

Cadmium was detected above the Connecticut GB Mobility Criterion by TCLP of 0.05 mg/L at soil boring:

- SB-5 (0.20 mg/L).

Lead was detected above the GB Mobility Criterion of 0.15 mg/L at soil boring:

- SB-3 (0.21 mg/L).

6.2.5 Total Organic Carbon

TOC results ranged from 1600 mg/kg at borehole SB-7 (9-11 feet BGS) to less than 100 mg/kg at several boreholes.

6.2.6 Bulk Density and Percent Moisture

Bulk density results ranged from 95.7 mg/kg at borehole SB-1 (9-11 feet BGS) to 145.5 mg/kg at borehole SB-1 (10 to 11 feet BGS).

Percent moisture results ranged from 11.4% at borehole SB-2 (10-11 feet BGS) to 25.8% at borehole SB-1 (9 to 11 feet BGS).

6.3 GROUNDWATER ANALYTICAL RESULTS

Groundwater samples were collected from 13 monitoring wells during the June 1995 and September 1995 sampling events. Groundwater samples were analyzed for TCL VOCs and selected total TAL metals. Figure 6.4, Figure 6.5 and Table 6.6 present detected analytical results.

6.3.1 Volatile Organic Compound Results - June 1995

Benzene was detected above the Connecticut Surface Water Protection Criterion of 710 microgram per liter (µg/L) and the Connecticut Volatilization Criterion of 530 µg/L at monitoring wells:

- CRA3 (670 µg/L);
- CRA4S (620 µg/L);
- CRA5S (9,900 µg/L);
- CRA5D (1,200 µg/L);
- CRA6S (15,000 µg/L); and
- CRA6D (3,600 µg/L/duplicate 3,800 µg/L).

1,1-Dichloroethene was detected above the Surface Water Protection Criterion of 96 µg/L and the Volatilization Criterion of 6 µg/L at monitoring wells:

- CRA2S (30 µg/L);
- CRA2D (360 µg/L);
- CRA4S (240 µg/L); and
- CRA4D (130 µg/L/duplicate 110 µg/L).

6.3.2 Volatile Organic Compound Results - September 1995

Benzene was detected above the Connecticut Surface Water Protection Criterion of 710 µg/L and the Connecticut Volatilization Criterion of 530 µg/L at monitoring wells:

- CRA3 (8,400 µg/L);
- CRA4S (1,000 µg/L);
- CRA5S (16,000 µg/L duplicate 14,000 µg/L);
- CRA6S (16,000 µg/L/duplicate 17,000 µg/L); and
- CRA6D (7,100 µg/L).

1,1-Dichloroethene was detected above the Surface Water Protection Criterion of 96 µg/L and the Volatilization Criterion of 6 µg/L at monitoring wells:

- CRA2S (510 µg/L);
- CRA2D (400 µg/L);
- CRA4S (570 µg/L); and
- CRA4D (490 µg/L).

Vinyl chloride was detected above Volatilization Criterion of 2.5 µg/L at monitoring wells:

- CRA1D (6.9 µg/L);
- CRA4S (150 µg/L); and
- CRA8 (2.8 µg/L).

6.3.3 Selected Total TAL Metals Results - June 1995

Arsenic was detected above the Surface Water Protection Criterion of 4 µg/L at monitoring wells:

- CRA1D (41 µg/L);
- CRA2S (23 µg/L);
- CRA2D (5.9 µg/L);
- CRA3 (15 µg/L);
- CRA4S (25 µg/L);
- CRA5S (25 µg/L);
- CRA5D (22 µg/L);
- CRA6S (27 µg/L);
- CRA6D (11 µg/L/duplicate 10 µg/L);
- CRA7 (6.4 µg/L); and
- CRA8 (8.9 µg/L).

Cadmium was detected above the Surface Water Protection Criterion of 6 µg/L at monitoring wells:

- CRA2S (340 μg/L);
- CRA4S (200 μg/L); and
- CRA4D (31 μg/L/duplicate 19 μg/L).

Copper was detected above the Surface Water Protection Criterion of 48 μg/L at monitoring wells:

- CRA4S (100 μg/L);
- CRA4D (61 μg/L/duplicate 38 μg/L);
- CRA5S (540 μg/L); and
- CRA6S (57 μg/L).

Lead was detected above the Surface Water Protection Criterion of 13 μg/L at monitoring wells:

- CRA2S (18 μg/L);
- CRA2D (29 μg/L);
- CRA3 (55 μg/L);
- CRA4S (110 μg/L);
- CRA4D (23 μg/L/duplicate 16 μg/L);
- CRA5S (140 μg/L);
- CRA6S (49 μg/L); and
- CRA7 (16 μg/L).

Zinc was detected above the Surface Water Protection Criterion of 123 μg/L at monitoring wells:

- CRA2S (140 μg/L);
- CRA2D (160 μg/L);
- CRA4S (1;700 μg/L);
- CRA4D (170 μg/L/duplicate 120 μg/L); and
- CRA5S (340 μg/L).

6.3.4 Selected Total TAL Metals Results - September 1995

Arsenic was detected above the Surface Water Protection Criterion of 4 µg/L at monitoring wells:

- CRA1D (34 µg/L);
- CRA2S (9.0 µg/L);
- CRA3 (7.0 µ/L);
- CRA4D (6.2 µg/L);
- CRA5S (13 µg/L/duplicate 16 µg/L);
- CRA5D (22 µg/L);
- CRA6S(29 µg/L/duplicate 38 µg/L);
- CRA6D (14 µg/L);
- CRA7 (11 µg/L); and
- CRA8 (6.1 µg/L).

Copper was detected above the Surface Water Protection Criterion of 48 µg/L in monitoring wells:

- CRA4D (78 µg/L);
- CRA5S (180 µg/L/duplicate 230 µg/L); and
- CRA7 (93 µg/L).

Lead was detected above the Surface Water Protection Criterion of 13 µg/L at monitoring wells:

- CRA3 (18 µg/L);
- CRA4S (24 µg/L);
- CRA4D (74 µg/L);
- CRA5S (51 µg/L/duplicate 65 µg/L);
- CRA6S (18 µg/L/duplicate 33 µg/L); and
- CRA7 (37 µg/L).

Nickel was detected above the Surface Water Protection Criterion of 880 µg/L at monitoring well:

- CRA8 (1,900 µg/L).

Zinc was detected above the Surface Water Protection Criterion of 123 μg/L at monitoring wells:

- CRA4S (1,200 μg/L);
- CRA4D (3,100 μg/L);
- CRA5S (180 μg/L/duplicated 230 μg/L); and
- CRA7 (280 μg/L).

6.4 DISPOSITION OF INVESTIGATION DERIVED WASTE

During the investigation, approximately 2000 gallons of decontamination washwaters, rinsate, development and purge water were generated and stored in two polyethylene tanks on Site. In addition, approximately 11 drums of soil cuttings were clearly labeled and stored on pallets on Site. During the July groundwater sampling round, a composite soil sample was collected from the drummed soils for waste characterization analysis. In addition, a composite water sample was collected from each tank and analyzed for TCL VOC, select TCL metals, total suspended solids (TSS), biochemical oxygen demand (BOD) and pH. Analytical results of the soil and waters is included in Appendix C.

Waste characterization indicated the soil to be characteristically non-hazardous. A waste profile for the soil was submitted to Chemical Waste Management (CWM) for review. On September 11, 1995 CWM accepted the waste for disposal at their Model City, New York facility. The waste was subsequently disposed of on October 26, 1995. A copy of the waste manifest is provided in Appendix E. Similarly, on July 21, 1995 CRA requested approval to discharge the stored waters to the Town of Stratford Publicly owned treatment works (POTW). On August 14, 1995, CRA received approval to discharge the waters at the POTW (Appendix F). Bill Roy Septic Tank Services of Monroe, Connecticut was contracted to remove the water by septic truck and transport the waters to the POTW for discharge. Discharge of the waters was completed on September 15, 1995.

7.0 NATURE AND EXTENT OF CONTAMINATION

7.1 CONTAMINANT DISTRIBUTION

Figures 6.1 though 6.3 present the contaminant distribution in Site soil in plan view. Figure 6.4 presents the contaminant distribution in Site groundwater in plan view.

7.1.1 Soil

Benzene, toluene and xylenes were detected in soil primarily in the area of the production building (SB-3, SB-3A, SB-4, and SB-5A) and to a lesser extent at SB-6, SB-5, SB-9A, SB-10 and SB-11 in the east, south and southwest portions of the Site, respectively. The highest concentrations in soil were detected beneath the production building area however, only benzene (SB-3, SB-4) and toluene (SB-5A) were detected above regulatory criteria.

1,1,1-TCA was the only chlorinated solvent detected, and only in one boring (SB-2) at a relatively low level in the northern (upgradient) portion of the Site. This compound was not detected above regulatory criteria.

TRPH was detected in two of three borings (SB-1A and SB-1B) installed around the suspected UST. Several polynuclear aromatic hydrocarbons (PAHs) were detected in the northernmost boring (SB-1B). However only benzo(a)anthracene and benzo(b)fluoroanthene were detected above regulatory criteria.

Two ketones were detected at relatively low concentrations in limited areas. 2-Butanone was detected in three soil samples and 4-methyl-2-pentanone was detected in one soil sample. 2-Butanone is a common laboratory contaminant recognized by the USEPA. Acetone, also a common laboratory contaminant recognized by the USEPA, was widespread at the Site and was detected in 11 soil samples, four of which

were qualified due to the compound also being detected in the method blank. None of these compounds were detected above their respective regulatory criteria.

Metals are prevalent throughout the Site, however, they may be naturally occurring since most were detected within published background concentrations. Table 7.1 presents a comparison of detected metals concentrations with published background levels. Moreover, TCLP analyses indicated only one detection of cadmium (SB-5) and one detection of lead (SB-3) that only slightly exceed their respective regulatory criterion. These two TCLP exceedences were detected in soil samples collected from borings beneath or near the production building area (SB-3 and SB-5).

7.1.1 Groundwater

In general, based on the analytical data, the same VOCs were detected in the June and September sampling event although at most locations and for most parameters, the September event concentrations tended to show an increase over June event concentrations. Free product was not detected in any of the monitoring wells during either sampling event.

Benzene and toluene were not detected at shallow monitoring wells on the western portion of the site (CRA7 and CRA8) or at one deep northern monitoring well (CRA2D). Benzene was however, detected above regulatory criterion in groundwater at several locations on Site (CRA3, CRA5S/D, CRA4S, and CRA6S/D), with concentrations increasing toward the south in the general direction of groundwater flow. Toluene was not detected above regulatory criteria in any well. Detected concentrations of benzene and toluene in the northern portion of the site were generally lower than elsewhere on Site. In general, concentrations were higher at the shallow well of a well nest than at the deeper well (well nests CRA4S/D, CRA5S/D and CRA6S/D). Concentrations decreased between the June sampling event to the September sampling event at monitoring wells CRA1S/D, CRA2S, CRA4D, and CRA5D, but increased in the remaining monitoring wells. Moreover, high concentrations of benzene detected in downgradient monitoring wells, and hence, elevated detection limits, may

mask the detection of other contaminants possibly at lower concentrations, such as chlorinated solvents.

Chlorinated solvents including TCE, 1,1-DCE, 1,2-DCE, 1,1,1-TCA, 1,1-DCA, chloroethane and vinyl chloride (VC) and chloroform were detected in seven of thirteen monitoring wells. Chlorinated solvents were not detected in the southern well nest (CRA6S/D), the central well nest (CRA5S/D), and one eastern well (CRA1S); however, their detection may be masked due to the elevated detection levels. Chloroform was the only chlorinated solvent detected at a western monitoring well (CRA7). Further, chloroform was only detected during the June sampling event but not above regulatory criteria. 1,1-DCE was detected above regulatory criteria in one upgradient well nest (CRA2S/D) and one downgradient well nest (CRA4S/D). Vinyl chloride was detected in three monitoring wells (CRA8, CRA1D and CRA4S) above the volatilization criteria only. Other chlorinated solvents present were not detected above regulatory criteria.

Acetone was detected at low concentrations in three monitoring wells but is a common laboratory contaminant recognized by the USEPA. Acetone concentrations were below regulatory criteria.

Total metals are prevalent in groundwater throughout the Site and exceed surface water protection criteria in several instances. However, these metals may be attributable to the natural chemistry of the groundwater since concentrations of most metals were detected within normal background ranges in Site soils and were not widely detected above GB pollutant mobility criteria by TCLP in Site soils. Moreover, the average value of field recorded turbidity measurements in groundwater is greater than 100 NTU, and in some cases greater than 1,000 NTU, indicating a high percentage of suspended solids which will tend to provide an extraneous source of metals to a water sample.

7.2 MIGRATION PATHWAYS AND POTENTIAL SOURCE AREAS

This section discusses potential pathways for migration of contaminants both onto and off Site, and also eliminates potential pathways from further consideration.

7.2.1 Soil

The excavation and remediation of the drywell system and associated soil appear to have been effective in eliminating a major source of continuing impact to soil and groundwater in light of the current analytical data collected by CRA.

In summary, limited impact to soil, exceeding either a direct exposure criterion and/or pollutant mobility criterion (migration to groundwater pathway), remain beneath or near the production building (SB-3,SB-3A,SB-4,SB-5 and SB-5A) and the potential UST (SB-1B). However, although limited exceedences occur, the Site is completely paved with asphalt or concrete (except in the far eastern portion of the property) which inhibits and/or prevents the infiltration of precipitation, limiting the ability for contaminants in soil to migrate to groundwater. The pavement and building floor also act as barriers to any direct exposure from inhalation, ingestion and dermal contact, subsequently eliminating this as a migration or exposure pathway under existing conditions.

7.2.2 Groundwater

A clay unit of significant thickness and lateral continuity in the overburden was not encountered during the Supplemental Hydrogeologic Investigation. Moreover, the bedrock is highly competent with minimal, if any, fractures. As evidenced by the water level data, the groundwater flow is primarily horizontal with little vertical movement. Therefore, groundwater flow through the Site, and hence contaminant transport, would occur primarily in the overburden and not the bedrock.

The sanitary sewer trunkline backfill that runs through the Site is similar to the surficial unit stratigraphy. The surficial materials and sewer backfill should also have similar hydraulic characteristics. Shallow groundwater at the Site would therefore be expected to be in direct hydraulic communication with the sewer backfill. Given this information and the contaminant concentrations detected in sewer backfill at monitoring well CRA8, as well as the groundwater contours, the sewer trunkline backfill may not be acting as a preferential pathway for contaminant migration onto the Site. However, contaminants from an off-Site source may be migrating on Site through the groundwater.

The contaminant distribution in groundwater indicates that benzene and 1,1-DCE were detected above the volatilization criteria and surface water protection criteria; vinyl chloride was detected above the volatilization criteria; and arsenic, cadmium, copper, lead and zinc were detected above the surface water protection criteria.

Benzene detections occurred across the Site (both upgradient and downgradient), however, the only regulatory exceedences occurred in the central and southern (downgradient) portion of the Site. High detection limits may, however, be masking other contaminants (from off-Site sources) potentially present at lower concentrations. The highest exceedences occurred at monitoring well nest CRA6, in and near the sewer backfill at the southern (downgradient) property boundary. This indicates that Site contaminants may be migrating off Site through the groundwater.

Total metals were detected in groundwater across the Site, both upgradient and downgradient, at concentrations exceeding surface water protection criteria. However, these concentrations may be due to the natural groundwater chemistry given their relatively equal distribution across the Site. Moreover, another important factor which may impact the concentration of metals species in a sample, is the presence of suspended solids within the collected sample. Suspended solids within the sample will tend to provide an extraneous source of metals to a water sample when the acid preservative is added to the sample. This effect will provide a high bias to the actual concentration of metallic species in solution. The average value

of field recorded turbidity measurement is greater than 100 NTU and in many cases greater than 1,000 NTU, indicating a high percentage of suspended solids in the groundwater.

Chlorinated solvents on the other hand, are not as wide-spread as benzene or metals but are detected in more upgradient wells (CRA8, CRA1D, and CRA2S/D) than downgradient wells (CRA4S/D). This is an indication that chlorinated solvents may be migrating on Site from an upgradient, off-Site source. In addition, chlorinated solvents may be present at more locations on Site than is presently indicated, based on the elevated analytical detection limits in some samples (due to benzene) which would tend to mask low concentrations of other contaminants.

7.2.3 Potential Receptors

In general, pathways and/or mechanisms for migration of contaminants from unsaturated zone soils to groundwater have been significantly restricted by source removal, the inhibition of stormwater infiltration through asphalt pavement, and direction of stormwater off site through stormwater collection systems. Additionally, since the Site is paved, the pavement acts as an engineered barrier to volatilization from soil and groundwater. There are also no basements on Site for vapors to migrate into and concentrate. The volatilization pathway from soil and groundwater should, therefore, be eliminated as well. Therefore the only pathway remaining is through groundwater transport to surface water. Only benzene, 1,1-DCE, arsenic cadmium, copper, lead and zinc exceed the surface water protection criteria for a GB area. Moreover, the metals detected in groundwater may be a result of natural groundwater chemistry and not releases at the Site which further reduce the chemicals of concern to only benzene and 1,1-DCE.

Although detections occur above surface water protection criteria, there are no sources of potable water reservoirs downgradient of the

Site on the Housatonic River.[4] In addition, the stretch of the Housatonic River near the Site is within tidal influence of the Atlantic Ocean according to the USGS[5] and is not used directly for potable water purposes. Moreover, dilution effects of the Housatonic River downgradient of the Site are expected to be very large, further diminishing the effect of any potential contaminated groundwater discharge.

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[4]Sternberg III, Howard W. "Community Water Systems in Connecticut, A 1984 Inventory", Connecticut Natural Resources Atlas Series, Connecticut Department of Environmental Protection, in cooperation with USGS Water Resources Division, 1986.

[5]Personal Communication, Bruce Davies, USGS, Hartford, Connecticut, January 1996.

8.0 SUMMARY AND CONCLUSIONS

8.1 SUMMARY

Conestoga-Rovers & Associates (CRA) was retained by Kraft Foods Inc. (Kraft) to conduct a supplemental hydrogeologic investigation at the Synthetic Products Company (SynPro) facility (Site) located in Stratford, Connecticut. The Site, formerly known as Ware Chemical (DART Industries, Inc.) is currently owned and operated by SynPro. Kraft merged with DART in 1980 and then subsequently divested the property to SynPro in 1983. Kraft has maintained environmental liability associated with the Site.

SynPro is located at 375 Barnum Avenue adjacent to the intersection of Barnum Avenue and Ferry Boulevard (Figure 2.1). The Site (Figure 2.2) is approximately one acre in size and located in an industrially-developed area. The triangular shaped parcel is bounded to the north by Barnum Avenue, to the south by Ferry Boulevard, and to the west by Hampford Research, Inc., a chemical manufacturer. North of Barnum Avenue lies a vacant industrial facility formerly occupied by Raymark Industries, Inc. (Raymark). Raymark is currently a Superfund site in various stages of remedial action.

A review of CTDEP files performed by IT Corporation in March 1991 indicated that the Raymark property is under a CTDEP order to investigate and clean up the site due to soil and groundwater contamination resulting from improper oil and chemical storage, handling and disposal activities. Toluene, naphtha and other solvents including chlorinated solvents were used in product manufacturing. Groundwater analyses from the Raymark facility indicate the presence of vinyl chloride, 1,1-DCA, 1,1-DCE, trans-1,2-DCA, TCE, chlorobenzene, chloroethane, chloroform, methylene chloride, ethylbenzene, 1,1,1-TCA, benzene and toluene. Many of these compounds are also observed in groundwater on the SynPro facility which is hydraulically downgradient of Raymark.

In addition to the potential for on-Site migration of contamination from Raymark; in the 1970's, Ware Chemical discharged

unreacted and or partially reacted chemicals generated in a polymer manufacturing batch process, to a dry well leaching system located on site. This practice was discontinued reportedly in the late 1970's. Previous investigations by others have confirmed the presence of organic and inorganic compounds and light non-aqueous phase liquids (LNAPL) in soils and groundwater on site. Additionally, corrective measures have been undertaken at the Site including excavation and disposal of the dry well leaching system and contaminated soil, groundwater extraction and treatment, and free product recovery.

As part of the property transfer between Kraft and SynPro, a Work Plan for a supplemental hydrogeologic investigation was prepared by CRA on behalf of Kraft, to complete data objectives for a Phase III site investigation. These data objectives are outlined in the document published by the State of Connecticut Department of Environmental Protection (CTDEP) entitled "Transfer Act Site Assessment Guidance Document" (November 1991 Revision). CTDEP approved the Work Plan on March 1, 1995. The primary objectives included determining:

- the nature and extent of contamination remaining on Site;
- the potential for upgradient (off Site) contribution to contamination detected on Site; and
- the pathways for contaminant migration both on and off Site.

To date, a number of remedial activities and other data gathering tasks associated with the Site have been completed. CRA has characterized post-remediation Site conditions through the completion of the Supplemental Hydrogeologic Investigation. Soil sampling and two rounds of groundwater sampling have been completed as part of the Supplemental Hydrogeologic Investigation. The following section presents objective specific conclusions supported by data contained within this report.

8.2 CONCLUSIONS

As a result of CRA's investigation the following conclusions are made with respect to the Site, specific to the three primary objectives:

i) Limited chemical impact to unsaturated zone soil remain at two locations beneath and/or adjacent to the production building on Site. There is limited migration potential for these soil contaminants under existing conditions since the Site is paved, thereby inhibiting direct contact and pollutant mobility pathways. The excavation and remediation of the drywell system and associated contaminated soil appear to have been effective in eliminating a major source of continuing impact to soil and groundwater in light of the current analytical data collected by CRA.

ii) During both groundwater sampling rounds, benzene was detected in 10 of the 13 monitoring wells, with the highest concentrations occurring in the central and southern portions of the Site. Benzene exceeded the regulatory criteria in six of the thirteen monitoring wells. Samples collected from the southern (downgradient) portion of the Site exhibit higher benzene concentrations than elsewhere on Site. The lower concentrations of benzene detected in upgradient monitoring wells may indicate that some benzene could be migrating on-Site from an off-Site source.

iii) Chlorinated solvents were detected in seven of the 13 monitoring wells during both groundwater sampling rounds. Concentrations above regulatory criteria were detected predominantly in upgradient monitoring wells. This indicates that chlorinated solvent contamination is most likely migrating on Site from an off-Site source. Moreover, high concentrations of benzene detected in downgradient monitoring wells, and hence, elevated detection limits, may mask the detection of

chlorinated solvents at lower concentrations at other locations across the Site.

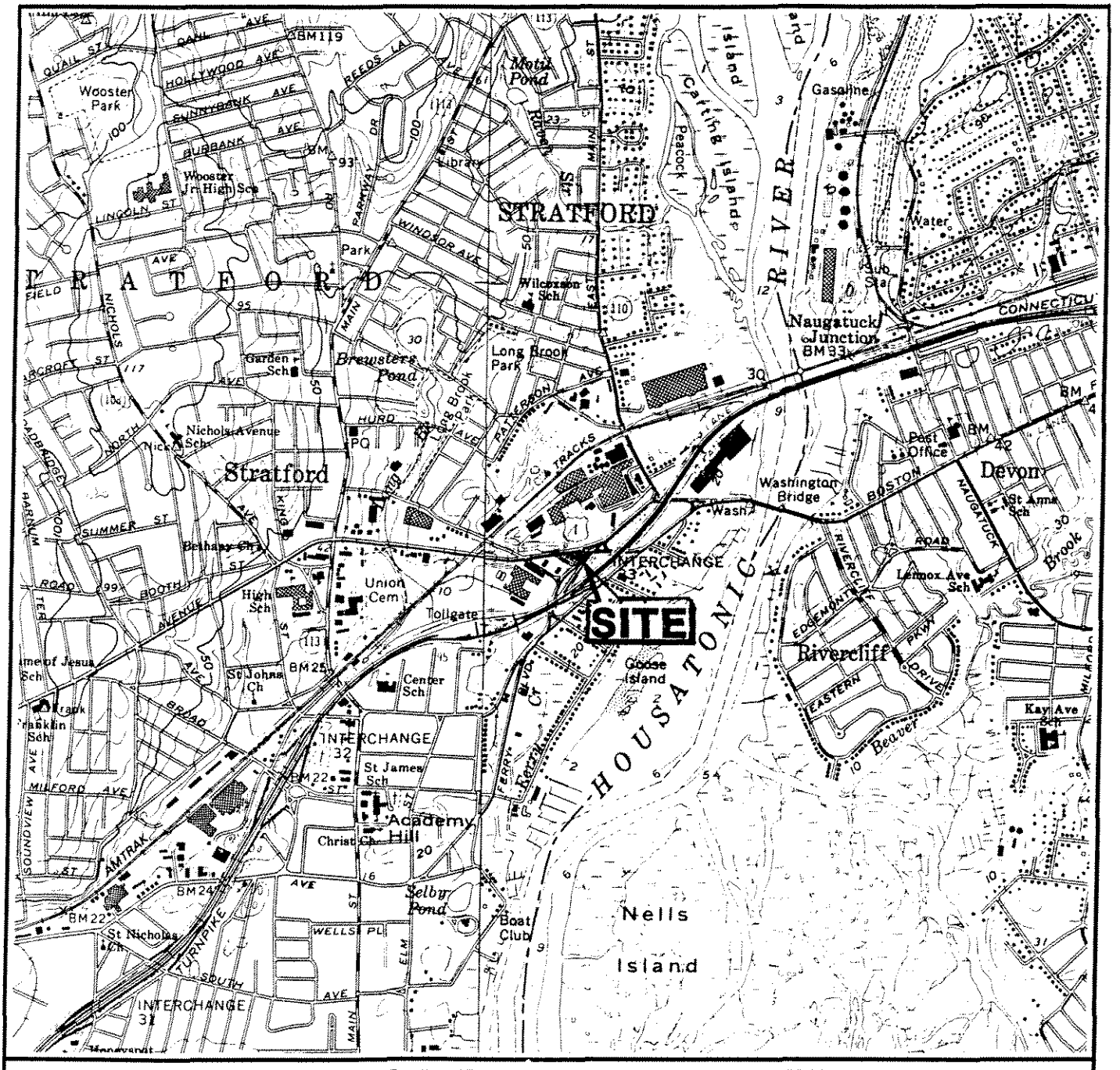
iv) Several metals were detected in groundwater at total concentrations above surface water protection criteria across the Site. Because these metals are areally widespread without indication of a discrete source area, these metals may be naturally occurring in groundwater at the Site. Moreover, the field recorded turbidity measurements in groundwater is greater than 100 NTV and in some cases greater than 1000 NTV, indicating a high percentage of suspended solids which will tend to provide an extraneous source of metals to water samples and mask true dissolved concentrations.

v) The principal pathway for contaminant migration has been determined to be groundwater transport to surface water. However, there are no sources of potable water reservoirs downgradient of the Site. Moreover, dilution effects of the Housatonic River downgradient of the Site are expected to be very large, further diminishing the effect of any potential contaminated groundwater discharge. The principal contaminants of concern in groundwater at the Site have been determined to be 1,1-DCE and benzene. However, 1,1-DCE may be the result of on Site migration from an off-Site source.

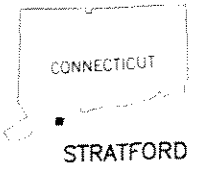
8.3 RECOMMENDATIONS

Supplemental Hydrogeologic Investigation activities have provided a detailed understanding of the physical, hydrogeological and chemical characteristics of the Site and the nature of post-remediation Site conditions. Moreover, groundwater quality data along the north and south perimeter of the Site have established upgradient and downgradient baseline conditions. Therefore, the data compiled during the Supplemental Hydrogeologic Investigation to date are sufficient to support a no action alternative for this Site since remediation of the source area has been

completed. This concept is consistent with the groundwater restoration goals of a GB area.



BASE SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, MILFORD, CONN.



0 1/4 1/2 mile

figure 2.1

SITE LOCATION
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

CRA

3627(4)–JULY 18, 95–REV.0–(C)

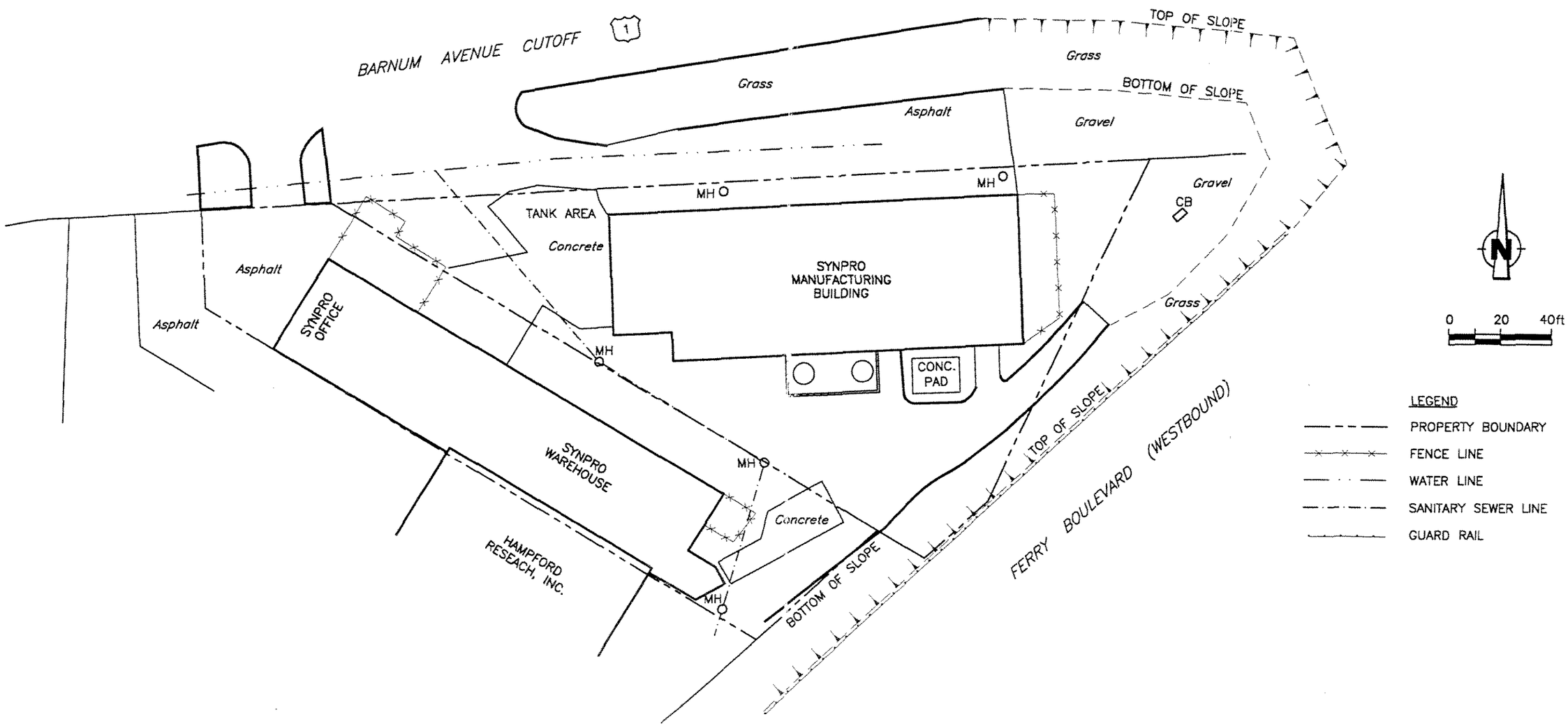


figure 2.2
SITE PLAN
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

CRA

3627(4)-JULY 3, 95-REV.0-(C)(P-15)

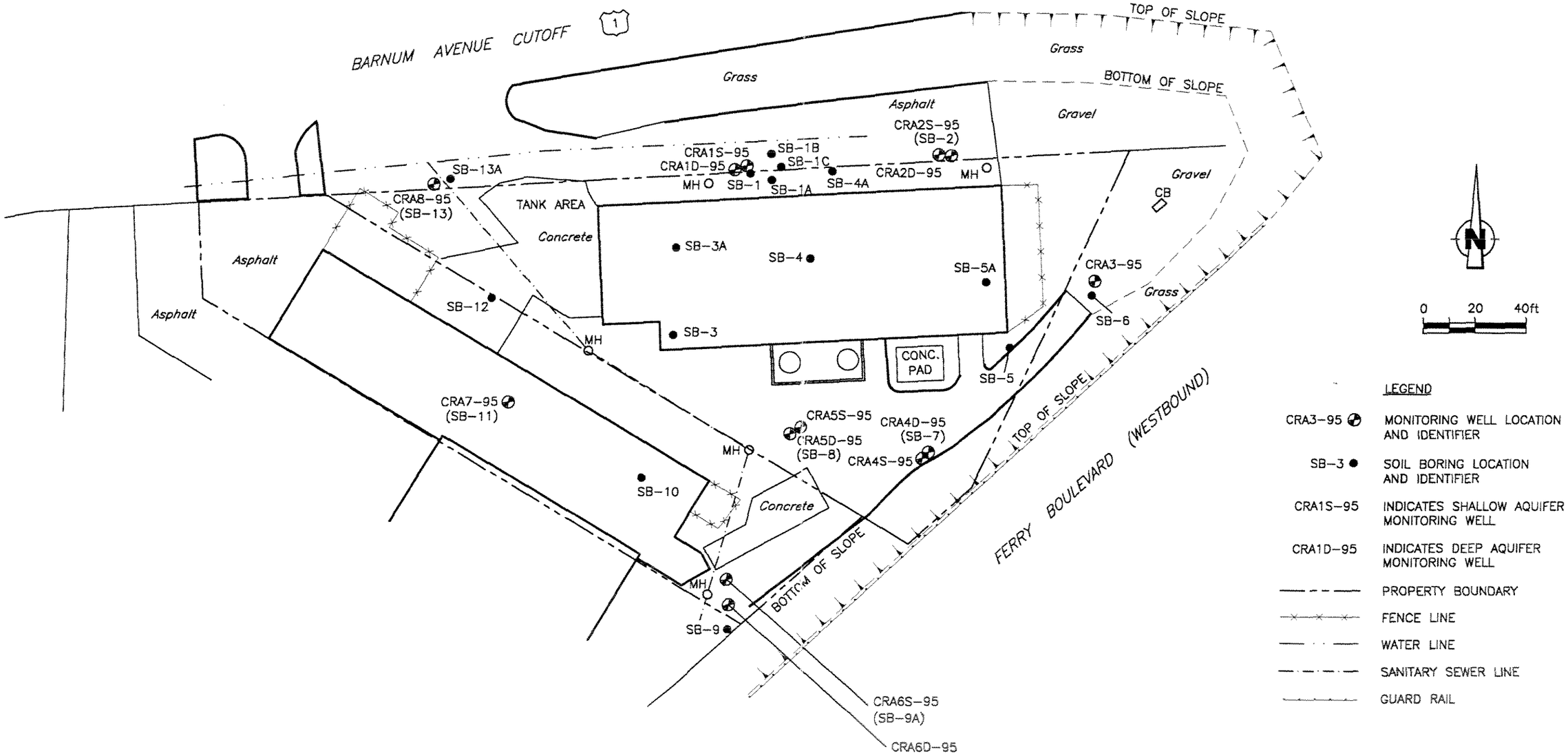
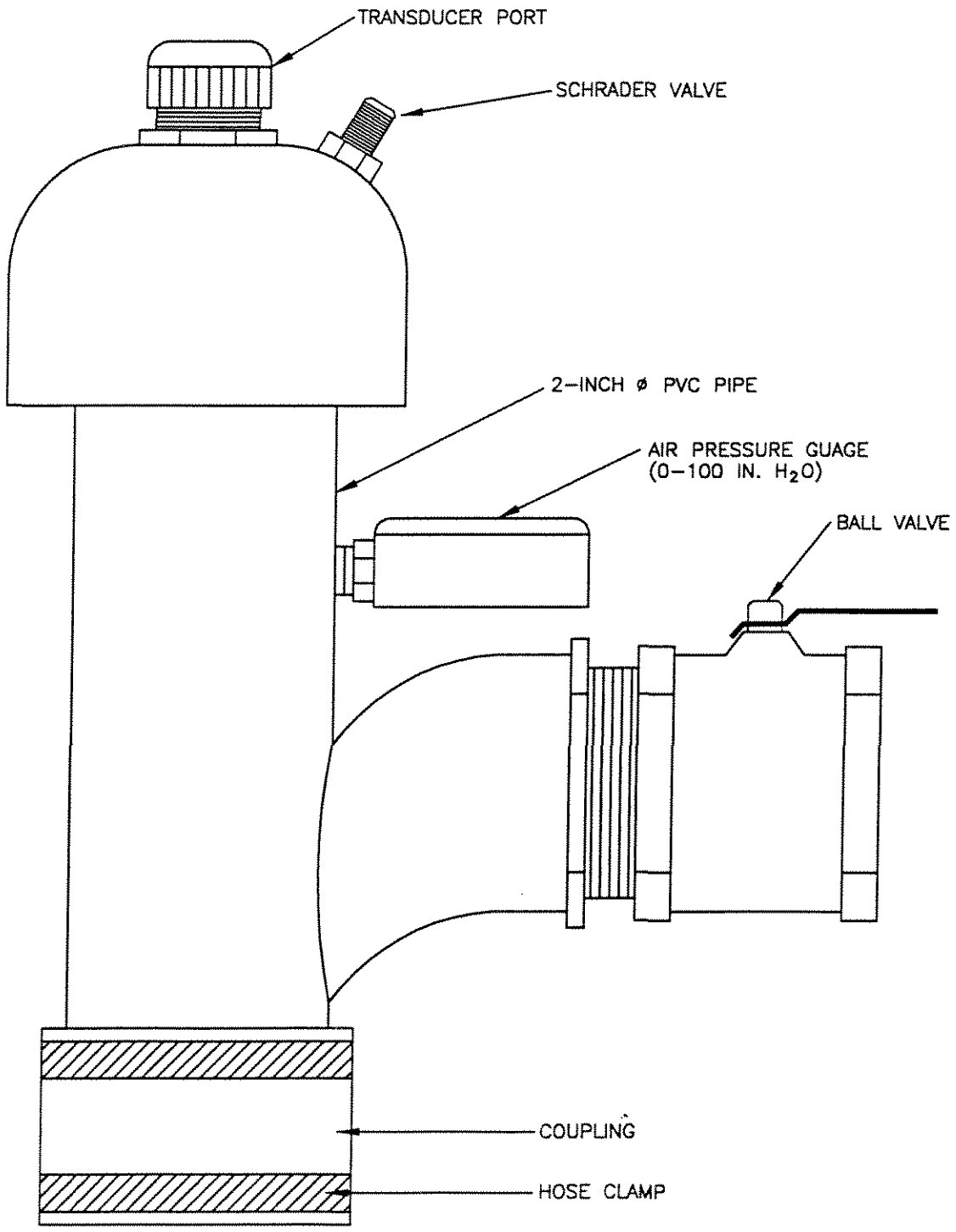


figure 4.1

SOIL BORING AND MONITORING WELL LOCATIONS
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

CRA

3627(4)-OCT. 12, 95-REV.0-(C)(P-16)



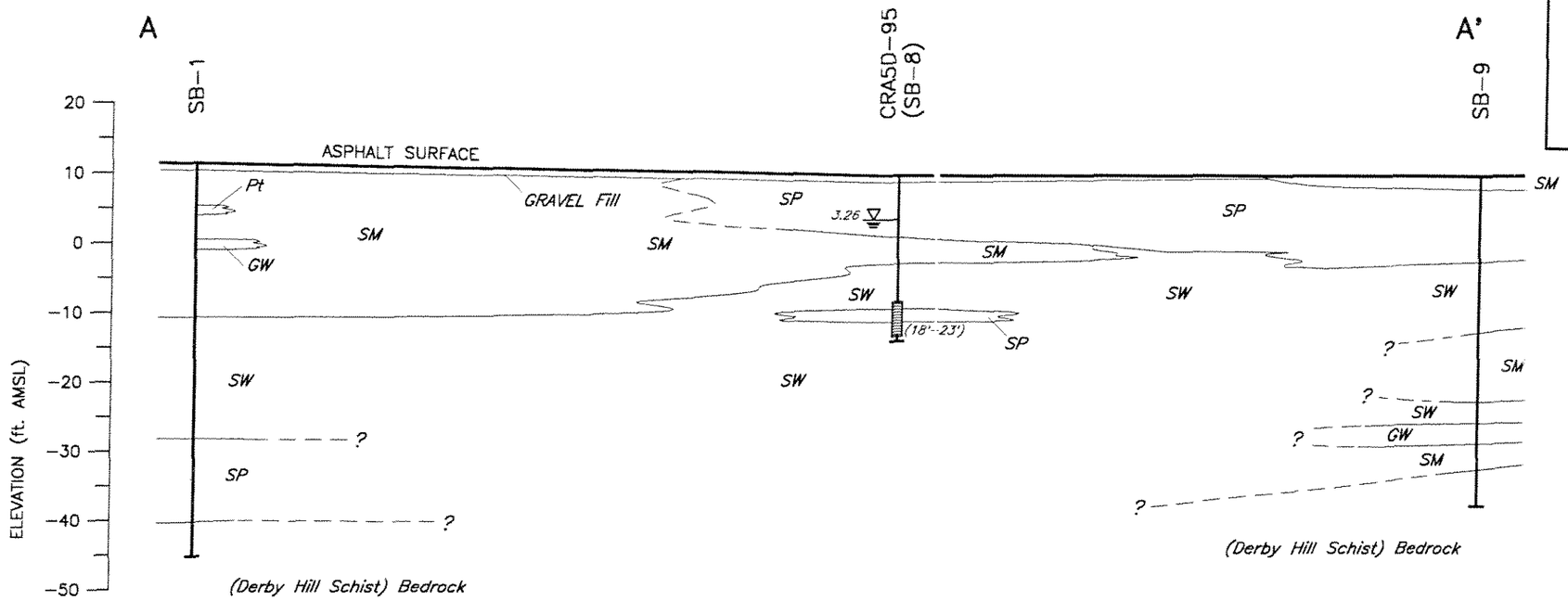
(NOT TO SCALE)

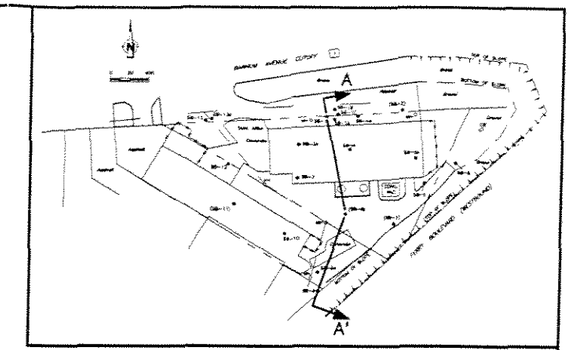
figure 4.2

PNEUMATIC RESPONSE TEST ASSEMBLY
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

CRA

3627(4)-FEB. 5, 96-REV.0-(C)(D-07)





HORIZ. SCALE:	1"=20'
VERT. SCALE:	1"=20'

LEGEND

GW = WELL-GRADED GRAVEL, GRAVEL-SAND MIXTURES

SW = WELL-GRADED GRAVELLY SAND

SP = POORLY-GRADED GRAVELLY SAND

SM = SILTY SAND, SAND-SILT MIXTURES

Pt = PEAT

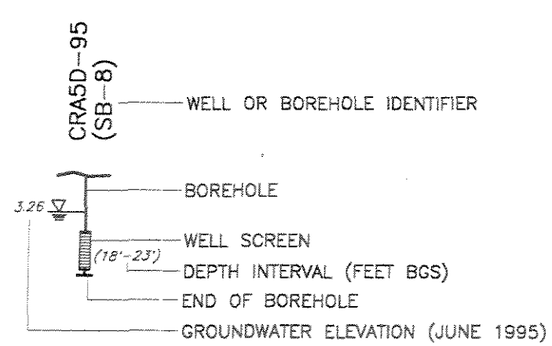


figure 5.1

GEOLOGIC CROSS SECTION A-A'
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

CRA

3627(4) OCT. 12, 95 REV. 0 (C)(X-01)

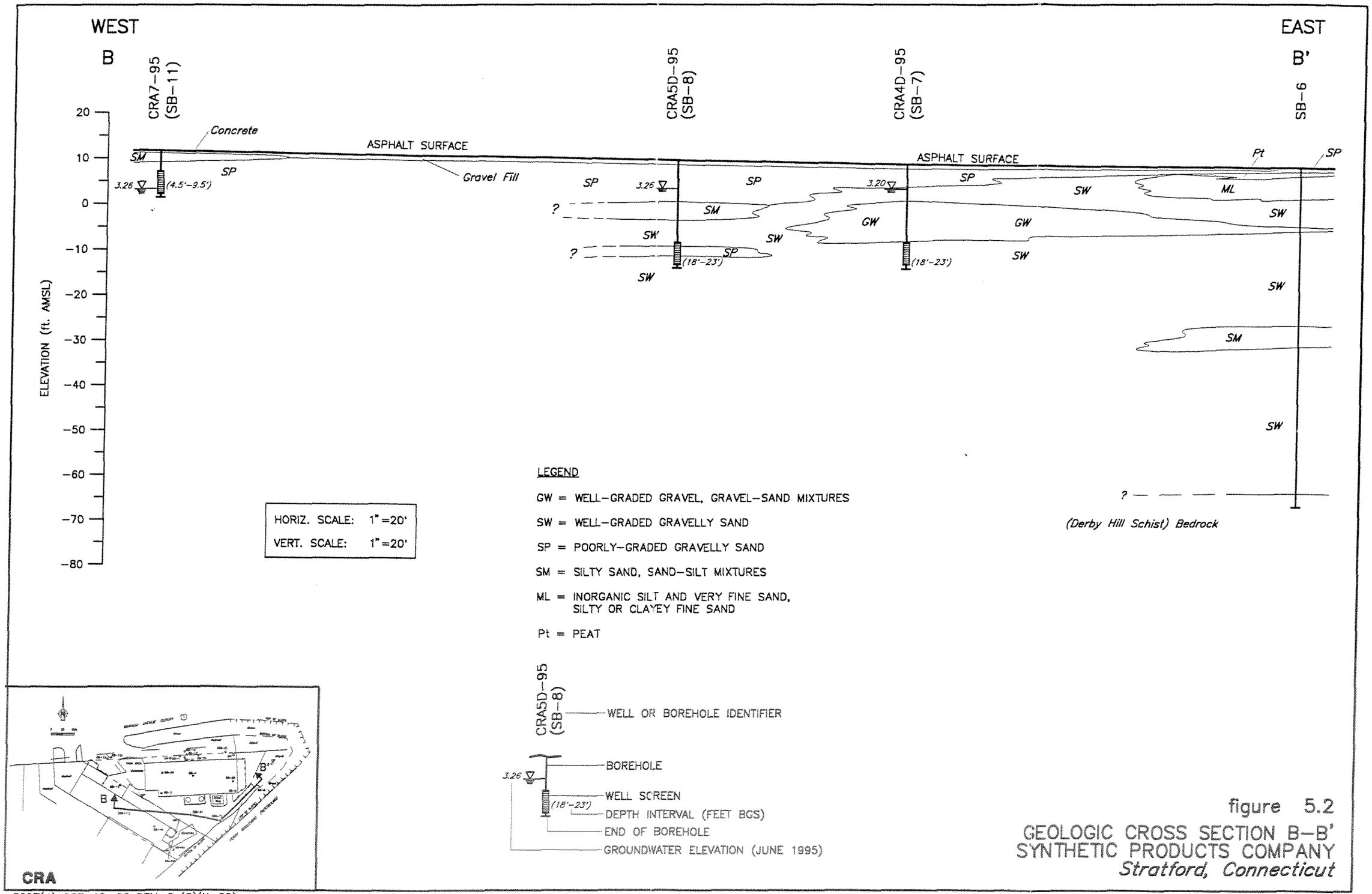


figure 5.2
GEOLOGIC CROSS SECTION B-B'
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

3627(4) OCT. 12, 95 REV. 0 (C)(X-02)

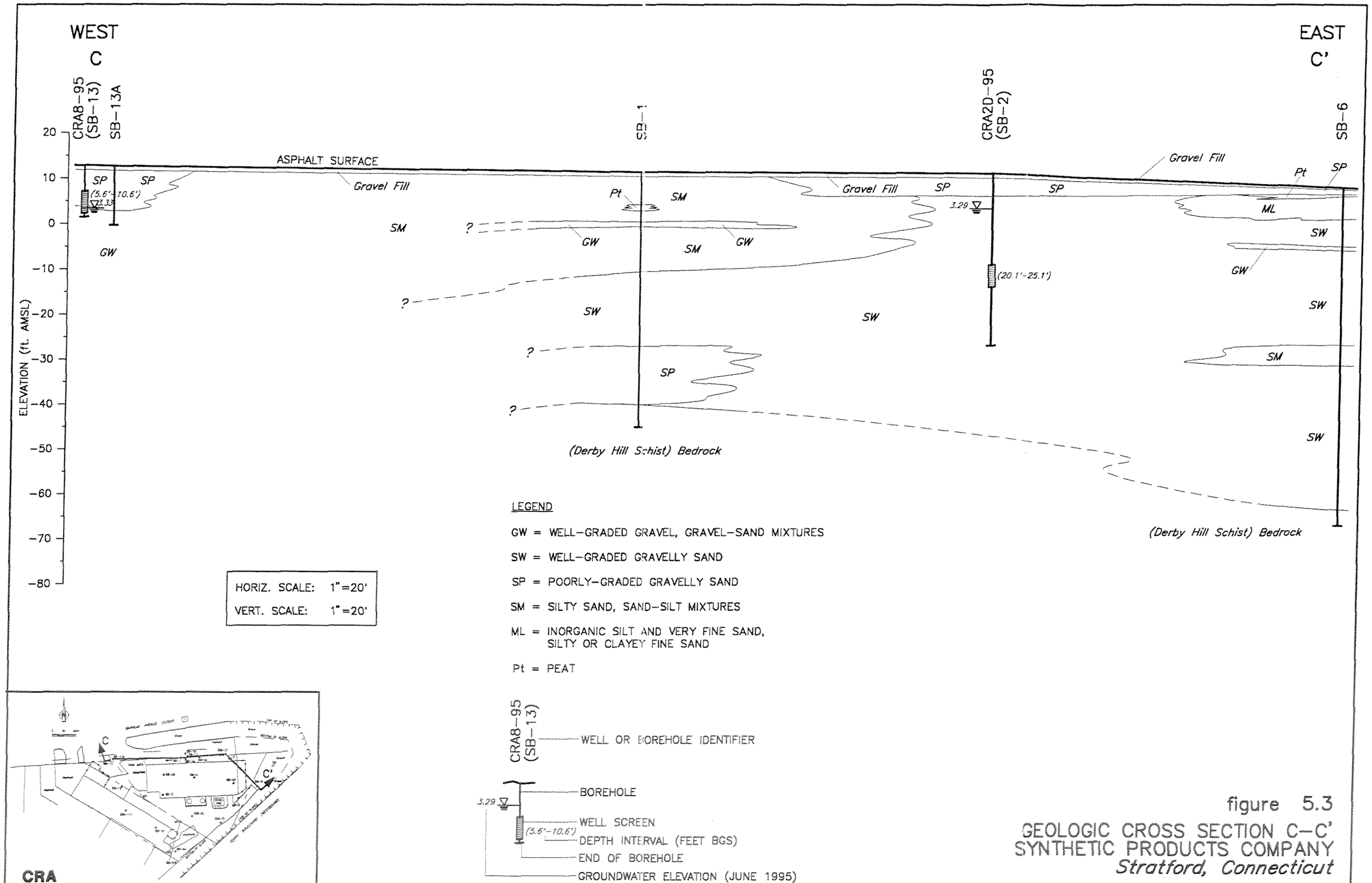


figure 5.3
GEOLOGIC CROSS SECTION C-C'
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

3627(4) OCT. 12, 95 REV. 0(C)(X-03)

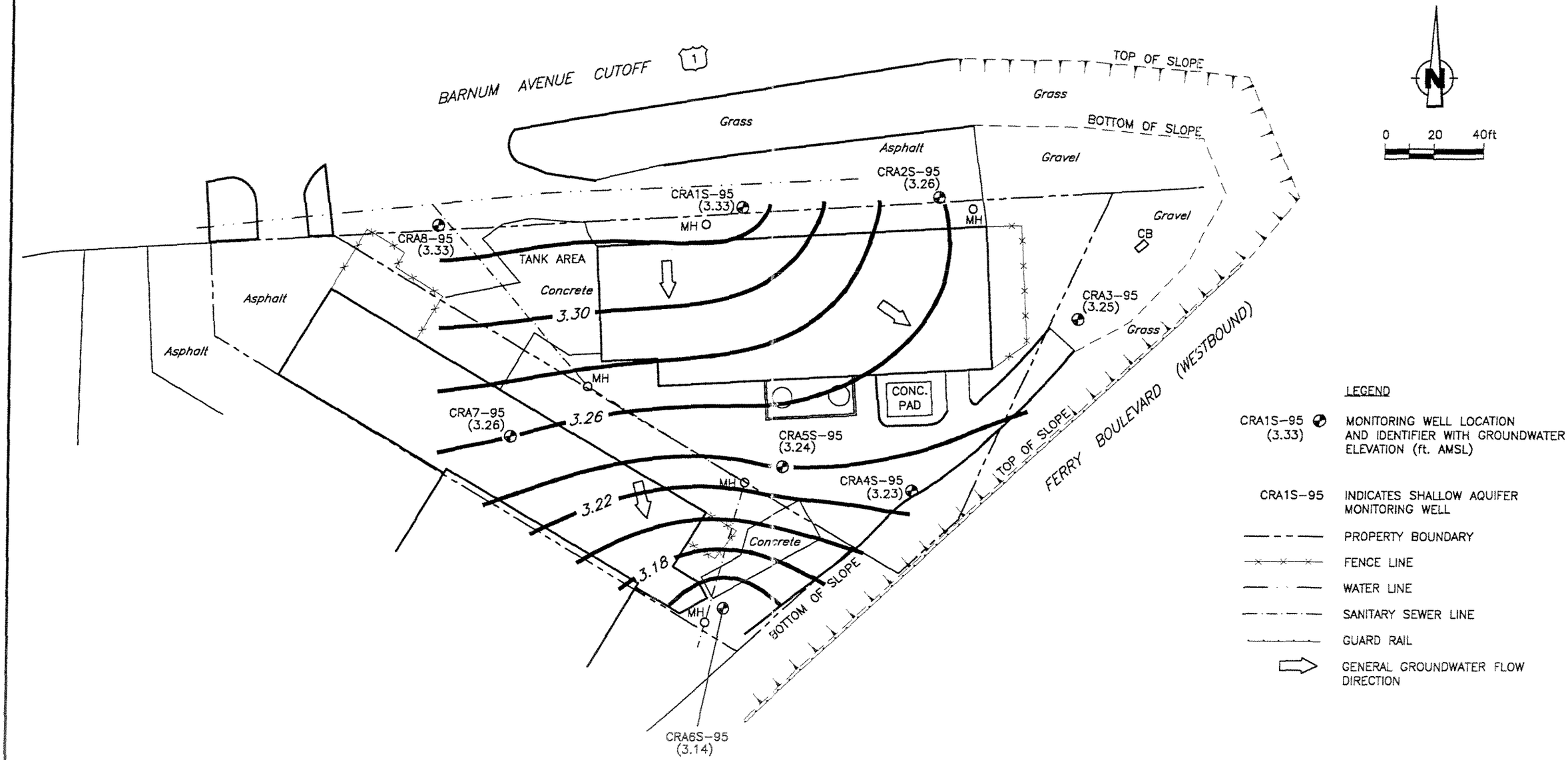


figure 5.4

SHALLOW MONITORING WELL GROUNDWATER CONTOURS
JUNE 13, 1995
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

CRA

3627(4)-AUG. 1, 95-REV.0-(C)(P-25)

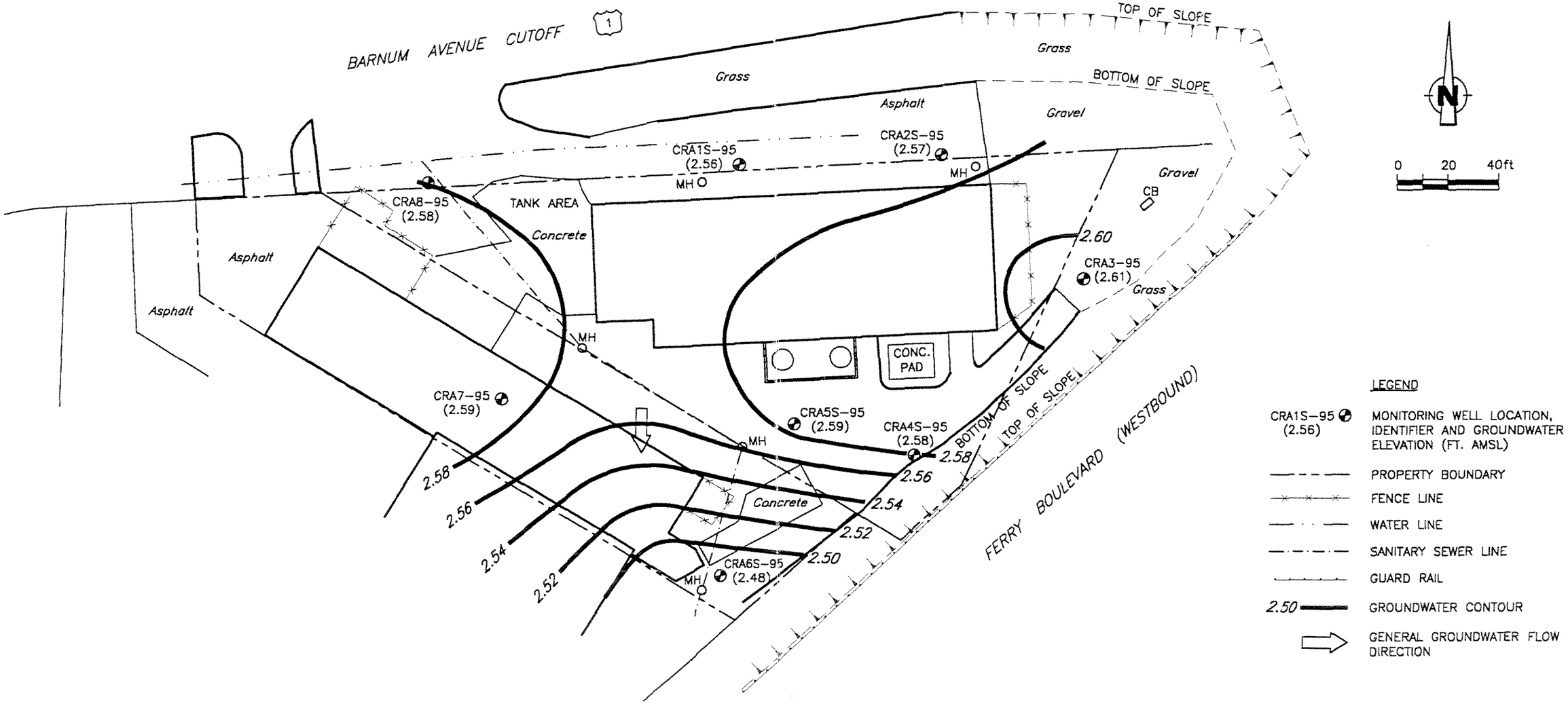
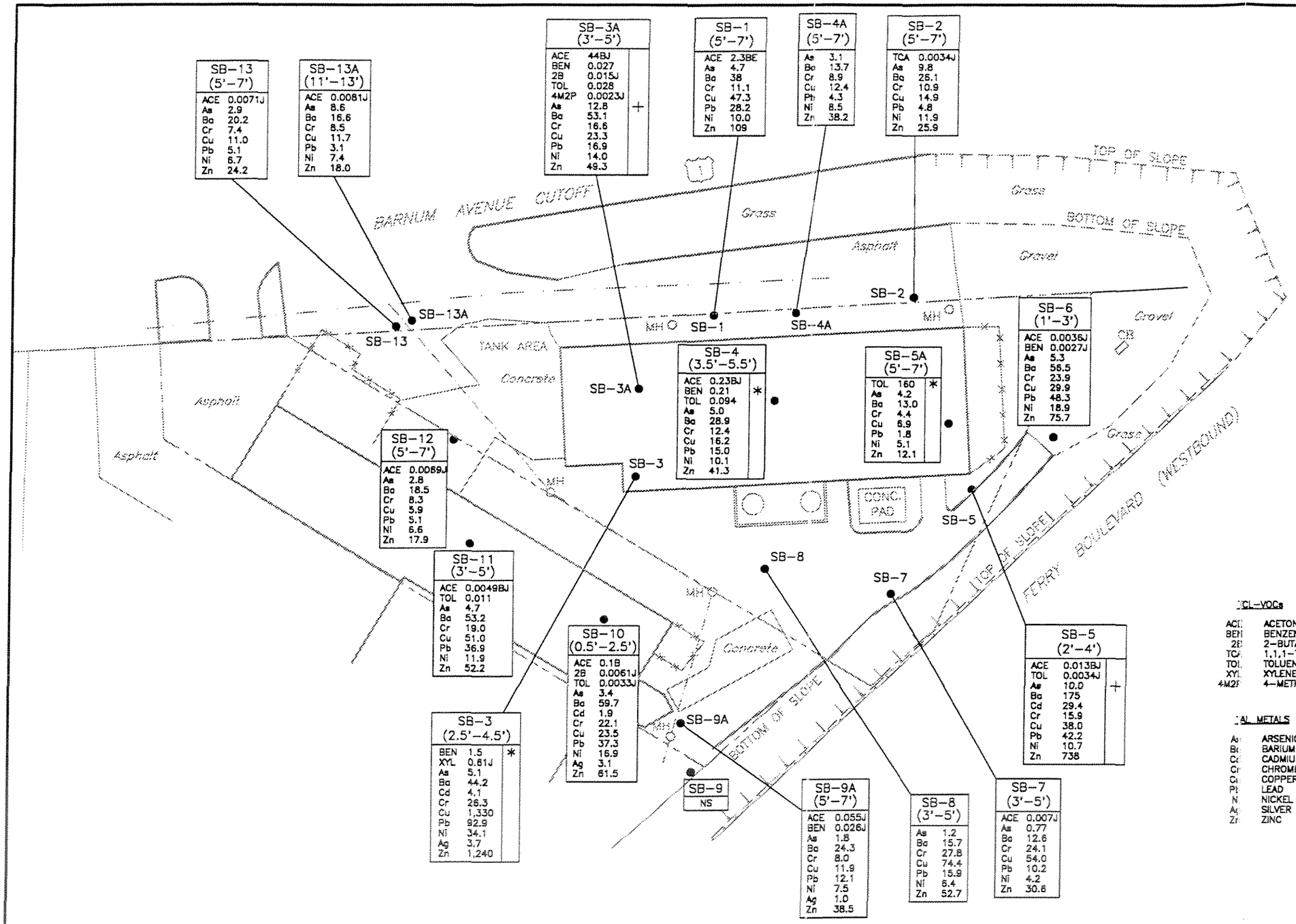


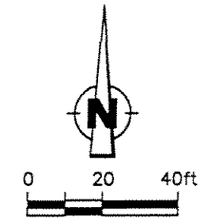
figure 5.5

SHALLOW MONITORING WELL GROUNDWATER CONTOURS
SEPTEMBER 1995
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

CRA

3627(4)-OCT. 12, 95-REV.0-(C)(P-27)





LEGEND

SB-3 ●	SOIL BORING LOCATION AND IDENTIFIER
———	PROPERTY BOUNDARY
—x—x—	FENCE LINE
— —	WATER LINE
—·—·—	SANITARY SEWER LINE
·····	GUARD RAIL
SB-5 (2'-4')	SAMPLE IDENTIFIER / DEPTH INTERVAL (ft. B.G.S.)
+	EXCEEDS CONNECTICUT INDUSTRIAL/COMMERCIAL DIRECT EXPOSURE CRITERIA
*	EXCEEDS CONNECTICUT GB POLLUTANT MOBILITY CRITERIA
#	EXCEEDS BOTH CRITERIA
J	ESTIMATED VALUE BELOW DETECTION LIMIT
E	ESTIMATED VALUE EXCEEDS CALIBRATION RANGE
B	COMPOUND DETECTED IN METHOD BLANK
NR	NO REGULATORY STANDARD PUBLISHED
NS	NOT SAMPLED

COMPOUNDS AND CONCENTRATIONS

TCL-VOCs		CONNECTICUT DIRECT EXPOSURE CRITERIA	CONNECTICUT POLLUTANT MOBILITY CRITERIA
ACE	ACETONE	1,000	140
BEN	BENZENE	200	0.2
2B	2-BUTANONE	1,000	80
TCA	1,1,1-TRICHLOROETHANE	1,000	40
TOL	TOLUENE	1,000	67
XYL	XYLENES	1,000	19.5
4M2P	4-METHYL-2-PENTANONE	NR	NR

TAL METALS		CONNECTICUT DIRECT EXPOSURE CRITERIA	CONNECTICUT POLLUTANT MOBILITY CRITERIA
As	ARSENIC	10	NR
Ba	BARIUM	140,000	NR
Cd	CADMIUM	1,000	NR
Cr	CHROMIUM (TOTAL)	NR	NR
Cu	COPPER	76,000	NR
Pb	LEAD	1,000	NR
Ni	NICKEL	7,500	NR
Ag	SILVER	10,000	NR
Zn	ZINC	610,000	NR

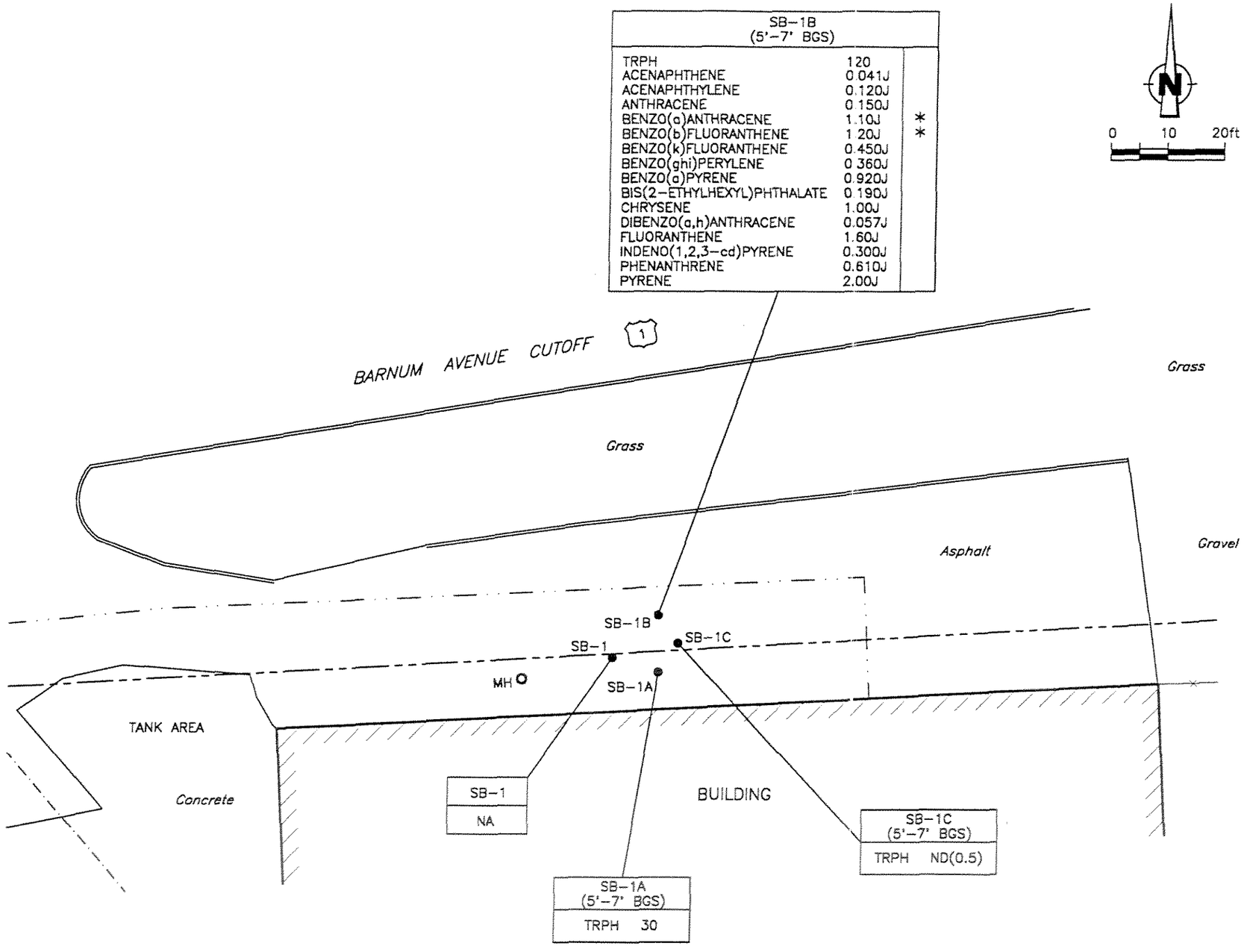
NOTE: CONCENTRATIONS IN mg/kg.

figure 6.1

SUMMARY OF DETECTED TCL VOC AND TAL METALS RESULTS (SOILS)
MAY 1995
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

CRA

3627(4)-OCT. 12, 95-REV.0-(C)(P-21)



LEGEND

SB-1A ●	SOIL BORING LOCATION AND IDENTIFIER
MH ○	MANHOLE
—— - - ——	PROPERTY BOUNDARY
—×—×—×—	FENCE LINE
—— · · ——	WATER LINE
—— · — · —	SANITARY SEWER LINE

SB-1A — SAMPLE IDENTIFIER
(5'-7' BGS) — DEPTH OF SOIL SAMPLE
* TRPH 30
CONCENTRATION (mg/kg)
COMPOUND
MOBILITY EXCEEDANCE

J	ESTIMATED VALUE
NR	NO REGULATORY CRITERIA
*	EXCEEDS CONNECTICUT GB POLLUTANT MOBILITY CRITERIA
ND( )	NOT DETECTED AT THE DETECTION LIMIT STATED IN PARENTHESES
NA	PILOT BORING – NOT ANALYZED FOR SVOC OR TRPH

CONNECTICUT DIRECT EXPOSURE CRITERIA	CONNECTICUT GB POLLUTANT MOBILITY CRITERIA
2,500	2,500
NR	NR
2,500	84
2,500	400
7.8	1.0
7.8	1.0
78	1.0
NR	NR
1.0	1.0
410	11
NR	NR
NR	NR
2,500	56
NR	NR
2,500	40
2,500	40

NOTE: CONCENTRATIONS IN mg/kg.

figure 6.2

ANALYTICAL RESULTS BURIED TANK AREA (SOIL)
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

CRA

3627(4)-AUG. 21, 95-REV.0-(C)(P-24)

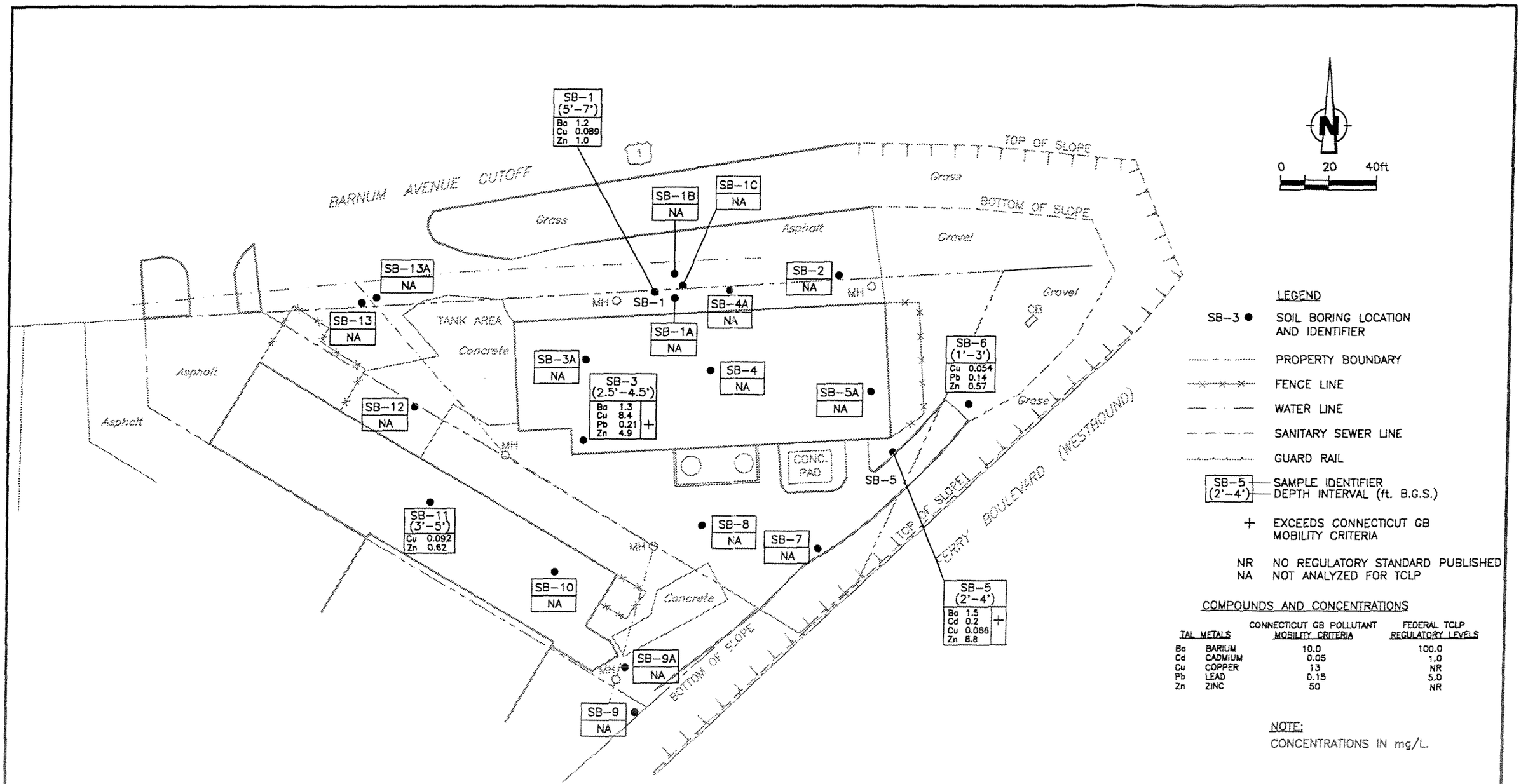
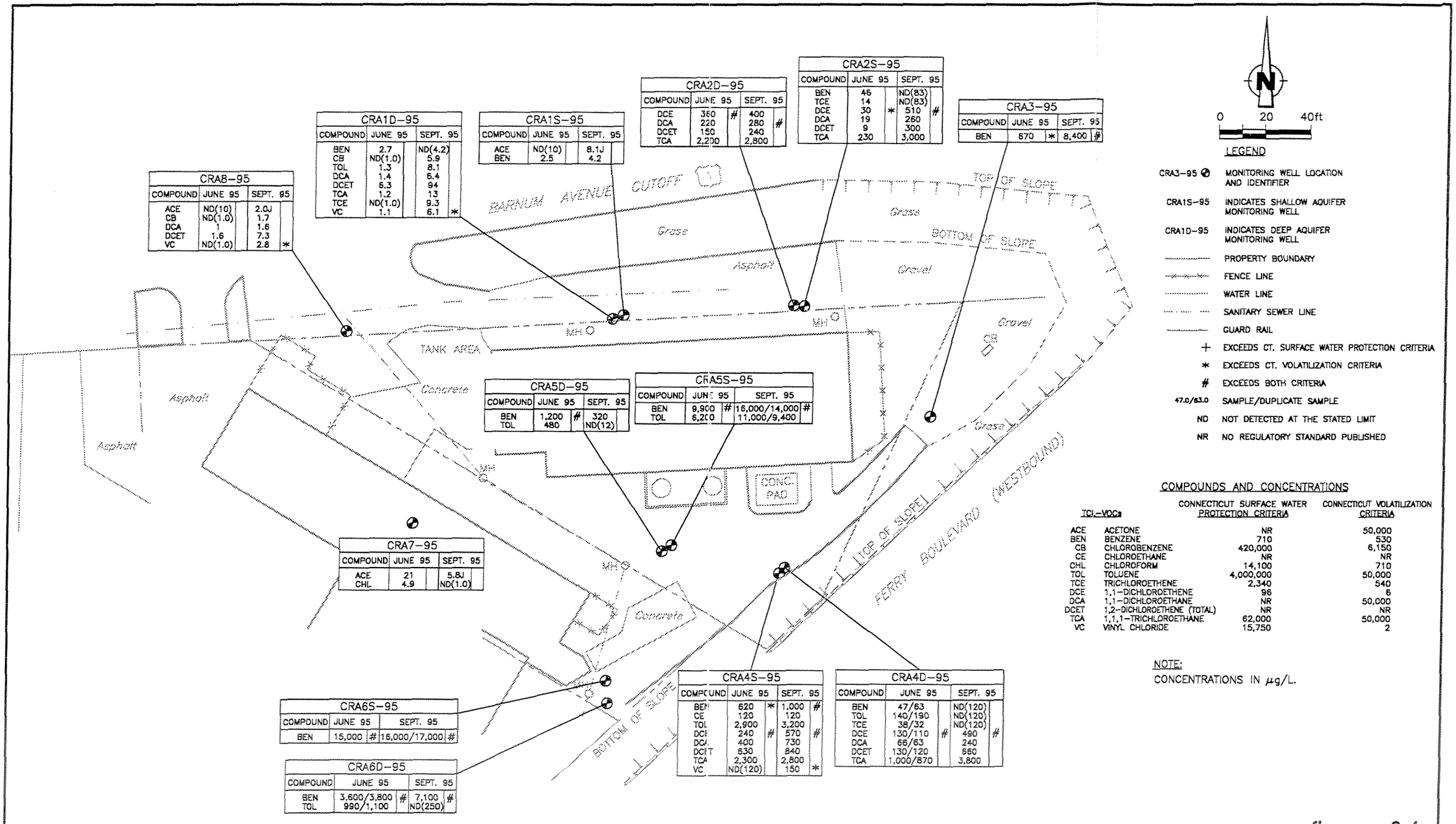


figure 6.3

DETECTED TCLP METALS RESULTS (SOILS)
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

CRA

3627(4)-AUG. 18, 95-REV.0-(C)(P-23)



CRA8–95			
COMPOUND	JUNE 95	SEPT. 95	
ACE	ND(10)	2.0J	
CB	ND(1.0)	1.7	
DCA	1	1.6	
DCET	1.6	7.3	
VC	ND(1.0)	2.8	*

CRA1D–95			
COMPOUND	JUNE 95	SEPT. 95	
BEN	2.7	ND(4.2)	
CB	ND(1.0)	5.9	
TOL	1.3	8.1	
DCA	1.4	6.4	
DCET	6.3	94	
TCA	1.2	13	
TCE	ND(1.0)	9.3	
VC	1.1	6.1	*

CRA1S–95		
COMPOUND	JUNE 95	SEPT. 95
ACE	ND(10)	8.1J
BEN	2.5	4.2

CRA2D–95			
COMPOUND	JUNE 95	SEPT. 95	
DCE	360	400	
DCA	220	280	#
DCET	150	240	
TCA	2,200	2,800	

CRA2S–95			
COMPOUND	JUNE 95	SEPT. 95	
BEN	46	ND(83)	
TCE	14	ND(83)	
DCE	30	510	#
DCA	19	260	*
DCET	9	300	
TCA	230	3,000	

CRA3–95			
COMPOUND	JUNE 95	SEPT. 95	
BEN	670	8,400	#

CRA5D–95			
COMPOUND	JUNE 95	SEPT. 95	
BEN	1,200	320	
TOL	480	ND(12)	

CRA5S–95			
COMPOUND	JUNE 95	SEPT. 95	
BEN	9,900	16,000/14,000	#
TOL	6,200	11,000/9,400	

CRA7–95			
COMPOUND	JUNE 95	SEPT. 95	
ACE	21	5.8J	
CHL	4.9	ND(1.0)	

CRA6S–95			
COMPOUND	JUNE 95	SEPT. 95	
BEN	15,000	16,000/17,000	#

CRA6D–95			
COMPOUND	JUNE 95	SEPT. 95	
BEN	3,600/3,800	7,100	#
TOL	990/1,100	ND(250)	

CRA4S–95			
COMPOUND	JUNE 95	SEPT. 95	
BEN	620	1,000	#
CE	120	120	
TOL	2,900	3,200	
DCE	240	570	#
DCA	400	730	
DCET	630	840	
TCA	2,300	2,800	
VC	ND(120)	150	*

CRA4D–95			
COMPOUND	JUNE 95	SEPT. 95	
BEN	47/63	ND(120)	
TOL	140/190	ND(120)	
TCE	38/32	ND(120)	
DCE	130/110	490	#
DCA	66/63	240	
DCET	130/120	660	
TCA	1,000/870	3,800	

LEGEND

CRA3–95	MONITORING WELL LOCATION AND IDENTIFIER
CRA1S–95	INDICATES SHALLOW AQUIFER MONITORING WELL
CRA1D–95	INDICATES DEEP AQUIFER MONITORING WELL
	PROPERTY BOUNDARY
	FENCE LINE
	WATER LINE
	SANITARY SEWER LINE
	GUARD RAIL
+	EXCEEDS CT. SURFACE WATER PROTECTION CRITERIA
*	EXCEEDS CT. VOLATILIZATION CRITERIA
#	EXCEEDS BOTH CRITERIA
47.0/63.0	SAMPLE/DUPLICATE SAMPLE
ND	NOT DETECTED AT THE STATED LIMIT
NR	NO REGULATORY STANDARD PUBLISHED

COMPOUNDS AND CONCENTRATIONS

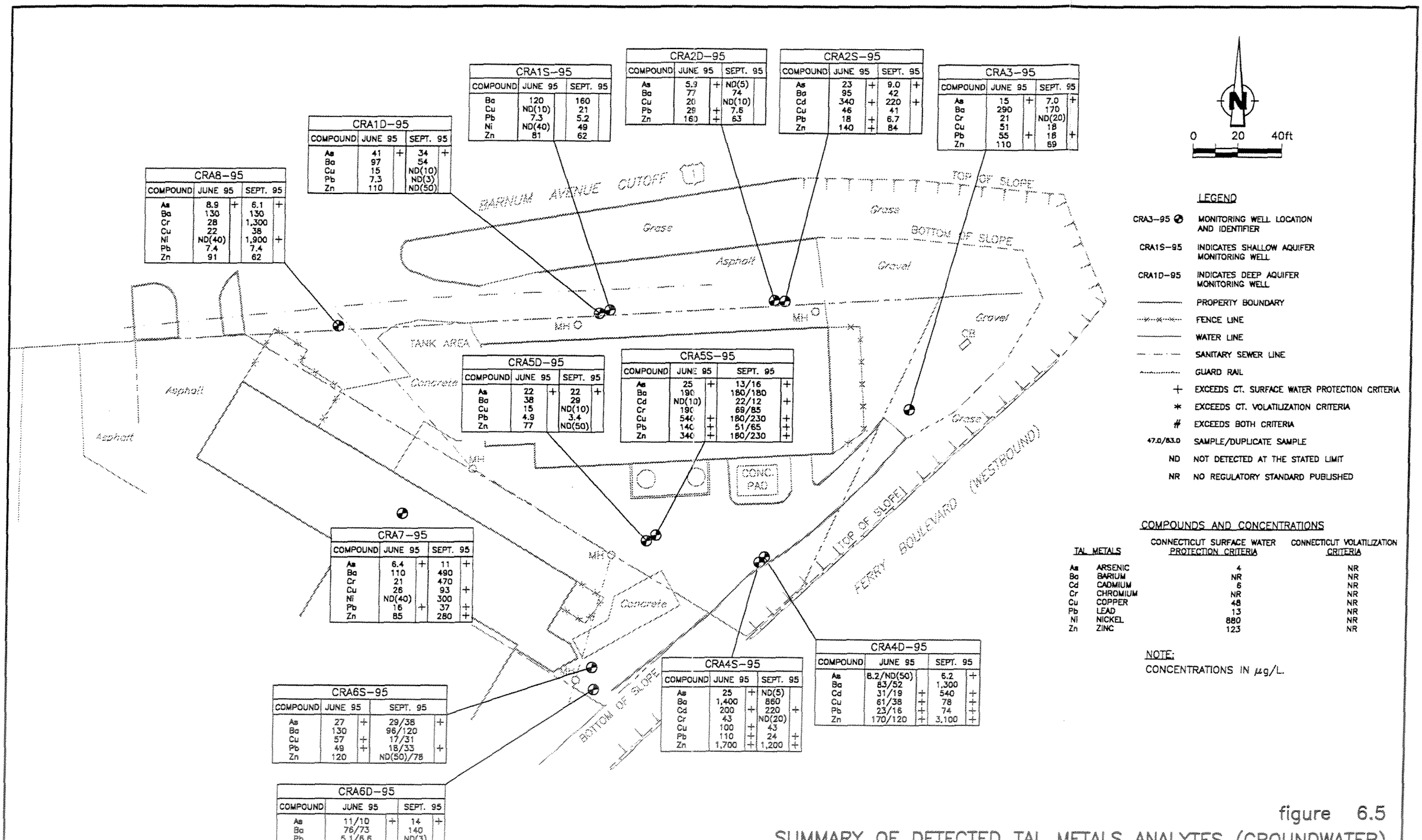
TCL–VOCs		CONNECTICUT SURFACE WATER PROTECTION CRITERIA	CONNECTICUT VOLATILIZATION CRITERIA
ACE	ACETONE	NR	50,000
BEN	BENZENE	710	530
CB	CHLOROBENZENE	420,000	6,150
CE	CHLOROETHANE	NR	NR
CHL	CHLOROFORM	14,100	710
TOL	TOLUENE	4,000,000	50,000
TCE	TRICHLOROETHENE	2,340	540
DCE	1,1–DICHLOROETHENE	96	6
DCA	1,1–DICHLOROETHANE	NR	50,000
DCET	1,2–DICHLOROETHENE (TOTAL)	NR	NR
TCA	1,1,1–TRICHLOROETHANE	62,000	50,000
VC	VINYL CHLORIDE	15,750	2

NOTE:
CONCENTRATIONS IN $\mu g/L$.

figure 6.4
SUMMARY OF DETECTED TCL VOC ANALYTES (GROUNDWATER)
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

CRA

3627(4)–OCT. 12, 95–REV.0–(C)(P–22)



CRA1S-95				
COMPOUND	JUNE 95		SEPT. 95	
Ba	120		160	
Cu	ND(10)		21	
Pb	7.3		5.2	
Ni	ND(40)		49	
Zn	81		62	

CRA2D-95				
COMPOUND	JUNE 95		SEPT. 95	
As	5.9	+	ND(5)	
Ba	77		74	
Cu	20		ND(10)	
Pb	29	+	7.6	
Zn	160	+	63	

CRA2S-95				
COMPOUND	JUNE 95		SEPT. 95	
As	23	+	9.0	+
Ba	95		42	
Cd	340	+	220	+
Cu	46		41	
Pb	18	+	6.7	
Zn	140	+	84	

CRA3-95				
COMPOUND	JUNE 95		SEPT. 95	
As	15	+	7.0	+
Ba	290		170	
Cr	21		ND(20)	
Cu	51		18	
Pb	55	+	18	+
Zn	110		69	

CRA1D-95				
COMPOUND	JUNE 95		SEPT. 95	
As	41	+	34	+
Ba	97		54	
Cu	15		ND(10)	
Pb	7.3		ND(3)	
Zn	110		ND(50)	

CRA8-95				
COMPOUND	JUNE 95		SEPT. 95	
As	8.9	+	6.1	+
Ba	130		130	
Cr	28		1,300	
Cu	22		38	
Ni	ND(40)		1,900	+
Pb	7.4		7.4	
Zn	91		62	

CRA5D-95				
COMPOUND	JUNE 95		SEPT. 95	
As	22	+	22	+
Ba	38		29	
Cu	15		ND(10)	
Pb	4.9		3.4	
Zn	77		ND(50)	

CRA5S-95				
COMPOUND	JUNE 95		SEPT. 95	
As	25	+	13/16	
Ba	190		180/180	
Cd	ND(10)		22/12	+
Cr	190		69/85	
Cu	540	+	180/230	+
Pb	140	+	51/65	+
Zn	340	+	180/230	+

CRA7-95				
COMPOUND	JUNE 95		SEPT. 95	
As	6.4	+	11	+
Ba	110		490	
Cr	21		470	
Cu	26		93	+
Ni	ND(40)		300	
Pb	16	+	37	+
Zn	85		280	+

CRA4S-95				
COMPOUND	JUNE 95		SEPT. 95	
As	25	+	ND(5)	
Ba	1,400		860	
Cd	200	+	220	+
Cr	43		ND(20)	
Cu	100	+	43	
Pb	110	+	24	+
Zn	1,700	+	1,200	+

CRA4D-95				
COMPOUND	JUNE 95		SEPT. 95	
As	8.2/ND(50)		6.2	+
Ba	83/52		1,300	
Cd	31/19	+	540	+
Cu	61/38	+	78	+
Pb	23/16	+	74	+
Zn	170/120	+	3,100	+

CRA6S-95				
COMPOUND	JUNE 95		SEPT. 95	
As	27	+	29/36	+
Ba	130		96/120	
Cu	57	+	17/31	
Pb	49	+	18/33	+
Zn	120		ND(50)/78	

CRA6D-95				
COMPOUND	JUNE 95		SEPT. 95	
As	11/10	+	14	+
Ba	76/73		140	
Pb	5.1/6.6		ND(3)	

figure 6.5

SUMMARY OF DETECTED TAL METALS ANALYTES (GROUNDWATER)
SYNTHETIC PRODUCTS COMPANY
Stratford, Connecticut

CRA

3627(4)-FEB. 20, 96-REV.0-(C)(P-29)

TABLE 2.1

GROUNDWATER ANALYTICAL RESULTS APRIL 1988 AND JULY 1988
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

(Results in mg/L [ppm])

Date Sampled	*OW-1* *7/14/88*	*OW-2* *7/14/88*	*OW-5* *7/14/88*	*OW-6* *4/23/88*	*OW-8* *NR*	*OW-9A* *4/23/88*	*OW-9B* *4/23/88*	*OW-10* *4/23/88*	*OW-11* *4/23/88*	*OW-12* *4/23/88*
pH	6.36	5.40	7.66	5.50	6.68	6.82	6.49	6.13	7.2	7.36
Benzene	ND(15)	ND(15)	0.188	10.676	15.319	50.781	184.875	26.456	1.228	15.813
Chloroform	ND	ND	ND	.018	ND	0.126	0.235	0.085	ND	ND
1,1-Dichloroethene	ND	ND	0.031	ND	ND	ND	ND	0.154	ND	ND
trans-1,2-Dichloroethane	ND	ND	ND	ND	ND	0.029	0.028	0.090	ND	0.040
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	0.026	ND	ND
Toluene	ND	ND	ND	9.532	3.147	24.431	55.75	15.300	0.010	9.510
1,1,1-Trichloroethene	ND	ND	ND	ND	ND	0.023	0.013	0.040	ND	ND
Trichloroethene	ND	ND	ND	0.028	ND	0.103	0.0225	0.021	ND	0.096
Xylenes	ND	ND	ND	0.073	0.007	0.075	ND	ND	ND	ND

1) OW-3 did not contain sufficient water for sample collection on either date. The date sampled for OW-8 was not reported (NR).
2) ND = Not Detected, detection limits not identified in reference report.

Reference:
Project Update Report by IT Corporation, January 24, 1989.

TABLE 4.1

SUMMARY OF ANALYTICAL METHODS
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Matrix	*Parameter* [1]	*Method of Analysis*	
Soil	TCL VOC	SW-846 [2]	8240
	TCL SVOC	SW-846	8270
	TAL Metals	SW-846	6010/7000 Series
	TOC	Walkley-Black [3]	
	Grain Size Distribution	ASTM [4]	D433
	Bulk Density	ASTM	D1188
	Moisture Content	ASTM	D4959
	TCLP Metals	SW-846	1311/6010/7000 Series
	TRPH	EPA [5]	418.1
Water	TCL VOC	SW-846	8240
	TCL BNA	SW-846	8270
	TAL Metals	SW-846	6010/7000 Series
	pH		Field
	Specific Conductance		Field
	Temperature		Field
	Dissolved Oxygen		Field
	Turbidity		Field

1 TCL = Target Compound List
VOC = Volatile Organic Compounds
SVOC = Semivolatile Organic Compounds
TAL = Target Analyte List
TOC = Total Organic Carbon
TRPH = Total Recoverable Petroleum Hydrocarbons
TCLP = Toxicity Characteristic Leaching Procedure
BNA = Base/Neutral and Acid Extractable Compounds

2 "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA SW-846, 3rd edition, November 1986.

3 "Methods of Soil Analysis, Part 2, Chemical and Microbiological Properties", American Society of Agronomy, 1965.

4 "1990 Annual Book of ASTM Standards", American Society for Testing and Materials.

5 "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, revised March 1983.

TABLE 4.2

SUMMARY OF CRA MONITORING WELL CONSTRUCTION DATA
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

CRA Well	*Completion Date*	*Top of Casing (ft AMSL)* [1]	*Ground Surface Elevation (ft AMSL)*	*Top of Screen Elevation (ft AMSL)*	*Bottom of Screen Elevation (ft AMSL)*	*Total Well Depth (ft BGS)* [2]	*Screen Length (feet)*	*Screen Slot Size (inch)*	*Screen Material*	*Casing Material*	*Protective Casing*
CRA1D-95	5/26/95	10.88	11.26	-10.74	-15.74	27.0	5.0	0.01	2 " SS [3]	2 " SS	Flush Mount
CRA1S-95	5/16/95	10.84	11.22	5.72	0.72	10.5	5.0	0.01	2 " SS	2 " SS	Flush Mount
CRA2D-95	5/16/95	10.68	11.03	-9.07	-14.07	25.1	5.0	0.01	2 " SS	2 " SS	Flush Mount
CRA2S-95	5/17/95	10.68	11.05	5.55	0.55	10.5	5.0	0.01	2 " SS	2 " SS	Flush Mount
CRA3-95	5/17/95	7.43	7.90	4.9	-0.1	8.0	5.0	0.01	2 " SS	2 " SS	Flush Mount
CRA4D-95	5/23/95	8.32	8.63	-9.37	-14.37	23.0	5.0	0.01	2 " SS	2 " SS	Flush Mount
CRA4S-95	5/23/95	8.34	8.72	4.72	-0.28	9.0	5.0	0.01	2 " SS	2 " SS	Flush Mount
CRA5D-95	5/24/95	9.23	9.54	-8.46	-13.46	23.0	5.0	0.01	2 " SS	2 " SS	Flush Mount
CRA5S-95	5/24/95	9.20	9.56	5.56	0.56	9.0	5.0	0.01	2 " SS	2 " SS	Flush Mount
CRA6D-95	5/22/95	9.49	9.91	-8.09	-13.09	23.0	5.0	0.01	2 " SS	2 " SS	Flush Mount
CRA6S-95	5/22/95	9.73	10.03	5.03	0.03	10.0	5.0	0.01	2 " SS	2 " SS	Flush Mount
CRA7-95	5/23/95	11.36	11.65	7.15	2.15	9.5	5.0	0.01	2 " SS	2 " SS	Flush Mount
CRA8-95	5/25/95	12.26	12.77	7.17	2.17	10.6	5.0	0.01	2 " SS	2 " SS	Flush Mount

[1] ft AMSL - feet above mean sea level
[2] ft BGS - feet below ground surface
[3] 2" SS - two inch diameter stainless steel

TABLE 4.3

SUMMARY OF MONITORING WELL DEVELOPMENT PARAMETERS
JUNE 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Well Identification	*Date*	*Well Volume (gallons)*	*Gallons Removed*	*pH (standard units)*	*Conductivity (µS/cm)* [1]	*Temperature (°C)*	*Dissolved Oxygen (ppm)* [2]	*Turbidity (NTU)* [3]	*Other*
CRA1S-95	06/13/95	0.38	Initial	6.40	598	16.4	2.2	>200	Dk. brown/cloudy
			0.5	6.47	585	16.2	4.8	>200	Dk. brown/cloudy
			1.0	6.49	577	16.0	1.7	>200	Dk. brown/cloudy
			2.0	6.55	584	16.0	1.8	>200	Dk. brown/cloudy
			3.0	6.55	574	16.2	2.6	>200	Dk. brown/cloudy
			4.0	6.59	567	16.2	1.8	>200	Lt. brown/sl. cloudy
CRA1D-95	06/13/95	3.00	Initial	6.61	442	18.2	4.9	>200	Lt. brown, sl. cloudy, dry
			4.0	6.88	445	17.0	5.4	>200	Lt. brown, dry
			7.0	6.86	449	16.1	3.2	75.6	Clear, dry
			9.0	6.85	466	15.0	1.9	22.8	Dry
			14.0	6.83	460	15.1	1.9	17.6	Dry
			19.0	6.86	469	15.1	1.8	16.1	Dry
			24.0	6.80	452	15.8	3.0	16.3	Dry
			30.0	6.89	456	14.9	2.3	16.1	Dry
CRA2S-95	06/01/95	0.40	Initial	6.86	896	19.9	7.4	>200	Brown/cloudy
			4.0	6.57	526	21.6	6.7	>200	Brown/cloudy
			5.0	6.60	520	21.4	7.2	188	Sl. cloudy
			6.0	6.52	473	20.8	7.1	101	Sl. cloudy
			7.0	6.55	460	20.3	9.0	57.1	Clear
			8.0	6.51	463	20.1	8.2	50.3	Clear
CRA2D-95	06/01/95	2.84	Initial	6.73	988	19.5	16.1	>200	Brown/cloudy
			15.0	6.70	985	18.1	12.7	33.1	Clear
			20.0	6.72	984	17.9	10.5	20.2	Clear
			22.0	6.70	986	17.3	9.8	8.1	Clear
			25.0	6.71	981	17.2	9.3	4.3	Clear
			28.0	6.70	983	17.1	9.1	3.8	Clear

TABLE 4.3

SUMMARY OF MONITORING WELL DEVELOPMENT PARAMETERS
JUNE 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Well Identification	*Date*	*Well Volume (gallons)*	*Gallons Removed*	*pH (standard units)*	*Conductivity (µS/cm)* [1]	*Temperature (°C)*	*Dissolved Oxygen (ppm)* [2]	*Turbidity (NTU)* [3]	*Other*
CRA3-95	06/01/95	0.51	Initial	6.66	529	25.8	7.9	>200	Brown/cloudy
			2.0	7.08	739	24.7	7.7	>200	Effervescent
			4.0	7.21	928	24.7	6.6	>200	Dry
			6.0	7.27	931	24.3	6.8	>200	Dry
			8.0	7.29	933	24.2	6.3	>200	Dry
			9.0	7.31	938	24.2	7.1	>200	Dry
CRA4S-95	06/01/95	0.62	Initial	6.98	826	21.5	3.0	>200	Gray-brown/cloudy
			2.0	6.91	682	20.5	4.2	>200	Effervescent
			4.0	6.95	690	20.5	5.4	>200	Chemical odor
			6.0	6.95	686	20.1	6.6	>200	Dry
			8.0	7.01	692	20.2	7.1	120	Sl. cloudy, dry
			10.0	7.02	692	20.2	8.5	105	Dry
CRA4D-95	06/01/95	2.87	Initial	7.32	693	20.9	6.5	>200	Brown-gray/cloudy
			15	6.77	821	17.5	6.5	148.6	Chemical odor
			20	6.72	816	16.8	5.5	60.9	Sl. cloudy
			25	6.67	821	16.4	4.9	26.3	Clear
			30	6.64	822	16.4	4.4	8.3	Clear
CRA5S-95	06/01/95	0.44	Initial	6.70	2770	18.5	5.8	>200	Gray/cloudy
			2.0	6.72	2070	19.7	5.9	>200	Effervescent
			4.0	6.76	1790	21.2	6.2	>200	Dry
			6.0	6.70	1740	21.6	7.7	>200	Dry
			8.0	6.77	1760	22.0	7.8	>200	Dry
			9.0	6.80	1750	22.3	8.5	>200	Dry

TABLE 4.3

SUMMARY OF MONITORING WELL DEVELOPMENT PARAMETERS
JUNE 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Well Identification	*Date*	*Well Volume (gallons)*	*Gallons Removed*	*pH (standard units)*	*Conductivity (µS/cm)* [1]	*Temperature (°C)*	*Dissolved Oxygen (ppm)* [2]	*Turbidity (NTU)* [3]	*Other*
CRA5D-95	06/01/95	2.70	Initial	6.88	743	21.3	7.8	>200	Gray/cloudy
			15.0	6.72	3110	17.9	8.6	>200	Effervescent
			20.0	6.77	3230	17.2	7.8	>200	Effervescent
			25.0	6.79	3300	16.9	7.2	>200	Effervescent
			30.0	6.80	3360	16.9	6.4	120.4	Sl. cloudy
			35.0	6.74	3390	16.7	6.3	39.3	Clear
			40.0	6.70	3380	16.7	5.7	22.0	Clear
			45.0	6.71	3390	16.6	5.1	12.3	Clear
CRA6S-95	06/01/95	0.48	Initial	6.71	2070	19.0	6.3	>200	Brown-gray/cloudy
			4.0	6.64	1138	19.7	6.8	>200	Dry
			5.0	6.60	1112	20.0	7.1	>200	Dry
			6.0	6.58	1107	20.4	7.2	>200	Dry
			7.0	6.56	1118	20.6	7.5	>200	Dry
CRA6D-95	06/01/95	2.60	Initial	6.95	898	23.5	9.1	>200	Gray/cloudy
			10.0	6.61	1850	19.7	9.2	39.5	Clear
			15.0	6.61	1910	19.7	6.7	37.5	Clear
			20.0	6.56	2010	18.6	6.6	27.3	Clear
			25.0	6.55	2040	18.7	6.0	12.1	Clear
			30.0	6.54	2070	18.6	5.9	6.2	Clear
CRA7-95	06/13/95	0.40	Initial	6.79	438	17.4	1.3	>200	Dk. brown/cloudy
			1.0	6.81	444	17.3	1.9	>200	Dry
			1.5	6.79	385	17.5	2.2	>200	Dry
			2.5	6.83	394	17.4	2.2	>200	Dry
			3.5	6.80	395	17.3	2.1	>200	Dry
			4.0	6.81	399	17.1	2.0	>200	Dry

TABLE 4.3

SUMMARY OF MONITORING WELL DEVELOPMENT PARAMETERS
JUNE 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Well Identification	*Date*	*Well Volume (gallons)*	*Gallons Removed*	*pH (standard units)*	*Conductivity (µS/cm)* [1]	*Temperature (°C)*	*Dissolved Oxygen (ppm)* [2]	*Turbidity (NTU)* [3]	*Other*
CRA8-95	06/13/95	0.26	Initial	6.63	734	17.7	5.3	>200	Dk. brown/cloudy
			.25	7.22	700	17.3	6.1	>200	Dry
			1.0	7.06	1590	17.9	5.1	>200	Dry
			1.5	6.83	1610	17.7	5.0	>200	Dry
			2.0	6.85	1580	17.2	5.0	>200	Dry
			2.5	6.87	1600	17.1	4.9	>200	Dry
			2.75	6.88	1580	17.0	5.5	>200	Dry

[1] µS/cm - microsiemens per centimeter
[2] ppm - parts per million
[3] NTU - nephelometric turbidity units

TABLE 4.4

SUMMARY OF MONITORING WELL PURGING PARAMETERS
JUNE 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Well Identification	*Date*	*Well Volume (Gallons)*	*Gallons Removed*	*pH (standard units)*	*Conductivity (µS/cm)* [1]	*Temperature (°C)*	*Dissolved Oxygen (ppm)* [2]	*Turbidity (NTU)* [3]	*Other*
CRA 1S-95	06/15/95	0.38	0.5	6.88	514	16.9	1.9	>200	Brown/cloudy
			1.0	6.87	521	17.3	3.1	>200	Brown/cloudy
			1.5	6.85	528	17.4	3.4	>200	Brown/cloudy
CRA 1D-95	06/15/95	3.0	3.5	7.04	423	16.3	1.1	>200	Brown/cloudy
			6.5	7.10	429	15.7	1.9	56.2	Clear
			9.5	7.08	431	16.4	0.8	12.7	Clear
CRA 2S-95	06/01/95	0.4	0.5	6.19	262	16.4	8.2	>200	Brown/cloudy
			1.0	6.12	267	15.9	3.7	>200	Brown/cloudy
			1.5	6.14	267	15.8	2.6	>200	Brown/cloudy
CRA 2D-95	06/01/95	2.83	3.0	6.96	611	16.0	1.9	87	Sl. brown/cloudy
			6.0	6.76	621	15.2	1.1	142	Sl. brown/cloudy
			9.0	6.73	617	15.0	1.1	25	Clear
			12.0	6.69	617	14.9	1.5	52	Clear
CRA 3-95	06/14/95	0.63	0.75	6.76	882	14.7	2.3	>200	Brown-gray/cloudy
			1.50	6.78	875	14.4	1.6	>200	Brown-gray/cloudy
			2.25	6.79	873	14.2	1.5	>200	Brown-gray/cloudy

TABLE 4.4

SUMMARY OF MONITORING WELL PURGING PARAMETERS
JUNE 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Well Identification	*Date*	*Well Volume (Gallons)*	*Gallons Removed*	*pH (standard units)*	*Conductivity (µS/cm)* [1]	*Temperature (°C)*	*Dissolved Oxygen (ppm)* [2]	*Turbidity (NTU)* [3]	*Other*
CRA 4S-95	06/14/95	0.59	0.75	6.87	499	16.6	2.2	>200	Gray/cloudy
			1.50	6.85	477	16.3	1.8	>200	Chemical Odor
			2.25	6.86	481	16.3	2.1	>200	Chemical Odor
			3.00	6.82	475	16.3	2.7	>200	Chemical Odor
CRA 4D-95	06/14/95	2.85	3.0	6.70	517	15.4	2.0	51.4	Clear/chemical odor
			6.0	6.66	506	15.2	0.8	26.1	Clear/chemical odor
			9.0	6.67	517	15.1	0.9	8.5	Clear/chemical odor
CRA 5S-95	06/14/95	0.42	0.5	6.90	1880	19.4	1.6	>200	Dk. brown/cloudy
			1.0	6.90	1870	19.2	1.5	>200	Dk. brown/cloudy
			1.5	6.86	1870	18.8	0.5	>200	Dk. brown/cloudy
CRA 5D-95	06/14/95	2.67	3.0	6.97	2690	17.0	2.0	53.1	Clear/chemical odor
			6.0	6.96	2890	16.3	2.4	17.2	Clear/chemical odor
			9.0	6.93	2950	16.0	1.8	12.1	Clear/chemical odor
			12.0	6.91	3010	15.9	1.2	11.5	Clear/chemical odor
			15.0	6.93	3080	15.8	2.0	10.0	Clear/chemical odor

TABLE 4.4

SUMMARY OF MONITORING WELL PURGING PARAMETERS
JUNE 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Well Identification	*Date*	*Well Volume (Gallons)*	*Gallons Removed*	*pH (standard units)*	*Conductivity (µS/cm)* [1]	*Temperature (°C)*	*Dissolved Oxygen (ppm)* [2]	*Turbidity (NTU)* [3]	*Other*
CRA 6S-95	06/14/95	0.47	0.5	6.69	701	16.7	0.8	>200	Dk. brown/cloudy with a sheen
			1.0	6.66	681	16.2	7.9	>200	Dk. brown/cloudy with a sheen
			1.5	6.65	669	16.1	1.6	>200	Dk. brown/cloudy with a sheen
			2.0	6.64	677	16.1	0.3	>200	Dk. brown/cloudy with a sheen
CRA 6D-95	06/14/95	2.58	3.0	6.63	1930	15.0	2.2	>200	Gray/cloudy
			6.0	6.66	2020	14.7	0.7	45.2	Strong chemical odor
			9.0	6.69	2020	14.5	0.9	21.2	Clear
CRA 7-95	06/14/95	0.40	0.5	6.56	382	18.7	3.1	>200	Brown/cloudy/dry
			1.0	6.59	382	18.2	2.7	>200	Brown/cloudy/dry
			1.5	6.64	379	16.9	3.0	>200	Brown/cloudy/dry
CRA 8-95	06/14/95	0.26	0.30	7.13	1390	19.4	4.9	180	Brown/cloudy/dry
			0.75	7.01	1380	18.1	4.6	120	Brown/cloudy/dry
			1.10	7.06	1410	18.5	4.4	110	Brown/cloudy/dry

[1] µS/cm - microsiemens per centimeter
[2] ppm - parts per million
[3] NTU - nephelometric turbidity units

TABLE 4.5

SUMMARY OF MONITORING WELL PURGING PARAMETERS
SEPTEMBER 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Well Identification	*Date*	*Water Level (ft BTOC)* [1]	*Well Volume (Gallons)*	*Gallons Removed*	*pH (Standard Units)*	*Conductivity (µS/cm)* [2]	*Temperature (°C)*	*Dissolved Oxygen (ppm)*	*Turbidity (NTU)* [4]	*Other*
CRA1S-95	9/13/95	8.28	0.26	0.25	6.38	1960	21.0	8.86	>1000	Brown, cloudy
				0.50	6.39	1960	21.1	9.02	>1000	Brown, cloudy
	9/14/95			0.75	6.41	1630	21.3	9.11	>1000	Brown, cloudy
				1.00	6.51	1630	21.6	9.84	>1000	Brown, cloudy
				1.25	6.52	1610	21.3	9.83	>1000	Brown, cloudy
CRA1D-95	9/13/95	8.30	2.91	3.00	6.41	1360	18.0	10.81	636	Brown, cloudy [5]
				6.00	6.68	1330	16.6	9.53	341	Lt brown, sl cloudy
				9.00	6.74	1340	16.1	10.17	91	Lt brown, sl cloudy
				12.00	6.78	1300	16.4	9.11	326	Lt brown, sl cloudy
CRA2S-95	9/13/95	8.11	0.27	0.40	5.86	484	20.5	9.00	>1000	Brown, cloudy
				0.80	5.91	480	20.5	9.01	576	Brown, cloudy
				1.20	5.84	483	20.4	9.02	>1000	Brown, cloudy
CRA2D-95	9/13/95	8.07	2.72	2.75	6.71	1860	15.1	9.98	690	Brown, cloudy
				5.50	6.63	1860	14.9	9.40	221	Lt brown, sl cloudy
				8.25	6.62	1860	14.8	9.03	118	Very lt brown, sl cloudy
CRA3-95	9/13/95	4.82	0.52	0.60	6.48	2800	19.2	9.51	>1000	Dark gray, cloudy
				1.20	6.52	2660	19.0	9.06	>1000	Dark gray, cloudy
				1.80	6.51	2550	18.9	9.30	>1000	Dark gray, cloudy
CRA4S-95	9/13/95	5.76	0.59	0.60	6.86	1680	20.3	9.45	458	Dk gray, cldy, chem odor
				1.20	6.86	1620	20.0	9.23	>1000	Dk gray, cldy, chem odor
				1.80	6.83	1580	19.7	9.32	>1000	Dk gray, cldy, chem odor

TABLE 4.5

SUMMARY OF MONITORING WELL PURGING PARAMETERS
SEPTEMBER 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Well Identification	*Date*	*Water Level (ft BTOC)* [1]	*Well Volume (Gallons)*	*Gallons Removed*	*pH (Standard Units)*	*Conductivity (µS/cm)* [2]	*Temperature (°C)*	*Dissolved Oxygen (ppm)*	*Turbidity (NTU)* [4]	*Other*
CRA4D-95	9/13/95	5.76	2.76	3.00	6.67	1690	16.5	11.54	421	Gray, cloudy, chem odor
				6.00	6.62	1690	16.1	10.81	203	Lt gray, cldy, chem odor
				9.00	6.59	1380	16.3	9.54	186	Lt gray, cldy, chem odor
CRA5S-95	9/14/95	6.61	0.32	0.50	6.62	3380	24.0	8.34	>1000	Brown, cloudy
				1.00	6.59	3760	24.1	8.40	>1000	Brown, cloudy
				1.50	6.59	3810	24.1	8.45	>1000	Brown, cloudy
				2.00	6.60	3750	24.2	8.38	566	Brown, cloudy
CRA5D-95	9/14/95	6.63	2.76	3.00	6.68	4610	17.9	8.48	105	Lt brown, slightly cloudy, strong chem odor
				6.00	6.62	4640	17.7	9.14	85	Very lt brown, slightly cloudy, strong chem odor
				9.00	6.61	4700	17.5	9.30	60	Same as above
CRA6S-95	9/14/95	7.25	0.36	0.40	6.67	1830	22.4	9.82	>1000	Brown, cloudy, sheen, chem odor
				0.80	6.65	1810	22.0	9.06	>1000	Same as above
				1.20	6.60	1800	21.8	9.19	>1000	Same as above
CRA6D-95	9/14/95	7.03	2.48	2.50	6.75	3710	17.6	7.84	563	Gray-brown, cldy, chem odor
				6.70	6.70	3930	17.2	9.19	158	Lt gray-brn, cldy, odor
				7.50	6.67	4040	16.8	9.48	40	Lt gray-brn, cldy, odor
CRA7-95	9/12/95	8.77	0.07	0.05	- [6]	-	-	-	-	Brown, cloudy, dry
	9/13/95			0.10	5.70	-	-	-	-	Brown, cloudy, dry
	9/14/95			0.15	5.67	-	-	-	-	Brown, cloudy, dry

TABLE 4.5

SUMMARY OF MONITORING WELL PURGING PARAMETERS
SEPTEMBER 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Well Identification	*Date*	*Water Level (ft BTOC)* [1]	*Well Volume (Gallons)*	*Gallons Removed*	*pH (Standard Units)*	*Conductivity (µS/cm)* [2]	*Temperature (°C)*	*Dissolved Oxygen (ppm)*	*Turbidity (NTU)* [4]	*Other*
				0.20	6.12	-	-	-	-	Brown, cloudy, dry
				0.25	5.99	-	-	-	-	Brown, cloudy, dry
CRA8-95	9/12/95	9.68	0.07	0.10	-	-	-	-	-	Brown, cloudy, dry
	9/13/95			0.20	6.20	3160	22.4	-	-	Brown, cloudy, dry
	9/14/95			0.30	6.25	1220	22.7	-	-	Brown, cloudy, dry
				0.40	6.76	1820	23.1	-	-	Brown, cloudy, dry
				0.50	6.69	1840	22.4	-	-	Brown, cloudy, dry

1
2 ft BTOC - feet below top of casing
3 µS/cm - microsiemens per centimeter
4 ppm - parts per million
5 NTU - nephelometric turbidity units
6 CRA1D-95 pumped dry after 5, 8 and 11 gallons
- volume of water removed not sufficient to measure parameter

TABLE 4.6

ABANDONED WELL CONSTRUCTION DETAILS
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

Well Number	*Date Installed*	*Total Depth (ft BGS)* [1]	*Screened Interval (ft BGS)*	*Diameter and Materials*
OW-5	11/17/82	20	0-20	4-inch steel
OW-6	11/18/82	20	0-20	4-inch steel
OW-8	11/19/82	20	0-20	4-inch steel
OW-9a	4/86	unknown	unknown	4-inch steel
OW-10	4/11/87	10	7-10	unknown
OW-12	4/11/87	10	5-10	unknown
OW-13 (OW-4) [2]	11/17/82	20	0-20	4-inch steel
RW-1	5/83	30	3-30 [3]	24-inch
RW-2	7/90	10	3-10 [3]	24-inch

[1] ft BGS - feet below ground surface
[2] This well could not be located during CRAs investigation - presumed destroyed or paved over.
[3] Recovery wells were constructed entirely of screen set in a concrete access vault.

TABLE 5.1

SUMMARY OF GROUNDWATER ELEVATIONS
SYNTHETIC PRODUCTS COMPANY
STRAFTFORD, CONNECTICUT

Well Identification	*Top of Casing Reference Elevation (ft AMSL)* [1]	*June 1995*		*September 1995*	
		Depth to Water (ft BTOC) [2]	*Groundwater Elevation (ft AMSL)*	*Depth to Water (ft BTOC)*	*Groundwater Elevation (ft AMSL)*
CRA1D-95	10.88	7.60	3.28	8.30	2.58
CRA1S-95	10.84	7.51	3.33	8.28	2.56
CRA2D-95	10.68	7.39	3.29	8.07	2.61
CRA2S-95	10.68	7.42	3.26	8.11	2.57
CRA3-95	7.43	4.18	3.25	4.82	2.61
CRA4D-95	8.32	5.12	3.20	5.76	2.56
CRA4S-95	8.34	5.11	3.23	5.76	2.58
CRA5D-95	9.23	5.97	3.26	6.63	2.60
CRA5S-95	9.20	5.96	3.24	6.61	2.59
CRA6D-95	9.49	6.36	3.13	7.03	2.46
CRA6S-95	9.73	6.59	3.14	7.25	2.48
CRA7-95	11.36	8.10	3.26	8.77	2.59
CRA8-95	12.26	8.93	3.33	9.68	2.58

[1] ft AMSL - feet above mean sea level

[2] ft BTOC - feet below top of casing

TABLE 5.2

SUMMARY OF CALCULATED VERTICAL GRADIENTS
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Monitoring Wells	*Vertical Distance Between Wells (ft)*	*Water Elevation (ft AMSL)* [1]		*Calculated Vertical Gradient (ft/ft)* [2]	
		June 13, 1995	*Sept.12, 1995*	*June 13, 1995*	*Sept. 12, 1995*
CRA1D-95	16.5	3.28	2.58	-0.0030	0.0012
CRA1S-95		3.33	2.56		
CRA2D-95	14.6	3.29	2.61	0.0021	0.0027
CRA2S-95		3.26	2.57		
CRA4D-95	14.1	3.20	2.56	-0.0021	-0.0014
CRA4S-95		3.23	2.58		
CRA5D-95	14.0	3.26	2.60	0.0014	0.0007
CRA5S-95		3.24	2.59		
CRA6D-95	13.1	3.13	2.46	-0.008	-0.0015
CRA6S-95		3.14	2.48		

[1] ft AMSL = feet above meal sea level

[2] ft/ft = feet per feet; positive value denotes upward gradient; negative value denotes downward gradient.

TABLE 5.3

SUMMARY OF HYDRAULIC CONDUCTIVITY CALCULATED FROM HYDRAULIC RESPONSE TESTS SYNTHETIC PRODUCTS COMPANY STRATFORD, CONNECTICUT

Monitoring Well	*Screened Interval (ft BGS)* [1]	*Screen Length (feet)*	*Hydraulic Conductivity* [2]	
			K (ft/day)	*K (cm/sec)*
CRA4S-95	4.0-9.0	5.0	265.25	9.36×10^{-2}
CRA4D-95	18.0-23.0	5.0	46.31	1.63×10^{-2}
CRA5S-95	4.0-9.0	5.0	64.54	2.28×10^{-2}
CRA5D-95	18.0-23.0	5.0	5.60	2.00×10^{-3}
		Arithmetic Mean	95.90	3.38×10^{-2}
		Geometric Mean	43.20	1.52×10^{-2}

[1] ft BGS - feet below ground surface

[2] Data from wells reduced using Bouwer and Rice method

TABLE 5.4

SUMMARY OF HYDRAULIC CONDUCTIVITY DATA CALCULATED FROM GRAIN SIZE ANALYSIS SYNTHETIC PRODUCTS COMPANY STRATFORD, CONNECTICUT

Soil Boring/ Monitoring Well [1]	*Soil Sample Interval (ft BGS)* [2]	*Screened Interval (ft BGS)*	*Hydraulic Conductivity (K) Using Hazen Method*	
			K (ft/day)	*K (cm/sec)*
SB-2 [3]	9/10	5.5-10.5	40.66	1.44E-02
SB-2/CRA2D-95	23/25	20.1-25.1	409.50	1.45E-01
SB-7/CRA4D-95	19/21	18-23	135.00	4.77E-02
SB-8 [4]	5/7	4-9	15.09	5.33E-03
SB-8/CRA5D-95	19/21	18-23	17.06	6.02E-03
SB-9 [5]	6/7	5-10	14.18	5.01E-03
SB-9 [6]	18/20	18-23	42.62	1.50E-02
	Arithmetic Mean		96.30	3.40E-02
	Geometric Mean		44.57	1.57E-02

[1] Hazen method could not be used for soil borings SB-1 (11-13 and 22-24 ft BGS) and SB-7 (9-11 ft BGS) due to the effective grain size (D10)
[2] ft BGS - feet below ground surface
[3] Soil sample interval corresponds to CRA2S-95
[4] Soil sample interval corresponds to CRA5S-95
[5] SB-9 is a pilot boring; soil sample interval corresponds to CRA6S-95
[6] SB-9 is a pilot boring; soil sample interval corresponds to CRA6D-95

TABLE 6.1

SUMMARY OF DETECTED ANALYTES
SOIL
MAY 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

TCL VOC [1]	*Units*	*Connecticut Direct Exposure Criteria Industrial/Commercial*	*Connecticut GB Pollutant Mobility Criteria*	*Sample Location and Depth (feet)*					
				SB-1 (5-7)	*SB-2 (5-7)*	*SB-3 (2.5-4.5)*	*SB-3A (3-5)*	*SB-4 (3.5-5.5)*	*SB-4A (5-7)*
Acetone	mg/kg	**1,000**	***140***	ND(6.20)U [2]	ND(0.050)	ND(6.20)	0.044BJ [3]	0.230BJ	ND(0.050)
Benzene	mg/kg	**200**	***0.2***	ND(0.050)	ND(0.005)	***1.50***	0.027	***0.210***	ND(0.005)
2-Butanone	mg/kg	**1,000**	***80***	0.027J [4]	ND(0.050)	ND(6.20)	0.015J	ND(0.500)	ND(0.050)
1,1,1-Trichloroethane	mg/kg	**1,000**	***40***	ND(0.050)	0.0034J	ND(0.620)	ND(0.005)	ND(0.050)	ND(0.005)
Toluene	mg/kg	**1,000**	***67***	ND(0.050)	ND(0.005)	ND(0.620)	0.028	0.094	ND(0.005)
Xylenes	mg/kg	**1,000**	***19.5***	ND(0.050)	ND(0.005)	0.610J	ND(0.005)	ND(0.050)	ND(0.005)
4-Methyl-2-pentanone	mg/kg	**NR**	**NR** [5]	ND(0.500)	ND(0.050)	ND(6.20)	0.0023J	ND(0.500)	ND(0.050)
TAL Metals [6]									
Arsenic	mg/kg	**10**	NR	4.7	9.8	5.1	**12.8**	5.0	3.1
Barium	mg/kg	**140,000**	NR	38.0	26.1	44.2J	53.1	28.9	13.7
Cadmium	mg/kg	**1,000**	NR	ND(1.0)	ND(1.0)	4.1J	ND(1.0)	ND(1.0)	ND(1.0)
Chromium (total)	mg/kg	**NR**	NR	11.1	10.9	26.3	16.6	12.4	8.9
Copper	mg/kg	**76,000** [7]	NR	47.3	14.9	1330J	23.3	16.2	12.4
Lead	mg/kg	**1,000**	NR	28.2	4.8	92.9	16.9	15.0	4.3
Nickel	mg/kg	**7,500**	NR	10.0	11.9	34.1	14.0	10.1	8.5
Silver	mg/kg	**10,000**	NR	ND(1.0)	ND(1.0)	3.7	ND(1.0)	ND(1.0)	ND(1.0)
Zinc	mg/kg	**610,000**	NR	109	25.9	1,240	49.3	41.3	38.2

TABLE 6.1

SUMMARY OF DETECTED ANALYTES
SOIL
MAY 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

TCL VOC [1]	*Units*	*Connecticut Direct Exposure Criteria Industrial/Commercial*	*Connecticut GB Pollutant Mobility Criteria*	*Sample Location and Depth*				
				SB-5 (2-4)	*SB-5A (5-7)*	*SB-6 (1-3)*	*SB-7 (3-5)*	*SB-8 (3-5)*
Acetone	mg/kg	**1,000**	***140***	ND(0.050)U	ND(120)	0.0036J	0.007J	ND(0.050)
Benzene	mg/kg	**200**	***0.2***	ND(0.005)	ND(12.0)	0.0027J	ND(0.005)	ND(0.005)
2-Butanone	mg/kg	**1,000**	***80***	ND(0.050)	ND(120)	ND(0.050)	ND(0.050)	ND(0.050)
1,1,1-Trichloroethane	mg/kg	**1,000**	***40***	ND(0.005)	ND(12.0)	ND(0.005)	ND(0.005)	ND(0.005)
Toluene	mg/kg	**1,000**	***67***	0.0034J	***160***	ND(0.005)	ND(0.005)	ND(0.005)
Xylenes	mg/kg	**1,000**	***19.5***	ND(0.005)	ND(12.0)	ND(0.005)	ND(0.005)	ND(0.005)
4-Methyl-2-pentanone	mg/kg	**NR**	**NR** [5]	ND(0.050)	ND(120)	ND(0.050)	ND(0.050)	ND(0.050)
TAL Metals [6]								
Arsenic	mg/kg	**10**	NR	**10.0**	4.2	5.3	0.77	1.2
Barium	mg/kg	**140,000**	NR	175J	13.0	56.5	12.6	15.7
Cadmium	mg/kg	**1,000**	NR	29.4J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chromium (total)	mg/kg	**NR**	NR	15.9	4.4	23.9	24.1	27.8
Copper	mg/kg	**76,000** [7]	NR	38.0J	6.9	29.9	54.0	74.4
Lead	mg/kg	**1,000**	NR	42.2	1.8	48.3	10.2	15.9
Nickel	mg/kg	**7,500**	NR	10.7	5.1	18.9	4.2	6.4
Silver	mg/kg	**10,000**	NR	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Zinc	mg/kg	**610,000**	NR	738	12.1	75.7	30.6	52.7

TABLE 6.1

SUMMARY OF DETECTED ANALYTES
SOIL
MAY 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

TCL VOC [1]	*Units*	*Connecticut Direct Exposure Criteria Industrial/Commercial*	*Connecticut GB Pollutant Mobility Criteria*	*Sample Location and Depth*					
				SB-9A (5-7)	*SB-10 (0.5-2.5)*	*SB-11 (3-5)*	*SB-12 (5-7)*	*SB-13 (5-7)*	*SB-13A (11-13)*
Acetone	mg/kg	**1,000**	***140***	0.055J	0.100B	ND(0.050)	0.0069J	0.0071J	0.0081J
Benzene	mg/kg	**200**	***0.2***	0.026J	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2-Butanone	mg/kg	**1,000**	***80***	ND(0.500)	0.0061J	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1,1-Trichloroethane	mg/kg	**1,000**	***40***	ND(0.050)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Toluene	mg/kg	**1,000**	***67***	ND(0.050)	0.0033J	0.011	ND(0.005)	ND(0.005)	ND(0.005)
Xylenes	mg/kg	**1,000**	***19.5***	ND(0.050)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
4-Methyl-2-pentanone	mg/kg	**NR**	**NR** [5]	ND(0.500)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
TAL Metals [6]									
Arsenic	mg/kg	**10**	NR	1.8	3.4	4.7	2.8	2.9	8.6
Barium	mg/kg	**140,000**	NR	24.3	59.7J	53.2	18.5	20.2	16.6
Cadmium	mg/kg	**1,000**	NR	ND(1.0)	1.9J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chromium (total)	mg/kg	**NR**	NR	8.0	22.1	19.0	8.3	7.4	8.5
Copper	mg/kg	**76,000** [7]	NR	11.9	23.5J	51.0	5.9	11.0	11.7
Lead	mg/kg	**1,000**	NR	12.1	37.3	36.9	5.1	5.1	ND(3.1)U
Nickel	mg/kg	**7,500**	NR	7.5	16.9	11.9	6.6	6.7	7.4
Silver	mg/kg	**10,000**	NR	1.0	3.1	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Zinc	mg/kg	**610,000**	NR	38.5	61.5	52.2	17.9	24.2	18.0

[1] TCL VOC - Target Compound List Volatile Organic Compounds
[2] ND ( ) - Not detected at the detection limit stated in parentheses
ND ( ) U - The analyte was analyzed for, but was not detected above the level of the associated value
[3] B - Compound detected in method blank associated with this sample
[4] TCL VOC
J - Estimated value, but below the quantitation limit
TAL Metals
J - The associated value is an estimated quantity
[5] NR - No regulatory standard
[6] TAL - Target Analyte List
[7] Trivalent chromium criterion = 51,000 mg/kg; hexavalent chromium criterion - 100 mg/kg
Bold = Exceed Connecticut Direct Exposure Criteria
Bold/Italics = Exceed Connecticut Pollutant Mobility Criteria
Underline/Bold = Exceed Both Criteria

TABLE 6.2

SUMMARY OF ANALYTICAL RESULTS, BURIED TANK AREA
MAY 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Parameters	*Units*	*Connecticut Direct Exposure Criteria for Soil Industrial/Commercial*	*Connecticut GB Mobility Criteria for Soil*	*Sample Location Depth (ft BGS)* [1]		
				SB-1A 5-7	*SB-1B 5-7*	*SB-1C 5-7*
TRPH [2]	mg/kg	2,500	2,500	30	120	ND(10)
TCL SVOCs [3]						
Acenaphthene	mg/kg	NR[4]	NR	NA[5]	0.041J[6]	NA
Acenaphthylene	mg/kg	2,500	84	NA	0.120J	NA
Anthracene	mg/kg	2,500	400	NA	0.150J	NA
Benzo(a)anthracene	mg/kg	7.8	1	NA	**1.10J**	NA
Benzo(b)fluoranthene	mg/kg	7.8	1	NA	**1.20J**	NA
Benzo(k)fluoranthene	mg/kg	78	1	NA	0.450J	NA
Benzo(g,h,i)perylene	mg/kg	NR	NR	NA	0.360J	NA
Benzo(a)pyrene	mg/kg	1	1	NA	0.920J	NA
bis(2-Ethylhexyl)phthalate	mg/kg	410	11	NA	0.190J	NA
Chrysene	mg/kg	NR	NR	NA	1.00J	NA
Dibenzo(a,h)anthracene	mg/kg	NR	NR	NA	0.057J	NA
Fluoranthene	mg/kg	2,500	56	NA	1.60J	NA
Indeno(1,2,3-cd)pyrene	mg/kg	NR	NR	NA	0.300J	NA
Phenanthrene	mg/kg	2,500	40	NA	0.610J	NA
Pyrene	mg/kg	2,500	40	NA	2.00J	NA

1 ft BGS - feet below ground surface
2 TRPH - Total Recoverable Petroleum Hydrocarbons
3 TCL SVOC - Target Compound List Semivolatile Organic Compounds
4 NR - No regulatory standard published
5 NA - Not analyzed
6 J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Bold = Exceed Connecticut GB Pollutant Mobility Criteria for soil
Underline = Exceed Connecticut Direct Exposure Criteria for soil.

TABLE 6.3

SUMMARY OF DETECTED TCLP METALS
MAY 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Parameter	*Units*	*Connecticut GB Mobility Criteria by TCLP*	*Federal TCLP Regulatory Levels*	*SAMPLE LOCATION AND DEPTH (ft BGS)*[1] *SB-1 (5-7)*	*SB-3 (2.5-4.5)*	*SB-5 (2-4)*	*SB-6 (1-3)*	*SB-11 (3-5)*
Barium	mg/L	**10.0**	***100.0***	1.2	1.3	1.5	ND(1.0)	ND(1.0)
Cadmium	mg/L	**0.05**	***1.0***	ND(0.10)	ND(0.10)	**0.20**	ND(0.10)	ND(0.10)
Copper	mg/L	**13**	***NR*** [3]	0.089	8.4	0.066	0.054	0.092
Lead	mg/L	**0.15**	***5.0***	ND(0.10)	**0.21**	ND(0.10)	0.14	ND(0.10)
Zinc	mg/L	**50**	***NR***	1.0	4.9	8.8	0.57	0.62

[1] ft BGS - feet below ground surface
[2] ND ( ) - Not detected at the detection limit stated in parentheses
[3] NR - No regulatory standard published
Bold = Exceeded GB Mobility Criteria
Bold/Italics = Exceed TCLP Regulatory Levels

TABLE 6.4

SUMMARY OF TOTAL ORGANIC CARBON RESULTS [1]
MAY 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Sample Location	*SB-1*	*SB-1*	*SB-2*	*SB-2*	*SB-7*	*SB-7*	*SB-8*	*SB-8*	*SB-9*	*SB-9*
Depth (ft BGS) [2]	*11/13*	*22/24*	*8/10*	*23/25*	*9/11*	*19/21*	*5/7*	*19/21*	*6/7*	*18/20*
TOC	1000	<100	940	630	1600	<100	750	<100	360	<100

[1] Results in mg/kg
[2] ft BGS - feet below ground surface

TABLE 6.5

SUMMARY OF BULK DENSITY AND MOISTURE CONTENT
MAY 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Sample Location	*SB-1*	*SB-1*	*SB-2*	*SB-2*	*SB-7*	*SB-7*	*SB-8*	*SB-8*	*SB-9*	*SB-9*
Depth (ft BGS) [1]	*9/11*	*24/26*	*10/11*	*25/27*	*7/9*	*21/23*	*7/9*	*21/23*	*7/9*	*20/22*
Bulk Density [2]	95.7	145.5	117.2	109.3	132.5	136.8	121.6	132.9	97.1	125.2
% Moisture	25.8	11.5	11.4	13.1	14.7	11.5	19.8	16.2	19.0	18.2

[1] ft BGS - feet below ground surface
[2] Results in mg/kg

TABLE 6.6

SUMMARY OF DETECTED ANALYTES
GROUNDWATER
JUNE AND SEPTEMBER 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

TCL VOCs [1]	*Units*	*Connecticut Surface Water Protection Criteria*	*Connecticut Volatilization Criteria Industrial/ Commercial*	*CRA 1S-95*		*CRA 1D-95*		*CRA 2S-95*		*CRA 2D-95*	
				June 1995	*Sept. 1995*	*June 1995*	*Sept. 1995*	*June 1995*	*Sept. 1995*	*June 1995*	*Sept. 1995*
Acetone	µg/L	**NR**	***50,000***	ND(10) [2]	8.1J	ND(10)	ND(42)	ND(71)	ND(830)	ND(830)	ND(830)
Benzene	µg/L	**710**	***530***	2.5	4.2	2.7	ND(4.2)	46	ND(83)	ND(83)	ND(83)
Chloroform	µg/L	**14,100**	***710***	ND(1.0)	ND(1.0)	ND(1.0)	ND(4.2)	ND(7.1)	ND(83)	ND(83)	ND(83)
Chlorobenzene	µg/L	**420,000**	***6,150***	ND(1.0)	ND(1.0)	ND(1.0)	5.9	ND(7.1)	ND(83)	ND(83)	ND(83)
Chloroethane	µg/L	**NR**	***NR*** [4]	ND(1.0)	ND(1.0)	ND(1.0)	ND(4.2)	ND(7.1)	ND(83)	ND(83)	ND(83)
Toluene	µg/L	**4,000,000**	***50,000***	ND(1.0)	ND(1.0)	1.3	8.1	ND(7.1)	ND(83)	ND(83)	ND(83)
Trichloroethene	µg/L	**2,340**	***540***	ND(1.0)	ND(1.0)	ND(1.0)	9.3	14	ND(83)	ND(83)	ND(83)
1,1-Dichloroethene	µg/L	**96**	***6***	ND(1.0)	ND(1.0)	ND(1.0)	ND(42)	***30***	**510**	**360**	**400**
1,1-Dichloroethane	µg/L	**NR**	***50,000***	ND(1.0)	ND(1.0)	1.4	6.4	19	260	220	280
1,2-Dichloroethene, Total	µg/L	**NR**	***NR*** [5]	ND(1.0)	ND(1.0)	6.3	94	9.0	300	150	240
1,1,1-Trichloroethane	µg/L	**62,000**	***50,000***	ND(1.0)	ND(1.0)	1.2	13	230	3,000	2,200	2,800
Vinyl chloride	µg/L	**15,750**	***2***	ND(1.0)	ND(1.0)	1.1	***6.9***	ND(7.1)	ND(83)	ND(83)	ND(83)
Total TAL Metals [6]											
Arsenic	µg/L	**4**	***NR***	ND(5.0)	ND(5.0)	**41**	**34**	**23**	**9.0**	**5.9**	ND(5.0)
Barium	µg/L	**NR**	***NR***	120	160	97	54	95	42	77	74
Cadmium	µg/L	**6**	***NR***	ND(10)	ND(10)	ND(10)	ND(10)	**340**	**220**	ND(10)	ND(10)
Chromium	µg/L	**NR** [7]	***NR***	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	41	ND(20)	ND(20)
Copper	µg/L	**48**	***NR***	ND(10)	21	15	ND(10)	46	22	20	ND(10)
Lead	µg/L	**13**	***NR***	7.3	5.2	7.3	ND(3.0)	**18**	6.7	**29**	7.6
Nickel	µg/L	**880**	***NR***	ND(40)	49	ND(40)	ND(40)	ND(40)	ND(40)	ND(40)	ND(40)
Zinc	µg/L	**123**	***NR***	81	62	110	ND(50)	**140**	84	**160**	63

TABLE 6.6

SUMMARY OF DETECTED ANALYTES
GROUNDWATER
JUNE AND SEPTEMBER 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

TCL VOCs [1]	*Units*	*Connecticut Surface Water Protection Criteria*	*Connecticut Volatilization Criteria Industrial/ Commercial*	*CRA 3-95*		*CRA 4S-95*		*CRA 4D-95*	
				June 1995	*Sept. 1995*	*June 1995*	*Sept. 1995*	*June 1995*	*Sept. 1995*
Acetone	µg/L	**NR**	***50,000***	ND(330)	ND(2,500)	ND(1,200)	ND(1,000)	ND(330)/ND(250) [3]	ND(1,200)
Benzene	µg/L	**710**	***530***	***670***	**8,400**	***620***	**1,000**	47/63	ND(120)
Chloroform	µg/L	**14,100**	***710***	ND(33)	ND(250)	ND(120)	ND(100)	ND(33)/ND(25)	ND(120)
Chlorobenzene	µg/L	**420,000**	***6,150***	ND(33)	ND(250)	ND(120)	ND(100)	ND(33)/ND(25)	ND(120)
Chloroethane	µg/L	**NR**	***NR*** [4]	ND(33)	ND(250)	ND(120)	120	ND(33)/ND(25)	ND(120)
Toluene	µg/L	**4,000,000**	***50,000***	ND(33)	ND(250)	2,900	3,200	140/190	ND(120)
Trichloroethene	µg/L	**2,340**	***540***	ND(33)	ND(250)	ND(120)	ND(100)	38/32	ND(120)
1,1-Dichloroethene	µg/L	**96**	***6***	ND(33)	ND(250)	**240**	**570**	**130/110**	**490**
1,1-Dichloroethane	µg/L	**NR**	***50,000***	ND(33)	ND(250)	400	730	66/63	240
1,2-Dichloroethene, Total	µg/L	**NR**	***NR*** [5]	ND(33)	ND(250)	630	840	130/120	660
1,1,1-Trichloroethane	µg/L	**62,000**	***50,000***	ND(33)	ND(250)	2,300	2,800	1,000/870	3,800
Vinyl chloride	µg/L	**15,750**	**2**	ND(33)	ND(250)	ND(120)	***150***	ND(33)/ND(25)	ND(120)
Total TAL Metals [6]									
Arsenic	µg/L	**4**	***NR***	**15**	**7.0**	**25**	ND(5.0)	8.2/ND(5.0)	**6.2**
Barium	µg/L	**NR**	***NR***	290	170	1,400	860	83/52	1,300
Cadmium	µg/L	**6**	***NR***	ND(10)	ND(10)	**200**	**220**	**31/19**	**540**
Chromium	µg/L	**NR** [7]	***NR***	21	ND(20)	43	ND(20)	ND(20)/ND(20)	ND(20)
Copper	µg/L	**48**	***NR***	51	18	**100**	43	**61/38**	**78**
Lead	µg/L	**13**	***NR***	**55**	**18**	**110**	**24**	**23/16**	**74**
Nickel	µg/L	**880**	***NR***	ND(40)	ND(40)	ND(40)	ND(40)	ND(40)/ND(40)	ND(40)
Zinc	µg/L	**123**	***NR***	110	69	**1,700**	**1,200**	**170/120**	**3,100**

TABLE 6.6

SUMMARY OF DETECTED ANALYTES
GROUNDWATER
JUNE AND SEPTEMBER 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

TCL VOCs [1]	*Units*	*Connecticut Surface Water Protection Criteria*	*Connecticut Volatilization Criteria Industrial/ Commercial*	*CRA 5S-95*		*CRA 5D-95*	
				June 1995	*Sept. 1995*	*June 1995*	*Sept. 1995*
Acetone	µg/L	**NR**	***50,000***	ND(5,000)	ND(5,000)ND(5,000)	ND(420)	ND(120)
Benzene	µg/L	**710**	***530***	**9,900**	**16,000/14,000**	**1,200**	320
Chloroform	µg/L	**14,100**	***710***	ND(500)	ND(500)/ND(500)	ND(42)	ND(12)
Chlorobenzene	µg/L	**420,000**	***6,150***	ND(500)	ND(500)/ND(500)	ND(42)	ND(12)
Chloroethane	µg/L	**NR**	***NR*** [4]	ND(500)	ND(500)/ND(500)	ND(42)	ND(12)
Toluene	µg/L	**4,000,000**	***50,000***	6,200	11,000/9,400	480	ND(12)
Trichloroethene	µg/L	**2,340**	***540***	ND(500)	ND(500)/ND(500)	ND(42)	ND(12)
1,1-Dichloroethene	µg/L	**96**	***6***	ND(500)	ND(500)/ND(500)	ND(42)	ND(12)
1,1-Dichloroethane	µg/L	**NR**	***50,000***	ND(500)	ND(500)/ND(500)	ND(42)	ND(12)
1,2-Dichloroethene, Total	µg/L	**NR**	***NR*** [5]	ND(500)	ND(500)/ND(500)	ND(42)	ND(12)
1,1,1-Trichloroethane	µg/L	**62,000**	***50,000***	ND(500)	ND(500)/ND(500)	ND(42)	ND(12)
Vinyl chloride	µg/L	**15,750**	***2***	ND(500)	ND(500)/ND(500)	ND(42)	ND(12)
Total TAL Metals [6]							
Arsenic	µg/L	**4**	***NR***	**25**	**13/16**	**22**	**22**
Barium	µg/L	**NR**	***NR***	190	180/180	38	29
Cadmium	µg/L	**6**	***NR***	ND(10)	**22/12**	ND(10)	ND(10)
Chromium	µg/L	**NR** [7]	***NR***	190	69/85	ND(20)	ND(20)
Copper	µg/L	**48**	***NR***	**540**	**180/230**	15	ND(10)
Lead	µg/L	**13**	***NR***	**140**	**51/65**	4.9	3.4
Nickel	µg/L	**880**	***NR***	ND(40)	ND(40)/ND(40)	ND(40)	ND(40)
Zinc	µg/L	**123**	***NR***	**340**	**180/230**	77	ND(50)

TABLE 6.6

SUMMARY OF DETECTED ANALYTES
GROUNDWATER
JUNE AND SEPTEMBER 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

TCL VOCs [1]	*Units*	*Connecticut Surface Water Protection Criteria*	*Connecticut Volatilization Criteria Industrial/ Commercial*	*CRA 6S-95*		*CRA 6D-95*	
				June 1995	*Sept. 1995*	*June 1995*	*Sept. 1995*
Acetone	µg/L	**NR**	***50,000***	ND(8,300)	ND(6,200)/ND(6,200)	ND(1,000)/ND(1,200)	ND(2,500)
Benzene	µg/L	**710**	***530***	**15,000**	**16,000/17,000**	**3,600/3,800**	**7,100**
Chloroform	µg/L	**14,100**	***710***	ND(830)	ND(620)/ND(620)	ND(100)/ND(120)	ND(250)
Chlorobenzene	µg/L	**420,000**	***6,150***	ND(830)	ND(620)/ND(620)	ND(100)/ND(120)	ND(250)
Chloroethane	µg/L	**NR**	***NR*** [4]	ND(830)	ND(620)/ND(620)	ND(100)/ND(120)	ND(250)
Toluene	µg/L	**4,000,000**	***50,000***	ND(830)	ND(620)/ND(620)	990/1,100	ND(250)
Trichloroethene	µg/L	**2,340**	***540***	ND(830)	ND(620)/ND(620)	ND(100)/ND(120)	ND(250)
1,1-Dichloroethene	µg/L	**96**	***6***	ND(830)	ND(620)/ND(620)	ND(100)/ND(120)	ND(250)
1,1-Dichloroethane	µg/L	**NR**	***50,000***	ND(830)	ND(620)/ND(620)	ND(100)/ND(120)	ND(250)
1,2-Dichloroethene, Total	µg/L	**NR**	***NR*** [5]	ND(830)	ND(620)/ND(620)	ND(100)/ND(120)	ND(250)
1,1,1-Trichloroethane	µg/L	**62,000**	***50,000***	ND(830)	ND(620)/ND(620)	ND(100)/ND(120)	ND(250)
Vinyl chloride	µg/L	**15,750**	**2**	ND(830)	ND(620)/ND(620)	ND(100)/ND(120)	ND(250)
Total TAL Metals [6]							
Arsenic	µg/L	**4**	***NR***	**27**	**29/38**	**11/10**	**14**
Barium	µg/L	**NR**	***NR***	130	96/120	76/73	140
Cadmium	µg/L	**6**	***NR***	ND(10)	ND(10)/ND(10)	ND(10)/ND(10)	ND(10)
Chromium	µg/L	**NR** [7]	***NR***	ND(20)	ND(20)/ND(20)	ND(20)/ND(20)	ND(20)
Copper	µg/L	**48**	***NR***	**57**	17/31	ND(10)/ND(10)	ND(10)
Lead	µg/L	**13**	***NR***	**49**	**18/33**	5.1/6.6	ND(3.0)
Nickel	µg/L	**880**	***NR***	ND(40)	ND(40)/ND(40)	ND(40)/ND(40)	ND(40)
Zinc	µg/L	**123**	***NR***	120	ND(50)/78	ND(50)/ND(50)	ND(50)

TABLE 6.6

SUMMARY OF DETECTED ANALYTES
GROUNDWATER
JUNE AND SEPTEMBER 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

TCL VOCs [1]	*Units*	*Connecticut Surface Water Protection Criteria*	*Connecticut Volatilization Criteria Industrial/ Commercial*	*CRA 7-95*		*CRA 8-95*	
				June 1995	*Sept. 1995*	*June 1995*	*Sept. 1995*
Acetone	µg/L	**NR**	***50,000***	21	5.8J	ND(10)	2.0J
Benzene	µg/L	**710**	***530***	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform	µg/L	**14,100**	***710***	4.9	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	µg/L	**420,000**	***6,150***	ND(1.0)	ND(1.0)	ND(1.0)	1.7
Chloroethane	µg/L	**NR**	***NR*** [4]	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Toluene	µg/L	**4,000,000**	***50,000***	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	µg/L	**2,340**	***540***	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	µg/L	**96**	***6***	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	µg/L	**NR**	***50,000***	ND(1.0)	ND(1.0)	1.0	1.6
1,2-Dichloroethene, Total	µg/L	**NR**	***NR*** [5]	ND(1.0)	ND(1.0)	1.6	7.3
1,1,1-Trichloroethane	µg/L	**62,000**	***50,000***	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	µg/L	**15,750**	***2***	ND(1.0)	ND(1.0)	ND(1.0)	***2.8***
Total TAL Metals [6]							
Arsenic	µg/L	**4**	***NR***	**6.4**	**11**	**8.9**	**6.1**
Barium	µg/L	**NR**	***NR***	110	490	130	130
Cadmium	µg/L	**6**	***NR***	ND(10)	ND(10)	ND(10)	ND(10)
Chromium	µg/L	**NR** [7]	***NR***	21	470	28	1,300
Copper	µg/L	**48**	***NR***	26	**93**	22	38
Lead	µg/L	**13**	***NR***	**16**	**37**	7.4	7.4
Nickel	µg/L	**880**	***NR***	ND(40)	300	ND(40)	**1,900**
Zinc	µg/L	**123**	***NR***	85	**280**	91	62

1 TCL VOC - Target Compound List Volatile Organic Compounds
2 ND ( ) - Not detected at the detection limit stated in parenthesis
3 ND(330)/ND(250) - Sample result/duplicate sample result
4 NR - No regulatory standard published
5 Criterion for cis-1,2-DCE = 70 µg/L; criterion for trans-1,2-DCE = 100 µg/L
6 TAL - Target Analyte List
Bold = Exceed Connecticut Surface Water Protection Criteria
Bold/Italics = Exceed Connecticut Volatilization Criteria
Underline/Bold = Exceed Both Criteria
7 Criterion for trivalent chromium = 1,200 µg/L; criterion for hexavalent chromium = 110 µg/L

TABLE 7.1

COMPARISON OF DETECTED TAL METALS CONCENTRATIONS TO PUBLISHED BACKGROUND LEVELS SYNTHETIC PRODUCTS COMPANY STRATFORD, CONNECTICUT

Element	*Observed Range* [1] *of Published Background (ppm)*	*Arithmetic Mean of Published Background (ppm)*	*Detected Range on Site (ppm)*
Arsenic	<0.1 - 73	7.4	0.77 - 12.8
Barium	10 - 1,300	420	12.6 - 175
Cadmium	0.01 - 7 [2]	--	ND - 29.4
Chromium (total)	1 - 1,000	52	4.4 - 27.8
Copper	<1 - 700	22	5.9 - 1,330
Lead	<10 - 300	17	ND - 92.9
Nickel	<5 - 700	18	4.2 - 34.1
Silver	0.01 - 8 [3]	--	ND - 3.7
Zinc	<5 - 2,900	52	12.1 - 1,240

1 Source: Shacklette, H.T. and Boerngen, J.G., "Elemental Concentrations in Soil and Other Surficial Materials of the Conterminous United States" (USGS Professional Paper 1270, 1984) unless otherwise noted.

2 Source: "Reclamation and Redevelopment of Contaminated Land - Volume I, U. S. Case Studies" EPA/600/2-86/066 (August 1986)

ND(0.50) - not detected at the reporting limit noted in parentheses

ND - not detected

3 Source: D.C. Adriano, "Trace Elements in the Terrestrial Environment" Springer-Verlug, 1986.

APPENDIX A

STRATIGRAPHIC AND INSTRUMENTATION LOGS

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-1
DATE COMPLETED: MAY 15, 1995
DRILLING METHOD: 4" Ø MUD ROTARY
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	11.32					
	Asphalt	11.02					
	FILL, gravel	10.32					
2.5	SM-SAND, some silt, trace fine gravel, medium dense, fine to medium grained, brown			1SS		21	0.3
				2SS		15	0
5.0				3SS		9	0
7.5	- 3" PT-PEAT seam			4SS		21	0
10.0			CEMENT/ BENTONITE GROUT	5SS		17	0.8
	GW-GRAVEL, some medium to coarse sand, dense, fine grained, gray	.32					
12.5	SM-SAND, some silt, trace fine gravel, very dense, fine grained, brown, wet	-.68		6SS		41	0.7
				7SS		51	0.9
15.0				8SS		105	NR
17.5				9SS		50+	0.9
20.0			4" Ø BOREHOLE	10SS		100	0.6
22.5	SW-SAND, little fine gravel, well graded, extremly dense, medium to coarse grained, dark gray, wet	-10.68		11SS		50+	0.4
				12SS		82	0.8
25.0				13SS		50+	0.3
27.5				14SS		81	0.4
30.0				15SS		50+	0.3
32.5				16SS		91	0.7
				17SS		92	0.5

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-1
DATE COMPLETED: MAY 15, 1995
DRILLING METHOD: 4" Ø MUD ROTARY
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5				18SS		32	1.1
				19SS		30	0.9
40.0	SP-SAND, dense, poorly graded, fine to medium grained, brown, wet	-27.68	CEMENT/ BENTONITE GROUT	20SS		23	0.8
42.5				21SS		28	0.6
45.0				22SS		28	0.6
47.5				23SS		48	0.5
50.0			4" Ø BOREHOLE	24SS		95	NR
				25SS		50+	0.3
52.5	BEDROCK, Derby Hill Schist; thin, almost vertically foliated, fine to medium grained, greenish-gray, alternating laminae of chlorite-muscovite and quartz-plagioclase, some biotite and garnet	-40.18					
55.0	A core was collected from 51.5 to 56.5ft BGS. The RQD was 90.9%		2" Ø COREHOLE				
57.5	END OF HOLE @ 56.5ft BGS Notes: NR - no recovery	-45.18					
60.0							
62.5							
65.0							
67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-6
DATE COMPLETED: MAY 11, 1995
DRILLING METHOD: 4" Ø MUD ROTARY
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	7.80					
	Asphalt	7.30					
	SP-SAND, medium dense, poorly graded, fine grained, gray, dry	6.30					
-2.5	PT-PEAT	5.80		1SS		12	11.5
	ML-SILT, some fine sand, trace fine gravel, gray, damp		▽	2SS		7	12.1
-5.0				3SS		9	1.2
-7.5	SW-SAND, little silt, trace fine to medium gravel, medium grained, gray, wet	.80		4SS		31	1.3
-10.0			CEMENT/ BENTONITE GROUT	5SS		48	1.1
-12.5				6SS		28	0.8
	GW-GRAVEL, some fine sand, dense, fine to medium grained, wet	-5.20		7SS		30	0.6
-15.0	SW-SAND, trace fine gravel, medium dense, well graded, coarse, gray	-6.20		8SS		21	0.6
-17.5				9SS		20	0
-20.0			4" Ø BOREHOLE	10SS		21	1.0
-22.5				11SS		29	1.5
-25.0				12SS		34	4.3
-27.5				13SS		26	3.8
-30.0				14SS		24	9.5
-32.5	- gravel content and size increase			15SS		80	4.3
-35.0				16SS		37	2.8
-37.5	SM-SAND, trace silt, dense, fine grained, brown, wet	-28.20		17SS		63	2.3
	SW-SAND, little fine to medium gravel, dense, well graded, medium to coarse grained, brown, wet	-30.20		18SS		36	6.2
				19SS		59	4.2
				20SS		27	4.4

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-6
DATE COMPLETED: MAY 11, 1995
DRILLING METHOD: 4" Ø MUD ROTARY
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
				21SS	X	30	4.1
43.5				22SS	X	31	4.0
46.0			CEMENT/ BENTONITE GROUT	23SS	X	28	2.8
48.5				24SS	X	40	2.0
51.0				25SS	X	9	7.9
53.5				26SS	X	22	8.5
56.0			4" Ø BOREHOLE	27SS	X	23	3.5
58.5				28SS	X	38	2.8
61.0				29SS	X	61	2.6
63.5				30SS	X	52	2.6
66.0				31SS	X	78	2.1
68.5				32SS	X	62	1.5
71.0	BEDROCK, Derby Hill Schist; thin, almost vertically foliated, fine to medium grained, greenish-gray, alternating laminae of chlorite-muscovite and quartz-plagioclase, some biotite and garnet	-62.40		33SS	X	26	3.1
73.5	A core was collected from 70 to 75ft BGS. The RQD was 100%		2" Ø COREHOLE	34SS	X	32	3.8
76.0	END OF HOLE @ 75ft BGS	-67.20		35SS	X	76	3.9
78.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-9
DATE COMPLETED: MAY 10, 1995
DRILLING METHOD: 4" Ø MUD ROTARY
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	10.07					
	SM-SILT, some fine sand, trace fine gravel, dense, gray, dry			1SS		30	38
2.5	SP-SAND, very dense, poorly graded, fine grained, gray, damp	7.57		2SS		45	25
5.0			▽	3SS		20	21
7.5				4ST		NA	NA
10.0			CEMENT/ BENTONITE GROUT	5SS		16	32
12.5				6SS		18	18.9
	SW-SAND, trace fine gravel, medium dense, well graded, medium to coarse grained, gray, wet	-2.93		7SS		28	12.1
15.0	- black staining			8SS		22	8.7
17.5				9SS		42	6.3
20.0			4" Ø BOREHOLE	10SS		30	15.1
22.5				11SS		38	12.3
	SM-SAND, some silt, very dense, fine grained, olive gray, wet	-12.93		12SS		61	10.2
25.0				13SS		35	8.4
27.5				14SS		35	5.8
30.0				15SS		66	21
32.5				16SS		94	1.2
	SW-SAND, little silt, trace fine gravel, extremely dense, well graded, coarse grained, olive, wet	-22.93		17SS		50+	1.3

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-9
DATE COMPLETED: MAY 10, 1995
DRILLING METHOD: 4" Ø MUD ROTARY
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GW-GRAVEL, some medium sand, well graded, fine to medium grained, gray, wet	-25.93	CEMENT/ BENTONITE GROUT	18SS		21	1.2
37.5				19SS		36	1.6
	SM-SAND, some silt, very dense, fine grained, gray, wet	-28.93	4" Ø BOREHOLE	20SS		35	1.8
40.0							
42.5				21SS		57	2.1
	BEDROCK, Derby Hill Schist; thin, almost vertically foliated, fine to medium grained, greenish-gray, alternating laminae of chlorite-muscovite and quartz-plagioclase, some biotite and garnet. A core was collected from 43 to 48ft BGS. The RQD was 90.7%	-32.93	2" Ø COREHOLE				
45.0							
47.5							
	END OF HOLE @ 48BGS. Notes: NA - not applicable	-37.93					
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							
67.5							

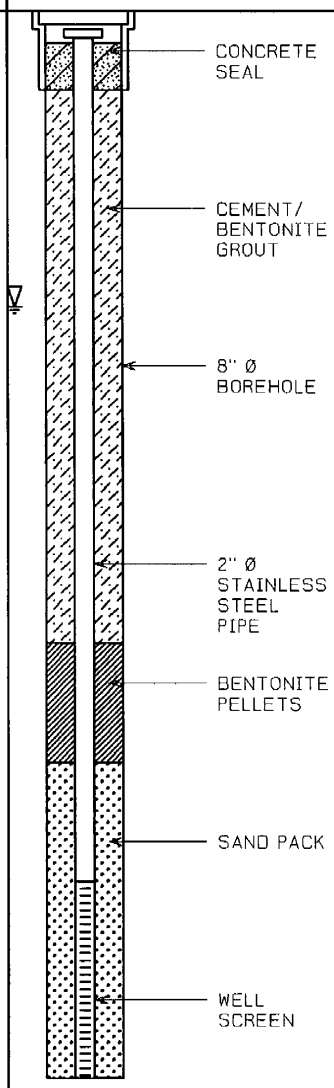
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: CRA1D-95
DATE COMPLETED: MAY 26, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*11.26* *10.88*					
	For stratigraphic details, please refer to SB-1.						
2.5							
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5	END OF HOLE @ 27ft BGS	*-15.74*					
30.0							
32.5							



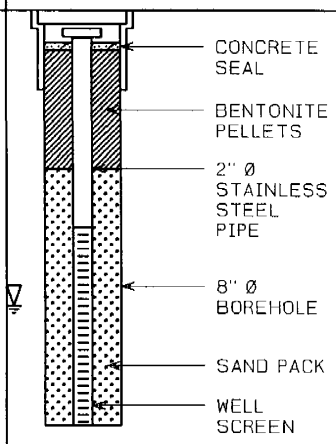
SCREEN DETAILS
Screened interval:
22 to 27ft BGS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
19 to 27ft BGS
Material: No. 1 Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: CRA1S-95
DATE COMPLETED: MAY 16, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*11.22* *10.84*					
	For stratigraphic details, please refer to SB-1.						
2.5							
5.0							
7.5							
10.0	END OF HOLE @ 10.5ft BGS	*.72*					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

SCREEN DETAILS
Screened interval:
5.5 to 10.5ft BGS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
4 to 10.5ft BGS
Material: No. 1 Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-1A
DATE COMPLETED: MAY 30, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	11.33					
	Asphalt	11.03					
	FILL, gravel	10.33					
2.5	SM-SAND, some silt, trace fine gravel, medium dense, fine to medium grained, brown, no odor or staining			1SS		13	0.2
				2SS		65	0.2
5.0			8" Ø BOREHOLE	3SS		6	0.2
7.5				4SS		13	0.1
10.0			CEMENT/ BENTONTIE GROUT	5SS		7	0.1
12.5	SW-SAND, some fine to medium gravel, very dense, well graded, medium to coarse grained, no odor	-.67		6SS		60	0.2
				7SS		100+	0.1
15.0	END OF HOLE @ 15ft BGS	-3.67					
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(CL-05)
Page 1 of 1

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNETICUT

HOLE DESIGNATION: SB-1B
DATE COMPLETED: MAY 30, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	11.01					
	Asphalt	10.71					
	FILL, gravel	10.01					
2.5	SM-SAND, some silt, trace fine gravel, medium dense, fine to medium grained, brown			1SS		21	0.3
5.0			8" Ø BOREHOLE	2SS		14	0.2
				3SS		6	0.2
7.5			▽	4SS		4	0.3
10.0			CEMENT/ BENTONTIE GROUT	5SS		49	0.1
	SW-SAND, some fine to medium gravel, very dense, well graded, medium to coarse grained, brown, no odor	.01		6SS		51	0.2
12.5				7SS		108	0.2
15.0	END OF HOLE @ 15ft BGS	-3.99					
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-1C
DATE COMPLETED: MAY 31, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	11.13					
	Asphalt	10.83					
	FILL, gravel	10.13					
2.5	SM-SAND, some fine to medium gravel, medium dense, medium to coarse grained, brown			1SS		23	0.3
				2SS		11	0.5
5.0			8" Ø BOREHOLE	3SS		7	0.4
7.5				4SS		15	0.2
10.0			CEMENT/ BENTONTIE GROUT	5SS		31	0.2
	SW-SAND, some medium gravel, very dense, medium to coarse grained, brown	.13		6SS		72	0.3
12.5				7SS		73	0.1
15.0	END OF HOLE @ 15ft BGS	-3.87					
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

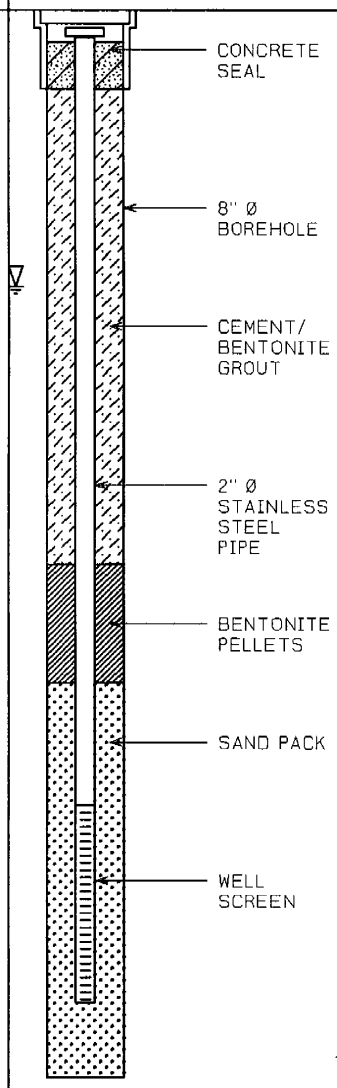
STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(CL-07)
Page 1 of 1

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-2/CRA2D-95
DATE COMPLETED: MAY 16, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*11.03* *10.68*					
	Asphalt	*10.73*					
	FILL, gravel	*10.03*					
-2.5	SP-SAND, medium dense, poorly graded, fine to medium grained, brown, dry			1SS		13	0.3
				2SS		12	0.4
-5.0	SW-SAND, trace fine gravel, very dense, well graded, medium to coarse gained, brown, wet	*6.03*		3SS		26	0.7
-7.5				4SS		34	0.5
-10.0	- spilt spoon not attempted due to rocks			5ST		NA	NA
-12.5				6SS		66	0.8
-15.0	- gravel increases in size (medium to coarse)			7SS		36	3.5
-17.5				8SS		27	3.1
-20.0				9SS		20	2.7
-22.5				10SS		49	3.1
-25.0				11SS		62	3.0
				12SS		NA	NA
-27.5	END OF HOLE @ 27ft BGS Notes: NA - not applicable	*-15.97*					
-30.0							
-32.5							



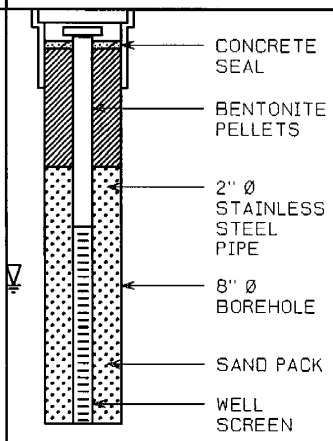
SCREEN DETAILS
Screened interval:
20.1 to 25.1ft BGS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
17 to 27ft BGS
Material: No. 1 Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: CRA2S-95
DATE COMPLETED: MAY 17, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*11.05* *10.68*					
	For stratigraphic details, please refer to SB-2.						
2.5							
5.0							
7.5							
10.0	END OF HOLE @ 10.5ft BGS	.55					
12.5			SCREEN DETAILS Screened interval: 5.5 to 10.5ft BGS Length: 5ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack: 4 to 10.5ft BGS Material: No. 1 Sand				
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-3
DATE COMPLETED: MAY 12, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	10.18					
	Concrete	9.68					
-2.5	SM-SAND, some silt, trace fine gravel, well graded, fine grained, brown, strong chemical odor		CEMENT/ BENTONITE GROUT	1SS		8	130
			8" Ø BOREHOLE	2SS		11	216
	END OF HOLE @ 4.2ft BGS	5.98					
-5.0							
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-3A
DATE COMPLETED: MAY 13, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	11.08					
	Concrete	10.58					
	SM-SAND, some silt, trace fine gravel, well graded, fine grained, brown		CEMENT/ BENTONITE GROUT	1SS		27	3.1
2.5			8" Ø BOREHOLE	2SS		28	6.5
5.0	END OF HOLE @ 5ft BGS	6.08					
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-4
DATE COMPLETED: MAY 13, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	11.51					
	Concrete						
	SM-SAND, some silt, trace fine gravel, dense, fine grained, brown	10.01					
2.5			CEMENT/ BENTONITE GROUT	1SS		24	18.1
5.0				2SS		16	45
			8" Ø BOREHOLE	3SS		25	27
7.5	END OF HOLE @ 7.5ft BGS	4.01					
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-4A
DATE COMPLETED: MAY 25, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	11.19					
	Asphalt	10.89					
	FILL, gravel	10.19					
-2.5	SP-SAND, medium dense, poorly graded, fine to medium grained, gray		CEMENT/ BENTONITE GROUT	1SS		21	0.1
-5.0				2SS		73	0.1
			8" Ø BOREHOLE	3SS		50+	0.1
-7.5	END OF HOLE @ 7ft BGS	4.19					
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-5
DATE COMPLETED: MAY 12, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	9.26					
	SM-SAND, some silt, medium dense, fine to medium grained, brown, damp		CEMENT/ BENTONITE GROUT	1SS		20	0.8
2.5			8" Ø BOREHOLE	2SS		43	63.2
	END OF HOLE @ 4ft BGS	5.26					
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-5A
DATE COMPLETED: MAY 14, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

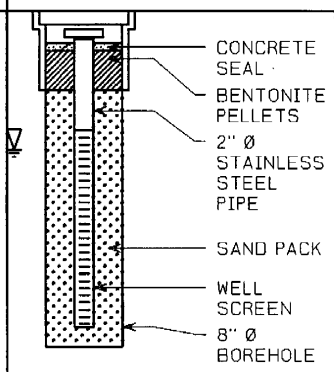
DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	11.03					
	Concrete	10.53					
	SP-SAND, dense, poorly graded, fine grained, brown, dry	9.03		1SS		13	16.3
2.5	SM-SAND, some silt, trace fine gravel, fine grained, brown		CEMENT/ BENTONITE GROUT	2SS		12	28
5.0	SP-SAND, dense, poorly graded, fine to medium grained, brown	6.03	8" Ø BOREHOLE	3SS		17	95
7.5	END OF HOLE @ 7ft BGS	4.03					
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: CRA3-95
DATE COMPLETED: MAY 17, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*7.90* *7.43*					
	For stratigraphic details, please refer to SB-6			1SS		6	10.8
2.5				2SS		12	15.1
5.0							
7.5							
	END OF HOLE @ 8.5ft BGS	*-.60*					
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

SCREEN DETAILS
Screened interval:
3 to 8ft BGS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
2 to 8.5ft BGS
Material: No. 1 Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

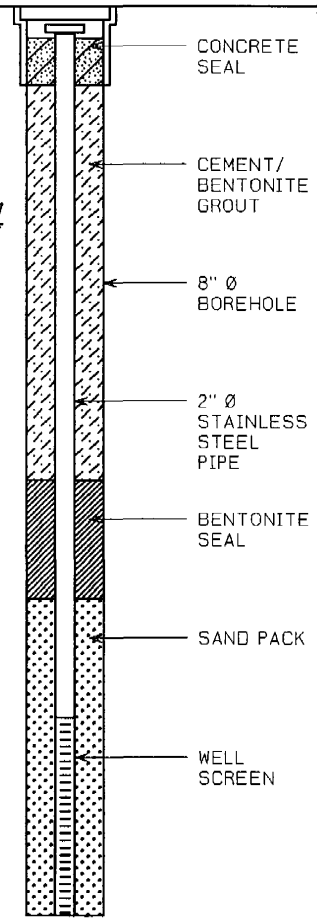
STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-7/CRA4D-95
DATE COMPLETED: MAY 23, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*8.63* *8.32*
	Asphalt	*8.33*
	FILL, gravel	*7.63*
-2.5	SP-SAND, medium dense to loose, poorly graded, fine grained, gray, dry	
-5.0	SW-SAND, trace fine to medium gravel, dense, well graded, fine to medium, grained, gray, wet	*3.63*
-7.5	GW-GRAVEL, some fine to medium sand, medium dense, well graded, fine to coarse grained, angular, gray, wet	*.63*
-10.0		
-12.5		
-15.0		
-17.5	SW-SAND, some fine gravel, medium dense, well graded, medium to coarse grained, brown, wet	*-8.37*
-20.0		
-22.5	END OF HOLE @ 23ft BGS Notes: NA - not applicable	*-14.37*
-25.0		
-27.5		
-30.0		
-32.5		

MONITOR INSTALLATION



SCREEN DETAILS
Screened interval:
18 to 23ft BGS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
15 to 23ft BGS
Material: No. 1 Sand

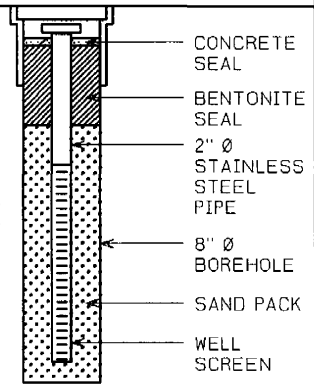
SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		11	75
2SS		6	162
3SS		26	105
4SS		30	NA
5SS		31	102
6SS		42	42
7SS		50+	35
8SS		21	51
9SS		21	43
10SS		22	35
11SS		65	NA

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: CRA4S-95
DATE COMPLETED: MAY 23, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*8.72* *8.34*					
	For stratigraphic details, please refer to SB-7						
2.5							
5.0							
7.5							
10.0	END OF HOLE @ 9.5ft BGS	*-.78*	SCREEN DETAILS Screened interval: 4 to 9ft BGS Length: 5ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack: 3 to 9.5ft BGS Material: No. 1 Sand				
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

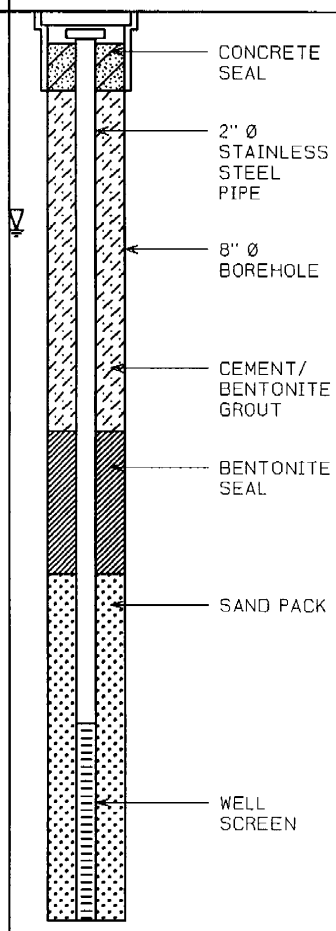
STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-8/CRA5D-95
DATE COMPLETED: MAY 24, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*9.54* *9.23*
	Asphalt	*9.24*
	FILL, gravel	*8.54*
2.5	SP-SAND, medium dense, poorly graded, fine grained, brown-gray, trace small plastic chips	
5.0		
	- 2" silt/clay seam	
7.5		
	SM-SILT, some fine sand, very stiff, gray, saturated	*.44*
10.0		
12.5	SW-SAND, trace fine to medium gravel, dense, well graded, medium grained, brown-gray mottled, some black staining	*-2.96*
15.0		
17.5		
	SP-SAND, very dense, poorly graded, gray, wet	*-9.46*
20.0		
	SW-SAND, trace fine gravel, dense, well graded, medium to coarse grained, gray	*-11.46*
22.5		
	END OF HOLE @ 23ft BGS Notes: NA - not applicable	*-13.46*
25.0		
27.5		
30.0		
32.5		

MONITOR INSTALLATION



SCREEN DETAILS
Screened interval:
18 to 23ft BGS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
14.2 to 23ft BGS
Material: No. 1 Sand

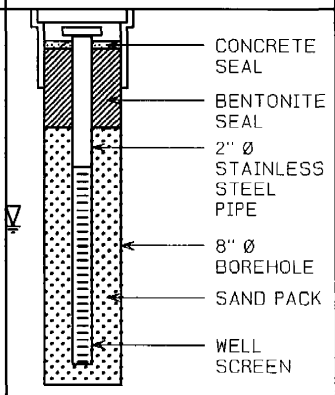
SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		18	14.2
2SS		10	51
3SS		7	25
4SS		11	NA
5SS		18	110
6SS		50+	49
7SS		65	18
8SS		35	49
9SS		50+	40
10SS		53	16.2
11SS		44	NA

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: CRA5S-95
DATE COMPLETED: MAY 24, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*9.56* *9.20*					
	For stratigraphic detail, please refer to SB-8						
2.5							
5.0							
7.5							
10.0	END OF HOLE @ 9.5BGS	*.06*					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

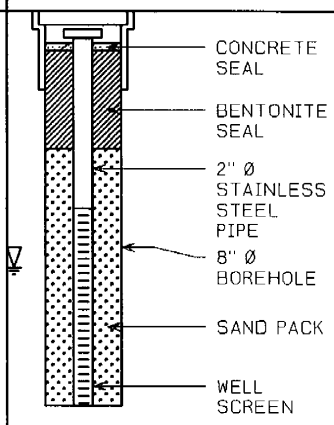
SCREEN DETAILS
Screened interval:
4 to 9ft BGS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
3 to 9.5ft BGS
Material: No. 1 Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-9A/CRA6S-95
DATE COMPLETED: MAY 22, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*10.03* *9.73*					
	Asphalt	*9.73*					
	FILL, gravel	*9.03*					
2.5	SM-SAND, some silt, medium dense, fine grained, gray, dry	*7.03*		1SS		40	130
	SP-SAND, medium dense to loose, poorly graded, brown			2SS		14	143
5.0				3SS		3	160
7.5				4SS		5	81
10.0				5SS		5	70
	END OF HOLE @ 11ft BGS	*-.97*					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

SCREEN DETAILS
Screened interval:
5 to 10ft BGS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
3.5 to 10ft BGS
Material: No. 1 Sand

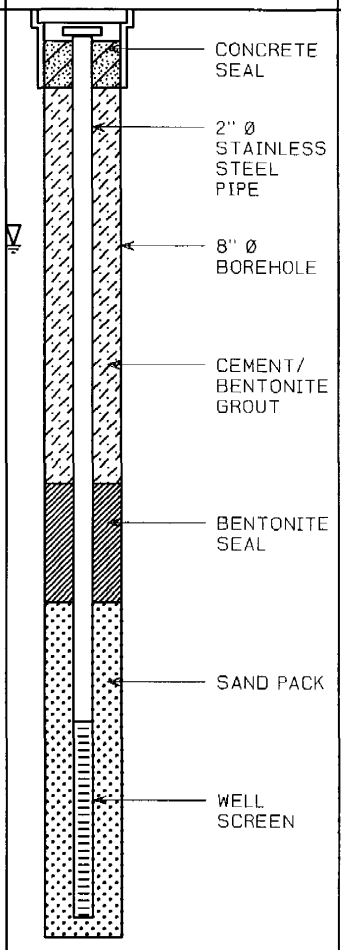
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: CRA6D-95
DATE COMPLETED: MAY 22, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*9.91* *9.49*					
	For stratigraphic detail, please refer to SB-9						
2.5							
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
	END OF HOLE @ 23.5BGS	*-13.59*					
25.0							
27.5							
30.0							
32.5							



SCREEN DETAILS
Screened interval:
18 to 23ft BGS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
15 to 23.5ft BGS
Material: No. 1 Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-10
DATE COMPLETED: MAY 12, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	11.64					
	Concrete						
	SM-SAND, some silt, trace fine gravel, very dense	10.64	CEMENT/ BENTONITE GROUT	1SS		57	0
2.5	- Auger refusal	8.64	8" Ø BOREHOLE	2SS		100+	NR
	END OF HOLE @ 3ft BGS						
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

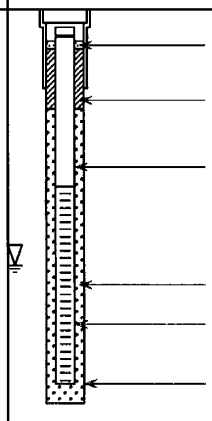
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-11/CRA7-95
DATE COMPLETED: MAY 23, 1995
DRILLING METHOD: 4" TRICONE
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*11.65* *11.36*					
	Concrete	*11.15*					
2.5	SM-SAND, some silt, trace fine gravel, extremely dense, well graded, fine grained, brown, dry - 6" GW-GRAVEL seam, some coarse sand	*9.15*		1SS		69	0
5.0	SP-SAND, extremly dense, poorly graded, fine grained, brown			2SS		200	0
				3SS		NA	0
7.5				4SS		NA	0
10.0	END OF HOLE @ 9.5ft BGS NOTES: NA - not applicable, used 300 lb. hammer.	*2.15*					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							



SCREEN DETAILS
Screened interval:
4.5 to 9.5ft BGS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
2.5 to 10ft BGS
Material: No. 1 Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-12
DATE COMPLETED: MAY 25, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	11.28					
	Concrete	10.28					
	SP-SAND, medium dense, poorly graded, fine to medium grained, brown-red, dry			1SS		14	0.2
2.5			CEMENT/ BENTONITE GROUT	2SS		14	0.1
5.0			8" Ø BOREHOLE	3SS		20	0.2
7.5	– interbedded less than 1" lenses of SW-SAND and trace fine gravel			4SS		26	0.1
	END OF HOLE @ 9ft BGS	2.28					
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

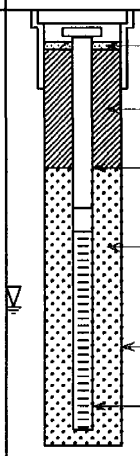
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-13/CRA8-95
DATE COMPLETED: MAY 25, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE REFERENCE POINT (Top of Riser)	*12.77* *12.26*					
	Asphalt	*12.47*					
	FILL, gravel	*11.77*					
-2.5	SP-SAND, medium dense to loose, poorly graded, fine to medium grained, brown, dry		CONCRETE SEAL BENTONITE SEAL	1SS		9	0.1
-5.0			2" Ø STAINLESS STEEL PIPE	2SS		4	0.1
-7.5			SAND PACK	3SS		9	0.2
				4SS		14	0.2
	GW-GRAVEL, little medium to fine sand, medium to coarse grained, rounded-unlike other gravel on Site, brown, wet	*3.77*	8" Ø BOREHOLE				
-10.0			WELL SCREEN	5SS		16	0.1
	END OF HOLE @ 11ft BGS	*1.77*					
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							



SCREEN DETAILS
Screened interval:
5.6 to 10.6ft BGS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
4 to 11ft BGS
Material: No. 1 Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SYNTHETIC PRODUCTS
PROJECT NUMBER: 3627
CLIENT: KRAFT FOODS
LOCATION: STRATFORD, CONNECTICUT

HOLE DESIGNATION: SB-13A
DATE COMPLETED: MAY 31, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: J. HARGENS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	12.62					
	Asphalt	12.32					
	FILL, gravel	11.62					
2.5	SP-SAND, loose, poorly graded, fine to medium grained, brown			1SS		2	0.8
5.0			8" Ø BOREHOLE	2SS		1	0.6
				3SS		1	0.6
7.5				4SS		3	0.4
10.0	GW-GRAVEL, some coarse sand, medium dense, well graded, fine to medium grained, rounded, brown, wet	2.62	CEMENT/ BENTONITE GROUT	5SS		13	NR
12.5				6SS		10	0.8
	END OF HOLE @ 13ft BGS Notes: NR - no recovery	-.38					
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

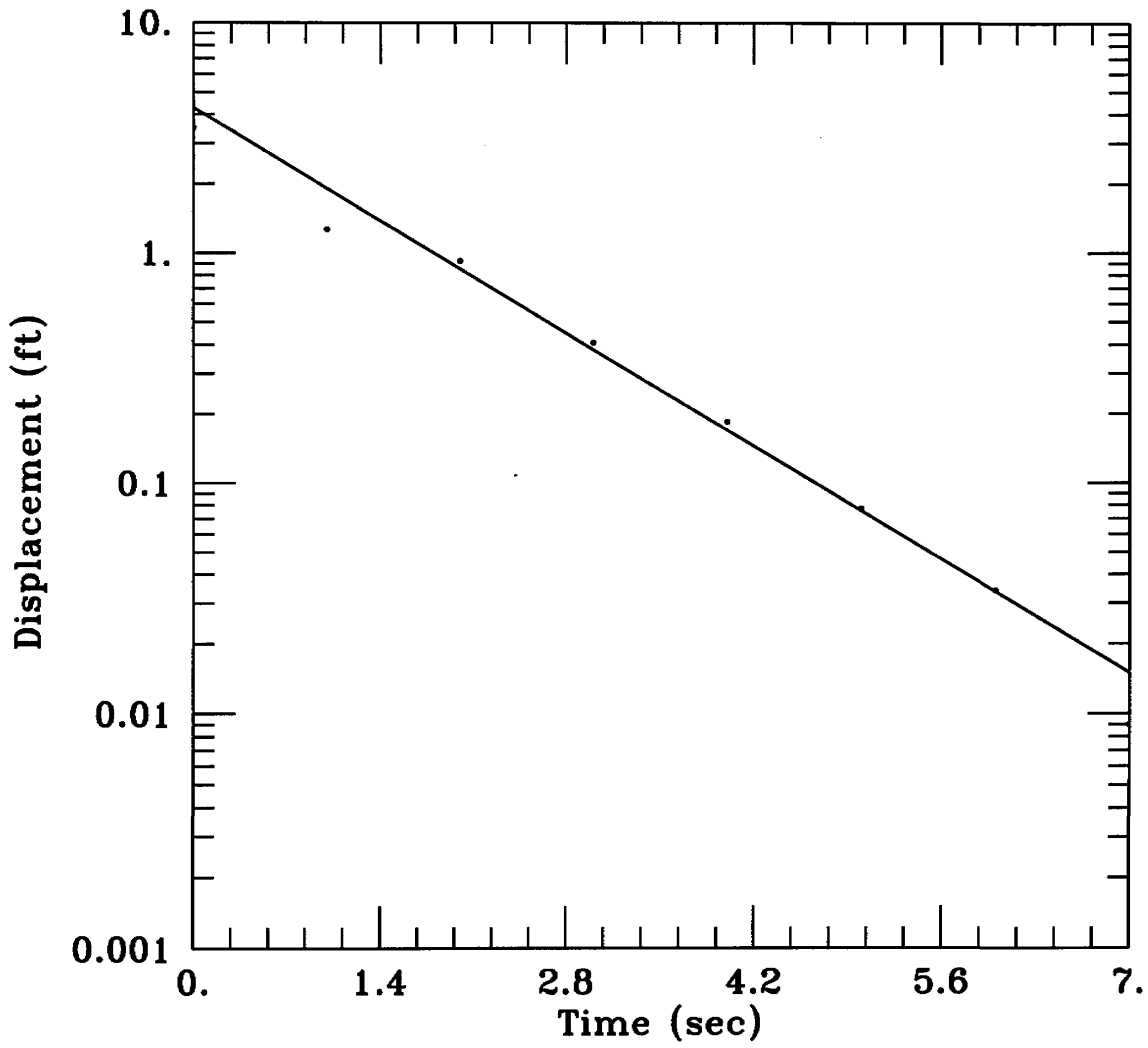
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭ GEOTECHNICAL ANALYSIS ▭

APPENDIX B

HYDRAULIC RESPONSE TEST DATA

Client: **Kraft**	Company: **Conestaga-Rovers & Associates**
Location: **Stratford**	Project: **3627**

CRA-4D Rising Head Test



DATA SET:
CRA-4D1.DAT
06/23/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

PROJECT DATA:
test date: 06/15/95
test well: CRA-4D
obs. well: CRA-4D

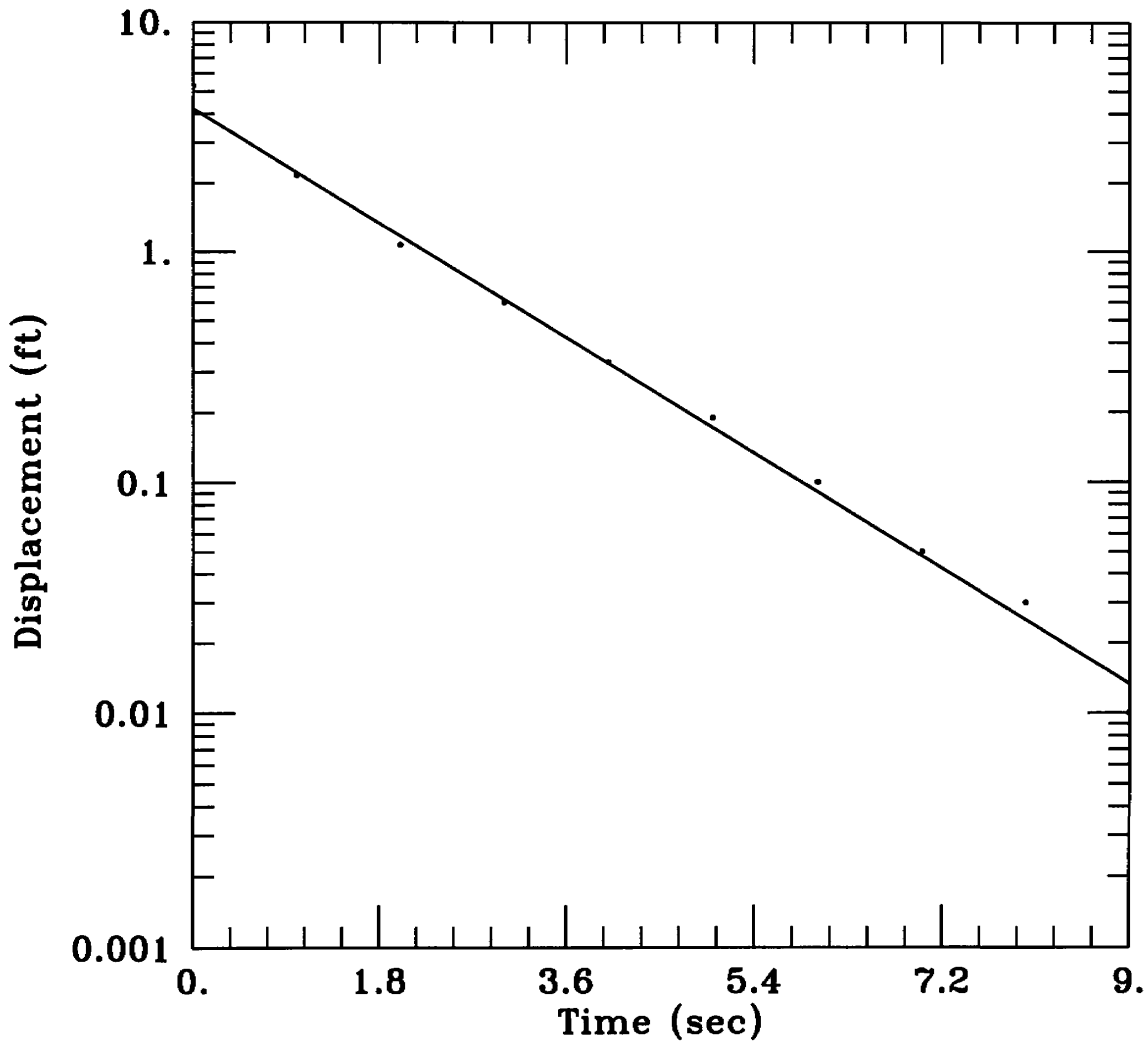
TEST DATA:
H0 = 3.5 ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 40. ft
H = 18. ft

PARAMETER ESTIMATES:
K = 0.0006745 ft/sec
y0 = 4.278 ft

AQTESOLV

Client: **Kraft**	Company: **Conestaga-Rovers & Associates**
Location: **Stratford**	Project: **3627**

CRA-4D Rising Head Test



DATA SET:
CRA-4D1B.DAT
06/23/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

PROJECT DATA:
test date: 06/15/95
test well: CRA-4D
obs. well: CRA-4D

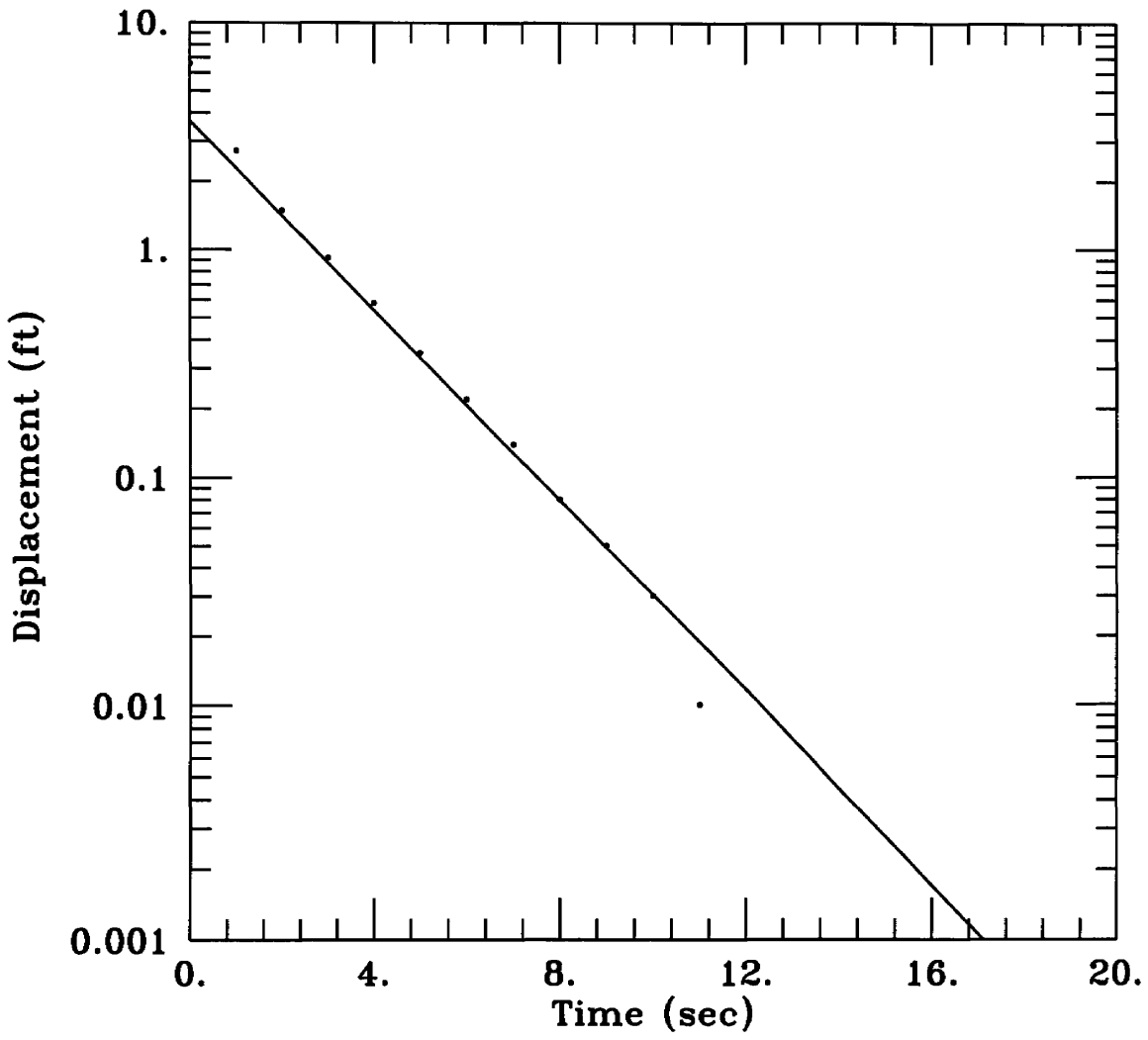
TEST DATA:
H0 = 5.3 ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 40. ft
H = 18. ft

PARAMETER ESTIMATES:
K = 0.0005341 ft/sec
y0 = 4.21 ft

AQTESOLV

Client: **Kraft**	Company: **Conestaga-Rovers & Associates**
Location: **Stratford**	Project: **3627**

CRA-4D Rising Head Test



DATA SET:
CRA-4D1A.DAT
06/23/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

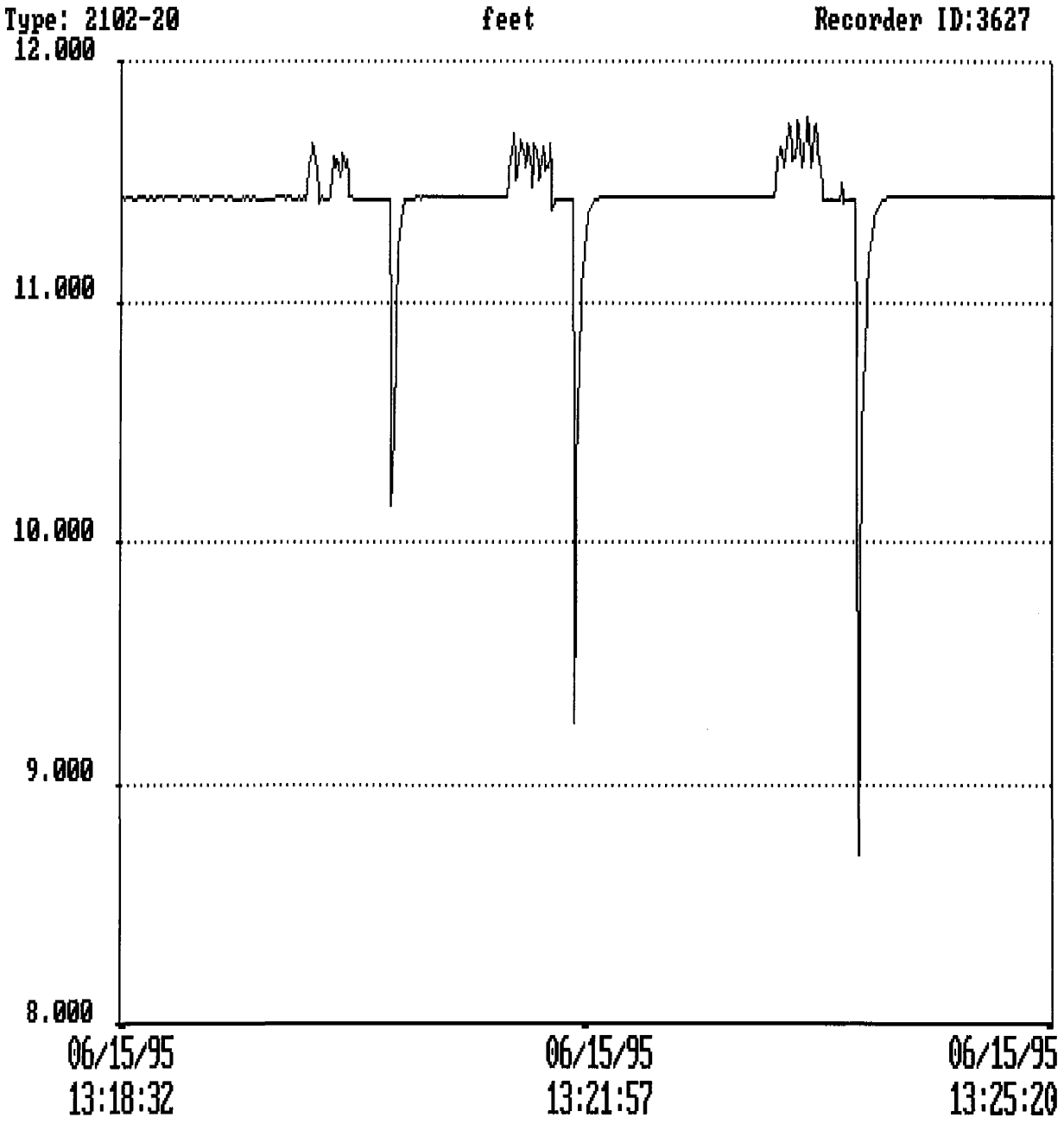
PROJECT DATA:
test date: 06/15/95
test well: CRA-4D
obs. well: CRA-4D

TEST DATA:
H0 = 6.6 ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 40. ft
H = 18. ft

PARAMETER ESTIMATES:
K = 0.0004007 ft/sec
y0 = 3.678 ft

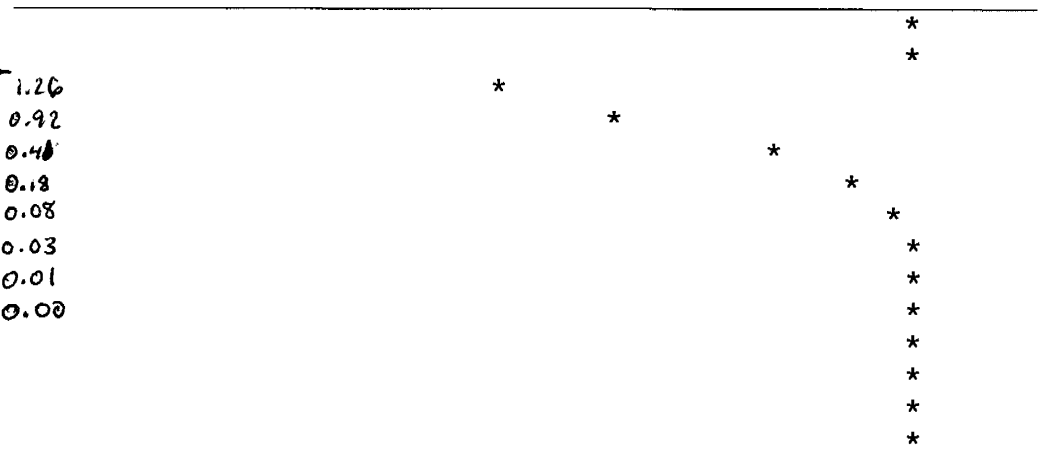
AQTESOLV

CRA-4D


Type: 2102-20
feet
Recorder ID:3627
12.000
11.000
10.000
9.000
8.000
06/15/95
13:18:32
06/15/95
13:21:57
06/15/95
13:25:20

Output compressed by a factor of 1

Date	Time	Avg	
06/15/95	13:20:29	11.424	
06/15/95	13:20:30	11.424	
06/15/95	13:20:31	10.158	1.26
06/15/95	13:20:32	10.504	0.92
06/15/95	13:20:33	11.017	0.40
06/15/95	13:20:34	11.240	0.18
06/15/95	13:20:35	11.347	0.08
06/15/95	13:20:36	11.390	0.03
06/15/95	13:20:37	11.415	0.01
06/15/95	13:20:38	11.424	0.00
06/15/95	13:20:39	11.424	
06/15/95	13:20:40	11.424	
06/15/95	13:20:41	11.424	
06/15/95	13:20:42	11.428	



CRA-4D Run#1

Static → 11.424

Saved Recorder Status

Type: 2102e-20 Range:-2.392 - 15.089 feet Recorder ID: 3627

Time at Recorder: 06/15/95 13:25:21 Last Update: 05/24/95 10:13:45

Signal process: No Processing Accum: Not Scaled

Values being saved: averages

Alarm status: Low alarm @ 1.167 is OFF Upper alarm @ 15.059 is OFF

Nbr of Events: Alarm recording is not enabled

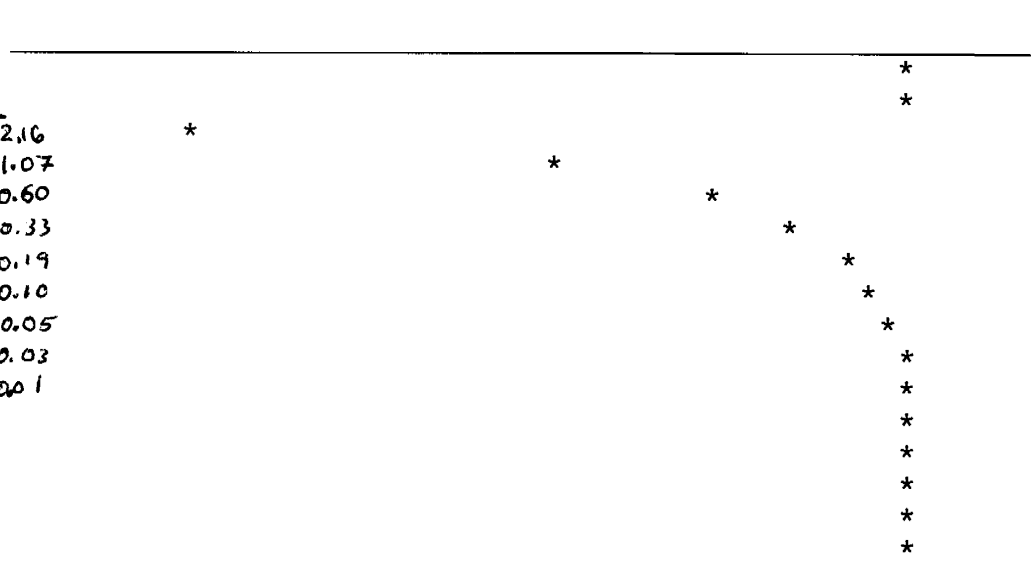
Averaging period: 00:00:01 Amount of data recorded: 00:06:49

Sample Rate: 00:00:01 Excitation time (msec): 015

Storage Capacity: 21330 values records: 05:55:30

Output compressed by a factor of 1

Date	Time	Avg	
06/15/95	13:21:50	11.419	
06/15/95	13:21:51	11.419	
06/15/95	13:21:52	9.255	2.16
06/15/95	13:21:53	10.346	1.07
06/15/95	13:21:54	10.821	0.60
06/15/95	13:21:55	11.082	0.33
06/15/95	13:21:56	11.231	0.19
06/15/95	13:21:57	11.317	0.10
06/15/95	13:21:58	11.368	0.05
06/15/95	13:21:59	11.394	0.03
06/15/95	13:22:00	11.407	0.01
06/15/95	13:22:01	11.415	
06/15/95	13:22:02	11.424	
06/15/95	13:22:03	11.428	
06/15/95	13:22:04	11.428	
06/15/95	13:22:05	11.428	



CRA-4D Run #2

Static → 11.419

Saved Recorder Status

Type: 2102e-20 Range:-2.392 - 15.089 feet Recorder ID: 3627

Time at Recorder: 06/15/95 13:25:21 Last Update: 05/24/95 10:13:45

Signal process: No Processing Accum: Not Scaled

Values being saved: averages

Alarm status: Low alarm @ 1.167 is OFF Upper alarm @ 15.059 is OFF

Nbr of Events: Alarm recording is not enabled

Averaging period: 00:00:01 Amount of data recorded: 00:06:49

Sample Rate: 00:00:01 Excitation time (msec): 015

Storage Capacity: 21330 values records: 05:55:30

Output compressed by a factor of 1

Date	Time	Avg	
06/15/95	13:23:53	11.424	
06/15/95	13:23:54	11.424	
06/15/95	13:23:55	11.424	
06/15/95	13:23:56	8.708	*2.71
06/15/95	13:23:57	9.931	1.49
06/15/95	13:23:58	10.500	0.92
06/15/95	13:23:59	10.842	0.58
06/15/95	13:24:00	11.069	0.35
06/15/95	13:24:01	11.201	0.22
06/15/95	13:24:02	11.287	0.14
06/15/95	13:24:03	11.347	0.08
06/15/95	13:24:04	11.377	0.05
06/15/95	13:24:05	11.398	0.03
06/15/95	13:24:06	11.411	0.01
06/15/95	13:24:07	11.419	
06/15/95	13:24:08	11.424	
06/15/95	13:24:09	11.428	
06/15/95	13:24:10	11.428	
06/15/95	13:24:11	11.432	

CR A-4D - Run # 3

static → 11.424

Saved Recorder Status

Type: 2102e-20 Range:-2.392 - 15.089 feet Recorder ID: 3627

Time at Recorder: 06/15/95 13:25:21 Last Update: 05/24/95 10:13:45

Signal process: No Processing Accum: Not Scaled

Values being saved: averages

Alarm status: Low alarm @ 1.167 is OFF Upper alarm @ 15.059 is OFF

Nbr of Events: Alarm recording is not enabled

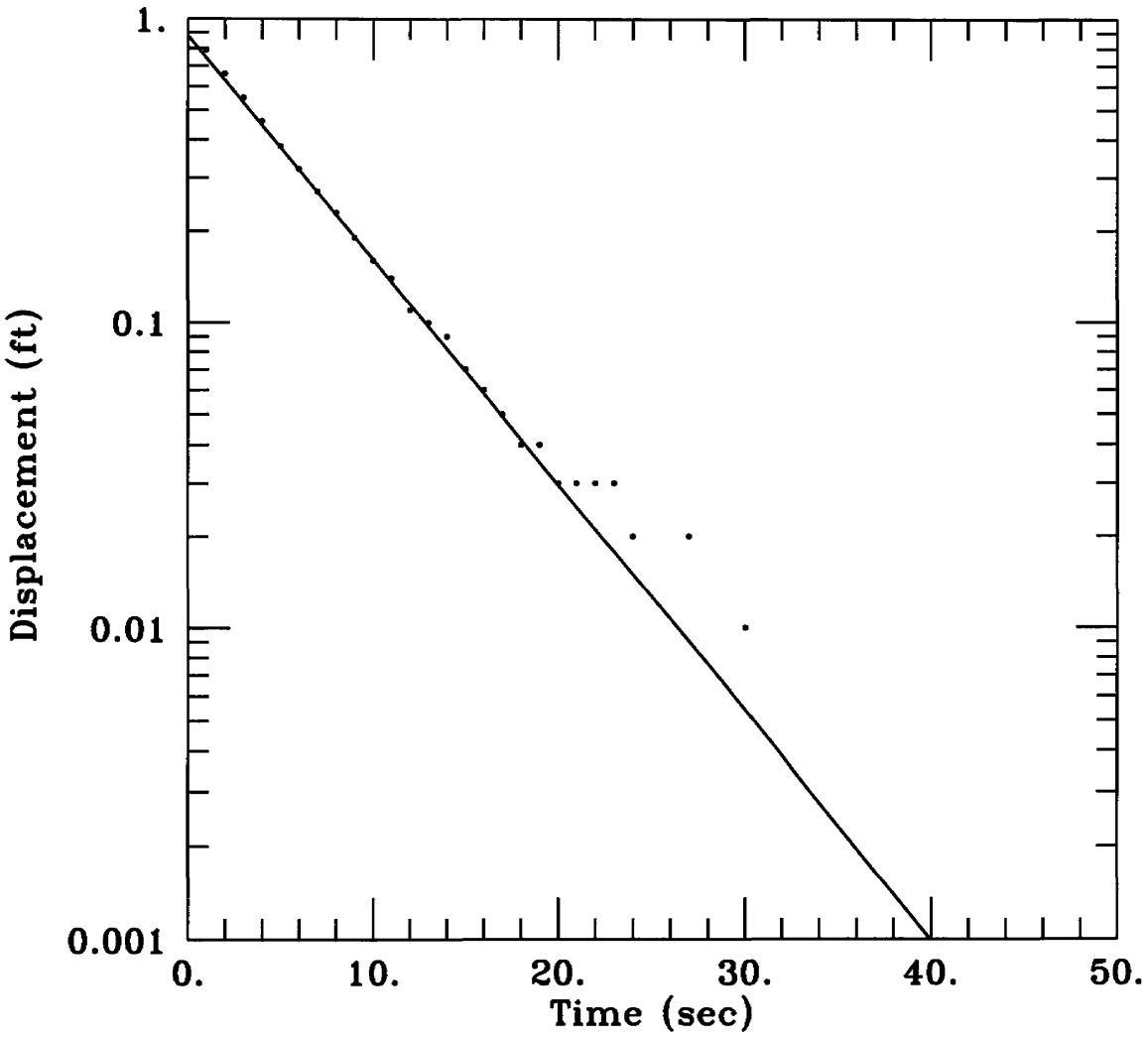
Averaging period: 00:00:01 Amount of data recorded: 00:06:49

Sample Rate: 00:00:01 Excitation time (msec): 015

Storage Capacity: 21330 values records: 05:55:30

Client: **Kraft**	Company: **Conestoga-Rovers & Associates**
Location: **Stratford**	Project: **3627**

CRA-4S Rising Head Test



DATA SET:
CRA-4S1A.DAT
06/23/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

PROJECT DATA:
test date: 06/15/95
test well: CRA-4S
obs. well: CRA-4S

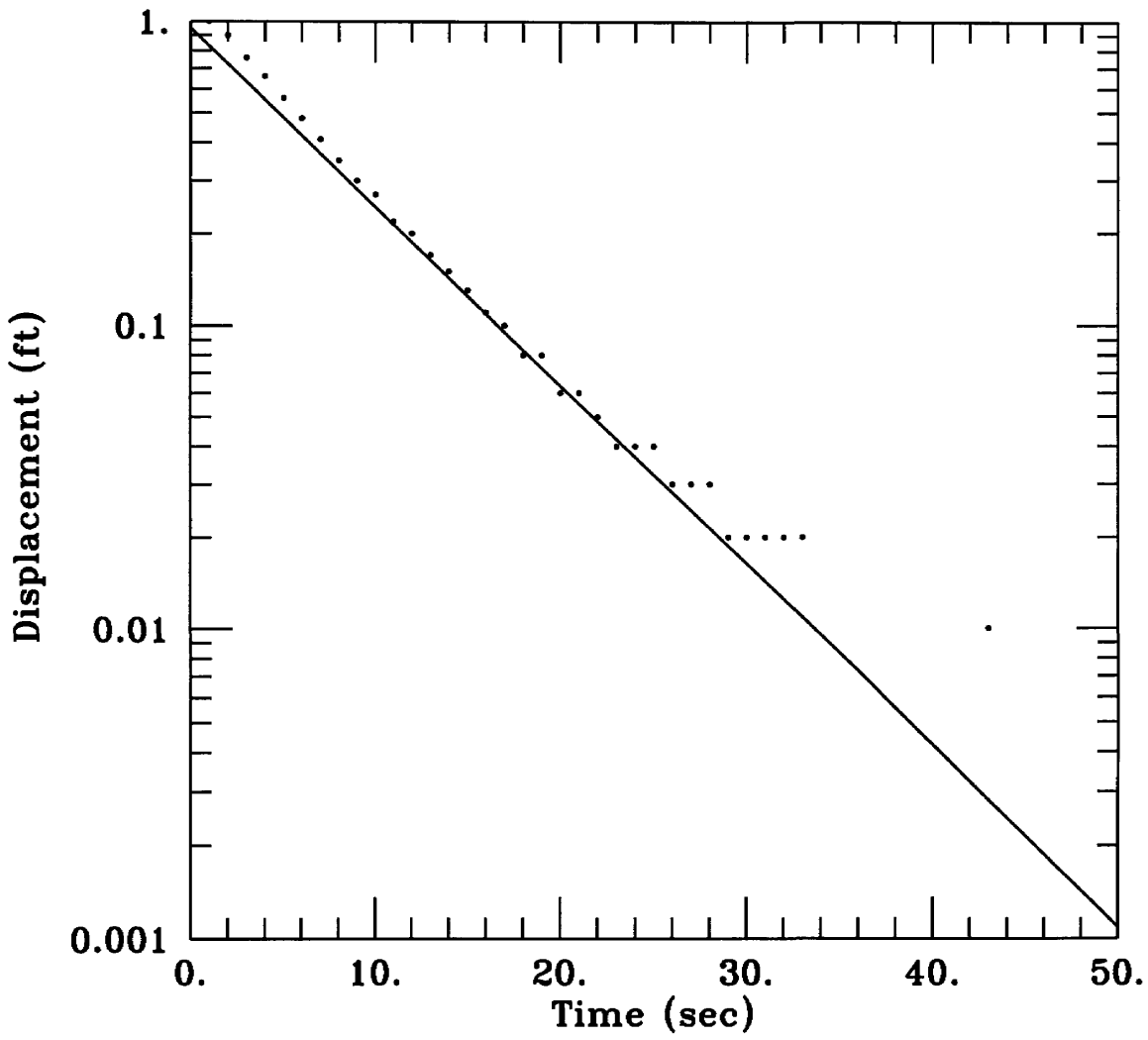
TEST DATA:
H0 = 0.8 ft
rc = 0.333 ft
rw = 0.333 ft
L = 3.69 ft
b = 40. ft
H = 3.69 ft

PARAMETER ESTIMATES:
K = 0.00342 ft/sec
y0 = 0.8809 ft

AQTESOLV

Client: **Kraft**	Company: **Conestoga-Rovers & Associates**
Location: **Stratford**	Project: **3627**

CRA-4S Rising Head Test



DATA SET:
CRA-4S1.DAT
06/23/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

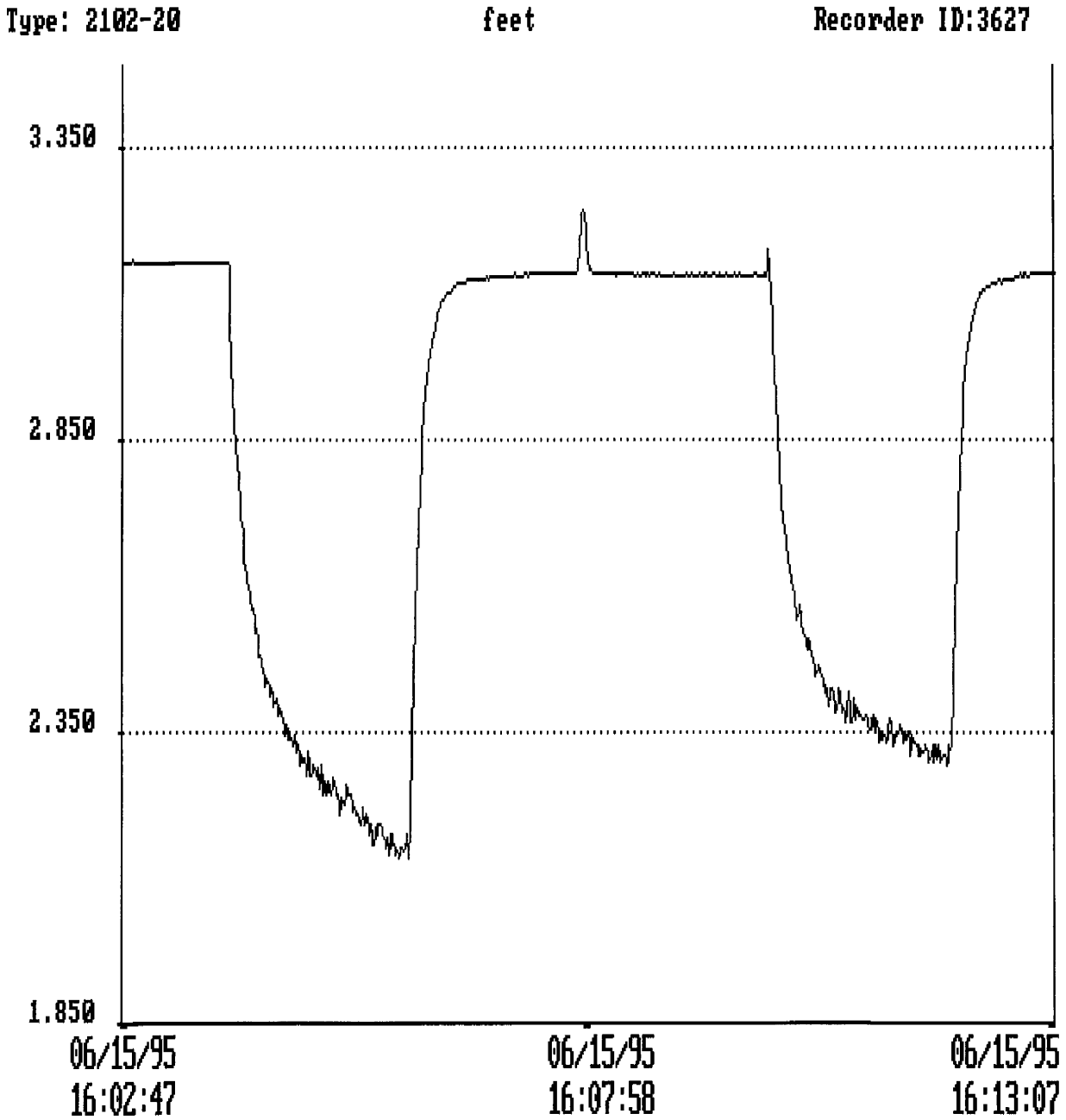
PROJECT DATA:
test date: 06/15/95
test well: CRA-4S
obs. well: CRA-4S

TEST DATA:
H0 = 1. ft
rc = 0.333 ft
rw = 0.333 ft
L = 3.69 ft
b = 40. ft
H = 3.69 ft

PARAMETER ESTIMATES:
K = 0.002729 ft/sec
y0 = 0.95 ft

AQTESOLV

CRA-4S


Type: 2102-20
feet
Recorder ID:3627
3.350
2.850
2.350
1.850
06/15/95
16:02:47
06/15/95
16:07:58
06/15/95
16:13:07

CRA-4S Run # 1

Output compressed by a factor of 1

static → 3.139

Date	Time	Avg	
06/15/95	16:05:59	2.133	1.00
06/15/95	16:06:00	2.236	0.80
06/15/95	16:06:01	2.369	0.76
06/15/95	16:06:02	2.476	0.66
06/15/95	16:06:03	2.574	0.56
06/15/95	16:06:04	2.651	0.48
06/15/95	16:06:05	2.719	0.41
06/15/95	16:06:06	2.779	0.35
06/15/95	16:06:07	2.831	0.30
06/15/95	16:06:08	2.869	0.27
06/15/95	16:06:09	2.912	0.22
06/15/95	16:06:10	2.938	0.20
06/15/95	16:06:11	2.963	0.17
06/15/95	16:06:12	2.989	0.15
06/15/95	16:06:13	3.006	0.13
06/15/95	16:06:14	3.023	0.11
06/15/95	16:06:15	3.036	0.10
06/15/95	16:06:16	3.049	0.08
06/15/95	16:06:17	3.057	0.08
06/15/95	16:06:18	3.070	0.06
06/15/95	16:06:19	3.074	0.06
06/15/95	16:06:20	3.083	0.05
06/15/95	16:06:21	3.092	0.04
06/15/95	16:06:22	3.092	0.04
06/15/95	16:06:23	3.096	0.04
06/15/95	16:06:24	3.100	0.03
06/15/95	16:06:25	3.104	0.03
06/15/95	16:06:26	3.104	0.03
06/15/95	16:06:27	3.109	0.02
06/15/95	16:06:28	3.109	0.02
06/15/95	16:06:29	3.113	0.02
06/15/95	16:06:30	3.113	0.02
06/15/95	16:06:31	3.117	0.02
06/15/95	16:06:32	3.117	
06/15/95	16:06:33	3.117	
06/15/95	16:06:34	3.122	
06/15/95	16:06:35	3.122	
06/15/95	16:06:36	3.122	
06/15/95	16:06:37	3.126	
06/15/95	16:06:38	3.126	
06/15/95	16:06:39	3.126	
06/15/95	16:06:40	3.126	
06/15/95	16:06:41	3.126	0.01
06/15/95	16:06:42	3.126	
06/15/95	16:06:43	3.126	
06/15/95	16:06:44	3.126	
06/15/95	16:06:45	3.126	
06/15/95	16:06:46	3.126	
06/15/95	16:06:47	3.126	
06/15/95	16:06:48	3.126	
06/15/95	16:06:49	3.126	
06/15/95	16:06:50	3.126	
06/15/95	16:06:51	3.130	
06/15/95	16:06:52	3.126	
06/15/95	16:06:53	3.130	
06/15/95	16:06:54	3.130	
06/15/95	16:06:55	3.130	

06/15/95	16:06:56	3.130	*
06/15/95	16:06:57	3.130	*
06/15/95	16:06:58	3.130	*
06/15/95	16:06:59	3.130	*
06/15/95	16:07:00	3.130	*
06/15/95	16:07:01	3.130	*
06/15/95	16:07:02	3.130	*
06/15/95	16:07:03	3.130	*
06/15/95	16:07:04	3.130	*
06/15/95	16:07:05	3.130	*
06/15/95	16:07:06	3.130	*
06/15/95	16:07:07	3.130	*
06/15/95	16:07:08	3.130	*
06/15/95	16:07:09	3.130	*
06/15/95	16:07:10	3.134	*
06/15/95	16:07:11	3.130	*
06/15/95	16:07:12	3.130	*
06/15/95	16:07:13	3.130	*
06/15/95	16:07:14	3.130	*
06/15/95	16:07:15	3.130	*
06/15/95	16:07:16	3.134	*
06/15/95	16:07:17	3.134	*
06/15/95	16:07:18	3.139	*
06/15/95	16:07:19	3.130	*
06/15/95	16:07:20	3.134	*
06/15/95	16:07:21	3.134	*
06/15/95	16:07:22	3.134	*

Saved Recorder Status

Type: 2102e-20 Range:-2.392 - 15.089 feet Recorder ID: 3627

Time at Recorder: 06/15/95 16:13:08 Last Update: 05/24/95 10:13:45

Signal process: No Processing Accum: Not Scaled

Values being saved: averages

Alarm status: Low alarm @ 1.167 is OFF Upper alarm @ 15.059 is OFF

Nbr of Events: Alarm recording is not enabled

Averaging period: 00:00:01 Amount of data recorded: 00:10:21

Sample Rate: 00:00:01 Excitation time (msec): 015

Storage Capacity: 21330 values records: 05:55:30

CRA-4S Run #2

Output compressed by a factor of 1

Static 3.134

Date	Time	Avg	
06/15/95	16:11:57	2.309	
06/15/95	16:11:58	2.326	
06/15/95	16:11:59	2.322	
06/15/95	16:12:00	2.343	0.79
06/15/95	16:12:01	2.471	0.66
06/15/95	16:12:02	2.583	0.55
06/15/95	16:12:03	2.677	0.46
06/15/95	16:12:04	2.749	0.38
06/15/95	16:12:05	2.809	0.32
06/15/95	16:12:06	2.865	0.27
06/15/95	16:12:07	2.908	0.23
06/15/95	16:12:08	2.942	0.19
06/15/95	16:12:09	2.972	0.16
06/15/95	16:12:10	2.997	0.14
06/15/95	16:12:11	3.019	0.11
06/15/95	16:12:12	3.036	0.10
06/15/95	16:12:13	3.049	0.09
06/15/95	16:12:14	3.062	0.07
06/15/95	16:12:15	3.074	0.06
06/15/95	16:12:16	3.083	0.05
06/15/95	16:12:17	3.092	0.04
06/15/95	16:12:18	3.092	0.04
06/15/95	16:12:19	3.100	0.03
06/15/95	16:12:20	3.100	0.03
06/15/95	16:12:21	3.109	0.03
06/15/95	16:12:22	3.109	0.03
06/15/95	16:12:23	3.113	0.02
06/15/95	16:12:24	3.113	
06/15/95	16:12:25	3.113	
06/15/95	16:12:26	3.117	0.02
06/15/95	16:12:27	3.122	
06/15/95	16:12:28	3.122	
06/15/95	16:12:29	3.122	0.01
06/15/95	16:12:30	3.122	
06/15/95	16:12:31	3.126	
06/15/95	16:12:32	3.126	
06/15/95	16:12:33	3.122	
06/15/95	16:12:34	3.126	
06/15/95	16:12:35	3.126	
06/15/95	16:12:36	3.126	
06/15/95	16:12:37	3.126	
06/15/95	16:12:38	3.126	
06/15/95	16:12:39	3.126	
06/15/95	16:12:40	3.126	
06/15/95	16:12:41	3.126	
06/15/95	16:12:42	3.130	
06/15/95	16:12:43	3.130	
06/15/95	16:12:44	3.130	
06/15/95	16:12:45	3.134	
06/15/95	16:12:46	3.130	
06/15/95	16:12:47	3.130	
06/15/95	16:12:48	3.134	
06/15/95	16:12:49	3.134	
06/15/95	16:12:50	3.130	
06/15/95	16:12:51	3.130	
06/15/95	16:12:52	3.134	
06/15/95	16:12:53	3.134	

06/15/95 16:12:54 3.134 *

Saved Recorder Status

Type: 2102e-20 Range:-2.392 - 15.089 feet Recorder ID: 3627

Time at Recorder: 06/15/95 16:13:08 Last Update: 05/24/95 10:13:45

Signal process: No Processing Accum: Not Scaled

Values being saved: averages

Alarm status: Low alarm @ 1.167 is OFF Upper alarm @ 15.059 is OFF

Nbr of Events: Alarm recording is not enabled

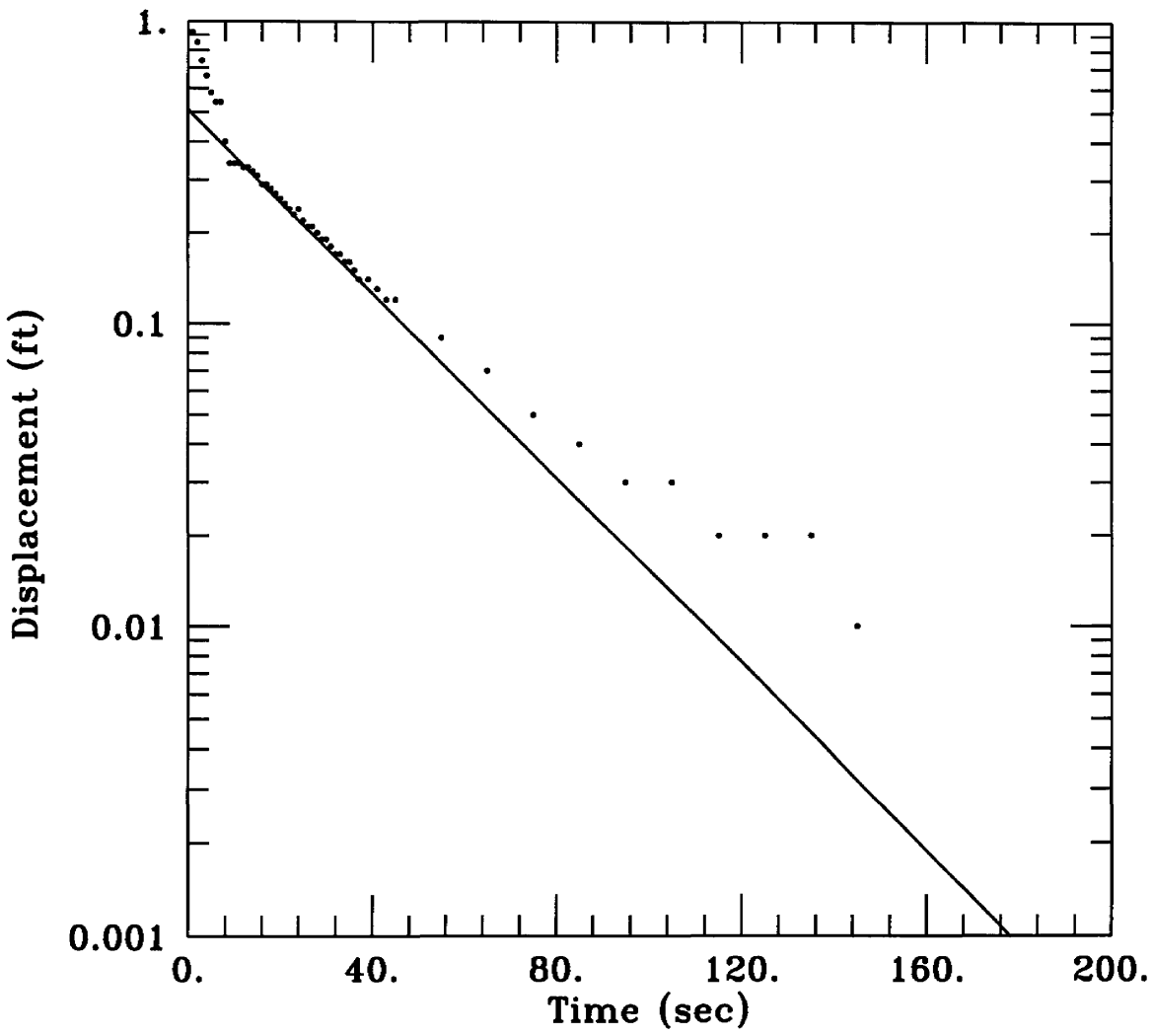
Averaging period: 00:00:01 Amount of data recorded: 00:10:21

Sample Rate: 00:00:01 Excitation time (msec): 015

Storage Capacity: 21330 values records: 05:55:30

Client: **Kraft**	Company: **Conestoga-Rovers & Associates**
Location: **Stratford**	Project: **3627**

CRA-5S Rising Head Test



DATA SET:
CRA-5S1.DAT
06/23/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

PROJECT DATA:
test date: 06/15/95
test well: CRA-5S
obs. well: CRA-5S

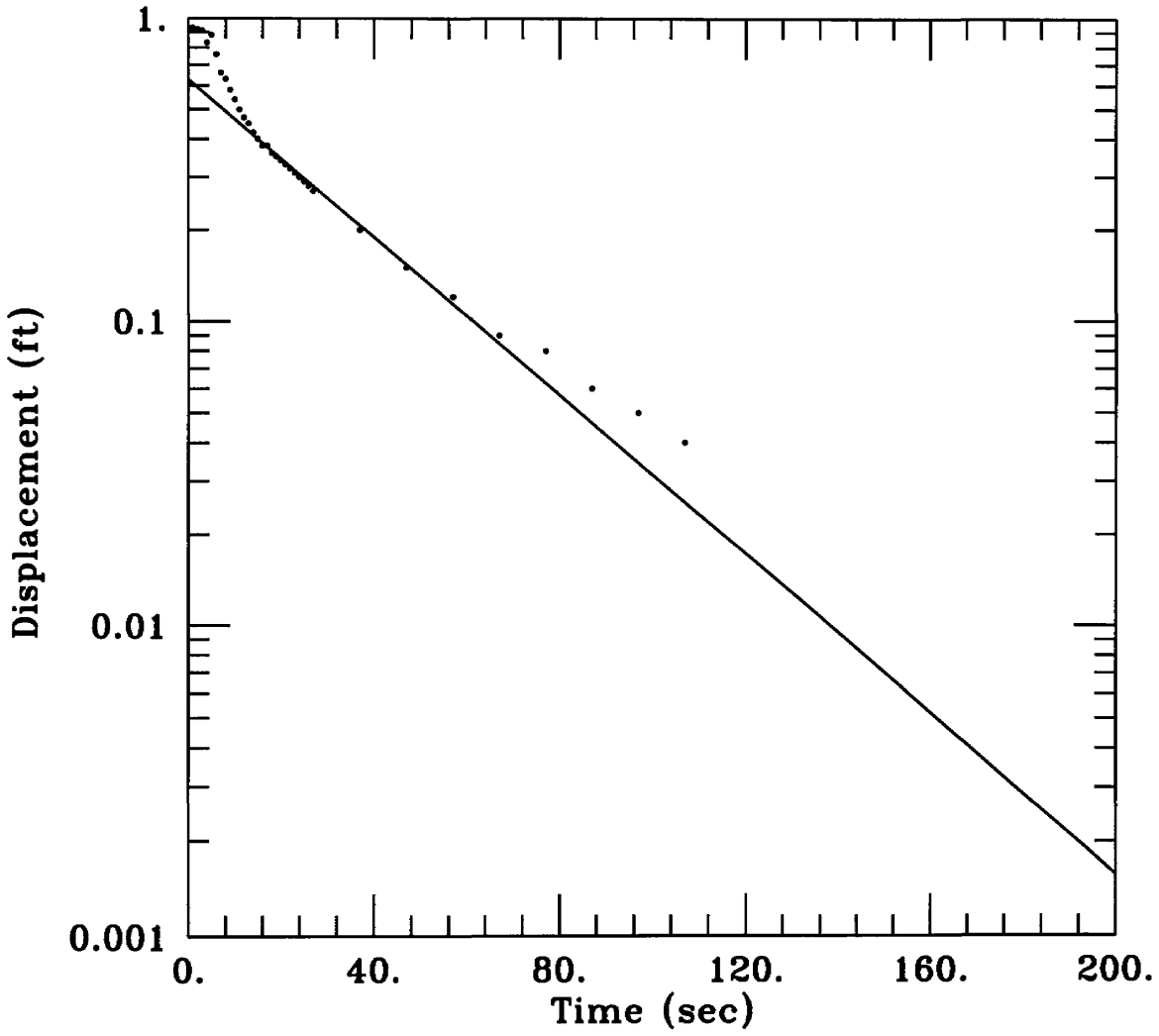
TEST DATA:
H0 = 0.92 ft
rc = 0.333 ft
rw = 0.333 ft
L = 2.64 ft
b = 40. ft
H = 2.64 ft

PARAMETER ESTIMATES:
K = 0.0008054 ft/sec
y0 = 0.5094 ft

AQTESOLV

Client: **Kraft**	Company: **Conestoga-Rovers & Associates**
Location: **Stratford**	Project: **3627**

CRA-5S Rising Head Test



DATA SET:
CRA-5S1A.DAT
06/23/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

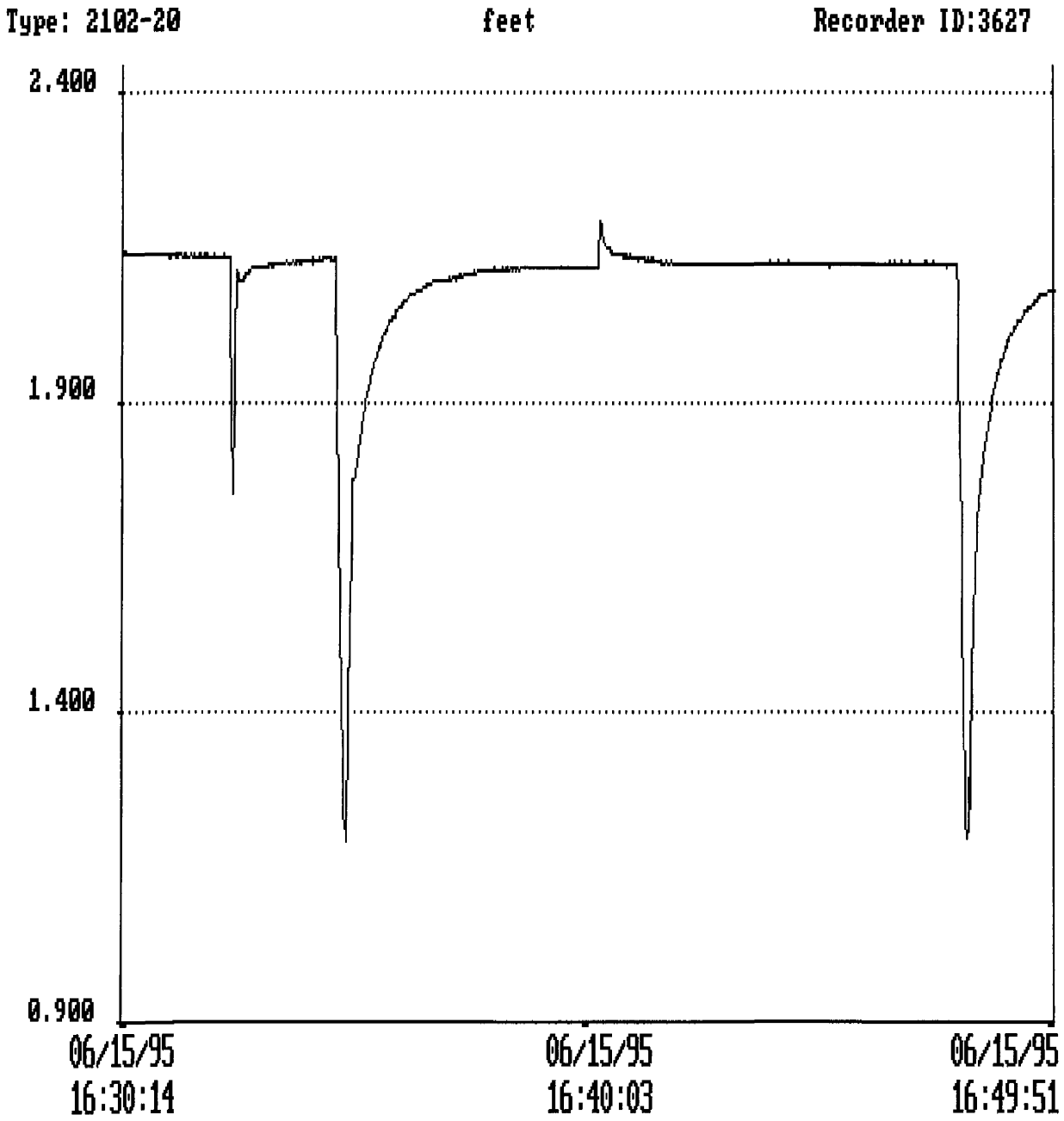
PROJECT DATA:
test date: 06/15/95
test well: CRA-5S
obs. well: CRA-5S

TEST DATA:
H0 = 0.93 ft
rc = 0.333 ft
rw = 0.333 ft
L = 2.64 ft
b = 40. ft
H = 2.64 ft

PARAMETER ESTIMATES:
K = 0.000689 ft/sec
y0 = 0.627 ft

AQTESOLV

CRA-55


Type: 2102-20
feet
Recorder ID:3627
2.400
1.900
1.400
0.900
06/15/95
16:30:14
06/15/95
16:40:03
06/15/95
16:49:51

CRA-5S Run #1

Output compressed by a factor of 1

Static → 2.116

Date	Time	Avg	
06/15/95	16:34:45	2.133	
06/15/95	16:34:46	2.031	
06/15/95	16:34:47	1.928	
06/15/95	16:34:48	1.843	
06/15/95	16:34:49	1.744	
06/15/95	16:34:50	1.654	
06/15/95	16:34:51	1.586	
06/15/95	16:34:52	1.500	
06/15/95	16:34:53	1.458	
06/15/95	16:34:54	1.389	
06/15/95	16:34:55	1.308	
06/15/95	16:34:56	1.231	
06/15/95	16:34:57	1.218	
06/15/95	16:34:58	1.218	
06/15/95	16:34:59	1.192	0.92
06/15/95	16:35:00	1.261	0.85
06/15/95	16:35:01	1.376	0.74
06/15/95	16:35:02	1.458	0.66
06/15/95	16:35:03	1.539	0.58
06/15/95	16:35:04	1.577	0.54
06/15/95	16:35:05	1.577	0.54
06/15/95	16:35:06	1.723	0.40
06/15/95	16:35:07	1.774	0.34
06/15/95	16:35:08	1.774	0.34
06/15/95	16:35:09	1.774	0.34
06/15/95	16:35:10	1.783	0.33
06/15/95	16:35:11	1.791	0.33
06/15/95	16:35:12	1.800	0.32
06/15/95	16:35:13	1.808	0.31
06/15/95	16:35:14	1.821	0.29
06/15/95	16:35:15	1.830	0.29
06/15/95	16:35:16	1.838	0.28
06/15/95	16:35:17	1.847	0.27
06/15/95	16:35:18	1.860	0.26
06/15/95	16:35:19	1.868	0.25
06/15/95	16:35:20	1.877	0.24
06/15/95	16:35:21	1.881	0.23
06/15/95	16:35:22	1.890	0.24
06/15/95	16:35:23	1.898	0.22
06/15/95	16:35:24	1.903	0.21
06/15/95	16:35:25	1.911	0.21
06/15/95	16:35:26	1.915	0.20
06/15/95	16:35:27	1.924	0.19
06/15/95	16:35:28	1.928	0.19
06/15/95	16:35:29	1.937	0.18
06/15/95	16:35:30	1.941	0.17
06/15/95	16:35:31	1.950	0.17
06/15/95	16:35:32	1.954	0.16
06/15/95	16:35:33	1.958	0.16
06/15/95	16:35:34	1.962	0.15
06/15/95	16:35:35	1.971	0.14
06/15/95	16:35:36	1.971	
06/15/95	16:35:37	1.979	0.14
06/15/95	16:35:38	1.979	
06/15/95	16:35:39	1.984	0.13
06/15/95	16:35:40	1.988	
06/15/95	16:35:41	1.992	0.12

06/15/95	16:35:42	1.997	
06/15/95	16:35:43	1.997	0.12
06/15/95	16:35:44	2.001	
06/15/95	16:35:45	2.005	
06/15/95	16:35:46	2.009	
06/15/95	16:35:47	2.009	
06/15/95	16:35:48	2.014	
06/15/95	16:35:49	2.018	
06/15/95	16:35:50	2.018	
06/15/95	16:35:51	2.022	
06/15/95	16:35:52	2.027	
06/15/95	16:35:53	2.031	0.09
06/15/95	16:35:54	2.031	
06/15/95	16:35:55	2.031	
06/15/95	16:35:56	2.035	
06/15/95	16:35:57	2.039	
06/15/95	16:35:58	2.039	
06/15/95	16:35:59	2.039	
06/15/95	16:36:00	2.039	
06/15/95	16:36:01	2.048	
06/15/95	16:36:02	2.048	
06/15/95	16:36:03	2.048	0.07
06/15/95	16:36:04	2.048	
06/15/95	16:36:05	2.052	
06/15/95	16:36:06	2.052	
06/15/95	16:36:07	2.056	
06/15/95	16:36:08	2.056	
06/15/95	16:36:09	2.056	
06/15/95	16:36:10	2.061	
06/15/95	16:36:11	2.061	
06/15/95	16:36:12	2.065	
06/15/95	16:36:13	2.065	-0.05
06/15/95	16:36:14	2.065	
06/15/95	16:36:15	2.065	
06/15/95	16:36:16	2.065	
06/15/95	16:36:17	2.069	
06/15/95	16:36:18	2.069	
06/15/95	16:36:19	2.074	
06/15/95	16:36:20	2.074	
06/15/95	16:36:21	2.074	
06/15/95	16:36:22	2.074	
06/15/95	16:36:23	2.074	0.04
06/15/95	16:36:24	2.078	
06/15/95	16:36:25	2.078	
06/15/95	16:36:26	2.078	
06/15/95	16:36:27	2.078	
06/15/95	16:36:28	2.082	
06/15/95	16:36:29	2.082	
06/15/95	16:36:30	2.082	
06/15/95	16:36:31	2.082	
06/15/95	16:36:32	2.082	
06/15/95	16:36:33	2.082	0.03
06/15/95	16:36:34	2.082	
06/15/95	16:36:35	2.082	
06/15/95	16:36:36	2.086	
06/15/95	16:36:37	2.086	
06/15/95	16:36:38	2.086	
06/15/95	16:36:39	2.086	
06/15/95	16:36:40	2.086	
06/15/95	16:36:41	2.086	

06/15/95	16:36:42	2.091	*
06/15/95	16:36:43	2.091 0.03	*
06/15/95	16:36:44	2.091	*
06/15/95	16:36:45	2.091	*
06/15/95	16:36:46	2.091	*
06/15/95	16:36:47	2.091	*
06/15/95	16:36:48	2.091	*
06/15/95	16:36:49	2.095	*
06/15/95	16:36:50	2.095	*
06/15/95	16:36:51	2.099	*
06/15/95	16:36:52	2.095	*
06/15/95	16:36:53	2.095 0.02	*
06/15/95	16:36:54	2.095	*
06/15/95	16:36:55	2.095	*
06/15/95	16:36:56	2.099	*
06/15/95	16:36:57	2.099	*
06/15/95	16:36:58	2.099	*
06/15/95	16:36:59	2.099	*
06/15/95	16:37:00	2.099	*
06/15/95	16:37:01	2.099	*
06/15/95	16:37:02	2.099	*
06/15/95	16:37:03	2.099 -0.02	*
06/15/95	16:37:04	2.099	*
06/15/95	16:37:05	2.099	*
06/15/95	16:37:06	2.099	*
06/15/95	16:37:07	2.099	*
06/15/95	16:37:08	2.099	*
06/15/95	16:37:09	2.099	*
06/15/95	16:37:10	2.099	*
06/15/95	16:37:11	2.104	*
06/15/95	16:37:12	2.099	*
06/15/95	16:37:13	2.099 0.02	*
06/15/95	16:37:14	2.104	*
06/15/95	16:37:15	2.104	*
06/15/95	16:37:16	2.104	*
06/15/95	16:37:17	2.104	*
06/15/95	16:37:18	2.099	*
06/15/95	16:37:19	2.104	*
06/15/95	16:37:20	2.104	*
06/15/95	16:37:21	2.104	*
06/15/95	16:37:22	2.104	*
06/15/95	16:37:23	2.108 0.01	*
06/15/95	16:37:24	2.104	*
06/15/95	16:37:25	2.104	*
06/15/95	16:37:26	2.108	*
06/15/95	16:37:27	2.104	*
06/15/95	16:37:28	2.104	*
06/15/95	16:37:29	2.108	*
06/15/95	16:37:30	2.108	*
06/15/95	16:37:31	2.108	*
06/15/95	16:37:32	2.108	*
06/15/95	16:37:33	2.108	*
06/15/95	16:37:34	2.108	*
06/15/95	16:37:35	2.108	*
06/15/95	16:37:36	2.108	*
06/15/95	16:37:37	2.108	*
06/15/95	16:37:38	2.108	*
06/15/95	16:37:39	2.108	*
06/15/95	16:37:40	2.108	*
06/15/95	16:37:41	2.108	*

06/15/95	16:37:42	2.112	*
06/15/95	16:37:43	2.108	*
06/15/95	16:37:44	2.108	*
06/15/95	16:37:45	2.108	*
06/15/95	16:37:46	2.112	*
06/15/95	16:37:47	2.112	*
06/15/95	16:37:48	2.112	*
06/15/95	16:37:49	2.112	*
06/15/95	16:37:50	2.112	*
06/15/95	16:37:51	2.112	*
06/15/95	16:37:52	2.112	*
06/15/95	16:37:53	2.112	*
06/15/95	16:37:54	2.112	*
06/15/95	16:37:55	2.112	*
06/15/95	16:37:56	2.112	*
06/15/95	16:37:57	2.112	*
06/15/95	16:37:58	2.112	*
06/15/95	16:37:59	2.112	*
06/15/95	16:38:00	2.112	*
06/15/95	16:38:01	2.112	*
06/15/95	16:38:02	2.112	*
06/15/95	16:38:03	2.112	*
06/15/95	16:38:04	2.112	*
06/15/95	16:38:05	2.112	*
06/15/95	16:38:06	2.112	*
06/15/95	16:38:07	2.116	*
06/15/95	16:38:08	2.112	*
06/15/95	16:38:09	2.112	*
06/15/95	16:38:10	2.112	*
06/15/95	16:38:11	2.112	*
06/15/95	16:38:12	2.112	*
06/15/95	16:38:13	2.112	*
06/15/95	16:38:14	2.112	*
06/15/95	16:38:15	2.112	*
06/15/95	16:38:16	2.112	*
06/15/95	16:38:17	2.112	*
06/15/95	16:38:18	2.112	*
06/15/95	16:38:19	2.116	*
06/15/95	16:38:20	2.112	*
06/15/95	16:38:21	2.112	*
06/15/95	16:38:22	2.116	*
06/15/95	16:38:23	2.112	*
06/15/95	16:38:24	2.116	*
06/15/95	16:38:25	2.112	*
06/15/95	16:38:26	2.112	*
06/15/95	16:38:27	2.112	*
06/15/95	16:38:28	2.116	*
06/15/95	16:38:29	2.116	*
06/15/95	16:38:30	2.116	*
06/15/95	16:38:31	2.112	*
06/15/95	16:38:32	2.116	*
06/15/95	16:38:33	2.116	*
06/15/95	16:38:34	2.116	*
06/15/95	16:38:35	2.112	*
06/15/95	16:38:36	2.116	*
06/15/95	16:38:37	2.116	*
06/15/95	16:38:38	2.116	*
06/15/95	16:38:39	2.112	*
06/15/95	16:38:40	2.112	*
06/15/95	16:38:41	2.116	*

```
06/15/95 16:38:42  2.116                                                    *
06/15/95 16:38:43  2.116                                                    *
06/15/95 16:38:44  2.116                                                    *
```

Saved Recorder Status

Type: 2102e-20 Range:-2.392 - 15.089 feet Recorder ID: 3627

Time at Recorder: 06/15/95 16:49:52 Last Update: 05/24/95 10:13:45

Signal process: No Processing Accum: Not Scaled

Values being saved: averages

Alarm status: Low alarm @ 1.167 is OFF Upper alarm @ 15.059 is OFF

Nbr of Events: Alarm recording is not enabled

Averaging period: 00:00:01 Amount of data recorded: 00:19:38

Sample Rate: 00:00:01 Excitation time (msec): 015

Storage Capacity: 21330 values records: 05:55:30

CRA-55 Run #2

Output compressed by a factor of 1

Static → 2.125

Date	Time	Avg	
06/15/95	16:47:48	2.125	
06/15/95	16:47:49	2.125	
06/15/95	16:47:50	2.125	
06/15/95	16:47:51	2.022	
06/15/95	16:47:52	1.928	
06/15/95	16:47:53	1.826	
06/15/95	16:47:54	1.766	
06/15/95	16:47:55	1.659	
06/15/95	16:47:56	1.556	
06/15/95	16:47:57	1.505	
06/15/95	16:47:58	1.458	
06/15/95	16:47:59	1.364	
06/15/95	16:48:00	1.261	
06/15/95	16:48:01	1.214	
06/15/95	16:48:02	1.197	0.93
06/15/95	16:48:03	1.205	0.92
06/15/95	16:48:04	1.210	0.92
06/15/95	16:48:05	1.295	0.83
06/15/95	16:48:06	1.248	0.88
06/15/95	16:48:07	1.364	0.76
06/15/95	16:48:08	1.466	0.66
06/15/95	16:48:09	1.500	0.63
06/15/95	16:48:10	1.543	0.58
06/15/95	16:48:11	1.586	0.54
06/15/95	16:48:12	1.629	0.50
06/15/95	16:48:13	1.659	0.47
06/15/95	16:48:14	1.680	0.45
06/15/95	16:48:15	1.701	0.42
06/15/95	16:48:16	1.723	0.40
06/15/95	16:48:17	1.740	0.38
06/15/95	16:48:18	1.749	0.38
06/15/95	16:48:19	1.761	0.36
06/15/95	16:48:20	1.774	0.35
06/15/95	16:48:21	1.783	0.34
06/15/95	16:48:22	1.796	0.33
06/15/95	16:48:23	1.808	0.32
06/15/95	16:48:24	1.817	0.31
06/15/95	16:48:25	1.826	0.30
06/15/95	16:48:26	1.834	0.29
06/15/95	16:48:27	1.843	0.28
06/15/95	16:48:28	1.851	0.27
06/15/95	16:48:29	1.864	
06/15/95	16:48:30	1.868	
06/15/95	16:48:31	1.877	
06/15/95	16:48:32	1.885	
06/15/95	16:48:33	1.894	
06/15/95	16:48:34	1.898	
06/15/95	16:48:35	1.911	
06/15/95	16:48:36	1.915	
06/15/95	16:48:37	1.920	
06/15/95	16:48:38	1.928	0.20
06/15/95	16:48:39	1.932	
06/15/95	16:48:40	1.937	
06/15/95	16:48:41	1.945	
06/15/95	16:48:42	1.950	
06/15/95	16:48:43	1.954	
06/15/95	16:48:44	1.962	

06/15/95	16:48:45	1.967	
06/15/95	16:48:46	1.967	
06/15/95	16:48:47	1.971	
06/15/95	16:48:48	1.979	0.15
06/15/95	16:48:49	1.979	
06/15/95	16:48:50	1.984	
06/15/95	16:48:51	1.988	
06/15/95	16:48:52	1.992	
06/15/95	16:48:53	1.992	
06/15/95	16:48:54	2.001	
06/15/95	16:48:55	2.001	
06/15/95	16:48:56	2.005	
06/15/95	16:48:57	2.009	
06/15/95	16:48:58	2.009	0.12
06/15/95	16:48:59	2.014	
06/15/95	16:49:00	2.014	
06/15/95	16:49:01	2.018	
06/15/95	16:49:02	2.022	
06/15/95	16:49:03	2.022	
06/15/95	16:49:04	2.022	
06/15/95	16:49:05	2.031	
06/15/95	16:49:06	2.031	
06/15/95	16:49:07	2.031	
06/15/95	16:49:08	2.031	0.09
06/15/95	16:49:09	2.035	
06/15/95	16:49:10	2.035	
06/15/95	16:49:11	2.039	
06/15/95	16:49:12	2.039	
06/15/95	16:49:13	2.039	
06/15/95	16:49:14	2.044	
06/15/95	16:49:15	2.048	
06/15/95	16:49:16	2.048	
06/15/95	16:49:17	2.048	
06/15/95	16:49:18	2.048	0.08
06/15/95	16:49:19	2.052	
06/15/95	16:49:20	2.056	
06/15/95	16:49:21	2.056	
06/15/95	16:49:22	2.056	
06/15/95	16:49:23	2.056	
06/15/95	16:49:24	2.061	
06/15/95	16:49:25	2.061	
06/15/95	16:49:26	2.061	
06/15/95	16:49:27	2.065	
06/15/95	16:49:28	2.065	0.06
06/15/95	16:49:29	2.065	
06/15/95	16:49:30	2.065	
06/15/95	16:49:31	2.069	
06/15/95	16:49:32	2.069	
06/15/95	16:49:33	2.069	
06/15/95	16:49:34	2.074	
06/15/95	16:49:35	2.074	
06/15/95	16:49:36	2.074	
06/15/95	16:49:37	2.074	
06/15/95	16:49:38	2.074	0.05
06/15/95	16:49:39	2.074	
06/15/95	16:49:40	2.078	
06/15/95	16:49:41	2.078	
06/15/95	16:49:42	2.078	
06/15/95	16:49:43	2.082	
06/15/95	16:49:44	2.082	

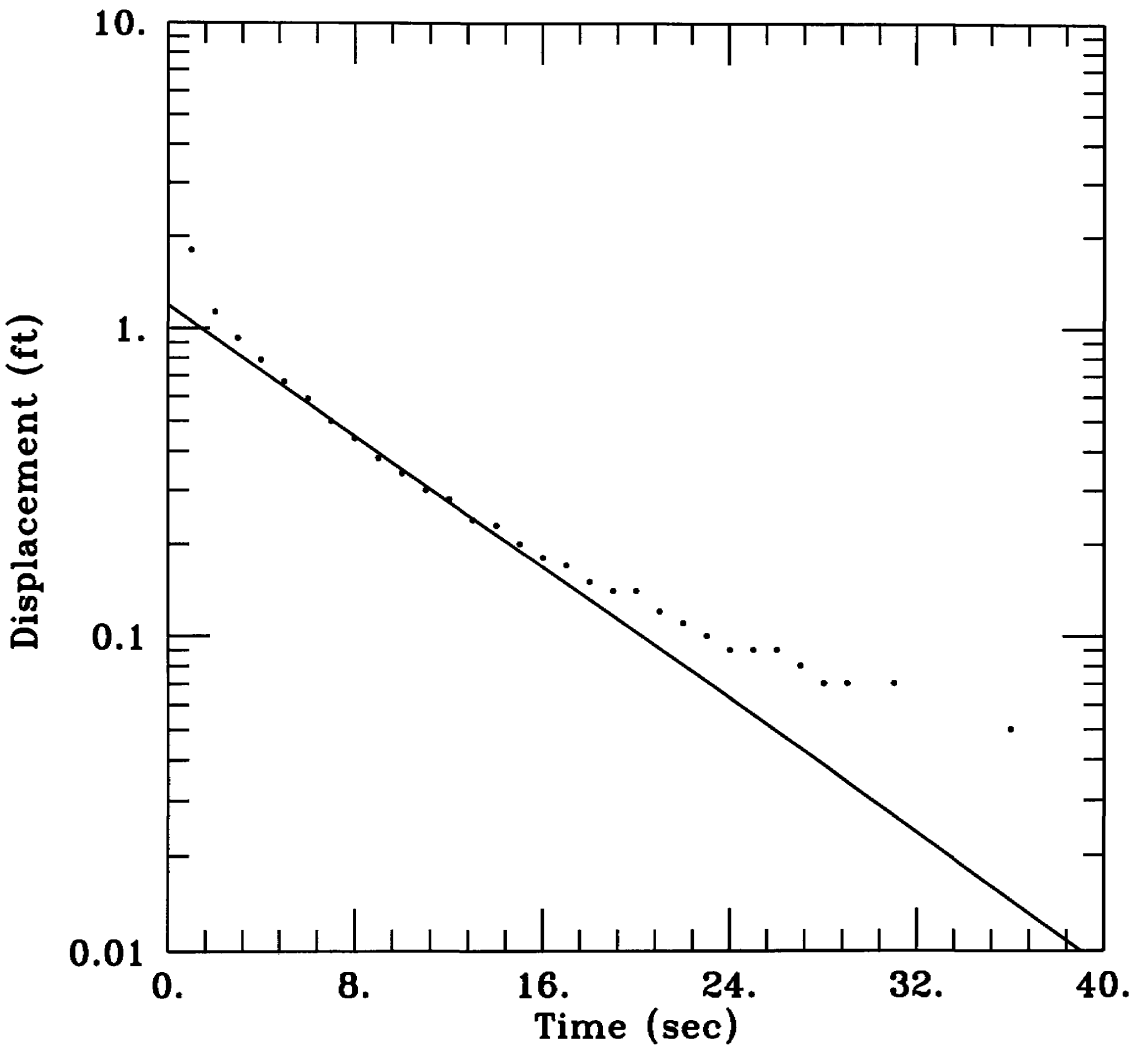
06/15/95	16:49:45	2.082	*
06/15/95	16:49:46	2.082	*
06/15/95	16:49:47	2.082	*
06/15/95	16:49:48	2.082 - 0.04	*
06/15/95	16:49:49	2.082	*
06/15/95	16:49:50	2.082	*

Saved Recorder Status

Type: 2102e-20 Range:-2.392 - 15.089 feet Recorder ID: 3627
Time at Recorder: 06/15/95 16:49:52 Last Update: 05/24/95 10:13:45
Signal process: No Processing Accum: Not Scaled
Values being saved: averages
Alarm status: Low alarm @ 1.167 is OFF Upper alarm @ 15.059 is OFF
Nbr of Events: Alarm recording is not enabled
Averaging period: 00:00:01 Amount of data recorded: 00:19:38
Sample Rate: 00:00:01 Excitation time (msec): 015
Storage Capacity: 21330 values records: 05:55:30

Client: **Kraft**	Company: **Conestoga-Rovers & Associates**
Location: **Stratford**	Project: **3627**

CRA-5D Rising Head Test



DATA SET:
CRA-5D1.DAT
06/23/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

PROJECT DATA:
test date: 06/15/95
test well: CRA-5D
obs. well: CRA-5D

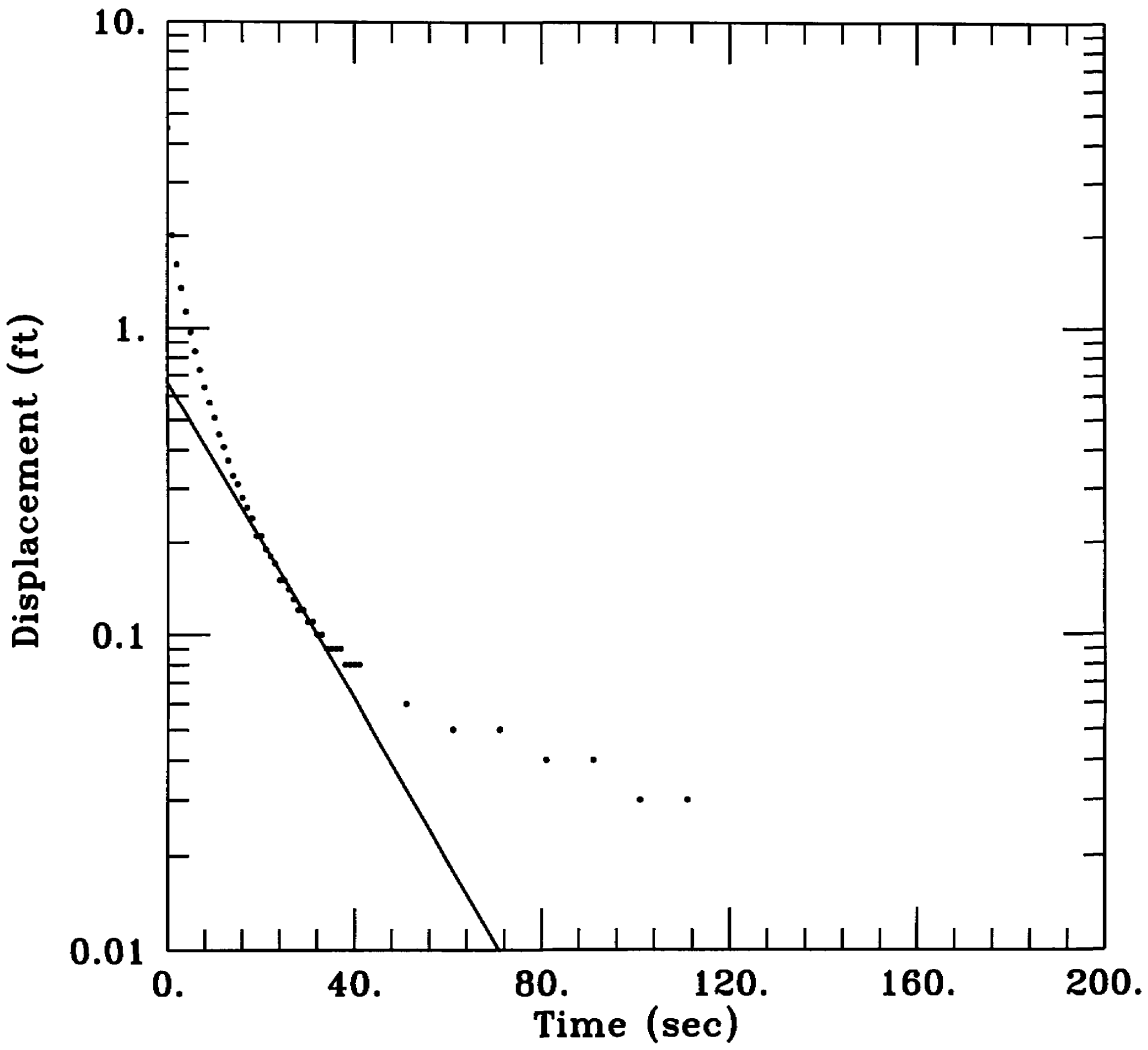
TEST DATA:
H0 = 3. ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 40. ft
H = 16.63 ft

PARAMETER ESTIMATES:
K = 0.0001007 ft/sec
y0 = 1.19 ft

AQTESOLV

Client: **Kraft**	Company: **Conestoga-Rovers & Associates**
Location: **Stratford**	Project: **3627**

CRA-5D Rising Head Test



DATA SET:
CRA-5D1A.DAT
06/23/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

PROJECT DATA:
test date: 06/15/95
test well: CRA-5D
obs. well: CRA-5D

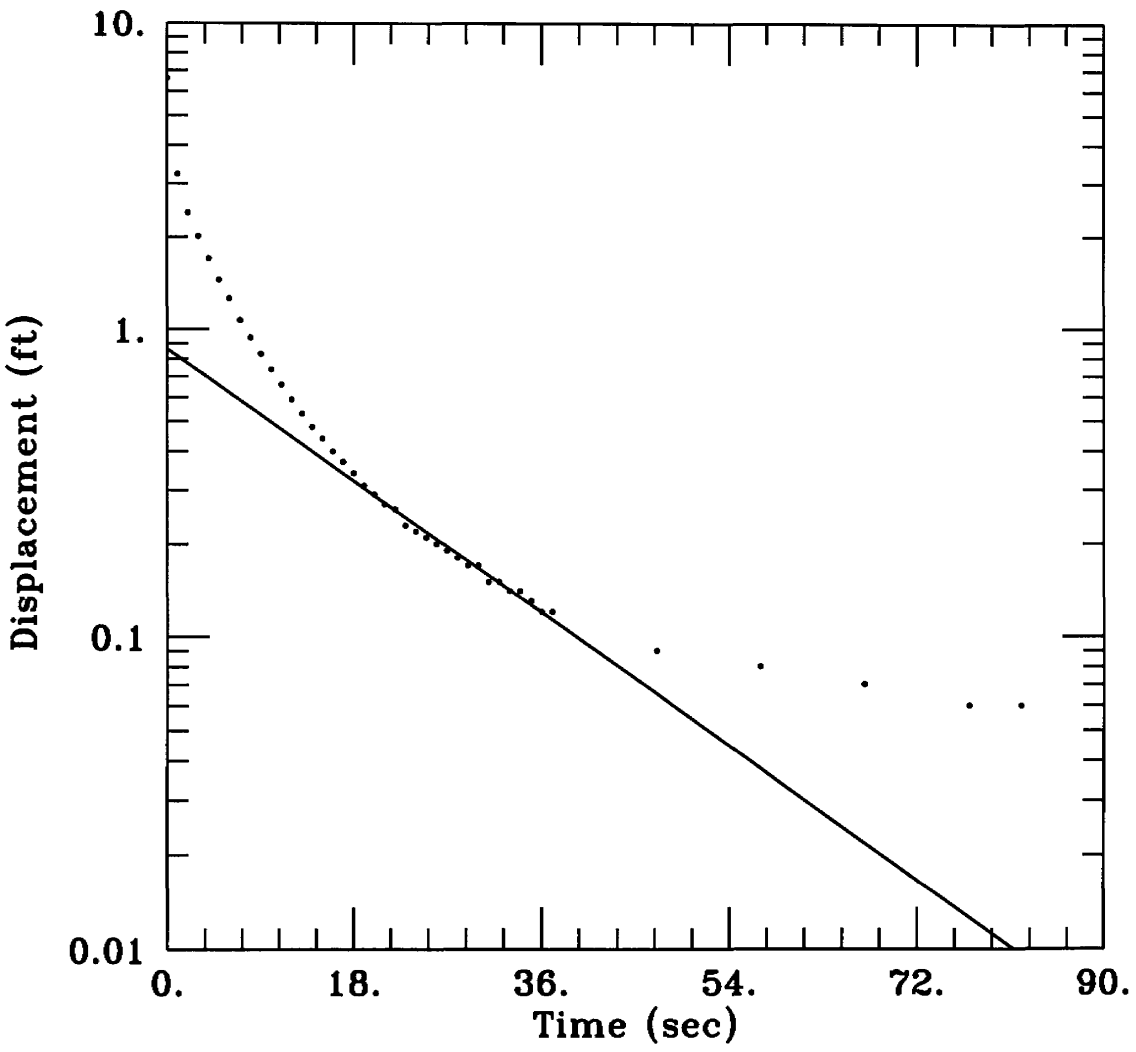
TEST DATA:
H0 = 4.5 ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 40. ft
H = 16.63 ft

PARAMETER ESTIMATES:
K = 4.862E-05 ft/sec
y0 = 0.6624 ft

AQTESOLV

Client: **Kraft**	Company: **Conestoga-Rovers & Associates**
Location: **Stratford**	Project: **3627**

CRA-5D Rising Head Test



DATA SET:
CRA-5D1B.DAT
06/23/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

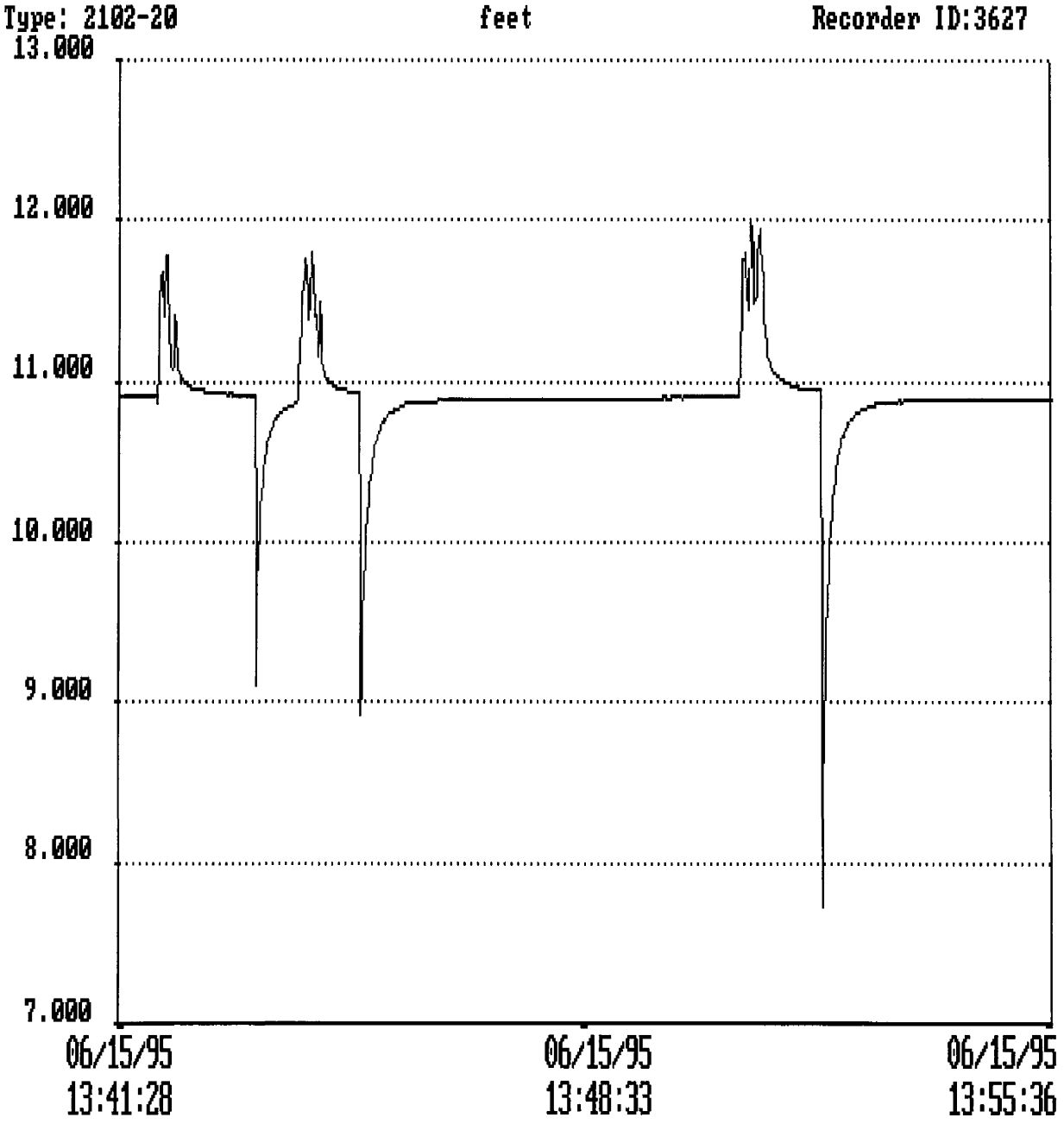
PROJECT DATA:
test date: 06/15/95
test well: CRA-5D
obs. well: CRA-5D

TEST DATA:
H0 = 6.6 ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 40. ft
H = 16.63 ft

PARAMETER ESTIMATES:
K = 4.511E-05 ft/sec
y0 = 0.8629 ft

AQTESOLV

CRA-5D


Type: 2102-20
feet
Recorder ID:3627
13.000
12.000
11.000
10.000
9.000
8.000
7.000
06/15/95
13:41:28
06/15/95
13:48:33
06/15/95
13:55:36

CRA-5D Run #1

Output compressed by a factor of 1

Date	Time	Avg	
06/15/95	13:43:29	10.915	
06/15/95	13:43:30	10.915	
06/15/95	13:43:31	10.915	
06/15/95	13:43:32	10.915	
06/15/95	13:43:33	9.114	1.80
06/15/95	13:43:34	9.781	1.13
06/15/95	13:43:35	9.987	0.93
06/15/95	13:43:36	10.128	0.79
06/15/95	13:43:37	10.243	0.67
06/15/95	13:43:38	10.337	0.59
06/15/95	13:43:39	10.414	0.50
06/15/95	13:43:40	10.478	0.44
06/15/95	13:43:41	10.530	0.38
06/15/95	13:43:42	10.573	0.34
06/15/95	13:43:43	10.611	0.30
06/15/95	13:43:44	10.637	0.28
06/15/95	13:43:45	10.671	0.24
06/15/95	13:43:46	10.688	0.23
06/15/95	13:43:47	10.714	0.20
06/15/95	13:43:48	10.731	0.18
06/15/95	13:43:49	10.748	0.17
06/15/95	13:43:50	10.761	0.15
06/15/95	13:43:51	10.774	0.14
06/15/95	13:43:52	10.778	0.14
06/15/95	13:43:53	10.791	0.12
06/15/95	13:43:54	10.799	0.12
06/15/95	13:43:55	10.808	0.10
06/15/95	13:43:56	10.812	0.10
06/15/95	13:43:57	10.821	0.09
06/15/95	13:43:58	10.825	0.09
06/15/95	13:43:59	10.829	0.09
06/15/95	13:44:00	10.833	0.08
06/15/95	13:44:01	10.838	0.07
06/15/95	13:44:02	10.842	0.07
06/15/95	13:44:03	10.842	
06/15/95	13:44:04	10.846	0.07
06/15/95	13:44:05	10.846	
06/15/95	13:44:06	10.851	
06/15/95	13:44:07	10.855	
06/15/95	13:44:08	10.859	
06/15/95	13:44:09	10.863	0.05
06/15/95	13:44:10	10.868	

Static → 10.915

Saved Recorder Status

Type: 2102e-20 Range:-2.392 - 15.089 feet Recorder ID: 3627

Time at Recorder: 06/15/95 13:55:37 Last Update: 05/24/95 10:13:45

Signal process: No Processing Accum: Not Scaled

Values being saved: averages

Alarm status: Low alarm @ 1.167 is OFF Upper alarm @ 15.059 is OFF

Nbr of Events: Alarm recording is not enabled

Averaging period: 00:00:01 Amount of data recorded: 00:14:09

Sample Rate: 00:00:01 Excitation time (msec): 015

Storage Capacity: 21330 values records: 05:55:30

CRA-5D Run #2

Output compressed by a factor of 1

Static → 10.932

Date	Time	Avg	
06/15/95	13:45:04	10.932	
06/15/95	13:45:05	10.932	
06/15/95	13:45:06	10.928	
06/15/95	13:45:07	10.928	
06/15/95	13:45:08	10.928	
06/15/95	13:45:09	8.917	2.01
06/15/95	13:45:10	9.315	1.61
06/15/95	13:45:11	9.576	1.35
06/15/95	13:45:12	9.794	1.13
06/15/95	13:45:13	9.957	0.97
06/15/95	13:45:14	10.089	0.839
06/15/95	13:45:15	10.196	0.732
06/15/95	13:45:16	10.286	0.642
06/15/95	13:45:17	10.363	0.57
06/15/95	13:45:18	10.423	0.51
06/15/95	13:45:19	10.474	0.45
06/15/95	13:45:20	10.521	0.41
06/15/95	13:45:21	10.560	0.37
06/15/95	13:45:22	10.594	0.33
06/15/95	13:45:23	10.620	0.31
06/15/95	13:45:24	10.645	0.28
06/15/95	13:45:25	10.671	0.26
06/15/95	13:45:26	10.688	0.24
06/15/95	13:45:27	10.714	0.21
06/15/95	13:45:28	10.722	0.21
06/15/95	13:45:29	10.739	0.19
06/15/95	13:45:30	10.752	0.18
06/15/95	13:45:31	10.761	0.17
06/15/95	13:45:32	10.774	0.15
06/15/95	13:45:33	10.778	0.15
06/15/95	13:45:34	10.791	0.14
06/15/95	13:45:35	10.799	0.13
06/15/95	13:45:36	10.804	0.12
06/15/95	13:45:37	10.808	0.12
06/15/95	13:45:38	10.816	0.11
06/15/95	13:45:39	10.816	0.11
06/15/95	13:45:40	10.825	0.10
06/15/95	13:45:41	10.825	0.10
06/15/95	13:45:42	10.833	0.09
06/15/95	13:45:43	10.838	0.09
06/15/95	13:45:44	10.838	0.09
06/15/95	13:45:45	10.842	0.09
06/15/95	13:45:46	10.846	0.08
06/15/95	13:45:47	10.846	0.08
06/15/95	13:45:48	10.851	0.08
06/15/95	13:45:49	10.851	0.08
06/15/95	13:45:50	10.859	
06/15/95	13:45:51	10.859	
06/15/95	13:45:52	10.859	
06/15/95	13:45:53	10.859	
06/15/95	13:45:54	10.863	
06/15/95	13:45:55	10.859	
06/15/95	13:45:56	10.859	
06/15/95	13:45:57	10.863	
06/15/95	13:45:58	10.868	
06/15/95	13:45:59	10.868	0.06
06/15/95	13:46:00	10.868	

06/15/95	13:46:01	10.868	*
06/15/95	13:46:02	10.868	*
06/15/95	13:46:03	10.868	*
06/15/95	13:46:04	10.872	*
06/15/95	13:46:05	10.872	*
06/15/95	13:46:06	10.876	*
06/15/95	13:46:07	10.872	*
06/15/95	13:46:08	10.876	*
06/15/95	13:46:09	10.876 0.05	*
06/15/95	13:46:10	10.876	*
06/15/95	13:46:11	10.876	*
06/15/95	13:46:12	10.876	*
06/15/95	13:46:13	10.876	*
06/15/95	13:46:14	10.876	*
06/15/95	13:46:15	10.876	*
06/15/95	13:46:16	10.876	*
06/15/95	13:46:17	10.876	*
06/15/95	13:46:18	10.876	*
06/15/95	13:46:19	10.876 0.05	*
06/15/95	13:46:20	10.881	*
06/15/95	13:46:21	10.881	*
06/15/95	13:46:22	10.881	*
06/15/95	13:46:23	10.881	*
06/15/95	13:46:24	10.881	*
06/15/95	13:46:25	10.885	*
06/15/95	13:46:26	10.885	*
06/15/95	13:46:27	10.885	*
06/15/95	13:46:28	10.885	*
06/15/95	13:46:29	10.885 0.04	*
06/15/95	13:46:30	10.889	*
06/15/95	13:46:31	10.885	*
06/15/95	13:46:32	10.889	*
06/15/95	13:46:33	10.889	*
06/15/95	13:46:34	10.885	*
06/15/95	13:46:35	10.889	*
06/15/95	13:46:36	10.889	*
06/15/95	13:46:37	10.889	*
06/15/95	13:46:38	10.885	*
06/15/95	13:46:39	10.889 0.04	*
06/15/95	13:46:40	10.889	*
06/15/95	13:46:41	10.893	*
06/15/95	13:46:42	10.889	*
06/15/95	13:46:43	10.893	*
06/15/95	13:46:44	10.893	*
06/15/95	13:46:45	10.893	*
06/15/95	13:46:46	10.893	*
06/15/95	13:46:47	10.893	*
06/15/95	13:46:48	10.893	*
06/15/95	13:46:49	10.893 +0.03	*
06/15/95	13:46:50	10.893	*
06/15/95	13:46:51	10.893	*
06/15/95	13:46:52	10.893	*
06/15/95	13:46:53	10.893	*
06/15/95	13:46:54	10.893	*
06/15/95	13:46:55	10.893	*
06/15/95	13:46:56	10.893	*
06/15/95	13:46:57	10.893	*
06/15/95	13:46:58	10.893	*
06/15/95	13:46:59	10.893 0.03	*
06/15/95	13:47:00	10.893	*

06/15/95	13:47:01	10.893		*
06/15/95	13:47:02	10.893		*
06/15/95	13:47:03	10.893		*
06/15/95	13:47:04	10.893		*
06/15/95	13:47:05	10.893		*
06/15/95	13:47:06	10.893		*
06/15/95	13:47:07	10.893		*
06/15/95	13:47:08	10.893		*
06/15/95	13:47:09	10.893	0.03	*
06/15/95	13:47:10	10.893		*
06/15/95	13:47:11	10.893		*
06/15/95	13:47:12	10.889		*
06/15/95	13:47:13	10.893		*
06/15/95	13:47:14	10.893		*
06/15/95	13:47:15	10.893		*
06/15/95	13:47:16	10.893		*
06/15/95	13:47:17	10.893		*
06/15/95	13:47:18	10.893		*
06/15/95	13:47:19	10.893	0.03	*
06/15/95	13:47:20	10.893		*
06/15/95	13:47:21	10.893		*
06/15/95	13:47:22	10.893		*
06/15/95	13:47:23	10.893		*
06/15/95	13:47:24	10.893		*
06/15/95	13:47:25	10.889		*
06/15/95	13:47:26	10.893		*
06/15/95	13:47:27	10.893		*
06/15/95	13:47:28	10.889		*
06/15/95	13:47:29	10.893	0.03	*
06/15/95	13:47:30	10.893		*
06/15/95	13:47:31	10.893		*
06/15/95	13:47:32	10.893		*
06/15/95	13:47:33	10.893		*
06/15/95	13:47:34	10.893		*
06/15/95	13:47:35	10.893		*
06/15/95	13:47:36	10.893		*
06/15/95	13:47:37	10.893		*
06/15/95	13:47:38	10.893		*
06/15/95	13:47:39	10.893	0.03	*
06/15/95	13:47:40	10.893		*
06/15/95	13:47:41	10.893		*
06/15/95	13:47:42	10.893		*
06/15/95	13:47:43	10.893		*
06/15/95	13:47:44	10.893		*
06/15/95	13:47:45	10.893		*
06/15/95	13:47:46	10.893		*
06/15/95	13:47:47	10.893		*
06/15/95	13:47:48	10.893		*
06/15/95	13:47:49	10.893	0.03	*
06/15/95	13:47:50	10.893		*
06/15/95	13:47:51	10.893		*
06/15/95	13:47:52	10.893		*
06/15/95	13:47:53	10.893		*
06/15/95	13:47:54	10.893		*
06/15/95	13:47:55	10.893		*
06/15/95	13:47:56	10.893		*
06/15/95	13:47:57	10.893		*
06/15/95	13:47:58	10.893		*
06/15/95	13:47:59	10.893	0.03	*
06/15/95	13:48:00	10.893		*

06/15/95	13:48:01	10.893	*
06/15/95	13:48:02	10.893	*
06/15/95	13:48:03	10.893	*
06/15/95	13:48:04	10.893	*
06/15/95	13:48:05	10.889	*
06/15/95	13:48:06	10.893	*
06/15/95	13:48:07	10.893	*
06/15/95	13:48:08	10.893	*
06/15/95	13:48:09	10.893	*
06/15/95	13:48:10	10.893	*
06/15/95	13:48:11	10.893	*
06/15/95	13:48:12	10.893	*
06/15/95	13:48:13	10.893	*
06/15/95	13:48:14	10.893	*
06/15/95	13:48:15	10.893	*
06/15/95	13:48:16	10.893	*
06/15/95	13:48:17	10.893	*
06/15/95	13:48:18	10.893	*
06/15/95	13:48:19	10.893	*
06/15/95	13:48:20	10.893	*
06/15/95	13:48:21	10.893	*
06/15/95	13:48:22	10.893	*
06/15/95	13:48:23	10.893	*
06/15/95	13:48:24	10.893	*
06/15/95	13:48:25	10.893	*
06/15/95	13:48:26	10.893	*
06/15/95	13:48:27	10.893	*
06/15/95	13:48:28	10.893	*
06/15/95	13:48:29	10.893	*
06/15/95	13:48:30	10.893	*
06/15/95	13:48:31	10.893	*
06/15/95	13:48:32	10.893	*
06/15/95	13:48:33	10.893	*
06/15/95	13:48:34	10.893	*
06/15/95	13:48:35	10.893	*
06/15/95	13:48:36	10.893	*
06/15/95	13:48:37	10.893	*
06/15/95	13:48:38	10.893	*
06/15/95	13:48:39	10.893	*
06/15/95	13:48:40	10.893	*
06/15/95	13:48:41	10.893	*
06/15/95	13:48:42	10.893	*
06/15/95	13:48:43	10.893	*
06/15/95	13:48:44	10.893	*
06/15/95	13:48:45	10.893	*
06/15/95	13:48:46	10.893	*
06/15/95	13:48:47	10.893	*
06/15/95	13:48:48	10.893	*
06/15/95	13:48:49	10.893	*
06/15/95	13:48:50	10.893	*
06/15/95	13:48:51	10.893	*
06/15/95	13:48:52	10.893	*
06/15/95	13:48:53	10.893	*
06/15/95	13:48:54	10.893	*
06/15/95	13:48:55	10.893	*
06/15/95	13:48:56	10.893	*
06/15/95	13:48:57	10.893	*
06/15/95	13:48:58	10.893	*
06/15/95	13:48:59	10.893	*
06/15/95	13:49:00	10.893	*

06/15/95	13:49:01	10.893	*
06/15/95	13:49:02	10.893	*
06/15/95	13:49:03	10.893	*
06/15/95	13:49:04	10.898	*
06/15/95	13:49:05	10.898	*
06/15/95	13:49:06	10.893	*
06/15/95	13:49:07	10.893	*
06/15/95	13:49:08	10.893	*
06/15/95	13:49:09	10.898	*
06/15/95	13:49:10	10.893	*
06/15/95	13:49:11	10.898	*
06/15/95	13:49:12	10.893	*
06/15/95	13:49:13	10.893	*
06/15/95	13:49:14	10.893	*
06/15/95	13:49:15	10.893	*
06/15/95	13:49:16	10.893	*
06/15/95	13:49:17	10.893	*
06/15/95	13:49:18	10.893	*
06/15/95	13:49:19	10.893	*
06/15/95	13:49:20	10.893	*
06/15/95	13:49:21	10.893	*
06/15/95	13:49:22	10.893	*
06/15/95	13:49:23	10.898	*
06/15/95	13:49:24	10.893	*
06/15/95	13:49:25	10.893	*
06/15/95	13:49:26	10.893	*
06/15/95	13:49:27	10.893	*
06/15/95	13:49:28	10.893	*
06/15/95	13:49:29	10.893	*
06/15/95	13:49:30	10.898	*
06/15/95	13:49:31	10.893	*
06/15/95	13:49:32	10.893	*
06/15/95	13:49:33	10.893	*
06/15/95	13:49:34	10.893	*
06/15/95	13:49:35	10.898	*
06/15/95	13:49:36	10.893	*
06/15/95	13:49:37	10.898	*
06/15/95	13:49:38	10.898	*
06/15/95	13:49:39	10.898	*
06/15/95	13:49:40	10.898	*
06/15/95	13:49:41	10.898	*
06/15/95	13:49:42	10.898	*
06/15/95	13:49:43	10.898	*
06/15/95	13:49:44	10.898	*
06/15/95	13:49:45	10.898	*
06/15/95	13:49:46	10.902	*
06/15/95	13:49:47	10.902	*
06/15/95	13:49:48	10.898	*
06/15/95	13:49:49	10.902	*
06/15/95	13:49:50	10.898	*
06/15/95	13:49:51	10.898	*
06/15/95	13:49:52	10.898	*
06/15/95	13:49:53	10.898	*
06/15/95	13:49:54	10.902	*
06/15/95	13:49:55	10.902	*
06/15/95	13:49:56	10.902	*
06/15/95	13:49:57	10.902	*
06/15/95	13:49:58	10.902	*
06/15/95	13:49:59	10.902	*
06/15/95	13:50:00	10.902	*

06/15/95	13:50:01	10.902	*
06/15/95	13:50:02	10.902	*
06/15/95	13:50:03	10.902	*
06/15/95	13:50:04	10.898	*
06/15/95	13:50:05	10.902	*
06/15/95	13:50:06	10.902	*
06/15/95	13:50:07	10.902	*
06/15/95	13:50:08	10.902	*
06/15/95	13:50:09	10.902	*
06/15/95	13:50:10	10.902	*
06/15/95	13:50:11	10.902	*
06/15/95	13:50:12	10.902	*
06/15/95	13:50:13	10.902	*
06/15/95	13:50:14	10.902	*
06/15/95	13:50:15	10.902	*
06/15/95	13:50:16	10.902	*
06/15/95	13:50:17	10.902	*
06/15/95	13:50:18	10.902	*
06/15/95	13:50:19	10.902	*
06/15/95	13:50:20	10.902	*
06/15/95	13:50:21	10.902	*
06/15/95	13:50:22	10.906	*
06/15/95	13:50:23	10.902	*
06/15/95	13:50:24	10.902	*

Saved Recorder Status

Type: 2102e-20 Range:-2.392 - 15.089 feet Recorder ID: 3627

Time at Recorder: 06/15/95 13:55:37 Last Update: 05/24/95 10:13:45

Signal process: No Processing Accum: Not Scaled

Values being saved: averages

Alarm status: Low alarm @ 1.167 is OFF Upper alarm @ 15.059 is OFF

Nbr of Events: Alarm recording is not enabled

Averaging period: 00:00:01 Amount of data recorded: 00:14:09

Sample Rate: 00:00:01 Excitation time (msec): 015

Storage Capacity: 21330 values records: 05:55:30

CKA-2D 1 run#3

Output compressed by a factor of 1

Static → 10.945

Date	Time	Avg	
06/15/95	13:52:09	10.945	
06/15/95	13:52:10	10.945	
06/15/95	13:52:11	7.720	3.22
06/15/95	13:52:12	8.537	2.41
06/15/95	13:52:13	8.939	2.01
06/15/95	13:52:14	9.242	1.70
06/15/95	13:52:15	9.490	1.45
06/15/95	13:52:16	9.683	1.26
06/15/95	13:52:17	9.871	1.07
06/15/95	13:52:18	10.004	0.94
06/15/95	13:52:19	10.115	0.83
06/15/95	13:52:20	10.209	0.74
06/15/95	13:52:21	10.286	0.66
06/15/95	13:52:22	10.350	0.59
06/15/95	13:52:23	10.414	0.53
06/15/95	13:52:24	10.466	0.48
06/15/95	13:52:25	10.504	0.44
06/15/95	13:52:26	10.547	0.40
06/15/95	13:52:27	10.577	0.37
06/15/95	13:52:28	10.603	0.34
06/15/95	13:52:29	10.632	0.31
06/15/95	13:52:30	10.654	0.29
06/15/95	13:52:31	10.671	0.27
06/15/95	13:52:32	10.688	0.26
06/15/95	13:52:33	10.714	0.23
06/15/95	13:52:34	10.722	0.22
06/15/95	13:52:35	10.735	0.21
06/15/95	13:52:36	10.748	0.20
06/15/95	13:52:37	10.756	0.19
06/15/95	13:52:38	10.765	0.18
06/15/95	13:52:39	10.774	0.17
06/15/95	13:52:40	10.778	0.17
06/15/95	13:52:41	10.791	0.15
06/15/95	13:52:42	10.799	0.15
06/15/95	13:52:43	10.804	0.14
06/15/95	13:52:44	10.808	0.14
06/15/95	13:52:45	10.816	0.13
06/15/95	13:52:46	10.821	0.12
06/15/95	13:52:47	10.825	0.12
06/15/95	13:52:48	10.825	
06/15/95	13:52:49	10.829	
06/15/95	13:52:50	10.833	
06/15/95	13:52:51	10.838	
06/15/95	13:52:52	10.842	
06/15/95	13:52:53	10.842	
06/15/95	13:52:54	10.846	
06/15/95	13:52:55	10.846	
06/15/95	13:52:56	10.851	
06/15/95	13:52:57	10.851	0.09
06/15/95	13:52:58	10.855	
06/15/95	13:52:59	10.859	
06/15/95	13:53:00	10.859	
06/15/95	13:53:01	10.859	
06/15/95	13:53:02	10.863	
06/15/95	13:53:03	10.863	
06/15/95	13:53:04	10.863	
06/15/95	13:53:05	10.868	

06/15/95	13:53:06	10.868		*
06/15/95	13:53:07	10.868	0.08	*
06/15/95	13:53:08	10.868		*
06/15/95	13:53:09	10.868		*
06/15/95	13:53:10	10.872		*
06/15/95	13:53:11	10.872		*
06/15/95	13:53:12	10.876		*
06/15/95	13:53:13	10.876		*
06/15/95	13:53:14	10.876		*
06/15/95	13:53:15	10.876		*
06/15/95	13:53:16	10.876		*
06/15/95	13:53:17	10.876	0.07	*
06/15/95	13:53:18	10.876		*
06/15/95	13:53:19	10.876		*
06/15/95	13:53:20	10.881		*
06/15/95	13:53:21	10.876		*
06/15/95	13:53:22	10.881		*
06/15/95	13:53:23	10.876		*
06/15/95	13:53:24	10.881		*
06/15/95	13:53:25	10.881		*
06/15/95	13:53:26	10.881		*
06/15/95	13:53:27	10.881	0.06	*
06/15/95	13:53:28	10.881		*
06/15/95	13:53:29	10.885		*
06/15/95	13:53:30	10.885		*
06/15/95	13:53:31	10.885		*
06/15/95	13:53:32	10.885	0.06	*

Saved Recorder Status

Type: 2102e-20 Range:-2.392 - 15.089 feet Recorder ID: 3627
Time at Recorder: 06/15/95 13:55:37 Last Update: 05/24/95 10:13:45
Signal process: No Processing Accum: Not Scaled
Values being saved: averages
Alarm status: Low alarm @ 1.167 is OFF Upper alarm @ 15.059 is OFF
Nbr of Events: Alarm recording is not enabled
Averaging period: 00:00:01 Amount of data recorded: 00:14:09
Sample Rate: 00:00:01 Excitation time (msec): 015
Storage Capacity: 21330 values records: 05:55:30

SUPPLEMENTAL HYDROGEOLOGIC INVESTIGATION REPORT

VOLUME 2 OF 2

APPENDICES C THROUGH F

Synthetic Products Company
Stratford, Connecticut

MAY 1996
REF. NO. 3627 (4)
This report printed on recycled paper

CONESTOGA-ROVERS & ASSOCIATES

APPENDIX C

LABORATORY ANALYTICAL REPORTS

TABLE C.1
SAMPLE KEY
MAY/JUNE 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Sample Location	*Sample Depth (ft BGS)* [1]	*Sample Matrix*	*Sample Number*	*Analysis* [2]
SB-9	6/7	Soil	S-050995-JH-001	TOC, Grain Size
SB-9	7/9	Soil	S-050995-JH-002	Bulk Density & Moisture Content
SB-5	2/4	Soil	S-051295-JH-003 [3]	TCL VOC, Site Specific TAL Metals & TCLP Metals
SB-3	2.5/4.5	Soil	S-051295-JH-004	TCL VOC, Site Specific TAL Metals & TCLP Metals
Rinsate		Water	S-051295-JH-005	TCL VOC & Site Specific TAL Metals
SB-10	0.5/2.5	Soil	S-051295-JH-006	TCL VOC & Site Specific TAL Metals
SB-11	3/5	Soil	S-051395-JH-007	TCL VOC, Site Specific TAL Metals & TCLP Metals
SB-3A	3/5	Soil	S-051395-JH-008	TCL VOC & Site Specific TAL Metals
SB-4	3.5/5.5	Soil	S-051395-JH-009	TCL VOC & Site Specific TAL Metals
SB-5A	5/7	Soil	S-051495-JH-010	TCL VOC & Site Specific TAL Metals
SB-1	9/11	Soil	S-051495-JH-011	Bulk Density & Moisture Content
SB-1	5/7	Soil	S-051495-JH-012	TCL VOC, Site Specific TAL Metals & TCLP Metals
SB-1	11/13	Soil	S-051495-JH-013	TOC, Grain Size
SB-2	10/11	Soil	S-051695-JH-014	Bulk Density & Moisture Content
SB-2	9/10	Soil	S-051695-JH-015	TOC, Grain Size
SB-2	23/25	Soil	S-051695-JH-016	TOC, Grain Size
SB-2	25/27	Soil	S-051695-JH-017	Bulk Density & Moisture Content
SB-2	5/7	Soil	S-051695-JH-018	TCL VOC & Site Specific TAL Metals
SB-6	1/3	Soil	S-051795-JH-019	TCL VOC, Site Specific TAL Metals & TCLP Metals
SB-9	18/20	Soil	S-052295-JH-020	TOC, Grain Size
SB-9	20/22	Soil	S-052295-JH-021	Bulk Density & Moisture Content
Rinsate		Water	W-052295-JH-022	TCL VOC & Site Specific TAL Metals
SB-9A	5/7	Soil	S-052295-JH-023	TCL VOC & Site Specific TAL Metals
SB-7	3/5	Soil	S-052395-JH-024	TCL VOC & Site Specific TAL Metals
SB-7	7/9	Soil	S-052395-JH-025	Bulk Density & Moisture Content
SB-7	9/11	Soil	S-052395-JH-026	TOC, Grain Size
SB-7	19/21	Soil	S-052395-JH-027	TOC, Grain Size
SB-7	21/23	Soil	S-052395-JH-028	Bulk Density & Moisture Content

TABLE C.1
SAMPLE KEY
MAY/JUNE 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Sample Location	*Sample Depth (ft BGS)*	*Sample Matrix*	*Sample Number*	*Analysis*
SB-8	3/5	Soil	S-052495-JH-029	TCL VOC & Site Specific TAL Metals
SB-8	5/7	Soil	S-052495-JH-030	TOC, Grain Size
SB-8	7/9	Soil	S-052495-JH-031	Bulk Density & Moisture Content
SB-8	19/21	Soil	S-052495-JH-032	TOC, Grain Size
SB-8	21/23	Soil	S-052495-JH-033	Bulk Density & Moisture Content
SB-12	5/7	Soil	S-052595-JH-034	TCL VOC & Site Specific TAL Metals
SB-13	5/7	Soil	S-052595-JH-035	TCL VOC & Site Specific TAL Metals
SB-4A	5/7	Soil	S-052595-JH-036	TCL VOC & Site Specific TAL Metals
SB-1	22/24	Soil	S-052695-JH-037	TOC, Grain Size
SB-1	24/26	Soil	S-052695-JH-038	Bulk Density & Moisture Content
SB-1A	5/7	Soil	S-053095-JH-039	TRPH
SB-1B	5/7	Soil	S-053095-JH-040	TPH & SVOC
Rinsate		Water	W-053095-JH-041	TPH & SVOC
SB-1C	5 7	Soil	S-053195-JH-042	TRPH
SB-13A	11/13	Soil	S-053195-JH-043	TCL VOC & Site Specific TAL Metals
Soil Drums	Composite	Soil	WP-061395-MAW-001	TCLP VOC, TCLP SVOC, TCLP-Metals, Reactivity, Corrosivity, Cn and Sulfide

TABLE C.1
SAMPLE KEY
MAY/JUNE 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Sample Location	*Sample Matrix*	*Sample Number*	*Analysis*
CRA 2D-95	Water	GW-061395-MAW-002	TCL VOC & Site Specific TAL Metals
CRA 2S-95	Water	GW-061395-MAW-003	TCL VOC & Site Specific TAL Metals
CRA 4D-95	Water	GW-061495-MAW-004	TCL VOC & Site Specific TAL Metals
CRA 4D-95 Duplicate	Water	GW-061495-MAW-005	TCL VOC & Site Specific TAL Metals
CRA 3-95	Water	GW-061495-MAW-006	TCL VOC & Site Specific TAL Metals
CRA 4S-95	Water	GW-061495-MAW-007	TCL VOC & Site Specific TAL Metals
CRA 6D-95	Water	GW-061495-MAW-008	TCL VOC & Site Specific TAL Metals
CRA 6D-95 Duplicate	Water	GW-061495-MAW-009	TCL VOC & Site Specific TAL Metals
CRA 6S-95	Water	GW-061495-MAW-010	TCL VOC & Site Specific TAL Metals
CRA 5D-95	Water	GW-061495-MAW-011	TCL VOC & Site Specific TAL Metals
CRA 5S-95	Water	GW-061495-MAW-012	TCL VOC & Site Specific TAL Metals
CRA 8-95	Water	GW-061495-MAW-013	TCL VOC & Site Specific TAL Metals
CRA 1D-95	Water	GW-061595-MAW-014 [3]	TCL VOC & Site Specific TAL Metals
CRA 1S-95	Water	GW-061595-MAW-015	TCL VOC & Site Specific TAL Metals
CRA 7-95	Water	GW-061595-MAW-016	TCL VOC & Site Specific TAL Metals
Water Tank #1	Water	GW-061595-MAW-017	TCL VOC, Site Specific TAL Metals, TSS, pH, & BOD
Water Tank #2	Water	GW-061595-MAW-018	TCL VOC, Site Specific TAL Metals, TSS, pH, & BOD

1

2 TCL - Target Compound List
VOC - Volatile Organic Compounds
TAL - Target Analyte List

3 MS/MSD was taken here

TABLE C.2

SAMPLE KEY
SEPTEMBER 1995
SYNTHETIC PRODUCTS COMPANY
STRATFORD, CONNECTICUT

Sample Number	*Well Identification*
GW-091395-PK-019	CRA2S-95
GW-091395-PK-020	CRA3-95
GW-091395-PK-021	CRA2D-95
GW-091395-PK-022	CRA1D-95
GW-091395-PK-023	CRA4D-95 MS/MSD
GW-091395-PK-024	CRA4S-95
GW-091495-PK-025	CRA5D-95
GW-091495-PK-026	CRA5S-95
GW-091495-PK-027	CRA5S-95 Duplicate
GW-091495-PK-028	CRA6D-95
GW-091495-PK-029	CRA6S-95
GW-091495-PK-030	CRA6S-95 Duplicate
GW-091495-PK-031	CRA1S-95
GW-091495-PK-032	CRA8-95
GW-091595-PK-033	CRA7-95

Rec'd CRA

JUN 09 1995

Quanterra
Environmental Services

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
216 497-0772 Fax

ASE 160009

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS COMPANY

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Daniel J. Wright
Project Manager

CHECKED AGAINST
PRELIMINARY DATA
Date 6-9-95
Initials NMB

June 8, 1995

VALIDATED DATA
Project # 3627
Lab Report # ASE 160009
Initials NMB
Date 8-21-95

Quanterra
Environmental Services

PROJECT NARRATIVE

The following report contains the analytical results for four solid samples and one water sample submitted to Quanterra-North Canton by Conestoga Rovers & Associates, Inc. from the Synthetic Products Company Site, project number 3627. The samples were received May 15, 1995, according to documented sample acceptance procedures.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the following page in accordance with the methods indicated. Preliminary results were provided by facsimile transmission to Nancy Bergstrom on May 30, 1995. A summary of QC data for these analyses is included at the end of the report.

Quanterra
Environmental Services

ENGINEERING • TESTING • INSPECTION

APPLIED CONSTRUCTION TECHNOLOGIES, INC.

210 HAYES DRIVE • SUITE C • CLEVELAND, OHIO 44131 • (216) 459-TEST • FAX (216) 459-8954
478 E. EXCHANGE ST. • SUITE 202 • AKRON, OHIO 44304 • (216) 253-TEST • FAX (216) 253-3462

May 30, 1995

Quanterra, Incorporated
4101 Shuffel Drive
North Canton, Ohio 44720

Attention: Mr. Daniel J. Wright

SUBJECT: LABORATORY RESULTS
ONE (1) SUBMITTED SAMPLE
P.O. SR006810
CLIENT CODE: 01628

ACT PROJECT NO. 9501.17
Report Dated 30 May 1995

Enclosed is a grain size analysis result for one (1) sample submitted to us on May 17, 1995. The grain size analysis was performed per ASTM D-422.

APPLIED CONSTRUCTION TECHNOLOGIES, INC.
Boris Shilman, Lab Technician
by:

GEORGE WOZNIAK, C.E.T.
Manager - Materials Laboratory

:fz

Quanterra
Environmental Services

ANALYTICAL METHODS SUMMARY

Parameters	Methods
TCL Volatile Organics	SW846 8240A
Silver	SW846 6010A
Barium	SW846 6010A
Cadmium	SW846 6010A
Chromium	SW846 6010A
Copper	SW846 6010A
Nickel	SW846 6010A
Zinc	SW846 6010A
Arsenic	SW846 6010A
Lead	SW846 6010A
Selenium	SW846 6010A
Solids, Total (TS)	MCAWW 160.3 MODIFIED

References:

MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL: Cincinnati, OH: March 1983 and subsequent revisions

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, September, 1986 and subsequent revisions

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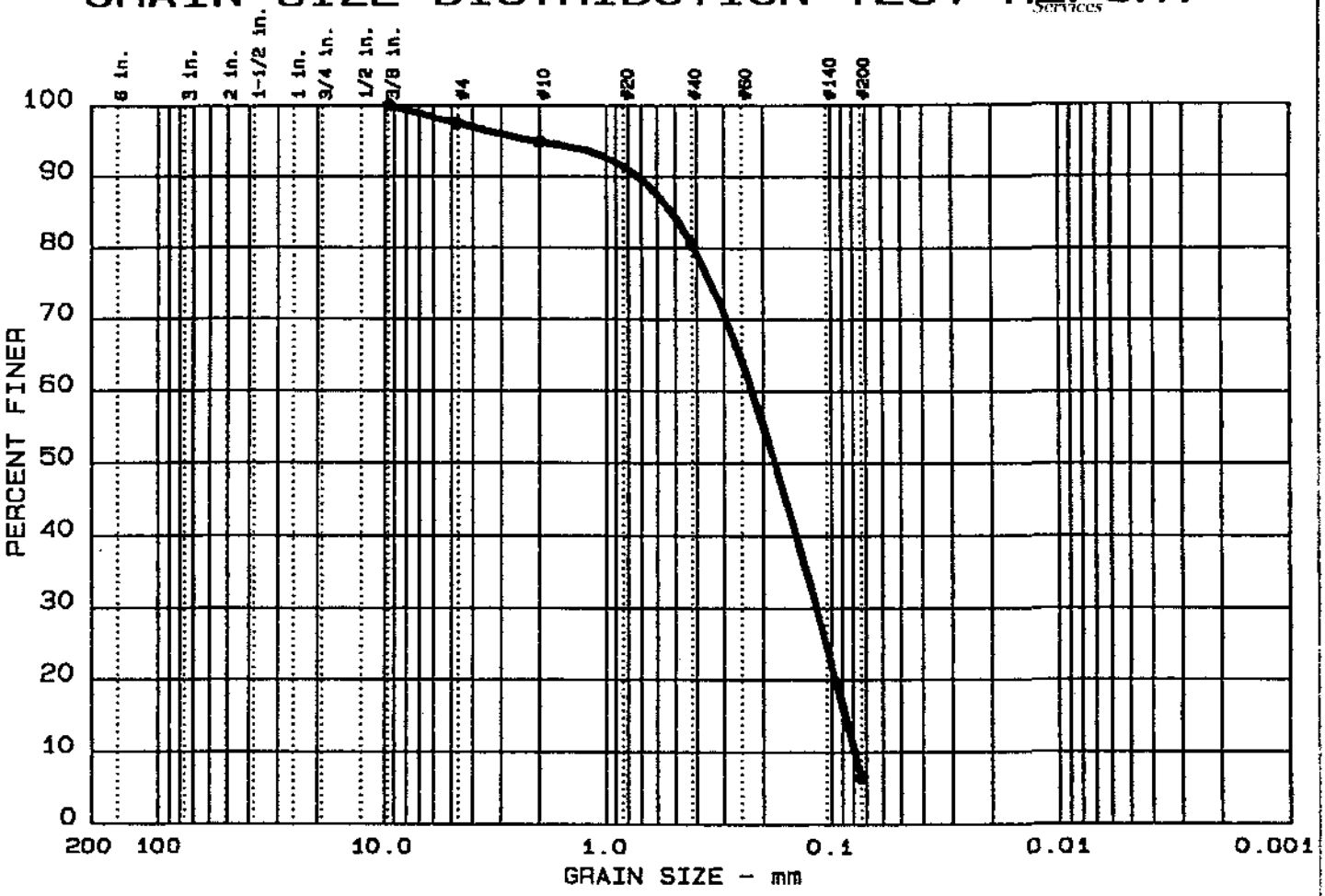
SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED
A4JVW	A5E160009-001	S-050995-JH-001	5/09/95
A4JW0	A5E160009-002	S-051295-JH-003	5/12/95 9:45
A4JW1	A5E160009-003	S-051295-JH-004	5/12/95 13:15
A4JW2	A5E160009-004	W-051295-JH-005	5/12/95 13:30
A4JW3	A5E160009-005	S-051295-JH-006	5/12/95 14:50

GRAIN SIZE DISTRIBUTION TEST REPORT

Quanterra Environmental Services



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	2.4	91.0	6.6	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.51	0.23	0.18	0.117	0.0871	0.0791	0.77	2.9

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN POORLY GRADED FINE SAND with SILT; tr.GRAVEL	SP-SM	

Project No.: 9501.07
Project: P.O. SR006810 CLIENT CODE: 001628
● Location: A-5E160009-001 A4JVW-1-01

Date: 5-26-95

Remarks:
CLIENT: QUANTERRA INC.

JAR SAMPLES RECEIVED ON
05-17-95

GRAIN SIZE DISTRIBUTION TEST REPORT

APPLIED CONSTRUCTION TECH., INC.

Figure No. 01

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-050995-JH-001

WO #: A4JVW
LAB #: A5E160009-001
MATRIX: SOLID

DATE SAMPLED: 5/09/95
TIME SAMPLED:
DATE RECEIVED: 5/15/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	83.1	0.50	%	MCAWW 160.3 M	5/17- 5/18/95	5137019
Carbon, Total Organic	360	100	mg/kg	MOSA WALKLEY-	6/05/95	5156044

NOTE: AS RECEIVED

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-003

WO #: A4JW010A
LAB #: A5E160009-002
MATRIX: SOLID

DATE SAMPLED: 5/12/95
TIME SAMPLED: 9:45
DATE RECEIVED: 5/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	10	SW846 8240A	05/22/95	5143073
Bromomethane	ND	10	SW846 8240A	05/22/95	5143073
Vinyl chloride	ND	10	SW846 8240A	05/22/95	5143073
Chloroethane	ND	10	SW846 8240A	05/22/95	5143073
Methylene chloride	ND	5.0	SW846 8240A	05/22/95	5143073
Acetone	**13 B J**	**50**	**SW846 8240A**	**05/22/95**	**5143073**
Carbon disulfide	ND	5.0	SW846 8240A	05/22/95	5143073
1,1-Dichloroethene	ND	5.0	SW846 8240A	05/22/95	5143073
1,1-Dichloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
1,2-Dichloroethene, Total	ND	5.0	SW846 8240A	05/22/95	5143073
Chloroform	ND	5.0	SW846 8240A	05/22/95	5143073
1,2-Dichloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
2-Butanone	ND	50	SW846 8240A	05/22/95	5143073
1,1,1-Trichloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
Carbon tetrachloride	ND	5.0	SW846 8240A	05/22/95	5143073
Bromodichloromethane	ND	5.0	SW846 8240A	05/22/95	5143073
1,2-Dichloropropane	ND	5.0	SW846 8240A	05/22/95	5143073
cis-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/22/95	5143073
Trichloroethene	ND	5.0	SW846 8240A	05/22/95	5143073
Dibromochloromethane	ND	5.0	SW846 8240A	05/22/95	5143073
1,1,2-Trichloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
Benzene	ND	5.0	SW846 8240A	05/22/95	5143073
trans-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	90	(70 - 121)
Toluene-d8	106	(81 - 117)
Bromofluorobenzene	100	(74 - 121)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

B (COMPOUND DETECTED IN METHOD BLANK ASSOCIATED WITH THIS SAMPLE)

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-003

WO #: A4JW010A
LAB #: A5E160009-002
MATRIX: SOLID

DATE SAMPLED: 5/12/95
TIME SAMPLED: 9:45
DATE RECEIVED: 5/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	5.0	SW846 8240A	05/22/95	5143073
4-Methyl-2-pentanone	ND	50	SW846 8240A	05/22/95	5143073
2-Hexanone	ND	50	SW846 8240A	05/22/95	5143073
Tetrachloroethene	ND	5.0	SW846 8240A	05/22/95	5143073
Toluene	**3.4 J**	**5.0**	**SW846 8240A**	**05/22/95**	**5143073**
1,1,2,2-Tetrachloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
Chlorobenzene	ND	5.0	SW846 8240A	05/22/95	5143073
Ethylbenzene	ND	5.0	SW846 8240A	05/22/95	5143073
Styrene	ND	5.0	SW846 8240A	05/22/95	5143073
Xylenes, Total	ND	5.0	SW846 8240A	05/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	90	(70 - 121)
Toluene-d8	106	(81 - 117)
Bromofluorobenzene	100	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-003

WO #: A4JW0
LAB #: A5E160009-002
MATRIX: SOLID

DATE SAMPLED: 5/12/95
TIME SAMPLED: 9:45
DATE RECEIVED: 5/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Barium	175	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Cadmium	29.4	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Chromium	15.9	2.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Copper	38.0	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Nickel	10.7	4.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Zinc	738	5.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Arsenic	10.0	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Lead	42.2	0.60	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Selenium	*ND	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
* ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-003

WO #: A4JW0
LAB #: A5E160009-002
MATRIX: SOLID

DATE SAMPLED: 5/12/95
TIME SAMPLED: 9:45
DATE RECEIVED: 5/15/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	93.5	0.50	%	MCAWW 160.3 M	5/17- 5/18/95	5137019

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-004

WO #: A4JW110E
LAB #: A5E160009-003
MATRIX: SOLID

DATE SAMPLED: 5/12/95
TIME SAMPLED: 13:15
DATE RECEIVED: 5/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1,200	SW846 8240A	05/22-05/24/95	5143029
Bromomethane	ND	1,200	SW846 8240A	05/22-05/24/95	5143029
Vinyl chloride	ND	1,200	SW846 8240A	05/22-05/24/95	5143029
Chloroethane	ND	1,200	SW846 8240A	05/22-05/24/95	5143029
Methylene chloride	ND	620	SW846 8240A	05/22-05/24/95	5143029
Acetone	ND	6,200	SW846 8240A	05/22-05/24/95	5143029
Carbon disulfide	ND	620	SW846 8240A	05/22-05/24/95	5143029
1,1-Dichloroethene	ND	620	SW846 8240A	05/22-05/24/95	5143029
1,1-Dichloroethane	ND	620	SW846 8240A	05/22-05/24/95	5143029
1,2-Dichloroethene, Total	ND	620	SW846 8240A	05/22-05/24/95	5143029
Chloroform	ND	620	SW846 8240A	05/22-05/24/95	5143029
1,2-Dichloroethane	ND	620	SW846 8240A	05/22-05/24/95	5143029
2-Butanone	ND	6,200	SW846 8240A	05/22-05/24/95	5143029
1,1,1-Trichloroethane	ND	620	SW846 8240A	05/22-05/24/95	5143029
Carbon tetrachloride	ND	620	SW846 8240A	05/22-05/24/95	5143029
Bromodichloromethane	ND	620	SW846 8240A	05/22-05/24/95	5143029
1,2-Dichloropropane	ND	620	SW846 8240A	05/22-05/24/95	5143029
cis-1,3-Dichloropropene	ND	620	SW846 8240A	05/22-05/24/95	5143029
Trichloroethene	ND	620	SW846 8240A	05/22-05/24/95	5143029
Dibromochloromethane	ND	620	SW846 8240A	05/22-05/24/95	5143029
1,1,2-Trichloroethane	ND	620	SW846 8240A	05/22-05/24/95	5143029
Benzene	**1,500**	**620**	**SW846 8240A**	**05/22-05/24/95**	**5143029**
trans-1,3-Dichloropropene	ND	620	SW846 8240A	05/22-05/24/95	5143029

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	115	(70 - 121)
Toluene-d8	96	(81 - 117)
Bromofluorobenzene	112	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-004

WO #: A4JW110E
LAB #: A5E160009-003
MATRIX: SOLID

DATE SAMPLED: 5/12/95
TIME SAMPLED: 13:15
DATE RECEIVED: 5/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	620	SW846 8240A	05/22-05/24/95	5143029
4-Methyl-2-pentanone	ND	6,200	SW846 8240A	05/22-05/24/95	5143029
2-Hexanone	ND	6,200	SW846 8240A	05/22-05/24/95	5143029
Tetrachloroethene	ND	620	SW846 8240A	05/22-05/24/95	5143029
Toluene	ND	620	SW846 8240A	05/22-05/24/95	5143029
1,1,2,2-Tetrachloroethane	ND	620	SW846 8240A	05/22-05/24/95	5143029
Chlorobenzene	ND	620	SW846 8240A	05/22-05/24/95	5143029
Ethylbenzene	ND	620	SW846 8240A	05/22-05/24/95	5143029
Styrene	ND	620	SW846 8240A	05/22-05/24/95	5143029
Xylenes, Total	**610 J**	**620**	**SW846 8240A**	**05/22-05/24/95**	**5143029**

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	115	(70 - 121)
Toluene-d8	96	(81 - 117)
Bromofluorobenzene	112	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-004

WO #: A4JW1
LAB #: A5E160009-003
MATRIX: SOLID

DATE SAMPLED: 5/12/95
TIME SAMPLED: 13:15
DATE RECEIVED: 5/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	3.7	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Barium	44.2	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Cadmium	4.1	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Chromium	26.3	2.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Copper	1,330	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Nickel	34.1	4.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Zinc	1,240	5.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Arsenic	5.1	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Lead	92.9	0.60	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Selenium	*ND	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004

NOTE: AS RECEIVED
* ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-004

WO #: A4JW1
LAB #: A5E160009-003
MATRIX: SOLID

DATE SAMPLED: 5/12/95
TIME SAMPLED: 13:15
DATE RECEIVED: 5/15/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	88.5	0.50	%	MCAWW 160.3 M	5/17- 5/18/95	5137019

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

W-051295-JH-005

WO #: A4JW210A
LAB #: A5E160009-004
MATRIX: WATER

DATE SAMPLED: 5/12/95
TIME SAMPLED: 13:30
DATE RECEIVED: 5/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	05/19/95	5139123
Bromomethane	ND	1.0	SW846 8260	05/19/95	5139123
Vinyl chloride	ND	1.0	SW846 8260	05/19/95	5139123
Chloroethane	ND	1.0	SW846 8260	05/19/95	5139123
Methylene chloride	ND	1.0	SW846 8260	05/19/95	5139123
Acetone	ND	10	SW846 8260	05/19/95	5139123
Carbon disulfide	ND	1.0	SW846 8260	05/19/95	5139123
1,1-Dichloroethene	ND	1.0	SW846 8260	05/19/95	5139123
1,1-Dichloroethane	ND	1.0	SW846 8260	05/19/95	5139123
1,2-Dichloroethene, Total	ND	1.0	SW846 8260	05/19/95	5139123
Chloroform	ND	1.0	SW846 8260	05/19/95	5139123
1,2-Dichloroethane	ND	1.0	SW846 8260	05/19/95	5139123
2-Butanone	ND	10	SW846 8260	05/19/95	5139123
1,1,1-Trichloroethane	ND	1.0	SW846 8260	05/19/95	5139123
Carbon tetrachloride	ND	1.0	SW846 8260	05/19/95	5139123
Bromodichloromethane	ND	1.0	SW846 8260	05/19/95	5139123
1,2-Dichloropropane	ND	1.0	SW846 8260	05/19/95	5139123
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	05/19/95	5139123
Trichloroethene	ND	1.0	SW846 8260	05/19/95	5139123
Dibromochloromethane	ND	1.0	SW846 8260	05/19/95	5139123
1,1,2-Trichloroethane	ND	1.0	SW846 8260	05/19/95	5139123
Benzene	ND	1.0	SW846 8260	05/19/95	5139123
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	05/19/95	5139123

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	93	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	105	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

W-051295-JH-005

WO #: A4JW210A
LAB #: A5E160009-004
MATRIX: WATER

DATE SAMPLED: 5/12/95
TIME SAMPLED: 13:30
DATE RECEIVED: 5/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	1.0	SW846 8260	05/19/95	5139123
4-Methyl-2-pentanone	ND	10	SW846 8260	05/19/95	5139123
2-Hexanone	ND	10	SW846 8260	05/19/95	5139123
Tetrachloroethene	ND	1.0	SW846 8260	05/19/95	5139123
Toluene	ND	1.0	SW846 8260	05/19/95	5139123
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	05/19/95	5139123
Chlorobenzene	ND	1.0	SW846 8260	05/19/95	5139123
Ethylbenzene	ND	1.0	SW846 8260	05/19/95	5139123
Styrene	ND	1.0	SW846 8260	05/19/95	5139123
Xylenes, Total	ND	1.0	SW846 8260	05/19/95	5139123

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	93	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	105	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

W-051295-JH-005

WO #: A4JW2
LAB #: A5E160009-004
MATRIX: WATER

DATE SAMPLED: 5/12/95
TIME SAMPLED: 13:30
DATE RECEIVED: 5/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	5/19- 5/24/95	5139004
Barium	ND	0.010	mg/L	SW846 6010A	5/19- 5/24/95	5139004
Cadmium	ND	0.010	mg/L	SW846 6010A	5/19- 5/24/95	5139004
Chromium	ND	0.020	mg/L	SW846 6010A	5/19- 5/24/95	5139004
Copper	ND	0.010	mg/L	SW846 6010A	5/19- 5/24/95	5139004
Nickel	ND	0.040	mg/L	SW846 6010A	5/19- 5/24/95	5139004
Zinc	ND	0.050	mg/L	SW846 6010A	5/19- 5/24/95	5139004
Arsenic	ND	0.0050	mg/L	SW846 6010A	5/19- 5/24/95	5139004
Lead	ND	0.0030	mg/L	SW846 6010A	5/19- 5/24/95	5139004
Selenium	ND	0.0050	mg/L	SW846 6010A	5/19- 5/24/95	5139004

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-006

WO #: A4JW310A
LAB #: A5E160009-005
MATRIX: SOLID

DATE SAMPLED: 5/12/95
TIME SAMPLED: 14:50
DATE RECEIVED: 5/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	10	SW846 8240A	05/22/95	5143073
Bromomethane	ND	10	SW846 8240A	05/22/95	5143073
Vinyl chloride	ND	10	SW846 8240A	05/22/95	5143073
Chloroethane	ND	10	SW846 8240A	05/22/95	5143073
Methylene chloride	ND	5.0	SW846 8240A	05/22/95	5143073
Acetone	**100 B**	**50**	**SW846 8240A**	**05/22/95**	**5143073**
Carbon disulfide	ND	5.0	SW846 8240A	05/22/95	5143073
1,1-Dichloroethene	ND	5.0	SW846 8240A	05/22/95	5143073
1,1-Dichloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
1,2-Dichloroethene, Total	ND	5.0	SW846 8240A	05/22/95	5143073
Chloroform	ND	5.0	SW846 8240A	05/22/95	5143073
1,2-Dichloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
2-Butanone	**6.1 J**	**50**	**SW846 8240A**	**05/22/95**	**5143073**
1,1,1-Trichloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
Carbon tetrachloride	ND	5.0	SW846 8240A	05/22/95	5143073
Bromodichloromethane	ND	5.0	SW846 8240A	05/22/95	5143073
1,2-Dichloropropane	ND	5.0	SW846 8240A	05/22/95	5143073
cis-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/22/95	5143073
Trichloroethene	ND	5.0	SW846 8240A	05/22/95	5143073
Dibromochloromethane	ND	5.0	SW846 8240A	05/22/95	5143073
1,1,2-Trichloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
Benzene	ND	5.0	SW846 8240A	05/22/95	5143073
trans-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	90	(70 - 121)
Toluene-d8	108	(81 - 117)
Bromofluorobenzene	101	(74 - 121)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

B (COMPOUND DETECTED IN METHOD BLANK ASSOCIATED WITH THIS SAMPLE)

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-006

WO #: A4JW310A
LAB #: A5E160009-005
MATRIX: SOLID

DATE SAMPLED: 5/12/95
TIME SAMPLED: 14:50
DATE RECEIVED: 5/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	5.0	SW846 8240A	05/22/95	5143073
4-Methyl-2-pentanone	ND	50	SW846 8240A	05/22/95	5143073
2-Hexanone	ND	50	SW846 8240A	05/22/95	5143073
Tetrachloroethene	ND	5.0	SW846 8240A	05/22/95	5143073
Toluene	**3.3 J**	**5.0**	**SW846 8240A**	**05/22/95**	**5143073**
1,1,2,2-Tetrachloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
Chlorobenzene	ND	5.0	SW846 8240A	05/22/95	5143073
Ethylbenzene	ND	5.0	SW846 8240A	05/22/95	5143073
Styrene	ND	5.0	SW846 8240A	05/22/95	5143073
Xylenes, Total	ND	5.0	SW846 8240A	05/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	90	(70 - 121)
Toluene-d8	108	(81 - 117)
Bromofluorobenzene	101	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-006

WO #: A4JW3
LAB #: A5E160009-005
MATRIX: SOLID

DATE SAMPLED: 5/12/95
TIME SAMPLED: 14:50
DATE RECEIVED: 5/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	3.1	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Barium	59.7	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Cadmium	1.9	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Chromium	22.1	2.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Copper	23.5	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Nickel	16.9	4.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Zinc	61.5	5.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Arsenic	3.4	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Lead	37.3	0.60	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Selenium	*ND	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004

NOTE: AS RECEIVED
* ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-006

WO #: A4JW3
LAB #: A5E160009-005
MATRIX: SOLID

DATE SAMPLED: 5/12/95
TIME SAMPLED: 14:50
DATE RECEIVED: 5/15/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	85.7	0.50	%	MCAWW 160.3 M	5/17- 5/18/95	5137019

NOTE: AS RECEIVED

Quanterra
Environmental Services

QUALITY CONTROL SECTION

Quanterra
Environmental Services

QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with the exception of those items noted.

The laboratory performs MATRIX SPIKES (MS) and MATRIX SPIKE DUPLICATES (MSD) to indicate any matrix effects within a given sample. They also allow the laboratory to gather precision and bias data for a specific method and matrix.

Since matrix effects may bias percent recovery, the laboratory performs corrective action if the precision (RPD) criteria of the MS/MSD is not met.

The matrix spike and matrix spike duplicate (MS/MSD) contained in this quality control report were generated as part of the laboratory QA/QC program requirements. These requirements include the analysis of a MS/MSD on a one in twenty basis. Therefore, the associated batch number indicated on the MS/MSD report may not reflect the same batch number as those of the samples contained in the analytical report.

"DIL" in the Quality Control Section means that due to high analyte concentration in the sample, the matrix spiking analytes added to the sample are diluted out and cannot be quantitated.

The lead preparation blank in batch 5137004 is 0.64 mg/kg. All associated samples in this lot are ND or at least 10 times the blank value.

The AD/RPD for the barium and cadmium MS/MSD performed on sample A5E160009-002 was outside laboratory acceptance criteria. Remaining elements spiked from the same spiking solution and from the same prep were within laboratory acceptance criteria. Matrix effect was demonstrated and associated results were accepted.

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5139123
LAB #: A5E190000-123 C

PREPARATION DATE: 5/19/95
DATE ANALYZED: 5/19/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	76	(70-143)
Trichloroethene	92	(76-121)
Chlorobenzene	97	(81-121)
Toluene	92	(79-122)
Benzene	92	(79-125)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5143029
LAB #: A5E230000-029 C

PREPARATION DATE: 5/22/95
DATE ANALYZED: 5/22/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	83	(63-137)
Trichloroethene	87	(77-116)
Chlorobenzene	91	(80-118)
Toluene	91	(80-118)
Benzene	86	(77-118)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5143073
LAB #: A5E230000-073 C

PREPARATION DATE: 5/22/95
DATE ANALYZED: 5/22/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	78	(63-137)
Trichloroethene	88	(77-116)
Chlorobenzene	96	(80-118)
Toluene	92	(80-118)
Benzene	90	(77-118)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

LAB #: A5E160009

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5137004		
Silver	100	(64-119)	5/17- 5/18/95
Arsenic	98	(80-120)	5/17- 5/25/95
Barium	96	(82-112)	5/17- 5/18/95
Cadmium	96	(72-109)	5/17- 5/18/95
Chromium	100	(76-118)	5/17- 5/18/95
Copper	98	(82-110)	5/17- 5/18/95
Nickel	98	(74-111)	5/17- 5/18/95
Lead	101	(80-120)	5/17- 5/25/95
Selenium	90	(80-120)	5/17- 5/25/95
Zinc	102	(68-116)	5/17- 5/18/95
	BATCH:5139004		
Silver	98	(77-113)	5/19- 5/24/95
Arsenic	93	(80-120)	5/19- 5/23/95
Barium	100	(86-110)	5/19- 5/24/95
Cadmium	103	(80-108)	5/19- 5/24/95
Chromium	103	(83-114)	5/19- 5/24/95
Copper	102	(84-110)	5/19- 5/24/95
Nickel	104	(81-110)	5/19- 5/24/95
Lead	93	(80-120)	5/19- 5/23/95
Selenium	91	(80-120)	5/19- 5/23/95
Zinc	110	(79-112)	5/19- 5/24/95

Quanterra Environmental Services

CHECK SAMPLE REPORT

LAB #: A5E160009

- - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - -

COMPOUND	SPIKE PERCENT RECOVERY	LIMITS	PREPARATION - ANALYSIS DATE	Q/C BATCH
Carbon, Total Organic	87	(80-119)	6/05/95	5156044

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E160009

- - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	PREPARATION - ANALYSIS DATE	QC BATCH
Carbon, Total Organic	ND	100	mg/kg	6/05/95	5156044

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E190000-123

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	5/19/95	5139123
Benzene	ND	1.0	5/19/95	5139123
Bromodichloromethane	ND	1.0	5/19/95	5139123
Bromoform	ND	1.0	5/19/95	5139123
Bromomethane	ND	1.0	5/19/95	5139123
2-Butanone	ND	10	5/19/95	5139123
Carbon disulfide	ND	1.0	5/19/95	5139123
Carbon tetrachloride	ND	1.0	5/19/95	5139123
Chlorobenzene	ND	1.0	5/19/95	5139123
Dibromochloromethane	ND	1.0	5/19/95	5139123
Chloroethane	ND	1.0	5/19/95	5139123
Chloroform	ND	1.0	5/19/95	5139123
Chloromethane	ND	1.0	5/19/95	5139123
1,1-Dichloroethane	ND	1.0	5/19/95	5139123
1,2-Dichloroethane	ND	1.0	5/19/95	5139123
1,1-Dichloroethene	ND	1.0	5/19/95	5139123
1,2-Dichloroethene, Total	ND	1.0	5/19/95	5139123
1,2-Dichloropropane	ND	1.0	5/19/95	5139123
cis-1,3-Dichloropropene	ND	1.0	5/19/95	5139123
trans-1,3-Dichloropropene	ND	1.0	5/19/95	5139123
Ethylbenzene	ND	1.0	5/19/95	5139123
2-Hexanone	ND	10	5/19/95	5139123
Methylene chloride	1.4	**1.0**	**5/19/95**	**5139123**
4-Methyl-2-pentanone	ND	10	5/19/95	5139123
Styrene	ND	1.0	5/19/95	5139123

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	96	(88 - 110)
Bromofluorobenzene	108	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E190000-123

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	1.0	5/19/95	5139123
Tetrachloroethene	ND	1.0	5/19/95	5139123
Toluene	ND	1.0	5/19/95	5139123
1,1,1-Trichloroethane	ND	1.0	5/19/95	5139123
1,1,2-Trichloroethane	ND	1.0	5/19/95	5139123
Trichloroethene	ND	1.0	5/19/95	5139123
Vinyl chloride	ND	1.0	5/19/95	5139123
Xylenes, Total	ND	1.0	5/19/95	5139123

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	96	(88 - 110)
Bromofluorobenzene	108	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E230000-029

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	6,200	5/22/95	5143029
Benzene	ND	620	5/22/95	5143029
Bromodichloromethane	ND	620	5/22/95	5143029
Bromoform	ND	620	5/22/95	5143029
Bromomethane	ND	1,200	5/22/95	5143029
2-Butanone	ND	6,200	5/22/95	5143029
Carbon disulfide	ND	620	5/22/95	5143029
Carbon tetrachloride	ND	620	5/22/95	5143029
Chlorobenzene	ND	620	5/22/95	5143029
Dibromochloromethane	ND	620	5/22/95	5143029
Chloroethane	ND	1,200	5/22/95	5143029
Chloroform	ND	620	5/22/95	5143029
Chloromethane	ND	1,200	5/22/95	5143029
1,1-Dichloroethane	ND	620	5/22/95	5143029
1,2-Dichloroethane	ND	620	5/22/95	5143029
1,1-Dichloroethene	ND	620	5/22/95	5143029
1,2-Dichloroethene, Total	ND	620	5/22/95	5143029
1,2-Dichloropropane	ND	620	5/22/95	5143029
cis-1,3-Dichloropropene	ND	620	5/22/95	5143029
trans-1,3-Dichloropropene	ND	620	5/22/95	5143029
Ethylbenzene	ND	620	5/22/95	5143029
2-Hexanone	ND	6,200	5/22/95	5143029
Methylene chloride	ND	620	5/22/95	5143029
4-Methyl-2-pentanone	ND	6,200	5/22/95	5143029
Styrene	ND	620	5/22/95	5143029

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	92	(70 - 121)
Toluene-d8	91	(81 - 117)
Bromofluorobenzene	95	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E230000-029

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	620	5/22/95	5143029
Tetrachloroethene	ND	620	5/22/95	5143029
Toluene	ND	620	5/22/95	5143029
1,1,1-Trichloroethane	ND	620	5/22/95	5143029
1,1,2-Trichloroethane	ND	620	5/22/95	5143029
Trichloroethene	ND	620	5/22/95	5143029
Vinyl chloride	ND	1,200	5/22/95	5143029
Xylenes, Total	ND	620	5/22/95	5143029

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	92	(70 - 121)
Toluene-d8	91	(81 - 117)
Bromofluorobenzene	95	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E230000-073

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	2.2 J	**50**	**5/22/95**	**5143073**
Benzene	ND	5.0	5/22/95	5143073
Bromodichloromethane	ND	5.0	5/22/95	5143073
Bromoform	ND	5.0	5/22/95	5143073
Bromomethane	ND	10	5/22/95	5143073
2-Butanone	ND	50	5/22/95	5143073
Carbon disulfide	ND	5.0	5/22/95	5143073
Carbon tetrachloride	ND	5.0	5/22/95	5143073
Chlorobenzene	ND	5.0	5/22/95	5143073
Dibromochloromethane	ND	5.0	5/22/95	5143073
Chloroethane	ND	10	5/22/95	5143073
Chloroform	ND	5.0	5/22/95	5143073
Chloromethane	ND	10	5/22/95	5143073
1,1-Dichloroethane	ND	5.0	5/22/95	5143073
1,2-Dichloroethane	ND	5.0	5/22/95	5143073
1,1-Dichloroethene	ND	5.0	5/22/95	5143073
1,2-Dichloroethene, Total	ND	5.0	5/22/95	5143073
1,2-Dichloropropane	ND	5.0	5/22/95	5143073
cis-1,3-Dichloropropene	ND	5.0	5/22/95	5143073
trans-1,3-Dichloropropene	ND	5.0	5/22/95	5143073
Ethylbenzene	ND	5.0	5/22/95	5143073
2-Hexanone	ND	50	5/22/95	5143073
Methylene chloride	ND	5.0	5/22/95	5143073
4-Methyl-2-pentanone	ND	50	5/22/95	5143073
Styrene	ND	5.0	5/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	91	(70 - 121)
Toluene-d8	104	(81 - 117)
Bromofluorobenzene	107	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E230000-073

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	5.0	5/22/95	5143073
Tetrachloroethene	ND	5.0	5/22/95	5143073
Toluene	ND	5.0	5/22/95	5143073
1,1,1-Trichloroethane	ND	5.0	5/22/95	5143073
1,1,2-Trichloroethane	ND	5.0	5/22/95	5143073
Trichloroethene	ND	5.0	5/22/95	5143073
Vinyl chloride	ND	10	5/22/95	5143073
Xylenes, Total	ND	5.0	5/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	91	(70 - 121)
Toluene-d8	104	(81 - 117)
Bromofluorobenzene	107	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E160009

METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5137004			
Silver	ND	1.0	mg/kg	SW846 6010A	5/17- 5/18/95
Arsenic	ND	0.50	mg/kg	SW846 6010A	5/17- 5/25/95
Barium	ND	1.0	mg/kg	SW846 6010A	5/17- 5/18/95
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/17- 5/18/95
Chromium	ND	2.0	mg/kg	SW846 6010A	5/17- 5/18/95
Copper	ND	1.0	mg/kg	SW846 6010A	5/17- 5/18/95
Nickel	ND	4.0	mg/kg	SW846 6010A	5/17- 5/18/95
Lead	**0.64**	**0.30**	**mg/kg**	**SW846 6010A**	**5/17- 5/25/95**
Selenium	ND	0.50	mg/kg	SW846 6010A	5/17- 5/25/95
Zinc	ND	5.0	mg/kg	SW846 6010A	5/17- 5/18/95
		BATCH:5139004			
Silver	ND	0.010	mg/L	SW846 6010A	5/19- 5/24/95
Arsenic	ND	0.0050	mg/L	SW846 6010A	5/19- 5/23/95
Barium	ND	0.010	mg/L	SW846 6010A	5/19- 5/24/95
Cadmium	ND	0.010	mg/L	SW846 6010A	5/19- 5/24/95
Chromium	ND	0.020	mg/L	SW846 6010A	5/19- 5/24/95
Copper	ND	0.010	mg/L	SW846 6010A	5/19- 5/24/95
Nickel	ND	0.040	mg/L	SW846 6010A	5/19- 5/24/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E160009

METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5139004			
Lead	ND	0.0030	mg/L	SW846 6010A	5/19- 5/23/95
Selenium	ND	0.0050	mg/L	SW846 6010A	5/19- 5/23/95
Zinc	ND	0.050	mg/L	SW846 6010A	5/19- 5/24/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5139123
LAB #: A5E120055-001 S
MATRIX: WATER

WO #: A4HPH
PREPARATION DATE: 5/19/95
DATE ANALYZED: 5/19/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	79	82	(55-142)	3.1	(0-19)
Trichloroethene	97	96	(77-124)	0.42	(0-13)
Chlorobenzene	102	104	(85-120)	2.1	(0-10)
Toluene	95	94	(82-122)	0.24	(0-15)
Benzene	95	98	(83-123)	2.4	(0-13)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5145043
LAB #: A5E160009-002 S
MATRIX: SOLID

WO #: A4JW0
PREPARATION DATE: 5/23/95
DATE ANALYZED: 5/23/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	95	83	(60-136)	14	(0-28)
Trichloroethene	85	86	(79-120)	0.78	(0-16)
Chlorobenzene	97	98	(90-115)	0.82	(0-20)
Toluene	107	104	(78-129)	3.1	(0-21)
Benzene	93	93	(79-124)	0.47	(0-19)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

LAB #: A5E160009-002

- METALS -

COMPOUND		SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
			BATCH:5137004 MATRIX:		SOLID		
Silver		101	99	(62-122)	2.3	(0-20)	5/17- 5/26/95
Arsenic		91	91	(80-120)	0.21	(0-20)	5/17- 5/25/95
Barium		229	52	(45-142)	126	(0-20)	5/17- 5/26/95
Cadmium		128	92	(63-114)	33	(0-20)	5/17- 5/26/95
Chromium		105	102	(58-130)	2.5	(0-20)	5/17- 5/26/95
Copper		117	109	(72-116)	7.1	(0-20)	5/17- 5/26/95
Nickel		105	101	(69-111)	3.2	(0-20)	5/17- 5/26/95
Lead		110	97	(80-120)	13	(0-20)	5/17- 5/25/95
Selenium		86	86	(80-120)	0.23	(0-20)	5/17- 5/25/95
Zinc	DIL						5/17- 5/26/95

NOTE:
DIL Diluted out

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

LAB #: A5D270023-001

- METALS -

COMPOUND		SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
			BATCH:5122006 MATRIX:		WATER		
Silver		89	87	(61-126)	1.9	(0-20)	5/02- 5/11/95
Arsenic		94	94	(80-120)	0.14	(0-20)	5/02- 5/11/95
Barium		93	93	(79-116)	0.10	(0-20)	5/02- 5/11/95
Beryllium		99	99	(76-117)	0.30	(0-20)	5/02- 5/11/95
Calcium	DIL						5/02- 5/11/95
Cadmium		95	96	(70-109)	0.52	(0-20)	5/02- 5/11/95
Cobalt		94	94	(75-110)	0.10	(0-20)	5/02- 5/11/95
Chromium		96	98	(74-117)	1.1	(0-20)	5/02- 5/11/95
Copper		94	94	(77-112)	0.21	(0-20)	5/02- 5/11/95
Iron		54	64	(45-146)	17	(0-20)	5/02- 5/11/95
Potassium		99	98	(67-123)	0.47	(0-20)	5/02- 5/11/95
Magnesium		94	95	(71-112)	1.0	(0-20)	5/02- 5/11/95
Manganese		86	90	(57-131)	4.1	(0-20)	5/02- 5/11/95
Sodium		90	90	(40-144)	0.020	(0-20)	5/02- 5/11/95
Nickel		94	96	(73-109)	2.0	(0-20)	5/02- 5/11/95
Lead		97	96	(80-120)	0.29	(0-20)	5/02- 5/11/95
Antimony		97	95	(73-112)	2.2	(0-20)	5/02- 5/11/95
Selenium		93	94	(80-120)	0.58	(0-20)	5/02- 5/11/95
Thallium		91	91	(80-120)	0.27	(0-20)	5/02- 5/11/95
Vanadium		97	98	(79-112)	0.30	(0-20)	5/02- 5/11/95
Zinc		92	93	(67-118)	1.3	(0-20)	5/02- 5/11/95

NOTE:
DIL Diluted out

Calculations are performed before rounding to avoid round-off errors in calculated results

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Quanterra

REFERENCE NUMBER: 3627

PROJECT NAME: synthetic products

SAMPLER'S SIGNATURE: John Hargens PRINTED NAME: John Hargens

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	TOC	grain size	TCL VOC	TAL metals*						REMARKS
	5-9-95		S-050995-JH-001	soil	2	V	V								* run TAL metals arsenic, barium, cadmium, chromium, copper, lead, nickel, selenium, silver, zinc, Then archive rest of sample for possible TCLP metals tests (SOILS ONLY)
	5-12-95	9:45	S-051295-JH-003		2			1	1					mg/mg/l	
		1315	S-051295-JH-004		2			1	1						
		1330	W-051295-JH-005	water	4			3	1						
		1450	S-051295-JH-006	soil	2			1	1						
				TOTAL NUMBER OF CONTAINERS	12										

RELINQUISHED BY: ① John Hargens	DATE: 5/12/95 TIME: 1600	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 3638964696

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: S. Goodn DATE: 51595 TIME: 1030

№ 4869

1001(FORMS)-APRIL 29, 93-REV.0-(C)(F-01)

Rec'd CRA

JUN 27 1995

Quanterra
Environmental Services

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
216 497-0772 Fax

A5E160013

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS COMPANY

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Laura L. Miller /for
Daniel J. Wright
Project Manager

VALIDATED DATA
Project # 3627
Lab Report # A5E160013
Initials NMB
Date 8-21-95

June 26, 1995

CHECKED AGAINST PRELIMINARY DATA
Date 06-27-95
Initials NMB

Quanterra
Environmental Services

PROJECT NARRATIVE

The following report contains the analytical results for five solid samples submitted to Quanterra-North Canton by Conestoga Rovers & Associates, Inc. from the Synthetic Products Company Site, project number 3627. The samples were received May 16, 1995, according to documented sample acceptance procedures.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the following page in accordance with the methods indicated. Preliminary results were provided by facsimile transmission to Nancy Bergstrom on May 30, 1995. A summary of QC data for these analyses is included at the end of the report.

Quanterra
Environmental Services

ANALYTICAL METHODS SUMMARY

Parameters	Methods
TCL Volatile Organics	SW846 8240A
Silver	SW846 6010A
Barium	SW846 6010A
Cadmium	SW846 6010A
Chromium	SW846 6010A
Copper	SW846 6010A
Nickel	SW846 6010A
Zinc	SW846 6010A
Arsenic	SW846 6010A
Lead	SW846 6010A
Selenium	SW846 6010A
Solids, Total (TS)	MCAWW 160.3 MODIFIED

References:

MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL: Cincinnati, OH: March 1983 and subsequent revisions

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, September, 1986 and subsequent revisions

Quanterra
Environmental Services

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	
A4JWN	A5E160013-001	S-051395-JH-007	5/13/95	9:50
A4JWT	A5E160013-002	S-051395-JH-008	5/13/95	13:50
A4JX0	A5E160013-003	S-051395-JH-009	5/13/95	15:15
A4JX3	A5E160013-004	S-051495-JH-010	5/14/95	8:45
A4JX5	A5E160013-005	S-051495-JH-012	5/14/95	10:45

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-007

WO #: A4JWN10A
LAB #: A5E160013-001
MATRIX: SOLID

DATE SAMPLED: 5/13/95
TIME SAMPLED: 9:50
DATE RECEIVED: 5/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	10	SW846 8240A	05/24/95	5145045
Bromomethane	ND	10	SW846 8240A	05/24/95	5145045
Vinyl chloride	ND	10	SW846 8240A	05/24/95	5145045
Chloroethane	ND	10	SW846 8240A	05/24/95	5145045
Methylene chloride	ND	5.0	SW846 8240A	05/24/95	5145045
Acetone	**4.9 B J**	**50**	**SW846 8240A**	**05/24/95**	**5145045**
Carbon disulfide	ND	5.0	SW846 8240A	05/24/95	5145045
1,1-Dichloroethene	ND	5.0	SW846 8240A	05/24/95	5145045
1,1-Dichloroethane	ND	5.0	SW846 8240A	05/24/95	5145045
1,2-Dichloroethene, Total	ND	5.0	SW846 8240A	05/24/95	5145045
Chloroform	ND	5.0	SW846 8240A	05/24/95	5145045
1,2-Dichloroethane	ND	5.0	SW846 8240A	05/24/95	5145045
2-Butanone	ND	50	SW846 8240A	05/24/95	5145045
1,1,1-Trichloroethane	ND	5.0	SW846 8240A	05/24/95	5145045
Carbon tetrachloride	ND	5.0	SW846 8240A	05/24/95	5145045
Bromodichloromethane	ND	5.0	SW846 8240A	05/24/95	5145045
1,2-Dichloropropane	ND	5.0	SW846 8240A	05/24/95	5145045
cis-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/24/95	5145045
Trichloroethene	ND	5.0	SW846 8240A	05/24/95	5145045
Dibromochloromethane	ND	5.0	SW846 8240A	05/24/95	5145045
1,1,2-Trichloroethane	ND	5.0	SW846 8240A	05/24/95	5145045
Benzene	ND	5.0	SW846 8240A	05/24/95	5145045
trans-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/24/95	5145045

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	92	(70 - 121)
Toluene-d8	111	(81 - 117)
Bromofluorobenzene	94	(74 - 121)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

B (COMPOUND DETECTED IN METHOD BLANK ASSOCIATED WITH THIS SAMPLE)

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-007

WO #: A4JWN10A
LAB #: A5E160013-001
MATRIX: SOLID

DATE SAMPLED: 5/13/95
TIME SAMPLED: 9:50
DATE RECEIVED: 5/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	5.0	SW846 8240A	05/24/95	5145045
4-Methyl-2-pentanone	ND	50	SW846 8240A	05/24/95	5145045
2-Hexanone	ND	50	SW846 8240A	05/24/95	5145045
Tetrachloroethene	ND	5.0	SW846 8240A	05/24/95	5145045
Toluene	**11**	**5.0**	**SW846 8240A**	**05/24/95**	**5145045**
1,1,2,2-Tetrachloroethane	ND	5.0	SW846 8240A	05/24/95	5145045
Chlorobenzene	ND	5.0	SW846 8240A	05/24/95	5145045
Ethylbenzene	ND	5.0	SW846 8240A	05/24/95	5145045
Styrene	ND	5.0	SW846 8240A	05/24/95	5145045
Xylenes, Total	ND	5.0	SW846 8240A	05/24/95	5145045

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	92	(70 - 121)
Toluene-d8	111	(81 - 117)
Bromofluorobenzene	94	(74 - 121)

NOTE: ***AS RECEIVED***
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-007

WO #: A4JWN
LAB #: A5E160013-001
MATRIX: SOLID

DATE SAMPLED: 5/13/95
TIME SAMPLED: 9:50
DATE RECEIVED: 5/16/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Barium	53.2	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Chromium	19.0	2.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Copper	51.0	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Nickel	11.9	4.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Zinc	52.2	5.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Arsenic	4.7	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Lead	36.9	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Selenium	*ND	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
* ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-007

WO #: A4JWN
LAB #: A5E160013-001
MATRIX: SOLID

DATE SAMPLED: 5/13/95
TIME SAMPLED: 9:50
DATE RECEIVED: 5/16/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	88.9	0.50	%	MCAWW 160.3 M	5/17- 5/18/95	5137019

NOTE: AS RECEIVED

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-008

WO #: A4JWT10A
LAB #: A5E160013-002
MATRIX: SOLID

DATE SAMPLED: 5/13/95
TIME SAMPLED: 13:50
DATE RECEIVED: 5/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	10	SW846 8240A	05/22/95	5143073
Bromomethane	ND	10	SW846 8240A	05/22/95	5143073
Vinyl chloride	ND	10	SW846 8240A	05/22/95	5143073
Chloroethane	ND	10	SW846 8240A	05/22/95	5143073
Methylene chloride	ND	5.0	SW846 8240A	05/22/95	5143073
Acetone	**44 B J**	**50**	**SW846 8240A**	**05/22/95**	**5143073**
Carbon disulfide	ND	5.0	SW846 8240A	05/22/95	5143073
1,1-Dichloroethene	ND	5.0	SW846 8240A	05/22/95	5143073
1,1-Dichloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
1,2-Dichloroethene, Total	ND	5.0	SW846 8240A	05/22/95	5143073
Chloroform	ND	5.0	SW846 8240A	05/22/95	5143073
1,2-Dichloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
2-Butanone	**15 J**	**50**	**SW846 8240A**	**05/22/95**	**5143073**
1,1,1-Trichloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
Carbon tetrachloride	ND	5.0	SW846 8240A	05/22/95	5143073
Bromodichloromethane	ND	5.0	SW846 8240A	05/22/95	5143073
1,2-Dichloropropane	ND	5.0	SW846 8240A	05/22/95	5143073
cis-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/22/95	5143073
Trichloroethene	ND	5.0	SW846 8240A	05/22/95	5143073
Dibromochloromethane	ND	5.0	SW846 8240A	05/22/95	5143073
1,1,2-Trichloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
Benzene	**27**	**5.0**	**SW846 8240A**	**05/22/95**	**5143073**
trans-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	94	(70 - 121)
Toluene-d8	108	(81 - 117)
Bromofluorobenzene	105	(74 - 121)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

B (COMPOUND DETECTED IN METHOD BLANK ASSOCIATED WITH THIS SAMPLE)

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-008

WO #: A4JWT10A
LAB #: A5E160013-002
MATRIX: SOLID

DATE SAMPLED: 5/13/95
TIME SAMPLED: 13:50
DATE RECEIVED: 5/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	5.0	SW846 8240A	05/22/95	5143073
4-Methyl-2-pentanone	**2.3 J**	**50**	**SW846 8240A**	**05/22/95**	**5143073**
2-Hexanone	ND	50	SW846 8240A	05/22/95	5143073
Tetrachloroethene	ND	5.0	SW846 8240A	05/22/95	5143073
Toluene	**28**	**5.0**	**SW846 8240A**	**05/22/95**	**5143073**
1,1,2,2-Tetrachloroethane	ND	5.0	SW846 8240A	05/22/95	5143073
Chlorobenzene	ND	5.0	SW846 8240A	05/22/95	5143073
Ethylbenzene	ND	5.0	SW846 8240A	05/22/95	5143073
Styrene	ND	5.0	SW846 8240A	05/22/95	5143073
Xylenes, Total	ND	5.0	SW846 8240A	05/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	94	(70 - 121)
Toluene-d8	108	(81 - 117)
Bromofluorobenzene	105	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-008

WO #: A4JWT
LAB #: A5E160013-002
MATRIX: SOLID

DATE SAMPLED: 5/13/95
TIME SAMPLED: 13:50
DATE RECEIVED: 5/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Barium	53.1	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Chromium	16.6	2.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Copper	23.3	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Nickel	14.0	4.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Zinc	49.3	5.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Arsenic	12.8	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Lead	16.9	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Selenium	*ND	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
* ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-008

WO #: A4JWT
LAB #: A5E160013-002
MATRIX: SOLID

DATE SAMPLED: 5/13/95
TIME SAMPLED: 13:50
DATE RECEIVED: 5/16/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	84.3	0.50	%	MCAWW 160.3 M	5/17- 5/18/95	5137019

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-009

WO #: A4JX010A
LAB #: A5E160013-003
MATRIX: SOLID

DATE SAMPLED: 5/13/95
TIME SAMPLED: 15:15
DATE RECEIVED: 5/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	100	SW846 8240A	05/22/95	5143073
Bromomethane	ND	100	SW846 8240A	05/22/95	5143073
Vinyl chloride	ND	100	SW846 8240A	05/22/95	5143073
Chloroethane	ND	100	SW846 8240A	05/22/95	5143073
Methylene chloride	ND	50	SW846 8240A	05/22/95	5143073
Acetone	**230 B J**	**500**	**SW846 8240A**	**05/22/95**	**5143073**
Carbon disulfide	ND	50	SW846 8240A	05/22/95	5143073
1,1-Dichloroethene	ND	50	SW846 8240A	05/22/95	5143073
1,1-Dichloroethane	ND	50	SW846 8240A	05/22/95	5143073
1,2-Dichloroethene, Total	ND	50	SW846 8240A	05/22/95	5143073
Chloroform	ND	50	SW846 8240A	05/22/95	5143073
1,2-Dichloroethane	ND	50	SW846 8240A	05/22/95	5143073
2-Butanone	ND	500	SW846 8240A	05/22/95	5143073
1,1,1-Trichloroethane	ND	50	SW846 8240A	05/22/95	5143073
Carbon tetrachloride	ND	50	SW846 8240A	05/22/95	5143073
Bromodichloromethane	ND	50	SW846 8240A	05/22/95	5143073
1,2-Dichloropropane	ND	50	SW846 8240A	05/22/95	5143073
cis-1,3-Dichloropropene	ND	50	SW846 8240A	05/22/95	5143073
Trichloroethene	ND	50	SW846 8240A	05/22/95	5143073
Dibromochloromethane	ND	50	SW846 8240A	05/22/95	5143073
1,1,2-Trichloroethane	ND	50	SW846 8240A	05/22/95	5143073
Benzene	**210**	**50**	**SW846 8240A**	**05/22/95**	**5143073**
trans-1,3-Dichloropropene	ND	50	SW846 8240A	05/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	97	(70 - 121)
Toluene-d8	102	(81 - 117)
Bromofluorobenzene	106	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
ELEVATED DETECTION LIMITS DUE TO TIC(S).
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.
B (COMPOUND DETECTED IN METHOD BLANK ASSOCIATED WITH THIS SAMPLE)

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-009

WO #: A4JX010A
LAB #: A5E160013-003
MATRIX: SOLID

DATE SAMPLED: 5/13/95
TIME SAMPLED: 15:15
DATE RECEIVED: 5/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	50	SW846 8240A	05/22/95	5143073
4-Methyl-2-pentanone	ND	500	SW846 8240A	05/22/95	5143073
2-Hexanone	ND	500	SW846 8240A	05/22/95	5143073
Tetrachloroethene	ND	50	SW846 8240A	05/22/95	5143073
Toluene	**94**	**50**	**SW846 8240A**	**05/22/95**	**5143073**
1,1,2,2-Tetrachloroethane	ND	50	SW846 8240A	05/22/95	5143073
Chlorobenzene	ND	50	SW846 8240A	05/22/95	5143073
Ethylbenzene	ND	50	SW846 8240A	05/22/95	5143073
Styrene	ND	50	SW846 8240A	05/22/95	5143073
Xylenes, Total	ND	50	SW846 8240A	05/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	97	(70 - 121)
Toluene-d8	102	(81 - 117)
Bromofluorobenzene	106	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
ELEVATED DETECTION LIMITS DUE TO TIC(S).

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-009

WO #: A4JX0
LAB #: A5E160013-003
MATRIX: SOLID

DATE SAMPLED: 5/13/95
TIME SAMPLED: 15:15
DATE RECEIVED: 5/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Barium	28.9	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Chromium	12.4	2.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Copper	16.2	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Nickel	10.1	4.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Zinc	41.3	5.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Arsenic	5.0	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Lead	15.0	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Selenium	*ND	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
* ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-009

WO #: A4JX0
LAB #: A5E160013-003
MATRIX: SOLID

DATE SAMPLED: 5/13/95
TIME SAMPLED: 15:15
DATE RECEIVED: 5/16/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	87.5	0.50	%	MCAWW 160.3 M	5/17- 5/18/95	5137019

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051495-JH-010

WO #: A4JX310A
LAB #: A5E160013-004
MATRIX: SOLID

DATE SAMPLED: 5/14/95
TIME SAMPLED: 8:45
DATE RECEIVED: 5/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	25,000	SW846 8240A	05/22-05/24/95	5143029
Bromomethane	ND	25,000	SW846 8240A	05/22-05/24/95	5143029
Vinyl chloride	ND	25,000	SW846 8240A	05/22-05/24/95	5143029
Chloroethane	ND	25,000	SW846 8240A	05/22-05/24/95	5143029
Methylene chloride	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
Acetone	ND	120,000	SW846 8240A	05/22-05/24/95	5143029
Carbon disulfide	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
1,1-Dichloroethene	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
1,1-Dichloroethane	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
1,2-Dichloroethene, Total	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
Chloroform	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
1,2-Dichloroethane	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
2-Butanone	ND	120,000	SW846 8240A	05/22-05/24/95	5143029
1,1,1-Trichloroethane	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
Carbon tetrachloride	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
Bromodichloromethane	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
1,2-Dichloropropane	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
cis-1,3-Dichloropropene	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
Trichloroethene	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
Dibromochloromethane	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
1,1,2-Trichloroethane	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
Benzene	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
trans-1,3-Dichloropropene	ND	12,000	SW846 8240A	05/22-05/24/95	5143029

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	DIL	(70 - 121)
Toluene-d8	DIL	(81 - 117)
Bromofluorobenzene	DIL	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051495-JH-010

WO #: A4JX310A
LAB #: A5E160013-004
MATRIX: SOLID

DATE SAMPLED: 5/14/95
TIME SAMPLED: 8:45
DATE RECEIVED: 5/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
4-Methyl-2-pentanone	ND	120,000	SW846 8240A	05/22-05/24/95	5143029
2-Hexanone	ND	120,000	SW846 8240A	05/22-05/24/95	5143029
Tetrachloroethene	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
Toluene	**160,000**	**12,000**	**SW846 8240A**	**05/22-05/24/95**	**5143029**
1,1,2,2-Tetrachloroethane	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
Chlorobenzene	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
Ethylbenzene	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
Styrene	ND	12,000	SW846 8240A	05/22-05/24/95	5143029
Xylenes, Total	ND	12,000	SW846 8240A	05/22-05/24/95	5143029

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	DIL	(70 - 121)
Toluene-d8	DIL	(81 - 117)
Bromofluorobenzene	DIL	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051495-JH-010

WO #: A4JX3
LAB #: A5E160013-004
MATRIX: SOLID

DATE SAMPLED: 5/14/95
TIME SAMPLED: 8:45
DATE RECEIVED: 5/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Barium	13.0	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Chromium	4.4	2.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Copper	6.9	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Nickel	5.1	4.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Zinc	12.1	5.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Arsenic	4.2	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Lead	1.8	0.50	mg/kg	SW846 6010A	6/02- 6/04/95	5153020
Selenium	*ND	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
* ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051495-JH-010

WO #: A4JX3
LAB #: A5E160013-004
MATRIX: SOLID

DATE SAMPLED: 5/14/95
TIME SAMPLED: 8:45
DATE RECEIVED: 5/16/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	94.1	0.50	%	MCAWW 160.3 M	5/17- 5/18/95	5137019

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051495-JH-012

WO #: A4JX510A
LAB #: A5E160013-005
MATRIX: SOLID

DATE SAMPLED: 5/14/95
TIME SAMPLED: 10:45
DATE RECEIVED: 5/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	100	SW846 8240A	05/22/95	5143073
Bromomethane	ND	100	SW846 8240A	05/22/95	5143073
Vinyl chloride	ND	100	SW846 8240A	05/22/95	5143073
Chloroethane	ND	100	SW846 8240A	05/22/95	5143073
Methylene chloride	ND	50	SW846 8240A	05/22/95	5143073
Acetone	**2,300 BE**	**500**	**SW846 8240A**	**05/22/95**	**5143073**
Carbon disulfide	ND	50	SW846 8240A	05/22/95	5143073
1,1-Dichloroethene	ND	50	SW846 8240A	05/22/95	5143073
1,1-Dichloroethane	ND	50	SW846 8240A	05/22/95	5143073
1,2-Dichloroethene, Total	ND	50	SW846 8240A	05/22/95	5143073
Chloroform	ND	50	SW846 8240A	05/22/95	5143073
1,2-Dichloroethane	ND	50	SW846 8240A	05/22/95	5143073
2-Butanone	**27 J**	**500**	**SW846 8240A**	**05/22/95**	**5143073**
1,1,1-Trichloroethane	ND	50	SW846 8240A	05/22/95	5143073
Carbon tetrachloride	ND	50	SW846 8240A	05/22/95	5143073
Bromodichloromethane	ND	50	SW846 8240A	05/22/95	5143073
1,2-Dichloropropane	ND	50	SW846 8240A	05/22/95	5143073
cis-1,3-Dichloropropene	ND	50	SW846 8240A	05/22/95	5143073
Trichloroethene	ND	50	SW846 8240A	05/22/95	5143073
Dibromochloromethane	ND	50	SW846 8240A	05/22/95	5143073
1,1,2-Trichloroethane	ND	50	SW846 8240A	05/22/95	5143073
Benzene	ND	50	SW846 8240A	05/22/95	5143073
trans-1,3-Dichloropropene	ND	50	SW846 8240A	05/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	88	(70 - 121)
Toluene-d8	102	(81 - 117)
Bromofluorobenzene	98	(74 - 121)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.
E ESTIMATED RESULT. CONCENTRATION EXCEEDS CALIBRATION RANGE.
B (COMPOUND DETECTED IN METHOD BLANK ASSOCIATED WITH THIS SAMPLE)

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051495-JH-012

WO #: A4JX510A
LAB #: A5E160013-005
MATRIX: SOLID

DATE SAMPLED: 5/14/95
TIME SAMPLED: 10:45
DATE RECEIVED: 5/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	50	SW846 8240A	05/22/95	5143073
4-Methyl-2-pentanone	ND	500	SW846 8240A	05/22/95	5143073
2-Hexanone	ND	500	SW846 8240A	05/22/95	5143073
Tetrachloroethene	ND	50	SW846 8240A	05/22/95	5143073
Toluene	ND	50	SW846 8240A	05/22/95	5143073
1,1,2,2-Tetrachloroethane	ND	50	SW846 8240A	05/22/95	5143073
Chlorobenzene	ND	50	SW846 8240A	05/22/95	5143073
Ethylbenzene	ND	50	SW846 8240A	05/22/95	5143073
Styrene	ND	50	SW846 8240A	05/22/95	5143073
Xylenes, Total	ND	50	SW846 8240A	05/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	88	(70 - 121)
Toluene-d8	102	(81 - 117)
Bromofluorobenzene	98	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051495-JH-012

WO #: A4JX520A
LAB #: A5E160013-005
MATRIX: SOLID

DATE SAMPLED: 5/14/95
TIME SAMPLED: 10:45
DATE RECEIVED: 5/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1,200	SW846 8240A	05/24/95	5145131
Bromomethane	ND	1,200	SW846 8240A	05/24/95	5145131
Vinyl chloride	ND	1,200	SW846 8240A	05/24/95	5145131
Chloroethane	ND	1,200	SW846 8240A	05/24/95	5145131
Methylene chloride	ND	620	SW846 8240A	05/24/95	5145131
Acetone	ND	6,200	SW846 8240A	05/24/95	5145131
Carbon disulfide	ND	620	SW846 8240A	05/24/95	5145131
1,1-Dichloroethene	ND	620	SW846 8240A	05/24/95	5145131
1,1-Dichloroethane	ND	620	SW846 8240A	05/24/95	5145131
1,2-Dichloroethene, Total	ND	620	SW846 8240A	05/24/95	5145131
Chloroform	ND	620	SW846 8240A	05/24/95	5145131
1,2-Dichloroethane	ND	620	SW846 8240A	05/24/95	5145131
2-Butanone	ND	6,200	SW846 8240A	05/24/95	5145131
1,1,1-Trichloroethane	ND	620	SW846 8240A	05/24/95	5145131
Carbon tetrachloride	ND	620	SW846 8240A	05/24/95	5145131
Bromodichloromethane	ND	620	SW846 8240A	05/24/95	5145131
1,2-Dichloropropane	ND	620	SW846 8240A	05/24/95	5145131
cis-1,3-Dichloropropene	ND	620	SW846 8240A	05/24/95	5145131
Trichloroethene	ND	620	SW846 8240A	05/24/95	5145131
Dibromochloromethane	ND	620	SW846 8240A	05/24/95	5145131
1,1,2-Trichloroethane	ND	620	SW846 8240A	05/24/95	5145131
Benzene	ND	620	SW846 8240A	05/24/95	5145131
trans-1,3-Dichloropropene	ND	620	SW846 8240A	05/24/95	5145131

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	93	(70 - 121)
Toluene-d8	93	(81 - 117)
Bromofluorobenzene	99	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051495-JH-012

WO #: A4JX520A
LAB #: A5E160013-005
MATRIX: SOLID

DATE SAMPLED: 5/14/95
TIME SAMPLED: 10:45
DATE RECEIVED: 5/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	620	SW846 8240A	05/24/95	5145131
4-Methyl-2-pentanone	ND	6,200	SW846 8240A	05/24/95	5145131
2-Hexanone	ND	6,200	SW846 8240A	05/24/95	5145131
Tetrachloroethene	ND	620	SW846 8240A	05/24/95	5145131
Toluene	ND	620	SW846 8240A	05/24/95	5145131
1,1,2,2-Tetrachloroethane	ND	620	SW846 8240A	05/24/95	5145131
Chlorobenzene	ND	620	SW846 8240A	05/24/95	5145131
Ethylbenzene	ND	620	SW846 8240A	05/24/95	5145131
Styrene	ND	620	SW846 8240A	05/24/95	5145131
Xylenes, Total	ND	620	SW846 8240A	05/24/95	5145131

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	93	(70 - 121)
Toluene-d8	93	(81 - 117)
Bromofluorobenzene	99	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051495-JH-012

WO #: A4JX5
LAB #: A5E160013-005
MATRIX: SOLID

DATE SAMPLED: 5/14/95
TIME SAMPLED: 10:45
DATE RECEIVED: 5/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Barium	38.0	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Chromium	11.1	2.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Copper	47.3	1.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Nickel	10.0	4.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Zinc	109	5.0	mg/kg	SW846 6010A	5/17- 5/26/95	5137004
Arsenic	4.7	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Lead	28.2	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004
Selenium	*ND	1.0	mg/kg	SW846 6010A	5/17- 5/25/95	5137004

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
* ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051495-JH-012

WO #: A4JX5
LAB #: A5E160013-005
MATRIX: SOLID

DATE SAMPLED: 5/14/95
TIME SAMPLED: 10:45
DATE RECEIVED: 5/16/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	90.3	0.50	%	MCAWW 160.3 M	5/17- 5/18/95	5137019

NOTE: AS RECEIVED

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QUALITY CONTROL SECTION

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QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with the exception of those items noted.

The laboratory performs MATRIX SPIKES (MS) and MATRIX SPIKE DUPLICATES (MSD) to indicate any matrix effects within a given sample. They also allow the laboratory to gather precision and bias data for a specific method and matrix.

Since matrix effects may bias percent recovery, the laboratory performs corrective action if the precision (RPD) criteria of the MS/MSD is not met.

The matrix spike and matrix spike duplicate (MS/MSD) contained in this quality control report were generated as part of the laboratory QA/QC program requirements. These requirements include the analysis of a MS/MSD on a one in twenty basis. Therefore, the associated batch number indicated on the MS/MSD report may not reflect the same batch number as those of the samples contained in the analytical report.

The acetone result for sample A5E160013-005 is flagged due to the acetone concentration exceeding linear range. A medium level analysis was performed on this sample to quantitate acetone within the instrument linear range; however, acetone concentration was not detected. Both sets of data are provided in the Analytical Section of the report.

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5143073
LAB #: A5E230000-073 C

PREPARATION DATE: 5/22/95
DATE ANALYZED: 5/22/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	78	(63-137)
Trichloroethene	88	(77-116)
Chlorobenzene	96	(80-118)
Toluene	92	(80-118)
Benzene	90	(77-118)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5143029
LAB #: A5E230000-029 C

PREPARATION DATE: 5/22/95
DATE ANALYZED: 5/22/95

- GC/MS Volatiles -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	83	(63-137)
Trichloroethene	87	(77-116)
Chlorobenzene	91	(80-118)
Toluene	91	(80-118)
Benzene	86	(77-118)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5145045
LAB #: A5E250000-045 C

PREPARATION DATE: 5/24/95
DATE ANALYZED: 5/24/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	78	(63-137)
Trichloroethene	90	(77-116)
Chlorobenzene	105	(80-118)
Toluene	100	(80-118)
Benzene	94	(77-118)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5145131
LAB #: A5E250000-131 C

PREPARATION DATE: 5/24/95
DATE ANALYZED: 5/24/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	88	(63-137)
Trichloroethene	99	(77-116)
Chlorobenzene	98	(80-118)
Toluene	98	(80-118)
Benzene	105	(77-118)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

LAB #: A5E160013

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5137004		
Silver	100	(64-119)	5/17- 5/18/95
Arsenic	98	(80-120)	5/17- 5/25/95
Barium	96	(82-112)	5/17- 5/18/95
Cadmium	96	(72-109)	5/17- 5/18/95
Chromium	100	(76-118)	5/17- 5/18/95
Copper	98	(82-110)	5/17- 5/18/95
Nickel	98	(74-111)	5/17- 5/18/95
Lead	101	(80-120)	5/17- 5/25/95
Selenium	90	(80-120)	5/17- 5/25/95
Zinc	102	(68-116)	5/17- 5/18/95
	BATCH:5153020		
Lead	94	(80-120)	6/02- 6/04/95

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E230000-073

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	2.2 J	**50**	**5/22/95**	**5143073**
Benzene	ND	5.0	5/22/95	5143073
Bromodichloromethane	ND	5.0	5/22/95	5143073
Bromoform	ND	5.0	5/22/95	5143073
Bromomethane	ND	10	5/22/95	5143073
2-Butanone	ND	50	5/22/95	5143073
Carbon disulfide	ND	5.0	5/22/95	5143073
Carbon tetrachloride	ND	5.0	5/22/95	5143073
Chlorobenzene	ND	5.0	5/22/95	5143073
Dibromochloromethane	ND	5.0	5/22/95	5143073
Chloroethane	ND	10	5/22/95	5143073
Chloroform	ND	5.0	5/22/95	5143073
Chloromethane	ND	10	5/22/95	5143073
1,1-Dichloroethane	ND	5.0	5/22/95	5143073
1,2-Dichloroethane	ND	5.0	5/22/95	5143073
1,1-Dichloroethene	ND	5.0	5/22/95	5143073
1,2-Dichloroethene, Total	ND	5.0	5/22/95	5143073
1,2-Dichloropropane	ND	5.0	5/22/95	5143073
cis-1,3-Dichloropropene	ND	5.0	5/22/95	5143073
trans-1,3-Dichloropropene	ND	5.0	5/22/95	5143073
Ethylbenzene	ND	5.0	5/22/95	5143073
2-Hexanone	ND	50	5/22/95	5143073
Methylene chloride	ND	5.0	5/22/95	5143073
4-Methyl-2-pentanone	ND	50	5/22/95	5143073
Styrene	ND	5.0	5/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	91	(70 - 121)
Toluene-d8	104	(81 - 117)
Bromofluorobenzene	107	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E230000-073

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	5.0	5/22/95	5143073
Tetrachloroethene	ND	5.0	5/22/95	5143073
Toluene	ND	5.0	5/22/95	5143073
1,1,1-Trichloroethane	ND	5.0	5/22/95	5143073
1,1,2-Trichloroethane	ND	5.0	5/22/95	5143073
Trichloroethene	ND	5.0	5/22/95	5143073
Vinyl chloride	ND	10	5/22/95	5143073
Xylenes, Total	ND	5.0	5/22/95	5143073

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	91	(70 - 121)
Toluene-d8	104	(81 - 117)
Bromofluorobenzene	107	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E230000-029

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	6,200	5/22/95	5143029
Benzene	ND	620	5/22/95	5143029
Bromodichloromethane	ND	620	5/22/95	5143029
Bromoform	ND	620	5/22/95	5143029
Bromomethane	ND	1,200	5/22/95	5143029
2-Butanone	ND	6,200	5/22/95	5143029
Carbon disulfide	ND	620	5/22/95	5143029
Carbon tetrachloride	ND	620	5/22/95	5143029
Chlorobenzene	ND	620	5/22/95	5143029
Dibromochloromethane	ND	620	5/22/95	5143029
Chloroethane	ND	1,200	5/22/95	5143029
Chloroform	ND	620	5/22/95	5143029
Chloromethane	ND	1,200	5/22/95	5143029
1,1-Dichloroethane	ND	620	5/22/95	5143029
1,2-Dichloroethane	ND	620	5/22/95	5143029
1,1-Dichloroethene	ND	620	5/22/95	5143029
1,2-Dichloroethene, Total	ND	620	5/22/95	5143029
1,2-Dichloropropane	ND	620	5/22/95	5143029
cis-1,3-Dichloropropene	ND	620	5/22/95	5143029
trans-1,3-Dichloropropene	ND	620	5/22/95	5143029
Ethylbenzene	ND	620	5/22/95	5143029
2-Hexanone	ND	6,200	5/22/95	5143029
Methylene chloride	ND	620	5/22/95	5143029
4-Methyl-2-pentanone	ND	6,200	5/22/95	5143029
Styrene	ND	620	5/22/95	5143029

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	92	(70 - 121)
Toluene-d8	91	(81 - 117)
Bromofluorobenzene	95	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E230000-029

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	620	5/22/95	5143029
Tetrachloroethene	ND	620	5/22/95	5143029
Toluene	ND	620	5/22/95	5143029
1,1,1-Trichloroethane	ND	620	5/22/95	5143029
1,1,2-Trichloroethane	ND	620	5/22/95	5143029
Trichloroethene	ND	620	5/22/95	5143029
Vinyl chloride	ND	1,200	5/22/95	5143029
Xylenes, Total	ND	620	5/22/95	5143029

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	92	(70 - 121)
Toluene-d8	91	(81 - 117)
Bromofluorobenzene	95	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E250000-045

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	2.7 J	**50**	**5/24/95**	**5145045**
Benzene	ND	5.0	5/24/95	5145045
Bromodichloromethane	ND	5.0	5/24/95	5145045
Bromoform	ND	5.0	5/24/95	5145045
Bromomethane	ND	10	5/24/95	5145045
2-Butanone	ND	50	5/24/95	5145045
Carbon disulfide	ND	5.0	5/24/95	5145045
Carbon tetrachloride	ND	5.0	5/24/95	5145045
Chlorobenzene	ND	5.0	5/24/95	5145045
Dibromochloromethane	ND	5.0	5/24/95	5145045
Chloroethane	ND	10	5/24/95	5145045
Chloroform	ND	5.0	5/24/95	5145045
Chloromethane	ND	10	5/24/95	5145045
1,1-Dichloroethane	ND	5.0	5/24/95	5145045
1,2-Dichloroethane	ND	5.0	5/24/95	5145045
1,1-Dichloroethene	ND	5.0	5/24/95	5145045
1,2-Dichloroethene, Total	ND	5.0	5/24/95	5145045
1,2-Dichloropropane	ND	5.0	5/24/95	5145045
cis-1,3-Dichloropropene	ND	5.0	5/24/95	5145045
trans-1,3-Dichloropropene	ND	5.0	5/24/95	5145045
Ethylbenzene	ND	5.0	5/24/95	5145045
2-Hexanone	ND	50	5/24/95	5145045
Methylene chloride	ND	5.0	5/24/95	5145045
4-Methyl-2-pentanone	ND	50	5/24/95	5145045
Styrene	ND	5.0	5/24/95	5145045

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	93	(70 - 121)
Toluene-d8	105	(81 - 117)
Bromofluorobenzene	100	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E250000-045

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	5.0	5/24/95	5145045
Tetrachloroethene	ND	5.0	5/24/95	5145045
Toluene	ND	5.0	5/24/95	5145045
1,1,1-Trichloroethane	ND	5.0	5/24/95	5145045
1,1,2-Trichloroethane	ND	5.0	5/24/95	5145045
Trichloroethene	ND	5.0	5/24/95	5145045
Vinyl chloride	ND	10	5/24/95	5145045
Xylenes, Total	ND	5.0	5/24/95	5145045

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	93	(70 - 121)
Toluene-d8	105	(81 - 117)
Bromofluorobenzene	100	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E250000-131

GC/MS VOLATILES

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	EXTRACTION-ANALYSIS DATE	QC BATCH
Acetone	ND	6,200	5/24/95	5145131
Benzene	ND	620	5/24/95	5145131
Bromodichloromethane	ND	620	5/24/95	5145131
Bromoform	ND	620	5/24/95	5145131
Bromomethane	ND	1,200	5/24/95	5145131
2-Butanone	ND	6,200	5/24/95	5145131
Carbon disulfide	ND	620	5/24/95	5145131
Carbon tetrachloride	ND	620	5/24/95	5145131
Chlorobenzene	ND	620	5/24/95	5145131
Dibromochloromethane	ND	620	5/24/95	5145131
Chloroethane	ND	1,200	5/24/95	5145131
Chloroform	ND	620	5/24/95	5145131
Chloromethane	ND	1,200	5/24/95	5145131
1,1-Dichloroethane	ND	620	5/24/95	5145131
1,2-Dichloroethane	ND	620	5/24/95	5145131
1,1-Dichloroethene	ND	620	5/24/95	5145131
1,2-Dichloroethene, Total	ND	620	5/24/95	5145131
1,2-Dichloropropane	ND	620	5/24/95	5145131
cis-1,3-Dichloropropene	ND	620	5/24/95	5145131
trans-1,3-Dichloropropene	ND	620	5/24/95	5145131
Ethylbenzene	ND	620	5/24/95	5145131
2-Hexanone	ND	6,200	5/24/95	5145131
Methylene chloride	ND	620	5/24/95	5145131
4-Methyl-2-pentanone	ND	6,200	5/24/95	5145131

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	104	(70 - 121)
Toluene-d8	96	(81 - 117)
Bromofluorobenzene	100	(74 - 121)

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E250000-131

- - - - - - - - - - - - - - - - - - GC/MS VOLATILES - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	EXTRACTION-ANALYSIS DATE	QC BATCH
Styrene	ND	620	5/24/95	5145131
1,1,2,2-Tetrachloroethane	ND	620	5/24/95	5145131
Tetrachloroethene	ND	620	5/24/95	5145131
Toluene	ND	620	5/24/95	5145131
1,1,1-Trichloroethane	ND	620	5/24/95	5145131
1,1,2-Trichloroethane	ND	620	5/24/95	5145131
Trichloroethene	ND	620	5/24/95	5145131
Vinyl chloride	ND	1,200	5/24/95	5145131
Xylenes, Total	ND	620	5/24/95	5145131

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	104	(70 - 121)
Toluene-d8	96	(81 - 117)
Bromofluorobenzene	100	(74 - 121)

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E160013

METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5137004			
Silver	ND	1.0	mg/kg	SW846 6010A	5/17- 5/18/95
Arsenic	ND	0.50	mg/kg	SW846 6010A	5/17- 5/25/95
Barium	ND	1.0	mg/kg	SW846 6010A	5/17- 5/18/95
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/17- 5/18/95
Chromium	ND	2.0	mg/kg	SW846 6010A	5/17- 5/18/95
Copper	ND	1.0	mg/kg	SW846 6010A	5/17- 5/18/95
Nickel	ND	4.0	mg/kg	SW846 6010A	5/17- 5/18/95
Lead	**0.64**	**0.50**	**mg/kg**	**SW846 6010A**	**5/17- 5/25/95**
Selenium	ND	0.50	mg/kg	SW846 6010A	5/17- 5/25/95
Zinc	ND	5.0	mg/kg	SW846 6010A	5/17- 5/18/95
		BATCH:5153020			
Lead	ND	0.50	mg/kg	SW846 6010A	6/02- 6/04/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5121053
LAB #: A5D200054-014 S
MATRIX: SOLID

WO #: A43T3
PREPARATION DATE: 4/27/95
DATE ANALYZED: 4/28/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	94	98	(60-136)	4.6	(0-28)
Trichloroethene	83	82	(79-120)	1.2	(0-16)
Chlorobenzene	102	102	(90-115)	0.50	(0-20)
Toluene	99	100	(78-129)	0.49	(0-21)
Benzene	94	92	(79-124)	2.9	(0-19)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5145045
LAB #: A5E160013-001 S
MATRIX: SOLID

WO #: A4JWN
PREPARATION DATE: 5/24/95
DATE ANALYZED: 5/24/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	76	82	(60-136)	8.6	(0-28)
Trichloroethene	82	79	(79-120)	4.0	(0-16)
Chlorobenzene	96	96	(90-115)	0.70	(0-20)
Toluene	97	105	(78-129)	7.8	(0-21)
Benzene	88	89	(79-124)	1.8	(0-19)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

LAB #: A5E160013-001

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
		BATCH:5137004 MATRIX:		SOLID		
Silver	96	101	(62-122)	5.0	(0-20)	5/17- 5/26/95
Arsenic	83	89	(80-120)	7.5	(0-20)	5/17- 5/25/95
Barium	108	114	(45-142)	5.9	(0-20)	5/17- 5/26/95
Cadmium	94	102	(63-114)	8.3	(0-20)	5/17- 5/26/95
Chromium	102	110	(58-130)	7.6	(0-20)	5/17- 5/26/95
Copper	89	104	(72-116)	16	(0-20)	5/17- 5/26/95
Nickel	97	107	(69-111)	10	(0-20)	5/17- 5/26/95
Lead	81	98	(80-120)	19	(0-20)	5/17- 5/25/95
Selenium	79	83	(80-120)	6.0	(0-20)	5/17- 5/25/95
Zinc	109	111	(50-117)	2.0	(0-20)	5/17- 5/26/95

NOTE:

Calculations are performed before rounding to avoid round-off errors in calculated results

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road – Suite 103
Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): QuanTerra

CHAIN OF CUSTODY RECORD

REFERENCE NUMBER: 3627

PROJECT NAME: Synthetic products

SAMPLER'S SIGNATURE: John Hargens PRINTED NAME: John Hargens

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	TCL-VOC	TAL Metals*	TOC	grain size	REMARKS
	5/13/95	950	S-051395-JH-007	soil	2	1	1			* run TAL metals arsenic, barium, cadmium chromium, copper, lead nickel, selenium, silver + zinc then archive rest of sample for possible TCLP metals Tests.
	↓	1350	S-051395-JH-008	soil	2	1	1			
		1515	S-051395-JH-009	soil	2	1	1			
	5/14/95	845	S-051495-JH-010	soil	2	1	1			
		1045	S-051495-JH-012	soil	2	1	1			
		~~1100~~	~~S-051495-JH-013~~	~~soil~~	~~2~~			~~1~~	~~1~~	
			TOTAL NUMBER OF CONTAINERS		10					

RELINQUISHED BY:	DATE: / TIME:	RECEIVED BY:	DATE: / TIME:
① John Hargens	5/15/95 1600	②	
RELINQUISHED BY: ②		RECEIVED BY: ③	
RELINQUISHED BY: ③		RECEIVED BY: ④	

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 3638964685

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: [signature]
DATE: 5-16-95 TIME: 10:15

№ 4870

1001(FORMS)–APRIL 29, 93–REV.0–(C)(F-01)

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
216 497-0772 Fax

Rec'd CRA
JUN 24 1995

Quanterra
Environmental Services

ASE 240044

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Daniel J. Wright
Project Manager

VALIDATED DATA
Project # 3627
Lab Report # ASE 240044
Initials NMB
Date 8-21-95

June 27, 1995

CHECKED AGAINST PRELIMINARY DATA
Date 6-28-95
Initials NMB

Quanterra
Environmental Services

PROJECT NARRATIVE

The following report contains the analytical results for eight solid samples and one water submitted to Quanterra-North Canton by Conestoga-Rovers and Associates, Inc. from the Synthetic Products Site, project number 3627. The samples were received May 24, 1995, according to documented sample acceptance procedures.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the following page in accordance with the methods indicated. Results were provided by facsimile on June 9, 1995 to Nancy Bergstrom. A summary of QC data for these analyses is included at the end of the report.

Soil samples analyzed for grain size, bulk density, and moisture content were subcontracted to Applied Construction Technologies, Inc. Moisture content associated with samples that were not analyzed for bulk density was performed by Quanterra-North Canton.

Quanterra
Environmental Services

ANALYTICAL METHODS SUMMARY

Parameters	Methods
TCL Volatile Organics	SW846 8260
TCL Volatile Organics	SW846 8240A
Grain Size	ASTM D422
Silver	SW846 6010A
Barium	SW846 6010A
Cadmium	SW846 6010A
Chromium	SW846 6010A
Copper	SW846 6010A
Nickel	SW846 6010A
Zinc	SW846 6010A
Bulk Density	ASTM D1188
Arsenic	SW846 6010A
Lead	SW846 6010A
Selenium	SW846 6010A
Percent Moisture	ASTM D2216
Carbon, Total Organic	MOSA WALKLEY-BLACK

References:

ASTM 1987 Annual Book Of ASTM Standards.

MOSA "Methods of Soil Analysis", Number 9 (Part 2) In The Series: Agronomy, American Society of Agronomy, Inc., Second Edition, 1982.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, September, 1986 and subsequent revisions

Quanterra
Environmental Services

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED
A4NH2	A5E240044-001	S-052295-JH-020	5/22/95 10:25
A4NH8	A5E240044-002	S-052295-JH-021	5/22/95 10:37
A4NHE	A5E240044-003	W-052295-JH-022	5/22/95 12:05
A4NHJ	A5E240044-004	S-052295-JH-023	5/22/95 12:20
A4NHM	A5E240044-005	S-052395-JH-024	5/23/95 10:05
A4NHN	A5E240044-006	S-052395-JH-025	5/23/95 18:50
A4NHQ	A5E240044-007	S-052395-JH-026	5/23/95 10:55
A4NHT	A5E240044-008	S-052395-JH-027	5/23/95 11:20
A4NHV	A5E240044-009	S-052395-JH-028	5/23/95 11:30

Quanterra
Environmental Services

ENGINEERING • TESTING • INSPECTION

APPLIED CONSTRUCTION TECHNOLOGIES, INC.

210 HAYES DRIVE • SUITE C • CLEVELAND, OHIO 44131 • (216) 459-TEST • FAX (216) 459-8954
478 E. EXCHANGE ST. • SUITE 202 • AKRON, OHIO 44304 • (216) 253-TEST • FAX (216) 253-3462

June 2, 1995

Quanterra Incorporated
4101 Snuffel Drive
North Canton, Ohio 44720

Attention: Mr. Daniel J. Wright

SUBJECT: LABORATORY RESULTS
Six (6) SUBMITTED SAMPLES
P. O. SR006869
CLIENT CODE: 001628

ACT PROJECT NO. 9501.17
Report Dated 02 June 1995

Enclosed are test results for three (3) jar samples and three (3) nominal 1-1/2 inch spoon liner tube samples submitted to us on May 25, 1995. The grain size analyses, densities and moisture contents were performed per appropriate ASTM Standards.

APPLIED CONSTRUCTION TECHNOLOGIES, INC.
Boris Shilman, Lab Technician
by:

GEORGE WOZNIAK, C.E.T.
Manager - Materials Laboratory

GW:jh

Quanterra Environmental Services

BULK DENSITY AND MOISTURE CONTENT RESULTS

Sample Identification	Bulk Density (Wet) pcf	Bulk Density (Dry) pcf	(Dry) (Weight Basis) % Moisture	Sample Description
A-5E240044-002 A-4NH8-1-01, 02	125.2	105.9	18.2	Brown sand and silt, trace of mica.
A-5E240044-006 A-4NHN-1-01,02	132.5	115.5	14.7	Gray silty sand, Some gravel and rock fragments, trace mica.
A-5E240044-009 A-4NHV-1-01,02	136.8	122.7	11.5	Brown with some gray poorly graded sand with silt, little gravel, trace mica.

Boris Shilman, Lab Technician

GEORGE WOZNIAK, C.E.T.
Manager - Materials Laboratory

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052295-JH-020

WO #: A4NH2
LAB #: A5E240044-001
MATRIX: SOLID

DATE SAMPLED: 5/22/95
TIME SAMPLED: 10:25
DATE RECEIVED: 5/24/95

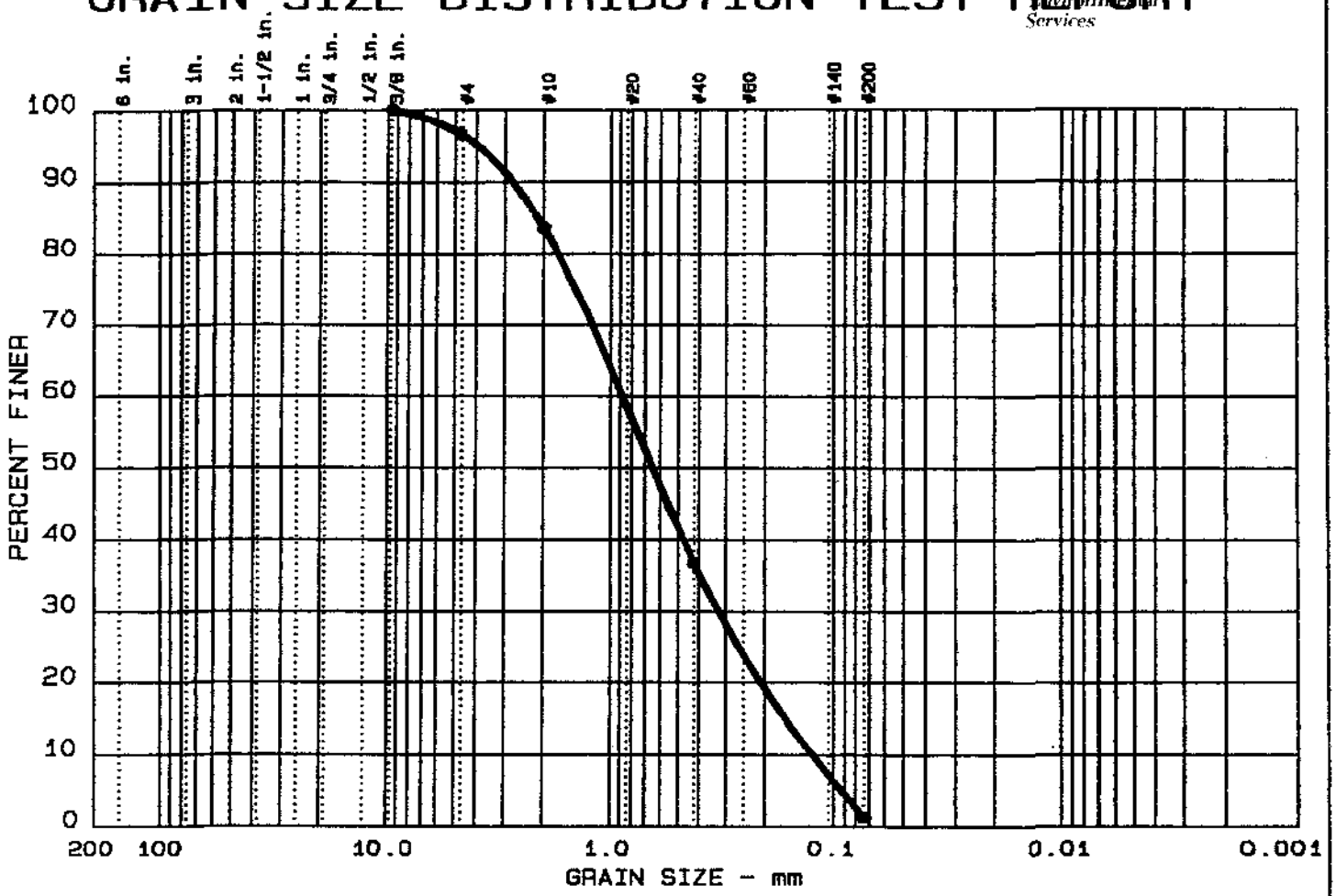
- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Percent Moisture	10.6	0.50	%	ASTM D2216	6/01- 6/02/95	5152022
Carbon, Total Organic	ND	100	mg/kg	MOSA WALKLEY-	6/12/95	5163116

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

GRAIN SIZE DISTRIBUTION TEST REPORT

Quanterra Environmental Services



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	3.2	95.4	1.4	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			2.11	0.88	0.64	0.323	0.1620	0.1229	0.97	7.2

MATERIAL DESCRIPTION	USCS	AASHTO
● GRAYISH BROWN POORLY GRADED SAND; trace GRAVEL.	SP	

Project No.: 9501.07
Project: P.O. SR006869 CLIENT CODE: 001628
● Location: A-5E240044-001 A4NH2-1-01

Date: 06-02-95

Remarks:
CLIENT: QUANTERRA INC.

JAR SAMPLES RECEIVED ON 05-25-95

GRAIN SIZE DISTRIBUTION TEST REPORT

APPLIED CONSTRUCTION TECH., INC.

Figure No. 01

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052295-JH-021

WO #: A4NH8
LAB #: A5E240044-002
MATRIX: SOLID

DATE SAMPLED: 5/22/95
TIME SAMPLED: 10:37
DATE RECEIVED: 5/24/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Bulk Density	125.2			ASTM D1188	6/09/95	5160041
Percent Moisture	18.2			ASTM D2216	6/09/95	5160042

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

W-052295-JH-022

WO #: A4NHE10A
LAB #: A5E240044-003
MATRIX: WATER

DATE SAMPLED: 5/22/95
TIME SAMPLED: 12:05
DATE RECEIVED: 5/24/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	05/30/95	5153041
Bromomethane	ND	1.0	SW846 8260	05/30/95	5153041
Vinyl chloride	ND	1.0	SW846 8260	05/30/95	5153041
Chloroethane	ND	1.0	SW846 8260	05/30/95	5153041
Methylene chloride	ND	1.0	SW846 8260	05/30/95	5153041
Acetone	**4.4 J**	**10**	**SW846 8260**	**05/30/95**	**5153041**
Carbon disulfide	ND	1.0	SW846 8260	05/30/95	5153041
1,1-Dichloroethene	ND	1.0	SW846 8260	05/30/95	5153041
1,1-Dichloroethane	ND	1.0	SW846 8260	05/30/95	5153041
1,2-Dichloroethene, Total	ND	1.0	SW846 8260	05/30/95	5153041
Chloroform	ND	1.0	SW846 8260	05/30/95	5153041
1,2-Dichloroethane	ND	1.0	SW846 8260	05/30/95	5153041
2-Butanone	ND	10	SW846 8260	05/30/95	5153041
1,1,1-Trichloroethane	ND	1.0	SW846 8260	05/30/95	5153041
Carbon tetrachloride	ND	1.0	SW846 8260	05/30/95	5153041
Bromodichloromethane	ND	1.0	SW846 8260	05/30/95	5153041
1,2-Dichloropropane	ND	1.0	SW846 8260	05/30/95	5153041
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	05/30/95	5153041
Trichloroethene	ND	1.0	SW846 8260	05/30/95	5153041
Dibromochloromethane	ND	1.0	SW846 8260	05/30/95	5153041
1,1,2-Trichloroethane	ND	1.0	SW846 8260	05/30/95	5153041
Benzene	ND	1.0	SW846 8260	05/30/95	5153041
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	05/30/95	5153041

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	91	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	99	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

W-052295-JH-022

WO #: A4NHE10A
LAB #: A5E240044-003
MATRIX: WATER

DATE SAMPLED: 5/22/95
TIME SAMPLED: 12:05
DATE RECEIVED: 5/24/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	1.0	SW846 8260	05/30/95	5153041
4-Methyl-2-pentanone	ND	10	SW846 8260	05/30/95	5153041
2-Hexanone	ND	10	SW846 8260	05/30/95	5153041
Tetrachloroethene	ND	1.0	SW846 8260	05/30/95	5153041
Toluene	ND	1.0	SW846 8260	05/30/95	5153041
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	05/30/95	5153041
Chlorobenzene	ND	1.0	SW846 8260	05/30/95	5153041
Ethylbenzene	ND	1.0	SW846 8260	05/30/95	5153041
Styrene	ND	1.0	SW846 8260	05/30/95	5153041
Xylenes, Total	ND	1.0	SW846 8260	05/30/95	5153041

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	91	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	99	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

W-052295-JH-022

WO #: A4NHE
LAB #: A5E240044-003
MATRIX: WATER

DATE SAMPLED: 5/22/95
TIME SAMPLED: 12:05
DATE RECEIVED: 5/24/95

- REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	5/30- 6/04/95	5150026
Barium	ND	0.010	mg/L	SW846 6010A	5/30- 6/04/95	5150026
Cadmium	ND	0.010	mg/L	SW846 6010A	5/30- 6/04/95	5150026
Chromium	ND	0.020	mg/L	SW846 6010A	5/30- 6/04/95	5150026
Copper	ND	0.010	mg/L	SW846 6010A	5/30- 6/04/95	5150026
Nickel	ND	0.040	mg/L	SW846 6010A	5/30- 6/04/95	5150026
Zinc	ND	0.050	mg/L	SW846 6010A	5/30- 6/04/95	5150026
Arsenic	ND	0.0050	mg/L	SW846 6010A	5/30- 6/04/95	5150026
Lead	ND	0.0030	mg/L	SW846 6010A	5/30- 6/04/95	5150026
Selenium	ND	0.0050	mg/L	SW846 6010A	5/30- 6/04/95	5150026

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052295-JH-023

WO #: A4NHJ10A
LAB #: A5E240044-004
MATRIX: SOLID

DATE SAMPLED: 5/22/95
TIME SAMPLED: 12:20
DATE RECEIVED: 5/24/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	100	SW846 8240A	05/30/95	5151054
Bromomethane	ND	100	SW846 8240A	05/30/95	5151054
Vinyl chloride	ND	100	SW846 8240A	05/30/95	5151054
Chloroethane	ND	100	SW846 8240A	05/30/95	5151054
Methylene chloride	ND	50	SW846 8240A	05/30/95	5151054
Acetone	**55 J**	**500**	**SW846 8240A**	**05/30/95**	**5151054**
Carbon disulfide	ND	50	SW846 8240A	05/30/95	5151054
1,1-Dichloroethene	ND	50	SW846 8240A	05/30/95	5151054
1,1-Dichloroethane	ND	50	SW846 8240A	05/30/95	5151054
1,2-Dichloroethene, Total	ND	50	SW846 8240A	05/30/95	5151054
Chloroform	ND	50	SW846 8240A	05/30/95	5151054
1,2-Dichloroethane	ND	50	SW846 8240A	05/30/95	5151054
2-Butanone	ND	500	SW846 8240A	05/30/95	5151054
1,1,1-Trichloroethane	ND	50	SW846 8240A	05/30/95	5151054
Carbon tetrachloride	ND	50	SW846 8240A	05/30/95	5151054
Bromodichloromethane	ND	50	SW846 8240A	05/30/95	5151054
1,2-Dichloropropane	ND	50	SW846 8240A	05/30/95	5151054
cis-1,3-Dichloropropene	ND	50	SW846 8240A	05/30/95	5151054
Trichloroethene	ND	50	SW846 8240A	05/30/95	5151054
Dibromochloromethane	ND	50	SW846 8240A	05/30/95	5151054
1,1,2-Trichloroethane	ND	50	SW846 8240A	05/30/95	5151054
Benzene	**26 J**	**50**	**SW846 8240A**	**05/30/95**	**5151054**
trans-1,3-Dichloropropene	ND	50	SW846 8240A	05/30/95	5151054

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(70 - 121)
Toluene-d8	102	(81 - 117)
Bromofluorobenzene	103	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
ELEVATED DETECTION LIMITS DUE TO TIC(S).
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052295-JH-023

WO #: A4NHJ10A
LAB #: A5E240044-004
MATRIX: SOLID

DATE SAMPLED: 5/22/95
TIME SAMPLED: 12:20
DATE RECEIVED: 5/24/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	50	SW846 8240A	05/30/95	5151054
4-Methyl-2-pentanone	ND	500	SW846 8240A	05/30/95	5151054
2-Hexanone	ND	500	SW846 8240A	05/30/95	5151054
Tetrachloroethene	ND	50	SW846 8240A	05/30/95	5151054
Toluene	ND	50	SW846 8240A	05/30/95	5151054
1,1,2,2-Tetrachloroethane	ND	50	SW846 8240A	05/30/95	5151054
Chlorobenzene	ND	50	SW846 8240A	05/30/95	5151054
Ethylbenzene	ND	50	SW846 8240A	05/30/95	5151054
Styrene	ND	50	SW846 8240A	05/30/95	5151054
Xylenes, Total	ND	50	SW846 8240A	05/30/95	5151054

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(70 - 121)
Toluene-d8	102	(81 - 117)
Bromofluorobenzene	103	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
ELEVATED DETECTION LIMITS DUE TO TIC(S).

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052295-JH-023

WO #: A4NHJ
LAB #: A5E240044-004
MATRIX: SOLID

DATE SAMPLED: 5/22/95
TIME SAMPLED: 12:20
DATE RECEIVED: 5/24/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	1.0	1.0	mg/kg	SW846 6010A	5/26- 5/31/95	5146005
Barium	24.3	1.0	mg/kg	SW846 6010A	5/26- 5/31/95	5146005
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/26- 5/31/95	5146005
Chromium	8.0	2.0	mg/kg	SW846 6010A	5/26- 5/31/95	5146005
Copper	11.9	1.0	mg/kg	SW846 6010A	5/26- 5/31/95	5146005
Nickel	7.5	4.0	mg/kg	SW846 6010A	5/26- 5/31/95	5146005
Zinc	38.5	5.0	mg/kg	SW846 6010A	6/01- 6/06/95	5152017
Arsenic	1.8	0.50	mg/kg	SW846 6010A	5/26- 6/06/95	5146005
Lead	12.1	0.30	mg/kg	SW846 6010A	5/26- 6/06/95	5146005
Selenium	ND	0.50	mg/kg	SW846 6010A	5/26- 6/06/95	5146005

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052295-JH-023

WO #: A4NHJ
LAB #: A5E240044-004
MATRIX: SOLID

DATE SAMPLED: 5/22/95
TIME SAMPLED: 12:20
DATE RECEIVED: 5/24/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Percent Moisture	9.4	0.50	%	ASTM D2216	6/01- 6/02/95	5152022

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052395-JH-024

WO #: A4NHM10A
LAB #: A5E240044-005
MATRIX: SOLID

DATE SAMPLED: 5/23/95
TIME SAMPLED: 10:05
DATE RECEIVED: 5/24/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	10	SW846 8240A	05/30/95	5151054
Bromomethane	ND	10	SW846 8240A	05/30/95	5151054
Vinyl chloride	ND	10	SW846 8240A	05/30/95	5151054
Chloroethane	ND	10	SW846 8240A	05/30/95	5151054
Methylene chloride	ND	5.0	SW846 8240A	05/30/95	5151054
Acetone	**7.0 J**	**50**	**SW846 8240A**	**05/30/95**	**5151054**
Carbon disulfide	ND	5.0	SW846 8240A	05/30/95	5151054
1,1-Dichloroethene	ND	5.0	SW846 8240A	05/30/95	5151054
1,1-Dichloroethane	ND	5.0	SW846 8240A	05/30/95	5151054
1,2-Dichloroethene, Total	ND	5.0	SW846 8240A	05/30/95	5151054
Chloroform	ND	5.0	SW846 8240A	05/30/95	5151054
1,2-Dichloroethane	ND	5.0	SW846 8240A	05/30/95	5151054
2-Butanone	ND	50	SW846 8240A	05/30/95	5151054
1,1,1-Trichloroethane	ND	5.0	SW846 8240A	05/30/95	5151054
Carbon tetrachloride	ND	5.0	SW846 8240A	05/30/95	5151054
Bromodichloromethane	ND	5.0	SW846 8240A	05/30/95	5151054
1,2-Dichloropropane	ND	5.0	SW846 8240A	05/30/95	5151054
cis-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/30/95	5151054
Trichloroethene	ND	5.0	SW846 8240A	05/30/95	5151054
Dibromochloromethane	ND	5.0	SW846 8240A	05/30/95	5151054
1,1,2-Trichloroethane	ND	5.0	SW846 8240A	05/30/95	5151054
Benzene	ND	5.0	SW846 8240A	05/30/95	5151054
trans-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/30/95	5151054

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	100	(70 - 121)
Toluene-d8	103	(81 - 117)
Bromofluorobenzene	97	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052395-JH-024

WO #: A4NHM10A
LAB #: A5E240044-005
MATRIX: SOLID

DATE SAMPLED: 5/23/95
TIME SAMPLED: 10:05
DATE RECEIVED: 5/24/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	5.0	SW846 8240A	05/30/95	5151054
4-Methyl-2-pentanone	ND	50	SW846 8240A	05/30/95	5151054
2-Hexanone	ND	50	SW846 8240A	05/30/95	5151054
Tetrachloroethene	ND	5.0	SW846 8240A	05/30/95	5151054
Toluene	ND	5.0	SW846 8240A	05/30/95	5151054
1,1,2,2-Tetrachloroethane	ND	5.0	SW846 8240A	05/30/95	5151054
Chlorobenzene	ND	5.0	SW846 8240A	05/30/95	5151054
Ethylbenzene	ND	5.0	SW846 8240A	05/30/95	5151054
Styrene	ND	5.0	SW846 8240A	05/30/95	5151054
Xylenes, Total	ND	5.0	SW846 8240A	05/30/95	5151054

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	100	(70 - 121)
Toluene-d8	103	(81 - 117)
Bromofluorobenzene	97	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052395-JH-024

WO #: A4NHM
LAB #: A5E240044-005
MATRIX: SOLID

DATE SAMPLED: 5/23/95
TIME SAMPLED: 10:05
DATE RECEIVED: 5/24/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/26- 5/31/95	5146005
Barium	12.6	1.0	mg/kg	SW846 6010A	5/26- 5/31/95	5146005
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/26- 5/31/95	5146005
Chromium	24.1	2.0	mg/kg	SW846 6010A	5/26- 5/31/95	5146005
Copper	54.0	1.0	mg/kg	SW846 6010A	5/26- 5/31/95	5146005
Nickel	4.2	4.0	mg/kg	SW846 6010A	5/26- 5/31/95	5146005
Zinc	30.6	5.0	mg/kg	SW846 6010A	6/01- 6/06/95	5152017
Arsenic	0.77	0.50	mg/kg	SW846 6010A	5/26- 6/06/95	5146005
Lead	10.2	0.30	mg/kg	SW846 6010A	5/26- 6/06/95	5146005
Selenium	ND	0.50	mg/kg	SW846 6010A	5/26- 6/06/95	5146005

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052395-JH-024

WO #: A4NHM
LAB #: A5E240044-005
MATRIX: SOLID

DATE SAMPLED: 5/23/95
TIME SAMPLED: 10:05
DATE RECEIVED: 5/24/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Percent Moisture	5.5	0.50	%	ASTM D2216	6/01- 6/02/95	5152022

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052395-JH-025

WO #: A4NHN
LAB #: A5E240044-006
MATRIX: SOLID

DATE SAMPLED: 5/23/95
TIME SAMPLED: 18:50
DATE RECEIVED: 5/24/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Bulk Density	132.5			ASTM D1188	6/09/95	5160041
Percent Moisture	14.7			ASTM D2216	6/09/95	5160042

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052395-JH-026

WO #: A4NHQ
LAB #: A5E240044-007
MATRIX: SOLID

DATE SAMPLED: 5/23/95
TIME SAMPLED: 10:55
DATE RECEIVED: 5/24/95

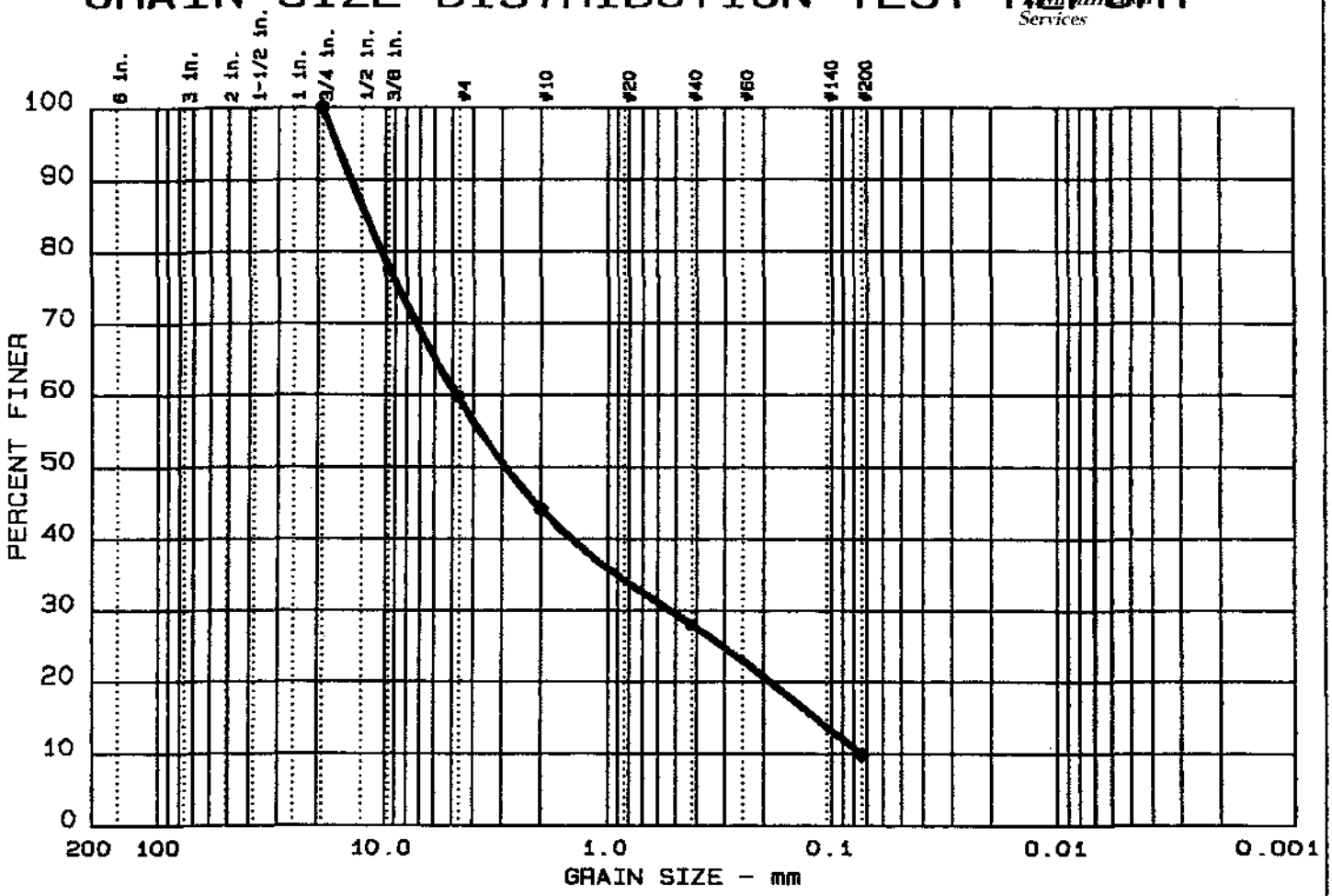
- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Percent Moisture	9.7	0.50	%	ASTM D2216	6/01- 6/02/95	5152022
Carbon, Total Organic	1,600	100	mg/kg	MOSA WALKLEY-	6/12/95	5163116

NOTE: AS RECEIVED

GRAIN SIZE DISTRIBUTION TEST REPORT

Quanterra Environmental Services



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	2	0.0	40.1	49.9	10.0	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			12.12	4.77	2.87	0.523	0.1171			

MATERIAL DESCRIPTION	USCS	AASHTO
● DARK GRAY POORLY GRADED SAND w/SILT; and GRAVEL.	SP-SM	

Project No.: 9501.07
Project: P.O. SR006869 CLIENT CODE: 001628
● Location: A-5E240044-007 A4NHG-1-01

Date: 06-02-95

Remarks:
CLIENT: QUANTERRA INC.

JAR SAMPLES RECEIVED ON 05-25-95

GRAIN SIZE DISTRIBUTION TEST REPORT

APPLIED CONSTRUCTION TECH., INC.

Figure No. 02

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052395-JH-027

WO #: A4NHT
LAB #: A5E240044-008
MATRIX: SOLID

DATE SAMPLED: 5/23/95
TIME SAMPLED: 11:20
DATE RECEIVED: 5/24/95

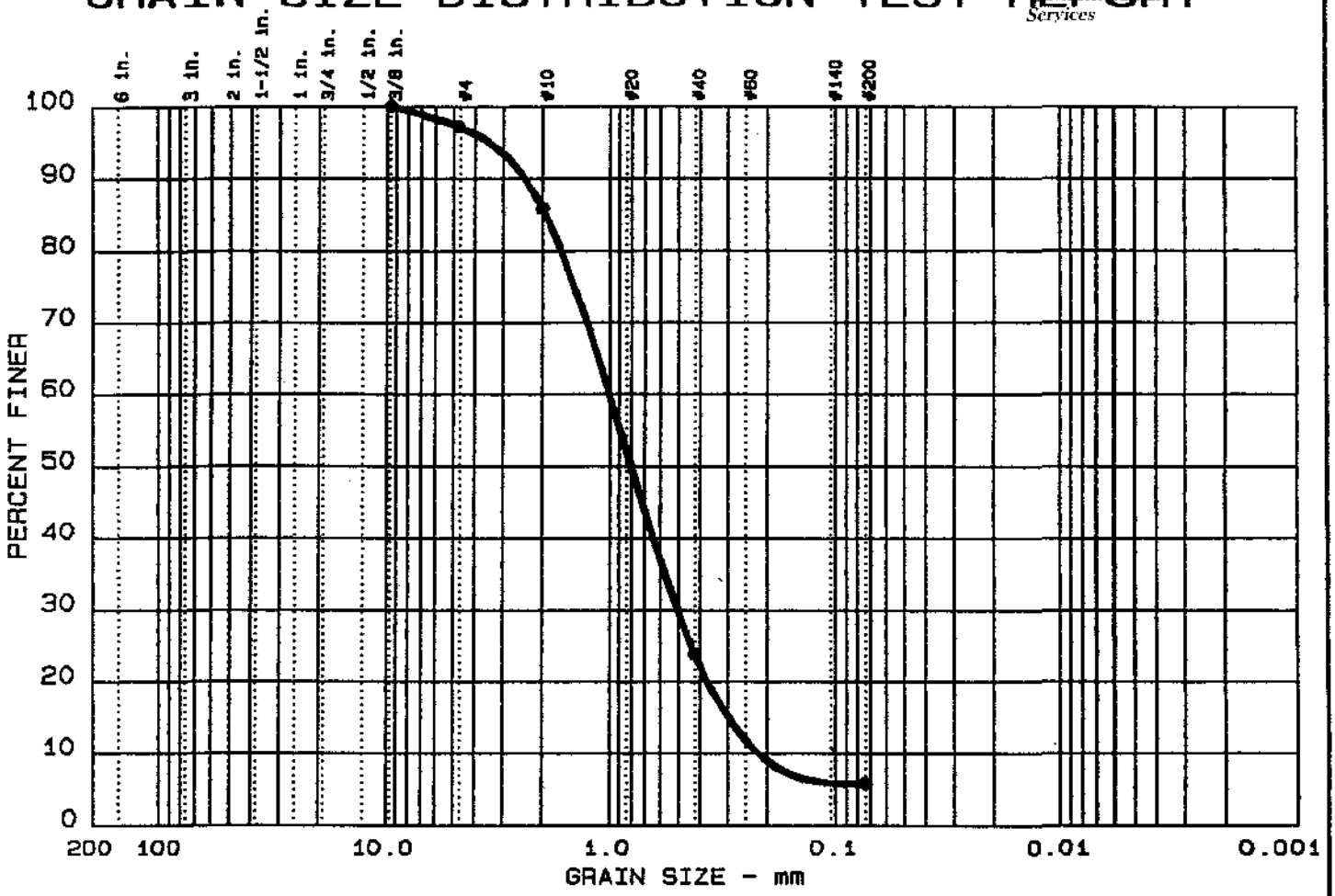
- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Percent Moisture	15.6	0.50	%	ASTM D2216	6/01- 6/02/95	5152022
Carbon, Total Organic	ND	100	mg/kg	MOSA WALKLEY-	6/12/95	5163116

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

GRAIN SIZE DISTRIBUTION TEST REPORT

Quanterra Environmental Services



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	3	0.0	2.8	91.4	5.8	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			1.93	1.00	0.80	0.500	0.2979	0.2183	1.15	4.6

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWNISH GRAY POORLY GRADED SAND w/SILT; tr.GRAVEL	SP-SM	

Project No.: 9501.07
Project: P.O. SR006869 CLIENT CODE: 001628
◆ Location: A-5E240044-008 A4NHT-1-01

Date: 06-02-95

Remarks:
CLIENT: QUANTERRA INC.

JAR SAMPLES RECEIVED ON
05-25-95

GRAIN SIZE DISTRIBUTION TEST REPORT

APPLIED CONSTRUCTION TECH., INC.

Figure No. 03

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052395-JH-028

WO #: A4NHV
LAB #: A5E240044-009
MATRIX: SOLID

DATE SAMPLED: 5/23/95
TIME SAMPLED: 11:30
DATE RECEIVED: 5/24/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Bulk Density	136.8			ASTM D1188	6/09/95	5160041
Percent Moisture	11.5			ASTM D2216	6/09/95	5160042

NOTE: AS RECEIVED

Quanterra
Environmental
Services

QUALITY CONTROL SECTION

Quanterra
Environmental Services

QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with the exception of those items noted.

The matrix spike and matrix spike duplicate (MS/MSD) contained in this quality control report were generated as part of the laboratory QA/QC program requirements. These requirements include the analysis of a MS/MSD on a one in twenty basis. Therefore, the associated batch number indicated on the MS/MSD report may not reflect the same batch number as those of the samples contained in the analytical report.

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5153041
LAB #: A5F020000-041 C

PREPARATION DATE: 5/30/95
DATE ANALYZED: 5/30/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	81	(70-143)
Trichloroethene	95	(76-121)
Chlorobenzene	99	(81-121)
Toluene	96	(79-122)
Benzene	94	(79-125)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5151054
LAB #: A5E310000-054 C

PREPARATION DATE: 5/30/95
DATE ANALYZED: 5/30/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	103	(63-137)
Trichloroethene	103	(77-116)
Chlorobenzene	103	(80-118)
Toluene	101	(80-118)
Benzene	102	(77-118)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

LAB #: A5E240044

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5146005		
Silver	109	(64-119)	5/26- 5/31/95
Arsenic	95	(80-120)	5/26- 5/30/95
Barium	105	(82-112)	5/26- 5/31/95
Cadmium	102	(72-109)	5/26- 5/31/95
Chromium	110	(76-118)	5/26- 5/31/95
Copper	110	(82-110)	5/26- 5/31/95
Nickel	109	(74-111)	5/26- 5/31/95
Lead	94	(80-120)	5/26- 5/30/95
Selenium	90	(80-120)	5/26- 5/30/95
	BATCH:5150026		
Silver	98	(77-113)	5/30- 6/02/95
Arsenic	102	(80-120)	5/30- 6/04/95
Barium	100	(86-110)	5/30- 6/02/95
Cadmium	92	(80-108)	5/30- 6/02/95
Chromium	106	(83-114)	5/30- 6/02/95
Copper	102	(84-110)	5/30- 6/02/95
Nickel	106	(81-110)	5/30- 6/02/95
Lead	93	(80-120)	5/30- 6/04/95
Selenium	99	(80-120)	5/30- 6/04/95
Zinc	107	(79-112)	5/30- 6/02/95
	BATCH:5152017		
Zinc	106	(68-116)	6/01- 6/06/95

Quanterra Environmental Services

CHECK SAMPLE REPORT

LAB #: A5E240044

- - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - -

COMPOUND	SPIKE PERCENT RECOVERY	LIMITS	PREPARATION - ANALYSIS DATE	Q/C BATCH
Carbon, Total Organic	83	(80-119)	6/12/95	5163116

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F020000-041

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	50	5/30/95	5153041
Benzene	ND	5.0	5/30/95	5153041
Bromodichloromethane	ND	5.0	5/30/95	5153041
Bromoform	ND	5.0	5/30/95	5153041
Bromomethane	ND	10	5/30/95	5153041
2-Butanone	ND	50	5/30/95	5153041
Carbon disulfide	ND	5.0	5/30/95	5153041
Carbon tetrachloride	ND	5.0	5/30/95	5153041
Chlorobenzene	ND	5.0	5/30/95	5153041
Dibromochloromethane	ND	5.0	5/30/95	5153041
Chloroethane	ND	10	5/30/95	5153041
Chloroform	ND	5.0	5/30/95	5153041
Chloromethane	ND	10	5/30/95	5153041
1,1-Dichloroethane	ND	5.0	5/30/95	5153041
1,2-Dichloroethane	ND	5.0	5/30/95	5153041
1,1-Dichloroethene	ND	5.0	5/30/95	5153041
1,2-Dichloroethene, Total	ND	5.0	5/30/95	5153041
1,2-Dichloropropane	ND	5.0	5/30/95	5153041
cis-1,3-Dichloropropene	ND	5.0	5/30/95	5153041
trans-1,3-Dichloropropene	ND	5.0	5/30/95	5153041
Ethylbenzene	ND	5.0	5/30/95	5153041
2-Hexanone	ND	50	5/30/95	5153041
Methylene chloride	ND	5.0	5/30/95	5153041
4-Methyl-2-pentanone	ND	50	5/30/95	5153041
Styrene	ND	5.0	5/30/95	5153041

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	105	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F020000-041

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	5.0	5/30/95	5153041
Tetrachloroethene	ND	5.0	5/30/95	5153041
Toluene	ND	5.0	5/30/95	5153041
1,1,1-Trichloroethane	ND	5.0	5/30/95	5153041
1,1,2-Trichloroethane	ND	5.0	5/30/95	5153041
Trichloroethene	ND	5.0	5/30/95	5153041
Vinyl chloride	ND	10	5/30/95	5153041
Xylenes, Total	ND	5.0	5/30/95	5153041

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	105	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E310000-054

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	50	5/30/95	5151054
Benzene	ND	5.0	5/30/95	5151054
Bromodichloromethane	ND	5.0	5/30/95	5151054
Bromoform	ND	5.0	5/30/95	5151054
Bromomethane	ND	10	5/30/95	5151054
2-Butanone	ND	50	5/30/95	5151054
Carbon disulfide	ND	5.0	5/30/95	5151054
Carbon tetrachloride	ND	5.0	5/30/95	5151054
Chlorobenzene	ND	5.0	5/30/95	5151054
Dibromochloromethane	ND	5.0	5/30/95	5151054
Chloroethane	ND	10	5/30/95	5151054
Chloroform	ND	5.0	5/30/95	5151054
Chloromethane	ND	10	5/30/95	5151054
1,1-Dichloroethane	ND	5.0	5/30/95	5151054
1,2-Dichloroethane	ND	5.0	5/30/95	5151054
1,1-Dichloroethene	ND	5.0	5/30/95	5151054
1,2-Dichloroethene, Total	ND	5.0	5/30/95	5151054
1,2-Dichloropropane	ND	5.0	5/30/95	5151054
cis-1,3-Dichloropropene	ND	5.0	5/30/95	5151054
trans-1,3-Dichloropropene	ND	5.0	5/30/95	5151054
Ethylbenzene	ND	5.0	5/30/95	5151054
2-Hexanone	ND	50	5/30/95	5151054
Methylene chloride	ND	5.0	5/30/95	5151054
4-Methyl-2-pentanone	ND	50	5/30/95	5151054
Styrene	ND	5.0	5/30/95	5151054

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	100	(70 - 121)
Toluene-d8	100	(81 - 117)
Bromofluorobenzene	99	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E310000-054

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	5.0	5/30/95	5151054
Tetrachloroethene	ND	5.0	5/30/95	5151054
Toluene	ND	5.0	5/30/95	5151054
1,1,1-Trichloroethane	ND	5.0	5/30/95	5151054
1,1,2-Trichloroethane	ND	5.0	5/30/95	5151054
Trichloroethene	ND	5.0	5/30/95	5151054
Vinyl chloride	ND	10	5/30/95	5151054
Xylenes, Total	ND	5.0	5/30/95	5151054

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	100	(70 - 121)
Toluene-d8	100	(81 - 117)
Bromofluorobenzene	99	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E240044

METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5146005			
Silver	ND	1.0	mg/kg	SW846 6010A	5/26- 5/31/95
Arsenic	ND	0.50	mg/kg	SW846 6010A	5/26- 5/30/95
Barium	ND	1.0	mg/kg	SW846 6010A	5/26- 5/31/95
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/26- 5/31/95
Chromium	ND	2.0	mg/kg	SW846 6010A	5/26- 5/31/95
Copper	ND	1.0	mg/kg	SW846 6010A	5/26- 5/31/95
Nickel	ND	4.0	mg/kg	SW846 6010A	5/26- 5/31/95
Lead	**0.68**	**0.30**	**mg/kg**	**SW846 6010A**	**5/26- 5/30/95**
Selenium	ND	0.50	mg/kg	SW846 6010A	5/26- 5/30/95
		BATCH:5150026			
Silver	ND	0.010	mg/L	SW846 6010A	5/30- 6/02/95
Arsenic	ND	0.0050	mg/L	SW846 6010A	5/30- 6/04/95
Barium	ND	0.010	mg/L	SW846 6010A	5/30- 6/02/95
Cadmium	ND	0.010	mg/L	SW846 6010A	5/30- 6/02/95
Chromium	ND	0.020	mg/L	SW846 6010A	5/30- 6/02/95
Copper	ND	0.010	mg/L	SW846 6010A	5/30- 6/02/95
Nickel	ND	0.040	mg/L	SW846 6010A	5/30- 6/02/95
Lead	ND	0.0030	mg/L	SW846 6010A	5/30- 6/04/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E240044

METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5150026			
Selenium	ND	0.0050	mg/L	SW846 6010A	5/30- 6/04/95
Zinc	ND	0.050	mg/L	SW846 6010A	5/30- 6/02/95
		BATCH:5152017			
Zinc	ND	5.0	mg/kg	SW846 6010A	6/01- 6/06/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E240044

- - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	PREPARATION - ANALYSIS DATE	QC BATCH
Carbon, Total Organic	ND	100	mg/kg	6/12/95	5163116

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5146029
LAB #: A5E190051-020 S
MATRIX: WATER

WO #: A4M1L
PREPARATION DATE: 5/25/95
DATE ANALYZED: 5/25/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	90	94	(55-142)	4.4	(0-19)
Trichloroethene	100	95	(77-124)	4.6	(0-13)
Chlorobenzene	99	97	(85-120)	2.0	(0-10)
Toluene	97	94	(82-122)	3.0	(0-15)
Benzene	100	100	(83-123)	0.31	(0-13)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5150051
LAB #: B5E180038-001 S
MATRIX: SOLID

WO #: A4LC2
PREPARATION DATE: 5/27/95
DATE ANALYZED: 5/27/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	87	92	(60-136)	4.8	(0-28)
Trichloroethene	92	98	(79-120)	6.2	(0-16)
Chlorobenzene	96	102	(90-115)	5.5	(0-20)
Toluene	94	100	(78-129)	6.2	(0-21)
Benzene	94	98	(79-124)	4.6	(0-19)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra Environmental Services

MATRIX SPIKE REPORT

LAB #: A5E240044-004

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
		BATCH:5146005 MATRIX:		SOLID		
Silver	102	101	(62-122)	1.3	(0-20)	5/26- 5/31/95
Arsenic	85	82	(80-120)	3.5	(0-20)	5/26- 6/06/95
Barium	100	101	(45-142)	0.99	(0-20)	5/26- 5/31/95
Cadmium	103	100	(63-114)	2.9	(0-20)	5/26- 5/31/95
Chromium	106	105	(58-130)	0.95	(0-20)	5/26- 5/31/95
Copper	106	105	(72-116)	1.0	(0-20)	5/26- 5/31/95
Nickel	104	102	(69-111)	1.7	(0-20)	5/26- 5/31/95
Lead	84	86	(80-120)	1.8	(0-20)	5/26- 6/06/95
Selenium	80	77	(80-120)	3.4	(0-20)	5/26- 6/06/95
Zinc	107	101	(50-117)	5.8	(0-20)	5/26- 5/31/95
		BATCH:5152017 MATRIX:		SOLID		
Zinc	90	91	(50-117)	0.77	(0-20)	6/01- 6/06/95

NOTE:

Calculations are performed before rounding to avoid round-off errors in calculated results

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): Quanterra

CHAIN OF CUSTODY RECORD

REFERENCE NUMBER: 3627

PROJECT NAME:

SAMPLER'S SIGNATURE: John Hargens PRINTED NAME: John Hargens

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	grain size	TOC	Bulk density	moisture content	TCL-VOC	TAL metals					REMARKS
	5/24/95	1025	S-052295-JH-020	soil	2	1	1									
		1037	S-052295-JH-021		1			1	1							S.S liner
		1205	W-052295-JH-022	water	4					3	1					
		1220	S-052295-JH-023	soil	2					1	1*					*run TAL metals arseni
	5/23/95	1005	S-052395-JH-024		2					1	1*					barium, cadmium, Chromi
		1050	S-052395-JH-025		1			1	1							copper, lead, nickel,
		1055	S-052395-JH-026		2	1	1									selenium, silver,
		1120	S-052395-JH-027		2	1	1									zinc, archive
		1130	S-052395-JH-028		1			1	1							rest of sample for
			Temp Blank	water	1											possible TCLP
																Analysis.
			TOTAL NUMBER OF CONTAINERS		18											

RELINQUISHED BY:	DATE: / TIME:	RECEIVED BY:	DATE: / TIME:
① John Hargens		②	
②		③	
③		④	

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 3638964722

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: Tom Eggs
DATE: 5/24/95 TIME: 12:15 p

№ 4873

1001(FORMS)-APRIL 29, 93-REV.0-(C)(F-01)

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
216 497-0772 Fax

Quanterra
Environmental Services

RECEIVED
JUN 28 1995

ASE 260059

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Daniel J. Wright
Project Manager

VALIDATED DATA
Project # 3627
Lab Report # ASE260059
Initials NMB
Date 8-21-95

June 27, 1995

CHECKED AGAINST
PRELIMINARY DATA
Date 6-28-95
Initials NMB

Quanterra
Environmental Services

PROJECT NARRATIVE

The following report contains the analytical results for four solid samples submitted to Quanterra-North Canton by Conestoga-Rovers and Associates, Inc. from the Synthetic Products Company Site, project number 3627. The samples were received May 26, 1995, according to documented sample acceptance procedures.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the following page in accordance with the methods indicated. Results were provided by facsimile to Nancy Bergstrom on June 9, 1995. A summary of QC data for these analyses is included at the end of the report.

Quanterra
Environmental Services

ANALYTICAL METHODS SUMMARY

Parameters	Methods
TCL Volatile Organics	SW846 8240A
Silver	SW846 6010A
Barium	SW846 6010A
Cadmium	SW846 6010A
Chromium	SW846 6010A
Copper	SW846 6010A
Nickel	SW846 6010A
Zinc	SW846 6010A
Arsenic	SW846 6010A
Lead	SW846 6010A
Selenium	SW846 6010A
Solids, Total (TS)	MCAWW 160.3 MODIFIED

References:

MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL: Cincinnati, OH: March 1983 and subsequent revisions

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, September, 1986 and subsequent revisions

Quanterra Environmental Services

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	
A4Q4E	A5E260059-001	S-052495-JH-029	5/24/95	8:15
A4Q4F	A5E260059-002	S-052595-JH-034	5/25/95	11:15
A4Q4G	A5E260059-003	S-052595-JH-035	5/25/95	12:30
A4Q4H	A5E260059-004	S-052595-JH-036	5/25/95	14:55

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052495-JH-029

WO #: A4Q4E10A
LAB #: A5E260059-001
MATRIX: SOLID

DATE SAMPLED: 5/24/95
TIME SAMPLED: 8:15
DATE RECEIVED: 5/26/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	10	SW846 8240A	06/01/95	5156028
Bromomethane	ND	10	SW846 8240A	06/01/95	5156028
Vinyl chloride	ND	10	SW846 8240A	06/01/95	5156028
Chloroethane	ND	10	SW846 8240A	06/01/95	5156028
Methylene chloride	ND	5.0	SW846 8240A	06/01/95	5156028
Acetone	ND	50	SW846 8240A	06/01/95	5156028
Carbon disulfide	ND	5.0	SW846 8240A	06/01/95	5156028
1,1-Dichloroethene	ND	5.0	SW846 8240A	06/01/95	5156028
1,1-Dichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
1,2-Dichloroethene, Total	ND	5.0	SW846 8240A	06/01/95	5156028
Chloroform	ND	5.0	SW846 8240A	06/01/95	5156028
1,2-Dichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
2-Butanone	ND	50	SW846 8240A	06/01/95	5156028
1,1,1-Trichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
Carbon tetrachloride	ND	5.0	SW846 8240A	06/01/95	5156028
Bromodichloromethane	ND	5.0	SW846 8240A	06/01/95	5156028
1,2-Dichloropropane	ND	5.0	SW846 8240A	06/01/95	5156028
cis-1,3-Dichloropropene	ND	5.0	SW846 8240A	06/01/95	5156028
Trichloroethene	ND	5.0	SW846 8240A	06/01/95	5156028
Dibromochloromethane	ND	5.0	SW846 8240A	06/01/95	5156028
1,1,2-Trichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
Benzene	ND	5.0	SW846 8240A	06/01/95	5156028
trans-1,3-Dichloropropene	ND	5.0	SW846 8240A	06/01/95	5156028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	89	(70 - 121)
Toluene-d8	93	(81 - 117)
Bromofluorobenzene	82	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052495-JH-029

WO #: A4Q4E10A
LAB #: A5E260059-001
MATRIX: SOLID

DATE SAMPLED: 5/24/95
TIME SAMPLED: 8:15
DATE RECEIVED: 5/26/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	5.0	SW846 8240A	06/01/95	5156028
4-Methyl-2-pentanone	ND	50	SW846 8240A	06/01/95	5156028
2-Hexanone	ND	50	SW846 8240A	06/01/95	5156028
Tetrachloroethene	ND	5.0	SW846 8240A	06/01/95	5156028
Toluene	ND	5.0	SW846 8240A	06/01/95	5156028
1,1,2,2-Tetrachloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
Chlorobenzene	ND	5.0	SW846 8240A	06/01/95	5156028
Ethylbenzene	ND	5.0	SW846 8240A	06/01/95	5156028
Styrene	ND	5.0	SW846 8240A	06/01/95	5156028
Xylenes, Total	ND	5.0	SW846 8240A	06/01/95	5156028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	89	(70 - 121)
Toluene-d8	93	(81 - 117)
Bromofluorobenzene	82	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052495-JH-029

WO #: A4Q4E
LAB #: A5E260059-001
MATRIX: SOLID

DATE SAMPLED: 5/24/95
TIME SAMPLED: 8:15
DATE RECEIVED: 5/26/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Barium	15.7	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Chromium	27.8	2.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Copper	74.4	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Nickel	6.4	4.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Zinc	52.7	5.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Arsenic	1.2	0.50	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Lead	15.9	0.30	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Selenium	ND	0.50	mg/kg	SW846 6010A	5/30- 6/07/95	5150021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052495-JH-029

WO #: A4Q4E
LAB #: A5E260059-001
MATRIX: SOLID

DATE SAMPLED: 5/24/95
TIME SAMPLED: 8:15
DATE RECEIVED: 5/26/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	90.8	0.50	%	MCAWW 160.3 M	6/06- 6/07/95	5157041

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052595-JH-034

WO #: A4Q4F10A
LAB #: A5E260059-002
MATRIX: SOLID

DATE SAMPLED: 5/25/95
TIME SAMPLED: 11:15
DATE RECEIVED: 5/26/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	10	SW846 8240A	06/01/95	5156028
Bromomethane	ND	10	SW846 8240A	06/01/95	5156028
Vinyl chloride	ND	10	SW846 8240A	06/01/95	5156028
Chloroethane	ND	10	SW846 8240A	06/01/95	5156028
Methylene chloride	ND	5.0	SW846 8240A	06/01/95	5156028
Acetone	**6.9 J**	**50**	**SW846 8240A**	**06/01/95**	**5156028**
Carbon disulfide	ND	5.0	SW846 8240A	06/01/95	5156028
1,1-Dichloroethene	ND	5.0	SW846 8240A	06/01/95	5156028
1,1-Dichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
1,2-Dichloroethene, Total	ND	5.0	SW846 8240A	06/01/95	5156028
Chloroform	ND	5.0	SW846 8240A	06/01/95	5156028
1,2-Dichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
2-Butanone	ND	50	SW846 8240A	06/01/95	5156028
1,1,1-Trichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
Carbon tetrachloride	ND	5.0	SW846 8240A	06/01/95	5156028
Bromodichloromethane	ND	5.0	SW846 8240A	06/01/95	5156028
1,2-Dichloropropane	ND	5.0	SW846 8240A	06/01/95	5156028
cis-1,3-Dichloropropene	ND	5.0	SW846 8240A	06/01/95	5156028
Trichloroethene	ND	5.0	SW846 8240A	06/01/95	5156028
Dibromochloromethane	ND	5.0	SW846 8240A	06/01/95	5156028
1,1,2-Trichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
Benzene	ND	5.0	SW846 8240A	06/01/95	5156028
trans-1,3-Dichloropropene	ND	5.0	SW846 8240A	06/01/95	5156028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	86	(70 - 121)
Toluene-d8	88	(81 - 117)
Bromofluorobenzene	84	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052595-JH-034

WO #: A4Q4F10A
LAB #: A5E260059-002
MATRIX: SOLID

DATE SAMPLED: 5/25/95
TIME SAMPLED: 11:15
DATE RECEIVED: 5/26/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	5.0	SW846 8240A	06/01/95	5156028
4-Methyl-2-pentanone	ND	50	SW846 8240A	06/01/95	5156028
2-Hexanone	ND	50	SW846 8240A	06/01/95	5156028
Tetrachloroethene	ND	5.0	SW846 8240A	06/01/95	5156028
Toluene	ND	5.0	SW846 8240A	06/01/95	5156028
1,1,2,2-Tetrachloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
Chlorobenzene	ND	5.0	SW846 8240A	06/01/95	5156028
Ethylbenzene	ND	5.0	SW846 8240A	06/01/95	5156028
Styrene	ND	5.0	SW846 8240A	06/01/95	5156028
Xylenes, Total	ND	5.0	SW846 8240A	06/01/95	5156028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	86	(70 - 121)
Toluene-d8	88	(81 - 117)
Bromofluorobenzene	84	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052595-JH-034

WO #: A4Q4F
LAB #: A5E260059-002
MATRIX: SOLID

DATE SAMPLED: 5/25/95
TIME SAMPLED: 11:15
DATE RECEIVED: 5/26/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Barium	18.5	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Chromium	8.3	2.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Copper	5.9	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Nickel	6.6	4.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Zinc	17.9	5.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Arsenic	2.8	0.50	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Lead	5.1	0.30	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Selenium	ND	0.50	mg/kg	SW846 6010A	5/30- 6/07/95	5150021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052595-JH-034

WO #: A4Q4F
LAB #: A5E260059-002
MATRIX: SOLID

DATE SAMPLED: 5/25/95
TIME SAMPLED: 11:15
DATE RECEIVED: 5/26/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	90.7	0.50	%	MCAWW 160.3 M	6/06- 6/07/95	5157041

NOTE: AS RECEIVED

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052595-JH-035

WO #: A4Q4G10A
LAB #: A5E260059-003
MATRIX: SOLID

DATE SAMPLED: 5/25/95
TIME SAMPLED: 12:30
DATE RECEIVED: 5/26/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	10	SW846 8240A	06/01/95	5156028
Bromomethane	ND	10	SW846 8240A	06/01/95	5156028
Vinyl chloride	ND	10	SW846 8240A	06/01/95	5156028
Chloroethane	ND	10	SW846 8240A	06/01/95	5156028
Methylene chloride	ND	5.0	SW846 8240A	06/01/95	5156028
Acetone	**7.1 J**	**50**	**SW846 8240A**	**06/01/95**	**5156028**
Carbon disulfide	ND	5.0	SW846 8240A	06/01/95	5156028
1,1-Dichloroethene	ND	5.0	SW846 8240A	06/01/95	5156028
1,1-Dichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
1,2-Dichloroethene, Total	ND	5.0	SW846 8240A	06/01/95	5156028
Chloroform	ND	5.0	SW846 8240A	06/01/95	5156028
1,2-Dichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
2-Butanone	ND	50	SW846 8240A	06/01/95	5156028
1,1,1-Trichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
Carbon tetrachloride	ND	5.0	SW846 8240A	06/01/95	5156028
Bromodichloromethane	ND	5.0	SW846 8240A	06/01/95	5156028
1,2-Dichloropropane	ND	5.0	SW846 8240A	06/01/95	5156028
cis-1,3-Dichloropropene	ND	5.0	SW846 8240A	06/01/95	5156028
Trichloroethene	ND	5.0	SW846 8240A	06/01/95	5156028
Dibromochloromethane	ND	5.0	SW846 8240A	06/01/95	5156028
1,1,2-Trichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
Benzene	ND	5.0	SW846 8240A	06/01/95	5156028
trans-1,3-Dichloropropene	ND	5.0	SW846 8240A	06/01/95	5156028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	90	(70 - 121)
Toluene-d8	97	(81 - 117)
Bromofluorobenzene	88	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052595-JH-035

WO #: A4Q4G10A
LAB #: A5E260059-003
MATRIX: SOLID

DATE SAMPLED: 5/25/95
TIME SAMPLED: 12:30
DATE RECEIVED: 5/26/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	5.0	SW846 8240A	06/01/95	5156028
4-Methyl-2-pentanone	ND	50	SW846 8240A	06/01/95	5156028
2-Hexanone	ND	50	SW846 8240A	06/01/95	5156028
Tetrachloroethene	ND	5.0	SW846 8240A	06/01/95	5156028
Toluene	ND	5.0	SW846 8240A	06/01/95	5156028
1,1,2,2-Tetrachloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
Chlorobenzene	ND	5.0	SW846 8240A	06/01/95	5156028
Ethylbenzene	ND	5.0	SW846 8240A	06/01/95	5156028
Styrene	ND	5.0	SW846 8240A	06/01/95	5156028
Xylenes, Total	ND	5.0	SW846 8240A	06/01/95	5156028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	90	(70 - 121)
Toluene-d8	97	(81 - 117)
Bromofluorobenzene	88	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052595-JH-035

WO #: A4Q4G
LAB #: A5E260059-003
MATRIX: SOLID

DATE SAMPLED: 5/25/95
TIME SAMPLED: 12:30
DATE RECEIVED: 5/26/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Barium	20.2	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Chromium	7.4	2.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Copper	11.0	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Nickel	6.7	4.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Zinc	24.2	5.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Arsenic	2.9	0.50	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Lead	5.1	0.30	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Selenium	ND	0.50	mg/kg	SW846 6010A	5/30- 6/07/95	5150021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052595-JH-035

WO #: A4Q4G
LAB #: A5E260059-003
MATRIX: SOLID

DATE SAMPLED: 5/25/95
TIME SAMPLED: 12:30
DATE RECEIVED: 5/26/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	84.0	0.50	%	MCAWW 160.3 M	6/06- 6/07/95	5157041

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052595-JH-036

WO #: A4Q4H10A
LAB #: A5E260059-004
MATRIX: SOLID

DATE SAMPLED: 5/25/95
TIME SAMPLED: 14:55
DATE RECEIVED: 5/26/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	10	SW846 8240A	06/01/95	5156028
Bromomethane	ND	10	SW846 8240A	06/01/95	5156028
Vinyl chloride	ND	10	SW846 8240A	06/01/95	5156028
Chloroethane	ND	10	SW846 8240A	06/01/95	5156028
Methylene chloride	ND	5.0	SW846 8240A	06/01/95	5156028
Acetone	ND	50	SW846 8240A	06/01/95	5156028
Carbon disulfide	ND	5.0	SW846 8240A	06/01/95	5156028
1,1-Dichloroethene	ND	5.0	SW846 8240A	06/01/95	5156028
1,1-Dichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
1,2-Dichloroethene, Total	ND	5.0	SW846 8240A	06/01/95	5156028
Chloroform	ND	5.0	SW846 8240A	06/01/95	5156028
1,2-Dichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
2-Butanone	ND	50	SW846 8240A	06/01/95	5156028
1,1,1-Trichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
Carbon tetrachloride	ND	5.0	SW846 8240A	06/01/95	5156028
Bromodichloromethane	ND	5.0	SW846 8240A	06/01/95	5156028
1,2-Dichloropropane	ND	5.0	SW846 8240A	06/01/95	5156028
cis-1,3-Dichloropropene	ND	5.0	SW846 8240A	06/01/95	5156028
Trichloroethene	ND	5.0	SW846 8240A	06/01/95	5156028
Dibromochloromethane	ND	5.0	SW846 8240A	06/01/95	5156028
1,1,2-Trichloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
Benzene	ND	5.0	SW846 8240A	06/01/95	5156028
trans-1,3-Dichloropropene	ND	5.0	SW846 8240A	06/01/95	5156028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	90	(70 - 121)
Toluene-d8	95	(81 - 117)
Bromofluorobenzene	91	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052595-JH-036

WO #: A4Q4H10A
LAB #: A5E260059-004
MATRIX: SOLID

DATE SAMPLED: 5/25/95
TIME SAMPLED: 14:55
DATE RECEIVED: 5/26/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	5.0	SW846 8240A	06/01/95	5156028
4-Methyl-2-pentanone	ND	50	SW846 8240A	06/01/95	5156028
2-Hexanone	ND	50	SW846 8240A	06/01/95	5156028
Tetrachloroethene	ND	5.0	SW846 8240A	06/01/95	5156028
Toluene	ND	5.0	SW846 8240A	06/01/95	5156028
1,1,2,2-Tetrachloroethane	ND	5.0	SW846 8240A	06/01/95	5156028
Chlorobenzene	ND	5.0	SW846 8240A	06/01/95	5156028
Ethylbenzene	ND	5.0	SW846 8240A	06/01/95	5156028
Styrene	ND	5.0	SW846 8240A	06/01/95	5156028
Xylenes, Total	ND	5.0	SW846 8240A	06/01/95	5156028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	90	(70 - 121)
Toluene-d8	95	(81 - 117)
Bromofluorobenzene	91	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052595-JH-036

WO #: A4Q4H
LAB #: A5E260059-004
MATRIX: SOLID

DATE SAMPLED: 5/25/95
TIME SAMPLED: 14:55
DATE RECEIVED: 5/26/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Barium	13.7	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Chromium	8.9	2.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Copper	12.4	1.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Nickel	8.5	4.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Zinc	38.2	5.0	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Arsenic	3.1	0.50	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Lead	4.3	0.30	mg/kg	SW846 6010A	5/30- 6/07/95	5150021
Selenium	ND	0.50	mg/kg	SW846 6010A	5/30- 6/07/95	5150021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052595-JH-036

WO #: A4Q4H
LAB #: A5E260059-004
MATRIX: SOLID

DATE SAMPLED: 5/25/95
TIME SAMPLED: 14:55
DATE RECEIVED: 5/26/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	96.5	0.50	%	MCAWW 160.3 M	6/06- 6/07/95	5157041

NOTE: AS RECEIVED

Quanterra
Environmental
Services

QUALITY CONTROL SECTION

Quanterra
Environmental Services

QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with the exception of those items noted.

The matrix spike and matrix spike duplicate (MS/MSD) contained in this quality control report were generated as part of the laboratory QA/QC program requirements. These requirements include the analysis of a MS/MSD on a one in twenty basis. Therefore, the associated batch number indicated on the MS/MSD report may not reflect the same batch number as those of the samples contained in the analytical report.

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5156028
LAB #: A5F050000-028 C

PREPARATION DATE: 6/01/95
DATE ANALYZED: 6/01/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	94	(63-137)
Trichloroethene	97	(77-116)
Chlorobenzene	98	(80-118)
Toluene	98	(80-118)
Benzene	96	(77-118)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

LAB #: A5E260059

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5150021		
Silver	100	(64-119)	5/30- 5/31/95
Arsenic	95	(80-120)	5/30- 5/31/95
Barium	99	(82-112)	5/30- 5/31/95
Cadmium	105	(72-109)	5/30- 5/31/95
Chromium	107	(76-118)	5/30- 5/31/95
Copper	98	(82-110)	5/30- 5/31/95
Nickel	104	(74-111)	5/30- 5/31/95
Lead	97	(80-120)	5/30- 5/31/95
Selenium	87	(80-120)	5/30- 5/31/95
Zinc	109	(68-116)	5/30- 5/31/95

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F050000-028

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	50	6/01/95	5156028
Benzene	ND	5.0	6/01/95	5156028
Bromodichloromethane	ND	5.0	6/01/95	5156028
Bromoform	ND	5.0	6/01/95	5156028
Bromomethane	ND	10	6/01/95	5156028
2-Butanone	ND	50	6/01/95	5156028
Carbon disulfide	ND	5.0	6/01/95	5156028
Carbon tetrachloride	ND	5.0	6/01/95	5156028
Chlorobenzene	ND	5.0	6/01/95	5156028
Dibromochloromethane	ND	5.0	6/01/95	5156028
Chloroethane	ND	10	6/01/95	5156028
Chloroform	ND	5.0	6/01/95	5156028
Chloromethane	ND	10	6/01/95	5156028
1,1-Dichloroethane	ND	5.0	6/01/95	5156028
1,2-Dichloroethane	ND	5.0	6/01/95	5156028
1,1-Dichloroethene	ND	5.0	6/01/95	5156028
1,2-Dichloroethene, Total	ND	5.0	6/01/95	5156028
1,2-Dichloropropane	ND	5.0	6/01/95	5156028
cis-1,3-Dichloropropene	ND	5.0	6/01/95	5156028
trans-1,3-Dichloropropene	ND	5.0	6/01/95	5156028
Ethylbenzene	ND	5.0	6/01/95	5156028
2-Hexanone	ND	50	6/01/95	5156028
Methylene chloride	ND	5.0	6/01/95	5156028
4-Methyl-2-pentanone	ND	50	6/01/95	5156028
Styrene	ND	5.0	6/01/95	5156028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	88	(70 - 121)
Toluene-d8	95	(81 - 117)
Bromofluorobenzene	89	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F050000-028

- - - - - - - - - - - - - - - - - - - GC/MS Volatiles - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	5.0	6/01/95	5156028
Tetrachloroethene	ND	5.0	6/01/95	5156028
Toluene	ND	5.0	6/01/95	5156028
1,1,1-Trichloroethane	ND	5.0	6/01/95	5156028
1,1,2-Trichloroethane	ND	5.0	6/01/95	5156028
Trichloroethene	ND	5.0	6/01/95	5156028
Vinyl chloride	ND	10	6/01/95	5156028
Xylenes, Total	ND	5.0	6/01/95	5156028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	88	(70 - 121)
Toluene-d8	95	(81 - 117)
Bromofluorobenzene	89	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5E260059

- **METALS** -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5150021			
Silver	ND	1.0	mg/kg	SW846 6010A	5/30- 5/31/95
Arsenic	ND	0.50	mg/kg	SW846 6010A	5/30- 5/31/95
Barium	ND	1.0	mg/kg	SW846 6010A	5/30- 5/31/95
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/30- 5/31/95
Chromium	ND	2.0	mg/kg	SW846 6010A	5/30- 5/31/95
Copper	ND	1.0	mg/kg	SW846 6010A	5/30- 5/31/95
Nickel	ND	4.0	mg/kg	SW846 6010A	5/30- 5/31/95
Lead	**0.34**	**0.30**	**mg/kg**	**SW846 6010A**	**5/30- 6/07/95**
Selenium	ND	0.50	mg/kg	SW846 6010A	5/30- 5/31/95
Zinc	ND	5.0	mg/kg	SW846 6010A	5/30- 5/31/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5146034
LAB #: A5E170057-009 S
MATRIX: SOLID

WO #: A4KX2
PREPARATION DATE: 5/25/95
DATE ANALYZED: 5/25/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	105	105	(60-136)	0.14	(0-28)
Trichloroethene	88	88	(79-120)	0.45	(0-16)
Chlorobenzene	93	91	(90-115)	1.7	(0-20)
Toluene	100	102	(78-129)	2.2	(0-21)
Benzene	96	96	(79-124)	0.080	(0-19)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

LAB #: A5E260054-001

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
		BATCH:5157012 MATRIX:		WATER		
Silver	86	81	(61-126)	6.5	(0-20)	6/06- 6/07/95
Arsenic	94	88	(80-120)	6.0	(0-20)	6/06- 6/07/95
Barium	87	80	(79-116)	8.6	(0-20)	6/06- 6/07/95
Beryllium	97	91	(76-117)	7.0	(0-20)	6/06- 6/07/95
Cadmium	97	91	(70-109)	7.1	(0-20)	6/06- 6/08/95
Cobalt	92	85	(75-110)	7.0	(0-20)	6/06- 6/07/95
Chromium	92	86	(74-117)	6.5	(0-20)	6/06- 6/07/95
Copper	96	89	(77-112)	7.8	(0-20)	6/06- 6/08/95
Mercury	99	102	(31-160)	4.0	(0-20)	6/06/95
Nickel	92	84	(73-109)	8.6	(0-20)	6/06- 6/07/95
Lead	92	86	(80-120)	6.5	(0-20)	6/06- 6/07/95
Antimony	83	81	(73-112)	3.0	(0-20)	6/06- 6/07/95
Selenium	90	85	(80-120)	5.3	(0-20)	6/06- 6/07/95
Tin	105	97	(73-123)	8.7	(0-20)	6/06- 6/08/95
Thallium	90	85	(80-120)	5.6	(0-20)	6/06- 6/07/95
Vanadium	91	85	(79-112)	6.7	(0-20)	6/06- 6/07/95
Zinc	95	85	(67-118)	11	(0-20)	6/06- 6/07/95

NOTE:

Calculations are performed before rounding to avoid round-off errors in calculated results

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): Quanterra

REFERENCE NUMBER: 3627

PROJECT NAME: synthetic products

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: John Hargens PRINTED NAME: John Hargens

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	TCL-VOC	TAL metals	REMARKS
	5/24/95	815	S-052495-JH-029	soil	2	1	1 X	* run TAL metals arsenic, barium, cadmiu chromium, copper, le nickel, selenium silver & zinc; archive rest of sample for TCLP metals
	5/25/95	1115	S-052595-JH-034	↓	2	1	1 X	
	5/25/95	1230	S-052595-JH-035	↓	2	1	1 X	
	5/25/95	1455	S-052595-JH-036	↓	2	1	1 X	
			Temp Blank	water	1			
			TOTAL NUMBER OF CONTAINERS		9			

RELINQUISHED BY: ① John Hargens	DATE: 5/25/95 TIME: 1600	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 5768383165

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: Kathy Graves
DATE: 950526 TIME: 530p

№ 5038

1001(FORMS)-APRIL 29, 93-REV.0-(C)(F-01)

Rec'd CRA

JUN 28 1995

Quanterra
Environmental Services

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
216 497-0772 Fax

ASF010057

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS COMPANY

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Daniel J. Wright
Project Manager

VALIDATED DATA
Project# 3627
Lab Report # ASF010057
Initials JMB
Date 8-21-95

June 27, 1995

CHECKED AGAINST PRELIMINARY DATA
Date 6-28-95
Initials JMB

Quanterra
Environmental Services

PROJECT NARRATIVE

The following report contains the analytical results for four solid samples and one water sample submitted to Quanterra-North Canton by Conestoga-Rovers and Associates, Inc. from the Synthetic Products Company Site, project number 3627. The samples were received June 1, 1995, according to documented sample acceptance procedures. Soil samples requested for BNA/SVOC analysis on chain-of-custody were archived until further notice per Nancy Bergstrom of Conestoga-Rovers and Associates. The water sample requested for BNA/SVOC analysis was extracted but not analyzed per Nancy Bergstrom.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the following page in accordance with the methods indicated. Results were provided by facsimile to Nancy Bergstrom on June 13, 1995. A summary of QC data for these analyses is included at the end of the report.

Quanterra
Environmental Services

ANALYTICAL METHODS SUMMARY

Parameters	Methods
TCL Volatile Organics	SW846 8240A
TCL Semivolatile Organics	SW846 8270A
Petroleum Hydrocarbons Total Recoverable	MCAWW 418.1
Petroleum Hydrocarbons Total Recoverable	MCAWW 418.1 MODIFIED
Silver	SW846 6010A
Barium	SW846 6010A
Cadmium	SW846 6010A
Chromium	SW846 6010A
Copper	SW846 6010A
Nickel	SW846 6010A
Zinc	SW846 6010A
Arsenic	SW846 6010A
Lead	SW846 6010A
Selenium	SW846 6010A
Solids, Total (TS)	MCAWW 160.3 MODIFIED

References:

MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL: Cincinnati, OH: March 1983 and subsequent revisions

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, September, 1986 and subsequent revisions

Quanterra
Environmental Services

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	
A4RWX	A5F010051-001	S-053095-JH-039	5/30/95	13:00
A4RX3	A5F010051-002	S-053095-JH-040	5/30/95	14:45
A4RX6	A5F010051-003	W-053095-JH-041	5/30/95	14:55
A4RXA	A5F010051-004	S-053195-JH-042	5/31/95	9:40
A4RXE	A5F010051-005	S-053195-JH-043	5/31/95	13:39

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-053095-JH-039

WO #: A4RWX
LAB #: A5F010051-001
MATRIX: SOLID

DATE SAMPLED: 5/30/95
TIME SAMPLED: 13:00
DATE RECEIVED: 6/01/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Petroleum Hydrocarbons Total Recoverable	30	10	mg/kg	MCAWW 418.1 M	6/05- 6/07/95	5156084
Solids, Total (TS)	87.8	0.50	%	MCAWW 160.3 M	6/02- 6/05/95	5153033

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-053095-JH-040

WO #: A4RX3
LAB #: A5F010051-002
MATRIX: SOLID

DATE SAMPLED: 5/30/95
TIME SAMPLED: 14:45
DATE RECEIVED: 6/01/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Petroleum Hydrocarbons Total Recoverable	120	10	mg/kg	MCAWW 418.1 M	6/05- 6/07/95	5156084
Solids, Total (TS)	85.5	0.50	%	MCAWW 160.3 M	6/02- 6/05/95	5153033

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

W-053095-JH-041

WO #: A4RX6
LAB #: A5F010051-003
MATRIX: WATER

DATE SAMPLED: 5/30/95
TIME SAMPLED: 14:55
DATE RECEIVED: 6/01/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Petroleum Hydrocarbons Total Recoverable	ND	0.5	mg/L	MCAWW 418.1	6/05- 6/07/95	5158043

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-053195-JH-042

WO #: A4RXA
LAB #: A5F010051-004
MATRIX: SOLID

DATE SAMPLED: 5/31/95
TIME SAMPLED: 9:40
DATE RECEIVED: 6/01/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Petroleum Hydrocarbons Total Recoverable	ND	10	mg/kg	MCAWW 418.1 M	6/05- 6/07/95	5156084
Solids, Total (TS)	81.7	0.50	%	MCAWW 160.3 M	6/02- 6/05/95	5153033

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-053195-JH-043

WO #: A4RXE10A
LAB #: A5F010051-005
MATRIX: SOLID

DATE SAMPLED: 5/31/95
TIME SAMPLED: 13:39
DATE RECEIVED: 6/01/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	10	SW846 8240A	06/05/95	5156134
Bromomethane	ND	10	SW846 8240A	06/05/95	5156134
Vinyl chloride	ND	10	SW846 8240A	06/05/95	5156134
Chloroethane	ND	10	SW846 8240A	06/05/95	5156134
Methylene chloride	ND	5.0	SW846 8240A	06/05/95	5156134
Acetone	**8.1 J**	**50**	**SW846 8240A**	**06/05/95**	**5156134**
Carbon disulfide	ND	5.0	SW846 8240A	06/05/95	5156134
1,1-Dichloroethene	ND	5.0	SW846 8240A	06/05/95	5156134
1,1-Dichloroethane	ND	5.0	SW846 8240A	06/05/95	5156134
1,2-Dichloroethene, Total	ND	5.0	SW846 8240A	06/05/95	5156134
Chloroform	ND	5.0	SW846 8240A	06/05/95	5156134
1,2-Dichloroethane	ND	5.0	SW846 8240A	06/05/95	5156134
2-Butanone	ND	50	SW846 8240A	06/05/95	5156134
1,1,1-Trichloroethane	ND	5.0	SW846 8240A	06/05/95	5156134
Carbon tetrachloride	ND	5.0	SW846 8240A	06/05/95	5156134
Bromodichloromethane	ND	5.0	SW846 8240A	06/05/95	5156134
1,2-Dichloropropane	ND	5.0	SW846 8240A	06/05/95	5156134
cis-1,3-Dichloropropene	ND	5.0	SW846 8240A	06/05/95	5156134
Trichloroethene	ND	5.0	SW846 8240A	06/05/95	5156134
Dibromochloromethane	ND	5.0	SW846 8240A	06/05/95	5156134
1,1,2-Trichloroethane	ND	5.0	SW846 8240A	06/05/95	5156134
Benzene	ND	5.0	SW846 8240A	06/05/95	5156134
trans-1,3-Dichloropropene	ND	5.0	SW846 8240A	06/05/95	5156134

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(70 - 121)
Toluene-d8	99	(81 - 117)
Bromofluorobenzene	96	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-053195-JH-043

WO #: A4RXE10A
LAB #: A5F010051-005
MATRIX: SOLID

DATE SAMPLED: 5/31/95
TIME SAMPLED: 13:39
DATE RECEIVED: 6/01/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	5.0	SW846 8240A	06/05/95	5156134
4-Methyl-2-pentanone	ND	50	SW846 8240A	06/05/95	5156134
2-Hexanone	ND	50	SW846 8240A	06/05/95	5156134
Tetrachloroethene	ND	5.0	SW846 8240A	06/05/95	5156134
Toluene	ND	5.0	SW846 8240A	06/05/95	5156134
1,1,2,2-Tetrachloroethane	ND	5.0	SW846 8240A	06/05/95	5156134
Chlorobenzene	ND	5.0	SW846 8240A	06/05/95	5156134
Ethylbenzene	ND	5.0	SW846 8240A	06/05/95	5156134
Styrene	ND	5.0	SW846 8240A	06/05/95	5156134
Xylenes, Total	ND	5.0	SW846 8240A	06/05/95	5156134

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(70 - 121)
Toluene-d8	99	(81 - 117)
Bromofluorobenzene	96	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-053195-JH-043

WO #: A4RXE
LAB #: A5F010051-005
MATRIX: SOLID

DATE SAMPLED: 5/31/95
TIME SAMPLED: 13:39
DATE RECEIVED: 6/01/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	6/05- 6/07/95	5156022
Barium	16.6	1.0	mg/kg	SW846 6010A	6/05- 6/07/95	5156022
Cadmium	ND	1.0	mg/kg	SW846 6010A	6/05- 6/07/95	5156022
Chromium	8.5	2.0	mg/kg	SW846 6010A	6/05- 6/07/95	5156022
Copper	11.7	1.0	mg/kg	SW846 6010A	6/05- 6/07/95	5156022
Nickel	7.4	4.0	mg/kg	SW846 6010A	6/05- 6/07/95	5156022
Zinc	18.0	5.0	mg/kg	SW846 6010A	6/05- 6/07/95	5156022
Arsenic	8.6	0.50	mg/kg	SW846 6010A	6/05- 6/07/95	5156022
Lead	3.1	0.30	mg/kg	SW846 6010A	6/05- 6/07/95	5156022
Selenium	ND	0.50	mg/kg	SW846 6010A	6/05- 6/07/95	5156022

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-053195-JH-043

WO #: A4RXE
LAB #: A5F010051-005
MATRIX: SOLID

DATE SAMPLED: 5/31/95
TIME SAMPLED: 13:39
DATE RECEIVED: 6/01/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total (TS)	91.2	0.50	%	MCAWW 160.3 M	6/02- 6/05/95	5153033

NOTE: AS RECEIVED

Quanterra
Environmental
Services

QUALITY CONTROL SECTION

Quanterra
Environmental Services

QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with the exception of those items noted.

The matrix spike and matrix spike duplicate (MS/MSD) contained in this quality control report were generated as part of the laboratory QA/QC program requirements. These requirements include the analysis of a MS/MSD on a one in twenty basis. Therefore, the associated batch number indicated on the MS/MSD report may not reflect the same batch number as those of the samples contained in the analytical report.

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5156134
LAB #: A5F050000-134 C

PREPARATION DATE: 6/05/95
DATE ANALYZED: 6/05/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	105	(63-137)
Trichloroethene	99	(77-116)
Chlorobenzene	105	(80-118)
Toluene	106	(80-118)
Benzene	105	(77-118)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

LAB #: A5F010051

METALS

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5156022		
Silver	99	(64-119)	6/05- 6/06/95
Arsenic	96	(80-120)	6/05- 6/06/95
Barium	102	(82-112)	6/05- 6/06/95
Cadmium	102	(72-109)	6/05- 6/06/95
Chromium	105	(76-118)	6/05- 6/06/95
Copper	103	(82-110)	6/05- 6/06/95
Nickel	104	(74-111)	6/05- 6/06/95
Lead	98	(80-120)	6/05- 6/06/95
Selenium	88	(80-120)	6/05- 6/06/95
Zinc	108	(68-116)	6/05- 6/06/95

Quanterra Environmental Services

CHECK SAMPLE REPORT

LAB #: A5F010051

- - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - -

COMPOUND	SPIKE PERCENT RECOVERY	LIMITS	PREPARATION - ANALYSIS DATE	Q/C BATCH
Petroleum Hydrocarbons Total Recoverable	94	(62-130)	6/05- 6/06/95	5156084
Petroleum Hydrocarbons Total Recoverable	104	(61-139)	6/05- 6/07/95	5158043

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F050000-134

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	50	6/05/95	5156134
Benzene	ND	5.0	6/05/95	5156134
Bromodichloromethane	ND	5.0	6/05/95	5156134
Bromoform	ND	5.0	6/05/95	5156134
Bromomethane	ND	10	6/05/95	5156134
2-Butanone	ND	50	6/05/95	5156134
Carbon disulfide	ND	5.0	6/05/95	5156134
Carbon tetrachloride	ND	5.0	6/05/95	5156134
Chlorobenzene	ND	5.0	6/05/95	5156134
Dibromochloromethane	ND	5.0	6/05/95	5156134
Chloroethane	ND	10	6/05/95	5156134
Chloroform	ND	5.0	6/05/95	5156134
Chloromethane	ND	10	6/05/95	5156134
1,1-Dichloroethane	ND	5.0	6/05/95	5156134
1,2-Dichloroethane	ND	5.0	6/05/95	5156134
1,1-Dichloroethene	ND	5.0	6/05/95	5156134
1,2-Dichloroethene, Total	ND	5.0	6/05/95	5156134
1,2-Dichloropropane	ND	5.0	6/05/95	5156134
cis-1,3-Dichloropropene	ND	5.0	6/05/95	5156134
trans-1,3-Dichloropropene	ND	5.0	6/05/95	5156134
Ethylbenzene	ND	5.0	6/05/95	5156134
2-Hexanone	ND	50	6/05/95	5156134
Methylene chloride	ND	5.0	6/05/95	5156134
4-Methyl-2-pentanone	ND	50	6/05/95	5156134
Styrene	ND	5.0	6/05/95	5156134

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	95	(70 - 121)
Toluene-d8	100	(81 - 117)
Bromofluorobenzene	99	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F050000-134

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	5.0	6/05/95	5156134
Tetrachloroethene	ND	5.0	6/05/95	5156134
Toluene	ND	5.0	6/05/95	5156134
1,1,1-Trichloroethane	ND	5.0	6/05/95	5156134
1,1,2-Trichloroethane	ND	5.0	6/05/95	5156134
Trichloroethene	ND	5.0	6/05/95	5156134
Vinyl chloride	ND	10	6/05/95	5156134
Xylenes, Total	ND	5.0	6/05/95	5156134

SURROGATE RECOVERY	%	*ACCEPTABLE LIMITS*
1,2-Dichloroethane-d4	95	(70 - 121)
Toluene-d8	100	(81 - 117)
Bromofluorobenzene	99	(74 - 121)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F010051

METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5156022			
Silver	ND	1.0	mg/kg	SW846 6010A	6/05- 6/06/95
Arsenic	ND	0.50	mg/kg	SW846 6010A	6/05- 6/06/95
Barium	ND	1.0	mg/kg	SW846 6010A	6/05- 6/06/95
Cadmium	ND	1.0	mg/kg	SW846 6010A	6/05- 6/06/95
Chromium	ND	2.0	mg/kg	SW846 6010A	6/05- 6/06/95
Copper	ND	1.0	mg/kg	SW846 6010A	6/05- 6/06/95
Nickel	ND	4.0	mg/kg	SW846 6010A	6/05- 6/06/95
Lead	**0.64**	**0.30**	**mg/kg**	**SW846 6010A**	**6/05- 6/06/95**
Selenium	ND	0.50	mg/kg	SW846 6010A	6/05- 6/06/95
Zinc	ND	5.0	mg/kg	SW846 6010A	6/05- 6/06/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F010051

INORGANIC ANALYTICAL REPORT

PARAMETER	RESULT	REPORTING LIMIT	UNIT	PREPARATION - ANALYSIS DATE	QC BATCH
Petroleum Hydrocarbons Total Recoverable	ND	10	mg/kg	6/05- 6/06/95	5156084
Petroleum Hydrocarbons Total Recoverable	ND	0.5	mg/L	6/05- 6/07/95	5158043

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5156134
LAB #: A5F020035-002 S
MATRIX: SOLID

WO #: A4TA0
PREPARATION DATE: 6/05/95
DATE ANALYZED: 6/05/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	112	111	(60-136)	0.53	(0-28)
Trichloroethene	100	101	(79-120)	1.6	(0-16)
Chlorobenzene	102	106	(90-115)	3.6	(0-20)
Toluene	113	117	(78-129)	3.5	(0-21)
Benzene	110	111	(79-124)	0.90	(0-19)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5107032
LAB #: A5D040021-002 S
MATRIX: SOLID

WO #: A3QNA
PREPARATION DATE: 4/13/95
DATE ANALYZED: 4/14/95

- - - - - - - - - - - - - **Petroleum Hydrocarbons Total Recoverable** - - - - - - - - - - - -

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
Petroleum Hydrocarbons Total Recoverable	91	91	(24-162)	0.66	(0-62)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5117110
LAB #: A5D050016-001 S
MATRIX: WATER

WO #: A3REM
PREPARATION DATE: 4/27/95
DATE ANALYZED: 4/27/95

- - - - - - - - - - - - - **Petroleum Hydrocarbons Total Recoverable** - - - - - - - - - - - -

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
Petroleum Hydrocarbons Total Recoverable	112	103	(57-141)	8.8	(0-30)

Calculations are performed before rounding to avoid round-off errors in calculated results

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road – Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Quanterra

REFERENCE NUMBER: 3627

PROJECT NAME: Synthetic products

SAMPLER'S SIGNATURE: John Hargens

PRINTED NAME: John Hargens

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	BNA/SVOC	TRPH	TCL-VOC	TAL-metals*							REMARKS
	5/30/95	1300	S-053095-JH-039	soil	2	✓	✓									
	↓	1445	S-053095-JH-040	soil	2	✓	✓									
	↓	1455	S-053095-JH-041	water	2	✓	✓									
	5/31/95	940	S-053195-JH-042	soil	2	✓	✓									
	↓	1339	S-053195-JH-043	soil	2			✓	✓*							* run TAL metals + Archive rest of sample for possible TCLP metals tests.
			Temp Blank	water	1											
			TOTAL NUMBER OF CONTAINERS		11											

RELINQUISHED BY: ① John Hargens	DATE: 5/31/95 TIME: 1600	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④ Dave Hewett	DATE: 6-1-95 TIME: 10:45

METHOD OF SHIPMENT: Fed. Ex. AIR BILL No. 5768383154

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY:

DATE: TIME:

№ 4874

1001(FORMS)–APRIL 29, 93–REV.0–(C)(F–01)

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
216 497-0772 Fax

Quanterra
Environmental Services

Rec'd CRA
JUN 28 1995

A5F020025

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Daniel J. Wright
Project Manager

June 27, 1995

VALIDATED DATA
Project # 3627
Lab Report # A5F020025
Initials NMB
Date 8-21-95

Quanterra
Environmental Services

ANALYTICAL METHODS SUMMARY

Parameters	Methods
Grain Size	ASTM D422
Bulk Density	ASTM D1188
Percent Moisture	ASTM D2216
Carbon, Total Organic	MOSA WALKLEY-BLACK

References:

ASTM 1987 Annual Book Of ASTM Standards.

MOSA "Methods of Soil Analysis", Number 9 (Part 2) In The Series: Agronomy, American Society of Agronomy, Inc., Second Edition, 1982.

Quanterra
Environmental Services

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	
A4T8E	A5F020025-001	S-052495-JH-030	5/24/95	8:30
A4T8F	A5F020025-002	S-052495-JH-031	5/24/95	8:45
A4T8H	A5F020025-003	S-052495-JH-032	5/24/95	9:55
A4T8J	A5F020025-004	S-052495-JH-033	5/24/95	10:10
A4V07	A5F020025-005	S-052695-JH-037	5/26/95	
A4V09	A5F020025-006	S-052695-JH-038	5/26/95	

Quanterra
Environmental Services

PROJECT NARRATIVE

The following report contains the analytical results for six solid water samples submitted to Quanterra-North Canton by Conestoga-Rovers and Associates, Inc. from the Synthetic Products Site, project number 3627. The samples were received June 1, 1995, according to documented sample acceptance procedures. Two samples were received with this project that were not documented on the chain-of-custody. Per Nancy Bergstrom sample JH-037 required total organic carbon and grain size analysis and sample JH-038 required bulk density and moisture content.

Soil samples analyzed for grain size, bulk density, and moisture content were subcontracted to Applied Construction Technologies, Inc. Moisture content associated with samples that were not analyzed for bulk density was performed by Quanterra-North Canton.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the following page in accordance with the methods indicated. A summary of QC data for these analyses is included at the end of the report.

Quanterra
Environmental Services

ENGINEERING • TESTING • INSPECTION

APPLIED CONSTRUCTION TECHNOLOGIES, INC.

210 HAYES DRIVE • SUITE C • CLEVELAND, OHIO 44131 • (216) 459-TEST • FAX (216) 459-8954
478 E. EXCHANGE ST. • SUITE 202 • AKRON, OHIO 44304 • (216) 253-TEST • FAX (216) 253-3462

June 9, 1995

Quanterra Incorporated
4101 Shuffel Drive
North Canton, Ohio 44720

Attention: Mr. Daniel J. Wright

SUBJECT: LABORATORY RESULTS
TWO (2) SUBMITTED SAMPLES
P.O. SR006901
CLIENT CODE: 001628

ACT PROJECT NO. 9501.17
Report Dated 09 June 1995

Enclosed are test results for one (1) jar sample and one (1) sampler liner sample submitted to us on June 5, 1995. A grain size anlaysis, moisture content and bulk density were performed for samples submitted as designated per appropriated ASTM Standards.

APPLIED CONSTRUCTION TECHNOLOGIES, INC.
Boris Shilman, Lab Technician
by:

GEORGE WOZNIAK, C.E.T.
Manager - Materials Laboratory

GW:jh

Quanterra
Environmental Services

ENGINEERING • TESTING • INSPECTION

APPLIED CONSTRUCTION TECHNOLOGIES, INC.

210 HAYES DRIVE • SUITE C • CLEVELAND, OHIO 44131 • (216) 459-TEST • FAX (216) 459-8954
478 E. EXCHANGE ST. • SUITE 202 • AKRON, OHIO 44304 • (216) 253-TEST • FAX (216) 253-3462

June 9, 1995

Quanterra Incorporated
4101 Shuffel Drive
North Canton, Ohio 44720

Attention: Mr. Daniel J. Wright

SUBJECT: LABORATORY RESULTS
FOUR (4) SUBMITTED SAMPLES
P.O. SR006894
CLIENT CODE: 001628

ACT PROJECT NO. 9501.17
Report Dated 09 June 1995

Enclosed are test results for two (2) jar samples and two (2) sampler liner samples submitted to us on June 2, 1995. Grain size analyses, moisture contents, and bulk densities were performed for samples submitted as designated per appropriate ASTM Standards.

APPLIED CONSTRUCTION TECHNOLOGIES, INC.
Boris Shilman, Lab Technician
by:

GEORGE WOZNIAK, C.E.T.
Manager - Materials Laboratory

GW:jh

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052495-JH-030

WO #: A4T8E
LAB #: A5F020025-001
MATRIX: SOLID

DATE SAMPLED: 5/24/95
TIME SAMPLED: 8:30
DATE RECEIVED: 6/01/95

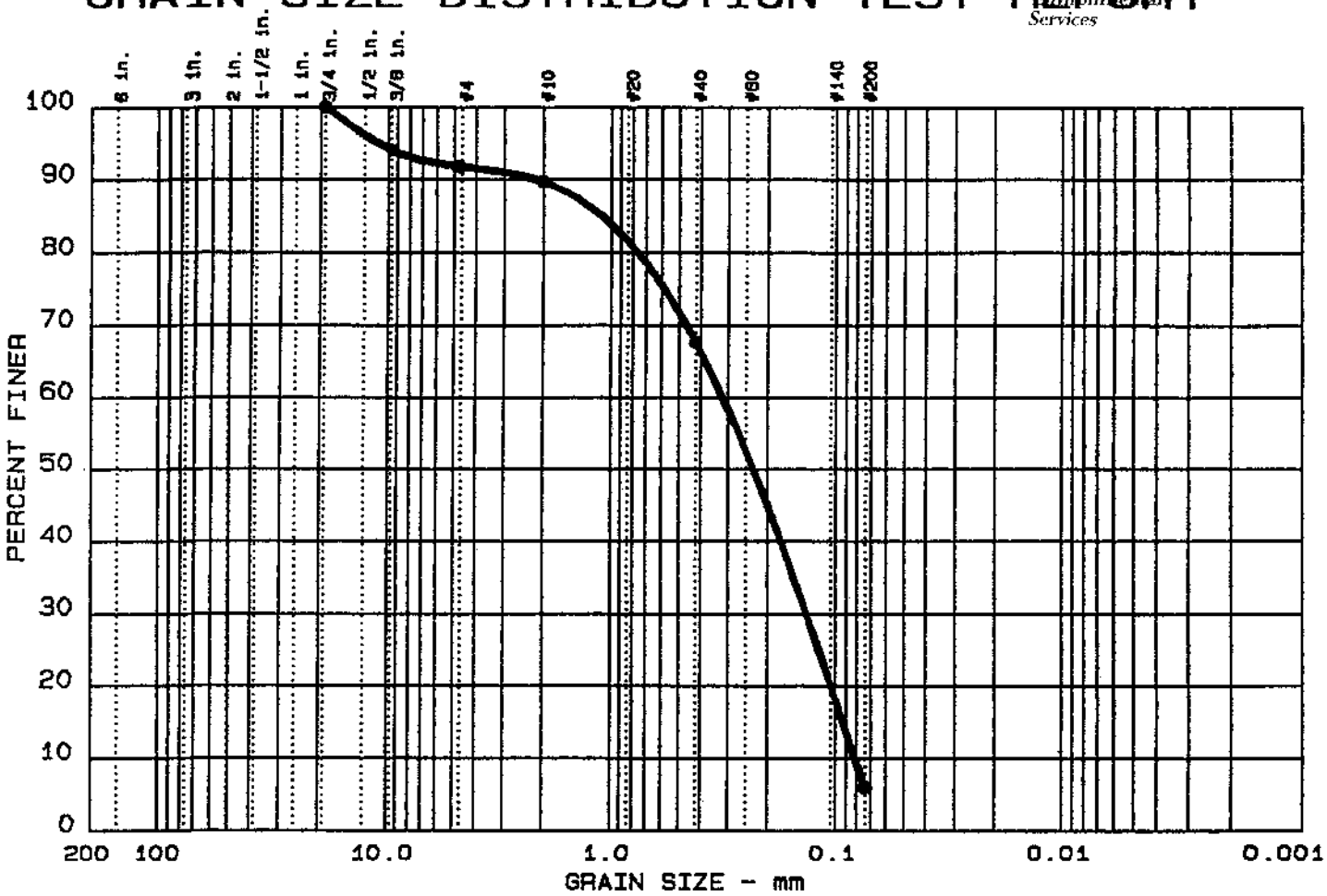
- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Percent Moisture	44.6	0.50	%	ASTM D2216	6/12- 6/13/95	5163011
Carbon, Total Organic	750	100	mg/kg	MOSA WALKLEY-	6/12/95	5163116

NOTE: AS RECEIVED

GRAIN SIZE DISTRIBUTION TEST REPORT

Quanterra Environmental Services



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	8.2	85.8	6.0	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			1.08	0.32	0.23	0.135	0.0922	0.0816	0.70	3.9

MATERIAL DESCRIPTION	USCS	AASHTO
● GRAYISH BROWN POORLY GRADED SAND with SILT; trace GRAVEL, trace mica chips.	SP-SM	

Project No.: 9501.07
Project: P.O. SR006894 CLIENT CODE: 001628
● Location: A-5F020025-001 A4T8E-1-01

Date: 06-07-95

Remarks:
CLIENT: QUANTERRA INC.

JAR SAMPLES RECEIVED ON 06-02-95

GRAIN SIZE DISTRIBUTION TEST REPORT

APPLIED CONSTRUCTION TECH., INC.

Figure No. 01

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052495-JH-031

WO #: A4T8F
LAB #: A5F020025-002
MATRIX: SOLID

DATE SAMPLED: 5/24/95
TIME SAMPLED: 8:45
DATE RECEIVED: 6/01/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Bulk Density	DONE			ASTM D1188	6/12/95	5163113
Percent Moisture	DONE			ASTM D2216	6/12/95	5163113

NOTE: AS RECEIVED

ACT PROJECT
Report Dated 09 June 1995

Quanterra Environmental Services

Quanterra, Incorporated
P.O. SR006894
Client Code: 001628

BULK DENSITY AND MOISTURE CONTENT RESULTS

Sample Identification	Percent Moisture	Bulk Density (Wet) pcf	Bulk Density (Dry) pcf	Visual Description
A-5F020025-002 A-4T8F-1-01	19.8	121.6	101.5	Dark Brown Poorly Graded Medium Sand, Trace Mica
A-5F020025-004 A-4T8J-1-02	16.2	132.9	114.4	Brownish Gray Poorly Graded Sand with Silt, Trace Gravel and Mica

Boris Shilman, Lab Technician

GEORGE WOZNIAK, C.E.T.
Manager - Materials Laboratory

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052495-JH-032

WO #: A4T8H
LAB #: A5F020025-003
MATRIX: SOLID

DATE SAMPLED: 5/24/95
TIME SAMPLED: 9:55
DATE RECEIVED: 6/01/95

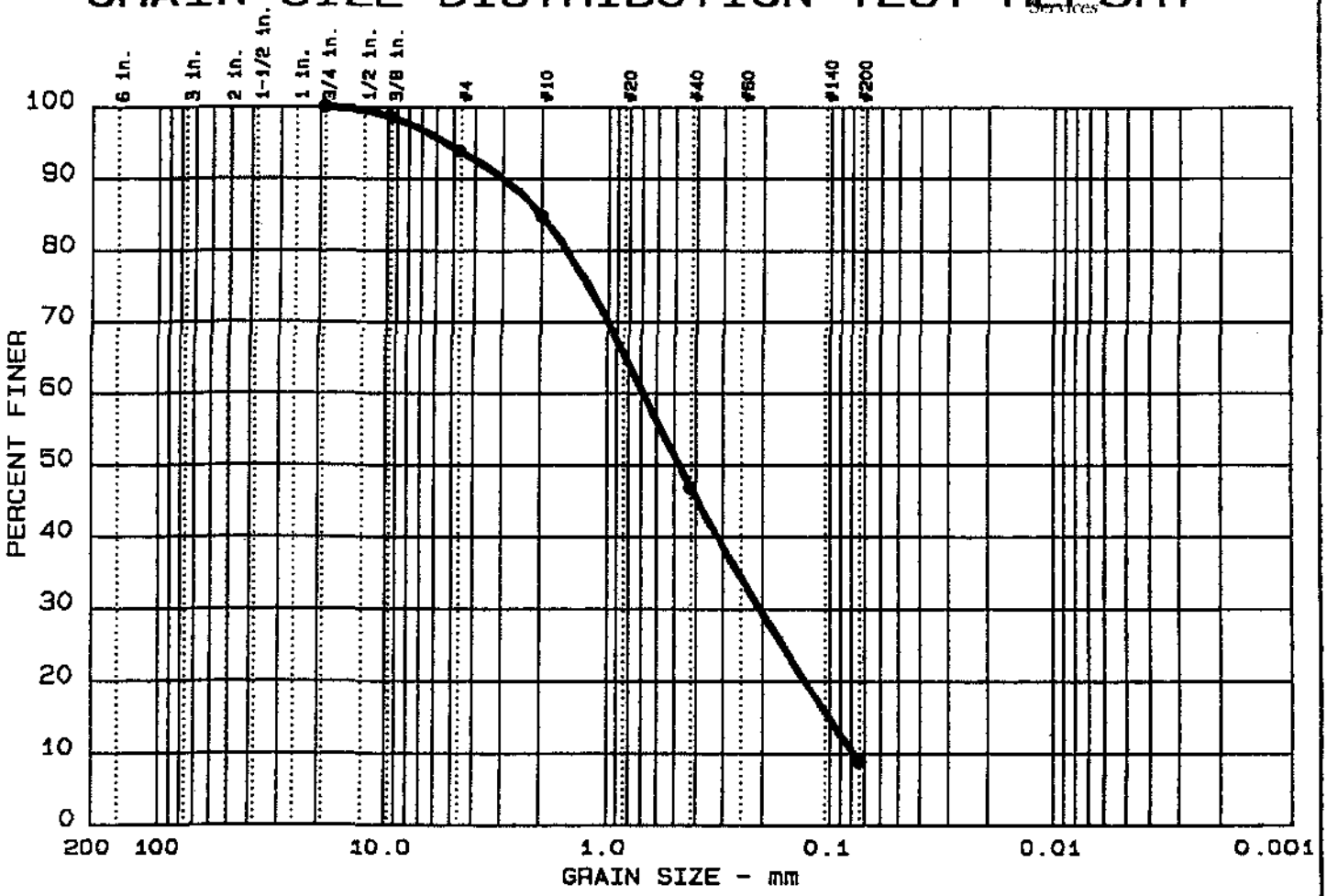
- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Percent Moisture	21.4	0.50	%	ASTM D2216	6/12- 6/13/95	5163011
Carbon, Total Organic	ND	100	mg/kg	MOSA WALKLEY-	6/12/95	5163116

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

GRAIN SIZE DISTRIBUTION TEST REPORT

Quanterra Environmental Services



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	5	0.0	6.0	85.1	8.9	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			2.00	0.68	0.47	0.207	0.1000	0.0776	0.80	8.8

MATERIAL DESCRIPTION	USCS	AASHTO
● GRAYISH BROWN POORLY GRADED SAND with SILT; trace GRAVEL, trace vegetation debris and mica chips.	SP-SM	

Project No.: 9501.07
Project: P.O. SR006894 CLIENT CODE: 001628
● Location: A-5F020025-003 A4T8H-1-01

Date: 06-07-95

Remarks:
CLIENT: QUANTERRA INC.

JAR SAMPLES RECEIVED ON 06-02-95

GRAIN SIZE DISTRIBUTION TEST REPORT

APPLIED CONSTRUCTION TECH., INC.

Figure No. 02

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052495-JH-033

WO #: A4T8J
LAB #: A5F020025-004
MATRIX: SOLID

DATE SAMPLED: 5/24/95
TIME SAMPLED: 10:10
DATE RECEIVED: 6/01/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Bulk Density	DONE			ASTM D1188	6/12/95	5163113
Percent Moisture	DONE			ASTM D2216	6/12/95	5163113

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052695-JH-037

WO #: A4V07
LAB #: A5F020025-005
MATRIX: SOLID

DATE SAMPLED: 5/26/95
TIME SAMPLED:
DATE RECEIVED: 6/01/95

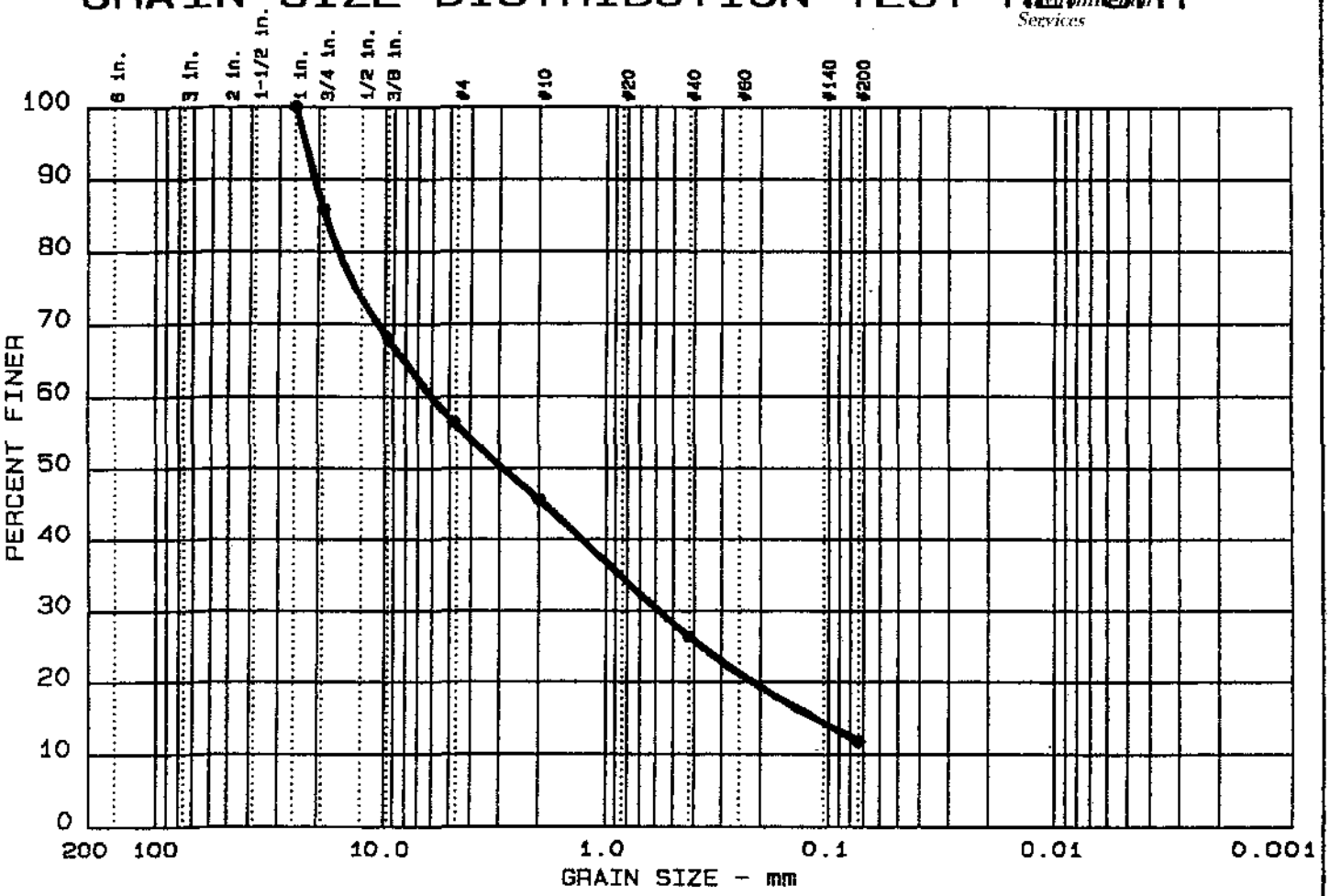
- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Percent Moisture	18.3	0.50	%	ASTM D2216	6/12- 6/13/95	5163011
Carbon, Total Organic	ND	100	mg/kg	MOSA WALKLEY-	6/12/95	5163116

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

GRAIN SIZE DISTRIBUTION TEST REPORT

Quanterra Environmental Services



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	8	0.0	43.6	44.5	11.9	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			18.60	5.95	2.88	0.575	0.1134			

MATERIAL DESCRIPTION	USCS	AASHTO
● GRAYISH BROWN POORLY GRADED SAND w/SILT; andGRAVEL	SP-SM	

Project No.: 9501.07
Project: P.O. SR006901 CLIENT CODE: 001628
● Location: A-5F020025-005 A4V07-1-01

Date: 06-07-95

Remarks:
CLIENT: QUANTERRA INC.

JAR SAMPLE RECEIVED ON
06-05-95

GRAIN SIZE DISTRIBUTION TEST REPORT

APPLIED CONSTRUCTION TECH., INC.

Figure No. 01

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-052695-JH-038

WO #: A4V09
LAB #: A5F020025-006
MATRIX: SOLID

DATE SAMPLED: 5/26/95
TIME SAMPLED:
DATE RECEIVED: 6/01/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Bulk Density	DONE			ASTM D1188	6/12/95	5163113
Percent Moisture	DONE			ASTM D2216	6/12/95	5163113

NOTE: AS RECEIVED

ACT PROJECT NO. 978
Report Dated 09 June 1995

Quanterra Environmental Services

Quanterra Incorporated
P.O. SR006901
Client Code: 001628

MOISTURE CONTENT AND BULK DENSITY RESULTS

Sample Identification	Percent Moisture Content	Bulk Density (Wet) pcf	Bulk Density (Dry) pcf	Visual Description
A-5F020025-006 A-4V09-1-01	11.5	145.5	130.5	Brown Poorly Graded Sand with Silt, Little Gravel

Boris Shilman, Lab Technician

GEORGE WOZNIAK, C.E.T.
Manager - Materials Laboratory

Quanterra
Environmental
Services

QUALITY CONTROL SECTION

Quanterra
Environmental Services

QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with laboratory protocol.

Quanterra Environmental Services

CHECK SAMPLE REPORT

LAB #: A5F020025

- - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - -

COMPOUND	SPIKE PERCENT RECOVERY	LIMITS	PREPARATION - ANALYSIS DATE	Q/C BATCH
Carbon, Total Organic	83	(80-119)	6/12/95	5163116

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F020025

- - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	PREPARATION - ANALYSIS DATE	QC BATCH
Carbon, Total Organic	ND	100	mg/kg	6/12/95	5163116

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

CRA
CONESTOGA–ROVERS & ASSOCIATES
10400 West Higgins Road – Suite 103
Rosemont, IL 60018 (708)299–9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Quanterra

REFERENCE NUMBER: 3627

PROJECT NAME: synthetic products

SAMPLER'S SIGNATURE: John Hargens

PRINTED NAME: John Hargens

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	TCL VOC	TAL metals*	T.O.C.	Grain size	Bulk Density	moisture content					REMARKS
	5/24/95	~~815~~	~~S-052495-JH-029~~	~~soil~~	~~2~~	~~1~~	~~1~~									*run TAL metals arsenic, barium, cadmi chromium, copper, le nickel, selenium, silver, zinc, Archi rest of sample for possible TCLP metals
		830	S-052495-JH-030	soil	2			1	1							
		845	S-052495-JH-031		1					1	1					
		955	S-052495-JH-032		2			1	1							
		1010	S-052495-JH-033		1					1	1					
			TOTAL NUMBER OF CONTAINERS		6											

RELINQUISHED BY: ① John Hargens	DATE: 5/31/95 TIME:	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④ Susan A. Haverth	DATE: 6-1-95 TIME: 10:55

METHOD OF SHIPMENT: Fed Ex

AIR BILL No. 5768383154

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY:

DATE: TIME:

№ 4876

1001(FORMS)–APRIL 29, 93–REV.0–(C)(F–01)

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
216 497-0772 Fax

Quanterra
Environmental Services

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Daniel J. Wright
Project Manager

June 30, 1995

VALIDATED DATA
Project # 3627
Lab Report # ASF170005
Initials hmb
Date 8-21-95

CHECKED AGAINST PRELIMINARY DATA
Date 7-5-95
Initials hmb

PROJECT NARRATIVE

The following report contains the analytical results for twelve water samples and one solid sample submitted to Quanterra-North Canton by Conestoga Rovers & Associates, Inc. from the Synthetic Products Site, project number 3627. The samples were received June 15, 1995, according to documented sample acceptance procedures.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the following page in accordance with the methods indicated. Preliminary results were provided by facsimile transmission to Nancy Bergstrom on June 30, 1995. A summary of QC data for these analyses is included at the end of the report.

ANALYTICAL METHODS SUMMARY

Parameters	Methods
TCL Volatile Organics	SW846 8260
TCLP Volatile Organics	SW846 8240A
TCLP Semivolatile Organics	SW846 8270A
Silver	SW846 6010A
Barium	SW846 6010A
Cadmium	SW846 6010A
Chromium	SW846 6010A
Copper	SW846 6010A
Nickel	SW846 6010A
Zinc	SW846 6010A
TCLP Extraction	SW846 1311
Silver	SW846 1311
Arsenic	SW846 1311
Barium	SW846 1311
Cadmium	SW846 1311
Chromium	SW846 1311
Copper	SW846 1311
Nickel	SW846 1311
Lead	SW846 1311
Selenium	SW846 1311
Zinc	SW846 1311
pH Non-Aqueous	SW846 9045
Reactive Cyanide	SW846 7.3.3.2
Sulfide Reactive	SW846 7.3.4.2
Flashpoint Cleveland Open Cup	ASTM D92-85
Arsenic	SW846 6010A
Lead	SW846 6010A
Selenium	SW846 6010A
Solids, Total (TS)	MCAWW 160.3 MODIFIED

References:

ASTM 1987 Annual Book Of ASTM Standards.

MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL: Cincinnati, OH: March 1983 and subsequent revisions

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, September, 1986 and subsequent revisions

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	
A53H9	A5F170005-001	WP-061395-MAW-001	6/13/95	12:45
A53HC	A5F170005-002	GW-061395-MAW-002	6/13/95	15:30
A53HG	A5F170005-003	GW-061395-MAW-003	6/13/95	17:00
A53HQ	A5F170005-004	GW-061495-MAW-004	6/14/95	9:15
A53HT	A5F170005-005	GW-061495-MAW-005	6/14/95	9:30
A53HV	A5F170005-006	GW-061495-MAW-006	6/14/95	10:20
A53HW	A5F170005-007	GW-061495-MAW-007	6/14/95	10:30
A53HX	A5F170005-008	GW-061495-MAW-008	6/14/95	11:25
A53J0	A5F170005-009	GW-061495-MAW-009	6/14/95	11:35
A53J1	A5F170005-010	GW-061495-MAW-010	6/14/95	12:55
A53J2	A5F170005-011	GW-061495-MAW-011	6/14/95	13:35
A53J3	A5F170005-012	GW-061495-MAW-012	6/14/95	14:40
A53J4	A5F170005-013	TRIP BLANK	6/14/95	

CONESTOGA-ROVERS & ASSOCIATES

WP-061395-MAW-001

WO #: A53H910A
LAB #: A5F170005-001
MATRIX: SOLID

DATE SAMPLED: 6/13/95
TIME SAMPLED: 12:45
DATE RECEIVED: 6/15/95
TCLP EXTRACTION DATE: 6/23/95

GC/MS Volatiles

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311 (55 FR 26986)

PARAMETER	RESULT (mg/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	0.025	SW846 8240A	06/29/95	5180082
Carbon tetrachloride	ND	0.025	SW846 8240A	06/29/95	5180082
Chlorobenzene	ND	0.025	SW846 8240A	06/29/95	5180082
Chloroform	ND	0.025	SW846 8240A	06/29/95	5180082
1,2-Dichloroethane	ND	0.025	SW846 8240A	06/29/95	5180082
1,1-Dichloroethylene	ND	0.025	SW846 8240A	06/29/95	5180082
Methyl ethyl ketone	ND	0.25	SW846 8240A	06/29/95	5180082
Tetrachlorethylene	ND	0.025	SW846 8240A	06/29/95	5180082
Trichloroethylene	ND	0.025	SW846 8240A	06/29/95	5180082
Vinyl chloride	ND	0.050	SW846 8240A	06/29/95	5180082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	88	(76 - 114)
Toluene-d8	98	(88 - 110)
Bromofluorobenzene	96	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

WP-061395-MAW-001

WO #: A53H910C
LAB #: A5F170005-001
MATRIX: SOLID

DATE SAMPLED: 6/13/95
TIME SAMPLED: 12:45
DATE RECEIVED: 6/15/95
TCLP EXTRACTION DATE: 6/20/95

- - - - - - - - - - - - - - - - - - **GC/MS Semi-Volatiles** - - - - - - - - - - - - - - - - - -

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311 (55 FR 26986)

PARAMETER	RESULT (mg/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Cresols, Total	ND	0.040	SW846 8270A	06/22-06/24/95	5173174
1,4-Dichlorobenzene	ND	0.040	SW846 8270A	06/22-06/24/95	5173174
2,4-Dinitrotoluene	ND	0.040	SW846 8270A	06/22-06/24/95	5173174
Hexachlorobenzene	ND	0.040	SW846 8270A	06/22-06/24/95	5173174
Hexachlorobutadiene	ND	0.040	SW846 8270A	06/22-06/24/95	5173174
Hexachloroethane	ND	0.040	SW846 8270A	06/22-06/24/95	5173174
Nitrobenzene	ND	0.040	SW846 8270A	06/22-06/24/95	5173174
Pentachlorophenol	ND	0.20	SW846 8270A	06/22-06/24/95	5173174
Pyridine	ND	0.040	SW846 8270A	06/22-06/24/95	5173174
2,4,5-Trichlorophenol	ND	0.040	SW846 8270A	06/22-06/24/95	5173174
2,4,6-Trichlorophenol	ND	0.040	SW846 8270A	06/22-06/24/95	5173174

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Nitrobenzene-d5	60	(31 - 114)
2-Fluorobiphenyl	57	(43 - 102)
Terphenyl-d14	44	(10 - 167)
Phenol-d5	54	(10 - 115)
2-Fluorophenol	50	(10 - 121)
2,4,6-Tribromophenol	74	(10 - 157)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

WP-061395-MAW-001

		DATE SAMPLED:	6/13/95
WO #: A53H9		TIME SAMPLED:	12:45
LAB #: A5F170005-001		DATE RECEIVED:	6/15/95
MATRIX: SOLID		TCLP EXTRACTION DATE:	6/20/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS -

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311 (55 FR 26986)

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
- - TCLP METALS - -						
Silver	ND	0.10	mg/L	SW846 6010A	6/21- 6/28/95	5172036
Arsenic	ND	0.50	mg/L	SW846 6010A	6/21- 6/28/95	5172036
Barium	ND	1.0	mg/L	SW846 6010A	6/21- 6/28/95	5172036
Cadmium	0.17	0.10	mg/L	SW846 6010A	6/21- 6/28/95	5172036
Chromium	ND	0.10	mg/L	SW846 6010A	6/21- 6/28/95	5172036
Copper	0.038	0.010	mg/L	SW846 6010A	6/21- 6/28/95	5172036
Nickel	0.066	0.040	mg/L	SW846 6010A	6/21- 6/28/95	5172036
Lead	0.12	0.10	mg/L	SW846 6010A	6/21- 6/28/95	5172036
Selenium	ND	0.30	mg/L	SW846 6010A	6/21- 6/28/95	5172036
Zinc	5.3	0.050	mg/L	SW846 6010A	6/21- 6/28/95	5172036

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

WP-061395-MAW-001

WO #: A53H9
LAB #: A5F170005-001
MATRIX: SOLID

DATE SAMPLED: 6/13/95
TIME SAMPLED: 12:45
DATE RECEIVED: 6/15/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
pH Non-Aqueous	8.6		su	SW846 9045	6/16/95	5171061
Reactive Cyanide	ND	10	mg/kg	SW846 7.3.3.2	6/20/95	5171081
Sulfide Reactive	ND	50	mg/kg	SW846 7.3.4.2	6/20/95	5171080
Flashpoint Cleveland Open Cup	>180		deg F	ASTM D92-85	6/27/95	5178085
Solids, Total (TS)	82.5	0.50	%	MCAWW 160.3 M	6/26- 6/28/95	5177027

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061395-MAW-002

WO #: A53HC10A
LAB #: A5F170005-002
MATRIX: WATER

DATE SAMPLED: 6/13/95
TIME SAMPLED: 15:30
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	83	SW846 8260	06/23/95	5178137
Bromomethane	ND	83	SW846 8260	06/23/95	5178137
Vinyl chloride	ND	83	SW846 8260	06/23/95	5178137
Chloroethane	ND	83	SW846 8260	06/23/95	5178137
Methylene chloride	ND	83	SW846 8260	06/23/95	5178137
Acetone	ND	830	SW846 8260	06/23/95	5178137
Carbon disulfide	ND	83	SW846 8260	06/23/95	5178137
1,1-Dichloroethene	**360**	**83**	**SW846 8260**	**06/23/95**	**5178137**
1,1-Dichloroethane	**220**	**83**	**SW846 8260**	**06/23/95**	**5178137**
1,2-Dichloroethene, Total	**150**	**83**	**SW846 8260**	**06/23/95**	**5178137**
Chloroform	ND	83	SW846 8260	06/23/95	5178137
1,2-Dichloroethane	ND	83	SW846 8260	06/23/95	5178137
2-Butanone	ND	830	SW846 8260	06/23/95	5178137
1,1,1-Trichloroethane	**2,200**	**83**	**SW846 8260**	**06/23/95**	**5178137**
Carbon tetrachloride	ND	83	SW846 8260	06/23/95	5178137
Bromodichloromethane	ND	83	SW846 8260	06/23/95	5178137
1,2-Dichloropropane	ND	83	SW846 8260	06/23/95	5178137
cis-1,3-Dichloropropene	ND	83	SW846 8260	06/23/95	5178137
Trichloroethene	ND	83	SW846 8260	06/23/95	5178137
Dibromochloromethane	ND	83	SW846 8260	06/23/95	5178137
1,1,2-Trichloroethane	ND	83	SW846 8260	06/23/95	5178137
Benzene	ND	83	SW846 8260	06/23/95	5178137
trans-1,3-Dichloropropene	ND	83	SW846 8260	06/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	104	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	97	(86 - 115)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061395-MAW-002

WO #: A53HC10A
LAB #: A5F170005-002
MATRIX: WATER

DATE SAMPLED: 6/13/95
TIME SAMPLED: 15:30
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	83	SW846 8260	06/23/95	5178137
4-Methyl-2-pentanone	ND	830	SW846 8260	06/23/95	5178137
2-Hexanone	ND	830	SW846 8260	06/23/95	5178137
Tetrachloroethene	ND	83	SW846 8260	06/23/95	5178137
Toluene	ND	83	SW846 8260	06/23/95	5178137
1,1,2,2-Tetrachloroethane	ND	83	SW846 8260	06/23/95	5178137
Chlorobenzene	ND	83	SW846 8260	06/23/95	5178137
Ethylbenzene	ND	83	SW846 8260	06/23/95	5178137
Styrene	ND	83	SW846 8260	06/23/95	5178137
Xylenes, Total	ND	83	SW846 8260	06/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	104	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	97	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061395-MAW-002

WO #: A53HC
LAB #: A5F170005-002
MATRIX: WATER

DATE SAMPLED: 6/13/95
TIME SAMPLED: 15:30
DATE RECEIVED: 6/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Barium	0.077	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Cadmium	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Chromium	ND	0.020	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Copper	0.020	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Zinc	0.16	0.050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Arsenic	0.0059	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Lead	0.029	0.0030	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Selenium	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061395-MAW-003

WO #: A53HG10A
LAB #: A5F170005-003
MATRIX: WATER

DATE SAMPLED: 6/13/95
TIME SAMPLED: 17:00
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	7.1	SW846 8260	06/23/95	5178137
Bromomethane	ND	7.1	SW846 8260	06/23/95	5178137
Vinyl chloride	ND	7.1	SW846 8260	06/23/95	5178137
Chloroethane	ND	7.1	SW846 8260	06/23/95	5178137
Methylene chloride	ND	7.1	SW846 8260	06/23/95	5178137
Acetone	ND	71	SW846 8260	06/23/95	5178137
Carbon disulfide	ND	7.1	SW846 8260	06/23/95	5178137
1,1-Dichloroethene	**30**	**7.1**	**SW846 8260**	**06/23/95**	**5178137**
1,1-Dichloroethane	**19**	**7.1**	**SW846 8260**	**06/23/95**	**5178137**
1,2-Dichloroethene, Total	**9.0**	**7.1**	**SW846 8260**	**06/23/95**	**5178137**
Chloroform	ND	7.1	SW846 8260	06/23/95	5178137
1,2-Dichloroethane	ND	7.1	SW846 8260	06/23/95	5178137
2-Butanone	ND	71	SW846 8260	06/23/95	5178137
1,1,1-Trichloroethane	**230**	**7.1**	**SW846 8260**	**06/23/95**	**5178137**
Carbon tetrachloride	ND	7.1	SW846 8260	06/23/95	5178137
Bromodichloromethane	ND	7.1	SW846 8260	06/23/95	5178137
1,2-Dichloropropane	ND	7.1	SW846 8260	06/23/95	5178137
cis-1,3-Dichloropropene	ND	7.1	SW846 8260	06/23/95	5178137
Trichloroethene	**14**	**7.1**	**SW846 8260**	**06/23/95**	**5178137**
Dibromochloromethane	ND	7.1	SW846 8260	06/23/95	5178137
1,1,2-Trichloroethane	ND	7.1	SW846 8260	06/23/95	5178137
Benzene	**46**	**7.1**	**SW846 8260**	**06/23/95**	**5178137**
trans-1,3-Dichloropropene	ND	7.1	SW846 8260	06/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	107	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	99	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061395-MAW-003

WO #: A53HG10A
LAB #: A5F170005-003
MATRIX: WATER

DATE SAMPLED: 6/13/95
TIME SAMPLED: 17:00
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	7.1	SW846 8260	06/23/95	5178137
4-Methyl-2-pentanone	ND	71	SW846 8260	06/23/95	5178137
2-Hexanone	ND	71	SW846 8260	06/23/95	5178137
Tetrachloroethene	ND	7.1	SW846 8260	06/23/95	5178137
Toluene	ND	7.1	SW846 8260	06/23/95	5178137
1,1,2,2-Tetrachloroethane	ND	7.1	SW846 8260	06/23/95	5178137
Chlorobenzene	ND	7.1	SW846 8260	06/23/95	5178137
Ethylbenzene	ND	7.1	SW846 8260	06/23/95	5178137
Styrene	ND	7.1	SW846 8260	06/23/95	5178137
Xylenes, Total	ND	7.1	SW846 8260	06/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	107	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	99	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061395-MAW-003

WO #: A53HG
LAB #: A5F170005-003
MATRIX: WATER

DATE SAMPLED: 6/13/95
TIME SAMPLED: 17:00
DATE RECEIVED: 6/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Barium	0.095	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Cadmium	0.34	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Chromium	ND	0.020	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Copper	0.046	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Zinc	0.14	0.050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Arsenic	0.023	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Lead	0.018	0.0030	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Selenium	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-004

WO #: A53HQ10A
LAB #: A5F170005-004
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 9:15
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	33	SW846 8260	06/23/95	5178137
Bromomethane	ND	33	SW846 8260	06/23/95	5178137
Vinyl chloride	ND	33	SW846 8260	06/23/95	5178137
Chloroethane	ND	33	SW846 8260	06/23/95	5178137
Methylene chloride	ND	33	SW846 8260	06/23/95	5178137
Acetone	ND	330	SW846 8260	06/23/95	5178137
Carbon disulfide	ND	33	SW846 8260	06/23/95	5178137
1,1-Dichloroethene	**130**	**33**	**SW846 8260**	**06/23/95**	**5178137**
1,1-Dichloroethane	**66**	**33**	**SW846 8260**	**06/23/95**	**5178137**
1,2-Dichloroethene, Total	**130**	**33**	**SW846 8260**	**06/23/95**	**5178137**
Chloroform	ND	33	SW846 8260	06/23/95	5178137
1,2-Dichloroethane	ND	33	SW846 8260	06/23/95	5178137
2-Butanone	ND	330	SW846 8260	06/23/95	5178137
1,1,1-Trichloroethane	**1,000**	**33**	**SW846 8260**	**06/23/95**	**5178137**
Carbon tetrachloride	ND	33	SW846 8260	06/23/95	5178137
Bromodichloromethane	ND	33	SW846 8260	06/23/95	5178137
1,2-Dichloropropane	ND	33	SW846 8260	06/23/95	5178137
cis-1,3-Dichloropropene	ND	33	SW846 8260	06/23/95	5178137
Trichloroethene	**38**	**33**	**SW846 8260**	**06/23/95**	**5178137**
Dibromochloromethane	ND	33	SW846 8260	06/23/95	5178137
1,1,2-Trichloroethane	ND	33	SW846 8260	06/23/95	5178137
Benzene	**47**	**33**	**SW846 8260**	**06/23/95**	**5178137**
trans-1,3-Dichloropropene	ND	33	SW846 8260	06/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	104	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-004

WO #: A53HQ10A
LAB #: A5F170005-004
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 9:15
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	33	SW846 8260	06/23/95	5178137
4-Methyl-2-pentanone	ND	330	SW846 8260	06/23/95	5178137
2-Hexanone	ND	330	SW846 8260	06/23/95	5178137
Tetrachloroethene	ND	33	SW846 8260	06/23/95	5178137
Toluene	**140**	**33**	**SW846 8260**	**06/23/95**	**5178137**
1,1,2,2-Tetrachloroethane	ND	33	SW846 8260	06/23/95	5178137
Chlorobenzene	ND	33	SW846 8260	06/23/95	5178137
Ethylbenzene	ND	33	SW846 8260	06/23/95	5178137
Styrene	ND	33	SW846 8260	06/23/95	5178137
Xylenes, Total	ND	33	SW846 8260	06/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	104	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-004

WO #: A53HQ
LAB #: A5F170005-004
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 9:15
DATE RECEIVED: 6/15/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Barium	0.083	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Cadmium	0.031	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Chromium	ND	0.020	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Copper	0.061	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Zinc	0.17	0.050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Arsenic	0.0082	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Lead	0.023	0.0030	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Selenium	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-005

WO #: A53HT10A
LAB #: A5F170005-005
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 9:30
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	25	SW846 8260	06/23/95	5178137
Bromomethane	ND	25	SW846 8260	06/23/95	5178137
Vinyl chloride	ND	25	SW846 8260	06/23/95	5178137
Chloroethane	ND	25	SW846 8260	06/23/95	5178137
Methylene chloride	ND	25	SW846 8260	06/23/95	5178137
Acetone	ND	250	SW846 8260	06/23/95	5178137
Carbon disulfide	ND	25	SW846 8260	06/23/95	5178137
1,1-Dichloroethene	**110**	**25**	**SW846 8260**	**06/23/95**	**5178137**
1,1-Dichloroethane	**63**	**25**	**SW846 8260**	**06/23/95**	**5178137**
1,2-Dichloroethene, Total	**120**	**25**	**SW846 8260**	**06/23/95**	**5178137**
Chloroform	ND	25	SW846 8260	06/23/95	5178137
1,2-Dichloroethane	ND	25	SW846 8260	06/23/95	5178137
2-Butanone	ND	250	SW846 8260	06/23/95	5178137
1,1,1-Trichloroethane	**870**	**25**	**SW846 8260**	**06/23/95**	**5178137**
Carbon tetrachloride	ND	25	SW846 8260	06/23/95	5178137
Bromodichloromethane	ND	25	SW846 8260	06/23/95	5178137
1,2-Dichloropropane	ND	25	SW846 8260	06/23/95	5178137
cis-1,3-Dichloropropene	ND	25	SW846 8260	06/23/95	5178137
Trichloroethene	**32**	**25**	**SW846 8260**	**06/23/95**	**5178137**
Dibromochloromethane	ND	25	SW846 8260	06/23/95	5178137
1,1,2-Trichloroethane	ND	25	SW846 8260	06/23/95	5178137
Benzene	**63**	**25**	**SW846 8260**	**06/23/95**	**5178137**
trans-1,3-Dichloropropene	ND	25	SW846 8260	06/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	108	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	99	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-005

WO #: A53HT10A
LAB #: A5F170005-005
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 9:30
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	25	SW846 8260	06/23/95	5178137
4-Methyl-2-pentanone	ND	250	SW846 8260	06/23/95	5178137
2-Hexanone	ND	250	SW846 8260	06/23/95	5178137
Tetrachloroethene	ND	25	SW846 8260	06/23/95	5178137
Toluene	**190**	**25**	**SW846 8260**	**06/23/95**	**5178137**
1,1,2,2-Tetrachloroethane	ND	25	SW846 8260	06/23/95	5178137
Chlorobenzene	ND	25	SW846 8260	06/23/95	5178137
Ethylbenzene	ND	25	SW846 8260	06/23/95	5178137
Styrene	ND	25	SW846 8260	06/23/95	5178137
Xylenes, Total	ND	25	SW846 8260	06/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	108	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	99	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-005

WO #: A53HT
LAB #: A5F170005-005
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 9:30
DATE RECEIVED: 6/15/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Barium	0.052	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Cadmium	0.019	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Chromium	ND	0.020	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Copper	0.038	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Zinc	0.12	0.050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Arsenic	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Lead	0.016	0.0030	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Selenium	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-006

WO #: A53HV10A
LAB #: A5F170005-006
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 10:20
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	33	SW846 8260	06/26/95	5178139
Bromomethane	ND	33	SW846 8260	06/26/95	5178139
Vinyl chloride	ND	33	SW846 8260	06/26/95	5178139
Chloroethane	ND	33	SW846 8260	06/26/95	5178139
Methylene chloride	ND	33	SW846 8260	06/26/95	5178139
Acetone	ND	330	SW846 8260	06/26/95	5178139
Carbon disulfide	ND	33	SW846 8260	06/26/95	5178139
1,1-Dichloroethene	ND	33	SW846 8260	06/26/95	5178139
1,1-Dichloroethane	ND	33	SW846 8260	06/26/95	5178139
1,2-Dichloroethene, Total	ND	33	SW846 8260	06/26/95	5178139
Chloroform	ND	33	SW846 8260	06/26/95	5178139
1,2-Dichloroethane	ND	33	SW846 8260	06/26/95	5178139
2-Butanone	ND	330	SW846 8260	06/26/95	5178139
1,1,1-Trichloroethane	ND	33	SW846 8260	06/26/95	5178139
Carbon tetrachloride	ND	33	SW846 8260	06/26/95	5178139
Bromodichloromethane	ND	33	SW846 8260	06/26/95	5178139
1,2-Dichloropropane	ND	33	SW846 8260	06/26/95	5178139
cis-1,3-Dichloropropene	ND	33	SW846 8260	06/26/95	5178139
Trichloroethene	ND	33	SW846 8260	06/26/95	5178139
Dibromochloromethane	ND	33	SW846 8260	06/26/95	5178139
1,1,2-Trichloroethane	ND	33	SW846 8260	06/26/95	5178139
Benzene	**670**	**33**	**SW846 8260**	**06/26/95**	**5178139**
trans-1,3-Dichloropropene	ND	33	SW846 8260	06/26/95	5178139

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	95	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	101	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-006

WO #: A53HV10A
LAB #: A5F170005-006
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 10:20
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	33	SW846 8260	06/26/95	5178139
4-Methyl-2-pentanone	ND	330	SW846 8260	06/26/95	5178139
2-Hexanone	ND	330	SW846 8260	06/26/95	5178139
Tetrachloroethene	ND	33	SW846 8260	06/26/95	5178139
Toluene	ND	33	SW846 8260	06/26/95	5178139
1,1,2,2-Tetrachloroethane	ND	33	SW846 8260	06/26/95	5178139
Chlorobenzene	ND	33	SW846 8260	06/26/95	5178139
Ethylbenzene	ND	33	SW846 8260	06/26/95	5178139
Styrene	ND	33	SW846 8260	06/26/95	5178139
Xylenes, Total	ND	33	SW846 8260	06/26/95	5178139

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	95	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	101	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-006

WO #: A53HV
LAB #: A5F170005-006
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 10:20
DATE RECEIVED: 6/15/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Barium	0.29	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Cadmium	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Chromium	0.021	0.020	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Copper	0.051	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Zinc	0.11	0.050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Arsenic	0.015	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Lead	0.055	0.0030	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Selenium	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-007

WO #: A53HW10A
LAB #: A5F170005-007
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 10:30
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	120	SW846 8260	06/27/95	5178139
Bromomethane	ND	120	SW846 8260	06/27/95	5178139
Vinyl chloride	ND	120	SW846 8260	06/27/95	5178139
Chloroethane	ND	120	SW846 8260	06/27/95	5178139
Methylene chloride	ND	120	SW846 8260	06/27/95	5178139
Acetone	ND	1,200	SW846 8260	06/27/95	5178139
Carbon disulfide	ND	120	SW846 8260	06/27/95	5178139
1,1-Dichloroethene	**240**	**120**	**SW846 8260**	**06/27/95**	**5178139**
1,1-Dichloroethane	**400**	**120**	**SW846 8260**	**06/27/95**	**5178139**
1,2-Dichloroethene, Total	**630**	**120**	**SW846 8260**	**06/27/95**	**5178139**
Chloroform	ND	120	SW846 8260	06/27/95	5178139
1,2-Dichloroethane	ND	120	SW846 8260	06/27/95	5178139
2-Butanone	ND	1,200	SW846 8260	06/27/95	5178139
1,1,1-Trichloroethane	**2,300**	**120**	**SW846 8260**	**06/27/95**	**5178139**
Carbon tetrachloride	ND	120	SW846 8260	06/27/95	5178139
Bromodichloromethane	ND	120	SW846 8260	06/27/95	5178139
1,2-Dichloropropane	ND	120	SW846 8260	06/27/95	5178139
cis-1,3-Dichloropropene	ND	120	SW846 8260	06/27/95	5178139
Trichloroethene	ND	120	SW846 8260	06/27/95	5178139
Dibromochloromethane	ND	120	SW846 8260	06/27/95	5178139
1,1,2-Trichloroethane	ND	120	SW846 8260	06/27/95	5178139
Benzene	**620**	**120**	**SW846 8260**	**06/27/95**	**5178139**
trans-1,3-Dichloropropene	ND	120	SW846 8260	06/27/95	5178139

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	91	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	99	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-007

WO #: A53HW10A
LAB #: A5F170005-007
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 10:30
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	120	SW846 8260	06/27/95	5178139
4-Methyl-2-pentanone	ND	1,200	SW846 8260	06/27/95	5178139
2-Hexanone	ND	1,200	SW846 8260	06/27/95	5178139
Tetrachloroethene	ND	120	SW846 8260	06/27/95	5178139
Toluene	**2,900**	**120**	**SW846 8260**	**06/27/95**	**5178139**
1,1,2,2-Tetrachloroethane	ND	120	SW846 8260	06/27/95	5178139
Chlorobenzene	ND	120	SW846 8260	06/27/95	5178139
Ethylbenzene	ND	120	SW846 8260	06/27/95	5178139
Styrene	ND	120	SW846 8260	06/27/95	5178139
Xylenes, Total	ND	120	SW846 8260	06/27/95	5178139

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	91	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	99	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-007

WO #: A53HW
LAB #: A5F170005-007
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 10:30
DATE RECEIVED: 6/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Barium	1.4	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Cadmium	0.20	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Chromium	0.043	0.020	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Copper	0.10	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Zinc	1.7	0.050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Arsenic	0.025	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Lead	0.11	0.0030	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Selenium	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-008

WO #: A53HX10A
LAB #: A5F170005-008
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 11:25
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	100	SW846 8260	06/23/95	5178137
Bromomethane	ND	100	SW846 8260	06/23/95	5178137
Vinyl chloride	ND	100	SW846 8260	06/23/95	5178137
Chloroethane	ND	100	SW846 8260	06/23/95	5178137
Methylene chloride	ND	100	SW846 8260	06/23/95	5178137
Acetone	ND	1,000	SW846 8260	06/23/95	5178137
Carbon disulfide	ND	100	SW846 8260	06/23/95	5178137
1,1-Dichloroethene	ND	100	SW846 8260	06/23/95	5178137
1,1-Dichloroethane	ND	100	SW846 8260	06/23/95	5178137
1,2-Dichloroethene, Total	ND	100	SW846 8260	06/23/95	5178137
Chloroform	ND	100	SW846 8260	06/23/95	5178137
1,2-Dichloroethane	ND	100	SW846 8260	06/23/95	5178137
2-Butanone	ND	1,000	SW846 8260	06/23/95	5178137
1,1,1-Trichloroethane	ND	100	SW846 8260	06/23/95	5178137
Carbon tetrachloride	ND	100	SW846 8260	06/23/95	5178137
Bromodichloromethane	ND	100	SW846 8260	06/23/95	5178137
1,2-Dichloropropane	ND	100	SW846 8260	06/23/95	5178137
cis-1,3-Dichloropropene	ND	100	SW846 8260	06/23/95	5178137
Trichloroethene	ND	100	SW846 8260	06/23/95	5178137
Dibromochloromethane	ND	100	SW846 8260	06/23/95	5178137
1,1,2-Trichloroethane	ND	100	SW846 8260	06/23/95	5178137
Benzene	**3,600**	**100**	**SW846 8260**	**06/23/95**	**5178137**
trans-1,3-Dichloropropene	ND	100	SW846 8260	06/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	108	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-008

WO #: A53HX10A
LAB #: A5F170005-008
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 11:25
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	100	SW846 8260	06/23/95	5178137
4-Methyl-2-pentanone	ND	1,000	SW846 8260	06/23/95	5178137
2-Hexanone	ND	1,000	SW846 8260	06/23/95	5178137
Tetrachloroethene	ND	100	SW846 8260	06/23/95	5178137
Toluene	**990**	**100**	**SW846 8260**	**06/23/95**	**5178137**
1,1,2,2-Tetrachloroethane	ND	100	SW846 8260	06/23/95	5178137
Chlorobenzene	ND	100	SW846 8260	06/23/95	5178137
Ethylbenzene	ND	100	SW846 8260	06/23/95	5178137
Styrene	ND	100	SW846 8260	06/23/95	5178137
Xylenes, Total	ND	100	SW846 8260	06/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	108	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-008

WO #: A53HX
LAB #: A5F170005-008
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 11:25
DATE RECEIVED: 6/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Barium	**0.076**	**0.010**	**mg/L**	**SW846 6010A**	**6/21- 6/23/95**	**5172021**
Cadmium	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Chromium	ND	0.020	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Copper	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Zinc	ND	0.050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Arsenic	**0.011**	**0.0050**	**mg/L**	**SW846 6010A**	**6/21- 6/23/95**	**5172021**
Lead	**0.0051**	**0.0030**	**mg/L**	**SW846 6010A**	**6/21- 6/23/95**	**5172021**
Selenium	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-009

WO #: A53J010A
LAB #: A5F170005-009
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 11:35
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	120	SW846 8260	06/23/95	5178137
Bromomethane	ND	120	SW846 8260	06/23/95	5178137
Vinyl chloride	ND	120	SW846 8260	06/23/95	5178137
Chloroethane	ND	120	SW846 8260	06/23/95	5178137
Methylene chloride	ND	120	SW846 8260	06/23/95	5178137
Acetone	ND	1,200	SW846 8260	06/23/95	5178137
Carbon disulfide	ND	120	SW846 8260	06/23/95	5178137
1,1-Dichloroethene	ND	120	SW846 8260	06/23/95	5178137
1,1-Dichloroethane	ND	120	SW846 8260	06/23/95	5178137
1,2-Dichloroethene, Total	ND	120	SW846 8260	06/23/95	5178137
Chloroform	ND	120	SW846 8260	06/23/95	5178137
1,2-Dichloroethane	ND	120	SW846 8260	06/23/95	5178137
2-Butanone	ND	1,200	SW846 8260	06/23/95	5178137
1,1,1-Trichloroethane	ND	120	SW846 8260	06/23/95	5178137
Carbon tetrachloride	ND	120	SW846 8260	06/23/95	5178137
Bromodichloromethane	ND	120	SW846 8260	06/23/95	5178137
1,2-Dichloropropane	ND	120	SW846 8260	06/23/95	5178137
cis-1,3-Dichloropropene	ND	120	SW846 8260	06/23/95	5178137
Trichloroethene	ND	120	SW846 8260	06/23/95	5178137
Dibromochloromethane	ND	120	SW846 8260	06/23/95	5178137
1,1,2-Trichloroethane	ND	120	SW846 8260	06/23/95	5178137
Benzene	**3,800**	**120**	**SW846 8260**	**06/23/95**	**5178137**
trans-1,3-Dichloropropene	ND	120	SW846 8260	06/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	109	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-009

WO #: A53J010A
LAB #: A5F170005-009
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 11:35
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	120	SW846 8260	06/23/95	5178137
4-Methyl-2-pentanone	ND	1,200	SW846 8260	06/23/95	5178137
2-Hexanone	ND	1,200	SW846 8260	06/23/95	5178137
Tetrachloroethene	ND	120	SW846 8260	06/23/95	5178137
Toluene	**1,100**	**120**	**SW846 8260**	**06/23/95**	**5178137**
1,1,2,2-Tetrachloroethane	ND	120	SW846 8260	06/23/95	5178137
Chlorobenzene	ND	120	SW846 8260	06/23/95	5178137
Ethylbenzene	ND	120	SW846 8260	06/23/95	5178137
Styrene	ND	120	SW846 8260	06/23/95	5178137
Xylenes, Total	ND	120	SW846 8260	06/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	109	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-009

WO #: A53J0
LAB #: A5F170005-009
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 11:35
DATE RECEIVED: 6/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Barium	**0.073**	**0.010**	**mg/L**	**SW846 6010A**	**6/21- 6/23/95**	**5172021**
Cadmium	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Chromium	ND	0.020	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Copper	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Zinc	ND	0.050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Arsenic	**0.010**	**0.0050**	**mg/L**	**SW846 6010A**	**6/21- 6/23/95**	**5172021**
Lead	**0.0066**	**0.0030**	**mg/L**	**SW846 6010A**	**6/21- 6/23/95**	**5172021**
Selenium	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-010

WO #: A53J110A
LAB #: A5F170005-010
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 12:55
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	830	SW846 8260	06/27/95	5178139
Bromomethane	ND	830	SW846 8260	06/27/95	5178139
Vinyl chloride	ND	830	SW846 8260	06/27/95	5178139
Chloroethane	ND	830	SW846 8260	06/27/95	5178139
Methylene chloride	ND	830	SW846 8260	06/27/95	5178139
Acetone	ND	8,300	SW846 8260	06/27/95	5178139
Carbon disulfide	ND	830	SW846 8260	06/27/95	5178139
1,1-Dichloroethene	ND	830	SW846 8260	06/27/95	5178139
1,1-Dichloroethane	ND	830	SW846 8260	06/27/95	5178139
1,2-Dichloroethene, Total	ND	830	SW846 8260	06/27/95	5178139
Chloroform	ND	830	SW846 8260	06/27/95	5178139
1,2-Dichloroethane	ND	830	SW846 8260	06/27/95	5178139
2-Butanone	ND	8,300	SW846 8260	06/27/95	5178139
1,1,1-Trichloroethane	ND	830	SW846 8260	06/27/95	5178139
Carbon tetrachloride	ND	830	SW846 8260	06/27/95	5178139
Bromodichloromethane	ND	830	SW846 8260	06/27/95	5178139
1,2-Dichloropropane	ND	830	SW846 8260	06/27/95	5178139
cis-1,3-Dichloropropene	ND	830	SW846 8260	06/27/95	5178139
Trichloroethene	ND	830	SW846 8260	06/27/95	5178139
Dibromochloromethane	ND	830	SW846 8260	06/27/95	5178139
1,1,2-Trichloroethane	ND	830	SW846 8260	06/27/95	5178139
Benzene	**15,000**	**830**	**SW846 8260**	**06/27/95**	**5178139**
trans-1,3-Dichloropropene	ND	830	SW846 8260	06/27/95	5178139

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	93	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	99	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-010

WO #: A53J110A
LAB #: A5F170005-010
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 12:55
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	830	SW846 8260	06/27/95	5178139
4-Methyl-2-pentanone	ND	8,300	SW846 8260	06/27/95	5178139
2-Hexanone	ND	8,300	SW846 8260	06/27/95	5178139
Tetrachloroethene	ND	830	SW846 8260	06/27/95	5178139
Toluene	ND	830	SW846 8260	06/27/95	5178139
1,1,2,2-Tetrachloroethane	ND	830	SW846 8260	06/27/95	5178139
Chlorobenzene	ND	830	SW846 8260	06/27/95	5178139
Ethylbenzene	ND	830	SW846 8260	06/27/95	5178139
Styrene	ND	830	SW846 8260	06/27/95	5178139
Xylenes, Total	ND	830	SW846 8260	06/27/95	5178139

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	93	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	99	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-010

WO #: A53J1
LAB #: A5F170005-010
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 12:55
DATE RECEIVED: 6/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Barium	0.13	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Cadmium	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Chromium	ND	0.020	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Copper	0.057	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Zinc	0.12	0.050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Arsenic	0.027	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Lead	0.049	0.0030	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Selenium	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-011

WO #: A53J210A
LAB #: A5F170005-011
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 13:35
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	42	SW846 8260	06/27/95	5178139
Bromomethane	ND	42	SW846 8260	06/27/95	5178139
Vinyl chloride	ND	42	SW846 8260	06/27/95	5178139
Chloroethane	ND	42	SW846 8260	06/27/95	5178139
Methylene chloride	ND	42	SW846 8260	06/27/95	5178139
Acetone	ND	420	SW846 8260	06/27/95	5178139
Carbon disulfide	ND	42	SW846 8260	06/27/95	5178139
1,1-Dichloroethene	ND	42	SW846 8260	06/27/95	5178139
1,1-Dichloroethane	ND	42	SW846 8260	06/27/95	5178139
1,2-Dichloroethene, Total	ND	42	SW846 8260	06/27/95	5178139
Chloroform	ND	42	SW846 8260	06/27/95	5178139
1,2-Dichloroethane	ND	42	SW846 8260	06/27/95	5178139
2-Butanone	ND	420	SW846 8260	06/27/95	5178139
1,1,1-Trichloroethane	ND	42	SW846 8260	06/27/95	5178139
Carbon tetrachloride	ND	42	SW846 8260	06/27/95	5178139
Bromodichloromethane	ND	42	SW846 8260	06/27/95	5178139
1,2-Dichloropropane	ND	42	SW846 8260	06/27/95	5178139
cis-1,3-Dichloropropene	ND	42	SW846 8260	06/27/95	5178139
Trichloroethene	ND	42	SW846 8260	06/27/95	5178139
Dibromochloromethane	ND	42	SW846 8260	06/27/95	5178139
1,1,2-Trichloroethane	ND	42	SW846 8260	06/27/95	5178139
Benzene	**1,200**	**42**	**SW846 8260**	**06/27/95**	**5178139**
trans-1,3-Dichloropropene	ND	42	SW846 8260	06/27/95	5178139

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	97	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-011

WO #: A53J210A
LAB #: A5F170005-011
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 13:35
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	42	SW846 8260	06/27/95	5178139
4-Methyl-2-pentanone	ND	420	SW846 8260	06/27/95	5178139
2-Hexanone	ND	420	SW846 8260	06/27/95	5178139
Tetrachloroethene	ND	42	SW846 8260	06/27/95	5178139
Toluene	**480**	**42**	**SW846 8260**	**06/27/95**	**5178139**
1,1,2,2-Tetrachloroethane	ND	42	SW846 8260	06/27/95	5178139
Chlorobenzene	ND	42	SW846 8260	06/27/95	5178139
Ethylbenzene	ND	42	SW846 8260	06/27/95	5178139
Styrene	ND	42	SW846 8260	06/27/95	5178139
Xylenes, Total	ND	42	SW846 8260	06/27/95	5178139

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	97	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-011

WO #: A53J2
LAB #: A5F170005-011
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 13:35
DATE RECEIVED: 6/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Barium	0.038	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Cadmium	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Chromium	ND	0.020	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Copper	0.015	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Zinc	0.077	0.050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Arsenic	0.022	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Lead	0.0049	0.0030	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Selenium	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-012

WO #: A53J310A
LAB #: A5F170005-012
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 14:40
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	500	SW846 8260	06/27/95	5178139
Bromomethane	ND	500	SW846 8260	06/27/95	5178139
Vinyl chloride	ND	500	SW846 8260	06/27/95	5178139
Chloroethane	ND	500	SW846 8260	06/27/95	5178139
Methylene chloride	ND	500	SW846 8260	06/27/95	5178139
Acetone	ND	5,000	SW846 8260	06/27/95	5178139
Carbon disulfide	ND	500	SW846 8260	06/27/95	5178139
1,1-Dichloroethene	ND	500	SW846 8260	06/27/95	5178139
1,1-Dichloroethane	ND	500	SW846 8260	06/27/95	5178139
1,2-Dichloroethene, Total	ND	500	SW846 8260	06/27/95	5178139
Chloroform	ND	500	SW846 8260	06/27/95	5178139
1,2-Dichloroethane	ND	500	SW846 8260	06/27/95	5178139
2-Butanone	ND	5,000	SW846 8260	06/27/95	5178139
1,1,1-Trichloroethane	ND	500	SW846 8260	06/27/95	5178139
Carbon tetrachloride	ND	500	SW846 8260	06/27/95	5178139
Bromodichloromethane	ND	500	SW846 8260	06/27/95	5178139
1,2-Dichloropropane	ND	500	SW846 8260	06/27/95	5178139
cis-1,3-Dichloropropene	ND	500	SW846 8260	06/27/95	5178139
Trichloroethene	ND	500	SW846 8260	06/27/95	5178139
Dibromochloromethane	ND	500	SW846 8260	06/27/95	5178139
1,1,2-Trichloroethane	ND	500	SW846 8260	06/27/95	5178139
Benzene	**9,900**	**500**	**SW846 8260**	**06/27/95**	**5178139**
trans-1,3-Dichloropropene	ND	500	SW846 8260	06/27/95	5178139

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	93	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-012

WO #: A53J310A
LAB #: A5F170005-012
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 14:40
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	500	SW846 8260	06/27/95	5178139
4-Methyl-2-pentanone	ND	5,000	SW846 8260	06/27/95	5178139
2-Hexanone	ND	5,000	SW846 8260	06/27/95	5178139
Tetrachloroethene	ND	500	SW846 8260	06/27/95	5178139
Toluene	**6,200**	**500**	**SW846 8260**	**06/27/95**	**5178139**
1,1,2,2-Tetrachloroethane	ND	500	SW846 8260	06/27/95	5178139
Chlorobenzene	ND	500	SW846 8260	06/27/95	5178139
Ethylbenzene	ND	500	SW846 8260	06/27/95	5178139
Styrene	ND	500	SW846 8260	06/27/95	5178139
Xylenes, Total	ND	500	SW846 8260	06/27/95	5178139

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	93	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-012

WO #: A53J3
LAB #: A5F170005-012
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 14:40
DATE RECEIVED: 6/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Barium	0.19	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Cadmium	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Chromium	0.19	0.020	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Copper	0.54	0.010	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Zinc	0.34	0.050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Arsenic	0.025	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Lead	0.14	0.0030	mg/L	SW846 6010A	6/21- 6/23/95	5172021
Selenium	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95	5172021

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

TRIP BLANK

WO #: A53J4101
LAB #: A5F170005-013
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED:
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	06/27/95	5179140
Bromomethane	ND	1.0	SW846 8260	06/27/95	5179140
Vinyl chloride	ND	1.0	SW846 8260	06/27/95	5179140
Chloroethane	ND	1.0	SW846 8260	06/27/95	5179140
Methylene chloride	ND	1.0	SW846 8260	06/27/95	5179140
Acetone	ND	10	SW846 8260	06/27/95	5179140
Carbon disulfide	ND	1.0	SW846 8260	06/27/95	5179140
1,1-Dichloroethene	ND	1.0	SW846 8260	06/27/95	5179140
1,1-Dichloroethane	ND	1.0	SW846 8260	06/27/95	5179140
1,2-Dichloroethene, Total	ND	1.0	SW846 8260	06/27/95	5179140
Chloroform	ND	1.0	SW846 8260	06/27/95	5179140
1,2-Dichloroethane	ND	1.0	SW846 8260	06/27/95	5179140
2-Butanone	ND	10	SW846 8260	06/27/95	5179140
1,1,1-Trichloroethane	ND	1.0	SW846 8260	06/27/95	5179140
Carbon tetrachloride	ND	1.0	SW846 8260	06/27/95	5179140
Bromodichloromethane	ND	1.0	SW846 8260	06/27/95	5179140
1,2-Dichloropropane	ND	1.0	SW846 8260	06/27/95	5179140
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	06/27/95	5179140
Trichloroethene	ND	1.0	SW846 8260	06/27/95	5179140
Dibromochloromethane	ND	1.0	SW846 8260	06/27/95	5179140
1,1,2-Trichloroethane	ND	1.0	SW846 8260	06/27/95	5179140
Benzene	ND	1.0	SW846 8260	06/27/95	5179140
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	06/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	96	(76 - 114)
Toluene-d8	108	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

TRIP BLANK

WO #: A53J4101
LAB #: A5F170005-013
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED:
DATE RECEIVED: 6/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	1.0	SW846 8260	06/27/95	5179140
4-Methyl-2-pentanone	ND	10	SW846 8260	06/27/95	5179140
2-Hexanone	ND	10	SW846 8260	06/27/95	5179140
Tetrachloroethene	ND	1.0	SW846 8260	06/27/95	5179140
Toluene	ND	1.0	SW846 8260	06/27/95	5179140
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	06/27/95	5179140
Chlorobenzene	ND	1.0	SW846 8260	06/27/95	5179140
Ethylbenzene	ND	1.0	SW846 8260	06/27/95	5179140
Styrene	ND	1.0	SW846 8260	06/27/95	5179140
Xylenes, Total	ND	1.0	SW846 8260	06/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	96	(76 - 114)
Toluene-d8	108	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

QUALITY CONTROL SECTION

QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with the exception of those items noted.

The matrix spike and matrix spike duplicate (MS/MSD) contained in this quality control report were generated as part of the laboratory QA/QC program requirements. These requirements include the analysis of a MS/MSD on a one in twenty basis. Therefore, the associated batch number indicated on the MS/MSD report may not reflect the same batch number as those of the samples contained in the analytical report.

"DIL" in the Quality Control Section means that due to high analyte concentration in the sample, the matrix spiking analytes added to the sample are diluted out and cannot be quantitated.

The zinc preparation blank in batch 5172036 is 0.059 mg/L. All associated samples in this lot are ND or at least 10 times the blank value.

CHECK SAMPLE REPORT

QC BATCH: 5180082
LAB #: A5F290000-082 C

PREPARATION DATE: 6/28/95
DATE ANALYZED: 6/28/95
TCLP EXTRACTION DATE: 6/23/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	80	(50-150)
Trichloroethene	88	(50-150)
Chlorobenzene	95	(50-150)
Toluene	96	(50-150)
Benzene	102	(50-150)

CHECK SAMPLE REPORT

QC BATCH: 5178137
LAB #: A5F270000-137 C

PREPARATION DATE: 6/23/95
DATE ANALYZED: 6/23/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	72	(70-143)
Trichloroethene	88	(76-121)
Chlorobenzene	93	(81-121)
Toluene	92	(79-122)
Benzene	92	(79-125)

CHECK SAMPLE REPORT

QC BATCH: 5178139
LAB #: A5F270000-139 C

PREPARATION DATE: 6/26/95
DATE ANALYZED: 6/26/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	99	(70-143)
Trichloroethene	98	(76-121)
Chlorobenzene	101	(81-121)
Toluene	100	(79-122)
Benzene	98	(79-125)

CHECK SAMPLE REPORT

QC BATCH: 5179140
LAB #: A5F280000-140 C

PREPARATION DATE: 6/27/95
DATE ANALYZED: 6/27/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	96	(70-143)
Trichloroethene	90	(76-121)
Chlorobenzene	94	(81-121)
Toluene	94	(79-122)
Benzene	93	(79-125)

CHECK SAMPLE REPORT

QC BATCH: 5173174
LAB #: A5F220000-174 C

PREPARATION DATE: 6/22/95
DATE ANALYZED: 6/24/95
TCLP EXTRACTION DATE: 6/20/95

- - - - - - - - - - - - - - - - - - - **GC/MS Semi-Volatiles** - - - - - - - - - - - - - - - - - -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,4-Dichlorobenzene	71	(39-100)
2,4-Dinitrotoluene	72	(32-123)
Hexachlorobenzene	92	(41-100)
Hexachlorobutadiene	77	(38-97)
Hexachloroethane	71	(26-105)
Nitrobenzene	76	(44-109)
Pentachlorophenol	78	(25-135)
Pyridine	38	(10-105)
2,4,5-Trichlorophenol	73	(48-127)
2,4,6-Trichlorophenol	81	(38-150)
Cresols, Total	76	(40-103)

CHECK SAMPLE REPORT

LAB #: A5F170005

*** TCLP ***

TCLP EXTRACTION DATE: 6/20/95

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5172036		
Silver	112	(50-150)	6/21- 6/28/95
Arsenic	107	(50-150)	6/21- 6/28/95
Barium	109	(50-150)	6/21- 6/28/95
Cadmium	118	(50-150)	6/21- 6/28/95
Chromium	110	(50-150)	6/21- 6/28/95
Copper	103	(50-150)	6/21- 6/28/95
Nickel	102	(50-150)	6/21- 6/28/95
Lead	107	(50-150)	6/21- 6/28/95
Selenium	106	(50-150)	6/21- 6/28/95
Zinc	118	(50-150)	6/21- 6/28/95

CHECK SAMPLE REPORT

LAB #: A5F170005

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5172021		
Silver	97	(77-113)	6/21- 6/23/95
Arsenic	88	(80-120)	6/21- 6/23/95
Barium	92	(86-110)	6/21- 6/23/95
Cadmium	91	(80-108)	6/21- 6/23/95
Chromium	91	(83-114)	6/21- 6/23/95
Copper	94	(84-110)	6/21- 6/23/95
Nickel	90	(81-110)	6/21- 6/23/95
Lead	87	(80-120)	6/21- 6/23/95
Selenium	85	(80-120)	6/21- 6/23/95
Zinc	93	(79-112)	6/21- 6/23/95

INTRA-LAB BLANK REPORT

LAB #: A5F290000-082

TCLP EXTRACTION DATE: 6/23/95

- **GC/MS Volatiles** -

PARAMETER	RESULT (mg/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Benzene	ND	0.025	6/28/95	5180082
Methyl ethyl ketone	ND	0.25	6/28/95	5180082
Carbon tetrachloride	ND	0.025	6/28/95	5180082
Chlorobenzene	ND	0.025	6/28/95	5180082
Chloroform	ND	0.025	6/28/95	5180082
1,2-Dichloroethane	ND	0.025	6/28/95	5180082
1,1-Dichloroethylene	ND	0.025	6/28/95	5180082
Tetrachlorethylene	ND	0.025	6/28/95	5180082
Trichloroethylene	ND	0.025	6/28/95	5180082
Vinyl chloride	ND	0.050	6/28/95	5180082

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	94	(76 - 114)
Toluene-d8	98	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: A5F270000-137

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	6/23/95	5178137
Benzene	ND	1.0	6/23/95	5178137
Bromodichloromethane	ND	1.0	6/23/95	5178137
Bromoform	ND	1.0	6/23/95	5178137
Bromomethane	ND	1.0	6/23/95	5178137
2-Butanone	ND	10	6/23/95	5178137
Carbon disulfide	ND	1.0	6/23/95	5178137
Carbon tetrachloride	ND	1.0	6/23/95	5178137
Chlorobenzene	ND	1.0	6/23/95	5178137
Dibromochloromethane	ND	1.0	6/23/95	5178137
Chloroethane	ND	1.0	6/23/95	5178137
Chloroform	ND	1.0	6/23/95	5178137
Chloromethane	ND	1.0	6/23/95	5178137
1,1-Dichloroethane	ND	1.0	6/23/95	5178137
1,2-Dichloroethane	ND	1.0	6/23/95	5178137
1,1-Dichloroethene	ND	1.0	6/23/95	5178137
1,2-Dichloroethene, Total	ND	1.0	6/23/95	5178137
1,2-Dichloropropane	ND	1.0	6/23/95	5178137
cis-1,3-Dichloropropene	ND	1.0	6/23/95	5178137
trans-1,3-Dichloropropene	ND	1.0	6/23/95	5178137
Ethylbenzene	ND	1.0	6/23/95	5178137
2-Hexanone	ND	10	6/23/95	5178137
Methylene chloride	ND	1.0	6/23/95	5178137
4-Methyl-2-pentanone	ND	10	6/23/95	5178137
Styrene	ND	1.0	6/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	105	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: A5F270000-137

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	1.0	6/23/95	5178137
Tetrachloroethene	ND	1.0	6/23/95	5178137
Toluene	ND	1.0	6/23/95	5178137
1,1,1-Trichloroethane	ND	1.0	6/23/95	5178137
1,1,2-Trichloroethane	ND	1.0	6/23/95	5178137
Trichloroethene	ND	1.0	6/23/95	5178137
Vinyl chloride	ND	1.0	6/23/95	5178137
Xylenes, Total	ND	1.0	6/23/95	5178137

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	105	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: A5F270000-139

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	6/26/95	5178139
Benzene	ND	1.0	6/26/95	5178139
Bromodichloromethane	ND	1.0	6/26/95	5178139
Bromoform	ND	1.0	6/26/95	5178139
Bromomethane	ND	1.0	6/26/95	5178139
2-Butanone	ND	10	6/26/95	5178139
Carbon disulfide	ND	1.0	6/26/95	5178139
Carbon tetrachloride	ND	1.0	6/26/95	5178139
Chlorobenzene	ND	1.0	6/26/95	5178139
Dibromochloromethane	ND	1.0	6/26/95	5178139
Chloroethane	ND	1.0	6/26/95	5178139
Chloroform	ND	1.0	6/26/95	5178139
Chloromethane	ND	1.0	6/26/95	5178139
1,1-Dichloroethane	ND	1.0	6/26/95	5178139
1,2-Dichloroethane	ND	1.0	6/26/95	5178139
1,1-Dichloroethene	ND	1.0	6/26/95	5178139
1,2-Dichloroethene, Total	ND	1.0	6/26/95	5178139
1,2-Dichloropropane	ND	1.0	6/26/95	5178139
cis-1,3-Dichloropropene	ND	1.0	6/26/95	5178139
trans-1,3-Dichloropropene	ND	1.0	6/26/95	5178139
Ethylbenzene	ND	1.0	6/26/95	5178139
2-Hexanone	ND	10	6/26/95	5178139
Methylene chloride	ND	1.0	6/26/95	5178139
4-Methyl-2-pentanone	ND	10	6/26/95	5178139
Styrene	ND	1.0	6/26/95	5178139

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	91	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	97	(86 - 115)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: A5F270000-139

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	1.0	6/26/95	5178139
Tetrachloroethene	ND	1.0	6/26/95	5178139
Toluene	ND	1.0	6/26/95	5178139
1,1,1-Trichloroethane	ND	1.0	6/26/95	5178139
1,1,2-Trichloroethane	ND	1.0	6/26/95	5178139
Trichloroethene	ND	1.0	6/26/95	5178139
Vinyl chloride	ND	1.0	6/26/95	5178139
Xylenes, Total	ND	1.0	6/26/95	5178139

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	91	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	97	(86 - 115)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: A5F280000-140

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	6/27/95	5179140
Benzene	ND	1.0	6/27/95	5179140
Bromodichloromethane	ND	1.0	6/27/95	5179140
Bromoform	ND	1.0	6/27/95	5179140
Bromomethane	ND	1.0	6/27/95	5179140
2-Butanone	ND	10	6/27/95	5179140
Carbon disulfide	ND	1.0	6/27/95	5179140
Carbon tetrachloride	ND	1.0	6/27/95	5179140
Chlorobenzene	ND	1.0	6/27/95	5179140
Dibromochloromethane	ND	1.0	6/27/95	5179140
Chloroethane	ND	1.0	6/27/95	5179140
Chloroform	ND	1.0	6/27/95	5179140
Chloromethane	ND	1.0	6/27/95	5179140
1,1-Dichloroethane	ND	1.0	6/27/95	5179140
1,2-Dichloroethane	ND	1.0	6/27/95	5179140
1,1-Dichloroethene	ND	1.0	6/27/95	5179140
1,2-Dichloroethene, Total	ND	1.0	6/27/95	5179140
1,2-Dichloropropane	ND	1.0	6/27/95	5179140
cis-1,3-Dichloropropene	ND	1.0	6/27/95	5179140
trans-1,3-Dichloropropene	ND	1.0	6/27/95	5179140
Ethylbenzene	ND	1.0	6/27/95	5179140
2-Hexanone	ND	10	6/27/95	5179140
Methylene chloride	ND	1.0	6/27/95	5179140
4-Methyl-2-pentanone	ND	10	6/27/95	5179140
Styrene	ND	1.0	6/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	99	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	106	(86 - 115)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: A5F280000-140

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	1.0	6/27/95	5179140
Tetrachloroethene	ND	1.0	6/27/95	5179140
Toluene	ND	1.0	6/27/95	5179140
1,1,1-Trichloroethane	ND	1.0	6/27/95	5179140
1,1,2-Trichloroethane	ND	1.0	6/27/95	5179140
Trichloroethene	ND	1.0	6/27/95	5179140
Vinyl chloride	ND	1.0	6/27/95	5179140
Xylenes, Total	ND	1.0	6/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	99	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	106	(86 - 115)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: A5F220000-174

TCLP EXTRACTION DATE: 6/20/95

- - - - - - - - - - - - - - - - - - **GC/MS Semi-Volatiles** - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT (mg/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,4-Dichlorobenzene	ND	0.040	6/22- 6/24/95	5173174
2,4-Dinitrotoluene	ND	0.040	6/22- 6/24/95	5173174
Hexachlorobenzene	ND	0.040	6/22- 6/24/95	5173174
Hexachlorobutadiene	ND	0.040	6/22- 6/24/95	5173174
Hexachloroethane	ND	0.040	6/22- 6/24/95	5173174
Nitrobenzene	ND	0.040	6/22- 6/24/95	5173174
Pentachlorophenol	ND	0.20	6/22- 6/24/95	5173174
Pyridine	ND	0.040	6/22- 6/24/95	5173174
2,4,5-Trichlorophenol	ND	0.040	6/22- 6/24/95	5173174
2,4,6-Trichlorophenol	ND	0.040	6/22- 6/24/95	5173174
Cresols, Total	ND	0.040	6/22- 6/24/95	5173174

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Nitrobenzene-d5	77	(31 - 114)
2-Fluorobiphenyl	73	(43 - 102)
Terphenyl-d14	103	(10 - 167)
Phenol-d5	67	(10 - 115)
2-Fluorophenol	62	(10 - 121)
2,4,6-Tribromophenol	85	(10 - 157)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: A5F170005

*** TCLP ***

TCLP EXTRACTION DATE: 6/20/95

\- **METALS** -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5172036			
Silver	ND	0.10	mg/L	SW846 6010A	6/21- 6/28/95
Arsenic	ND	0.50	mg/L	SW846 6010A	6/21- 6/28/95
Barium	ND	1.0	mg/L	SW846 6010A	6/21- 6/28/95
Cadmium	ND	0.10	mg/L	SW846 6010A	6/21- 6/28/95
Chromium	ND	0.10	mg/L	SW846 6010A	6/21- 6/28/95
Copper	ND	0.010	mg/L	SW846 6010A	6/21- 6/28/95
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/28/95
Lead	ND	0.10	mg/L	SW846 6010A	6/21- 6/28/95
Selenium	ND	0.30	mg/L	SW846 6010A	6/21- 6/28/95
Zinc	0.059	0.050	mg/L	SW846 6010A	6/21- 6/28/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

INTRA-LAB BLANK REPORT

LAB #: A5F170005

- **METALS** -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5172021			
Silver	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95
Arsenic	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95
Barium	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95
Cadmium	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95
Chromium	ND	0.020	mg/L	SW846 6010A	6/21- 6/23/95
Copper	ND	0.010	mg/L	SW846 6010A	6/21- 6/23/95
Nickel	ND	0.040	mg/L	SW846 6010A	6/21- 6/23/95
Lead	ND	0.0030	mg/L	SW846 6010A	6/21- 6/23/95
Selenium	ND	0.0050	mg/L	SW846 6010A	6/21- 6/23/95
Zinc	ND	0.050	mg/L	SW846 6010A	6/21- 6/23/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

INTRA-LAB BLANK REPORT

LAB #: A5F170005

- - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	PREPARATION - ANALYSIS DATE	QC BATCH
Reactive Cyanide	ND	10	mg/kg	6/20/95	5171081
Sulfide Reactive	ND	50	mg/kg	6/20/95	5171080

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

MATRIX SPIKE REPORT

QC BATCH: 5156103
LAB #: A5E310039-010 S
MATRIX: WATER

WO #: A4RCQ
PREPARATION DATE: 6/09/95
DATE ANALYZED: 6/12/95
TCLP EXTRACTION DATE: 6/03/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	94	98	(50-150)	4.4	(0-50)
Trichloroethene	88	89	(50-150)	1.9	(0-50)
Chlorobenzene	92	92	(50-150)	0.82	(0-50)
Toluene	94	92	(50-150)	2.0	(0-50)
Benzene	94	93	(50-150)	0.64	(0-50)

Calculations are performed before rounding to avoid round-off errors in calculated results

MATRIX SPIKE REPORT

QC BATCH: 5178137
LAB #: A5F170005-009 S
MATRIX: WATER

WO #: A53J0
PREPARATION DATE: 6/23/95
DATE ANALYZED: 6/23/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	80	83	(55-142)	3.9	(0-19)
Trichloroethene	98	99	(77-124)	1.8	(0-13)
Chlorobenzene	99	100	(85-120)	1.4	(0-10)
Toluene	97	101	(82-122)	4.0	(0-15)
Benzene	92	93	(83-123)	0.50	(0-13)

Calculations are performed before rounding to avoid round-off errors in calculated results

MATRIX SPIKE REPORT

QC BATCH: 5162006
LAB #: A5F090008-006 S
MATRIX: WATER

WO #: A4XE8
PREPARATION DATE: 6/11/95
DATE ANALYZED: 6/16/95

GC/MS Semi-Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,2,4-Trichlorobenzene	62	62	(40-133)	0	(0-35)
Acenaphthene	67	73	(45-112)	8.6	(0-28)
2,4-Dinitrotoluene	94	88	(37-124)	6.6	(0-34)
Pyrene	109	123	(15-185)	12	(0-45)
N-Nitrosodi-n-propylamine	52	60	(10-230)	14	(0-30)
1,4-Dichlorobenzene	54	62	(33-90)	14	(0-37)
Pentachlorophenol	95	113	(10-122)	17	(0-71)
Phenol	47	58	(10-107)	21	(0-35)
2-Chlorophenol	46	54	(10-134)	16	(0-28)
4-Chloro-3-methylphenol	78	86	(21-120)	9.8	(0-49)
4-Nitrophenol	96	102	(10-144)	6.1	(0-100)

Calculations are performed before rounding to avoid round-off errors in calculated results

MATRIX SPIKE REPORT

LAB #: A5F170005-001

*** TCLP *** **TCLP EXTRACTION DATE:** 6/20/95

- METALS -

COMPOUND		SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
			BATCH:5172036 MATRIX: SOLID				
Silver		110	106	(50-150)	3.7	(0-20)	6/21- 6/28/95
Arsenic		105	103	(50-150)	2.3	(0-20)	6/21- 6/28/95
Barium		104	98	(50-150)	5.7	(0-20)	6/21- 6/28/95
Cadmium		110	98	(50-150)	12	(0-20)	6/21- 6/28/95
Chromium		120	110	(50-150)	7.8	(0-20)	6/21- 6/28/95
Copper		102	97	(50-150)	4.4	(0-20)	6/21- 6/28/95
Nickel		102	97	(50-150)	5.6	(0-20)	6/21- 6/28/95
Lead		103	94	(50-150)	9.1	(0-20)	6/21- 6/28/95
Selenium		106	102	(50-150)	3.4	(0-20)	6/21- 6/28/95
Zinc	DIL						6/21- 6/28/95

NOTE:
DIL Diluted out

Calculations are performed before rounding to avoid round-off errors in calculated results

MATRIX SPIKE REPORT

LAB #: A5F170005-002

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
		BATCH:5172021 MATRIX:		WATER		
Silver	98	89	(61-126)	9.4	(0-20)	6/21- 6/23/95
Arsenic	89	81	(80-120)	9.1	(0-20)	6/21- 6/23/95
Barium	92	83	(79-116)	10	(0-20)	6/21- 6/23/95
Cadmium	107	99	(70-109)	8.0	(0-20)	6/21- 6/23/95
Chromium	100	90	(74-117)	11	(0-20)	6/21- 6/23/95
Copper	88	85	(77-112)	4.2	(0-20)	6/21- 6/23/95
Nickel	95	87	(73-109)	8.6	(0-20)	6/21- 6/23/95
Lead	89	81	(80-120)	9.4	(0-20)	6/21- 6/23/95
Selenium	88	81	(80-120)	8.4	(0-20)	6/21- 6/23/95
Zinc	80	78	(67-118)	3.6	(0-20)	6/21- 6/23/95

NOTE:

Calculations are performed before rounding to avoid round-off errors in calculated results

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): QuanTerra

REFERENCE NUMBER: 3627

PROJECT NAME: Synthetic products

SAMPLER'S SIGNATURE:

PRINTED NAME: Mark Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	TCL-VOC	TAL Metal	TCLP VOC	TCLP SVOC	TCLP metals	reactivity	corrosive	reactive CN & sulfide			REMARKS
	6/13/95	1245	WP-061395-MAW-001	Soil	2			✓	✓	✓	1	1	1			
	↓	1530	GW-061395-MAW-002	water	4	3	1									TAL metals arsenic,
		1700	GW-061395-MAW-003		4	3	1									barium, cadmium
	6/14/95	915	GW-061395-MAW-004		4	3	1									chromium, copper,
		930	GW-061495-MAW-005		4	3	1									lead, nickel, selenium
		1020	GW-061495-MAW-006		4	3	1									silver + zinc
		1030	GW-061495-MAW-007		4	3	1									
		1125	GW-061495-MAW-008		4	3	1									
		1135	GW-061495-MAW-009		4	3	1									
		1255	GW-061495-MAW-010		4	3	1									
		1335	GW-061495-MAW-011		4	3	1									
		1440	GW-061495-MAW-012		4	3	1									
			Temp Blank		1											
	↓		Trip Blank	↓	1	1										
			TOTAL NUMBER OF CONTAINERS		48											

RELINQUISHED BY: ① 6/14/95	DATE: [illegible] TIME: 1600	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 7115099331

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: Mark Willis, John Hargens

RECEIVED FOR LABORATORY BY: Kathy Brown DATE: 950615 TIME: 1125am

№ 4875

1001(FORMS)-APRIL 29, 93-REV.0-(C)(F-01)

Rec'd CRA

JUL 05 1995

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
216 497-0772 Fax

Quanterra Environmental Services

A5F210046

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS COMPANY

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Daniel J. Wright
Project Manager

June 30, 1995

CHECKED AGAINST PRELIMINARY DATA
Date 7-5-95
Initials NMB

VALIDATED DATA
Project # 3627
Lab Report # A5F210046
Initials NMB
Date 8-21-95

Quanterra
Environmental Services

PROJECT NARRATIVE

The following report contains the analytical results for one solid sample submitted to Quanterra-North Canton by Conestoga Rovers & Associates, Inc. from the Synthetic Products Company Site, project number 3627. The sample was received June 1, 1995, according to documented sample acceptance procedures. On June 20, 1995, Base/Neutrals and Acids analysis was requested by Nancy Bergstrom. The results of this analysis are contained in this report.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The sample presented in this report was analyzed for the parameters listed on the following page in accordance with the methods indicated. Preliminary results were provided by facsimile transmission to Nancy Bergstrom on June 27, 1995. A summary of QC data for this analysis is included at the end of the report.

Quanterra
Environmental Services

ANALYTICAL METHODS SUMMARY

Parameters	Methods
TCL Semivolatile Organics	SW846 8270A

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, September, 1986 and subsequent revisions

Quanterra
Environmental Services

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED
A552H	A5F210046-001	S-053095-JH-040	5/30/95 14:45

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-053095-JH-040

WO #: A552H101
LAB #: A5F210046-001
MATRIX: SOLID

DATE SAMPLED: 5/30/95
TIME SAMPLED: 14:45
DATE RECEIVED: 6/01/95

GC/MS Semi-Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Acenaphthene	**41 J**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
Acenaphthylene	**120 J**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
Anthracene	**150 J**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
Benzo(a)anthracene	**1,100**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
Benzo(b)fluoranthene	**1,200**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
Benzo(k)fluoranthene	**450**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
Benzo(g,h,i)perylene	**360**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
Benzo(a)pyrene	**920**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
bis(2-Chloroethoxy)methane	ND	330	SW846 8270A	06/25-06/27/95	5176012
bis(2-Chloroethyl)ether	ND	330	SW846 8270A	06/25-06/27/95	5176012
2,2'-oxybis(1-Chloro-propane)	ND	330	SW846 8270A	06/25-06/27/95	5176012
bis(2-Ethylhexyl)phthalate	**190 J**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
4-Bromophenyl phenyl ether	ND	330	SW846 8270A	06/25-06/27/95	5176012
Butyl benzyl phthalate	ND	330	SW846 8270A	06/25-06/27/95	5176012
Carbazole	ND	330	SW846 8270A	06/25-06/27/95	5176012
4-Chloroaniline	ND	330	SW846 8270A	06/25-06/27/95	5176012
2-Chloronaphthalene	ND	330	SW846 8270A	06/25-06/27/95	5176012
4-Chlorophenyl phenyl ether	ND	330	SW846 8270A	06/25-06/27/95	5176012
Chrysene	**1,000**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
Dibenzo(a,h)anthracene	**57 J**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
Dibenzofuran	ND	330	SW846 8270A	06/25-06/27/95	5176012
Di-n-butyl phthalate	ND	330	SW846 8270A	06/25-06/27/95	5176012
1,2-Dichlorobenzene	ND	330	SW846 8270A	06/25-06/27/95	5176012

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Nitrobenzene-d5	75	(52 - 131)
2-Fluorobiphenyl	69	(43 - 109)
Terphenyl-d14	90	(37 - 150)
Phenol-d5	59	(37 - 117)
2-Fluorophenol	60	(28 - 101)
2,4,6-Tribromophenol	82	(10 - 170)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-053095-JH-040

WO #: A552H101
LAB #: A5F210046-001
MATRIX: SOLID

DATE SAMPLED: 5/30/95
TIME SAMPLED: 14:45
DATE RECEIVED: 6/01/95

GC/MS Semi-Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
1,3-Dichlorobenzene	ND	330	SW846 8270A	06/25-06/27/95	5176012
1,4-Dichlorobenzene	ND	330	SW846 8270A	06/25-06/27/95	5176012
3,3'-Dichlorobenzidine	ND	660	SW846 8270A	06/25-06/27/95	5176012
Diethyl phthalate	ND	330	SW846 8270A	06/25-06/27/95	5176012
Dimethyl phthalate	ND	330	SW846 8270A	06/25-06/27/95	5176012
2,4-Dinitrotoluene	ND	330	SW846 8270A	06/25-06/27/95	5176012
2,6-Dinitrotoluene	ND	330	SW846 8270A	06/25-06/27/95	5176012
Di-n-octyl phthalate	ND	330	SW846 8270A	06/25-06/27/95	5176012
Fluoranthene	**1,600**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
Fluorene	ND	330	SW846 8270A	06/25-06/27/95	5176012
Hexachlorobenzene	ND	330	SW846 8270A	06/25-06/27/95	5176012
Hexachlorobutadiene	ND	330	SW846 8270A	06/25-06/27/95	5176012
Hexachlorocyclopentadiene	ND	330	SW846 8270A	06/25-06/27/95	5176012
Hexachloroethane	ND	330	SW846 8270A	06/25-06/27/95	5176012
Indeno(1,2,3-cd)pyrene	**300 J**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
Isophorone	ND	330	SW846 8270A	06/25-06/27/95	5176012
2-Methylnaphthalene	ND	330	SW846 8270A	06/25-06/27/95	5176012
Naphthalene	ND	330	SW846 8270A	06/25-06/27/95	5176012
Nitrobenzene	ND	330	SW846 8270A	06/25-06/27/95	5176012
2-Nitroaniline	ND	1,600	SW846 8270A	06/25-06/27/95	5176012
3-Nitroaniline	ND	1,600	SW846 8270A	06/25-06/27/95	5176012
4-Nitroaniline	ND	1,600	SW846 8270A	06/25-06/27/95	5176012
N-Nitrosodiphenylamine	ND	330	SW846 8270A	06/25-06/27/95	5176012

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Nitrobenzene-d5	75	(52 - 131)
2-Fluorobiphenyl	69	(43 - 109)
Terphenyl-d14	90	(37 - 150)
Phenol-d5	59	(37 - 117)
2-Fluorophenol	60	(28 - 101)
2,4,6-Tribromophenol	82	(10 - 170)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-053095-JH-040

WO #: A552H101
LAB #: A5F210046-001
MATRIX: SOLID

DATE SAMPLED: 5/30/95
TIME SAMPLED: 14:45
DATE RECEIVED: 6/01/95

GC/MS Semi-Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
N-Nitrosodi-n-propylamine	ND	330	SW846 8270A	06/25-06/27/95	5176012
Phenanthrene	**610**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
Pyrene	**2,000**	**330**	**SW846 8270A**	**06/25-06/27/95**	**5176012**
1,2,4-Trichlorobenzene	ND	330	SW846 8270A	06/25-06/27/95	5176012

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Nitrobenzene-d5	75	(52 - 131)
2-Fluorobiphenyl	69	(43 - 109)
Terphenyl-d14	90	(37 - 150)
Phenol-d5	59	(37 - 117)
2-Fluorophenol	60	(28 - 101)
2,4,6-Tribromophenol	82	(10 - 170)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-053095-JH-040

WO #: A552H101
LAB #: A5F210046-001
MATRIX: SOLID

DATE SAMPLED: 5/30/95
TIME SAMPLED: 14:45
DATE RECEIVED: 6/01/95

GC/MS Semi-Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
4-Chloro-3-methylphenol	ND	330	SW846 8270A	06/25-06/27/95	5176012
2-Chlorophenol	ND	330	SW846 8270A	06/25-06/27/95	5176012
2,4-Dichlorophenol	ND	330	SW846 8270A	06/25-06/27/95	5176012
2,4-Dimethylphenol	ND	330	SW846 8270A	06/25-06/27/95	5176012
2,4-Dinitrophenol	ND	1,600	SW846 8270A	06/25-06/27/95	5176012
4,6-Dinitro-2-methylphenol	ND	1,600	SW846 8270A	06/25-06/27/95	5176012
2-Methylphenol	ND	330	SW846 8270A	06/25-06/27/95	5176012
4-Methylphenol	ND	330	SW846 8270A	06/25-06/27/95	5176012
2-Nitrophenol	ND	330	SW846 8270A	06/25-06/27/95	5176012
4-Nitrophenol	ND	1,600	SW846 8270A	06/25-06/27/95	5176012
Pentachlorophenol	ND	1,600	SW846 8270A	06/25-06/27/95	5176012
Phenol	ND	330	SW846 8270A	06/25-06/27/95	5176012
2,4,5-Trichlorophenol	ND	330	SW846 8270A	06/25-06/27/95	5176012
2,4,6-Trichlorophenol	ND	330	SW846 8270A	06/25-06/27/95	5176012

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Nitrobenzene-d5	75	(52 - 131)
2-Fluorobiphenyl	69	(43 - 109)
Terphenyl-d14	90	(37 - 150)
Phenol-d5	59	(37 - 117)
2-Fluorophenol	60	(28 - 101)
2,4,6-Tribromophenol	82	(10 - 170)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

QUALITY CONTROL SECTION

Quanterra
Environmental Services

QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with the exception of those items noted.

Sample A5F210046-001 was requested for Base/Neutrals and Acids analysis after the recommended holding time had expired.

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5176012
LAB #: A5F250000-012 C

PREPARATION DATE: 6/25/95
DATE ANALYZED: 6/28/95

- - - - - - - - - - - - - - - - - - **GC/MS Semi-Volatiles** - - - - - - - - - - - - - - - - - -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,2,4-Trichlorobenzene	71	(43-119)
Acenaphthene	73	(48-106)
2,4-Dinitrotoluene	79	(43-125)
Pyrene	87	(46-141)
N-Nitrosodi-n-propylamine	75	(40-103)
1,4-Dichlorobenzene	67	(37-88)
Pentachlorophenol	77	(27-130)
Phenol	68	(34-95)
2-Chlorophenol	69	(47-101)
4-Chloro-3-methylphenol	74	(46-107)
4-Nitrophenol	72	(36-129)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F250000-012

- - - - - - - - - - - - - - - - - - **GC/MS Semi-Volatiles** - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acenaphthene	ND	330	6/25- 6/28/95	5176012
Acenaphthylene	ND	330	6/25- 6/28/95	5176012
Anthracene	ND	330	6/25- 6/28/95	5176012
Benzo(a)anthracene	ND	330	6/25- 6/28/95	5176012
Benzo(b)fluoranthene	ND	330	6/25- 6/28/95	5176012
Benzo(k)fluoranthene	ND	330	6/25- 6/28/95	5176012
Benzo(g,h,i)perylene	ND	330	6/25- 6/28/95	5176012
Benzo(a)pyrene	ND	330	6/25- 6/28/95	5176012
bis(2-Chloroethoxy)methane	ND	330	6/25- 6/28/95	5176012
bis(2-Chloroethyl)ether	ND	330	6/25- 6/28/95	5176012
bis(2-Ethylhexyl)phthalate	ND	330	6/25- 6/28/95	5176012
4-Bromophenyl phenyl ether	ND	330	6/25- 6/28/95	5176012
Butyl benzyl phthalate	ND	330	6/25- 6/28/95	5176012
4-Chloroaniline	ND	330	6/25- 6/28/95	5176012
4-Chloro-3-methylphenol	ND	330	6/25- 6/28/95	5176012
2-Chloronaphthalene	ND	330	6/25- 6/28/95	5176012
2-Chlorophenol	ND	330	6/25- 6/28/95	5176012
4-Chlorophenyl phenyl ether	ND	330	6/25- 6/28/95	5176012
Chrysene	ND	330	6/25- 6/28/95	5176012
Dibenzofuran	ND	330	6/25- 6/28/95	5176012
Di-n-butyl phthalate	ND	330	6/25- 6/28/95	5176012
1,2-Dichlorobenzene	ND	330	6/25- 6/28/95	5176012
1,3-Dichlorobenzene	ND	330	6/25- 6/28/95	5176012
1,4-Dichlorobenzene	ND	330	6/25- 6/28/95	5176012
3,3'-Dichlorobenzidine	ND	660	6/25- 6/28/95	5176012

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Nitrobenzene-d5	76	(52 - 131)
2-Fluorobiphenyl	71	(43 - 109)
Terphenyl-d14	95	(37 - 150)
Phenol-d5	64	(37 - 117)
2-Fluorophenol	62	(28 - 101)
2,4,6-Tribromophenol	73	(10 - 170)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F250000-012

GC/MS Semi-Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
2,4-Dichlorophenol	ND	330	6/25- 6/28/95	5176012
Diethyl phthalate	ND	330	6/25- 6/28/95	5176012
2,4-Dimethylphenol	ND	330	6/25- 6/28/95	5176012
Dimethyl phthalate	ND	330	6/25- 6/28/95	5176012
Di-n-octyl phthalate	ND	330	6/25- 6/28/95	5176012
4,6-Dinitro-2-methylphenol	ND	1,600	6/25- 6/28/95	5176012
2,4-Dinitrophenol	ND	1,600	6/25- 6/28/95	5176012
2,4-Dinitrotoluene	ND	330	6/25- 6/28/95	5176012
2,6-Dinitrotoluene	ND	330	6/25- 6/28/95	5176012
Fluoranthene	ND	330	6/25- 6/28/95	5176012
Fluorene	ND	330	6/25- 6/28/95	5176012
Hexachlorobenzene	ND	330	6/25- 6/28/95	5176012
Hexachlorobutadiene	ND	330	6/25- 6/28/95	5176012
Hexachlorocyclopentadiene	ND	330	6/25- 6/28/95	5176012
Hexachloroethane	ND	330	6/25- 6/28/95	5176012
Indeno(1,2,3-cd)pyrene	ND	330	6/25- 6/28/95	5176012
Isophorone	ND	330	6/25- 6/28/95	5176012
2-Methylnaphthalene	ND	330	6/25- 6/28/95	5176012
2-Methylphenol	ND	330	6/25- 6/28/95	5176012
4-Methylphenol	ND	330	6/25- 6/28/95	5176012
Naphthalene	ND	330	6/25- 6/28/95	5176012
2-Nitroaniline	ND	1,600	6/25- 6/28/95	5176012
3-Nitroaniline	ND	1,600	6/25- 6/28/95	5176012
4-Nitroaniline	ND	1,600	6/25- 6/28/95	5176012

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Nitrobenzene-d5	76	(52 - 131)
2-Fluorobiphenyl	71	(43 - 109)
Terphenyl-d14	95	(37 - 150)
Phenol-d5	64	(37 - 117)
2-Fluorophenol	62	(28 - 101)
2,4,6-Tribromophenol	73	(10 - 170)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F250000-012

- **GC/MS Semi-Volatiles** -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Nitrobenzene	ND	330	6/25- 6/28/95	5176012
2-Nitrophenol	ND	330	6/25- 6/28/95	5176012
4-Nitrophenol	ND	1,600	6/25- 6/28/95	5176012
N-Nitrosodi-n-propylamine	ND	330	6/25- 6/28/95	5176012
N-Nitrosodiphenylamine	ND	330	6/25- 6/28/95	5176012
Pentachlorophenol	ND	1,600	6/25- 6/28/95	5176012
Phenanthrene	ND	330	6/25- 6/28/95	5176012
Phenol	ND	330	6/25- 6/28/95	5176012
Pyrene	ND	330	6/25- 6/28/95	5176012
1,2,4-Trichlorobenzene	ND	330	6/25- 6/28/95	5176012
2,4,5-Trichlorophenol	ND	330	6/25- 6/28/95	5176012
2,4,6-Trichlorophenol	ND	330	6/25- 6/28/95	5176012
Dibenzo(a,h)anthracene	ND	330	6/25- 6/28/95	5176012
Carbazole	ND	330	6/25- 6/28/95	5176012
2,2'-oxybis(1-Chloro-propane)	ND	330	6/25- 6/28/95	5176012

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Nitrobenzene-d5	76	(52 - 131)
2-Fluorobiphenyl	71	(43 - 109)
Terphenyl-d14	95	(37 - 150)
Phenol-d5	64	(37 - 117)
2-Fluorophenol	62	(28 - 101)
2,4,6-Tribromophenol	73	(10 - 170)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5176012
LAB #: A5F210046-001 S
MATRIX: SOLID

WO #: A552H
PREPARATION DATE: 6/25/95
DATE ANALYZED: 6/27/95

GC/MS Semi-Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,2,4-Trichlorobenzene	70	78	(50-156)	9.8	(0-60)
Acenaphthene	76	80	(50-115)	6.4	(0-60)
2,4-Dinitrotoluene	89	97	(35-144)	8.4	(0-85)
Pyrene	75	101	(15-174)	30	(0-61)
N-Nitrosodi-n-propylamine	87	96	(10-230)	9.2	(0-32)
1,4-Dichlorobenzene	66	73	(39-105)	10	(0-61)
Pentachlorophenol	73	83	(38-129)	13	(0-67)
Phenol	64	72	(35-108)	12	(0-100)
2-Chlorophenol	68	74	(42-134)	7.8	(0-81)
4-Chloro-3-methylphenol	83	91	(39-138)	8.3	(0-93)
4-Nitrophenol	53	68	(42-131)	25	(0-58)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
216 497-0772 Fax

Rec'd Chk.
JUL 05 1995

Quanterra
Environmental Services

ASE180039

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Daniel J. Wright
Project Manager

July 3, 1995

VALIDATED DATA
Project # 3627
Lab Report # ASE180039
Initials NMB
Date 8-21-95

CHECKED AGAINST PRELIMINARY DATA
Date 7-5-95
Initials NMB

PROJECT NARRATIVE

The following report contains the analytical results for nine solid samples submitted to Quanterra-North Canton by Conestoga Rovers & Associates, Inc. from the Synthetic Products Site, project number 3627. The samples were received May 18, 1995, according to documented sample acceptance procedures.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the following page in accordance with the methods indicated. Preliminary results were provided by facsimile transmission to Nancy Bergstrom on June 5, 1995. A summary of QC data for these analyses is included at the end of the report.

ANALYTICAL METHODS SUMMARY

Parameters	Methods
TCL Volatile Organics	SW846 8240A
Grain Size	ASTM D422
Silver	SW846 6010A
Barium	SW846 6010A
Cadmium	SW846 6010A
Chromium	SW846 6010A
Copper	SW846 6010A
Nickel	SW846 6010A
Zinc	SW846 6010A
Bulk Density	ASTM D1188
Permeability (Sand)	ASTM D2434
Arsenic	SW846 6010A
Lead	SW846 6010A
Selenium	SW846 6010A
Percent Moisture	ASTM D2216
Carbon, Total Organic	MOSA WALKLEY-BLACK

References:

ASTM 1987 Annual Book Of ASTM Standards.

MOSA "Methods of Soil Analysis", Number 9 (Part 2) In The Series: Agronomy, American Society of Agronomy, Inc., Second Edition, 1982.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, September, 1986 and subsequent revisions

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	
A4LC8	A5E180039-001	S-051495-JH-013	5/14/95	11:00
A4LC9	A5E180039-002	S-051695-JH-014	5/16/95	13:00
A4LCA	A5E180039-003	S-051695-JH-015	5/16/95	13:10
A4LCC	A5E180039-004	S-051695-JH-016	5/16/95	16:15
A4LCE	A5E180039-005	S-051695-JH-017	5/16/95	16:35
A4LCJ	A5E180039-006	S-051695-JH-018	5/16/95	15:00
A4LCQ	A5E180039-007	S-051795-JH-019	5/17/95	12:30
A4LD0	A5E180039-008	S-050995-JH-002	5/09/95	
A4LD2	A5E180039-009	S-051495-JH-011	5/14/95	

ENGINEERING • TESTING • INSPECTION

APPLIED CONSTRUCTION TECHNOLOGIES, INC.

210 HAYES DRIVE • SUITE C • CLEVELAND, OHIO 44131 • (216) 459-TEST • FAX (216) 459-8954
478 E. EXCHANGE ST. • SUITE 202 • AKRON, OHIO 44304 • (216) 253-TEST • FAX (216) 253-3462

May 31, 1995

Quanterra, Incorporated
4101 Shuffel Drive
North Canton, Ohio 44720

Attention: Mr. Daniel J. Wright

SUBJECT: LABORATORY RESULTS
SEVEN (7) SUBMITTED SAMPLES
P.O. SR006848
CLIENT CODE: 001628

ACT PROJECT NO. 9501.17
Report Dated 31 May 1995

Enclosed are test results for three (3) jar samples and four (4) Shelby tube samples submitted to us on May 19, 1995. The grain size analyses, densities, moisture contents and permeabilities, were performed per appropriate ASTM standards.

APPLIED CONSTRUCTION TECHNOLOGIES, INC.
Boris Shilman, Lab Technician
by:

GEORGE WOZNIAK, C.E.T.
Manager - Materials Laboratory

:fz

Quanterra, Incorporated
May 31, 1995

BULK DENSITY AND MOISTURE CONTENT RESULTS

Sample I.D.	(Dry Weight Basis) Percent Moisture Content	Dry Bulk Density (P.C.F.)	Visual Description
A-5E180039-002 A-4LC8-1-01,02	11.4	117.2	Brown Poorly Graded Gravely Sand, Trace Silt and Mica
A-5E180039-005 A-4LCE-1-01,02	13.1	109.3	Brown Poorly Graded Gravely Sand, Trace Silt and Mica
A-5E180039-008 A-4LDO-1-01,02	19.0	97.1	Brown Poorly Graded Sand, Trace Silt, Mica, Gravel
A-5E180039-009 A-4LD2-1-01,02	25.8	95.7	Black Non-Homogeneous Mixture of Sand, Organic Silt, Trace Gravel and Mica

PERMEABILITY RESULTS (Constant Head)

Sample I.D.: A5E180038-008 A-4LDO-1-01,02

Coefficient of Permeability $K_{20^oC} = 1.67 \times 10^{-3}$ cm/sec

Dry Bulk Density of Sample After Test = 100.5 P.C.F.

CONESTOGA-ROVERS & ASSOCIATES

S-051495-JH-013

WO #: A4LC8
LAB #: A5E180039-001
MATRIX: SOLID

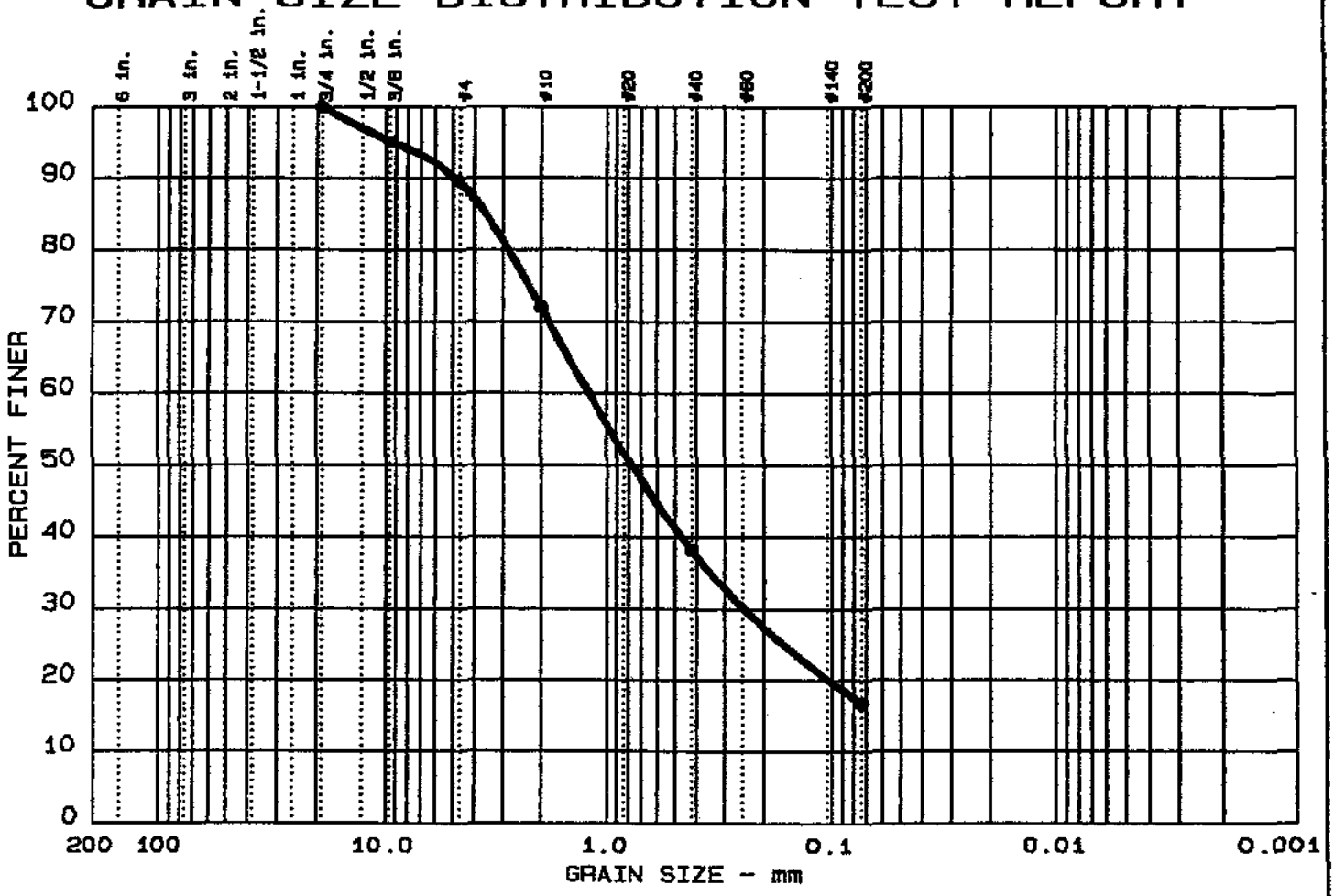
DATE SAMPLED: 5/14/95
TIME SAMPLED: 11:00
DATE RECEIVED: 5/18/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Percent Moisture	14.8	0.50	%	ASTM D2216	5/24- 5/25/95	5144079
Carbon, Total Organic	1,000	100	mg/kg	MOSA WALKLEY-	6/05/95	5156044

NOTE: AS RECEIVED

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	12	0.0	10.3	73.0	16.7	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			3.55	1.20	0.77	0.245				

MATERIAL DESCRIPTION	USCS	AASHTO
● GRAYISH BROWN SILTY SAND WITH GRAVEL. TRACES MICA.	SM	

Project No.: 9501.07
Project: P.O. SR006848 CLIENT CODE: 001628
● Location: A-5E180039-001 A4LCB-1-01

Date: 05-30-95

Remarks:
CLIENT: QUANTERRA INC.

JAR SAMPLES RECEIVED ON 05-19-95

GRAIN SIZE DISTRIBUTION TEST REPORT

APPLIED CONSTRUCTION TECH., INC.

Figure No. 01

CONESTOGA-ROVERS & ASSOCIATES

S-051695-JH-015

WO #: A4LCA
LAB #: A5E180039-003
MATRIX: SOLID

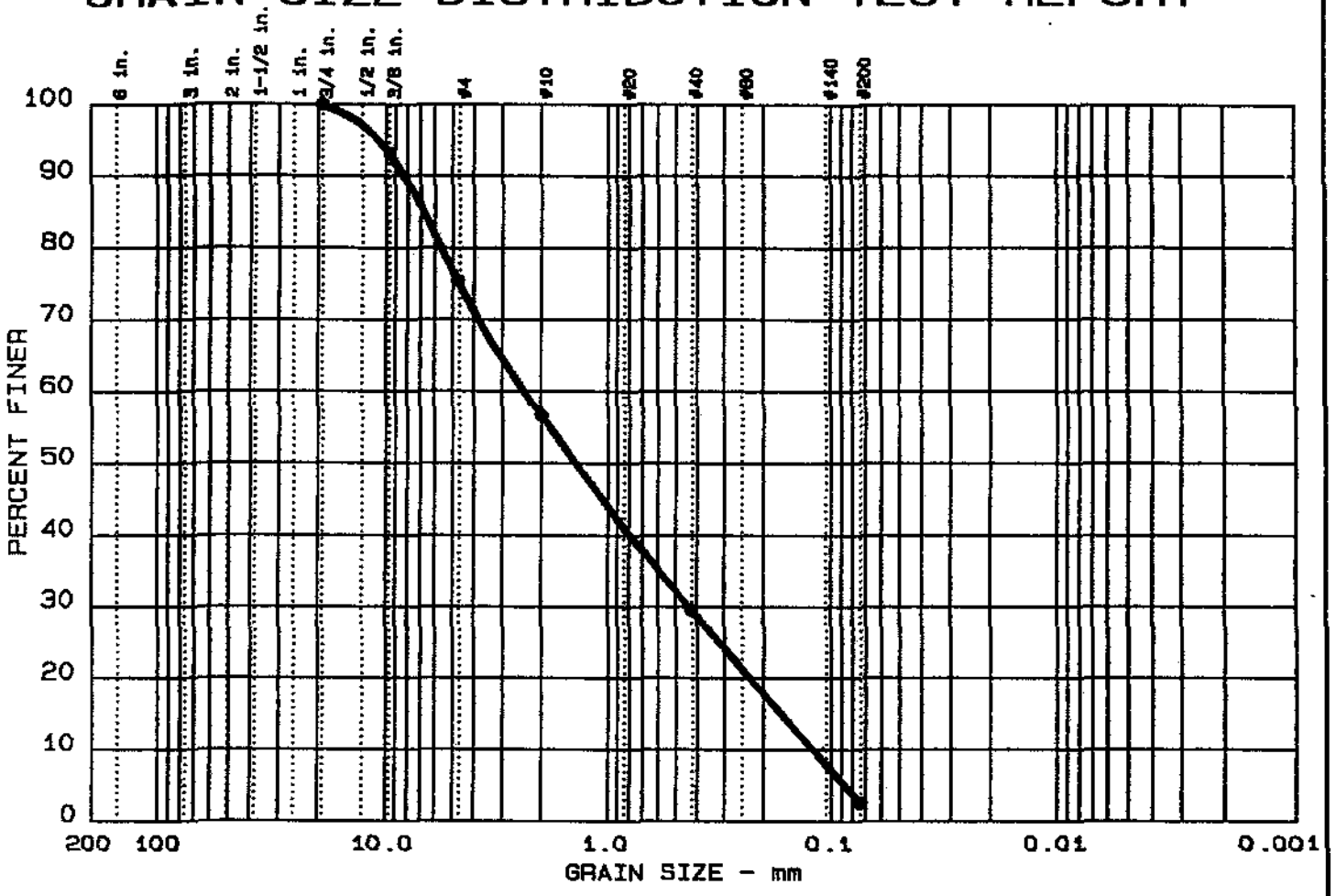
DATE SAMPLED: 5/16/95
TIME SAMPLED: 13:10
DATE RECEIVED: 5/18/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Percent Moisture	19.6	0.50	%	ASTM D2216	5/24- 5/25/95	5144079
Carbon, Total Organic	940	100	mg/kg	MOSA WALKLEY-	6/05/95	5156044

NOTE: AS RECEIVED

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	24.5	72.9	2.6	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			6.74	2.36	1.39	0.430	0.1654	0.1198	0.65	19.7

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN POORLY GRADED GRAVELLY SAND; trace SILT and MICA.	SP	

Project No.: 9501.07
Project: P.O. SR006848 CLIENT CODE: 001628
● Location: A-5E180039-003 A4LCA-1-01

Date: 05-30-95

Remarks:
CLIENT: QUANTERRA INC.

JAR SAMPLES RECEIVED ON 05-19-95

GRAIN SIZE DISTRIBUTION TEST REPORT

APPLIED CONSTRUCTION TECH., INC.

Figure No. 02

CONESTOGA-ROVERS & ASSOCIATES

S-051695-JH-016

WO #: A4LCC
LAB #: A5E180039-004
MATRIX: SOLID

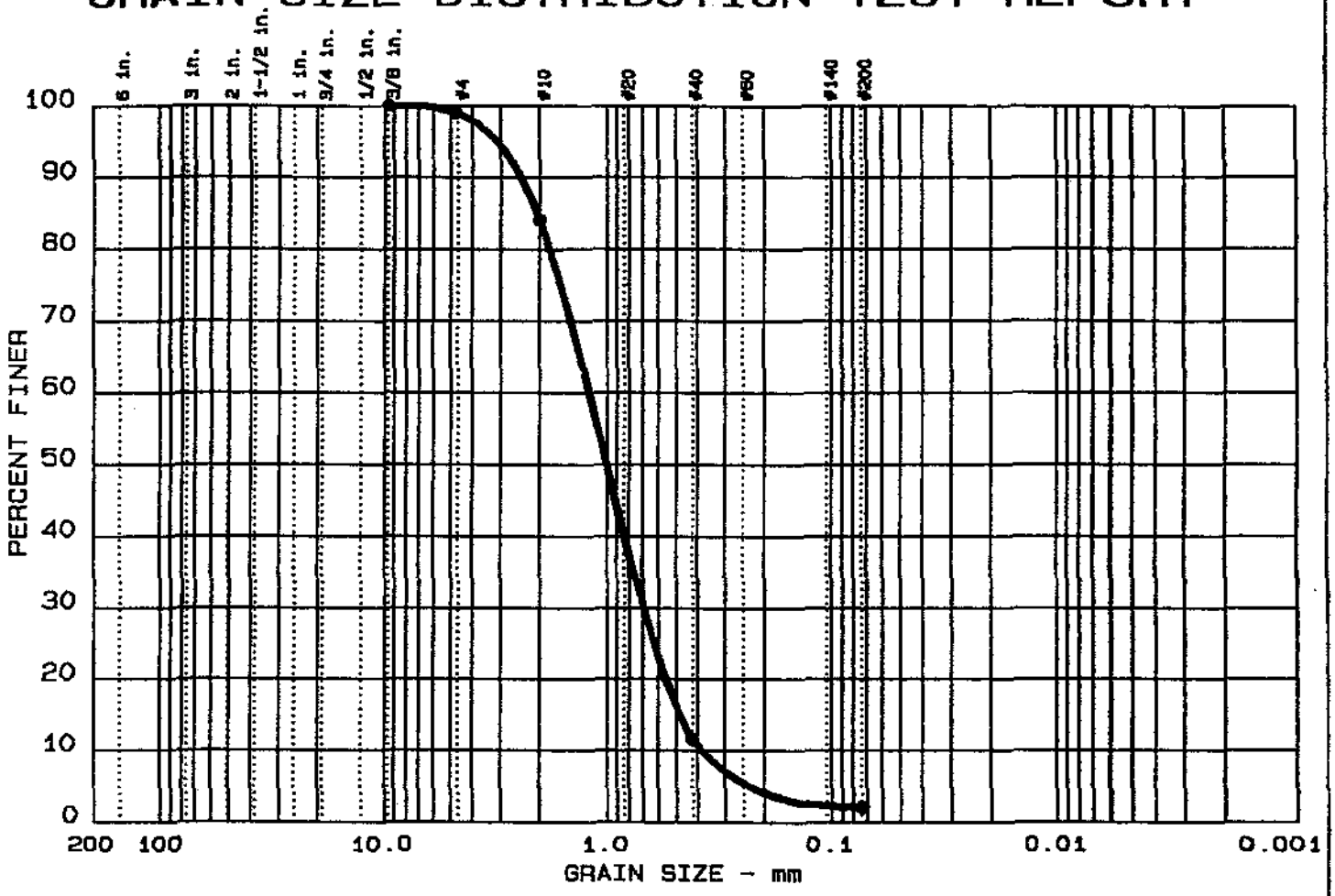
DATE SAMPLED: 5/16/95
TIME SAMPLED: 16:15
DATE RECEIVED: 5/18/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Percent Moisture	6.9	0.50	%	ASTM D2216	5/24- 5/25/95	5144079
Carbon, Total Organic	630	100	mg/kg	MOSA WALKLEY-	6/05/95	5156044

NOTE: AS RECEIVED

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	14	0.0	1.0	96.9	2.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			2.04	1.20	1.00	0.692	0.4786	0.3802	1.05	3.2

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN POORLY GRADED SAND: tr. GRAVEL, tr. SILT and MICA.	SP	

Project No.: 9501.07
Project: P.O. SR006848 CLIENT CODE: 001628
● Location: A-5E180039-004 A4LCC-1-01

Date: 05-30-95

Remarks:
CLIENT: QUANTERRA INC.

JAR SAMPLES RECEIVED ON
05-19-95

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No. 03

CONESTOGA-ROVERS & ASSOCIATES

S-051695-JH-018

WO #: A4LCJ102
LAB #: A5E180039-006
MATRIX: SOLID

DATE SAMPLED: 5/16/95
TIME SAMPLED: 15:00
DATE RECEIVED: 5/18/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	10	SW846 8240A	05/27/95	5150051
Bromomethane	ND	10	SW846 8240A	05/27/95	5150051
Vinyl chloride	ND	10	SW846 8240A	05/27/95	5150051
Chloroethane	ND	10	SW846 8240A	05/27/95	5150051
Methylene chloride	ND	5.0	SW846 8240A	05/27/95	5150051
Acetone	ND	50	SW846 8240A	05/27/95	5150051
Carbon disulfide	ND	5.0	SW846 8240A	05/27/95	5150051
1,1-Dichloroethene	ND	5.0	SW846 8240A	05/27/95	5150051
1,1-Dichloroethane	ND	5.0	SW846 8240A	05/27/95	5150051
1,2-Dichloroethene, Total	ND	5.0	SW846 8240A	05/27/95	5150051
Chloroform	ND	5.0	SW846 8240A	05/27/95	5150051
1,2-Dichloroethane	ND	5.0	SW846 8240A	05/27/95	5150051
2-Butanone	ND	50	SW846 8240A	05/27/95	5150051
1,1,1-Trichloroethane	**3.4 J**	**5.0**	**SW846 8240A**	**05/27/95**	**5150051**
Carbon tetrachloride	ND	5.0	SW846 8240A	05/27/95	5150051
Bromodichloromethane	ND	5.0	SW846 8240A	05/27/95	5150051
1,2-Dichloropropane	ND	5.0	SW846 8240A	05/27/95	5150051
cis-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/27/95	5150051
Trichloroethene	ND	5.0	SW846 8240A	05/27/95	5150051
Dibromochloromethane	ND	5.0	SW846 8240A	05/27/95	5150051
1,1,2-Trichloroethane	ND	5.0	SW846 8240A	05/27/95	5150051
Benzene	ND	5.0	SW846 8240A	05/27/95	5150051
trans-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/27/95	5150051

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	107	(70 - 121)
Toluene-d8	103	(81 - 117)
Bromofluorobenzene	87	(74 - 121)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

CONESTOGA-ROVERS & ASSOCIATES

S-051695-JH-018

WO #: A4LCJ102
LAB #: A5E180039-006
MATRIX: SOLID

DATE SAMPLED: 5/16/95
TIME SAMPLED: 15:00
DATE RECEIVED: 5/18/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	5.0	SW846 8240A	05/27/95	5150051
4-Methyl-2-pentanone	ND	50	SW846 8240A	05/27/95	5150051
2-Hexanone	ND	50	SW846 8240A	05/27/95	5150051
Tetrachloroethene	ND	5.0	SW846 8240A	05/27/95	5150051
Toluene	ND	5.0	SW846 8240A	05/27/95	5150051
1,1,2,2-Tetrachloroethane	ND	5.0	SW846 8240A	05/27/95	5150051
Chlorobenzene	ND	5.0	SW846 8240A	05/27/95	5150051
Ethylbenzene	ND	5.0	SW846 8240A	05/27/95	5150051
Styrene	ND	5.0	SW846 8240A	05/27/95	5150051
Xylenes, Total	ND	5.0	SW846 8240A	05/27/95	5150051

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	107	(70 - 121)
Toluene-d8	103	(81 - 117)
Bromofluorobenzene	87	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

S-051695-JH-018

WO #: A4LCJ
LAB #: A5E180039-006
MATRIX: SOLID

DATE SAMPLED: 5/16/95
TIME SAMPLED: 15:00
DATE RECEIVED: 5/18/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Barium	26.1	1.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Chromium	10.9	2.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Copper	14.9	1.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Nickel	11.9	4.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Zinc	25.9	5.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Arsenic	9.8	1.0	mg/kg	SW846 6010A	5/19- 5/25/95	5139001
Lead	4.8	0.60	mg/kg	SW846 6010A	5/19- 5/25/95	5139001
Selenium	*ND	1.0	mg/kg	SW846 6010A	5/19- 5/25/95	5139001

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
* ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

CONESTOGA-ROVERS & ASSOCIATES

S-051795-JH-019

WO #: A4LCQ10A
LAB #: A5E180039-007
MATRIX: SOLID

DATE SAMPLED: 5/17/95
TIME SAMPLED: 12:30
DATE RECEIVED: 5/18/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	10	SW846 8240A	05/30/95	5151054
Bromomethane	ND	10	SW846 8240A	05/30/95	5151054
Vinyl chloride	ND	10	SW846 8240A	05/30/95	5151054
Chloroethane	ND	10	SW846 8240A	05/30/95	5151054
Methylene chloride	ND	5.0	SW846 8240A	05/30/95	5151054
Acetone	**3.6 J**	**50**	**SW846 8240A**	**05/30/95**	**5151054**
Carbon disulfide	ND	5.0	SW846 8240A	05/30/95	5151054
1,1-Dichloroethene	ND	5.0	SW846 8240A	05/30/95	5151054
1,1-Dichloroethane	ND	5.0	SW846 8240A	05/30/95	5151054
1,2-Dichloroethene, Total	ND	5.0	SW846 8240A	05/30/95	5151054
Chloroform	ND	5.0	SW846 8240A	05/30/95	5151054
1,2-Dichloroethane	ND	5.0	SW846 8240A	05/30/95	5151054
2-Butanone	ND	50	SW846 8240A	05/30/95	5151054
1,1,1-Trichloroethane	ND	5.0	SW846 8240A	05/30/95	5151054
Carbon tetrachloride	ND	5.0	SW846 8240A	05/30/95	5151054
Bromodichloromethane	ND	5.0	SW846 8240A	05/30/95	5151054
1,2-Dichloropropane	ND	5.0	SW846 8240A	05/30/95	5151054
cis-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/30/95	5151054
Trichloroethene	ND	5.0	SW846 8240A	05/30/95	5151054
Dibromochloromethane	ND	5.0	SW846 8240A	05/30/95	5151054
1,1,2-Trichloroethane	ND	5.0	SW846 8240A	05/30/95	5151054
Benzene	**2.7 J**	**5.0**	**SW846 8240A**	**05/30/95**	**5151054**
trans-1,3-Dichloropropene	ND	5.0	SW846 8240A	05/30/95	5151054

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	99	(70 - 121)
Toluene-d8	102	(81 - 117)
Bromofluorobenzene	97	(74 - 121)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

CONESTOGA-ROVERS & ASSOCIATES

S-051795-JH-019

WO #: A4LCQ10A
LAB #: A5E180039-007
MATRIX: SOLID

DATE SAMPLED: 5/17/95
TIME SAMPLED: 12:30
DATE RECEIVED: 5/18/95

GC/MS Volatiles

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	5.0	SW846 8240A	05/30/95	5151054
4-Methyl-2-pentanone	ND	50	SW846 8240A	05/30/95	5151054
2-Hexanone	ND	50	SW846 8240A	05/30/95	5151054
Tetrachloroethene	ND	5.0	SW846 8240A	05/30/95	5151054
Toluene	ND	5.0	SW846 8240A	05/30/95	5151054
1,1,2,2-Tetrachloroethane	ND	5.0	SW846 8240A	05/30/95	5151054
Chlorobenzene	ND	5.0	SW846 8240A	05/30/95	5151054
Ethylbenzene	ND	5.0	SW846 8240A	05/30/95	5151054
Styrene	ND	5.0	SW846 8240A	05/30/95	5151054
Xylenes, Total	ND	5.0	SW846 8240A	05/30/95	5151054

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	99	(70 - 121)
Toluene-d8	102	(81 - 117)
Bromofluorobenzene	97	(74 - 121)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

CONESTOGA-ROVERS & ASSOCIATES

S-051795-JH-019

WO #: A4LCQ
LAB #: A5E180039-007
MATRIX: SOLID

DATE SAMPLED: 5/17/95
TIME SAMPLED: 12:30
DATE RECEIVED: 5/18/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	1.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Barium	56.5	1.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Chromium	23.9	2.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Copper	29.9	1.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Nickel	18.9	4.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Zinc	75.7	5.0	mg/kg	SW846 6010A	5/19- 6/01/95	5139001
Arsenic	5.3	1.0	mg/kg	SW846 6010A	5/19- 5/25/95	5139001
Lead	48.3	0.60	mg/kg	SW846 6010A	5/19- 5/25/95	5139001
Selenium	*ND	1.0	mg/kg	SW846 6010A	5/19- 5/25/95	5139001

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
* ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

QUALITY CONTROL SECTION

QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with the exception of those items noted.

The matrix spike and matrix spike duplicate (MS/MSD) contained in this quality control report were generated as part of the laboratory QA/QC program requirements. These requirements include the analysis of a MS/MSD on a one in twenty basis. Therefore, the associated batch number indicated on the MS/MSD report may not reflect the same batch number as those of the samples contained in the analytical report.

The lead preparation blank in batch 5139001 is 0.46 mg/kg. All associated samples in this lot are ND or at least 10 times the blank value.

CHECK SAMPLE REPORT

QC BATCH: 5150051
LAB #: A5E300000-051 C

PREPARATION DATE: 5/26/95
DATE ANALYZED: 5/26/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	91	(63-137)
Trichloroethene	101	(77-116)
Chlorobenzene	102	(80-118)
Toluene	100	(80-118)
Benzene	101	(77-118)

CHECK SAMPLE REPORT

QC BATCH: 5151054
LAB #: A5E310000-054 C

PREPARATION DATE: 5/30/95
DATE ANALYZED: 5/30/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	103	(63-137)
Trichloroethene	103	(77-116)
Chlorobenzene	103	(80-118)
Toluene	101	(80-118)
Benzene	102	(77-118)

CHECK SAMPLE REPORT

LAB #: A5E180039

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5139001		
Silver	98	(64-119)	5/19- 5/23/95
Arsenic	100	(80-120)	5/19- 5/25/95
Barium	100	(82-112)	5/19- 5/23/95
Cadmium	109	(72-109)	5/19- 5/25/95
Chromium	105	(76-118)	5/19- 5/23/95
Copper	101	(82-110)	5/19- 5/23/95
Nickel	104	(74-111)	5/19- 5/23/95
Lead	98	(80-120)	5/19- 5/25/95
Selenium	91	(80-120)	5/19- 5/25/95
Zinc	101	(68-116)	5/19- 5/23/95

CHECK SAMPLE REPORT

LAB #: A5E180039

- - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - -

COMPOUND	SPIKE PERCENT RECOVERY	LIMITS	PREPARATION - ANALYSIS DATE	Q/C BATCH
Carbon, Total Organic	87	(80-119)	6/05/95	5156044

INTRA-LAB BLANK REPORT

LAB #: A5E300000-051

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	50	5/26/95	5150051
Benzene	ND	5.0	5/26/95	5150051
Bromodichloromethane	ND	5.0	5/26/95	5150051
Bromoform	ND	5.0	5/26/95	5150051
Bromomethane	ND	10	5/26/95	5150051
2-Butanone	ND	50	5/26/95	5150051
Carbon disulfide	ND	5.0	5/26/95	5150051
Carbon tetrachloride	ND	5.0	5/26/95	5150051
Chlorobenzene	ND	5.0	5/26/95	5150051
Dibromochloromethane	ND	5.0	5/26/95	5150051
Chloroethane	ND	10	5/26/95	5150051
Chloroform	ND	5.0	5/26/95	5150051
Chloromethane	ND	10	5/26/95	5150051
1,1-Dichloroethane	ND	5.0	5/26/95	5150051
1,2-Dichloroethane	ND	5.0	5/26/95	5150051
1,1-Dichloroethene	ND	5.0	5/26/95	5150051
1,2-Dichloroethene, Total	ND	5.0	5/26/95	5150051
1,2-Dichloropropane	ND	5.0	5/26/95	5150051
cis-1,3-Dichloropropene	ND	5.0	5/26/95	5150051
trans-1,3-Dichloropropene	ND	5.0	5/26/95	5150051
Ethylbenzene	ND	5.0	5/26/95	5150051
2-Hexanone	ND	50	5/26/95	5150051
Methylene chloride	ND	5.0	5/26/95	5150051
4-Methyl-2-pentanone	ND	50	5/26/95	5150051
Styrene	ND	5.0	5/26/95	5150051

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	106	(70 - 121)
Toluene-d8	99	(81 - 117)
Bromofluorobenzene	102	(74 - 121)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: A5E300000-051

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	5.0	5/26/95	5150051
Tetrachloroethene	ND	5.0	5/26/95	5150051
Toluene	ND	5.0	5/26/95	5150051
1,1,1-Trichloroethane	ND	5.0	5/26/95	5150051
1,1,2-Trichloroethane	ND	5.0	5/26/95	5150051
Trichloroethene	ND	5.0	5/26/95	5150051
Vinyl chloride	ND	10	5/26/95	5150051
Xylenes, Total	ND	5.0	5/26/95	5150051

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	106	(70 - 121)
Toluene-d8	99	(81 - 117)
Bromofluorobenzene	102	(74 - 121)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: A5E310000-054

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	50	5/30/95	5151054
Benzene	ND	5.0	5/30/95	5151054
Bromodichloromethane	ND	5.0	5/30/95	5151054
Bromoform	ND	5.0	5/30/95	5151054
Bromomethane	ND	10	5/30/95	5151054
2-Butanone	ND	50	5/30/95	5151054
Carbon disulfide	ND	5.0	5/30/95	5151054
Carbon tetrachloride	ND	5.0	5/30/95	5151054
Chlorobenzene	ND	5.0	5/30/95	5151054
Dibromochloromethane	ND	5.0	5/30/95	5151054
Chloroethane	ND	10	5/30/95	5151054
Chloroform	ND	5.0	5/30/95	5151054
Chloromethane	ND	10	5/30/95	5151054
1,1-Dichloroethane	ND	5.0	5/30/95	5151054
1,2-Dichloroethane	ND	5.0	5/30/95	5151054
1,1-Dichloroethene	ND	5.0	5/30/95	5151054
1,2-Dichloroethene, Total	ND	5.0	5/30/95	5151054
1,2-Dichloropropane	ND	5.0	5/30/95	5151054
cis-1,3-Dichloropropene	ND	5.0	5/30/95	5151054
trans-1,3-Dichloropropene	ND	5.0	5/30/95	5151054
Ethylbenzene	ND	5.0	5/30/95	5151054
2-Hexanone	ND	50	5/30/95	5151054
Methylene chloride	ND	5.0	5/30/95	5151054
4-Methyl-2-pentanone	ND	50	5/30/95	5151054
Styrene	ND	5.0	5/30/95	5151054

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	100	(70 - 121)
Toluene-d8	100	(81 - 117)
Bromofluorobenzene	99	(74 - 121)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: A5E310000-054

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/kg)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	5.0	5/30/95	5151054
Tetrachloroethene	ND	5.0	5/30/95	5151054
Toluene	ND	5.0	5/30/95	5151054
1,1,1-Trichloroethane	ND	5.0	5/30/95	5151054
1,1,2-Trichloroethane	ND	5.0	5/30/95	5151054
Trichloroethene	ND	5.0	5/30/95	5151054
Vinyl chloride	ND	10	5/30/95	5151054
Xylenes, Total	ND	5.0	5/30/95	5151054

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	100	(70 - 121)
Toluene-d8	100	(81 - 117)
Bromofluorobenzene	99	(74 - 121)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: A5E180039

- **METALS** -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5139001			
Silver	ND	1.0	mg/kg	SW846 6010A	5/19- 5/23/95
Arsenic	ND	0.50	mg/kg	SW846 6010A	5/19- 5/25/95
Barium	ND	1.0	mg/kg	SW846 6010A	5/19- 5/23/95
Cadmium	ND	1.0	mg/kg	SW846 6010A	5/19- 5/25/95
Chromium	ND	2.0	mg/kg	SW846 6010A	5/19- 5/23/95
Copper	ND	1.0	mg/kg	SW846 6010A	5/19- 5/23/95
Nickel	ND	4.0	mg/kg	SW846 6010A	5/19- 5/23/95
Lead	**0.46**	**0.30**	**mg/kg**	**SW846 6010A**	**5/19- 5/25/95**
Selenium	ND	0.50	mg/kg	SW846 6010A	5/19- 5/25/95
Zinc	ND	5.0	mg/kg	SW846 6010A	5/19- 5/23/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

INTRA-LAB BLANK REPORT

LAB #: A5E180039

- - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	PREPARATION - ANALYSIS DATE	QC BATCH
Carbon, Total Organic	ND	100	mg/kg	6/05/95	5156044

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

MATRIX SPIKE REPORT

QC BATCH: 5145045
LAB #: A5E160013-001 S
MATRIX: SOLID

WO #: A4JWN
PREPARATION DATE: 5/24/95
DATE ANALYZED: 5/24/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	76	82	(60-136)	8.6	(0-28)
Trichloroethene	82	79	(79-120)	4.0	(0-16)
Chlorobenzene	96	96	(90-115)	0.70	(0-20)
Toluene	97	105	(78-129)	7.8	(0-21)
Benzene	88	89	(79-124)	1.8	(0-19)

Calculations are performed before rounding to avoid round-off errors in calculated results

MATRIX SPIKE REPORT

LAB #: A5E180039-006

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
		BATCH:5139001 MATRIX:		SOLID		
Silver	92	95	(62-122)	2.6	(0-20)	5/19- 6/01/95
Arsenic	86	86	(80-120)	0.47	(0-20)	5/19- 5/25/95
Barium	99	105	(45-142)	5.6	(0-20)	5/19- 6/01/95
Cadmium	92	97	(63-114)	5.6	(0-20)	5/19- 6/01/95
Chromium	100	102	(58-130)	2.1	(0-20)	5/19- 6/01/95
Copper	101	101	(72-116)	0.49	(0-20)	5/19- 6/01/95
Nickel	98	100	(69-111)	1.4	(0-20)	5/19- 6/01/95
Lead	86	85	(80-120)	1.1	(0-20)	5/19- 5/25/95
Selenium	81	80	(80-120)	1.1	(0-20)	5/19- 5/25/95
Zinc	100	111	(50-117)	10	(0-20)	5/19- 6/01/95

NOTE:

Calculations are performed before rounding to avoid round-off errors in calculated results

CRA
CONESTOGA–ROVERS & ASSOCIATES
10400 West Higgins Road – Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Quanterra

REFERENCE NUMBER: 3627

PROJECT NAME: Synthetic products

SAMPLER'S SIGNATURE: John Hargens PRINTED NAME: John Hargens

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	TCL-VOC	TAL-metals*	grain size	TOC	Bulk density	moisture content				REMARKS
	5/14/95	11:00	S-051495-JH-013	soil	2			✓	✓						
	5/16/95	1300	S-051695-JH-014		1					✓	✓				Split spoon liner
		1310	S-051695-JH-015		2			✓	✓						
		1615	S-051695-JH-016		2			✓	✓						
		1635	S-051695-JH-017		1					✓	✓				S.S. liner
		1500	S-051695-JH-018		2	✓	✓								* run TAL metals
	5/17/95	1230	S-051795-JH-019		2	✓	✓								arsenic, barium, cadmi
			Temp Blank	water	1										chromium, copper, lea
															nickel, selenium,
															silver, + zinc – then
															archive rest of sampl
															for TCLP metals Test
			TOTAL NUMBER OF CONTAINERS		13										

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
① John Hargens	5/17/95	1600	②		
②			③		
③			④		

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 3638964711

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: [signature] DATE: 5/18/95 TIME: 11:50

№ 4871

1001(FORMS)–APRIL 29, 93–REV.0–(C)(F–01)

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Quanterra

REFERENCE NUMBER: 3627

PROJECT NAME: Synthetic Products

SAMPLER'S SIGNATURE: John Hargens PRINTED NAME: John Hargens

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	TOC	Grain size	permeability	Bulk Density	moisture content					REMARKS
~~5-9-95~~			~~S-050995-JH-001~~	~~soil~~	~~2~~	~~✓~~	~~✓~~								
	5-9-95		S-050995-JH-002		1			✓	✓	✓					shelby tube
	5-14-95		S-051495-JH-011		1				✓	✓					shelby tube
			TOTAL NUMBER OF CONTAINERS		2										

RELINQUISHED BY:	DATE: / TIME:	RECEIVED BY:	DATE: / TIME:
① John Hargens		②	
②		③	
③		④	

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 3638964711

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: Kris M Brooks
DATE: 51855 TIME: 135

№ 4868

1001(FORMS)-APRIL 29, 93-REV.0-(C)(F-01)

Rec'd CRA

JUL 10 1995

Quanterra
Environmental Services

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
216 497-0772 Fax

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Daniel J. Wright
Project Manager

July 7, 1995

CHECKED AGAINST PRELIMINARY DATA
Date 7-10-95
Initials NMB

VALIDATED DATA
Project # 3627
Lab Report # A5F170003
Initials NMB
Date 8-21-95

Quanterra
Environmental Services

PROJECT NARRATIVE

The following report contains the analytical results for seven water samples submitted to Quanterra-North Canton by Conestoga Rovers & Associates, Inc. from the Synthetic Products Site, project number 3627. The samples were received June 16, 1995, according to documented sample acceptance procedures.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the following page in accordance with the methods indicated. Preliminary results were provided by facsimile transmission to Nancy Bergstrom on June 30, 1995. A summary of QC data for these analyses is included at the end of the report.

Quanterra
Environmental Services

ANALYTICAL METHODS SUMMARY

Parameters	Methods
TCL Volatile Organics	SW846 8260
pH Aqueous	MCAWW 150.1
Solids, Total Suspended	MCAWW 160.2
Biochemical Oxygen Demand - 5 Day	MCAWW 405.1
Silver	SW846 6010A
Barium	SW846 6010A
Cadmium	SW846 6010A
Chromium	SW846 6010A
Copper	SW846 6010A
Nickel	SW846 6010A
Zinc	SW846 6010A
Arsenic	SW846 6010A
Lead	SW846 6010A
Selenium	SW846 6010A

References:

MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL: Cincinnati, OH: March 1983 and subsequent revisions

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, September, 1986 and subsequent revisions

Quanterra
Environmental Services

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	
A53H2	A5F170003-001	GW-061495-MAW-013	6/14/95	16:40
A53H3	A5F170003-002	GW-061595-MAW-014 (MS/MSD)	6/15/95	8:45
A53H4	A5F170003-003	GW-061595-MAW-015	6/15/95	9:00
A53H5	A5F170003-004	GW-061595-MAW-016	6/15/95	9:45
A53H6	A5F170003-005	GW-061595-MAW-017	6/15/95	10:10
A53H7	A5F170003-006	GW-061595-MAW-018	6/15/95	10:15
A53H8	A5F170003-007	TRIP BLANK	6/15/95	

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-013

WO #: A53H210A
LAB #: A5F170003-001
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 16:40
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	06/24/95	5178128
Bromomethane	ND	1.0	SW846 8260	06/24/95	5178128
Vinyl chloride	ND	1.0	SW846 8260	06/24/95	5178128
Chloroethane	ND	1.0	SW846 8260	06/24/95	5178128
Methylene chloride	ND	1.0	SW846 8260	06/24/95	5178128
Acetone	ND	10	SW846 8260	06/24/95	5178128
Carbon disulfide	ND	1.0	SW846 8260	06/24/95	5178128
1,1-Dichloroethene	ND	1.0	SW846 8260	06/24/95	5178128
1,1-Dichloroethane	**1.0**	**1.0**	**SW846 8260**	**06/24/95**	**5178128**
1,2-Dichloroethene, Total	**1.6**	**1.0**	**SW846 8260**	**06/24/95**	**5178128**
Chloroform	ND	1.0	SW846 8260	06/24/95	5178128
1,2-Dichloroethane	ND	1.0	SW846 8260	06/24/95	5178128
2-Butanone	ND	10	SW846 8260	06/24/95	5178128
1,1,1-Trichloroethane	ND	1.0	SW846 8260	06/24/95	5178128
Carbon tetrachloride	ND	1.0	SW846 8260	06/24/95	5178128
Bromodichloromethane	ND	1.0	SW846 8260	06/24/95	5178128
1,2-Dichloropropane	ND	1.0	SW846 8260	06/24/95	5178128
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	06/24/95	5178128
Trichloroethene	ND	1.0	SW846 8260	06/24/95	5178128
Dibromochloromethane	ND	1.0	SW846 8260	06/24/95	5178128
1,1,2-Trichloroethane	ND	1.0	SW846 8260	06/24/95	5178128
Benzene	ND	1.0	SW846 8260	06/24/95	5178128
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	06/24/95	5178128

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	95	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	104	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-013

WO #: A53H210A
LAB #: A5F170003-001
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 16:40
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	1.0	SW846 8260	06/24/95	5178128
4-Methyl-2-pentanone	ND	10	SW846 8260	06/24/95	5178128
2-Hexanone	ND	10	SW846 8260	06/24/95	5178128
Tetrachloroethene	ND	1.0	SW846 8260	06/24/95	5178128
Toluene	ND	1.0	SW846 8260	06/24/95	5178128
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	06/24/95	5178128
Chlorobenzene	ND	1.0	SW846 8260	06/24/95	5178128
Ethylbenzene	ND	1.0	SW846 8260	06/24/95	5178128
Styrene	ND	1.0	SW846 8260	06/24/95	5178128
Xylenes, Total	ND	1.0	SW846 8260	06/24/95	5178128

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	95	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	104	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061495-MAW-013

WO #: A53H2
LAB #: A5F170003-001
MATRIX: WATER

DATE SAMPLED: 6/14/95
TIME SAMPLED: 16:40
DATE RECEIVED: 6/16/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Barium	0.13	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Cadmium	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Chromium	0.028	0.020	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Copper	0.022	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Nickel	ND	0.040	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Zinc	0.091	0.050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Arsenic	0.0089	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Lead	0.0074	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Selenium	ND	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-014 (MS/MSD)

WO #: A53H310A
LAB #: A5F170003-002
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 8:45
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	06/24/95	5178128
Bromomethane	ND	1.0	SW846 8260	06/24/95	5178128
Vinyl chloride	**1.1**	**1.0**	**SW846 8260**	**06/24/95**	**5178128**
Chloroethane	ND	1.0	SW846 8260	06/24/95	5178128
Methylene chloride	ND	1.0	SW846 8260	06/24/95	5178128
Acetone	ND	10	SW846 8260	06/24/95	5178128
Carbon disulfide	ND	1.0	SW846 8260	06/24/95	5178128
1,1-Dichloroethene	ND	1.0	SW846 8260	06/24/95	5178128
1,1-Dichloroethane	**1.4**	**1.0**	**SW846 8260**	**06/24/95**	**5178128**
1,2-Dichloroethene, Total	**6.3**	**1.0**	**SW846 8260**	**06/24/95**	**5178128**
Chloroform	ND	1.0	SW846 8260	06/24/95	5178128
1,2-Dichloroethane	ND	1.0	SW846 8260	06/24/95	5178128
2-Butanone	ND	10	SW846 8260	06/24/95	5178128
1,1,1-Trichloroethane	**1.2**	**1.0**	**SW846 8260**	**06/24/95**	**5178128**
Carbon tetrachloride	ND	1.0	SW846 8260	06/24/95	5178128
Bromodichloromethane	ND	1.0	SW846 8260	06/24/95	5178128
1,2-Dichloropropane	ND	1.0	SW846 8260	06/24/95	5178128
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	06/24/95	5178128
Trichloroethene	ND	1.0	SW846 8260	06/24/95	5178128
Dibromochloromethane	ND	1.0	SW846 8260	06/24/95	5178128
1,1,2-Trichloroethane	ND	1.0	SW846 8260	06/24/95	5178128
Benzene	**2.7**	**1.0**	**SW846 8260**	**06/24/95**	**5178128**
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	06/24/95	5178128

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	97	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	103	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-014 (MS/MSD)

WO #: A53H310A
LAB #: A5F170003-002
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 8:45
DATE RECEIVED: 6/16/95

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	1.0	SW846 8260	06/24/95	5178128
4-Methyl-2-pentanone	ND	10	SW846 8260	06/24/95	5178128
2-Hexanone	ND	10	SW846 8260	06/24/95	5178128
Tetrachloroethene	ND	1.0	SW846 8260	06/24/95	5178128
Toluene	**1.3**	**1.0**	**SW846 8260**	**06/24/95**	**5178128**
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	06/24/95	5178128
Chlorobenzene	ND	1.0	SW846 8260	06/24/95	5178128
Ethylbenzene	ND	1.0	SW846 8260	06/24/95	5178128
Styrene	ND	1.0	SW846 8260	06/24/95	5178128
Xylenes, Total	ND	1.0	SW846 8260	06/24/95	5178128

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	97	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	103	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-014 (MS/MSD)

WO #: A53H3
LAB #: A5F170003-002
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 8:45
DATE RECEIVED: 6/16/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Barium	0.097	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Cadmium	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Chromium	ND	0.020	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Copper	0.015	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Nickel	ND	0.040	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Zinc	0.11	0.050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Arsenic	0.041	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Lead	0.0073	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Selenium	ND	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-015

WO #: A53H410A
LAB #: A5F170003-003
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 9:00
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	06/24/95	5178128
Bromomethane	ND	1.0	SW846 8260	06/24/95	5178128
Vinyl chloride	ND	1.0	SW846 8260	06/24/95	5178128
Chloroethane	ND	1.0	SW846 8260	06/24/95	5178128
Methylene chloride	ND	1.0	SW846 8260	06/24/95	5178128
Acetone	ND	10	SW846 8260	06/24/95	5178128
Carbon disulfide	ND	1.0	SW846 8260	06/24/95	5178128
1,1-Dichloroethene	ND	1.0	SW846 8260	06/24/95	5178128
1,1-Dichloroethane	ND	1.0	SW846 8260	06/24/95	5178128
1,2-Dichloroethene, Total	ND	1.0	SW846 8260	06/24/95	5178128
Chloroform	ND	1.0	SW846 8260	06/24/95	5178128
1,2-Dichloroethane	ND	1.0	SW846 8260	06/24/95	5178128
2-Butanone	ND	10	SW846 8260	06/24/95	5178128
1,1,1-Trichloroethane	ND	1.0	SW846 8260	06/24/95	5178128
Carbon tetrachloride	ND	1.0	SW846 8260	06/24/95	5178128
Bromodichloromethane	ND	1.0	SW846 8260	06/24/95	5178128
1,2-Dichloropropane	ND	1.0	SW846 8260	06/24/95	5178128
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	06/24/95	5178128
Trichloroethene	ND	1.0	SW846 8260	06/24/95	5178128
Dibromochloromethane	ND	1.0	SW846 8260	06/24/95	5178128
1,1,2-Trichloroethane	ND	1.0	SW846 8260	06/24/95	5178128
Benzene	**2.5**	**1.0**	**SW846 8260**	**06/24/95**	**5178128**
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	06/24/95	5178128

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	101	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-015

WO #: A53H410A
LAB #: A5F170003-003
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 9:00
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	1.0	SW846 8260	06/24/95	5178128
4-Methyl-2-pentanone	ND	10	SW846 8260	06/24/95	5178128
2-Hexanone	ND	10	SW846 8260	06/24/95	5178128
Tetrachloroethene	ND	1.0	SW846 8260	06/24/95	5178128
Toluene	ND	1.0	SW846 8260	06/24/95	5178128
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	06/24/95	5178128
Chlorobenzene	ND	1.0	SW846 8260	06/24/95	5178128
Ethylbenzene	ND	1.0	SW846 8260	06/24/95	5178128
Styrene	ND	1.0	SW846 8260	06/24/95	5178128
Xylenes, Total	ND	1.0	SW846 8260	06/24/95	5178128

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	101	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-015

WO #: A53H4
LAB #: A5F170003-003
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 9:00
DATE RECEIVED: 6/16/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Barium	**0.12**	**0.010**	**mg/L**	**SW846 6010A**	**6/26- 6/29/95**	**5177017**
Cadmium	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Chromium	ND	0.020	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Copper	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Nickel	ND	0.040	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Zinc	**0.081**	**0.050**	**mg/L**	**SW846 6010A**	**6/26- 6/29/95**	**5177017**
Arsenic	ND	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Lead	**0.0073**	**0.0050**	**mg/L**	**SW846 6010A**	**6/26- 6/29/95**	**5177017**
Selenium	ND	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-016

WO #: A53H510A
LAB #: A5F170003-004
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 9:45
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	06/27/95	5179140
Bromomethane	ND	1.0	SW846 8260	06/27/95	5179140
Vinyl chloride	ND	1.0	SW846 8260	06/27/95	5179140
Chloroethane	ND	1.0	SW846 8260	06/27/95	5179140
Methylene chloride	ND	1.0	SW846 8260	06/27/95	5179140
Acetone	**21**	**10**	**SW846 8260**	**06/27/95**	**5179140**
Carbon disulfide	ND	1.0	SW846 8260	06/27/95	5179140
1,1-Dichloroethene	ND	1.0	SW846 8260	06/27/95	5179140
1,1-Dichloroethane	ND	1.0	SW846 8260	06/27/95	5179140
1,2-Dichloroethene, Total	ND	1.0	SW846 8260	06/27/95	5179140
Chloroform	**4.9**	**1.0**	**SW846 8260**	**06/27/95**	**5179140**
1,2-Dichloroethane	ND	1.0	SW846 8260	06/27/95	5179140
2-Butanone	ND	10	SW846 8260	06/27/95	5179140
1,1,1-Trichloroethane	ND	1.0	SW846 8260	06/27/95	5179140
Carbon tetrachloride	ND	1.0	SW846 8260	06/27/95	5179140
Bromodichloromethane	ND	1.0	SW846 8260	06/27/95	5179140
1,2-Dichloropropane	ND	1.0	SW846 8260	06/27/95	5179140
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	06/27/95	5179140
Trichloroethene	ND	1.0	SW846 8260	06/27/95	5179140
Dibromochloromethane	ND	1.0	SW846 8260	06/27/95	5179140
1,1,2-Trichloroethane	ND	1.0	SW846 8260	06/27/95	5179140
Benzene	ND	1.0	SW846 8260	06/27/95	5179140
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	06/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	103	(88 - 110)
Bromofluorobenzene	102	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-016

WO #: A53H510A
LAB #: A5F170003-004
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 9:45
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	1.0	SW846 8260	06/27/95	5179140
4-Methyl-2-pentanone	ND	10	SW846 8260	06/27/95	5179140
2-Hexanone	ND	10	SW846 8260	06/27/95	5179140
Tetrachloroethene	ND	1.0	SW846 8260	06/27/95	5179140
Toluene	ND	1.0	SW846 8260	06/27/95	5179140
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	06/27/95	5179140
Chlorobenzene	ND	1.0	SW846 8260	06/27/95	5179140
Ethylbenzene	ND	1.0	SW846 8260	06/27/95	5179140
Styrene	ND	1.0	SW846 8260	06/27/95	5179140
Xylenes, Total	ND	1.0	SW846 8260	06/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	103	(88 - 110)
Bromofluorobenzene	102	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-016

WO #: A53H5
LAB #: A5F170003-004
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 9:45
DATE RECEIVED: 6/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Barium	0.11	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Cadmium	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Chromium	0.021	0.020	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Copper	0.026	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Nickel	ND	0.040	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Zinc	0.085	0.050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Arsenic	0.0064	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Lead	0.016	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Selenium	ND	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-017

WO #: A53H610A
LAB #: A5F170003-005
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 10:10
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	42	SW846 8260	06/27/95	5179140
Bromomethane	ND	42	SW846 8260	06/27/95	5179140
Vinyl chloride	ND	42	SW846 8260	06/27/95	5179140
Chloroethane	ND	42	SW846 8260	06/27/95	5179140
Methylene chloride	ND	42	SW846 8260	06/27/95	5179140
Acetone	**1,100**	**420**	**SW846 8260**	**06/27/95**	**5179140**
Carbon disulfide	ND	42	SW846 8260	06/27/95	5179140
1,1-Dichloroethene	ND	42	SW846 8260	06/27/95	5179140
1,1-Dichloroethane	**42**	**42**	**SW846 8260**	**06/27/95**	**5179140**
1,2-Dichloroethene, Total	ND	42	SW846 8260	06/27/95	5179140
Chloroform	ND	42	SW846 8260	06/27/95	5179140
1,2-Dichloroethane	ND	42	SW846 8260	06/27/95	5179140
2-Butanone	ND	420	SW846 8260	06/27/95	5179140
1,1,1-Trichloroethane	**260**	**42**	**SW846 8260**	**06/27/95**	**5179140**
Carbon tetrachloride	ND	42	SW846 8260	06/27/95	5179140
Bromodichloromethane	ND	42	SW846 8260	06/27/95	5179140
1,2-Dichloropropane	ND	42	SW846 8260	06/27/95	5179140
cis-1,3-Dichloropropene	ND	42	SW846 8260	06/27/95	5179140
Trichloroethene	ND	42	SW846 8260	06/27/95	5179140
Dibromochloromethane	ND	42	SW846 8260	06/27/95	5179140
1,1,2-Trichloroethane	ND	42	SW846 8260	06/27/95	5179140
Benzene	**550**	**42**	**SW846 8260**	**06/27/95**	**5179140**
trans-1,3-Dichloropropene	ND	42	SW846 8260	06/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	99	(76 - 114)
Toluene-d8	103	(88 - 110)
Bromofluorobenzene	105	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-017

WO #: A53H610A
LAB #: A5F170003-005
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 10:10
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	42	SW846 8260	06/27/95	5179140
4-Methyl-2-pentanone	ND	420	SW846 8260	06/27/95	5179140
2-Hexanone	ND	420	SW846 8260	06/27/95	5179140
Tetrachloroethene	ND	42	SW846 8260	06/27/95	5179140
Toluene	**160**	**42**	**SW846 8260**	**06/27/95**	**5179140**
1,1,2,2-Tetrachloroethane	ND	42	SW846 8260	06/27/95	5179140
Chlorobenzene	ND	42	SW846 8260	06/27/95	5179140
Ethylbenzene	ND	42	SW846 8260	06/27/95	5179140
Styrene	ND	42	SW846 8260	06/27/95	5179140
Xylenes, Total	ND	42	SW846 8260	06/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	99	(76 - 114)
Toluene-d8	103	(88 - 110)
Bromofluorobenzene	105	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-017

WO #: A53H6
LAB #: A5F170003-005
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 10:10
DATE RECEIVED: 6/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Barium	0.48	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Cadmium	0.057	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Chromium	0.12	0.020	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Copper	0.20	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Nickel	0.11	0.040	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Zinc	0.92	0.050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Arsenic	0.067	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Lead	0.11	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Selenium	ND	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-017

WO #: A53H6
LAB #: A5F170003-005
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 10:10
DATE RECEIVED: 6/16/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
pH Aqueous	6.7		su	MCAWW 150.1	6/16/95	5171061
Solids, Total Suspended	3,100	110	mg/L	MCAWW 160.2	6/20- 6/21/95	5173125
Biochemical Oxygen Demand - 5 Day	640	20	mg/L	MCAWW 405.1	6/16- 6/21/95	5167138

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-018

WO #: A53H710A
LAB #: A5F170003-006
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 10:15
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	50	SW846 8260	06/27/95	5179140
Bromomethane	ND	50	SW846 8260	06/27/95	5179140
Vinyl chloride	ND	50	SW846 8260	06/27/95	5179140
Chloroethane	ND	50	SW846 8260	06/27/95	5179140
Methylene chloride	ND	50	SW846 8260	06/27/95	5179140
Acetone	ND	500	SW846 8260	06/27/95	5179140
Carbon disulfide	ND	50	SW846 8260	06/27/95	5179140
1,1-Dichloroethene	ND	50	SW846 8260	06/27/95	5179140
1,1-Dichloroethane	ND	50	SW846 8260	06/27/95	5179140
1,2-Dichloroethene, Total	ND	50	SW846 8260	06/27/95	5179140
Chloroform	ND	50	SW846 8260	06/27/95	5179140
1,2-Dichloroethane	ND	50	SW846 8260	06/27/95	5179140
2-Butanone	ND	500	SW846 8260	06/27/95	5179140
1,1,1-Trichloroethane	**62**	**50**	**SW846 8260**	**06/27/95**	**5179140**
Carbon tetrachloride	ND	50	SW846 8260	06/27/95	5179140
Bromodichloromethane	ND	50	SW846 8260	06/27/95	5179140
1,2-Dichloropropane	ND	50	SW846 8260	06/27/95	5179140
cis-1,3-Dichloropropene	ND	50	SW846 8260	06/27/95	5179140
Trichloroethene	ND	50	SW846 8260	06/27/95	5179140
Dibromochloromethane	ND	50	SW846 8260	06/27/95	5179140
1,1,2-Trichloroethane	ND	50	SW846 8260	06/27/95	5179140
Benzene	**1,500**	**50**	**SW846 8260**	**06/27/95**	**5179140**
trans-1,3-Dichloropropene	ND	50	SW846 8260	06/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	105	(88 - 110)
Bromofluorobenzene	106	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-018

WO #: A53H710A
LAB #: A5F170003-006
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 10:15
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	50	SW846 8260	06/27/95	5179140
4-Methyl-2-pentanone	ND	500	SW846 8260	06/27/95	5179140
2-Hexanone	ND	500	SW846 8260	06/27/95	5179140
Tetrachloroethene	ND	50	SW846 8260	06/27/95	5179140
Toluene	**590**	**50**	**SW846 8260**	**06/27/95**	**5179140**
1,1,2,2-Tetrachloroethane	ND	50	SW846 8260	06/27/95	5179140
Chlorobenzene	ND	50	SW846 8260	06/27/95	5179140
Ethylbenzene	ND	50	SW846 8260	06/27/95	5179140
Styrene	ND	50	SW846 8260	06/27/95	5179140
Xylenes, Total	ND	50	SW846 8260	06/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	105	(88 - 110)
Bromofluorobenzene	106	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-018

WO #: A53H7
LAB #: A5F170003-006
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 10:15
DATE RECEIVED: 6/16/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Silver	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Barium	1.4	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Cadmium	0.10	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Chromium	0.030	0.020	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Copper	0.091	0.010	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Nickel	ND	0.040	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Zinc	0.71	0.050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Arsenic	0.039	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Lead	0.083	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017
Selenium	ND	0.0050	mg/L	SW846 6010A	6/26- 6/29/95	5177017

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-061595-MAW-018

WO #: A53H7
LAB #: A5F170003-006
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED: 10:15
DATE RECEIVED: 6/16/95

- - - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
pH Aqueous	6.6		su	MCAWW 150.1	6/16/95	5171061
Solids, Total Suspended	770	10	mg/L	MCAWW 160.2	6/20- 6/21/95	5173125
Biochemical Oxygen Demand - 5 Day	12	2	mg/L	MCAWW 405.1	6/16- 6/21/95	5167138

NOTE: AS RECEIVED

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

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WO #: A53H8101
LAB #: A5F170003-007
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED:
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	06/27/95	5179140
Bromomethane	ND	1.0	SW846 8260	06/27/95	5179140
Vinyl chloride	ND	1.0	SW846 8260	06/27/95	5179140
Chloroethane	ND	1.0	SW846 8260	06/27/95	5179140
Methylene chloride	ND	1.0	SW846 8260	06/27/95	5179140
Acetone	ND	10	SW846 8260	06/27/95	5179140
Carbon disulfide	ND	1.0	SW846 8260	06/27/95	5179140
1,1-Dichloroethene	ND	1.0	SW846 8260	06/27/95	5179140
1,1-Dichloroethane	ND	1.0	SW846 8260	06/27/95	5179140
1,2-Dichloroethene, Total	ND	1.0	SW846 8260	06/27/95	5179140
Chloroform	ND	1.0	SW846 8260	06/27/95	5179140
1,2-Dichloroethane	ND	1.0	SW846 8260	06/27/95	5179140
2-Butanone	ND	10	SW846 8260	06/27/95	5179140
1,1,1-Trichloroethane	ND	1.0	SW846 8260	06/27/95	5179140
Carbon tetrachloride	ND	1.0	SW846 8260	06/27/95	5179140
Bromodichloromethane	ND	1.0	SW846 8260	06/27/95	5179140
1,2-Dichloropropane	ND	1.0	SW846 8260	06/27/95	5179140
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	06/27/95	5179140
Trichloroethene	ND	1.0	SW846 8260	06/27/95	5179140
Dibromochloromethane	ND	1.0	SW846 8260	06/27/95	5179140
1,1,2-Trichloroethane	ND	1.0	SW846 8260	06/27/95	5179140
Benzene	ND	1.0	SW846 8260	06/27/95	5179140
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	06/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	104	(88 - 110)
Bromofluorobenzene	104	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

TRIP BLANK

WO #: A53H8101
LAB #: A5F170003-007
MATRIX: WATER

DATE SAMPLED: 6/15/95
TIME SAMPLED:
DATE RECEIVED: 6/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Bromoform	ND	1.0	SW846 8260	06/27/95	5179140
4-Methyl-2-pentanone	ND	10	SW846 8260	06/27/95	5179140
2-Hexanone	ND	10	SW846 8260	06/27/95	5179140
Tetrachloroethene	ND	1.0	SW846 8260	06/27/95	5179140
Toluene	ND	1.0	SW846 8260	06/27/95	5179140
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	06/27/95	5179140
Chlorobenzene	ND	1.0	SW846 8260	06/27/95	5179140
Ethylbenzene	ND	1.0	SW846 8260	06/27/95	5179140
Styrene	ND	1.0	SW846 8260	06/27/95	5179140
Xylenes, Total	ND	1.0	SW846 8260	06/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	104	(88 - 110)
Bromofluorobenzene	104	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

QUALITY CONTROL SECTION

Quanterra
Environmental Services

QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant.

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5178128
LAB #: A5F270000-128 C

PREPARATION DATE: 6/23/95
DATE ANALYZED: 6/23/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	92	(70-143)
Trichloroethene	92	(76-121)
Chlorobenzene	93	(81-121)
Toluene	93	(79-122)
Benzene	97	(79-125)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5179140
LAB #: A5F280000-140 C

PREPARATION DATE: 6/27/95
DATE ANALYZED: 6/27/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	96	(70-143)
Trichloroethene	90	(76-121)
Chlorobenzene	94	(81-121)
Toluene	94	(79-122)
Benzene	93	(79-125)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

LAB #: A5F170003

METALS

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5177017		
Silver	110	(80-120)	6/26- 6/29/95
Arsenic	102	(80-120)	6/26- 6/29/95
Barium	99	(80-120)	6/26- 6/29/95
Cadmium	102	(80-120)	6/26- 6/29/95
Chromium	103	(80-120)	6/26- 6/29/95
Copper	99	(80-120)	6/26- 6/29/95
Nickel	102	(80-120)	6/26- 6/29/95
Lead	100	(80-120)	6/26- 6/29/95
Selenium	100	(80-120)	6/26- 6/29/95
Zinc	107	(80-120)	6/26- 6/29/95

Quanterra
Environmental Services

CHECK SAMPLE REPORT

LAB #: A5F170003

- - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - -

COMPOUND	SPIKE PERCENT RECOVERY	LIMITS	PREPARATION - ANALYSIS DATE	Q/C BATCH
Solids, Total Suspended	74	(64-120)	6/20- 6/21/95	5173125
Biochemical Oxygen Demand - 5 Day	64	(58-115)	6/16- 6/21/95	5167138

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F270000-128

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	6/23/95	5178128
Benzene	ND	1.0	6/23/95	5178128
Bromodichloromethane	ND	1.0	6/23/95	5178128
Bromoform	ND	1.0	6/23/95	5178128
Bromomethane	ND	1.0	6/23/95	5178128
Carbon disulfide	ND	1.0	6/23/95	5178128
Carbon tetrachloride	ND	1.0	6/23/95	5178128
Chlorobenzene	ND	1.0	6/23/95	5178128
Dibromochloromethane	ND	1.0	6/23/95	5178128
Chloroethane	ND	1.0	6/23/95	5178128
Chloroform	ND	1.0	6/23/95	5178128
Chloromethane	ND	1.0	6/23/95	5178128
1,1-Dichloroethane	ND	1.0	6/23/95	5178128
1,2-Dichloroethane	ND	1.0	6/23/95	5178128
1,1-Dichloroethene	ND	1.0	6/23/95	5178128
1,2-Dichloroethene, Total	ND	1.0	6/23/95	5178128
1,2-Dichloropropane	ND	1.0	6/23/95	5178128
cis-1,3-Dichloropropene	ND	1.0	6/23/95	5178128
trans-1,3-Dichloropropene	ND	1.0	6/23/95	5178128
Ethylbenzene	ND	1.0	6/23/95	5178128
2-Hexanone	ND	10	6/23/95	5178128
Methylene chloride	ND	1.0	6/23/95	5178128
4-Methyl-2-pentanone	ND	10	6/23/95	5178128
Styrene	ND	1.0	6/23/95	5178128
1,1,2,2-Tetrachloroethane	ND	1.0	6/23/95	5178128

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	103	(88 - 110)
Bromofluorobenzene	104	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F270000-128

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	1.0	6/23/95	5178128
Toluene	ND	1.0	6/23/95	5178128
1,1,1-Trichloroethane	ND	1.0	6/23/95	5178128
1,1,2-Trichloroethane	ND	1.0	6/23/95	5178128
Trichloroethene	ND	1.0	6/23/95	5178128
Vinyl chloride	ND	1.0	6/23/95	5178128
Xylenes, Total	ND	1.0	6/23/95	5178128
2-Butanone	ND	10	6/23/95	5178128

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	103	(88 - 110)
Bromofluorobenzene	104	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F280000-140

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	6/27/95	5179140
Benzene	ND	1.0	6/27/95	5179140
Bromodichloromethane	ND	1.0	6/27/95	5179140
Bromoform	ND	1.0	6/27/95	5179140
Bromomethane	ND	1.0	6/27/95	5179140
2-Butanone	ND	10	6/27/95	5179140
Carbon disulfide	ND	1.0	6/27/95	5179140
Carbon tetrachloride	ND	1.0	6/27/95	5179140
Chlorobenzene	ND	1.0	6/27/95	5179140
Dibromochloromethane	ND	1.0	6/27/95	5179140
Chloroethane	ND	1.0	6/27/95	5179140
Chloroform	ND	1.0	6/27/95	5179140
Chloromethane	ND	1.0	6/27/95	5179140
1,1-Dichloroethane	ND	1.0	6/27/95	5179140
1,2-Dichloroethane	ND	1.0	6/27/95	5179140
1,1-Dichloroethene	ND	1.0	6/27/95	5179140
1,2-Dichloroethene, Total	ND	1.0	6/27/95	5179140
1,2-Dichloropropane	ND	1.0	6/27/95	5179140
cis-1,3-Dichloropropene	ND	1.0	6/27/95	5179140
trans-1,3-Dichloropropene	ND	1.0	6/27/95	5179140
Ethylbenzene	ND	1.0	6/27/95	5179140
2-Hexanone	ND	10	6/27/95	5179140
Methylene chloride	ND	1.0	6/27/95	5179140
4-Methyl-2-pentanone	ND	10	6/27/95	5179140
Styrene	ND	1.0	6/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	99	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	106	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F280000-140

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
1,1,2,2-Tetrachloroethane	ND	1.0	6/27/95	5179140
Tetrachloroethene	ND	1.0	6/27/95	5179140
Toluene	ND	1.0	6/27/95	5179140
1,1,1-Trichloroethane	ND	1.0	6/27/95	5179140
1,1,2-Trichloroethane	ND	1.0	6/27/95	5179140
Trichloroethene	ND	1.0	6/27/95	5179140
Vinyl chloride	ND	1.0	6/27/95	5179140
Xylenes, Total	ND	1.0	6/27/95	5179140

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	99	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	106	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F170003

METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5177017			
Silver	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95
Arsenic	ND	0.0050	mg/L	SW846 6010A	6/26- 6/29/95
Barium	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95
Cadmium	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95
Chromium	ND	0.020	mg/L	SW846 6010A	6/26- 6/29/95
Copper	ND	0.010	mg/L	SW846 6010A	6/26- 6/29/95
Nickel	ND	0.040	mg/L	SW846 6010A	6/26- 6/29/95
Lead	ND	0.0050	mg/L	SW846 6010A	6/26- 6/29/95
Selenium	ND	0.0050	mg/L	SW846 6010A	6/26- 6/29/95
Zinc	ND	0.050	mg/L	SW846 6010A	6/26- 6/29/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F170003

- - - - - - - - - - - - - - - - - INORGANIC ANALYTICAL REPORT - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	PREPARATION - ANALYSIS DATE	QC BATCH
Solids, Total Suspended	ND	10	mg/L	6/20- 6/21/95	5173125
Biochemical Oxygen Demand - 5 Day	ND	2	mg/L	6/16- 6/21/95	5167138

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5178128
LAB #: A5F170003-002 S
MATRIX: WATER

WO #: A53H3
PREPARATION DATE: 6/23/95
DATE ANALYZED: 6/24/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	92	90	(55-142)	2.0	(0-19)
Trichloroethene	94	95	(77-124)	0.77	(0-13)
Chlorobenzene	93	98	(85-120)	4.3	(0-10)
Toluene	89	93	(82-122)	4.5	(0-15)
Benzene	91	93	(83-123)	2.4	(0-13)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

LAB #: A5F170003-002

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
		BATCH:5177017 MATRIX:		WATER		
Silver	106	105	(80-120)	0.70	(0-20)	6/26- 6/29/95
Arsenic	98	97	(80-120)	0.78	(0-20)	6/26- 6/29/95
Barium	97	95	(80-120)	1.6	(0-20)	6/26- 6/29/95
Cadmium	99	98	(80-120)	1.9	(0-20)	6/26- 6/29/95
Chromium	108	106	(80-120)	1.5	(0-20)	6/26- 6/29/95
Copper	101	94	(80-120)	6.6	(0-20)	6/26- 6/29/95
Nickel	103	102	(80-120)	1.5	(0-20)	6/26- 6/29/95
Lead	96	94	(80-120)	1.5	(0-20)	6/26- 6/29/95
Selenium	98	96	(80-120)	1.5	(0-20)	6/26- 6/29/95
Zinc	92	89	(80-120)	3.8	(0-20)	6/26- 6/29/95

NOTE:

Calculations are performed before rounding to avoid round-off errors in calculated results

CRA
CONESTOGA–ROVERS & ASSOCIATES
10400 West Higgins Road – Suite 103
Rosemont, IL 60018 (708)299–9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Quanterra

REFERENCE NUMBER: 3627

PROJECT NAME: Synthetic Products

SAMPLER'S SIGNATURE:

PRINTED NAME: Marc Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: TCL VOC	PARAMETERS: Selected TAL Metals	PARAMETERS: TSS, BOD, pH	REMARKS
	06/14/95	16:40	GW-061495-MAW-013	Water	4	X	X		
	06/15/95	08:45	GW-061595-MAW-014		11	X	X		MS/MSD
		09:00	GW-061595-MAW-015		4	X	X		
		09:45	GW-061595-MAW-016		4	X	X		
		1010	GW-061595-MAW-017		5	X	X	X	TAL metals–
		1015	GW-061595-MAW-018		5	X	X	X	arsenic, cadmium,
			Temp Blank		1				chromium, copper,
			Trip Blank		1	X			lead, nickel, selenium,
									silver, zinc

TOTAL NUMBER OF CONTAINERS 35

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
①	6/15/95	1600	②		
②			③		
③			④		

METHOD OF SHIPMENT: Fed Ex

AIR BILL No. 7115099320

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: Marc Willis, John Hargens

RECEIVED FOR LABORATORY BY: [signature]

DATE: 95/6/16 TIME: 9:05am

№ 3892

1001(FORMS)–APRIL 29, 93–REV.0–(C)(F–01)

Rec'd CRA

JUL 26 1995

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
216 497-0772 Fax

Quanterra Environmental Services

ASF 280036

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS COMPANY

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Daniel J. Wright
Project Manager

July 25, 1995

CHECKED AGAINST PRELIMINARY DATA
Date 7-26-95
Initials DMB

VALIDATED DATA
Project # 3627
Lab Report # ASF 280036
Initials DMB
Date 8-21-95

Quanterra
Environmental Services

PROJECT NARRATIVE

The following report contains the analytical results for five solid samples submitted to Quanterra-North Canton by Conestoga Rovers & Associates, Inc. from the Synthetic Products Company Site, project number 3627. The samples were received May 15, 1995, according to documented sample acceptance procedures. On June 27, 1995, TCLP Metals analysis was requested. The results of these analyses are provided in this report.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the following page in accordance with the methods indicated. Preliminary results were provided by facsimile transmission to Nancy Bergstrom on July 12, 1995. A summary of QC data for these analyses is included at the end of the report.

Quanterra
Environmental Services

ANALYTICAL METHODS SUMMARY

Parameters	Methods
TCLP Extraction	SW846 1311
Silver	SW846 6010A
Arsenic	SW846 6010A
Barium	SW846 6010A
Cadmium	SW846 6010A
Chromium	SW846 6010A
Copper	SW846 6010A
Nickel	SW846 6010A
Lead	SW846 6010A
Selenium	SW846 6010A
Zinc	SW846 6010A

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, September, 1986 and subsequent revisions

Quanterra
Environmental Services

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	
A580E	A5F280026-001	S-051295-JH-003 (MS/MSD)	5/12/95	9:45
A580L	A5F280026-002	S-051295-JH-004	5/12/95	13:15
A580Q	A5F280026-003	S-051395-JH-007	5/13/95	10:15
A580T	A5F280026-004	S-051495-JH-012	5/14/95	10:45
A5810	A5F280026-005	S-051795-JH-019	5/17/95	12:30

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-003 (MS/MSD)

		DATE SAMPLED:	5/12/95
WO #: A580E		TIME SAMPLED:	9:45
LAB #: A5F280026-001		DATE RECEIVED:	5/15/95
MATRIX: SOLID		TCLP EXTRACTION DATE:	7/06/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311 (55 FR 26986)

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
- - TCLP METALS - -						
Silver	ND	0.10	mg/L	SW846 6010A	7/07- 7/10/95	5188071
Arsenic	ND	0.50	mg/L	SW846 6010A	7/07- 7/10/95	5188071
Barium	1.5	1.0	mg/L	SW846 6010A	7/07- 7/10/95	5188071
Cadmium	0.20	0.10	mg/L	SW846 6010A	7/07- 7/10/95	5188071
Chromium	ND	0.10	mg/L	SW846 6010A	7/07- 7/10/95	5188071
Copper	0.066	0.050	mg/L	SW846 6010A	7/07- 7/10/95	5188071
Nickel	ND	0.040	mg/L	SW846 6010A	7/07- 7/10/95	5188071
Lead	ND	0.10	mg/L	SW846 6010A	7/07- 7/10/95	5188071
Selenium	ND	0.30	mg/L	SW846 6010A	7/07- 7/10/95	5188071
Zinc	8.8	0.10	mg/L	SW846 6010A	7/07- 7/10/95	5188071

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051295-JH-004

DATE SAMPLED:	5/12/95
TIME SAMPLED:	13:15
DATE RECEIVED:	5/15/95
TCLP EXTRACTION DATE:	7/06/95

WO #: A580L
LAB #: A5F280026-002
MATRIX: SOLID

- - - - - - - - - - - - - - - - - - - REQUESTED METALS -

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311 (55 FR 26986)

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
- - TCLP METALS - -						
Silver	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Arsenic	ND	0.50	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Barium	**1.3**	**1.0**	**mg/L**	**SW846 6010A**	**7/06- 7/11/95**	**5187007**
Cadmium	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Chromium	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Copper	**8.4**	**0.050**	**mg/L**	**SW846 6010A**	**7/06- 7/11/95**	**5187007**
Nickel	ND	0.040	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Lead	**0.21**	**0.10**	**mg/L**	**SW846 6010A**	**7/06- 7/11/95**	**5187007**
Selenium	ND	0.30	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Zinc	**4.9**	**0.10**	**mg/L**	**SW846 6010A**	**7/06- 7/11/95**	**5187007**

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051395-JH-007

DATE SAMPLED:	5/13/95
TIME SAMPLED:	10:15
DATE RECEIVED:	5/15/95
TCLP EXTRACTION DATE:	7/06/95

WO #: A580Q
LAB #: A5F280026-003
MATRIX: SOLID

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311 (55 FR 26986)

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
- - TCLP METALS - -						
Silver	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Arsenic	ND	0.50	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Barium	ND	1.0	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Cadmium	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Chromium	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Copper	0.092	0.050	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Nickel	ND	0.040	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Lead	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Selenium	ND	0.30	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Zinc	0.62	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051495-JH-012

DATE SAMPLED:	5/14/95
TIME SAMPLED:	10:45
DATE RECEIVED:	5/15/95
TCLP EXTRACTION DATE:	7/06/95

WO #: A580T
LAB #: A5F280026-004
MATRIX: SOLID

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311 (55 FR 26986)

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
- - TCLP METALS - -						
Silver	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Arsenic	ND	0.50	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Barium	**1.2**	**1.0**	**mg/L**	**SW846 6010A**	**7/06- 7/11/95**	**5187007**
Cadmium	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Chromium	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Copper	**0.089**	**0.050**	**mg/L**	**SW846 6010A**	**7/06- 7/11/95**	**5187007**
Nickel	ND	0.040	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Lead	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Selenium	ND	0.30	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Zinc	**1.0**	**0.10**	**mg/L**	**SW846 6010A**	**7/06- 7/11/95**	**5187007**

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

S-051795-JH-019

DATE SAMPLED:	5/17/95
TIME SAMPLED:	12:30
DATE RECEIVED:	5/15/95
TCLP EXTRACTION DATE:	7/06/95

WO #: A5810
LAB #: A5F280026-005
MATRIX: SOLID

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311 (55 FR 26986)

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
- - TCLP METALS - -						
Silver	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Arsenic	ND	0.50	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Barium	ND	1.0	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Cadmium	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Chromium	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Copper	**0.054**	**0.050**	**mg/L**	**SW846 6010A**	**7/06- 7/11/95**	**5187007**
Nickel	ND	0.040	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Lead	**0.14**	**0.10**	**mg/L**	**SW846 6010A**	**7/06- 7/11/95**	**5187007**
Selenium	ND	0.30	mg/L	SW846 6010A	7/06- 7/11/95	5187007
Zinc	0.57	0.10	mg/L	SW846 6010A	7/06- 7/11/95	5187007

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

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QUALITY CONTROL SECTION

Quanterra
Environmental Services

QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with the exception of those items noted.

The matrix spike and matrix spike duplicate (MS/MSD) contained in this quality control report were generated as part of the laboratory QA/QC program requirements. These requirements include the analysis of a MS/MSD on a one in twenty basis. Therefore, the associated batch number indicated on the MS/MSD report may not reflect the same batch number as those of the samples contained in the analytical report.

"DIL" in the Quality Control Section means that due to high analyte concentration in the sample, the matrix spiking analytes added to the sample are diluted out and cannot be quantitated.

Quanterra
Environmental Services

CHECK SAMPLE REPORT

LAB #: A5F280026

*** TCLP ***

TCLP EXTRACTION DATE: 7/06/95

- METALS -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5187007		
Silver	130	(50-150)	7/06- 7/11/95
Arsenic	107	(50-150)	7/06- 7/11/95
Barium	106	(50-150)	7/06- 7/11/95
Cadmium	104	(50-150)	7/06- 7/11/95
Chromium	100	(50-150)	7/06- 7/11/95
Copper	106	(50-150)	7/06- 7/11/95
Nickel	104	(50-150)	7/06- 7/11/95
Lead	98	(50-150)	7/06- 7/11/95
Selenium	97	(50-150)	7/06- 7/11/95
Zinc	113	(50-150)	7/06- 7/11/95
	BATCH:5188071		
Silver	146	(50-150)	7/07- 7/10/95
Arsenic	105	(50-150)	7/07- 7/10/95
Barium	106	(50-150)	7/07- 7/10/95
Cadmium	100	(50-150)	7/07- 7/10/95
Chromium	100	(50-150)	7/07- 7/10/95
Copper	106	(50-150)	7/07- 7/10/95
Nickel	104	(50-150)	7/07- 7/10/95
Lead	104	(50-150)	7/07- 7/10/95
Selenium	95	(50-150)	7/07- 7/10/95
Zinc	114	(50-150)	7/07- 7/10/95

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F280026

*** TCLP ***

TCLP EXTRACTION DATE: 7/06/95

METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5187007			
Silver	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95
Arsenic	ND	0.50	mg/L	SW846 6010A	7/06- 7/11/95
Barium	ND	1.0	mg/L	SW846 6010A	7/06- 7/11/95
Cadmium	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95
Chromium	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95
Copper	ND	0.050	mg/L	SW846 6010A	7/06- 7/11/95
Nickel	ND	0.040	mg/L	SW846 6010A	7/06- 7/11/95
Lead	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95
Selenium	ND	0.30	mg/L	SW846 6010A	7/06- 7/11/95
Zinc	ND	0.10	mg/L	SW846 6010A	7/06- 7/11/95
		BATCH:5188071			
Silver	ND	0.10	mg/L	SW846 6010A	7/07- 7/10/95
Arsenic	ND	0.50	mg/L	SW846 6010A	7/07- 7/10/95
Barium	ND	1.0	mg/L	SW846 6010A	7/07- 7/10/95
Cadmium	ND	0.10	mg/L	SW846 6010A	7/07- 7/10/95
Chromium	ND	0.10	mg/L	SW846 6010A	7/07- 7/10/95
Copper	ND	0.050	mg/L	SW846 6010A	7/07- 7/10/95
Nickel	ND	0.040	mg/L	SW846 6010A	7/07- 7/10/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

INTRA-LAB BLANK REPORT

LAB #: A5F280026

*** TCLP ***

TCLP EXTRACTION DATE: 7/06/95

METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5188071			
Lead	ND	0.10	mg/L	SW846 6010A	7/07- 7/10/95
Selenium	ND	0.30	mg/L	SW846 6010A	7/07- 7/10/95
Zinc	ND	0.10	mg/L	SW846 6010A	7/07- 7/10/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

MATRIX SPIKE REPORT

LAB #: A5F280026-001

*** TCLP *** TCLP EXTRACTION DATE: 7/06/95

- METALS -

COMPOUND		SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
			BATCH:5188071 MATRIX: SOLID				
Silver		128	136	(50-150)	6.1	(0-20)	7/07- 7/10/95
Arsenic		103	108	(50-150)	5.1	(0-20)	7/07- 7/10/95
Barium		93	101	(50-150)	8.1	(0-20)	7/07- 7/10/95
Cadmium		80	94	(50-150)	16	(0-20)	7/07- 7/10/95
Chromium		96	103	(50-150)	6.5	(0-20)	7/07- 7/10/95
Copper		97	102	(50-150)	5.2	(0-20)	7/07- 7/10/95
Nickel		106	107	(50-150)	1.7	(0-20)	7/07- 7/10/95
Lead		109	114	(50-150)	4.5	(0-20)	7/07- 7/10/95
Selenium		88	94	(50-150)	5.7	(0-20)	7/07- 7/10/95
Zinc	DIL						7/07- 7/10/95

NOTE:
DIL Diluted out

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
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Quanterra
Environmental Services

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS COMPANY

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Daniel J. Wright
Project Manager

October 5, 1995

VALIDATED DATA
Project 3627
ASI160104
Initials NMB
Date 11-8-95

10-10-95
Initials NMB

Quanterra
Environmental Services

PROJECT NARRATIVE

The following report contains the analytical results for twenty six water samples submitted to Quanterra-North Canton by Conestoga Rovers & Associates, Inc. from the Synthetic Products Company Site, project number 3627. The samples were received September 15, 1995, according to documented sample acceptance procedures.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the following page in accordance with the methods indicated. Preliminary results were provided by facsimile transmission to Nancy Bergstrom on September 28, 1995. A summary of QC data for these analyses is included at the end of the report.

ANALYTICAL METHODS SUMMARY

Quanterra Environmental Services

A5I160104

Parameters	Methods
Volatile Organics by GC/MS	SW846 8260
Inductively Coupled Plasma (ICP) Metals	SW846 6010A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010A

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and Final Update I (7/92).

Quanterra Environmental Services

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	
C1389	A5I160104-001	GW-091395-PK-022	9/13/95	17:10
C138A	A5I160104-002	GW-091395-PK-023 (MS/MSD)	9/13/95	18:35
C138C	A5I160104-003	GW-091395-PK-024	9/13/95	19:10
C138D	A5I160104-004	TRIP BLANK #2	9/14/95	
C138E	A5I160104-005	GW-091495-PK-025	9/14/95	8:50
C138F	A5I160104-006	GW-091495-PK-026	9/14/95	9:25
C138G	A5I160104-007	GW-091495-PK-027	9/14/95	9:30
C138H	A5I160104-008	GW-091495-PK-028	9/14/95	14:30
C138J	A5I160104-009	GW-091495-PK-029	9/14/95	15:10
C138K	A5I160104-010	GW-091495-PK-030	9/14/95	15:15
C138L	A5I160104-011	GW-091395-PK-019	9/14/95	10:05
C138M	A5I160104-012	GW-091395-PK-020	9/14/95	10:20
C138N	A5I160104-013	GW-091395-PK-021	9/14/95	10:35
C138P	A5I160104-014	GW-091395-PK-022	9/14/95	12:25
C13DV	A5I160104-015	GW-091495-PK-028	9/15/95	
C13DX	A5I160104-016	GW-091495-PK-029	9/15/95	
C13E0	A5I160104-017	GW-091495-PK-030	9/15/95	
C13E2	A5I160104-018	GW-091495-PK-031	9/15/95	
C13E3	A5I160104-019	GW-091495-PK-032	9/15/95	
C13E4	A5I160104-020	GW-091595-PK-033	9/15/95	
C13E5	A5I160104-021	GW-091395-PK-023 (MS/MSD)	9/14/95	17:15
C13E7	A5I160104-022	GW-091395-PK-024	9/14/95	17:00
C13E8	A5I160104-023	GW-091495-PK-025	9/14/95	18:15
C13E9	A5I160104-024	GW-091495-PK-026	9/14/95	18:25
C13ED	A5I160104-025	GW-091495-PK-027	9/14/95	18:30
C13EG	A5I160104-026	TRIP BLANK #3	9/15/95	

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-022

WO #: C1389101
LAB #: A5I160104-001
MATRIX: WATER
DILUTION FACTOR: 4.16

DATE SAMPLED: 9/13/95
TIME SAMPLED: 17:10
DATE RECEIVED: 9/15/95

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	4.2	SW846 8260	09/21/95	5265028
Bromomethane	ND	4.2	SW846 8260	09/21/95	5265028
Vinyl chloride	**6.9**	**4.2**	**SW846 8260**	**09/21/95**	**5265028**
Chloroethane	ND	4.2	SW846 8260	09/21/95	5265028
Methylene chloride	ND	4.2	SW846 8260	09/21/95	5265028
Acetone	ND	42	SW846 8260	09/21/95	5265028
Carbon disulfide	ND	4.2	SW846 8260	09/21/95	5265028
1,1-Dichloroethene	ND	4.2	SW846 8260	09/21/95	5265028
1,1-Dichloroethane	**6.4**	**4.2**	**SW846 8260**	**09/21/95**	**5265028**
1,2-Dichloroethene (total)	**94**	**4.2**	**SW846 8260**	**09/21/95**	**5265028**
Chloroform	ND	4.2	SW846 8260	09/21/95	5265028
1,2-Dichloroethane	ND	4.2	SW846 8260	09/21/95	5265028
2-Butanone	ND	42	SW846 8260	09/21/95	5265028
1,1,1-Trichloroethane	**13**	**4.2**	**SW846 8260**	**09/21/95**	**5265028**
Carbon tetrachloride	ND	4.2	SW846 8260	09/21/95	5265028
Bromodichloromethane	ND	4.2	SW846 8260	09/21/95	5265028
1,2-Dichloropropane	ND	4.2	SW846 8260	09/21/95	5265028
cis-1,3-Dichloropropene	ND	4.2	SW846 8260	09/21/95	5265028
Trichloroethene	**9.3**	**4.2**	**SW846 8260**	**09/21/95**	**5265028**
Dibromochloromethane	ND	4.2	SW846 8260	09/21/95	5265028
1,1,2-Trichloroethane	ND	4.2	SW846 8260	09/21/95	5265028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	99	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	104	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-022

WO #: C1389101
LAB #: A5I160104-001
MATRIX: WATER
DILUTION FACTOR: 4.16

DATE SAMPLED: 9/13/95
TIME SAMPLED: 17:10
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	4.2	SW846 8260	09/21/95	5265028
trans-1,3-Dichloropropene	ND	4.2	SW846 8260	09/21/95	5265028
Bromoform	ND	4.2	SW846 8260	09/21/95	5265028
4-Methyl-2-pentanone	ND	42	SW846 8260	09/21/95	5265028
2-Hexanone	ND	42	SW846 8260	09/21/95	5265028
Tetrachloroethene	ND	4.2	SW846 8260	09/21/95	5265028
1,1,2,2-Tetrachloroethane	ND	4.2	SW846 8260	09/21/95	5265028
Toluene	**8.1**	**4.2**	**SW846 8260**	**09/21/95**	**5265028**
Chlorobenzene	**5.9**	**4.2**	**SW846 8260**	**09/21/95**	**5265028**
Ethylbenzene	ND	4.2	SW846 8260	09/21/95	5265028
Styrene	ND	4.2	SW846 8260	09/21/95	5265028
Xylenes (total)	ND	4.2	SW846 8260	09/21/95	5265028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	99	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	104	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-023 (MS/MSD)

WO #: C138A101
LAB #: A5I160104-002
MATRIX: WATER
DILUTION FACTOR: 125.00

DATE SAMPLED: 9/13/95
TIME SAMPLED: 18:35
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	120	SW846 8260	09/21/95	5265028
Bromomethane	ND	120	SW846 8260	09/21/95	5265028
Vinyl chloride	ND	120	SW846 8260	09/21/95	5265028
Chloroethane	ND	120	SW846 8260	09/21/95	5265028
Methylene chloride	ND	120	SW846 8260	09/21/95	5265028
Acetone	ND	1,200	SW846 8260	09/21/95	5265028
Carbon disulfide	ND	120	SW846 8260	09/21/95	5265028
1,1-Dichloroethene	**490**	**120**	**SW846 8260**	**09/21/95**	**5265028**
1,1-Dichloroethane	**240**	**120**	**SW846 8260**	**09/21/95**	**5265028**
1,2-Dichloroethene (total)	**660**	**120**	**SW846 8260**	**09/21/95**	**5265028**
Chloroform	ND	120	SW846 8260	09/21/95	5265028
1,2-Dichloroethane	ND	120	SW846 8260	09/21/95	5265028
2-Butanone	ND	1,200	SW846 8260	09/21/95	5265028
1,1,1-Trichloroethane	**3,800**	**120**	**SW846 8260**	**09/21/95**	**5265028**
Carbon tetrachloride	ND	120	SW846 8260	09/21/95	5265028
Bromodichloromethane	ND	120	SW846 8260	09/21/95	5265028
1,2-Dichloropropane	ND	120	SW846 8260	09/21/95	5265028
cis-1,3-Dichloropropene	ND	120	SW846 8260	09/21/95	5265028
Trichloroethene	ND	120	SW846 8260	09/21/95	5265028
Dibromochloromethane	ND	120	SW846 8260	09/21/95	5265028
1,1,2-Trichloroethane	ND	120	SW846 8260	09/21/95	5265028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	95	(88 - 110)
Bromofluorobenzene	107	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-023 (MS/MSD)

WO #: C138A101
LAB #: A5I160104-002
MATRIX: WATER
DILUTION FACTOR: 125.00

DATE SAMPLED: 9/13/95
TIME SAMPLED: 18:35
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	120	SW846 8260	09/21/95	5265028
trans-1,3-Dichloropropene	ND	120	SW846 8260	09/21/95	5265028
Bromoform	ND	120	SW846 8260	09/21/95	5265028
4-Methyl-2-pentanone	ND	1,200	SW846 8260	09/21/95	5265028
2-Hexanone	ND	1,200	SW846 8260	09/21/95	5265028
Tetrachloroethene	ND	120	SW846 8260	09/21/95	5265028
1,1,2,2-Tetrachloroethane	ND	120	SW846 8260	09/21/95	5265028
Toluene	ND	120	SW846 8260	09/21/95	5265028
Chlorobenzene	ND	120	SW846 8260	09/21/95	5265028
Ethylbenzene	ND	120	SW846 8260	09/21/95	5265028
Styrene	ND	120	SW846 8260	09/21/95	5265028
Xylenes (total)	ND	120	SW846 8260	09/21/95	5265028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	95	(88 - 110)
Bromofluorobenzene	107	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-024

WO #: C138C101
LAB #: A5I160104-003
MATRIX: WATER
DILUTION FACTOR: 100.00

DATE SAMPLED: 9/13/95
TIME SAMPLED: 19:10
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	100	SW846 8260	09/26/95	5269116
Bromomethane	ND	100	SW846 8260	09/26/95	5269116
Vinyl chloride	**150**	**100**	**SW846 8260**	**09/26/95**	**5269116**
Chloroethane	**120**	**100**	**SW846 8260**	**09/26/95**	**5269116**
Methylene chloride	ND	100	SW846 8260	09/26/95	5269116
Acetone	ND	1,000	SW846 8260	09/26/95	5269116
Carbon disulfide	ND	100	SW846 8260	09/26/95	5269116
1,1-Dichloroethene	**570**	**100**	**SW846 8260**	**09/26/95**	**5269116**
1,1-Dichloroethane	**730**	**100**	**SW846 8260**	**09/26/95**	**5269116**
1,2-Dichloroethene (total)	**840**	**100**	**SW846 8260**	**09/26/95**	**5269116**
Chloroform	ND	100	SW846 8260	09/26/95	5269116
1,2-Dichloroethane	ND	100	SW846 8260	09/26/95	5269116
2-Butanone	ND	1,000	SW846 8260	09/26/95	5269116
1,1,1-Trichloroethane	**2,800**	**100**	**SW846 8260**	**09/26/95**	**5269116**
Carbon tetrachloride	ND	100	SW846 8260	09/26/95	5269116
Bromodichloromethane	ND	100	SW846 8260	09/26/95	5269116
1,2-Dichloropropane	ND	100	SW846 8260	09/26/95	5269116
cis-1,3-Dichloropropene	ND	100	SW846 8260	09/26/95	5269116
Trichloroethene	ND	100	SW846 8260	09/26/95	5269116
Dibromochloromethane	ND	100	SW846 8260	09/26/95	5269116
1,1,2-Trichloroethane	ND	100	SW846 8260	09/26/95	5269116

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	96	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-024

WO #: C138C101
LAB #: A5I160104-003
MATRIX: WATER
DILUTION FACTOR: 100.00

DATE SAMPLED: 9/13/95
TIME SAMPLED: 19:10
DATE RECEIVED: 9/15/95

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	**1,000**	**100**	**SW846 8260**	**09/26/95**	**5269116**
trans-1,3-Dichloropropene	ND	100	SW846 8260	09/26/95	5269116
Bromoform	ND	100	SW846 8260	09/26/95	5269116
4-Methyl-2-pentanone	ND	1,000	SW846 8260	09/26/95	5269116
2-Hexanone	ND	1,000	SW846 8260	09/26/95	5269116
Tetrachloroethene	ND	100	SW846 8260	09/26/95	5269116
1,1,2,2-Tetrachloroethane	ND	100	SW846 8260	09/26/95	5269116
Toluene	**3,200**	**100**	**SW846 8260**	**09/26/95**	**5269116**
Chlorobenzene	ND	100	SW846 8260	09/26/95	5269116
Ethylbenzene	ND	100	SW846 8260	09/26/95	5269116
Styrene	ND	100	SW846 8260	09/26/95	5269116
Xylenes (total)	ND	100	SW846 8260	09/26/95	5269116

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	102	(88 - 110)
Bromofluorobenzene	96	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

TRIP BLANK #2

WO #: C138D101
LAB #: A5I160104-004
MATRIX: WATER
DILUTION FACTOR: 1.00

DATE SAMPLED: 9/14/95
TIME SAMPLED:
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	09/21/95	5268045
Bromomethane	ND	1.0	SW846 8260	09/21/95	5268045
Vinyl chloride	ND	1.0	SW846 8260	09/21/95	5268045
Chloroethane	ND	1.0	SW846 8260	09/21/95	5268045
Methylene chloride	ND	1.0	SW846 8260	09/21/95	5268045
Acetone	ND	10	SW846 8260	09/21/95	5268045
Carbon disulfide	ND	1.0	SW846 8260	09/21/95	5268045
1,1-Dichloroethene	ND	1.0	SW846 8260	09/21/95	5268045
1,1-Dichloroethane	ND	1.0	SW846 8260	09/21/95	5268045
1,2-Dichloroethene (total)	ND	1.0	SW846 8260	09/21/95	5268045
Chloroform	ND	1.0	SW846 8260	09/21/95	5268045
1,2-Dichloroethane	ND	1.0	SW846 8260	09/21/95	5268045
2-Butanone	ND	10	SW846 8260	09/21/95	5268045
1,1,1-Trichloroethane	ND	1.0	SW846 8260	09/21/95	5268045
Carbon tetrachloride	ND	1.0	SW846 8260	09/21/95	5268045
Bromodichloromethane	ND	1.0	SW846 8260	09/21/95	5268045
1,2-Dichloropropane	ND	1.0	SW846 8260	09/21/95	5268045
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	09/21/95	5268045
Trichloroethene	ND	1.0	SW846 8260	09/21/95	5268045
Dibromochloromethane	ND	1.0	SW846 8260	09/21/95	5268045
1,1,2-Trichloroethane	ND	1.0	SW846 8260	09/21/95	5268045

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	97	(88 - 110)
Bromofluorobenzene	97	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

TRIP BLANK #2

WO #: C138D101
LAB #: A5I160104-004
MATRIX: WATER
DILUTION FACTOR: 1.00

DATE SAMPLED: 9/14/95
TIME SAMPLED:
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	SW846 8260	09/21/95	5268045
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	09/21/95	5268045
Bromoform	ND	1.0	SW846 8260	09/21/95	5268045
4-Methyl-2-pentanone	ND	10	SW846 8260	09/21/95	5268045
2-Hexanone	ND	10	SW846 8260	09/21/95	5268045
Tetrachloroethene	ND	1.0	SW846 8260	09/21/95	5268045
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	09/21/95	5268045
Toluene	ND	1.0	SW846 8260	09/21/95	5268045
Chlorobenzene	ND	1.0	SW846 8260	09/21/95	5268045
Ethylbenzene	ND	1.0	SW846 8260	09/21/95	5268045
Styrene	ND	1.0	SW846 8260	09/21/95	5268045
Xylenes (total)	ND	1.0	SW846 8260	09/21/95	5268045

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	97	(88 - 110)
Bromofluorobenzene	97	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-025

WO #: C138E101
LAB #: A5I160104-005
MATRIX: WATER
DILUTION FACTOR: 12.50

DATE SAMPLED: 9/14/95
TIME SAMPLED: 8:50
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	12	SW846 8260	09/21/95	5265028
Bromomethane	ND	12	SW846 8260	09/21/95	5265028
Vinyl chloride	ND	12	SW846 8260	09/21/95	5265028
Chloroethane	ND	12	SW846 8260	09/21/95	5265028
Methylene chloride	ND	12	SW846 8260	09/21/95	5265028
Acetone	ND	120	SW846 8260	09/21/95	5265028
Carbon disulfide	ND	12	SW846 8260	09/21/95	5265028
1,1-Dichloroethene	ND	12	SW846 8260	09/21/95	5265028
1,1-Dichloroethane	ND	12	SW846 8260	09/21/95	5265028
1,2-Dichloroethene (total)	ND	12	SW846 8260	09/21/95	5265028
Chloroform	ND	12	SW846 8260	09/21/95	5265028
1,2-Dichloroethane	ND	12	SW846 8260	09/21/95	5265028
2-Butanone	ND	120	SW846 8260	09/21/95	5265028
1,1,1-Trichloroethane	ND	12	SW846 8260	09/21/95	5265028
Carbon tetrachloride	ND	12	SW846 8260	09/21/95	5265028
Bromodichloromethane	ND	12	SW846 8260	09/21/95	5265028
1,2-Dichloropropane	ND	12	SW846 8260	09/21/95	5265028
cis-1,3-Dichloropropene	ND	12	SW846 8260	09/21/95	5265028
Trichloroethene	ND	12	SW846 8260	09/21/95	5265028
Dibromochloromethane	ND	12	SW846 8260	09/21/95	5265028
1,1,2-Trichloroethane	ND	12	SW846 8260	09/21/95	5265028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	96	(88 - 110)
Bromofluorobenzene	108	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-025

WO #: C138E101
LAB #: ASI160104-005
MATRIX: WATER
DILUTION FACTOR: 12.50

DATE SAMPLED: 9/14/95
TIME SAMPLED: 8:50
DATE RECEIVED: 9/15/95

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	**320**	**12**	**SW846 8260**	**09/21/95**	**5265028**
trans-1,3-Dichloropropene	ND	12	SW846 8260	09/21/95	5265028
Bromoform	ND	12	SW846 8260	09/21/95	5265028
4-Methyl-2-pentanone	ND	120	SW846 8260	09/21/95	5265028
2-Hexanone	ND	120	SW846 8260	09/21/95	5265028
Tetrachloroethene	ND	12	SW846 8260	09/21/95	5265028
1,1,2,2-Tetrachloroethane	ND	12	SW846 8260	09/21/95	5265028
Toluene	ND	12	SW846 8260	09/21/95	5265028
Chlorobenzene	ND	12	SW846 8260	09/21/95	5265028
Ethylbenzene	ND	12	SW846 8260	09/21/95	5265028
Styrene	ND	12	SW846 8260	09/21/95	5265028
Xylenes (total)	ND	12	SW846 8260	09/21/95	5265028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	96	(88 - 110)
Bromofluorobenzene	108	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-026

WO #: C138F101
LAB #: A5I160104-006
MATRIX: WATER
DILUTION FACTOR: 500.00

DATE SAMPLED: 9/14/95
TIME SAMPLED: 9:25
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	500	SW846 8260	09/27/95	5271025
Bromomethane	ND	500	SW846 8260	09/27/95	5271025
Vinyl chloride	ND	500	SW846 8260	09/27/95	5271025
Chloroethane	ND	500	SW846 8260	09/27/95	5271025
Methylene chloride	ND	500	SW846 8260	09/27/95	5271025
Acetone	ND	5,000	SW846 8260	09/27/95	5271025
Carbon disulfide	ND	500	SW846 8260	09/27/95	5271025
1,1-Dichloroethene	ND	500	SW846 8260	09/27/95	5271025
1,1-Dichloroethane	ND	500	SW846 8260	09/27/95	5271025
1,2-Dichloroethene (total)	ND	500	SW846 8260	09/27/95	5271025
Chloroform	ND	500	SW846 8260	09/27/95	5271025
1,2-Dichloroethane	ND	500	SW846 8260	09/27/95	5271025
2-Butanone	ND	5,000	SW846 8260	09/27/95	5271025
1,1,1-Trichloroethane	ND	500	SW846 8260	09/27/95	5271025
Carbon tetrachloride	ND	500	SW846 8260	09/27/95	5271025
Bromodichloromethane	ND	500	SW846 8260	09/27/95	5271025
1,2-Dichloropropane	ND	500	SW846 8260	09/27/95	5271025
cis-1,3-Dichloropropene	ND	500	SW846 8260	09/27/95	5271025
Trichloroethene	ND	500	SW846 8260	09/27/95	5271025
Dibromochloromethane	ND	500	SW846 8260	09/27/95	5271025
1,1,2-Trichloroethane	ND	500	SW846 8260	09/27/95	5271025

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	96	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-026

WO #: C138F101
LAB #: A5I160104-006
MATRIX: WATER
DILUTION FACTOR: 500.00

DATE SAMPLED: 9/14/95
TIME SAMPLED: 9:25
DATE RECEIVED: 9/15/95

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	**16,000**	**500**	**SW846 8260**	**09/27/95**	**5271025**
trans-1,3-Dichloropropene	ND	500	SW846 8260	09/27/95	5271025
Bromoform	ND	500	SW846 8260	09/27/95	5271025
4-Methyl-2-pentanone	ND	5,000	SW846 8260	09/27/95	5271025
2-Hexanone	ND	5,000	SW846 8260	09/27/95	5271025
Tetrachloroethene	ND	500	SW846 8260	09/27/95	5271025
1,1,2,2-Tetrachloroethane	ND	500	SW846 8260	09/27/95	5271025
Toluene	**11,000**	**500**	**SW846 8260**	**09/27/95**	**5271025**
Chlorobenzene	ND	500	SW846 8260	09/27/95	5271025
Ethylbenzene	ND	500	SW846 8260	09/27/95	5271025
Styrene	ND	500	SW846 8260	09/27/95	5271025
Xylenes (total)	ND	500	SW846 8260	09/27/95	5271025

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	98	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	96	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-027

WO #: C138G101
LAB #: A5I160104-007
MATRIX: WATER
DILUTION FACTOR: 500.00

DATE SAMPLED: 9/14/95
TIME SAMPLED: 9:30
DATE RECEIVED: 9/15/95

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	500	SW846 8260	09/27/95	5271025
Bromomethane	ND	500	SW846 8260	09/27/95	5271025
Vinyl chloride	ND	500	SW846 8260	09/27/95	5271025
Chloroethane	ND	500	SW846 8260	09/27/95	5271025
Methylene chloride	ND	500	SW846 8260	09/27/95	5271025
Acetone	ND	5,000	SW846 8260	09/27/95	5271025
Carbon disulfide	ND	500	SW846 8260	09/27/95	5271025
1,1-Dichloroethene	ND	500	SW846 8260	09/27/95	5271025
1,1-Dichloroethane	ND	500	SW846 8260	09/27/95	5271025
1,2-Dichloroethene (total)	ND	500	SW846 8260	09/27/95	5271025
Chloroform	ND	500	SW846 8260	09/27/95	5271025
1,2-Dichloroethane	ND	500	SW846 8260	09/27/95	5271025
2-Butanone	ND	5,000	SW846 8260	09/27/95	5271025
1,1,1-Trichloroethane	ND	500	SW846 8260	09/27/95	5271025
Carbon tetrachloride	ND	500	SW846 8260	09/27/95	5271025
Bromodichloromethane	ND	500	SW846 8260	09/27/95	5271025
1,2-Dichloropropane	ND	500	SW846 8260	09/27/95	5271025
cis-1,3-Dichloropropene	ND	500	SW846 8260	09/27/95	5271025
Trichloroethene	ND	500	SW846 8260	09/27/95	5271025
Dibromochloromethane	ND	500	SW846 8260	09/27/95	5271025
1,1,2-Trichloroethane	ND	500	SW846 8260	09/27/95	5271025

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	95	(76 - 114)
Toluene-d8	105	(88 - 110)
Bromofluorobenzene	93	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-027

WO #: C138G101
LAB #: A5I160104-007
MATRIX: WATER
DILUTION FACTOR: 500.00

DATE SAMPLED: 9/14/95
TIME SAMPLED: 9:30
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	**14,000**	**500**	**SW846 8260**	**09/27/95**	**5271025**
trans-1,3-Dichloropropene	ND	500	SW846 8260	09/27/95	5271025
Bromoform	ND	500	SW846 8260	09/27/95	5271025
4-Methyl-2-pentanone	ND	5,000	SW846 8260	09/27/95	5271025
2-Hexanone	ND	5,000	SW846 8260	09/27/95	5271025
Tetrachloroethene	ND	500	SW846 8260	09/27/95	5271025
1,1,2,2-Tetrachloroethane	ND	500	SW846 8260	09/27/95	5271025
Toluene	**9,400**	**500**	**SW846 8260**	**09/27/95**	**5271025**
Chlorobenzene	ND	500	SW846 8260	09/27/95	5271025
Ethylbenzene	ND	500	SW846 8260	09/27/95	5271025
Styrene	ND	500	SW846 8260	09/27/95	5271025
Xylenes (total)	ND	500	SW846 8260	09/27/95	5271025

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	95	(76 - 114)
Toluene-d8	105	(88 - 110)
Bromofluorobenzene	93	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-028

WO #: C138H101
LAB #: A5I160104-008
MATRIX: WATER
DILUTION FACTOR: 250.00

DATE SAMPLED: 9/14/95
TIME SAMPLED: 14:30
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	250	SW846 8260	09/26/95	5269116
Bromomethane	ND	250	SW846 8260	09/26/95	5269116
Vinyl chloride	ND	250	SW846 8260	09/26/95	5269116
Chloroethane	ND	250	SW846 8260	09/26/95	5269116
Methylene chloride	ND	250	SW846 8260	09/26/95	5269116
Acetone	ND	2,500	SW846 8260	09/26/95	5269116
Carbon disulfide	ND	250	SW846 8260	09/26/95	5269116
1,1-Dichloroethene	ND	250	SW846 8260	09/26/95	5269116
1,1-Dichloroethane	ND	250	SW846 8260	09/26/95	5269116
1,2-Dichloroethene (total)	ND	250	SW846 8260	09/26/95	5269116
Chloroform	ND	250	SW846 8260	09/26/95	5269116
1,2-Dichloroethane	ND	250	SW846 8260	09/26/95	5269116
2-Butanone	ND	2,500	SW846 8260	09/26/95	5269116
1,1,1-Trichloroethane	ND	250	SW846 8260	09/26/95	5269116
Carbon tetrachloride	ND	250	SW846 8260	09/26/95	5269116
Bromodichloromethane	ND	250	SW846 8260	09/26/95	5269116
1,2-Dichloropropane	ND	250	SW846 8260	09/26/95	5269116
cis-1,3-Dichloropropene	ND	250	SW846 8260	09/26/95	5269116
Trichloroethene	ND	250	SW846 8260	09/26/95	5269116
Dibromochloromethane	ND	250	SW846 8260	09/26/95	5269116
1,1,2-Trichloroethane	ND	250	SW846 8260	09/26/95	5269116

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	100	(76 - 114)
Toluene-d8	98	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-028

WO #: C138H101
LAB #: A5I160104-008
MATRIX: WATER
DILUTION FACTOR: 250.00

DATE SAMPLED: 9/14/95
TIME SAMPLED: 14:30
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	**7,100**	**250**	**SW846 8260**	**09/26/95**	**5269116**
trans-1,3-Dichloropropene	ND	250	SW846 8260	09/26/95	5269116
Bromoform	ND	250	SW846 8260	09/26/95	5269116
4-Methyl-2-pentanone	ND	2,500	SW846 8260	09/26/95	5269116
2-Hexanone	ND	2,500	SW846 8260	09/26/95	5269116
Tetrachloroethene	ND	250	SW846 8260	09/26/95	5269116
1,1,2,2-Tetrachloroethane	ND	250	SW846 8260	09/26/95	5269116
Toluene	ND	250	SW846 8260	09/26/95	5269116
Chlorobenzene	ND	250	SW846 8260	09/26/95	5269116
Ethylbenzene	ND	250	SW846 8260	09/26/95	5269116
Styrene	ND	250	SW846 8260	09/26/95	5269116
Xylenes (total)	ND	250	SW846 8260	09/26/95	5269116

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	100	(76 - 114)
Toluene-d8	98	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-029

WO #: C138J101
LAB #: A5I160104-009
MATRIX: WATER
DILUTION FACTOR: 625.00

DATE SAMPLED: 9/14/95
TIME SAMPLED: 15:10
DATE RECEIVED: 9/15/95

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	620	SW846 8260	09/27/95	5271025
Bromomethane	ND	620	SW846 8260	09/27/95	5271025
Vinyl chloride	ND	620	SW846 8260	09/27/95	5271025
Chloroethane	ND	620	SW846 8260	09/27/95	5271025
Methylene chloride	ND	620	SW846 8260	09/27/95	5271025
Acetone	ND	6,200	SW846 8260	09/27/95	5271025
Carbon disulfide	ND	620	SW846 8260	09/27/95	5271025
1,1-Dichloroethene	ND	620	SW846 8260	09/27/95	5271025
1,1-Dichloroethane	ND	620	SW846 8260	09/27/95	5271025
1,2-Dichloroethene (total)	ND	620	SW846 8260	09/27/95	5271025
Chloroform	ND	620	SW846 8260	09/27/95	5271025
1,2-Dichloroethane	ND	620	SW846 8260	09/27/95	5271025
2-Butanone	ND	6,200	SW846 8260	09/27/95	5271025
1,1,1-Trichloroethane	ND	620	SW846 8260	09/27/95	5271025
Carbon tetrachloride	ND	620	SW846 8260	09/27/95	5271025
Bromodichloromethane	ND	620	SW846 8260	09/27/95	5271025
1,2-Dichloropropane	ND	620	SW846 8260	09/27/95	5271025
cis-1,3-Dichloropropene	ND	620	SW846 8260	09/27/95	5271025
Trichloroethene	ND	620	SW846 8260	09/27/95	5271025
Dibromochloromethane	ND	620	SW846 8260	09/27/95	5271025
1,1,2-Trichloroethane	ND	620	SW846 8260	09/27/95	5271025

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	95	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	95	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-029

WO #: C138J101
LAB #: A5I160104-009
MATRIX: WATER
DILUTION FACTOR: 625.00

DATE SAMPLED: 9/14/95
TIME SAMPLED: 15:10
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	**16,000**	**620**	**SW846 8260**	**09/27/95**	**5271025**
trans-1,3-Dichloropropene	ND	620	SW846 8260	09/27/95	5271025
Bromoform	ND	620	SW846 8260	09/27/95	5271025
4-Methyl-2-pentanone	ND	6,200	SW846 8260	09/27/95	5271025
2-Hexanone	ND	6,200	SW846 8260	09/27/95	5271025
Tetrachloroethene	ND	620	SW846 8260	09/27/95	5271025
1,1,2,2-Tetrachloroethane	ND	620	SW846 8260	09/27/95	5271025
Toluene	ND	620	SW846 8260	09/27/95	5271025
Chlorobenzene	ND	620	SW846 8260	09/27/95	5271025
Ethylbenzene	ND	620	SW846 8260	09/27/95	5271025
Styrene	ND	620	SW846 8260	09/27/95	5271025
Xylenes (total)	ND	620	SW846 8260	09/27/95	5271025

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	95	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	95	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-030

WO #: C138K101
LAB #: A5I160104-010
MATRIX: WATER
DILUTION FACTOR: 625.00

DATE SAMPLED: 9/14/95
TIME SAMPLED: 15:15
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	620	SW846 8260	09/27/95	5271025
Bromomethane	ND	620	SW846 8260	09/27/95	5271025
Vinyl chloride	ND	620	SW846 8260	09/27/95	5271025
Chloroethane	ND	620	SW846 8260	09/27/95	5271025
Methylene chloride	ND	620	SW846 8260	09/27/95	5271025
Acetone	ND	6,200	SW846 8260	09/27/95	5271025
Carbon disulfide	ND	620	SW846 8260	09/27/95	5271025
1,1-Dichloroethene	ND	620	SW846 8260	09/27/95	5271025
1,1-Dichloroethane	ND	620	SW846 8260	09/27/95	5271025
1,2-Dichloroethene (total)	ND	620	SW846 8260	09/27/95	5271025
Chloroform	ND	620	SW846 8260	09/27/95	5271025
1,2-Dichloroethane	ND	620	SW846 8260	09/27/95	5271025
2-Butanone	ND	6,200	SW846 8260	09/27/95	5271025
1,1,1-Trichloroethane	ND	620	SW846 8260	09/27/95	5271025
Carbon tetrachloride	ND	620	SW846 8260	09/27/95	5271025
Bromodichloromethane	ND	620	SW846 8260	09/27/95	5271025
1,2-Dichloropropane	ND	620	SW846 8260	09/27/95	5271025
cis-1,3-Dichloropropene	ND	620	SW846 8260	09/27/95	5271025
Trichloroethene	ND	620	SW846 8260	09/27/95	5271025
Dibromochloromethane	ND	620	SW846 8260	09/27/95	5271025
1,1,2-Trichloroethane	ND	620	SW846 8260	09/27/95	5271025

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	94	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-030

WO #: C138K101
LAB #: A5I160104-010
MATRIX: WATER
DILUTION FACTOR: 625.00

DATE SAMPLED: 9/14/95
TIME SAMPLED: 15:15
DATE RECEIVED: 9/15/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	**17,000**	**620**	**SW846 8260**	**09/27/95**	**5271025**
trans-1,3-Dichloropropene	ND	620	SW846 8260	09/27/95	5271025
Bromoform	ND	620	SW846 8260	09/27/95	5271025
4-Methyl-2-pentanone	ND	6,200	SW846 8260	09/27/95	5271025
2-Hexanone	ND	6,200	SW846 8260	09/27/95	5271025
Tetrachloroethene	ND	620	SW846 8260	09/27/95	5271025
1,1,2,2-Tetrachloroethane	ND	620	SW846 8260	09/27/95	5271025
Toluene	ND	620	SW846 8260	09/27/95	5271025
Chlorobenzene	ND	620	SW846 8260	09/27/95	5271025
Ethylbenzene	ND	620	SW846 8260	09/27/95	5271025
Styrene	ND	620	SW846 8260	09/27/95	5271025
Xylenes (total)	ND	620	SW846 8260	09/27/95	5271025

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	94	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	98	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-019

WO #: C138L
LAB #: A5I160104-011
MATRIX: WATER

DATE SAMPLED: 9/14/95
TIME SAMPLED: 10:05
DATE RECEIVED: 9/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	0.0090	0.0050	mg/L	SW846 6010A	9/25- 9/29/95	5268016
Lead	0.0067	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	0.042	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Cadmium	0.22	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	0.041	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	0.022	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	0.084	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-020

WO #: C138M
LAB #: A5I160104-012
MATRIX: WATER

DATE SAMPLED: 9/14/95
TIME SAMPLED: 10:20
DATE RECEIVED: 9/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	0.0070	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Lead	0.018	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	0.17	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Cadmium	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	ND	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	0.018	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	0.069	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-021

WO #: C138N
LAB #: A5I160104-013
MATRIX: WATER

DATE SAMPLED: 9/14/95
TIME SAMPLED: 10:35
DATE RECEIVED: 9/15/95

- REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Lead	0.0076	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	0.074	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Cadmium	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	ND	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	0.063	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-022

WO #: C138P
LAB #: A5I160104-014
MATRIX: WATER

DATE SAMPLED: 9/14/95
TIME SAMPLED: 12:25
DATE RECEIVED: 9/15/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	**0.034**	**0.0050**	**mg/L**	**SW846 6010A**	**9/25- 9/28/95**	**5268016**
Lead	ND	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	**0.054**	**0.010**	**mg/L**	**SW846 6010A**	**9/25- 9/28/95**	**5268016**
Cadmium	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	ND	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	ND	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-028

WO #: C13DV
LAB #: A5I160104-015
MATRIX: WATER

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	**0.014**	**0.0050**	**mg/L**	**SW846 6010A**	**9/25- 9/28/95**	**5268016**
Lead	ND	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/29/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	**0.14**	**0.010**	**mg/L**	**SW846 6010A**	**9/25- 9/28/95**	**5268016**
Cadmium	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	ND	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	ND	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-029

WO #: C13DX
LAB #: A5I160104-016
MATRIX: WATER

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	0.029	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Lead	0.018	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/29/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	0.096	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Cadmium	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	ND	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	0.017	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	ND	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-030

WO #: C13E0
LAB #: A5I160104-017
MATRIX: WATER

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

- - - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	0.038	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Lead	0.033	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	0.12	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Cadmium	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	ND	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	0.031	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	0.078	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-031

WO #: C13E210C
LAB #: A5I160104-018
MATRIX: WATER
DILUTION FACTOR: 1.00

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	09/26/95	5269116
Bromomethane	ND	1.0	SW846 8260	09/26/95	5269116
Vinyl chloride	ND	1.0	SW846 8260	09/26/95	5269116
Chloroethane	ND	1.0	SW846 8260	09/26/95	5269116
Methylene chloride	ND	1.0	SW846 8260	09/26/95	5269116
Acetone	**8.1 J**	**10**	**SW846 8260**	**09/26/95**	**5269116**
Carbon disulfide	ND	1.0	SW846 8260	09/26/95	5269116
1,1-Dichloroethene	ND	1.0	SW846 8260	09/26/95	5269116
1,1-Dichloroethane	ND	1.0	SW846 8260	09/26/95	5269116
1,2-Dichloroethene (total)	ND	1.0	SW846 8260	09/26/95	5269116
Chloroform	ND	1.0	SW846 8260	09/26/95	5269116
1,2-Dichloroethane	ND	1.0	SW846 8260	09/26/95	5269116
2-Butanone	ND	10	SW846 8260	09/26/95	5269116
1,1,1-Trichloroethane	ND	1.0	SW846 8260	09/26/95	5269116
Carbon tetrachloride	ND	1.0	SW846 8260	09/26/95	5269116
Bromodichloromethane	ND	1.0	SW846 8260	09/26/95	5269116
1,2-Dichloropropane	ND	1.0	SW846 8260	09/26/95	5269116
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	09/26/95	5269116
Trichloroethene	ND	1.0	SW846 8260	09/26/95	5269116
Dibromochloromethane	ND	1.0	SW846 8260	09/26/95	5269116
1,1,2-Trichloroethane	ND	1.0	SW846 8260	09/26/95	5269116

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	99	(76 - 114)
Toluene-d8	96	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-031

WO #: C13E210C
LAB #: A5I160104-018
MATRIX: WATER
DILUTION FACTOR: 1.00

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

- **GC/MS Volatiles** -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	**4.2**	**1.0**	**SW846 8260**	**09/26/95**	**5269116**
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	09/26/95	5269116
Bromoform	ND	1.0	SW846 8260	09/26/95	5269116
4-Methyl-2-pentanone	ND	10	SW846 8260	09/26/95	5269116
2-Hexanone	ND	10	SW846 8260	09/26/95	5269116
Tetrachloroethene	ND	1.0	SW846 8260	09/26/95	5269116
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	09/26/95	5269116
Toluene	ND	1.0	SW846 8260	09/26/95	5269116
Chlorobenzene	ND	1.0	SW846 8260	09/26/95	5269116
Ethylbenzene	ND	1.0	SW846 8260	09/26/95	5269116
Styrene	ND	1.0	SW846 8260	09/26/95	5269116
Xylenes (total)	ND	1.0	SW846 8260	09/26/95	5269116

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	99	(76 - 114)
Toluene-d8	96	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-031

WO #: C13E2
LAB #: A5I160104-018
MATRIX: WATER

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Lead	0.0052	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	0.16	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Cadmium	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	ND	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	0.021	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	0.049	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	0.062	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-032

WO #: C13E310C
LAB #: A5I160104-019
MATRIX: WATER
DILUTION FACTOR: 1.00

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	09/26/95	5269124
Bromomethane	ND	1.0	SW846 8260	09/26/95	5269124
Vinyl chloride	**2.8**	**1.0**	**SW846 8260**	**09/26/95**	**5269124**
Chloroethane	ND	1.0	SW846 8260	09/26/95	5269124
Methylene chloride	ND	1.0	SW846 8260	09/26/95	5269124
Acetone	**2.0 J**	**10**	**SW846 8260**	**09/26/95**	**5269124**
Carbon disulfide	ND	1.0	SW846 8260	09/26/95	5269124
1,1-Dichloroethene	ND	1.0	SW846 8260	09/26/95	5269124
1,1-Dichloroethane	**1.6**	**1.0**	**SW846 8260**	**09/26/95**	**5269124**
1,2-Dichloroethene (total)	**7.3**	**1.0**	**SW846 8260**	**09/26/95**	**5269124**
Chloroform	ND	1.0	SW846 8260	09/26/95	5269124
1,2-Dichloroethane	ND	1.0	SW846 8260	09/26/95	5269124
2-Butanone	ND	10	SW846 8260	09/26/95	5269124
1,1,1-Trichloroethane	ND	1.0	SW846 8260	09/26/95	5269124
Carbon tetrachloride	ND	1.0	SW846 8260	09/26/95	5269124
Bromodichloromethane	ND	1.0	SW846 8260	09/26/95	5269124
1,2-Dichloropropane	ND	1.0	SW846 8260	09/26/95	5269124
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	09/26/95	5269124
Trichloroethene	ND	1.0	SW846 8260	09/26/95	5269124
Dibromochloromethane	ND	1.0	SW846 8260	09/26/95	5269124
1,1,2-Trichloroethane	ND	1.0	SW846 8260	09/26/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	96	(76 - 114)
Toluene-d8	96	(88 - 110)
Bromofluorobenzene	102	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-032

WO #: C13E310C
LAB #: A5I160104-019
MATRIX: WATER
DILUTION FACTOR: 1.00

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	SW846 8260	09/26/95	5269124
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	09/26/95	5269124
Bromoform	ND	1.0	SW846 8260	09/26/95	5269124
4-Methyl-2-pentanone	ND	10	SW846 8260	09/26/95	5269124
2-Hexanone	ND	10	SW846 8260	09/26/95	5269124
Tetrachloroethene	ND	1.0	SW846 8260	09/26/95	5269124
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	09/26/95	5269124
Toluene	ND	1.0	SW846 8260	09/26/95	5269124
Chlorobenzene	**1.7**	**1.0**	**SW846 8260**	**09/26/95**	**5269124**
Ethylbenzene	ND	1.0	SW846 8260	09/26/95	5269124
Styrene	ND	1.0	SW846 8260	09/26/95	5269124
Xylenes (total)	ND	1.0	SW846 8260	09/26/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	96	(76 - 114)
Toluene-d8	96	(88 - 110)
Bromofluorobenzene	102	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-032

WO #: C13E3
LAB #: A5I160104-019
MATRIX: WATER

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	0.0061	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Lead	0.0074	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	0.13	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Cadmium	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	1.3	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	0.038	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	1.9	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	0.062	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091595-PK-033

WO #: C13E410C
LAB #: A5I160104-020
MATRIX: WATER
DILUTION FACTOR: 1.00

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	09/26/95	5269124
Bromomethane	ND	1.0	SW846 8260	09/26/95	5269124
Vinyl chloride	ND	1.0	SW846 8260	09/26/95	5269124
Chloroethane	ND	1.0	SW846 8260	09/26/95	5269124
Methylene chloride	ND	1.0	SW846 8260	09/26/95	5269124
Acetone	**5.8 J**	**10**	**SW846 8260**	**09/26/95**	**5269124**
Carbon disulfide	ND	1.0	SW846 8260	09/26/95	5269124
1,1-Dichloroethene	ND	1.0	SW846 8260	09/26/95	5269124
1,1-Dichloroethane	ND	1.0	SW846 8260	09/26/95	5269124
1,2-Dichloroethene (total)	ND	1.0	SW846 8260	09/26/95	5269124
Chloroform	ND	1.0	SW846 8260	09/26/95	5269124
1,2-Dichloroethane	ND	1.0	SW846 8260	09/26/95	5269124
2-Butanone	ND	10	SW846 8260	09/26/95	5269124
1,1,1-Trichloroethane	ND	1.0	SW846 8260	09/26/95	5269124
Carbon tetrachloride	ND	1.0	SW846 8260	09/26/95	5269124
Bromodichloromethane	ND	1.0	SW846 8260	09/26/95	5269124
1,2-Dichloropropane	ND	1.0	SW846 8260	09/26/95	5269124
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	09/26/95	5269124
Trichloroethene	ND	1.0	SW846 8260	09/26/95	5269124
Dibromochloromethane	ND	1.0	SW846 8260	09/26/95	5269124
1,1,2-Trichloroethane	ND	1.0	SW846 8260	09/26/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	97	(76 - 114)
Toluene-d8	97	(88 - 110)
Bromofluorobenzene	102	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091595-PK-033

WO #: C13E410C
LAB #: A5I160104-020
MATRIX: WATER
DILUTION FACTOR: 1.00

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	SW846 8260	09/26/95	5269124
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	09/26/95	5269124
Bromoform	ND	1.0	SW846 8260	09/26/95	5269124
4-Methyl-2-pentanone	ND	10	SW846 8260	09/26/95	5269124
2-Hexanone	ND	10	SW846 8260	09/26/95	5269124
Tetrachloroethene	ND	1.0	SW846 8260	09/26/95	5269124
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	09/26/95	5269124
Toluene	ND	1.0	SW846 8260	09/26/95	5269124
Chlorobenzene	ND	1.0	SW846 8260	09/26/95	5269124
Ethylbenzene	ND	1.0	SW846 8260	09/26/95	5269124
Styrene	ND	1.0	SW846 8260	09/26/95	5269124
Xylenes (total)	ND	1.0	SW846 8260	09/26/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	97	(76 - 114)
Toluene-d8	97	(88 - 110)
Bromofluorobenzene	102	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091595-PK-033

WO #: C13E4
LAB #: A5I160104-020
MATRIX: WATER

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	0.011	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Lead	0.037	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	0.49	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Cadmium	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	0.47	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	0.093	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	0.30	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	0.28	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-023 (MS/MSD)

WO #: C13E5
LAB #: A5I160104-021
MATRIX: WATER

DATE SAMPLED: 9/14/95
TIME SAMPLED: 17:15
DATE RECEIVED: 9/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	0.0062	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Lead	0.074	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	1.3	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Cadmium	0.54	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	ND	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	0.078	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	3.1	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-024

WO #: C13E7
LAB #: A5I160104-022
MATRIX: WATER

DATE SAMPLED: 9/14/95
TIME SAMPLED: 17:00
DATE RECEIVED: 9/16/95

- REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Lead	0.024	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	0.86	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Cadmium	0.22	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	ND	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	0.043	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	1.2	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-025

WO #: C13E8
LAB #: A5I160104-023
MATRIX: WATER

DATE SAMPLED: 9/14/95
TIME SAMPLED: 18:15
DATE RECEIVED: 9/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	**0.022**	**0.0050**	**mg/L**	**SW846 6010A**	**9/25- 9/28/95**	**5268016**
Lead	**0.0034**	**0.0030**	**mg/L**	**SW846 6010A**	**9/25- 9/28/95**	**5268016**
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	**0.029**	**0.010**	**mg/L**	**SW846 6010A**	**9/25- 9/28/95**	**5268016**
Cadmium	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	ND	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	ND	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-026

WO #: C13E9
LAB #: A5I160104-024
MATRIX: WATER

DATE SAMPLED: 9/14/95
TIME SAMPLED: 18:25
DATE RECEIVED: 9/16/95

- REQUESTED METALS -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	0.013	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Lead	0.051	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	0.0060	0.0050	mg/L	SW846 6010A	9/25- 9/29/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	0.18	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Cadmium	0.022	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	0.069	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	0.18	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	0.18	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091495-PK-027

WO #: C13ED
LAB #: A5I160104-025
MATRIX: WATER

DATE SAMPLED: 9/14/95
TIME SAMPLED: 18:30
DATE RECEIVED: 9/16/95

- - - - - - - - - - - - - - - - - - REQUESTED METALS - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE	QC BATCH
Arsenic	0.016	0.0050	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Lead	0.065	0.0030	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Selenium	0.0061	0.0050	mg/L	SW846 6010A	9/25- 9/29/95	5268016
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Barium	0.18	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Cadmium	0.012	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Chromium	0.085	0.020	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Copper	0.23	0.010	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95	5268016
Zinc	0.23	0.050	mg/L	SW846 6010A	9/25- 9/29/95	5268016

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

TRIP BLANK #3

WO #: C13EG101
LAB #: A5I160104-026
MATRIX: WATER
DILUTION FACTOR: 1.00

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	09/21/95	5265028
Bromomethane	ND	1.0	SW846 8260	09/21/95	5265028
Vinyl chloride	ND	1.0	SW846 8260	09/21/95	5265028
Chloroethane	ND	1.0	SW846 8260	09/21/95	5265028
Methylene chloride	ND	1.0	SW846 8260	09/21/95	5265028
Acetone	ND	10	SW846 8260	09/21/95	5265028
Carbon disulfide	ND	1.0	SW846 8260	09/21/95	5265028
1,1-Dichloroethene	ND	1.0	SW846 8260	09/21/95	5265028
1,1-Dichloroethane	ND	1.0	SW846 8260	09/21/95	5265028
1,2-Dichloroethene (total)	ND	1.0	SW846 8260	09/21/95	5265028
Chloroform	ND	1.0	SW846 8260	09/21/95	5265028
1,2-Dichloroethane	ND	1.0	SW846 8260	09/21/95	5265028
2-Butanone	ND	10	SW846 8260	09/21/95	5265028
1,1,1-Trichloroethane	ND	1.0	SW846 8260	09/21/95	5265028
Carbon tetrachloride	ND	1.0	SW846 8260	09/21/95	5265028
Bromodichloromethane	ND	1.0	SW846 8260	09/21/95	5265028
1,2-Dichloropropane	ND	1.0	SW846 8260	09/21/95	5265028
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	09/21/95	5265028
Trichloroethene	ND	1.0	SW846 8260	09/21/95	5265028
Dibromochloromethane	ND	1.0	SW846 8260	09/21/95	5265028
1,1,2-Trichloroethane	ND	1.0	SW846 8260	09/21/95	5265028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	104	(76 - 114)
Toluene-d8	93	(88 - 110)
Bromofluorobenzene	105	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

TRIP BLANK #3

WO #: C13EG101
LAB #: A5I160104-026
MATRIX: WATER
DILUTION FACTOR: 1.00

DATE SAMPLED: 9/15/95
TIME SAMPLED:
DATE RECEIVED: 9/16/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	SW846 8260	09/21/95	5265028
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	09/21/95	5265028
Bromoform	ND	1.0	SW846 8260	09/21/95	5265028
4-Methyl-2-pentanone	ND	10	SW846 8260	09/21/95	5265028
2-Hexanone	ND	10	SW846 8260	09/21/95	5265028
Tetrachloroethene	ND	1.0	SW846 8260	09/21/95	5265028
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	09/21/95	5265028
Toluene	ND	1.0	SW846 8260	09/21/95	5265028
Chlorobenzene	ND	1.0	SW846 8260	09/21/95	5265028
Ethylbenzene	ND	1.0	SW846 8260	09/21/95	5265028
Styrene	ND	1.0	SW846 8260	09/21/95	5265028
Xylenes (total)	ND	1.0	SW846 8260	09/21/95	5265028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	104	(76 - 114)
Toluene-d8	93	(88 - 110)
Bromofluorobenzene	105	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

QUALITY CONTROL SECTION

Quanterra
Environmental Services

QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant.

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5265028
LAB #: A5I220000-028 C

PREPARATION DATE: 9/21/95
DATE ANALYZED: 9/21/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	86	(70-143)
Trichloroethene	102	(76-121)
Chlorobenzene	102	(81-121)
Toluene	99	(79-122)
Benzene	100	(79-125)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5269116
LAB #: A5I260000-116 C

PREPARATION DATE: 9/26/95
DATE ANALYZED: 9/26/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	92	(70-143)
Trichloroethene	100	(76-121)
Chlorobenzene	100	(81-121)
Toluene	100	(79-122)
Benzene	98	(79-125)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5268045
LAB #: A5I250000-045 C

PREPARATION DATE: 9/20/95
DATE ANALYZED: 9/20/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	104	(70-143)
Trichloroethene	100	(76-121)
Chlorobenzene	100	(81-121)
Toluene	102	(79-122)
Benzene	101	(79-125)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5271025
LAB #: A5I280000-025 C

PREPARATION DATE: 9/27/95
DATE ANALYZED: 9/27/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	91	(70-143)
Trichloroethene	106	(76-121)
Chlorobenzene	111	(81-121)
Toluene	106	(79-122)
Benzene	110	(79-125)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5269124
LAB #: A5I260000-124 C

PREPARATION DATE: 9/25/95
DATE ANALYZED: 9/25/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	82	(70-143)
Trichloroethene	96	(76-121)
Chlorobenzene	105	(81-121)
Toluene	96	(79-122)
Benzene	102	(79-125)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

LAB #: A5I160104

METALS

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5268016		
Silver	117	(80-120)	9/25- 9/28/95
Arsenic	107	(80-120)	9/25- 9/28/95
Barium	102	(80-120)	9/25- 9/28/95
Cadmium	104	(80-120)	9/25- 9/28/95
Chromium	103	(80-120)	9/25- 9/28/95
Copper	102	(80-120)	9/25- 9/28/95
Nickel	102	(80-120)	9/25- 9/28/95
Lead	103	(80-120)	9/25- 9/28/95
Selenium	111	(80-120)	9/25- 9/28/95
Zinc	107	(80-120)	9/25- 9/29/95

Quanterra
Environmental Services

METHOD BLANK REPORT

LAB #: A5I220000-028

- - - - - - - - - - - - - - - - - - - GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	9/21/95	5265028
Benzene	ND	1.0	9/21/95	5265028
Bromodichloromethane	ND	1.0	9/21/95	5265028
Bromoform	ND	1.0	9/21/95	5265028
Bromomethane	ND	1.0	9/21/95	5265028
2-Butanone	ND	10	9/21/95	5265028
Carbon disulfide	ND	1.0	9/21/95	5265028
Carbon tetrachloride	ND	1.0	9/21/95	5265028
Chlorobenzene	ND	1.0	9/21/95	5265028
Dibromochloromethane	ND	1.0	9/21/95	5265028
Chloroethane	ND	1.0	9/21/95	5265028
Chloroform	ND	1.0	9/21/95	5265028
Chloromethane	ND	1.0	9/21/95	5265028
1,1-Dichloroethane	ND	1.0	9/21/95	5265028
1,2-Dichloroethane	ND	1.0	9/21/95	5265028
1,1-Dichloroethene	ND	1.0	9/21/95	5265028
1,2-Dichloroethene (total)	ND	1.0	9/21/95	5265028
1,2-Dichloropropane	ND	1.0	9/21/95	5265028
cis-1,3-Dichloropropene	ND	1.0	9/21/95	5265028
trans-1,3-Dichloropropene	ND	1.0	9/21/95	5265028
Ethylbenzene	ND	1.0	9/21/95	5265028
2-Hexanone	ND	10	9/21/95	5265028
Methylene chloride	ND	1.0	9/21/95	5265028
4-Methyl-2-pentanone	ND	10	9/21/95	5265028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	97	(76 - 114)
Toluene-d8	96	(88 - 110)
Bromofluorobenzene	106	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

METHOD BLANK REPORT

LAB #: A5I220000-028

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Styrene	ND	1.0	9/21/95	5265028
1,1,2,2-Tetrachloroethane	ND	1.0	9/21/95	5265028
Tetrachloroethene	ND	1.0	9/21/95	5265028
Toluene	ND	1.0	9/21/95	5265028
1,1,1-Trichloroethane	ND	1.0	9/21/95	5265028
1,1,2-Trichloroethane	ND	1.0	9/21/95	5265028
Trichloroethene	ND	1.0	9/21/95	5265028
Vinyl chloride	ND	1.0	9/21/95	5265028
Xylenes (total)	ND	1.0	9/21/95	5265028

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	97	(76 - 114)
Toluene-d8	96	(88 - 110)
Bromofluorobenzene	106	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

METHOD BLANK REPORT

LAB #: A5I260000-116

- - - - - - - - - - - - - - - - - - - GC/MS Volatiles - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	9/26/95	5269116
Benzene	ND	1.0	9/26/95	5269116
Bromodichloromethane	ND	1.0	9/26/95	5269116
Bromoform	ND	1.0	9/26/95	5269116
Bromomethane	ND	1.0	9/26/95	5269116
2-Butanone	ND	10	9/26/95	5269116
Carbon disulfide	ND	1.0	9/26/95	5269116
Carbon tetrachloride	ND	1.0	9/26/95	5269116
Chlorobenzene	ND	1.0	9/26/95	5269116
Dibromochloromethane	ND	1.0	9/26/95	5269116
Chloroethane	ND	1.0	9/26/95	5269116
Chloroform	ND	1.0	9/26/95	5269116
Chloromethane	ND	1.0	9/26/95	5269116
1,1-Dichloroethane	ND	1.0	9/26/95	5269116
1,2-Dichloroethane	ND	1.0	9/26/95	5269116
1,1-Dichloroethene	ND	1.0	9/26/95	5269116
1,2-Dichloroethene (total)	ND	1.0	9/26/95	5269116
1,2-Dichloropropane	ND	1.0	9/26/95	5269116
cis-1,3-Dichloropropene	ND	1.0	9/26/95	5269116
trans-1,3-Dichloropropene	ND	1.0	9/26/95	5269116
Ethylbenzene	ND	1.0	9/26/95	5269116
2-Hexanone	ND	10	9/26/95	5269116
Methylene chloride	ND	1.0	9/26/95	5269116
4-Methyl-2-pentanone	ND	10	9/26/95	5269116

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	97	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

METHOD BLANK REPORT

LAB #: A5I260000-116

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Styrene	ND	1.0	9/26/95	5269116
1,1,2,2-Tetrachloroethane	ND	1.0	9/26/95	5269116
Tetrachloroethene	ND	1.0	9/26/95	5269116
Toluene	ND	1.0	9/26/95	5269116
1,1,1-Trichloroethane	ND	1.0	9/26/95	5269116
1,1,2-Trichloroethane	ND	1.0	9/26/95	5269116
Trichloroethene	ND	1.0	9/26/95	5269116
Vinyl chloride	ND	1.0	9/26/95	5269116
Xylenes (total)	ND	1.0	9/26/95	5269116

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	97	(76 - 114)
Toluene-d8	100	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: A5I250000-045

- - - - - - - - - - - - - - - - - - - GC/MS Volatiles - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	9/20/95	5268045
Benzene	ND	1.0	9/20/95	5268045
Bromodichloromethane	ND	1.0	9/20/95	5268045
Bromoform	ND	1.0	9/20/95	5268045
Bromomethane	ND	1.0	9/20/95	5268045
2-Butanone	ND	10	9/20/95	5268045
Carbon disulfide	ND	1.0	9/20/95	5268045
Carbon tetrachloride	ND	1.0	9/20/95	5268045
Chlorobenzene	ND	1.0	9/20/95	5268045
Dibromochloromethane	ND	1.0	9/20/95	5268045
Chloroethane	ND	1.0	9/20/95	5268045
Chloroform	ND	1.0	9/20/95	5268045
Chloromethane	ND	1.0	9/20/95	5268045
1,1-Dichloroethane	ND	1.0	9/20/95	5268045
1,2-Dichloroethane	ND	1.0	9/20/95	5268045
1,1-Dichloroethene	ND	1.0	9/20/95	5268045
1,2-Dichloroethene (total)	ND	1.0	9/20/95	5268045
1,2-Dichloropropane	ND	1.0	9/20/95	5268045
cis-1,3-Dichloropropene	ND	1.0	9/20/95	5268045
trans-1,3-Dichloropropene	ND	1.0	9/20/95	5268045
Ethylbenzene	ND	1.0	9/20/95	5268045
2-Hexanone	ND	10	9/20/95	5268045
Methylene chloride	ND	1.0	9/20/95	5268045
4-Methyl-2-pentanone	ND	10	9/20/95	5268045

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	90	(76 - 114)
Toluene-d8	104	(88 - 110)
Bromofluorobenzene	94	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

METHOD BLANK REPORT

LAB #: A5I250000-045

- - - - - - - - - - - - - - - - - - - GC/MS Volatiles - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Styrene	ND	1.0	9/20/95	5268045
1,1,2,2-Tetrachloroethane	ND	1.0	9/20/95	5268045
Tetrachloroethene	ND	1.0	9/20/95	5268045
Toluene	ND	1.0	9/20/95	5268045
1,1,1-Trichloroethane	ND	1.0	9/20/95	5268045
1,1,2-Trichloroethane	ND	1.0	9/20/95	5268045
Trichloroethene	ND	1.0	9/20/95	5268045
Vinyl chloride	ND	1.0	9/20/95	5268045
Xylenes (total)	ND	1.0	9/20/95	5268045

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	90	(76 - 114)
Toluene-d8	104	(88 - 110)
Bromofluorobenzene	94	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: A5I280000-025

- - - - - - - - - - - - - - - - - - - GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	9/27/95	5271025
Benzene	ND	1.0	9/27/95	5271025
Bromodichloromethane	ND	1.0	9/27/95	5271025
Bromoform	ND	1.0	9/27/95	5271025
Bromomethane	ND	1.0	9/27/95	5271025
2-Butanone	ND	10	9/27/95	5271025
Carbon disulfide	ND	1.0	9/27/95	5271025
Carbon tetrachloride	ND	1.0	9/27/95	5271025
Chlorobenzene	ND	1.0	9/27/95	5271025
Dibromochloromethane	ND	1.0	9/27/95	5271025
Chloroethane	ND	1.0	9/27/95	5271025
Chloroform	ND	1.0	9/27/95	5271025
Chloromethane	ND	1.0	9/27/95	5271025
1,1-Dichloroethane	ND	1.0	9/27/95	5271025
1,2-Dichloroethane	ND	1.0	9/27/95	5271025
1,1-Dichloroethene	ND	1.0	9/27/95	5271025
1,2-Dichloroethene (total)	ND	1.0	9/27/95	5271025
1,2-Dichloropropane	ND	1.0	9/27/95	5271025
cis-1,3-Dichloropropene	ND	1.0	9/27/95	5271025
trans-1,3-Dichloropropene	ND	1.0	9/27/95	5271025
Ethylbenzene	ND	1.0	9/27/95	5271025
2-Hexanone	ND	10	9/27/95	5271025
Methylene chloride	ND	1.0	9/27/95	5271025
4-Methyl-2-pentanone	ND	10	9/27/95	5271025

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	96	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	97	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: A5I280000-025

- - - - - - - - - - - - - - - - - - - GC/MS Volatiles - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Styrene	ND	1.0	9/27/95	5271025
1,1,2,2-Tetrachloroethane	ND	1.0	9/27/95	5271025
Tetrachloroethene	ND	1.0	9/27/95	5271025
Toluene	ND	1.0	9/27/95	5271025
1,1,1-Trichloroethane	ND	1.0	9/27/95	5271025
1,1,2-Trichloroethane	ND	1.0	9/27/95	5271025
Trichloroethene	ND	1.0	9/27/95	5271025
Vinyl chloride	ND	1.0	9/27/95	5271025
Xylenes (total)	ND	1.0	9/27/95	5271025

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	96	(76 - 114)
Toluene-d8	101	(88 - 110)
Bromofluorobenzene	97	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: A5I260000-124

- - - - - - - - - - - - - - - - - - - GC/MS Volatiles - - - - - - - - - - - - - - - - - - -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	9/25/95	5269124
Benzene	ND	1.0	9/25/95	5269124
Bromodichloromethane	ND	1.0	9/25/95	5269124
Bromoform	ND	1.0	9/25/95	5269124
Bromomethane	ND	1.0	9/25/95	5269124
2-Butanone	ND	10	9/25/95	5269124
Carbon disulfide	ND	1.0	9/25/95	5269124
Carbon tetrachloride	ND	1.0	9/25/95	5269124
Chlorobenzene	ND	1.0	9/25/95	5269124
Dibromochloromethane	ND	1.0	9/25/95	5269124
Chloroethane	ND	1.0	9/25/95	5269124
Chloroform	ND	1.0	9/25/95	5269124
Chloromethane	ND	1.0	9/25/95	5269124
1,1-Dichloroethane	ND	1.0	9/25/95	5269124
1,2-Dichloroethane	ND	1.0	9/25/95	5269124
1,1-Dichloroethene	ND	1.0	9/25/95	5269124
1,2-Dichloroethene (total)	ND	1.0	9/25/95	5269124
1,2-Dichloropropane	ND	1.0	9/25/95	5269124
cis-1,3-Dichloropropene	ND	1.0	9/25/95	5269124
trans-1,3-Dichloropropene	ND	1.0	9/25/95	5269124
Ethylbenzene	ND	1.0	9/25/95	5269124
2-Hexanone	ND	10	9/25/95	5269124
Methylene chloride	ND	1.0	9/25/95	5269124
4-Methyl-2-pentanone	ND	10	9/25/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	92	(88 - 110)
Bromofluorobenzene	107	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

METHOD BLANK REPORT

LAB #: A5I260000-124

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Styrene	ND	1.0	9/25/95	5269124
1,1,2,2-Tetrachloroethane	ND	1.0	9/25/95	5269124
Tetrachloroethene	ND	1.0	9/25/95	5269124
Toluene	ND	1.0	9/25/95	5269124
1,1,1-Trichloroethane	ND	1.0	9/25/95	5269124
1,1,2-Trichloroethane	ND	1.0	9/25/95	5269124
Trichloroethene	ND	1.0	9/25/95	5269124
Vinyl chloride	ND	1.0	9/25/95	5269124
Xylenes (total)	ND	1.0	9/25/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	92	(88 - 110)
Bromofluorobenzene	107	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: A5I160104

METALS

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD	PREPARATION - ANALYSIS DATE
		BATCH:5268016			
Silver	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95
Arsenic	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95
Barium	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95
Cadmium	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95
Chromium	ND	0.020	mg/L	SW846 6010A	9/25- 9/28/95
Copper	ND	0.010	mg/L	SW846 6010A	9/25- 9/28/95
Nickel	ND	0.040	mg/L	SW846 6010A	9/25- 9/28/95
Lead	ND	0.0030	mg/L	SW846 6010A	9/25- 9/28/95
Selenium	ND	0.0050	mg/L	SW846 6010A	9/25- 9/28/95
Zinc	ND	0.050	mg/L	SW846 6010A	9/25- 9/29/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5269124
LAB #: A5I160104-002 S
MATRIX: WATER

WO #: C138A
PREPARATION DATE: 9/26/95
DATE ANALYZED: 9/26/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	71	82	(55-142)	15	(0-19)
Trichloroethene	97	100	(77-124)	2.7	(0-13)
Chlorobenzene	98	101	(85-120)	3.3	(0-10)
Toluene	97	101	(82-122)	4.3	(0-15)
Benzene	106	107	(83-123)	1.6	(0-13)

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

MATRIX SPIKE REPORT

LAB #: ASI160104-021

- METALS -

COMPOUND		SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
			BATCH:5268016 MATRIX:		WATER		
Silver		111	113	(80-120)	1.2	(0-20)	9/25- 9/28/95
Arsenic		110	111	(80-120)	1.3	(0-20)	9/25- 9/28/95
Barium		110	112	(80-120)	1.9	(0-20)	9/25- 9/28/95
Cadmium	DIL						9/25- 9/28/95
Chromium		107	109	(80-120)	1.8	(0-20)	9/25- 9/28/95
Copper		111	111	(80-120)	0.32	(0-20)	9/25- 9/28/95
Nickel		109	113	(80-120)	3.4	(0-20)	9/25- 9/28/95
Lead		102	104	(80-120)	1.4	(0-20)	9/25- 9/28/95
Selenium		114	115	(80-120)	0.68	(0-20)	9/25- 9/28/95
Zinc	DIL						9/25- 9/29/95

NOTE:
DIL Diluted out

Calculations are performed before rounding to avoid round-off errors in calculated results

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road – Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Quanterra, OH

REFERENCE NUMBER: 3627

PROJECT NAME: Synthetic Products

SAMPLER'S SIGNATURE: Pat Klick PRINTED NAME: Pat Klick

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	TCL VOC	Metals *	MS/MSD	Temperature	REMARKS
	9/13/95	17:10	GW-091395-PK-022	Water	3	✓				* Selected
		18:35	GW-091395-PK-023		9	✓		✓		TAL Metals =
		19:10	GW-091395-PK-024		3	✓				As, Ba, Cd,
	9/14/95		Trip Blank #2		1	✓				Cr, Cu, Pb,
			Temperature Blank		1				✓	Ni, Selenium,
		08:50	GW-091495-PK-025		3	✓				Ag + Zn
	09:25	~~08:50~~ (MS)	GW-091495-PK-026		3	✓				
		09:30	GW-091495-PK-027		3	✓				
		1430	GW-091495-PK-028		3	✓				
		1510	GW-091495-PK-029		3	✓				
		1515	GW-091495-PK-030		3	✓				
		10:05	GW-091395-PK-019		1		✓			
		10:20	GW-091395-PK-020		1		✓			
		10:35 ~~12:50~~ (MS)	GW-091395-PK-021		1		✓			
		12:25	GW-091395-PK-022		1		✓			
			TOTAL NUMBER OF CONTAINERS		39					

RELINQUISHED BY: ① Pat Klick	DATE: 9/14/95 TIME: 1600	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed EX AIR BILL No. 5272062261

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: Klick

RECEIVED FOR LABORATORY BY: Kathy Evans
DATE: 90915 TIME: 9:15A

№ 5022

1001(FORMS)–APRIL 29, 93–REV.0–(C)(F–01)

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road – Suite 103
Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): Quanterra, OH

CHAIN OF CUSTODY RECORD

REFERENCE NUMBER: 3627

PROJECT NAME: Synthetic Products

SAMPLER'S SIGNATURE: Pat Klick PRINTED NAME: Pat Klick

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	Metals *	REMARKS
	9/15/95		GW-091495-PK-028	Water	1	✓	* Selected TAL Metals As, Ba, Cd, Cr, Cu, Pb, Ni, Selenium, Ag, Zn
			GW-091495-PK-029		1	✓	
			GW-091495-PK-030		1	✓	
			GW-091495-PK-031		1	✓	
			GW-091495-PK-032		1	✓	
			GW-091595-PK-033		1	✓	
			TOTAL NUMBER OF CONTAINERS				

RELINQUISHED BY: ① Pat Klick	DATE: 9/15/95 TIME: 1600	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed X AIR BILL No. 5272062246

White –Fully Executed Copy
Yellow –Receiving Laboratory Copy
Pink –Shipper Copy
Goldenrod –Sampler Copy

SAMPLE TEAM: Klick

RECEIVED FOR LABORATORY BY: Kathy Brown
DATE: 950916 TIME: 11:45A

№ 5023

1001(FORMS)–APRIL 29, 93–REV.0–(C)(F-01)

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): Quanterra, OH

REFERENCE NUMBER: 3627

PROJECT NAME: Synthetic Products

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: Pat Klick PRINTED NAME: Pat Klick

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	TCL VOC	Metals *	MS/MSD	Temperature	REMARKS
	9/14/95	17:15	GW-091395-PK-023	Water	2		✓	✓		* Selected TAL Metals - As, Ba, Cd, Cr, Cu, Pb, Ni, Selenium, Ag + Zn
		17:00	GW-091395-PK-024		1		✓			
		18:15	GW-091495-PK-025		1		✓			
		18:25	GW-091495-PK-026		1		✓			
		18:30	GW-091495-PK-027		1		✓			
		17:40	GW-091495-PK-031		3	✓				
		18:40	GW-091495-PK-032		3	✓				
	9/15/95	08:25	GW-091595-PK-033		3	✓				
			Trip Blank #3		1	✓				
			Temperature Blank.		1				1	

TOTAL NUMBER OF CONTAINERS 17

RELINQUISHED BY: ① Pat Klick	DATE: 9/15/95 TIME: 1600	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed X AIR BILL No. 5272062246

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: Klick

RECEIVED FOR LABORATORY BY: Kathy Graves
DATE: 950916 TIME: 1145A

№ 5024

1001(FORMS)-APRIL 29, 93-REV.0-(C)(F-01)

Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

216 497-9396 Telephone
216 497-0772 Fax

Quanterra
Environmental Services

ANALYTICAL REPORT

PROJECT NO. 3627

SYNTHETIC PRODUCTS COMPANY

NANCY BERGSTROM

CONESTOGA-ROVERS & ASSOCIATES

QUANTERRA INCORPORATED

Daniel J. Wright
Project Manager

October 5, 1995

VALIDATED DATA
Project 3627
A5I140122
Date 11-8-95

10-4-95

Quanterra
Environmental Services

PROJECT NARRATIVE

The following report contains the analytical results for four water samples submitted to Quanterra-North Canton by Conestoga-Rovers and Associates, Inc. from the Synthetic Products Company Site, project number 3627. The samples were received September 14, 1995, according to documented sample acceptance procedures.

Quanterra utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the following page in accordance with the methods indicated. Results were provided by facsimile transmission to Nancy Bergstrom on October 2, 1995. A summary of QC data for these analyses is included at the end of the report.

ANALYTICAL METHODS SUMMARY

Quanterra Environmental Services

A5I140122

Parameters	Methods
Volatile Organics by GC/MS	SW846 8260

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and Final Update I (7/92).

SAMPLE SUMMARY

Quanterra Environmental Services

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	
C12Q2	A5I140122-001	GW-091395-PK-019	9/13/95	10:35
C12Q3	A5I140122-002	GW-091395-PK-020	9/13/95	11:25
C12Q4	A5I140122-003	GW-091395-PK-021	9/13/95	12:50
C12Q6	A5I140122-004	TRIP BLANK #1	9/13/95	

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-019

WO #: C12Q2101
LAB #: A5I140122-001
MATRIX: WATER
DILUTION FACTOR: 83.33

DATE SAMPLED: 9/13/95
TIME SAMPLED: 10:35
DATE RECEIVED: 9/14/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	83	SW846 8260	09/25/95	5269124
Bromomethane	ND	83	SW846 8260	09/25/95	5269124
Vinyl chloride	ND	83	SW846 8260	09/25/95	5269124
Chloroethane	ND	83	SW846 8260	09/25/95	5269124
Methylene chloride	ND	83	SW846 8260	09/25/95	5269124
Acetone	ND	830	SW846 8260	09/25/95	5269124
Carbon disulfide	ND	83	SW846 8260	09/25/95	5269124
1,1-Dichloroethene	**510**	**83**	**SW846 8260**	**09/25/95**	**5269124**
1,1-Dichloroethane	**260**	**83**	**SW846 8260**	**09/25/95**	**5269124**
1,2-Dichloroethene (total)	**300**	**83**	**SW846 8260**	**09/25/95**	**5269124**
Chloroform	ND	83	SW846 8260	09/25/95	5269124
1,2-Dichloroethane	ND	83	SW846 8260	09/25/95	5269124
2-Butanone	ND	830	SW846 8260	09/25/95	5269124
1,1,1-Trichloroethane	**3,000**	**83**	**SW846 8260**	**09/25/95**	**5269124**
Carbon tetrachloride	ND	83	SW846 8260	09/25/95	5269124
Bromodichloromethane	ND	83	SW846 8260	09/25/95	5269124
1,2-Dichloropropane	ND	83	SW846 8260	09/25/95	5269124
cis-1,3-Dichloropropene	ND	83	SW846 8260	09/25/95	5269124
Trichloroethene	**40 J**	**83**	**SW846 8260**	**09/25/95**	**5269124**
Dibromochloromethane	ND	83	SW846 8260	09/25/95	5269124
1,1,2-Trichloroethane	ND	83	SW846 8260	09/25/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	97	(88 - 110)
Bromofluorobenzene	106	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-019

WO #: C12Q2101
LAB #: A5I140122-001
MATRIX: WATER
DILUTION FACTOR: 83.33

DATE SAMPLED: 9/13/95
TIME SAMPLED: 10:35
DATE RECEIVED: 9/14/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	83	SW846 8260	09/25/95	5269124
trans-1,3-Dichloropropene	ND	83	SW846 8260	09/25/95	5269124
Bromoform	ND	83	SW846 8260	09/25/95	5269124
4-Methyl-2-pentanone	ND	830	SW846 8260	09/25/95	5269124
2-Hexanone	ND	830	SW846 8260	09/25/95	5269124
Tetrachloroethene	ND	83	SW846 8260	09/25/95	5269124
1,1,2,2-Tetrachloroethane	ND	83	SW846 8260	09/25/95	5269124
Toluene	ND	83	SW846 8260	09/25/95	5269124
Chlorobenzene	ND	83	SW846 8260	09/25/95	5269124
Ethylbenzene	ND	83	SW846 8260	09/25/95	5269124
Styrene	ND	83	SW846 8260	09/25/95	5269124
Xylenes (total)	ND	83	SW846 8260	09/25/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	97	(88 - 110)
Bromofluorobenzene	106	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-020

WO #: C12Q3101
LAB #: A5I140122-002
MATRIX: WATER
DILUTION FACTOR: 250.00

DATE SAMPLED: 9/13/95
TIME SAMPLED: 11:25
DATE RECEIVED: 9/14/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	250	SW846 8260	09/25/95	5269124
Bromomethane	ND	250	SW846 8260	09/25/95	5269124
Vinyl chloride	ND	250	SW846 8260	09/25/95	5269124
Chloroethane	ND	250	SW846 8260	09/25/95	5269124
Methylene chloride	ND	250	SW846 8260	09/25/95	5269124
Acetone	ND	2,500	SW846 8260	09/25/95	5269124
Carbon disulfide	ND	250	SW846 8260	09/25/95	5269124
1,1-Dichloroethene	ND	250	SW846 8260	09/25/95	5269124
1,1-Dichloroethane	ND	250	SW846 8260	09/25/95	5269124
1,2-Dichloroethene (total)	ND	250	SW846 8260	09/25/95	5269124
Chloroform	ND	250	SW846 8260	09/25/95	5269124
1,2-Dichloroethane	ND	250	SW846 8260	09/25/95	5269124
2-Butanone	ND	2,500	SW846 8260	09/25/95	5269124
1,1,1-Trichloroethane	ND	250	SW846 8260	09/25/95	5269124
Carbon tetrachloride	ND	250	SW846 8260	09/25/95	5269124
Bromodichloromethane	ND	250	SW846 8260	09/25/95	5269124
1,2-Dichloropropane	ND	250	SW846 8260	09/25/95	5269124
cis-1,3-Dichloropropene	ND	250	SW846 8260	09/25/95	5269124
Trichloroethene	ND	250	SW846 8260	09/25/95	5269124
Dibromochloromethane	ND	250	SW846 8260	09/25/95	5269124
1,1,2-Trichloroethane	ND	250	SW846 8260	09/25/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	102	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	104	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-020

WO #: C12Q3101
LAB #: A5I140122-002
MATRIX: WATER
DILUTION FACTOR: 250.00

DATE SAMPLED: 9/13/95
TIME SAMPLED: 11:25
DATE RECEIVED: 9/14/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	**8,400**	**250**	**SW846 8260**	**09/25/95**	**5269124**
trans-1,3-Dichloropropene	ND	250	SW846 8260	09/25/95	5269124
Bromoform	ND	250	SW846 8260	09/25/95	5269124
4-Methyl-2-pentanone	ND	2,500	SW846 8260	09/25/95	5269124
2-Hexanone	ND	2,500	SW846 8260	09/25/95	5269124
Tetrachloroethene	ND	250	SW846 8260	09/25/95	5269124
1,1,2,2-Tetrachloroethane	ND	250	SW846 8260	09/25/95	5269124
Toluene	ND	250	SW846 8260	09/25/95	5269124
Chlorobenzene	ND	250	SW846 8260	09/25/95	5269124
Ethylbenzene	ND	250	SW846 8260	09/25/95	5269124
Styrene	ND	250	SW846 8260	09/25/95	5269124
Xylenes (total)	ND	250	SW846 8260	09/25/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	102	(76 - 114)
Toluene-d8	99	(88 - 110)
Bromofluorobenzene	104	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-021

WO #: C12Q4101
LAB #: A5I140122-003
MATRIX: WATER
DILUTION FACTOR: 83.33

DATE SAMPLED: 9/13/95
TIME SAMPLED: 12:50
DATE RECEIVED: 9/14/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Tetrachloroethene	ND	83	SW846 8260	09/25/95	5269124
1,1,2,2-Tetrachloroethane	ND	83	SW846 8260	09/25/95	5269124
Toluene	ND	83	SW846 8260	09/25/95	5269124
Chlorobenzene	ND	83	SW846 8260	09/25/95	5269124
Ethylbenzene	ND	83	SW846 8260	09/25/95	5269124
Styrene	ND	83	SW846 8260	09/25/95	5269124
Xylenes (total)	ND	83	SW846 8260	09/25/95	5269124
Chloromethane	ND	83	SW846 8260	09/25/95	5269124
Bromomethane	ND	83	SW846 8260	09/25/95	5269124
Vinyl chloride	ND	83	SW846 8260	09/25/95	5269124
Chloroethane	ND	83	SW846 8260	09/25/95	5269124
Methylene chloride	ND	83	SW846 8260	09/25/95	5269124
Acetone	ND	830	SW846 8260	09/25/95	5269124
Carbon disulfide	ND	83	SW846 8260	09/25/95	5269124
1,1-Dichloroethene	**400**	**83**	**SW846 8260**	**09/25/95**	**5269124**
1,1-Dichloroethane	**280**	**83**	**SW846 8260**	**09/25/95**	**5269124**
1,2-Dichloroethene (total)	**240**	**83**	**SW846 8260**	**09/25/95**	**5269124**
Chloroform	ND	83	SW846 8260	09/25/95	5269124
1,2-Dichloroethane	ND	83	SW846 8260	09/25/95	5269124
2-Butanone	ND	830	SW846 8260	09/25/95	5269124
1,1,1-Trichloroethane	**2,800**	**83**	**SW846 8260**	**09/25/95**	**5269124**

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	100	(76 - 114)
Toluene-d8	94	(88 - 110)
Bromofluorobenzene	107	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

GW-091395-PK-021

WO #: C12Q4101
LAB #: A5I140122-003
MATRIX: WATER
DILUTION FACTOR: 83.33

DATE SAMPLED: 9/13/95
TIME SAMPLED: 12:50
DATE RECEIVED: 9/14/95

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Carbon tetrachloride	ND	83	SW846 8260	09/25/95	5269124
Bromodichloromethane	ND	83	SW846 8260	09/25/95	5269124
1,2-Dichloropropane	ND	83	SW846 8260	09/25/95	5269124
cis-1,3-Dichloropropene	ND	83	SW846 8260	09/25/95	5269124
Trichloroethene	**60 J**	**83**	**SW846 8260**	**09/25/95**	**5269124**
Dibromochloromethane	ND	83	SW846 8260	09/25/95	5269124
1,1,2-Trichloroethane	ND	83	SW846 8260	09/25/95	5269124
Benzene	ND	83	SW846 8260	09/25/95	5269124
trans-1,3-Dichloropropene	ND	83	SW846 8260	09/25/95	5269124
Bromoform	ND	83	SW846 8260	09/25/95	5269124
4-Methyl-2-pentanone	ND	830	SW846 8260	09/25/95	5269124
2-Hexanone	ND	830	SW846 8260	09/25/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	100	(76 - 114)
Toluene-d8	94	(88 - 110)
Bromofluorobenzene	107	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT
J ESTIMATED VALUE. (DETECTED), BUT BELOW QUANTITATION LIMIT.

Quanterra Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

TRIP BLANK #1

WO #: C12Q6101
LAB #: A5I140122-004
MATRIX: WATER
DILUTION FACTOR: 1.00

DATE SAMPLED: 9/13/95
TIME SAMPLED:
DATE RECEIVED: 9/14/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Chloromethane	ND	1.0	SW846 8260	09/20/95	5268045
Bromomethane	ND	1.0	SW846 8260	09/20/95	5268045
Vinyl chloride	ND	1.0	SW846 8260	09/20/95	5268045
Chloroethane	ND	1.0	SW846 8260	09/20/95	5268045
Methylene chloride	ND	1.0	SW846 8260	09/20/95	5268045
Acetone	ND	10	SW846 8260	09/20/95	5268045
Carbon disulfide	ND	1.0	SW846 8260	09/20/95	5268045
1,1-Dichloroethene	ND	1.0	SW846 8260	09/20/95	5268045
1,1-Dichloroethane	ND	1.0	SW846 8260	09/20/95	5268045
1,2-Dichloroethene (total)	ND	1.0	SW846 8260	09/20/95	5268045
Chloroform	ND	1.0	SW846 8260	09/20/95	5268045
1,2-Dichloroethane	ND	1.0	SW846 8260	09/20/95	5268045
2-Butanone	ND	10	SW846 8260	09/20/95	5268045
1,1,1-Trichloroethane	ND	1.0	SW846 8260	09/20/95	5268045
Carbon tetrachloride	ND	1.0	SW846 8260	09/20/95	5268045
Bromodichloromethane	ND	1.0	SW846 8260	09/20/95	5268045
1,2-Dichloropropane	ND	1.0	SW846 8260	09/20/95	5268045
cis-1,3-Dichloropropene	ND	1.0	SW846 8260	09/20/95	5268045
Trichloroethene	ND	1.0	SW846 8260	09/20/95	5268045
Dibromochloromethane	ND	1.0	SW846 8260	09/20/95	5268045
1,1,2-Trichloroethane	ND	1.0	SW846 8260	09/20/95	5268045

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	92	(76 - 114)
Toluene-d8	103	(88 - 110)
Bromofluorobenzene	97	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

CONESTOGA-ROVERS & ASSOCIATES

TRIP BLANK #1

WO #: C12Q6101
LAB #: A5I140122-004
MATRIX: WATER
DILUTION FACTOR: 1.00

DATE SAMPLED: 9/13/95
TIME SAMPLED:
DATE RECEIVED: 9/14/95

GC/MS Volatiles

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	SW846 8260	09/20/95	5268045
trans-1,3-Dichloropropene	ND	1.0	SW846 8260	09/20/95	5268045
Bromoform	ND	1.0	SW846 8260	09/20/95	5268045
4-Methyl-2-pentanone	ND	10	SW846 8260	09/20/95	5268045
2-Hexanone	ND	10	SW846 8260	09/20/95	5268045
Tetrachloroethene	ND	1.0	SW846 8260	09/20/95	5268045
1,1,2,2-Tetrachloroethane	ND	1.0	SW846 8260	09/20/95	5268045
Toluene	ND	1.0	SW846 8260	09/20/95	5268045
Chlorobenzene	ND	1.0	SW846 8260	09/20/95	5268045
Ethylbenzene	ND	1.0	SW846 8260	09/20/95	5268045
Styrene	ND	1.0	SW846 8260	09/20/95	5268045
Xylenes (total)	ND	1.0	SW846 8260	09/20/95	5268045

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	92	(76 - 114)
Toluene-d8	103	(88 - 110)
Bromofluorobenzene	97	(86 - 115)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental
Services

QUALITY CONTROL SECTION

Quanterra
Environmental Services

QUALITY CONTROL NARRATIVE

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant.

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5269124
LAB #: A5I260000-124 C

PREPARATION DATE: 9/25/95
DATE ANALYZED: 9/25/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	82	(70-143)
Trichloroethene	96	(76-121)
Chlorobenzene	105	(81-121)
Toluene	96	(79-122)
Benzene	102	(79-125)

Quanterra
Environmental Services

CHECK SAMPLE REPORT

QC BATCH: 5268045
LAB #: A5I250000-045 C

PREPARATION DATE: 9/20/95
DATE ANALYZED: 9/20/95

- **GC/MS Volatiles** -

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
1,1-Dichloroethene	104	(70-143)
Trichloroethene	100	(76-121)
Chlorobenzene	100	(81-121)
Toluene	102	(79-122)
Benzene	101	(79-125)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: A5I260000-124

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	9/25/95	5269124
Benzene	ND	1.0	9/25/95	5269124
Bromodichloromethane	ND	1.0	9/25/95	5269124
Bromoform	ND	1.0	9/25/95	5269124
Bromomethane	ND	1.0	9/25/95	5269124
2-Butanone	ND	10	9/25/95	5269124
Carbon disulfide	ND	1.0	9/25/95	5269124
Carbon tetrachloride	ND	1.0	9/25/95	5269124
Chlorobenzene	ND	1.0	9/25/95	5269124
Dibromochloromethane	ND	1.0	9/25/95	5269124
Chloroethane	ND	1.0	9/25/95	5269124
Chloroform	ND	1.0	9/25/95	5269124
Chloromethane	ND	1.0	9/25/95	5269124
1,1-Dichloroethane	ND	1.0	9/25/95	5269124
1,2-Dichloroethane	ND	1.0	9/25/95	5269124
1,1-Dichloroethene	ND	1.0	9/25/95	5269124
1,2-Dichloroethene (total)	ND	1.0	9/25/95	5269124
1,2-Dichloropropane	ND	1.0	9/25/95	5269124
cis-1,3-Dichloropropene	ND	1.0	9/25/95	5269124
trans-1,3-Dichloropropene	ND	1.0	9/25/95	5269124
Ethylbenzene	ND	1.0	9/25/95	5269124
2-Hexanone	ND	10	9/25/95	5269124
Methylene chloride	ND	1.0	9/25/95	5269124
4-Methyl-2-pentanone	ND	10	9/25/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	92	(88 - 110)
Bromofluorobenzene	107	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra
Environmental Services

METHOD BLANK REPORT

LAB #: A5I260000-124

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Styrene	ND	1.0	9/25/95	5269124
1,1,2,2-Tetrachloroethane	ND	1.0	9/25/95	5269124
Tetrachloroethene	ND	1.0	9/25/95	5269124
Toluene	ND	1.0	9/25/95	5269124
1,1,1-Trichloroethane	ND	1.0	9/25/95	5269124
1,1,2-Trichloroethane	ND	1.0	9/25/95	5269124
Trichloroethene	ND	1.0	9/25/95	5269124
Vinyl chloride	ND	1.0	9/25/95	5269124
Xylenes (total)	ND	1.0	9/25/95	5269124

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	101	(76 - 114)
Toluene-d8	92	(88 - 110)
Bromofluorobenzene	107	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: A5I250000-045

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Acetone	ND	10	9/20/95	5268045
Benzene	ND	1.0	9/20/95	5268045
Bromodichloromethane	ND	1.0	9/20/95	5268045
Bromoform	ND	1.0	9/20/95	5268045
Bromomethane	ND	1.0	9/20/95	5268045
2-Butanone	ND	10	9/20/95	5268045
Carbon disulfide	ND	1.0	9/20/95	5268045
Carbon tetrachloride	ND	1.0	9/20/95	5268045
Chlorobenzene	ND	1.0	9/20/95	5268045
Dibromochloromethane	ND	1.0	9/20/95	5268045
Chloroethane	ND	1.0	9/20/95	5268045
Chloroform	ND	1.0	9/20/95	5268045
Chloromethane	ND	1.0	9/20/95	5268045
1,1-Dichloroethane	ND	1.0	9/20/95	5268045
1,2-Dichloroethane	ND	1.0	9/20/95	5268045
1,1-Dichloroethene	ND	1.0	9/20/95	5268045
1,2-Dichloroethene (total)	ND	1.0	9/20/95	5268045
1,2-Dichloropropane	ND	1.0	9/20/95	5268045
cis-1,3-Dichloropropene	ND	1.0	9/20/95	5268045
trans-1,3-Dichloropropene	ND	1.0	9/20/95	5268045
Ethylbenzene	ND	1.0	9/20/95	5268045
2-Hexanone	ND	10	9/20/95	5268045
Methylene chloride	ND	1.0	9/20/95	5268045
4-Methyl-2-pentanone	ND	10	9/20/95	5268045

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	90	(76 - 114)
Toluene-d8	104	(88 - 110)
Bromofluorobenzene	94	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

METHOD BLANK REPORT

LAB #: A5I250000-045

- GC/MS Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	PREPARATION - ANALYSIS DATE	QC BATCH
Styrene	ND	1.0	9/20/95	5268045
1,1,2,2-Tetrachloroethane	ND	1.0	9/20/95	5268045
Tetrachloroethene	ND	1.0	9/20/95	5268045
Toluene	ND	1.0	9/20/95	5268045
1,1,1-Trichloroethane	ND	1.0	9/20/95	5268045
1,1,2-Trichloroethane	ND	1.0	9/20/95	5268045
Trichloroethene	ND	1.0	9/20/95	5268045
Vinyl chloride	ND	1.0	9/20/95	5268045
Xylenes (total)	ND	1.0	9/20/95	5268045

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
1,2-Dichloroethane-d4	90	(76 - 114)
Toluene-d8	104	(88 - 110)
Bromofluorobenzene	94	(86 - 115)

NOTE:

ND (NONE DETECTED)

Quanterra Environmental Services

MATRIX SPIKE REPORT

QC BATCH: 5269124
LAB #: A5I160104-002 S
MATRIX: WATER

WO #: C138A
PREPARATION DATE: 9/26/95
DATE ANALYZED: 9/26/95

GC/MS Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
1,1-Dichloroethene	71	82	(55-142)	15	(0-19)
Trichloroethene	97	100	(77-124)	2.7	(0-13)
Chlorobenzene	98	101	(85-120)	3.3	(0-10)
Toluene	97	101	(82-122)	4.3	(0-15)
Benzene	106	107	(83-123)	1.6	(0-13)

Calculations are performed before rounding to avoid round-off errors in calculated results

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road – Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Quanterra, OH

REFERENCE NUMBER: 3627

PROJECT NAME: Synthetic Products

SAMPLER'S SIGNATURE: Pat Klick PRINTED NAME: Pat Klick

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: TCL VOC	PARAMETERS: Temperature	REMARKS
	9/13/95	10:35	GW-091395-PK-019	Water	3	✓		
		11:25	GW-091395-PK-020		3	✓		
		12:50	GW-091395-PK-021		3	✓		
			Trip Blank #1		1	✓		
			Temperature Blank		1		✓	
			TOTAL NUMBER OF CONTAINERS		11			

RELINQUISHED BY: ① Pat Klick	DATE: 9-13-95 TIME: 1600	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed X AIR BILL No. 5272062250

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: Klick

RECEIVED FOR LABORATORY BY: Kathy J. Graves
DATE: 950914 TIME: 12301

№ 5021

1001(FORMS)-APRIL 29, 93-REV.0-(C)(F-01)

APPENDIX D

ANALYTICAL DATA QUALITY ASSESSMENT AND VALIDATION

MEMO

TO: Scott Green

REFERENCE NO: 3627

FROM: Nancy Bergstrom NMB

DATE: August 21, 1995
Revised: September 21, 1995

RE: Data Quality Assessment and Validation for Multiple Soil and Water Samples Collected from the Synthetic Products Company Site in Stratford, Connecticut [Reports Numbered A5E160009, A5E160013, A5E180039, A5E240044, A5E260059, A5F010051, A5F020025, A5F210046 and A5F280036]

The following details an analytical data quality assessment of the data resulting from the May 1995 collection of multiple soil and water samples collected from the above-referenced Site. The samples, identified in Table 1, were analyzed for the parameters presented in Table 2 by Quanterra, Inc. of North Canton, Ohio using the analytical methods presented in Table 2. The quality control criteria used to assess the data were established by the methods.[1]

Holding Time Periods

The holding time periods for the analyses are listed in Table 3. The extraction of sample S-053095-JH-040 for target compound list (TCL) semivolatile organic compounds (SVOC) was performed outside of the required holding time period and the results for sample S-053095-JH-040 should be qualified as estimated (J) or the quantitation limits should be qualified as estimated (UJ). The remaining samples were prepared and analyzed within the required holding time periods as indicated by the sample collection and analysis dates on the chain-of-custody documents and the analytical reports provided by the laboratory.

Method Blank Samples

Contamination of samples contributed by laboratory conditions or procedures was monitored by the concurrent preparation and analysis of method blank samples. Table 4 presents the data which should be qualified due to method blank contamination. The remainder of the method blank samples were reported to be free from detectable concentrations of target analytes or target analytes were less than ten times the concentration detected in the samples indicating no significant laboratory contamination occurred.

---

[1]Application of quality assurance criteria was consistent with "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-94/012, February 1994 and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", EPA-540/R-94-013, February 1994.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for the organic analyses was monitored by surrogate compound percent recoveries. In sample S-051395-JH-010, the surrogate percent recoveries were diluted out of detectable range for TCL volatile organic compounds (VOC) analysis. No qualification of the associated data is required. The remaining surrogate recoveries for the samples were within the acceptance criteria.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Percent Recoveries

To assess the long-term accuracy and precision of the analytical methods on sample matrices, MS/MSD percent recoveries and the relative percent difference (RPD) of the recoveries were determined. In two MS/MSD samples, zinc was diluted beyond recovery range but qualification of the sample data was deemed unnecessary. Table 5 presents the data that should be qualified due to violation of MS/MSD acceptance criteria. All remaining MS/MSD percent recoveries and RPD data were within the control limits, indicating an adequate level of accuracy and precision was achieved.

Check Sample Percent Recoveries

Check sample percent recoveries were examined to assess the overall performance and accuracy of the laboratory procedures. The check sample percent recoveries were within the laboratory control limits, indicating the methods achieved an adequate level of accuracy.

Rinsate Blank Samples

Two rinsate blank samples were collected to evaluate the effectiveness of the field decontamination procedures. Acetone was detected in one rinsate blank sample, but qualification of the associated data was unnecessary since acetone was detected at less than ten times the concentration detected in the associated sample. The remaining rinsate blank sample fractions remained free from contamination and qualification of the sample data was unnecessary.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision and may be used with the qualifications noted.

NB/mo/3

Attachments

cc: Steven Day

TABLE 1

SAMPLE IDENTIFICATION NUMBERS
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

S-050995-JH-001
S-050995-JH-002
S-051295-JH-003
S-051295-JH-004
W-051295-JH-005
S-051295-JH-006
S-051395-JH-007
S-051395-JH-008
S-051395-JH-009
S-051495-JH-010
S-051495-JH-011
S-051495-JH-012
S-051495-JH-013
S-051695-JH-014
S-051695-JH-015
S-051695-JH-016
S-051695-JH-017
S-051695-JH-018
S-051695-JH-019
S-052295-JH-020
S-052295-JH-021
W-052295-JH-022
S-052295-JH-023
S-052395-JH-024
S-052395-JH-025
S-052395-JH-026
S-052395-JH-027
S-052395-JH-028
S-052495-JH-029
S-052495-JH-030
S-052495-JH-031
S-052495-JH-032
S-052495-JH-033
S-052595-JH-034
S-052595-JH-035
S-052595-JH-036
S-052695-JH-037
S-052695-JH-038
S-053095-JH-039
S-053095-JH-040
W-053095-JH-041
S-053195-JH-042
S-053195-JH-043

TABLE 2

ANALYTICAL METHODS
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

Parameter	*Analytical Method*	
Target Compound List (TCL) Volatile Organic Compounds (VOC)	SW-846 [1]	8240A
Select Metals [2]	SW-846	6010A
Bulk Density	ASTM [3]	D1188
Permeability	ASTM	D2434
Percent Moisture	ASTM	D2216
Total Organic Carbon (TOC)	Walkley-Black [4]	
Total Recoverable Petroleum Hydrocarbons (TRPH) (water)	EPA [5]	418.1
TRPH (soil)	EPA	418.1 (modified)
TCL Semivolatile Organic Compounds (SVOC)	SW-846	8270A
Toxicity Characteristic Leaching Procedure (TCLP) Extraction	SW-846	1311
TCLP Select Metals	SW-846	6010A

[1] "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW-846, 3rd edition, November 1986, with promulgated updates.
[2] Select Metals = Silver, Barium, Cadmium, Chromium, Copper, Nickel, Zinc, Arsenic, Lead and Selenium.
[3] "Annual Book of ASTM Standards", American Society for Testing and Materials, Philadelphia, Pennsylvania, 1987.
[4] "Methods for Soil Analysis, Part 2, Chemical and Microbiological Properties", American Society of Agronomy, 1965.
[5] "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, revised March 1983.

TABLE 3

HOLDING TIME PERIODS
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

Parameter	*Holding Time Period*
TCL VOC	- 14 days from sample collection to completion of analysis
Select Metals	- 6 months from sample collection to completion of analysis
Bulk Density, Permeability, Percent Moisture	- none established
TOC, TRPH (water and soil)	- 28 days from sample collection to completion of analysis
TCL SVOC	- 14 days from sample collection to extraction - 40 days from extraction to completion of analysis
TCLP Select Metals	- 180 days from sample collection to TCLP extraction - 180 days from TCLP extraction to completion of analysis

TABLE 4

QUALIFIED SAMPLES DUE TO METHOD BLANK CONTAMINATION SYNTHETIC PRODUCTS COMPANY SITE STRATFORD, CONNECTICUT

Parameter	*Associated Samples*	*Qualified Sample Result* [1]
Acetone	S-051295-JH-003	U(50) µg/L
	S-051395-JH-007	U(50) µg/L
Lead	S-053195-JH-043	U(3.1) mg/L

[1] U( ) - The analyte was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or sample detection limit.

TABLE 5

QUALIFICATION OF SAMPLE DATA DUE TO
VIOLATION OF MS/MSD ACCEPTANCE CRITERIA
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

Sample ID	*Analyte*	*Qualifier* [1]
S-051295-JH-003	Barium	J
S-051295-JH-004		J
S-051295-JH-006		J
S-051295-JH-003	Cadmium	J
S-051295-JH-004		J
S-051295-JH-006		J
S-051295-JH-003	Copper	J
S-051295-JH-004		J
S-051295-JH-006		J
S-051395-JH-007	Selenium	UJ
S-051395-JH-008		UJ
S-051395-JH-009		UJ
S-051495-JH-010		UJ
S-051495-JH-012		UJ
S-052295-JH-023		UJ
S-052395-JH-024		UJ

1 J - The associated value is an estimated quantity.
UJ - The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

MEMO

TO: Scott Green REFERENCE NO: 3627

FROM: Nancy Bergstrom DATE: August 21, 1995

RE: Data Quality Assessment and Validation for Multiple Groundwater Samples and One Soil Sample Collected from the Synthetic Products Company Site in Stratford, Connecticut [Reports Numbered A5F170005 and A5F170003]

The following details an analytical data quality assessment of the data resulting from the June 13 through 15, 1995 collection of multiple groundwater samples and one soil sample collected from the above-referenced Site. The samples, identified in Table 1, were analyzed for the parameters presented in Table 2 by Quanterra, Inc. of North Canton, Ohio using the analytical methods presented in Table 2. The quality control criteria used to assess the data were established by the methods.[1]

Holding Time Periods

The holding time periods for the analyses are listed in Table 3. The samples were prepared and analyzed within the required holding time periods as indicated by the sample collection and analysis dates on the chain-of-custody documents and the analytical reports provided by the laboratory.

Method Blank Samples

Contamination of samples contributed by laboratory conditions or procedures was monitored by concurrent preparation and analysis of method blank samples. The method blank samples were reported to be free of detectable concentrations of target analytes indicating no significant laboratory contamination occurred.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for the organic analyses was monitored by surrogate compound percent recoveries. The surrogate recoveries for the samples were within the acceptance criteria.

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[1]Application of quality assurance criteria was consistent with "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-94/012, February 1994 and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", EPA-540/R-94-013, February 1994.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Percent Recoveries

To assess the long-term accuracy and precision of the analytical methods on sample matrices, MS/MSD percent recoveries and the relative percent difference (RPD) of the recoveries were determined. All MS/MSD percent recoveries and RPD data were within the control limits, indicating an adequate level of accuracy and precision was achieved.

Check Sample Percent Recoveries

Check sample percent recoveries were examined to assess the overall performance and accuracy of the laboratory procedures. The check sample percent recoveries were within the laboratory control limits, indicating the methods achieved an adequate level of accuracy.

Field Duplicate Samples

To assess the overall field and laboratory precision of the sampling and analytical effort, two field duplicate sample sets were collected. Table 4 presents the results of the detected analytes in the field duplicate sample sets.

Trip Blank Samples

To monitor for cross-contamination of VOC samples during transport and storage, two trip blank samples were submitted with the investigative samples. The trip blank samples remained free from VOC contamination and qualification of the sample data was unnecessary.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision and may be used without qualification.

NB/MO/2

Attachments

cc: Steven Day

TABLE 1

SAMPLE IDENTIFICATION NUMBERS
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

WP-061395-MAW-001
GW-061395-MAW-002
GW-061395-MAW-003
GW-061495-MAW-004
GW-061495-MAW-005
GW-061495-MAW-006
GW-061495-MAW-007
GW-061495-MAW-008
GW-061495-MAW-009
GW-061495-MAW-010
GW-061495-MAW-011
GW-061495-MAW-012
GW-061495-MAW-013
GW-061595-MAW-014
GW-061595-MAW-015
GW-061595-MAW-016
GW-061595-MAW-017
GW-061595-MAW-018

TABLE 2

ANALYTICAL METHODS
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

Parameter	*Analytical Method*
Toxicity Characteristic Leaching Procedure (TCLP) Volatile Organic Compounds (VOC)	SW-846 [1] 8240A
TCLP Semivolatile Organic Compounds (SVOC)	SW-846 8270A
TCLP Select Metals [2]	SW-846 6010A
TCLP Extraction	SW-846 1311
pH	SW-846 9045
Reactive Cyanide	SW-846 7.3.3.2
Reactive Sulfide	SW-846 7.3.4.2
Flashpoint (Cleveland Open Cup)	ASTM [3] D92-85
Target Compound List (TCL) VOC	SW-846 8260
Select Metals	SW-846 6010A

[1] "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW-846, 3rd edition, November 1986, with promulgated updates.

[2] Select Metals = Silver, Barium, Cadmium, Chromium, Copper, Nickel, Zinc, Arsenic, Lead and Selenium.

[3] "Annual Book of ASTM Standards", American Society for Testing and Materials, Philadelphia, Pennsylvania, 1987.

TABLE 3

HOLDING TIME PERIODS
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

Parameter	*Holding Time Period*
TCLP VOC	- 14 days from sample collection to TCLP extraction - 14 days from TCLP extraction to completion of analysis
TCLP SVOC	- 14 days from sample collection to TCLP extraction - 7 days from TCLP extraction to preparative extraction - 40 days from preparative extraction to completion of analysis
TCLP Select Metals	- 180 days from sample collection to TCLP extraction - 180 days from TCLP extraction to completion of analysis
pH	- analyze immediately
Reactive Cyanide	- 14 days from sample collection to completion of analysis
Reactive Sulfide	- 7 days from sample collection to completion of analysis
Flashpoint (Cleveland Open Cup)	- none established
TCL VOC	- 14 days from sample collection to completion of analysis
Select Metals	- 6 months from sample collection to completion of analysis

TABLE 4

SUMMARY OF DETECTED ANALYTES
FIELD DUPLICATE SAMPLE SETS
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

Parameter	*Investigative Sample GW-061495-MAW-004*	*Duplicate Sample GW-061495-MAW-005*	*RPD* [1]
Organics (µg/L)			
1,1-Dichloroethene	130	110	17
1,1-Dichloroethane	66	63	4.7
1,2-Dichloroethene, total	130	120	8.0
1,1,1-Trichloroethane	1,000	870	14
Trichloroethene	38	32	17
Benzene	47	63	29
Toluene	140	190	30
Select Metals (mg/L)			
Barium	0.083	0.052	46
Cadmium	0.031	0.019	48
Copper	0.061	0.038	46
Zinc	0.17	0.12	34
Arsenic	0.0082	ND(0.0050) [2]	NC [3]
Lead	0.023	0.016	36

Parameter	*Investigative Sample GW-061495-MAW-008*	*Duplicate Sample GW-061495-MAW-009*	*RPD*
Volatile Organic Compounds (µg/L)			
Benzene	3,600	3,800	5.4
Toluene	990	1,100	11
Select Metals (mg/L)			
Barium	0.076	0.073	4.0
Arsenic	0.011	0.010	9.5
Lead	0.0051	0.0066	26

1 RPD = Relative Percent Difference
2 ND( ) = Not detected at quantitation limit stated in parentheses.
3 NC = Not calculable

MEMO

TO: Scott Green REFERENCE NO: 3627

FROM: Nancy Bergstrom NMB DATE: November 8, 1995

RE: Data Quality Assessment and Validation for Fifteen Groundwater Samples Collected from the Synthetic Products Company Site in Stratford, Connecticut [Report Numbers A5I140122 and A5I160104]

The following details an analytical data quality assessment of the data resulting from the September 13 through 15, 1995 collection of 15 groundwater samples from the above-referenced Site. The samples, identified in Table 1, were analyzed for the parameters presented in Table 2 by Quanterra, Inc. of North Canton, Ohio using the analytical methods presented in Table 2. The quality control criteria used to assess the data were established by the methods.[1]

Holding Time Periods

The holding time periods for the analyses are listed in Table 3. The samples were prepared and analyzed within the required holding time periods as indicated by the sample collection and analysis dates on the chain-of-custody documents and the analytical reports provided by the laboratory.

Method Blank Samples

Contamination of samples contributed by laboratory conditions or procedures was monitored by concurrent preparation and analysis of method blank samples. The method blank samples were reported to be free of detectable concentrations of target analytes indicating no significant laboratory contamination occurred.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for the organic analyses was monitored by surrogate compound percent recoveries. The surrogate recoveries for the samples were within the acceptance criteria.

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[1]Application of quality assurance criteria was consistent with "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-94/012, February 1994 and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", EPA-540/R-94-013, February 1994.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Percent Recoveries

To assess the long-term accuracy and precision of the analytical methods on sample matrices, MS/MSD percent recoveries and the relative percent difference (RPD) of the recoveries were determined. Cadmium and zinc were diluted beyond the recovery range in one MS/MSD sample but qualification of the sample data was deemed unnecessary. All remaining MS/MSD percent recoveries and RPD data were within the control limits, indicating an acceptable level of accuracy and precision was achieved.

Check Sample Percent Recoveries

Check sample percent recoveries were examined to assess the overall performance and accuracy of the laboratory procedures. The check sample percent recoveries were within the laboratory control limits, indicating the methods achieved an acceptable level of accuracy.

Trip Blank Sample

To monitor for cross-contamination of volatile organic compounds (VOC) samples during sample transport and storage, three trip blank samples were submitted with the investigative samples. The trip blank samples were reported to be free of detected concentrations of target analytes.

Field Duplicate Samples

To assess the overall field and laboratory precision of the sampling and analytical effort, two field duplicate sample sets were collected. Table 4 presents the results of the detected analytes in the field duplicate sample sets.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision and may be used without qualification.

NB/mo/4

Attachments

cc: Steven Day

TABLE 1

SAMPLE IDENTIFICATION NUMBERS
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

GW-091395-PK-019
GW-091395-PK-020
GW-091395-PK-021
GW-091395-PK-022
GW-091395-PK-023
GW-091395-PK-024
GW-091495-PK-025
GW-091495-PK-026
GW-091495-PK-027
GW-091495-PK-028
GW-091495-PK-029
GW-091495-PK-030
GW-091495-PK-031
GW-091495-PK-032
GW-091595-PK-033

TABLE 2

ANALYTICAL METHODS
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

Parameter	*Analytical Method*
Target Compound List (TCL) Volatile Organic Compounds (VOC)	SW-846 [1] 8260
Select Metals [2]	SW-846 6010A

[1] "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW-846, 3rd edition, November 1986, with promulgated updates.

[2] Select Metals = Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver and Zinc.

TABLE 3

HOLDING TIME PERIODS
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

Parameter	*Holding Time Period*
TCL VOC	- 14 days from sample collection to completion of analysis
Select Metals	- 6 months from sample collection to completion of analysis

TABLE 4

SUMMARY OF DETECTED ANALYTES
FIELD DUPLICATE SAMPLE SETS
SYNTHETIC PRODUCTS COMPANY SITE
STRATFORD, CONNECTICUT

Parameter	*Investigative Sample GW-091495-PK-026*	*Duplicate Sample GW-091495-PK-027*	*RPD* [1]
Organics (µg/L)			
Benzene	16,000	14,000	13
Toluene	11,000	9,400	16
Inorganics (mg/L)			
Arsenic	0.013	0.016	21
Lead	0.051	0.065	24
Selenium	0.0060	0.0061	1.6
Barium	0.18	0.18	0
Cadmium	0.022	0.012	59
Chromium	0.069	0.085	21
Copper	0.18	0.23	24
Zinc	0.18	0.23	24

Parameter	*Investigative Sample GW-091495-PK-029*	*Duplicate Sample GW-091495-PK-030*	*RPD*
Organics (µg/L)			
Benzene	16,000	17,000	6.1
Inorganics (mg/L)			
Arsenic	0.029	0.038	27
Lead	0.018	0.033	59
Barium	0.096	0.12	22
Copper	0.017	0.031	58
Zinc	ND(0.050) [2]	0.078	NC [3]

[1] RPD - Relative Percent Difference
[2] *ND ( ) - Not detected at the limit stated in parentheses.*
[3] NC - Not calculable

APPENDIX E

WASTE MANIFEST - SOIL

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS SUBSTANCES REGULATION

[redacted] WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

Please print or type. Do not Staple.

Form Approved. OMB No. 2050-0039. Expires 9-30-96

[redacted] WASTE MANIFEST

1. Generator's US EPA No.: 00GEXEMPT
Manifest Document No.: 04318
2. Page 1 of 1
Information in the shaded areas is not required by Federal Law.

3. Generator's Name and Mailing Address
KRAFT GENERAL FOODS
375 BARNUM AVE
STRATFORD CT 06497-5142
4. Generator's Phone (708 546-6801

A. State Manifest Document No.: NY B740431 8
B. Generator's ID: [redacted]

5. Transporter 1 (Company Name): HAZMAT ENV. GRP. INC.
6. US EPA ID Number: NYD980769947
C. State Transporter's ID: 09945(NY)
D. Transporter's Phone (716) 827-7200

7. Transporter 2 (Company Name)
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone ( )

9. Designated Facility Name and Site Address
CWM CHEMICAL SERVICES, INC.
1550 BALMER RD.
MODEL CITY NY 14107
10. US EPA ID Number: NYD049836679
G. State Facility's ID
H. Facility's Phone: 716 754-8231

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NON-REGULATED MATERIAL	011	DM	09900 EST.	P	EPA / STATE [redacted]
b.					EPA / STATE
c.					EPA / STATE
d.					EPA / STATE

J. Additional Descriptions for Materials listed Above
BD9595

K. Handling Codes for Wastes Listed Above
a: L c: b: d:

15. Special Handling Instructions and Additional Information
CHEMTREC Emergency Response Number (800)424-9300

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations.

If I am a large quantity generator, I certify that I have program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small generator, I have made a good faith effort to minimize my waste and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Philip M. McAndrew
Signature: Philip M. McAndrew
Mo. Day Year: 10 26 95

TRANSPORTER

17. Transporter 1 (Acknowledgement of Receipt of Materials)
Printed/Typed Name: TIMOTHY J. O'HALA
Signature: Timothy J. O'Hala
Mo. Day Year: 10 26 95

18. Transporter 2 (Acknowledgement of Receipt of Materials)
Printed/Typed Name
Signature
Mo. Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name
Signature
Mo. Day Year

NY B740431 8

EPA Form 8700-22 (Rev. 3-88) Previous editions are obsolete.

APPENDIX F

APPROVAL TO DISCHARGE WATER

(362-1)

Rec'd CRA
AUG 21 1995

WATER POLLUTION CONTROL
105 BEACON POINT ROAD
STRATFORD, CT 06497
(203) 385-4065

TOWN OF STRATFORD

CONNECTICUT
06497

August 14, 1995

Scott R. Green
Conestoga-Rovers & Associates
O'Hare Corporate Towers One
10400 W. Higgins Road, Suite 103
Rosemont, Illinois 60018

Dear Mr. Green;

Upon review of your letter, dated July 21, 1995, and the analytical data provided, Stratford Water Pollution Control will accept your request to discharge approximately 2000 gallons of monitoring well purge/development and decon water from the Synthetic Products site at 375 Barnum Avenue Cutoff, Stratford, CT.

The wastewater is to be discharged at the WPC Plant located at 105 Beacon Point Road in Stratford. You will be charged the septic truck delivery rate to discharge this waste. I've included a copy of the explanation of the septic hauling fees as it was provided to me. Please note, you will be charged the yearly $25.00 hauling permit fee in addition to the fee for the gallons of waste discharged. Our Superintendent has agreed that you may bring the waste to the plant in the two holding tanks currently in use and meter the actual discharge. The waste billing will be made to Kraft Foods, Inc., attn. Phil McAndrew, Kraft Court, Glenview, Illinois, 60025 (tel.# (708) 646-6801).

Please contact us when you are ready to proceed with the waste disposal and we will finalize any arrangements needed or answer any questions you may have.

Sincerely,

Caroline Joy Hamilla

Caroline Joy Hamilla
Monitoring & Enforcement Chemist
Stratford Water Pollution Control