DATA REPORT
ACTIVITIES FROM MARCH TO DECEMBER 2003

GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

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1.0 INTRODUCTION

1.1 PURPOSE

Conestoga-Rovers & Associates (CRA) was retained by General Motors Corporation (GM) to conduct an environmental investigation at the GM Grand Rapids Metal Plant located at 300 36th Street in Wyoming, Michigan (Site).

The purpose of the environmental investigation was to outline the activities necessary to further evaluate and delineate chlorinated compound impacts to groundwater above the Michigan Public Act 451, Part 201 Residential Cleanup Criteria; to further define hydrogeologic conditions at the Site; to evaluate the extent and nature of the light non-aqueous phase liquid (LNAPL) identified at the Site; to evaluate potential groundwater and indoor air issues associated with the identified LNAPL and potentially impacted groundwater therefrom; and evaluate the current effectiveness of the groundwater extraction system.

1.2 BACKGROUND AND HISTORY

The Site is a metal fabrication and assembly plant for GM North American Operations (NAO) Group consisting of approximately 45 acres of production activities on approximately 88 acres of land. Figure 1.1 presents the Site location.

The Site currently manufactures quarter panels, floor pans, roof panels, deck lids, doors, and center pillars for assembly plant use. In addition, the Site constructs the dies, fixtures, mechanical devices, and manufacturing aids used internally to produce the aforementioned parts. The Site consists of a main manufacturing building, with several outbuildings including a baler house, wastewater treatment plant (WWTP), powerhouse, and other ancillary structures. The remainder of the Site areas consist of asphalt/concrete paved areas and landscaped areas. The Site is relatively flat, with little or no significant topographic relief. Figure 1.2 presents the Site plan.

The Site is currently zoned General Industrial. Adjoining properties are currently zoned as a mixture of residential, commercial, and industrial properties.

1.2.1 INVESTIGATION HISTORY

Numerous environmental investigations have been conducted at the Site to date. Based on the review of available documentation, three areas of concern were identified: an oil release from a press pit sump pan, chlorinated compounds in soil and groundwater

beneath the Site, and LNAPL observed in groundwater in monitoring wells located in the northeast portion of the main manufacturing building.

Contamination from a release of water-soluble oil from a press pit sump pan was identified in soil and groundwater at the Site in 1981. Based on analytical results from soil and groundwater samples collected in the vicinity of the release and a review of the material safety data sheet (MSDS) for the oil, no chemicals of concern were detected in the soil and groundwater samples collected above the applicable regulatory limits at the time that the samples were collected.

From 1953 to 1979, the Site conducted degreasing operations inside the facility utilizing chlorinated compounds near Column A-15. This area is the suspected source of chlorinated compound contamination to soil and groundwater beneath the facility. Numerous subsurface investigations were conducted at the Site between 1985 and 1989 to identify and delineate the chlorinated compound contamination and geological/hydrogeological conditions at the Site and on the area located hydraulically downgradient of the Site. Chlorinated volatile organic compounds (VOCs) have been identified in groundwater on-Site and off-Site at concentrations above Michigan Act 451, Part 201 Residential Drinking Water Criteria (RDWC). Semi-volatile organic compounds (SVOCs) have been identified in the groundwater on-Site at concentrations above the Michigan Act 451, Part 201 Industrial Groundwater Volatilization to Indoor Air Criteria (IGVIAC). Based on the results of the investigations, a remediation system, consisting of a combination soil vapor extraction (SVE) system and a groundwater extraction system was constructed in 1989 and is currently in place at the facility to remediate the soil and groundwater at the Site. Quarterly monitoring activities are conducted at the Site and reported to the Michigan Department of Environmental Quality (MDEQ). The SVE system has accomplished significant contaminant removal and with the approval of the MDEQ is currently not being operated.

LNAPL was identified in monitoring wells located in the northeast portion of the plant in 1985 during plant expansion activities. Subsequent investigations continued to monitor on a regular basis for the presence of LNAPL in select monitoring wells; however, the nature and extent of the LNAPL had not been determined.

1.3 REPORT ORGANIZATION

The remainder of this report is presented in the following sections:

Section 2.0	Environmental Setting
Section 3.0	Scope of Work
Section 4.0	Results of Investigation
Section 5.0	Summary

2.0 ENVIRONMENTAL SETTING

2.1 REGIONAL GEOLOGY AND HYDROGEOLOGY

Kent County is situated in an area near the southwestern margin of the Michigan Basin. Marshall Sandstone bedrock crops out or is found at shallow depth and underlies all of Kent County with overlapping by the Michigan Formation. The Michigan Formation consists of primarily limestone, gypsum, and dolomite interbedded with shale and sandstone. To the northeast, the Marshall Sandstone and Michigan Formation are progressively overlain by Bayport Limestone, Parma Sandstone, and then the Saginaw Formation. Overlying these rocks is a mass of glacial drift from the Wisconsinan Glacial stage consisting of moraines and former sand lake beds with thicknesses of less than ten feet to several hundred feet. The glacial drift is characterized by ranges of materials from coarse gravel to fine lacustrine clays. The outwash is underlain by a clay layer that has been observed to generally slope to the west-northwest at a gradient of approximately 1 foot in 15 feet. Bedrock in the area of the Site is encountered at approximately 100 feet bgs.

Shallow groundwater in this area of Kent County is generally less than 20 feet bgs. Groundwater flow is influenced by local topography and surface water drains, such as creeks and streams.

Bedrock aquifers near the Site include, in descending order, the Bayport Limestone, the Michigan Formation, and the Marshall Sandstone. Elevated concentrations of naturally occurring sulfate, cadmium, and bicarbonate limit the use of the Bayport Limestone aquifer as a drinking water supply. The Michigan Formation aquifer generally yields only small quantities of poor quality groundwater. The deepest regional aquifer, the Marshall Sandstone aquifer, provides large quantities of better quality groundwater. Groundwater flow in the Bayport Limestone bedrock aquifer in the area is generally uniform and to the southeast.

2.2 SITE GEOLOGY AND HYDROGEOLOGY

Information regarding the geologic conditions at the Site was collected during previous environmental investigations, as well as during this investigation. Numerous soil borings were installed at the Site between 1981 and 2003. Seven soil borings were advanced at the Site and logged by a CRA geologist to further define the geologic conditions at the Site. The stratigraphic logs generated during the environmental investigation are presented in Appendix A.

The overburden at the Site consists of a sand and/or clay surficial layer containing various amounts of sand, gravel, underlain by interbedded layers of silt and clay material. Bedrock was not encountered during any of the environmental investigations conducted to date.

To better understand the surficial geology at the Site, three cross-sections were prepared, based on previous investigation results. Locations of the cross-sections are presented on Figure 2.1. Cross-sections A-A', B-B', and C-C' are presented on Figures 2.2, 2.3, and 2.4, respectively.

2.2.1 GROUNDWATER FLOW DIRECTION

Groundwater level measurements and the corresponding depths were recorded for all monitoring wells. The new wells were developed by removing a minimum of five well volumes until the groundwater was developed to a silt-free condition, if possible, and the turbidity, pH, temperature, dissolved oxygen (DO), oxidation/reduction potential (ORP), and conductivity of the groundwater had stabilized.

Groundwater elevation data for the groundwater monitoring events on December 9, 2002, March 20, 2003, July 14, 2003, October 7, 2003, and December 17, 2003 are presented in Table 2.1. Groundwater was encountered during the environmental investigations at approximately 20 feet bgs. Based on the December 17, 2003 groundwater levels, the approximate groundwater flow direction is to the north-northwest, toward the Cole Drain, which is consistent with historical groundwater flow direction. Figure 2.5 presents the approximate December 17, 2003 groundwater flow direction.

Based on the groundwater flow direction, it appears that groundwater in the vicinity of the Site is discharging to Cole Drain, which acts as a hydrologic barrier. Based on the review of analytical data for monitoring wells located adjacent to the Cole Drain (see Section 4.2), no parameters were currently detected at concentrations exceeding the Michigan Act 451, Part 201 Groundwater-Surface Water Interface (GSI) Cleanup Criteria.

2.3 TOPOGRAPHY

According to the Grand Rapids West, Michigan United States Geological Surrey (USGS) 7.5 minute quadrangle, the Site is located approximately 675 feet above mean sea level (AMSL), with regional elevations ranging from 650 to 690 feet AMSL. The Site and surrounding area display gently rolling to relatively flat topographical features, with local topography sloping towards Cole Drain and Plaster Creek.

2.4 HYDROLOGY

There are no natural surface water bodies on the Site. A stormwater retention pond is located on-Site, which discharges to Cole Drain, under a National Pollution Discharge Elimination System (NPDES) permit. The nearest surface water body to the Site is the Cole Drain, which runs along the entire west side of the Site and flows north. Cole Drain discharges to Plaster Creek, which is part of the Grand River Drainage Basin, and ultimately discharges to Lake Michigan.

3.0 SCOPE OF WORK

The Scope of Work (SOW) for this investigation included the installation of soil borings and monitoring wells, the collection and analysis of discrete groundwater samples utilizing a hydropunch method, the collection of groundwater samples from monitoring wells and the collection and analysis of a LNAPL sample. In addition, the SOW included conducting a LNAPL recovery test. The investigation fieldwork adhered to the methods and procedures specified in the Work Plan, including the Quality Assurance Project Plan (QAPP), which was submitted to the Michigan Department of Environmental Quality (MDEQ) under separate cover on November 24, 2002 and a letter addendum submitted to the MDEQ on May 16, 2003.

Additionally, this report presents a portion of the results of the September and December 2003 Quarterly Groundwater Monitoring Reports for the Site, as presented below.

A Freedom of Information Act (FOIA) review was conducted in April 2003, to identify any potential upgradient sources of contamination, which may be migrating onto the Site.

3.1 SUMMARY OF INVESTIGATION

The SOW for this investigation is documented in the November 2002 Work Plan that was submitted to the MDEQ. The SOW identified in the Work Plan included the installation of soil borings and monitoring wells, the collection of groundwater samples from monitoring wells and hydropunch locations, and the collection of LNAPL samples. In addition, the SOW included conducting a LNAPL recovery test.

The SOW for the Quarterly Groundwater Monitoring Program activities is documented in the September and December 2003 Quarterly Groundwater Monitoring Program Reports, submitted to the MDEQ under separate cover on December 8, 2003 and February 6, 2004, respectively. The SOW identified herein is a portion of the SOW presented in the Quarterly Groundwater Monitoring Program Reports and included the collection and analysis of groundwater samples from monitoring wells, the measurement of static groundwater levels in all monitoring wells, and the measurement of free product levels in select Site monitoring wells.

3.2 SUBSURFACE INVESTIGATION

3.2.1 SOIL BORING INSTALLATION

A total of seven soil borings, HP1-03 through HP7-03, were advanced and logged by a CRA geologist. Stratigraphic soil boring and monitoring well construction logs are presented in Appendix A.

Soil borings were advanced utilizing 4¼-inch inside diameter hollow-stem augers (HSA) with continuous split spoon sample collection. Soil samples were described and classified according to the Unified Soil Classification System (USCS) by a CRA Geologist. Soil samples were field screened for visual/olfactory evidence of impact and with an 11.7 eV photoionization detector (PID). PID readings are recorded on the stratigraphic logs presented in Appendix A.

3.2.2 LNAPL INVESTIGATION

3.2.2.1 LNAPL RECOVERY TESTING

To evaluate the potential extent of LNAPL, a recovery test was conducted. Measurements of LNAPL and groundwater levels were collected from monitoring wells 85-3, 85-5b, and 86-1, which are currently monitored on a monthly, quarterly, or annual basis in the area of the identified LNAPL, utilizing an oil-water interface probe.

LNAPL, in the form of globules of oil in the groundwater, was identified in 85-3 and was not observed in wells 85-5B, 85-6 or 86-1 during this investigation. Measurement of the LNAPL was conducted in 85-3 utilizing an oil-water interface probe and approximately 0.02 feet of LNAPL was observed. A disposable polyethylene bailer was lowered into 85-3 for visual observation of the LNAPL. The groundwater was observed to exhibit a heavy sheen that contained suspended globules. A polyethylene bailer was used to remove the 0.02 feet of LNAPL, with a recovery rate too slow to measure.

3.2.2.2 LNAPL SAMPLE COLLECTION

Only 0.02 feet of LNAPL, consisting of water with a heavy sheen and suspended globules of LNAPL, was observed in monitoring well 85-3. Due to the insufficient LNAPL volume identified in monitoring well 85-3, a sample could not be collected.

3.2.3 GROUNDWATER INVESTIGATION

The vertical and horizontal extent of contamination in groundwater was investigated during the environmental investigation through the collection and analysis of 68 groundwater samples, including 14 quality assurance/quality control (QA/QC) samples (six duplicates, four matrix spike (MS)/matrix spike duplicate (MSD), and four field rinsates) from seven soil borings, HP1-03 through HP7-03; twenty monitoring wells; MW1-03 through MW7-03, 85-3, 87-8, 87-9, 87-10, 87-11, 93-1, 87-13, 87-4, 87-5, 87-2, 87-1, 86-3, and 85-7; and two groundwater extraction wells; 86-2 and PWDISCH. Figure 3.1 presents the hydropunch and monitoring well locations. A sample summary is presented in Table 3.1.

Soil borings were advanced utilizing a 4 ¼-inch inside diameter HSA with continuous split spoon sampling. Discrete groundwater samples were collected from soil borings HP1-03 through HP7-03 utilizing a hydropunch for vertical aquifer sampling (VAS). VAS was conducted starting at the top of the water table and continuing at ten-foot intervals until the confining clay layer was encountered. Discrete groundwater grab sample depths varied slightly dependent on stratigraphic conditions encountered. A 5-foot long stainless steel hydropunch sampler with a 0.01-inch slotted screen and a well point were driven into the undisturbed material through the 4¼-inch HSA annulus. The well point detached from the hydropunch sampler at the specified sample depth and groundwater was allowed to flow into and fill the hydropunch sampler. The amount of time required to fill the hydropunch was dependent upon geological factors such as surrounding media (i.e., sand vs. clay) and depth below ground surface (i.e., increasing water pressure with increasing depth). After sufficient time to fill the hydropunch sampler passed (approximately 15 minutes to 1 hour), the sampler was removed from the soil boring and the groundwater sample was collected.

After completion of the VAS and receipt of analytical data, a second soil boring was advanced adjacent to the VAS soil boring, and a monitoring well was constructed, based on the analytical results from the VAS. Monitoring wells were constructed in the borehole annulus through the auger using 2-inch diameter Schedule 40 polyvinyl chloride (PVC) riser with 5-foot long, 0.01-inch slot Schedule 40 PVC screens. During completion of the installation, the risers were temporarily capped to prevent entrance of foreign materials during the overburden well installation. The risers and screens were joined with flush threaded joints.

An inert silica sand pack was placed around the screen to a height of three vertical feet above the top of the screen using a flush-threaded 1-inch diameter tremie pipe as the

augers were withdrawn from the borehole. If bridging of the silica sand occurred, the bridged material was mechanically broken prior to the addition of more silica sand.

A high solids bentonite grout was installed above the silica sand using a flush-threaded 1-inch diameter tremie pipe. Once the grout was set, the remainder of the annulus was filled with concrete and a flushmounted casing was installed. The protective flushmount casing was centered over the riser and extends into the concrete collar 1-foot bgs. The concrete seal was sloped away from the flushmount casing to deter infiltration of precipitation. Risers were capped with a locking cap.

Monitoring wells were developed as presented in Section 2.2. The generated development water was containerized in DOT approved 55-gallon drums prior to treatment at the on-Site wastewater treat plant (WWTP) prior to discharge to the Publicly Owned Treatment Works (POTW).

Groundwater samples were collected from MW1-03 through MW7-03, 85-3, 87-8, 87-9, 87-10, 87-11, 93-1, 87-13, 87-4, 87-5, 87-2, 87-1, 86-2, 86-3, 85-7, and PWDISCH. Prior to sampling the monitoring wells, the caps were removed and the groundwater was allowed to equilibrate. Stabilization for each well was confirmed by three consecutive readings within 10 percent of each other for the following parameters: pH, turbidity, ORP, DO, temperature, specific conductivity, and draw down of less then 0.3 of a foot.

All groundwater samples were analyzed for Target Compound List (TCL) VOCs. In addition, all wells were sampled for select natural attenuation parameters (alkalinity, chloride, hardness, nitrate, nitrite, sulfate, sulfide, total organic carbon (TOC), calcium, magnesium, manganese, ethane, ethene, and methane) and well 85-3 was sampled for TCL Semi-volatile Organic Compounds (SVOCs). Collected samples were placed in pre-cleaned laboratory-provided containers, properly labeled, and shipped under chain-of-custody (COC) protocol via overnight courier to Severn Trent Laboratories (STL) in North Canton, Ohio to be analyzed on a two week turn around time (TAT) for groundwater samples collected from the monitoring wells and a 72-hr TAT for VAS samples.

3.3 QUARTERLY GROUNDWATER MONITORING PROGRAM

3.3.1 SEPTEMBER 2003 GROUNDWATER MONITORING ACTIVITIES

A total of 30 groundwater samples, including QA/QC samples, were collected from monitoring wells MW1-03 through MW7-03, 82-6, 85-7, 86-3, 87-1, 87-2, 87-4, 87-5, 87-8, 87-9, 87-10, 87-11, 87-13, 93-1 and PWDISCH, and from culvert locations C-1, C-2, and

C-3 on September 30, 2003 through October 7, 2003 for analysis of TCL VOCs, and monitoring wells 85-3, 85-5B, 85-6, and 86-1 were sampled on October 7, 2003 for TCL VOCs and TCL SVOCs. Table 3.2 presents a summary of the samples collected during the September 2003 quarterly sampling event.

Prior to groundwater sample collection, static water levels, and if applicable, the free product thickness, were measured and recorded for the monitoring wells. Well caps were unlocked and removed allowing the water levels in the wells to stabilize. Static water levels and free product levels were measured to the top of each riser. No measurable free product was detected in monitoring wells 85-3, 85-6, or 86-1 during the September 2003 quarterly sampling event. A sheen was observed in well 85-5B during the September monitoring event.

New ¼-inch diameter polyethylene tubing was installed into each of the wells to be sampled. The bottom intake of the tubing was set in the middle of the screened interval for each of the wells. All wells were purged with a peristaltic pump using low-flow purge (LFP) techniques. Wells were purged between 100 and 200 mL per minute with continuous monitoring to confirm less then 0.3 feet of drawdown of the water level. Groundwater quality measurements were recorded in consecutive timed intervals using a Horiba and a HF Scientific turbidity meter. Groundwater quality parameters included pH, specific conductivity, temperature, DO, ORP, and turbidity. Upon groundwater stabilization, based on three consecutive similar readings, groundwater samples were collected.

Water samples collected from PWDISCH and 86-2 were collected from the sample ports attached to the purge wells. Water samples collected from the culvert locations C-1, C-2, and C-3 were collected using a new disposable bottom-filling polyethylene bailer in each location.

Groundwater samples and water samples were analyzed for TCL VOCs with the exception of the groundwater samples collected from 85-3, 85-5B, 85-6, and 86-1, which were analyzed for TCL VOCs and TCL SVOCs. Collected groundwater samples and water samples were containerized in laboratory-approved containers, labeled, packed on ice, and shipped under a COC protocol to STL located in North Canton, Ohio for analysis on a standard two-week TAT.

3.3.2 DECEMBER 2003 GROUNDWATER MONITORING ACTIVITIES

A total of 30 groundwater samples, including QA/QC samples, were collected from monitoring wells MW1-03 through MW7-03, 85-7, 86-2, 86-3, 87-1, 87-2, 87-4, 87-5, 87-8,

87-9, 87-10, 87-11, 87-13, 93-1 and PWDISCH, and from culvert locations C-1, C-2, and C-3 on December 17, 2003 through December 18, 2003 for analysis of TCL VOCs, and monitoring wells 85-3, 85-5B, 85-6, and 86-1 were sampled on December 17, 2003 TCL SVOCs. Table 3.3 presents a summary of the samples collected during the December 2003 quarterly sampling event.

Prior to groundwater sample collection, static water levels, and if applicable, the free product thickness, were measured and recorded for the monitoring wells. Well caps were unlocked and removed allowing the water levels in the wells to stabilize. Static water levels and free product levels were measured to the top of each riser. No measurable free product was detected in monitoring wells 85-3, 85-6, or 86-1 during the December 2003 quarterly sampling event.

New ¼-inch diameter polyethylene tubing was installed into each of the wells to be sampled. The bottom intake of the tubing was set in the middle of the screened interval for each of the wells. All wells were purged with a peristaltic pump using LFP techniques. Wells were purged between 100 and 200 mL per minute with continuous monitoring to confirm less then 0.3 feet of drawdown of the water level. Groundwater quality measurements were recorded in consecutive timed intervals using a Horiba and a HF Scientific turbidity meter. Groundwater quality parameters included: pH, specific conductivity, temperature, DO, ORP, and turbidity. Upon groundwater stabilization, based on three consecutive similar readings, groundwater samples were collected.

Water samples collected from PWDISCH and 86-2 were collected from the sample ports attached to the purge wells. Water samples collected from the culvert locations C-1, C-2, and C-3 were collected using a new disposable bottom-filling polyethylene bailer in each location.

Groundwater samples and water samples were analyzed for TCL VOCs with the exception of the groundwater samples collected from 85-3, 85-5B, 85-6, and 86-1, which were analyzed for TCL SVOCs. Collected groundwater samples and water samples were containerized in laboratory-approved containers, labeled, packed on ice, and shipped under a COC protocol to STL located in North Canton, Ohio for analysis on a standard two-week TAT.

3.4 FREEDOM OF INFORMATION ACT REVIEW

CRA completed an adjacent property review in the immediate upgradient vicinity of the Site on April 24, 2003. The adjacent property review included observing and recording the addresses and facility names of adjacent properties along Buchanan Avenue, 36th

Street, and 39th Street, which are located hydraulically upgradient of the Site. Based on the observations, a number of commercial and light industrial type facilities are located upgradient of the Site.

Based on the results of the adjacent property identification, a written Freedom of Information Act (FOIA) request was submitted to the Michigan Department of Environmental Quality (MDEQ), Remediation and Redevelopment Section on April 29, 2003. The FOIA request included the properties and addresses noted during the visual inspection to be adjacent to the Site.

One file was identified for all requested properties: Conical Tool Company (Conical Tool), located at 3890 Buchanan Avenue. On May 13, 2003, CRA performed a file review at the MDEQ Remediation and Redevelopment office located in Wyoming, Michigan. Documentation that was available for CRA's review on May 13, 2003 included:

- Phase II Environmental Site Assessment (ESA) prepared by Dixon Environmental Consulting, Inc. (Dixon), dated January 28, 2002; and
- Preliminary Soil and Groundwater Data for Conical Tool Company prepared by Dixon, dated September 3, 2002.

In addition, the following reports were obtained from the MDEQ for the properties located at 3700 and 3740 Buchanan Street, and 150 36th Avenue:

- Aboveground Storage Tank (AST) Inspection Reports for 3700 Buchanan Street;
- Underground Storage Tank (UST) Closure Report and associated letters for 3740 Buchanan Street; and
- UST Inspection Reports for 150 36th Street.

A copy of the memorandum summarizing the FOIA review and the documents obtained during the FOIA review is presented in Appendix B.

3.5 BOREHOLE ABANDONMENT

Upon completion of soil and discrete groundwater sample collection, each borehole was completed as a monitoring well or abandoned. All soil borings not completed as monitoring wells during the environmental investigation were abandoned using a tremie method to backfill the annulus with bentonite grout to the ground surface.

Abandonment details are presented on the stratigraphic logs, which are presented in Appendix A.

Soil cuttings from all soil boring and monitoring well installations were containerized, and characterized for off Site disposed as described in Section 3.7.

3.6 SURVEYING

A survey of the Site was conducted by CRA surveyors. Soil boring locations, reference features, and monitoring well locations were surveyed. Elevations were established to the nearest 0.01-foot. The survey was benchmarked by National Geographic Survey (NGS) Station Number NF0822.

3.7 DECONTAMINATION AND CONTAINMENT PROCEDURES

Upon mobilization to the Site and prior to commencing drilling, the drill rig and all associated equipment were thoroughly cleaned using a high pressure, low volume steam wash and inspected by CRA field personnel. Before initiating drilling at each subsequent location, the augers, drill rod, hydropunch sampler, and all other non-disposable sampling and drilling equipment were decontaminated to prevent cross-contamination.

All non-disposable sampling equipment was decontaminated prior to each use by using an Alconox wash, a potable water rinse, a deionized water rinse and was allowed to air dry.

All decontamination water was containerized in DOT approved 55-gallon drums and discharged to the on-Site WWTP.

3.8 DISPOSITION OF INVESTIGATION-DERIVED WASTE

Soil cuttings generated during drilling were containerized in DOT approved 55-gallon drums. All soil cuttings were properly labeled, characterized, sealed, and staged on Site in a GM designated area near the maintenance building. Soil cuttings generated during drilling were characterized as non-hazardous waste. Fifty-two 55-gallon drums of soil cutting waste were shipped off-Site for disposal at Waste Management's CWM Model City Landfill, located in Model City, New York.

Waste characterization samples were divided into upgradient and downgradient samples. One composite waste characterization soil sample was collected from the 55-gallon drums containing the soil cuttings of HP1-03 and HP2-03 for analysis of Toxicity Characteristic Leaching Procedure (TCLP) VOCs, TCLP SVOCs, TCLP metals, reactivity, corrosivity, and ignitibility (RCI), and TCL VOCs. An additional composite waste characterization soil sample was collected from the 55-gallon drums containing the soil cuttings of HP3-03 through HP7-03 for analysis of TCLP VOCs, TCLP SVOCs, TCLP metals, reactivity, corrosivity, and ignitability (RCI), and TCL VOCs. Soil samples collected for laboratory analysis were placed in pre-cleaned laboratory-provided containers, labeled, and shipped under COC protocol via overnight courier to STL in North Canton, Ohio to be analyzed on a one week TAT. A sample summary is presented in Table 3.1. Analytical results are presented in Appendix C.

Decontamination/purge water was containerized in DOT approved 55-gallon drums. All decontamination/purge water was properly labeled, sealed and staged in fifteen DOT approved 55-gallon drums. Decontamination/purge water was discharged to the on-Site WWTP.

All personal protective equipment (PPE) and decontamination liner material was properly labeled, characterized, sealed, and staged in two DOT approved 55-gallon drums and shipped, as non-hazardous waste for disposal at Waste Management's CWM Model City Landfill, located in Model City, New York.

Waste disposal documentation is presented in Appendix D.

4.0 RESULTS OF INVESTIGATION

4.1 COMPARISON OF ANALYTICAL RESULTS

Analytical results for groundwater samples were compared to the cleanup criteria and screening levels found in the Michigan Act 451, Part 201 Residential and Industrial Cleanup Criteria. Waste characterization sample results were compared to Resource Conservation and Recovery Act (RCRA) waste characteristics. Laboratory analytical results for samples collected during this environmental investigation, the September 2003 quarterly groundwater sampling event, and the December 2003 quarterly groundwater sampling event are presented in Appendix C. Data validation memorandums for this environmental investigation, September 2003 quarterly groundwater sampling event, and December 2003 quarterly groundwater sampling event are presented in Appendix E.

4.2 RESULTS OF INVESTIGATION

A total of 68 groundwater samples were collected and analyzed for TCL VOCs, one groundwater sample was collected and analyzed for TCL SVOCs, and 26 groundwater samples were collect and analyzed for select natural attenuation parameters during the environmental investigation to further delineate the horizontal and vertical extent of TCE contamination identified during the previous investigations at the Site and downgradient of the Site. The sample from well 85-3 was also analyzed for TCL SVOCs. A sample summary is presented in Table 3.1. Plan 1 presents a summary of select TCL VOCs in groundwater. Plan 2 presents the isocontours for select TCL VOCs, cis-1,2-DCE, TCE, PCE, and VC on the southern portion of the Site. Plan 3 presents the isocontours for select TCL VOCs, cis-1,2-DCE, TCE, PCE, and VC on the northern portion of the Site.

4.2.1 SOIL INVESTIGATION RESULTS

Soil samples collected during the environmental investigation were examined by a CRA geologist for odor and visual impact and screened with a PID. No soil samples above the water table were observed to exhibit contamination; therefore, no soil samples were collected and submitted for laboratory analysis. Descriptions and PID readings for soil intervals are included in the stratigraphic borehole logs presented in Appendix A.

4.2.2 LNAPL TEST RESULTS

Prior to groundwater sampling, LNAPL was evaluated in 85-3. Measurement of the LNAPL was conducted in 85-3 utilizing an oil-water interface probe and approximately 0.02 feet of LNAPL was observed. A disposable polyethylene bailer was lowered into 85-3 for visual observation of the LNAPL. The LNAPL was observed to exhibit a heavy sheen that contained suspended globules. Due to insufficient sample volume, a LNAPL sample was not collected. LNAPL was not observed in other wells during this investigation; however, a sheen was observed in wells 85-5B, 85-6 and 86-1.

One groundwater sample was collected from monitoring well 85-3 for analysis for TCL SVOCs. Bis(2-Ethylhexyl) phthalate was detected in the groundwater sample collected from 85-3 (screened 20.3 to 30.3 feet bgs) at 20 µg/L, which is above the Michigan Act 451, Part 201 RDWC of 6 µg/L.

4.2.3 GROUNDWATER INVESTIGATION RESULTS

A total of 68 groundwater samples, including 14 QA/QC samples, were collected during the environmental investigation. Groundwater samples were analyzed for TCL VOCs, TCL SVOCs, and select natural attenuation parameters, and VAS samples were analyzed for TCL VOCs. Table 3.1 presents a summary of the collected samples. Table 4.1 presents TCL VOC analytical results, Table 4.2 presents TCL SVOC analytical results, and Table 4.3 presents select natural attenuation parameter analytical results.

Several parameters were detected in groundwater samples collected at the Site, including: bis(2-ethylhexyl) phthalate, tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride (VC) above criteria. Groundwater sample results for the VAS and monitoring well samples collected July 14, 15, and August 6, 2003, are discussed below.

Bis(2-Ethylhexyl) phthalate was detected in the groundwater sample collected from 85-3 (screened 20.3 to 30.3 feet bgs) at 20 µg/L, which is above the Michigan Act 451, Part 201 RDWC of 6 µg/L.

PCE was detected in groundwater samples collected from MW2-03 (screened 22 to 27 feet bgs) and MW1-03 (screened 30 to 35 feet bgs), at concentrations of 14 µg/L and 72 µg/L, which are above the Michigan Act 451, Part 201 RDWC of 5.0 µg/L. PCE was also detected in groundwater samples collected from HP2-03 at concentrations of 31 µg/L (at 24 feet bgs), 7.2 µg/L (at 34 feet bgs), and HP1-03 at concentrations of 7.0 µg/L (at 24 feet bgs), 7.1 µg/L (duplicate, at 24 feet bgs), and 66 µg/L (at 34 feet bgs).

TCE was detected in groundwater samples collected from MW5-03 (screened 30 to 35 feet bgs), 87-10 (screened 29 to 32 feet bgs), 87-11 (screened 30 to 33 feet bgs), 87-1 (screened 8.5 to 19.5 feet bgs), and 87-2 (screened 7.5 to 18.5 feet bgs), at concentrations of 7.4 µg/L, 27 µg/L, 28 µg/L, 55 µg/L, and 26 µg/L, respectively, which are above the Michigan Act 451, Part 201 RDWC of 5.0 µg/L. TCE was also detected in groundwater samples collected from HP5-03 (at 34 feet bgs), at a concentration of 5.9 µg/L.

VC was detected in the groundwater sample collected from 87-11 (screened 30 to feet 33 bgs), 87-5 (screened 39.5 to 50.5 feet bgs), and 87-1 (screened 8.5 to 19.5 feet bgs), at concentrations of 3.7 µg/L, 130 µg/L, and 7.2 µg/L, respectively, which are above the Michigan Act 451, Part 201 RDWC of 2.0 µg/L.

No other TCL VOCs were detected in the groundwater samples collected during the investigation above the Michigan Act 451, Part 201 RDWC. Plan 1 presents a summary of TCL VOCs identified in groundwater.

Based upon the distribution of contaminant concentrations identified across the Site, and the results of the natural attenuation parameters, there is an indication that natural attenuation of contaminants is occurring at the Site. There appear to be two distinct areas where natural attenuation is occurring; one is located just north of the extraction well 86-2, and the other is located downgradient of the second recovery well PWDISCH. Both areas identified contain detectable concentrations of 1,1-dichloroethene, 1,1-dichloroethane, cis-1,2-dichloroethene, and vinyl chloride (daughter products of PCE and TCE). Figure 4.1 presents the degradation product contours. Field parameters also provide indirect evidence of natural attenuation with low levels of dissolved oxygen and negative oxidation-reduction potential in both areas noted above. Groundwater from all sampled monitoring wells was also submitted for laboratory analysis of natural attenuation indicator parameters (ethene, ethane, methane, nitrogen, and sulfate). The analytical results for these parameters also provide an indication that natural attenuation is occurring in the two areas noted above (i.e., methane detections and reduced concentrations of nitrogen and sulfate). Table 4.3 presents the results of the natural attenuation parameter sampling.

4.3 SEPTEMBER AND DECEMBER QUARTERLY MONITORING RESULTS

4.3.1 SEPTEMBER QUARTERLY MONITORING RESULTS

A total of 30 groundwater samples, including QA/QC samples, were collected from monitoring wells MW1-03 through MW7-03, 82-6, 85-7, 86-3, 87-1, 87-2, 87-4, 87-5, 87-8,

87-9, 87-10, 87-11, 87-13, 93-1 and PWDISCH, and from culvert locations C-1, C-2, and C-3 for analysis of TCL VOCs, and monitoring wells 85-3, 85-5B, 85-6, and 86-1 were sampled for TCL VOCs and TCL SVOCs during the September 2003 groundwater quarterly monitoring event. Table 3.2 presents a summary of the samples collected during the September 2003 quarterly sampling event. Table 4.4 presents the TCL VOC results and Table 4.5 presents the TCL SVOC results.

Several parameters were detected in groundwater samples collected at the Site during September 2003 quarterly monitoring sampling, including: bis(2-ethylhexyl) phthalate, chrysene, cis-1,2-dichloroethene (cis-1,2-DCE), PCE, TCE, and VC above the Michigan Act 451, Part 201 Residential Drinking Water Criteria. Groundwater sample results for the September 2003 quarterly groundwater monitoring activities are discussed below.

Bis(2-Ethylhexyl) phthalate was detected in the groundwater sample collected from 85-3 (screened 20.3 to 30.3 feet bgs) at 97 µg/L, which is above the Michigan Act 451, Part 201 RDWC of 6 µg/L.

Chrysene was detected in the groundwater sample collected from 85-3 (screened 20.3 to 30.0 feet bgs) at 36 µg/L, which is above the Michigan Act 451, Part 201 RDWC of 5.0 µg/L.

Cis-1,2-DCE was detected in groundwater samples collected from 87-11 (screened 30 to 33 feet bgs) and 87-1 (screened 24 to 29 feet bgs), at concentrations of 130 µg/L and 100 µg/L, respectively, which are above the Michigan Act 451, Part 201 RDWC of 70 µg/L.

PCE was detected in groundwater samples collected from MW2-03 (screened 22 to 27 feet bgs), MW1-03 (screened 30 to 35 feet bgs), and 85-6 (screened 19.5 to 24.5 feet bgs) at concentrations of 13 µg/L, 83 µg/L, and 5.3 µg/L, respectively, which are above the Michigan Act 451, Part 201 RDWC of 5.0 µg/L.

TCE was detected in groundwater samples collected from MW5-03 (screened 30 to 35 feet bgs), 87-10 (screened 29 to 32 feet bgs), 87-11 (screened 30 to 33 feet bgs), and 87-2 (screened 7.5 to 18.5 feet bgs), at concentrations of 6.2 µg/L, 44 µg/L, 34 µg/L, and 8.5 µg/L, respectively, which are above the Michigan Act 451, Part 201 RDWC of 5.0 µg/L.

VC was detected in the groundwater sample collected from 87-11 (screened 30 to feet 33 bgs), 87-5 (screened 39.5 to 50.5 feet bgs), and 87-1 (screened 8.5 to 19.5 feet bgs), at concentrations of 5.0 µg/L, 92 µg/L, and 5.1 µg/L, respectively, which are above the Michigan Act 451, Part 201 RDWC of 2.0 µg/L.

No other TCL VOCs or SVOCs were detected in the groundwater samples collected during the investigation above the Michigan Act 451, Part 201 RDWC.

4.3.2 DECEMBER QUARTERLY MONITORING RESULTS

A total of 30 groundwater samples, including QA/QC samples, were collected from monitoring wells MW1-03 through MW7-03, 85-7, 86-2, 86-3, 87-1, 87-2, 87-4, 87-5, 87-8, 87-9, 87-10, 87-11, 87-13, 93-1 and PWDISCH, and from culvert locations C-1, C-2, and C-3 for analysis of TCL VOCs, and monitoring wells 85-3, 85-5B, 85-6, and 86-1 were sampled for TCL SVOCs during the December quarterly groundwater monitoring event. Table 3.3 presents a summary of the samples collected during the December 2003 quarterly sampling event. Table 4.6 presents the TCL VOC results and Table 4.7 presented the TCL SVOC results.

Several parameters were detected in groundwater samples collected at the Site during December 2003 quarterly monitoring sampling, including: 1,2-DCE, PCE, TCE, and VC above criteria, however bis(2-ethylhexyl) phthalate and chrysene were not detected above criteria for December. Groundwater sample results for the December 2003 quarterly groundwater monitoring activities are discussed below.

Cis-1,2-DCE was detected in groundwater sample collected from 87-11 (screened 30 to 33 feet bgs) at a concentration of 130 µg/L, which is above the Michigan Act 451, Part 201 RDWC of 70 µg/L.

PCE was detected in groundwater samples collected from MW2-03 (screened 22 to 27 feet bgs) and MW1-03 (screened 30 to 35 feet bgs) at concentrations of 7.2 µg/L and 86 µg/L, respectively, which are above the Michigan Act 451, Part 201 RDWC of 5.0 µg/L.

TCE was detected in groundwater samples collected from MW5-03 (screened 30 to 35 feet bgs), 87-10 (screened 29 to 32 feet bgs), 87-11 (screened 30 to 33 feet bgs), 87-2 (screened 7.5 to 18.5 feet bgs), and 87-1 (screened 8.5 to 19.5 feet bgs and 24 to 29 feet bgs), at concentrations of 9.8 µg/L, 44.0 µg/L, 11 µg/L, 35 µg/L (33 µg/L in a duplicate sample), and 76 µg/L, respectively, which are above the Michigan Act 451, Part 201 RDWC of 5.0 µg/L.

VC was detected in the groundwater sample collected from 87-1 (screened 8.5 to 19.5 feet bgs and 24 to 29 feet bgs), and 87-5 (screened 39.5 to 50.5 feet bgs), at concentrations of 5.2 µg/L and 120 µg/L, respectively, which are above the Michigan Act 451, Part 201 RDWC of 2.0 µg/L.

No other TCL VOCs or TCL SVOCs were detected in the groundwater samples collected during the investigation above the Michigan Act 451, Part 201 RDWC.

4.4 ANALYTICAL DATA VALIDATION RESULTS SUMMARY

Soil and groundwater samples were submitted under COC protocol to STL in North Canton, Ohio. All samples were analyzed using EPA approved methods set forth in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition and Promulgated Update, November 1986.

The laboratory analytical data was reviewed by a CRA chemist to determine the quality and validity of the analytical data resulting from the collection and analysis of groundwater samples. The laboratory analytical data are presented in Appendix C. The data validation memorandum is presented in Appendix E.

The data validation was performed in accordance with the requirements of the State of Michigan, as identified in the Site-specific QAPP and as approved by MDEQ. The data is usable with a few qualifiers as noted in the validation memorandum in Appendix E.

4.5 FREEDOM OF INFORMATION ACT REVIEW

4.5.1 CONICAL TOOL COMPANY

Phase II ESA

A Phase II ESA was conducted by Dixon on January 28, 2002, for Conical Tool. The scope of work for the Phase II ESA was determined based on the results of a Phase I ESA previously conducted by Dixon on January 29, 2002. A copy of the Phase I ESA was not available for review by CRA.

Based on information provided in the Phase II ESA, the Phase I ESA identified one Recognized Environmental Condition (REC) at the Conical Tool site, that being two areas of discolored surface soil. One area was identified during the Site inspection portion of the January 2002 Phase I ESA, and one area was observed by Dixon during the review of 1970 and 1975 aerial photographs. The area observed in the aerial photographs was formerly used as a storage area for scrap steel and empty drums. This area is currently located beneath the northeastern portion of the building. The area of discolored surface soil observed during the Phase I ESA is located outside, near the northeast corner of the existing building.

Based on the results of the Phase I ESA, Dixon completed a Phase II ESA on January 28, 2002, and February 6, 2002. One soil boring, SB-1, was installed in January 2002 to an approximate depth of 5 feet below ground surface (bgs) and one soil boring, SB-2, was installed in February 2002 to an approximate depth of 3.5 feet bgs. Four soil samples, two from each soil boring, were collected for laboratory analysis for VOCs, polynuclear aromatic hydrocarbons (PNAs), and metals (aluminum, arsenic, cadmium chromium, iron, lead, nickel, molybdenum, silver and zinc).

TCE was detected in the soil sample collected from SB-2 at a concentration of 790 µg/kg, which is above the current Michigan Act 451, Part 201 Residential & Commercial I (Residential) Drinking Water Protection Criterion (DWPC) of 100 µg/kg. The soil sample collected from SB-1 identified 1,3,5-trimethylbenzene at a concentration of 2,400 µg/kg, which is above the Michigan Act, Part 201 Residential DWPC of 1,800 µg/kg. Chromium was detected in the soil samples collected from SB-1 and SB-2 at concentrations of 49,000 µg/kg and 1,500,000 µg/kg, respectively, which are above the Michigan Act 451, Part 201 Residential DWPC of 30,000 µg/kg. Molybdenum was detected in the soil samples collected from SB-1 and SB-2 at concentrations of 43,000 µg/kg and 1,500,000 µg/kg, respectively, which are above the current Michigan Act 451, Part 201 Residential DWPC of 1,500 µg/kg. Nickel was detected in the soil sample collected from SB-2 at a concentration of 120,000 ug/kg, which is the Michigan Act 451, Part 201 Residential DWPC of 100,000 µg/kg. Iron was detected in soil samples collected from SB-2 at concentrations of 46,000,000 µg/kg, and 17,000,000 µg/kg, respectively, which are above the Residential DWPC of 6,000 µg/kg and above the Michigan Statewide Default Background Level Criterion of 12,000,000 µg/kg.

Preliminary Soil and Groundwater Data for Conical Tool Company

Based on the results of the Phase II ESA, additional subsurface investigation activities were conducted by Dixon, including additional soil sampling, the installation of five monitoring wells, and soil excavation and verification sampling in the areas of historic and current soil discoloration. Results were present in preliminary data form in the FOIA file reviewed.

A soil sample collected from GP-9 detected 1,2,4-trimethylbenzene at a concentration of 24,000 µg/kg, which is above the Michigan Act 451, Part 201 Residential DWPC of 2,100 µg/kg. A soil sample collected from GP-9 detected 1,3,5-trimethylbenzene at a concentration of 7,900 µg/kg, which is above the Michigan Act 451, Part 201 Residential DWPC of 1,800 µg/kg. Dibenzo(a,h)anthracene was detected in a soil sample collected from GP-9 at a concentration of 4,400 µg/kg, which is above the Michigan Act 451, Part

201 Residential DWPC of 2,000 µg/kg. Chromium was detected in soil samples collected from VSR-2, VSR-7, VSR-8, GP-2, GP-3, GP-4, GP-5, GP-8 and GP-9 at concentrations of 69,000 µg/kg, 450,00 µg/kg, 110,000 µg/kg, 51,000 µg/kg, 540,000 µg/kg, 82,000 µg/kg, 110,000 µg/kg, 62,000 µg/kg, and 380,000 µg/kg, respectively, which are above the Michigan Act 451, Part 201 DWPC of 30,000 µg/kg. Molybdenum was detected in soil samples collected from VSR-1, VSR-2, VSR-3, VSR-4, VSR-5, VSR-6, VSR-7, VSR-8, VSR-9, VSSR-10, VSR-11, VSR-12, GP-2, GP-3, GP-4, GP-5, GP-6, GP-7, GP-8, GP-9, and GP-10 at concentrations of 3,400 µg/kg, 57,000 µg/kg, 2,800 µg/kg, 18,000 µg/kg, 6,500 µg/kg, 3,400 µg/kg, 330,000 µg/kg, 120,000 µg/kg, 27,000 µg/kg, 24,000 µg/kg, 4,500 µg/kg, 8,900 µg/kg, 38,000 µg/kg, 580,000 µg/kg, 83,000 µg/kg, 230,000 µg/kg, 5,400 µg/kg, 4,500 µg/kg, 53,000 µg/kg, 250,000 µg/kg and 950 µg/kg, respectively, which are above the current Michigan Act 451, Part 201 DWPC of 1,500 µg/kg. Nickel was detected in a soil sample collected from GP-9 at a concentration of 140,000 µg/kg, which is above the Michigan Act 451, Part 201 DWPC of 100,000 µg/kg. Silver was detected in a soil sample collected from GP-9 at a concentration of 15,000 µg/kg, which is above the Michigan Act 451, Part 201 DWPC of 4,500 µg/kg. Iron was detected in soil samples VSR-7, GP-2, and GP-3 at concentrations of 25,000,000 µg/kg, 26,000,000 µg/kg, and 21,000,000 µg/kg, respectively, which are above the Michigan Statewide Default Background Level Criterion of 12,000,000 µg/kg.

TCE was detected in the groundwater samples collected from MW-1, MW-2, MW-3, MW-4, GP-1, and GP-5 at concentrations of 7.8 µg/L, 28 µg/L, 85 µg/L, 17 µg/L, 14 µg/L, and 100 µg/L, respectively, which are above the current Michigan Act 451, Part 201 Drinking Water Criterion (DWC) of 5.0 µg/L, which is above the Michigan Act 451, Part 201 DWC of 5 µg/L. Tetrachloroethene (PCE) was detected in the groundwater sample collected from MW-4 at a concentration of 12 µg/L, which is above the Michigan Act 451, Part 201 DWC of 5 µg/L.

Based on discussions with Mr. Terry O'Brien, the MDEQ Project Manager for the Conical Tool site, no further investigations have been conducted or scheduled at this time.

4.5.2 MISCELLANEOUS ADJACENT PROPERTIES

AST Inspection Reports (Sunshine Systems Factory Showroom, 3700 Buchanan Street)

AST inspection reports were available for July 1980, April 1991, January 1993, July 1994, January 995, May 1995, August 1995, May 1996, January 1997, June 1997, July 1997, August 1997, December 1997, March 1998, May 1998, February 1999, July 1999, August

1999, December 1998, and January 2001. The Michigan State Police approved the installation of two 1,850-gallon liquefied petroleum (LP) gasoline ASTs at the property on November 3, 1980. According to inspection reports, a third 1,850-gallon LP gasoline AST was installed in 1985. Two 1,000-gallon LP gasoline ASTs were installed at the property in April 1991. The two original 1,850-gallon LP gasoline ASTs were removed in April 1991. The three remaining ASTs were removed in 1996 and replaced by a 12,000-gallon LP gasoline AST. AST inspection reports cite non-environmental violations or deficiencies including, but not limited to:

- Electrical inspection needs;
- Verified flow rates;
- Incorrect labeling/painting; and
- Fire extinguisher availability.

UST Closure Report and Associated Letters (currently Fed-Ex Freight, 3740 Buchanan Street)

A UST closure report, prepared by Superior Environmental Corporation, dated October 15, 1990, was available for review. According to the report, three USTs (one 12,000-gallon gasoline UST, one 15,000-gallon diesel UST, and one 1,000-gallon used oil UST) were excavated by Pitsch's Wrecking. No visible staining or petroleum odors were observed during the excavation activities. Two soil samples were collected per tank and analyzed for total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO), and benzene, toluene, ethylbenzene, and xylenes (BTEX). According to the report, the analytical results indicated that no concentrations of TPH-GRO, TPH-DRO, or BTEX were reported above the laboratory detection limits. A letter from the Michigan State Police, dated April 17, 1991, referencing the UST Closure Report, indicates that no further information/action is required.

UST Inspection and Associated Reports (Amoco Station, 150 36th Street)

According to Notifications for Underground Storage Tanks forms received by the Michigan State Police in June 1989, five USTs (one 9,500-gallon gasoline UST, one 6,000-gallon gasoline UST, two 4,000-gallon gasoline USTs, one 500-gallon waste oil UST) were removed and replaced by four USTs (two 10,000-gallon gasoline USTs, one 6,000-gallon gasoline UST, one 4,000 gallon-diesel UST) from the property in March 1989. UST inspection reports were available for June 1990, January 1997, March 1997, June 1999, July 1999, August 1999, June 2002, and July 2002. These UST inspection reports cite non-environmental violations or deficiencies including, but not limited to:

- Inventory control needs;
- Shut-off valve needs;
- Annual testing requirements;
- Tank gauging needs; and
- Fire extinguisher needs.

A copy of the memorandum summarizing the FOIA review and the documents obtained during the FOIA review is presented in Appendix B.

5.0 SUMMARY

5.1 SUMMARY OF ANALYTICAL RESULTS

5.1.1 SOIL

No soil samples above the water table were observed to exhibit contamination; therefore, no soil samples were collected for laboratory analysis.

5.1.2 GROUNDWATER

Bis(2-Ethylhexyl) phthalate, PCE, VC, and TCE were detected in groundwater samples above the Michigan Act 451, Part 201 RDWC.

5.1.3 LNAPL

LNAPL, evaluated in 85-3, measured approximately 0.02 feet and consisted of water with globules of LNAPL exhibiting a heavy sheen. Due to insufficient pure LNAPL sample volume, a LNAPL sample was not collected. LNAPL was not observed in other wells during this investigation; however, a sheen was observed in wells 85-5B, 85-6 and 86-1.

5.1.4 SEPTEMBER 2003 QUARTERLY MONITORING

Several parameters were detected in groundwater samples collected at the Site during September 2003 quarterly monitoring sampling, including: bis(2-ethylhexyl) phthalate, chrysene, cis-1,2-DCE, PCE, TCE, and VC above Michigan Act 451, Part 201 RDWC.

5.1.5 DECEMBER 2003 QUARTERLY MONITORING

Several parameters were detected in groundwater samples collected at the Site during December 2003 quarterly monitoring sampling, including: cis-1,2-DCE, PCE, TCE, and VC above Michigan Act 451, Part 201 RDWC.

5.1.6 FREEDOM OF INFORMATION ACT REVIEW

Based on the observed groundwater flow direction at the Grand Rapids Metal Plant, the Conical Tool property is assumed to be located hydraulically upgradient. However, no groundwater flow direction information for the Conical Tool site was presented in the documentation reviewed by CRA.

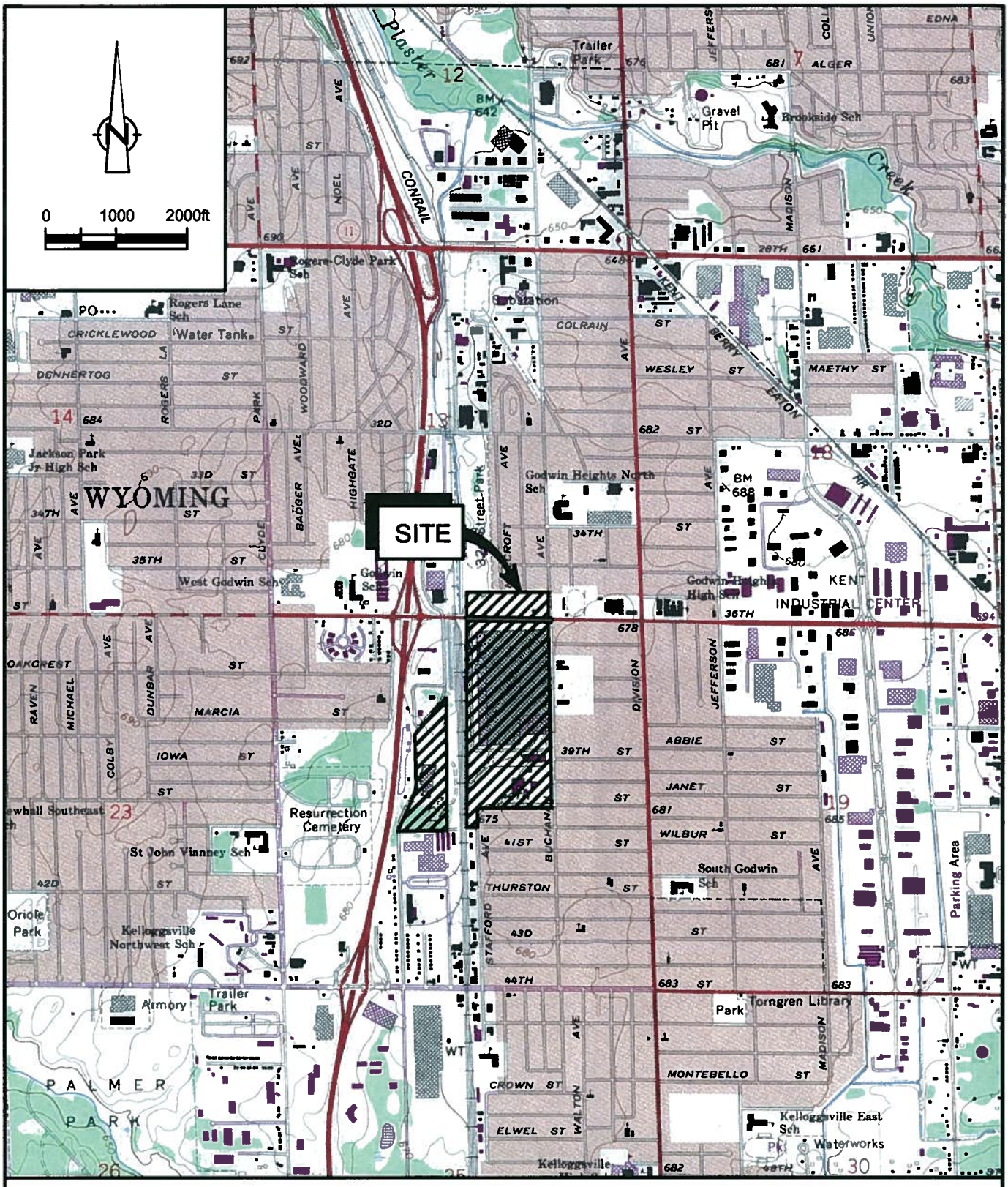
Based on the review of available information obtained from the FOIA request, it appears possible that there was a former or current source of TCE at the Conical Tool site. TCE was identified in soil and groundwater at concentrations above the Michigan Act 451, Part 201 Residential DWPC and DWC, respectively. PCE was also detected in groundwater above the Michigan Act 451, Part 201 Residential DWC from the Conical Tool site. However, it is not clear from the information reviewed whether all soil samples were analyzed for PCE. Insufficient information from the MDEQ files was present to determine a possible source location for PCE at the Conical Tool site. Additionally, the vertical extents of TCE and PCE in groundwater were not determined, based on the information reviewed.

Selected excavation was conducted in two areas at the Conical Tool site. Neither of these excavations were conducted where the TCE was detected in soil above the Residential Criterion.

During the investigations conducted by Dixon, five monitoring wells, MW-1 through MW-5, were installed at the Conical Tool site. Groundwater samples collected from these wells ranged from 12 feet bgs to 17.5 feet bgs. Additional delineation grab groundwater samples were collected from depths of approximately 17 to 19 feet bgs. These depths correspond to the upper few feet of the aquifer.

5.2 ADDITIONAL INVESTIGATION

Based on the results of the environmental investigation, further investigation of the Site is warranted. A Work Plan for additional investigation of LNAPL, as well as TCE and associated chlorinated compounds in groundwater will be presented under a separate cover.



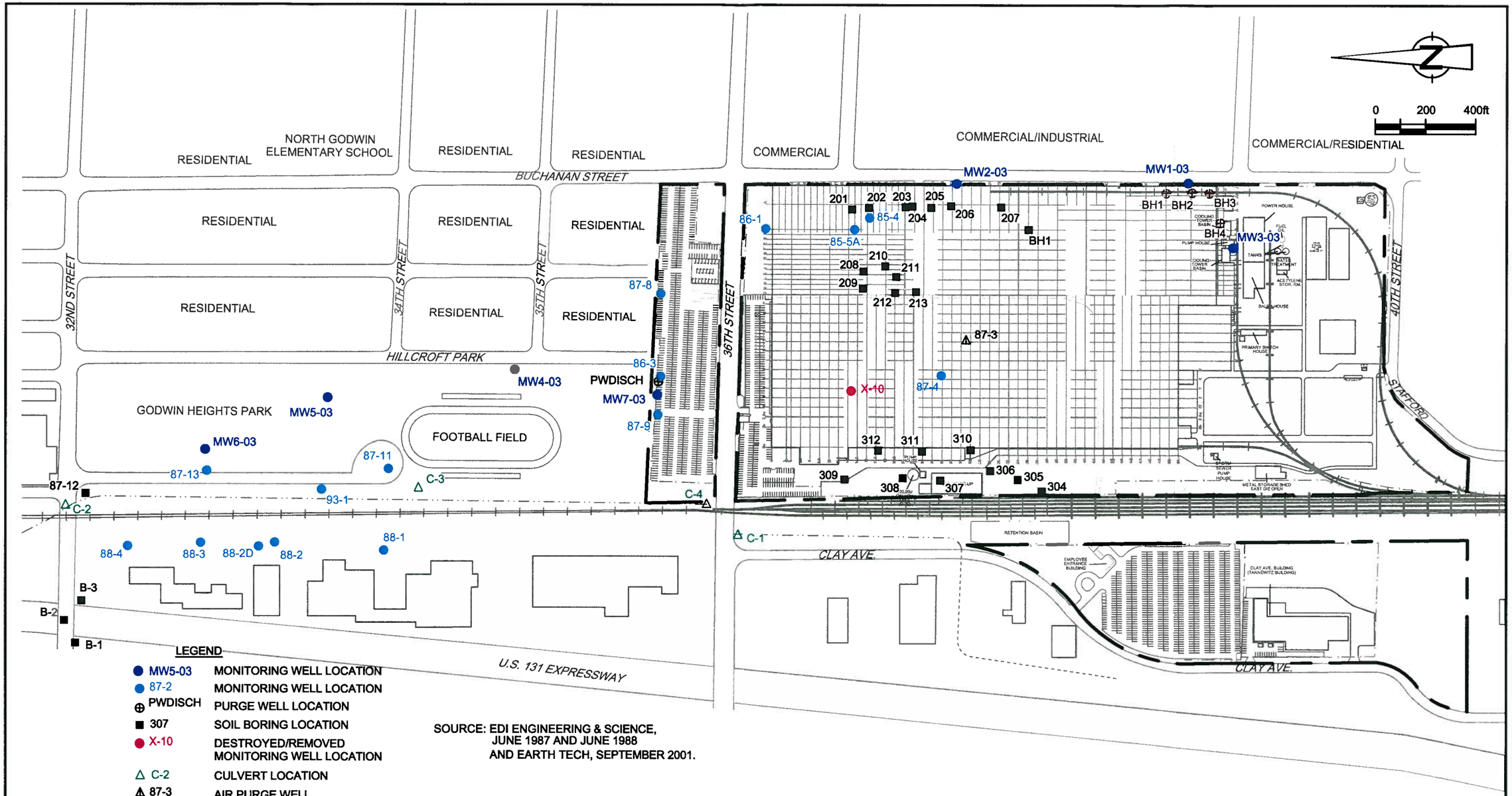
SOURCE: USGS QUADRANGLE MAP;
GRAND RAPIDS WEST, MICHIGAN



figure 1.1

SITE LOCATION
GRAND RAPIDS METAL PLANT
Wyoming, Michigan

17360-09(007)GN-DE001 FEB 16/2004

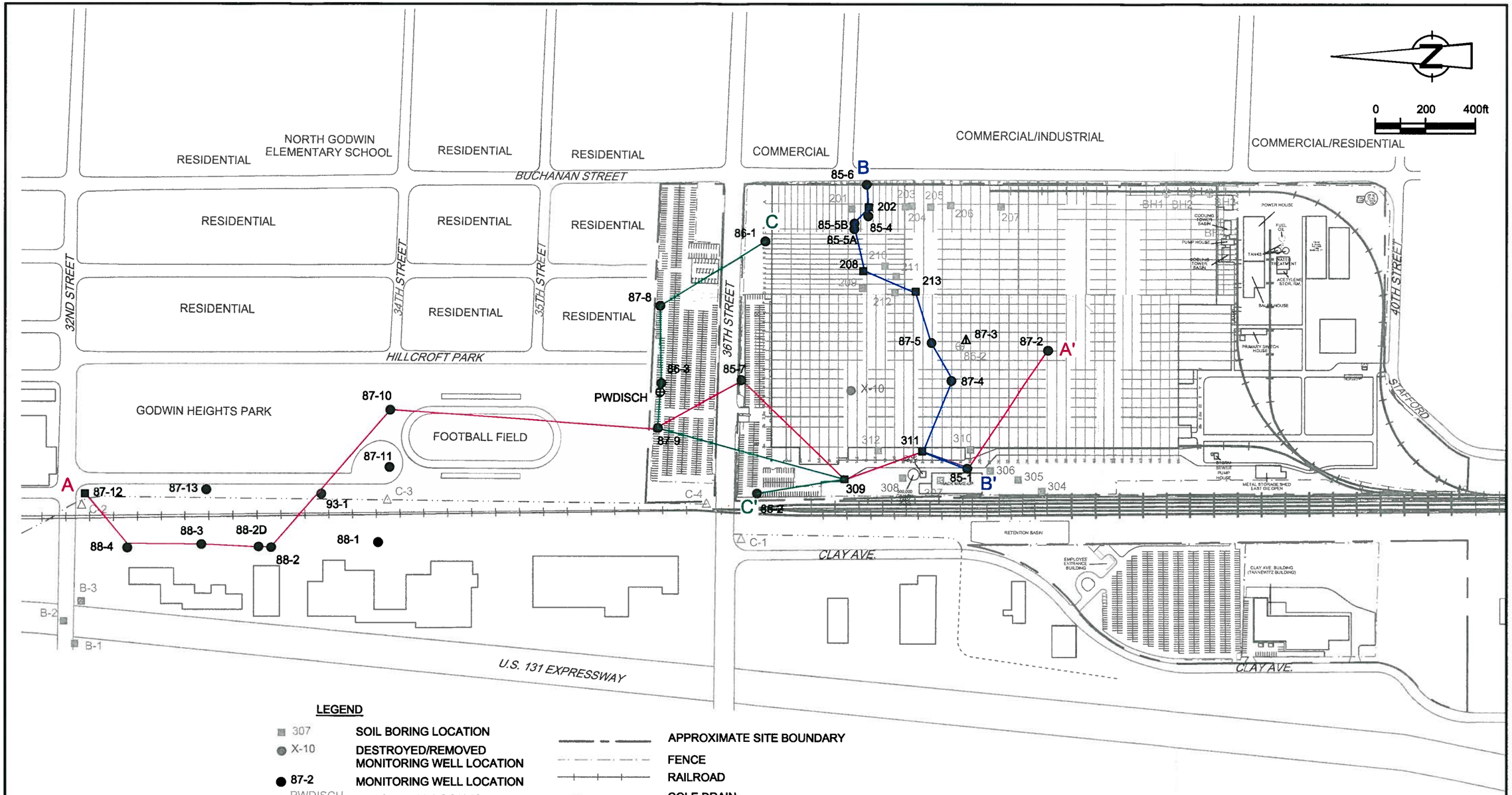


SOURCE: EDI ENGINEERING & SCIENCE, JUNE 1987 AND JUNE 1988 AND EARTH TECH, SEPTEMBER 2001.

figure 1.2

SITE PLAN
GRAND RAPIDS METAL PLANT
Wyoming, Michigan

17360-09(007)GN-DE002 FEB 27/2004



LEGEND

307	SOIL BORING LOCATION
X-10	DESTROYED/REMOVED MONITORING WELL LOCATION
87-2	MONITORING WELL LOCATION
PWDISCH	PURGE WELL LOCATION
C-2	CULVERT LOCATION
87-3	AIR PURGE WELL
BH1	APPROXIMATE LOCATION OF DEWATERING WELLS
	APPROXIMATE SITE BOUNDARY
	FENCE
	RAILROAD
	COLE DRAIN
A — A'	CROSS SECTION LOCATION

SOURCE: EDI ENGINEERING & SCIENCE, JUNE 1987 AND JUNE 1988 AND EARTH TECH, SEPTEMBER 2001.

figure 2.1

CROSS SECTION LOCATIONS
GRAND RAPIDS METAL PLANT
Wyoming, Michigan

17360-09(007)GN-DE006 FEB 27/2004

A

A'

VERTICAL SCALE:
1"=20' (FT. AMSL)

690
680
670
660
650
640
630
620
610
600
590
580

87-12
88-4
88-3
88-2D/88-2
87-10
87-9
85-7
309
311
85-1
87-2

TOPSOIL
ASPHALT
WOOD CHIPS
CONCRETE
DEBRIS
SILTY SAND
PEAT

SAND
GRAVEL
SAND
SAND
SAND
SILTY SAND
SAND
SAND
CLAY
CLAY
GRAVEL
CLAY
SILTY CLAY
CLAYEY SAND

0
400
800
1200
1600
2000
2400
2800
3200
3600
4000
4400

HORIZONTAL SCALE:
1"=400'

LEGEND

- DECEMBER 17, 2003 STATIC WATER LEVEL
- UNSATURATED ZONE SCREEN
- SATURATED ZONE SCREEN
- INTERPRETIVE WATER TABLE
- INTERPRETIVE CONTACT
- KNOWN CONTACT
- ASPHALT/TOPSOIL/WOOD CHIPS/ WOOD FLOOR BLOCK/CONCRETE
- DEBRIS
- GRAVEL
- SAND
- CLAY
- SILTY SAND
- CLAYEY SAND
- PEAT

figure 2.2

CROSS SECTION A-A'
GRAND RAPIDS METAL PLANT
Wyoming, Michigan

17360-09(007)GN-DE003 FEB 16/2004

B

B'

VERTICAL SCALE:
1"=20' (FT. AMSL)

700
690
680
670
660
650
640
630
620
610
600
590
580
570

85-6
202
85-5B
208
213
87-5
87-4
311
85-1

WOOD FLOOR BLOCK/ CONCRETE
WOOD FLOOR BLOCK/ CONCRETE
WOOD FLOOR BLOCK/ CONCRETE

SAND
GRAVEL
SAND
SAND
DEBRIS
SILTY SAND
PEAT
SAND
SAND
SAND
SILTY CLAY
SANDY SILT
SILTY SAND
CLAYEY SILT
SAND
SILTY CLAY
SILTY CLAY
SILTY CLAY
CLAY
SILTY CLAY
CLAYEY SAND
SAND
SAND & GRAVEL
?
?
SANDY SILT
SILTY CLAY

0
120
240
360
480
600
720
840
960
1080
1200
1320
1440
1560

HORIZONTAL SCALE:
1"=120'

LEGEND

- DECEMBER 17, 2003 STATIC WATER LEVEL
- UNSATURATED ZONE SCREEN
- SATURATED ZONE SCREEN
- INTERPRETIVE WATER TABLE
- INTERPRETIVE CONTACT
- KNOWN CONTACT
- WOOD FLOOR BLOCK/CONCRETE
- DEBRIS
- GRAVEL
- SAND
- CLAY
- PEAT
- CLAYEY SILT
- SANDY SILT
- SILTY SAND
- CLAYEY SAND

figure 2.3

CROSS SECTION B-B'
GRAND RAPIDS METAL PLANT
Wyoming, Michigan

17360-09(007)GN-DE004 FEB 16/2004

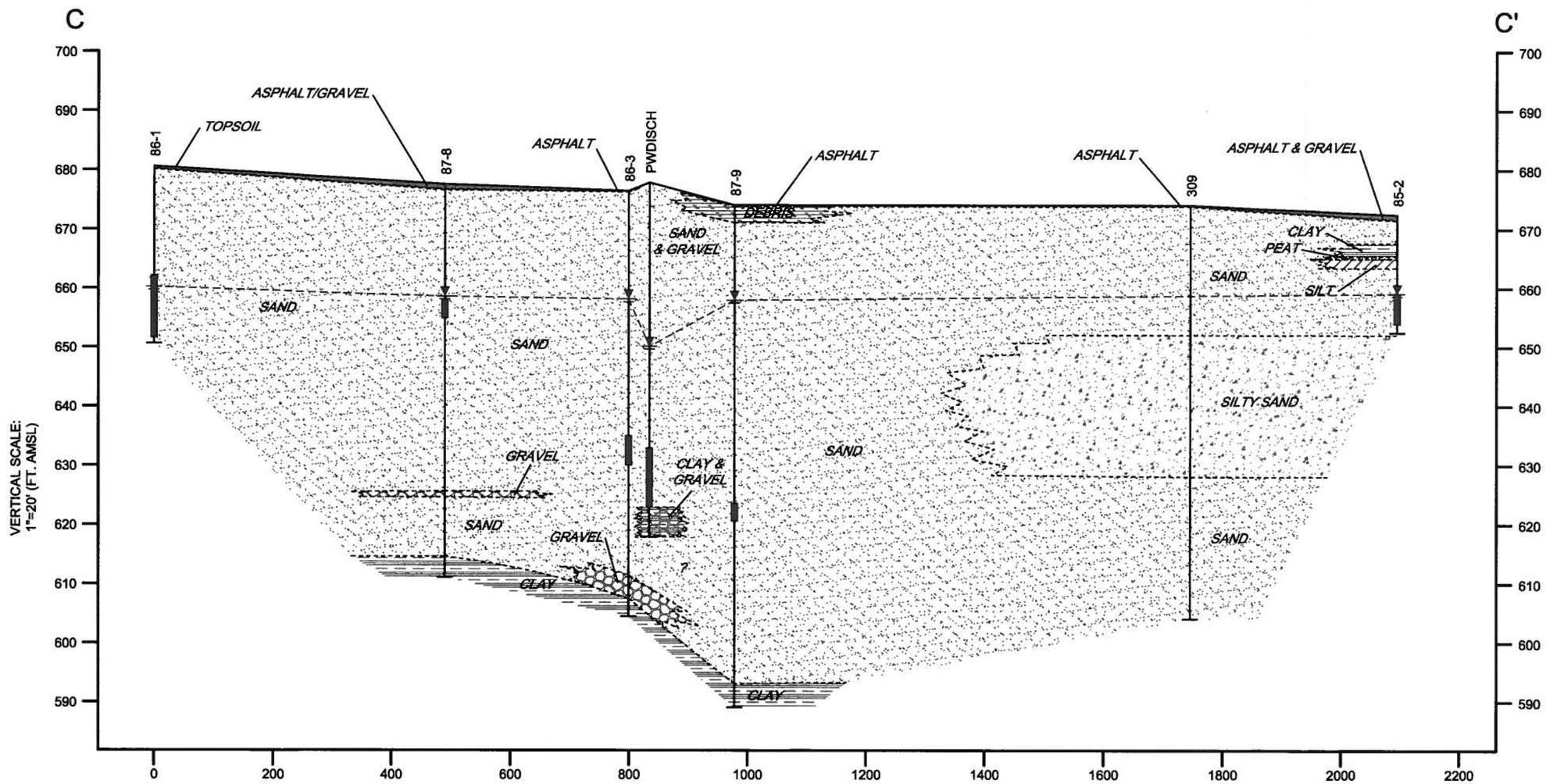
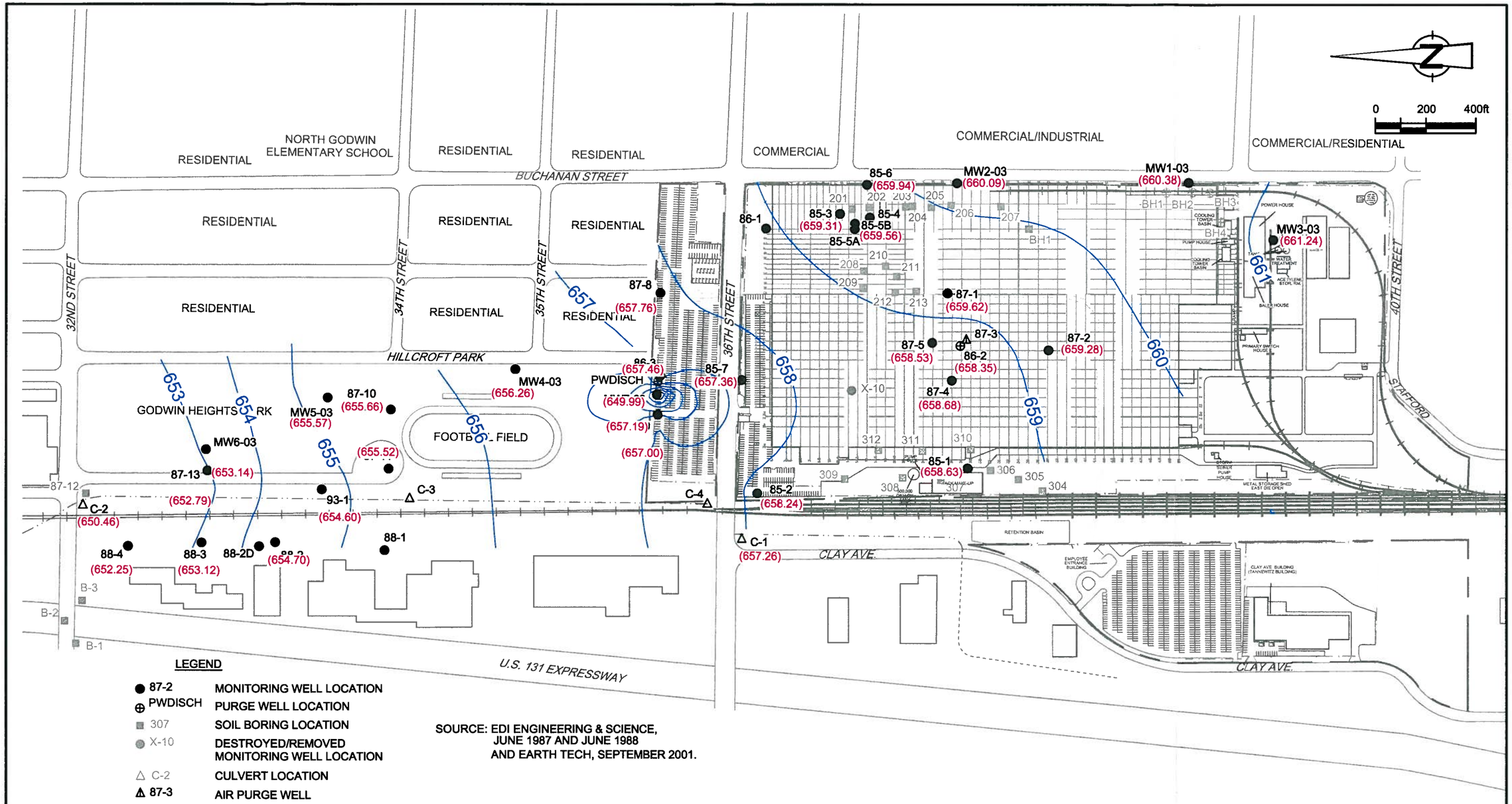


figure 2.4

CROSS SECTION C-C'
GRAND RAPIDS METAL PLANT
Wyoming, Michigan

17360-09(007)GN-DE005 FEB 16/2004



LEGEND

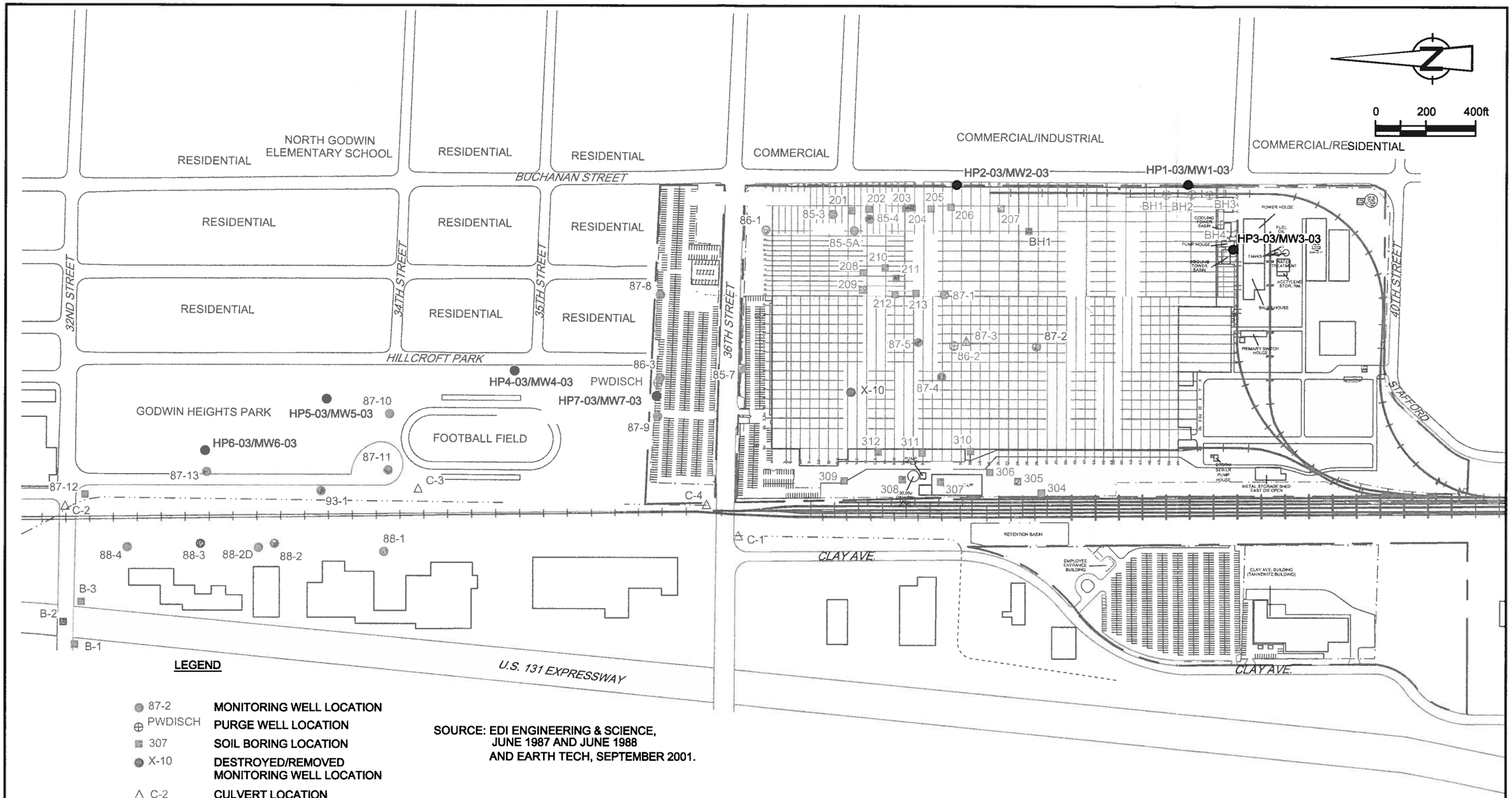
● 87-2	MONITORING WELL LOCATION
⊕ PWDISCH	PURGE WELL LOCATION
■ 307	SOIL BORING LOCATION
● X-10	DESTROYED/REMOVED MONITORING WELL LOCATION
△ C-2	CULVERT LOCATION
⚠ 87-3	AIR PURGE WELL
⊕ BH1	APPROXIMATE LOCATION OF DEWATERING WELLS
———	APPROXIMATE SITE BOUNDARY
—·—·—	FENCE
—+—+—	RAILROAD
—·—·—	COLE DRAIN
———	GROUNDWATER ELEVATION CONTOUR
- - - - -	INFERRED GROUNDWATER ELEVATION CONTOUR
(658.63)	DECEMBER 17, 2003 GROUNDWATER ELEVATION

SOURCE: EDI ENGINEERING & SCIENCE, JUNE 1987 AND JUNE 1988 AND EARTH TECH, SEPTEMBER 2001.

figure 2.5

APPROXIMATE DECEMBER 17, 2003 GROUNDWATER FLOW DIRECTION
GRAND RAPIDS METAL PLANT
Wyoming, Michigan

17360-09(007)GN-DE010 FEB 27/2004



SOURCE: EDI ENGINEERING & SCIENCE, JUNE 1987 AND JUNE 1988 AND EARTH TECH, SEPTEMBER 2001.

figure 3.1

HYDROPUNCH AND MONITORING WELL LOCATIONS
GRAND RAPIDS METAL PLANT
Wyoming, Michigan

17360-09(007)GN-DE007 FEB 27/2004

TABLE 2.1

GROUNDWATER ELEVATIONS
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Monitoring Well Identification	Elevation of Top of Riser	December 9, 2002		March 20, 2003		July 14, 2003		September 29, 2003		December 17, 2003	
		Depth to Groundwater ft. (BTOR)	Groundwater Elevation	Depth to Groundwater ft. (BTOR)	Groundwater Elevation	Depth to Groundwater ft. (BTOR)	Groundwater Elevation	Depth to Groundwater ft. (BTOR)	Groundwater Elevation	Depth to Groundwater ft. (BTOR)	Groundwater Elevation
93-1	656.62	2.00	654.62	1.77	654.85	2.42	654.20	2.28	654.34	2.02	654.6
88-4	661.20	8.59	652.61	8.64	652.56	NA	NA	8.95	652.25	8.95	652.25
88-3	664.36	10.41	653.95	10.41	653.95	NA	NA	11.32	653.04	11.24	653.12
88-2	665.80	11.06	654.74	11.12	654.68	NA	NA	12.04	653.76	11.10	654.7
87-9	673.13	16.20	656.93	16.37	656.76	16.44	656.69	16.43	656.70	16.13	657.00
87-8	676.78	19.87	656.91	20.00	656.78	20.29	656.49	19.90	656.88	19.02	657.76
87-5	680.39	21.95	658.44	22.24	658.15	21.99	658.40	22.24	658.15	21.86	658.53
87-4	680.91	22.14	658.77	22.62	658.29	27.23	653.68	22.49	658.42	22.23	658.68
87-2	680.73	21.20	659.53	22.70	658.03	21.33	659.40	21.78	658.95	21.45	659.28
87-13	663.57	10.55	653.02	10.76	652.81	10.76	652.81	10.82	652.75	10.78	652.79
87-11	666.25	10.78	655.47	10.84	655.41	10.73	655.52	10.82	655.43	10.73	655.52
87-10	667.76	11.76	656.00	12.29	655.47	12.19	655.57	12.28	655.48	12.10	655.66
87-1	680.74	22.10	658.64	22.47	658.27	22.18	658.56	22.36	658.38	21.12	659.62
86-3	675.80	18.80	657.00	19.10	656.70	18.95	656.85	19.11	656.69	18.34	657.46
86-2	680.93	22.35	658.58	22.77	658.16	22.48	658.45	22.75	658.18	22.58	658.35
86-1	679.92	19.95	659.97	21.25	658.67	NA	NA	21.82	658.1	NA	NA
85-7	677.84	20.25	657.59	20.43	657.41	20.27	657.57	20.48	657.36	20.12	657.72
85-6	679.59	19.01	660.58	20.46	659.13	19.79	659.80	20.19	659.40	19.65	659.94
85-5B	680.83	21.30	659.53	22.04	658.79	21.27	659.56	21.20	659.63	NA	NA
85-3	680.91	21.49	659.42	22.32	658.59	21.60	659.31	21.54	659.37	NA	NA
85-2	671.63	13.99	657.64	15.01	656.62	13.88	657.75	14.06	657.57	13.39	658.24
85-1	675.03	15.91	659.12	16.44	658.59	16.16	658.87	16.40	658.63	16.40	658.63
C-3	661.97	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-2	658.81	7.90	650.91	7.82	650.99	8.35	650.46	8.26	650.55	8.14	650.67
C-1	662.61	5.30	657.31	5.45	657.16	5.35	657.26	5.19	657.42	5.06	657.55
MW1-03	678.68	NA	NA	NA	NA	18.32	660.36	18.57	660.11	18.30	660.38
MW2-03	680.60	NA	NA	NA	NA	20.56	660.04	20.88	659.72	20.51	660.09
MW3-03	676.74	NA	NA	NA	NA	15.59	661.15	15.82	660.92	15.50	661.24
MW4-03	679.12	NA	NA	NA	NA	22.95	656.17	23.01	656.11	22.86	656.26
MW5-03	675.82	NA	NA	NA	NA	20.54	655.28	20.66	655.16	20.25	655.57
MW6-03	665.39	NA	NA	NA	NA	12.35	653.04	12.38	653.01	12.25	653.14
MW7-03	674.79	NA	NA	NA	NA	17.69	657.10	17.86	656.93	17.60	657.19
PWDISCH	677.79	NA	NA	NA	NA	28.12	649.67	28.61	649.18	27.80	649.99

Notes:

ft. BTOR - Feet below top of riser
NA-Not Available
All elevations are measured as Above Mean Sea Level (AMSL)

TABLE 3.1

SAMPLE SUMARY
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Identification	*Sample Location*	*Sample Interval (ft. BTOR)*	*QA/QC*	*Analysis* [1]
GW-17360-060903-BW-001	HP6-03	16		TCL VOCs
GW-17360-060903-BW-002	HP6-03	26		TCL VOCs
GW-17360-060903-BW-003	HP6-03	36		TCL VOCs
GW-17360-060903-BW-004	HP6-03	45		TCL VOCs
GW-17360-060903-BW-005	HP6-03	45	Duplicate	TCL VOCs
GW-17360-061003-BW-006	HP5-03	24		TCL VOCs
GW-17360-061003-BW-007	HP5-03	34		TCL VOCs
GW-17360-061003-BW-008	HP5-03	44		TCL VOCs
GW-17360-061003-BW-009	HP5-03	54		TCL VOCs
GW-17360-061003-BW-010	HP5-03	--	Field Rinsate	TCL VOCs
GW-17360-061003-BW-011	HP5-03	62		TCL VOCs
GW-17360-061103-BW-012	HP4-03	26		TCL VOCs
GW-17360-061103-BW-013	HP4-03	36		TCL VOCs
GW-17360-061103-BW-014	HP4-03	46		TCL VOCs
GW-17360-061103-BW-015	HP4-03	56		TCL VOCs
GW-17360-061103-BW-016	HP4-03	66		TCL VOCs
GW-17360-061203-BW-017	HP2-03	24		TCL VOCs
GW-17360-061203-BW-018	HP2-03	34		TCL VOCs
GW-17360-061203-BW-019	HP2-03	41		TCL VOCs
GW-17360-061303-BW-020	HP1-03	24		TCL VOCs
GW-17360-061303-BW-021	HP1-03	24	Duplicate	TCL VOCs
GW-17360-061303-BW-022	HP1-03	34	MS/MSD	TCL VOCs
GW-17360-061303-BW-023	HP1-03	--	Field Rinsate	TCL VOCs
GW-17360-061303-BW-024	HP1-03	41		TCL VOCs
GW-17360-061603-BW-025	HP3-03	18		TCL VOCs
GW-17360-061603-BW-026	HP3-03	28	MS/MSD	TCL VOCs
GW-17360-061603-BW-027	HP3-03	38		TCL VOCs
GW-17360-061603-BW-028	HP3-03	38	Duplicate	TCL VOCs
GW-17360-061603-BW-029	HP3-03	43		TCL VOCs
GW-17360-061703-BW-030	HP7-03	20		TCL VOCs
GW-17360-061703-BW-031	HP7-03	30		TCL VOCs
GW-17360-061703-BW-032	HP7-03	--	Field Rinsate	TCL VOCs
GW-17360-061703-BW-033	HP7-03	40		TCL VOCs
GW-17360-061703-BW-034	HP7-03	50		TCL VOCs
GW-17360-061703-BW-035	HP7-03	50	Duplicate	TCL VOCs
GW-17360-061703-BW-036	HP7-03	60		TCL VOCs
GW-17360-061703-BW-037	HP7-03	69.5		TCL VOCs
GW-17360-061703-BW-038	HP7-03	--	Field Rinsate	TCL VOCs
S-17360-060903-BW-039	Drums 1 & 2	--		TCLP VOCs, TCLP SVOCs, TCLP Metals, Corrosivity, Flashpoint, Reactive Cyanide, and Reactive Sulfide
S-17360-060903-BW-040	Drums 3 - 7	--		TCLP VOCs, TCLP SVOCs, TCLP Metals, Corrosivity, Flashpoint, Reactive Cyanide, and Reactive Sulfide

[1] Samples were transported under chain-of-custody (COC) protocol to Severn Trent Laboratory (STL) located in North Canton, Ohio or Los Angeles, California to be analyzed within a standard two week timeframe.

ND - No Available Depth
-- Non Applicable
QA/QC - Quality Assurance/Quality Control
MS/MSD - Matrix Spike/Matrix Spike Duplicate
BTOR - Below top of riser

TABLE 3.1

SAMPLE SUMARY
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Identification	*Sample Location*	*Sample Interval (ft. BTOR)*	*QA/QC*	*Analysis* [1]
GW-17360-071403-SP-041	MW6-03	13-18		TCL VOCs and NA Parameters
GW-17360-071403-SP-042	MW5-03	30-35		TCL VOCs and NA Parameters
GW-17360-071403-SP-043	MW4-03	52-57		TCL VOCs and NA Parameters
GW-17360-071403-SP-044	MW2-03	22-27		TCL VOCs and NA Parameters
GW-17360-071403-SP-045	MW1-03	30-35		TCL VOCs and NA Parameters
GW-17360-071403-SP-046	87-10	29-32		TCL VOCs and NA Parameters
GW-17360-071403-SP-047	87-11	30-33		TCL VOCs and NA Parameters
GW-17360-071403-SP-048	93-1	8.2		TCL VOCs and NA Parameters
GW-17360-071403-SP-049	87-13	40-43		TCL VOCs and NA Parameters
GW-17360-071403-SP-050	C-1	ND		TCL VOCs and NA Parameters
GW-17360-071403-SP-051	C-2	ND		TCL VOCs and NA Parameters
GW-17360-071403-SP-052	C-3	ND		TCL VOCs and NA Parameters
GW-17360-071403-SP-053	86-3	41.5-46.5		TCL VOCs and NA Parameters
TB-017360-071403-SP-054	Trip Blank	--		TCL VOCs
GW-17360-071503-SP-055	85-7	20.6-25.6		TCL VOCs and NA Parameters
GW-17360-071503-SP-056	85-7	20.6-25.6	Duplicate	TCL VOCs and NA Parameters
GW-17360-071503-SP-057	MW7-03	36-41	MS/MSD	TCL VOCs and NA Parameters
GW-17360-071503-SP-058	PWDISCH	45-55	MS/MSD	TCL VOCs and NA Parameters
GW-17360-071503-SP-059	87-4	24-27		TCL VOCs and NA Parameters
GW-17360-071503-SP-060	87-5	39.5-50.5		TCL VOCs and NA Parameters
GW-17360-071503-SP-061	87-1	24-29		TCL VOCs and NA Parameters
GW-17360-071503-SP-062	87-2	33.2-38.2		TCL VOCs and NA Parameters
GW-17360-071503-SP-063	86-2	ND		TCL VOCs and NA Parameters
GW-17360-071503-SP-064	85-3	ND		TCL VOCs, NA Parameters and TCL
GW-17360-071503-SP-065	MW3-03	25-30		TCL VOCs and NA Parameters
TB-17360-071503-SP-066	Trip Blank	--		TCL VOCs
GW-17360-080603-JB-067	87-9	50.5-53.5		TCL VOCs and NA Parameters
GW-17360-080603-JB-068	87-8	19.7-22.7		TCL VOCs and NA Parameters
GW-17360-080603-JB-069	87-8	19.7-22.7	Duplicate	TCL VOCs and NA Parameters
TB-17360-080603-JB-070	Trip Blank	--		TCL VOCs

[1] Samples were transported under chain-of-custody (COC) protocol to Severn Trent Laboratory (STL) located in North Canton, Ohio to be analyzed within a standard two week timeframe.

ND - No Available Depth
-- Non Applicable
QA/QC - Quality Assurance/Quality Control
MS/MSD - Matrix Spike/Matrix Spike Duplicate
BTOR - Below top of riser

TABLE 3.2

SEPTEMBER QUARTERLY SAMPLE SUMMARY
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Identification	*Sample Location*	*Matrix*	*QA/QC*	*Analysis* [1]
GW-17360-093003-JB-070	87-9	Water		TCL VOCs
GW-17360-093003-JB-071	MW-7-03	Water		TCL VOCs
GW-17360-093003-JB-072	PWDISCH	Water		TCL VOCs
GW-17360-093003-JB-073	86-3	Water	MS/MSD	TCL VOCs
GW-17360-093003-JB-074	87-8	Water		TCL VOCs
GW-17360-100103-JB-075	87-11	Water		TCL VOCs
GW-17360-100103-JB-076	87-10	Water		TCL VOCs
GW-17360-100103-JB-077	87-13	Water		TCL VOCs
GW-17360-100103-JB-078	87-13	Water	Duplicate	TCL VOCs
GW-17360-100103-JB-079	93-1	Water		TCL VOCs
GW-17360-100103-JB-080	C-1	Water		TCL VOCs
GW-17360-100103-JB-081	C-2	Water		TCL VOCs
GW-17360-100103-JB-082	C-3	Water		TCL VOCs
GW-17360-100203-JB-083	87-1	Water		TCL VOCs
GW-17360-100203-JB-084	87-5	Water		TCL VOCs
GW-17360-100203-JB-085	87-2	Water		TCL VOCs
GW-17360-100203-JB-086	85-7	Water		TCL VOCs
GW-17360-100203-JB-087	85-7	Water	Duplicate	TCL VOCs
GW-17360-100203-JB-088	MW-6-03	Water		TCL VOCs
GW-17360-100903-JB-089	MW-4-03	Water	MS/MSD	TCL VOCs
GW-17360-100903-JB-090	MW-5-03	Water		TCL VOCs
GW-17360-100303-JB-091	MW1-03	Water		TCL VOCs
GW-17360-100303-JB-092	MW-2-03	Water		TCL VOCs
GW-17360-100303-JB-093	MW-3-03	Water		TCL VOCs
GW-17360-100703-JB-094	87-4	Water		TCL VOCs
GW-17360-100703-JB-095	86-2	Water		TCL VOCs
GW-17360-100703-JB-096	85-5B	Water		TCL VOCs, TCL SVOCs
GW-17360-100703-JB-097	85-3	Water		TCL VOCs, TCL SVOCs
GW-17360-100703-JB-098	86-1	Water		TCL VOCs, TCL SVOCs
GW-17360-100703-JB-099	85-6	Water		TCL VOCs, TCL SVOCs

Notes:

[1] Samples were transported under chain-of-custody (COC) protocol to Severn Trent Laboratory (STL) located in North Canton, Ohio to be analyzed within a standard two week timeframe.

QA/QC - Quality Assurance/Quality Control

MS/MSD - Matrix Spike/Matrix Spike Duplicate

TABLE 3.3

DECEMBER QUARTERLY SAMPLE SUMMARY
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Identification	*Sample Location*	*Matrix*	*QA/QC*	*Analysis* [1]
GW-17360-121703-JB-091	87-4	Water		TCL VOCs
GW-17360-121703-JB-092	87-5	Water		TCL VOCs
GW-17360-121703-JB-093	87-1	Water		TCL VOCs
GW-17360-121703-JB-094	86-2	Water		TCL VOCs
GW-17360-121703-JB-095	87-2	Water		TCL VOCs
GW-17360-121703-JB-096	85-3	Water		TCL SVOCs
GW-17360-121703-JB-097	87-2	Water	Duplicate	TCL VOCs
GW-17360-121703-JB-098	85-5B	Water		TCL SVOCs
GW-17360-121703-JB-099	86-1	Water		TCL SVOCs
GW-17360-121703-JB-100	85-7	Water		TCL VOCs
GW-17360-121703-JB-101	85-6	Water		TCL SVOCs
GW-17360-121703-JB-102	MW7-03	Water		TCL VOCs
GW-17360-121803-JB-103	87-9	Water		TCL VOCs
GW-17360-121803-JB-104	86-3	Water		TCL VOCs
GW-17360-121803-JB-105	87-8	Water		TCL VOCs
GW-17360-121803-JB-106	MW4-03	Water	MS/MSD	TCL VOCs
GW-17360-121803-JB-107	C-3	Water		TCL VOCs
GW-17360-121803-JB-108	C-1	Water		TCL VOCs
GW-17360-121803-JB-109	C-2	Water		TCL VOCs
GW-17360-121803-JB-110	PWDISCH	Water		TCL VOCs
GW-17360-121803-JB-111	MW6-03	Water		TCL VOCs
GW-17360-121803-JB-112	87-13	Water		TCL VOCs
GW-17360-121803-JB-113	87-11	Water		TCL VOCs
GW-17360-121803-JB-114	87-10	Water		TCL VOCs
GW-17360-121803-JB-115	MW5-03	Water		TCL VOCs
GW-17360-121803-JB-116	93-1	Water		TCL VOCs
GW-17360-121803-JB-117	MW2-03	Water		TCL VOCs
GW-17360-121803-JB-118	MW1-03	Water		TCL VOCs
GW-17360-121803-JB-119	MW3-03	Water		TCL VOCs
TB-17360-121803-JB-120	--	Water		TCL VOCs

Notes:

[1] Samples were transported under chain-of-custody (COC) protocol to Severn Trent Laboratory (STL) located in North Canton, Ohio to be analyzed within a standard two week timeframe.

-- Not applicable
QA/QC - Quality Assurance/Quality Control
MS/MSD - Matrix Spike/Matrix Spike Duplicate

TABLE 4.1

ANALYTICAL RESULTS FOR TCL VOCs IN GROUNDWATER SAMPLES
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*85-7*	*85-7*	*86-2*	*86-3*	*87-1*	*87-2*	*87-4*	*87-5*	*87-8*	*87-8*	*87-9*	*87-10*	*87-11*	*87-13*	*93-1*
Sample Identification (GW-17360-)	*Residential &*	*071503-SP-055*	*071503-SP-056*	*071503-SP-063*	*071403-SP-053*	*071503-SP-061*	*071503-SP-062*	*071503-SP-059*	*071503-SP-060*	*080603-JB-068*	*080603-JB-069*	*080603-JB-067*	*071403-SP-046*	*071403-SP-047*	*071403-SP-049*	*071403-SP-048*
Sample Depth	*Commercial I*	*20.6-25.6*	*20.6-25.6*	*27.5-32.5*	*41.5-46.5*	*24-29*	*33.2-38.2*	*24-27*	*39.5-50.5*	*19.7-22.7*	*19.7-22.7*	*50.5-53.5*	*29-32*	*30-33*	*40-43*	*8.2*
Sample Date	*Drinking Water*	*7/15/2003*	*7/15/2003*	*7/15/2003*	*7/14/2003*	*7/15/2003*	*7/15/2003*	*7/15/2003*	*7/15/2003*	*8/6/2003*	*8/6/2003*	*8/6/2003*	*7/14/2003*	*7/14/2003*	*7/14/2003*	*7/14/2003*
Units	*Criteria* [1]	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
			Duplicate								*Duplicate*					
TCL VOCs (ug/L)																
1,1,1-Trichloroethane	200	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	3.4 J	ND(1.0)	ND(1.0)	ND(1.0)	1.8	ND(2.0)	ND(1.0)	ND(1.0)
1,1,2,2-Tetrachloroethane	8.5	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	880	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	3.7	ND(1.0)	ND(1.0)	6.9	ND(1.0)	ND(1.0)	0.57 J	1.5	ND(2.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	7.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	2.4 J	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	0.51 J	ND(2.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	70	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(12)	ND(5.0)	ND(5.0)	ND(20)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	6.6	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	75	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	13,000	ND(25)	ND(25)	ND(25)	ND(25)UJ	ND(62)	ND(25)	ND(25)	ND(100)	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(50)UJ	ND(25)UJ	ND(25)UJ
2-Hexanone	1,000	ND(50)	ND(50)	ND(50)	ND(50)UJ	ND(120)	ND(50)	ND(50)	ND(200)	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(100)UJ	ND(50)UJ	ND(50)UJ
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	1,800	ND(50)	ND(50)	ND(50)	ND(50)	ND(120)	ND(50)	ND(50)	ND(200)	ND(50)	ND(50)	ND(50)	ND(50)	ND(100)	ND(50)	ND(50)
Acetone	730	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(62)UJ	ND(25)UJ	ND(25)UJ	ND(100)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(50)UJ	ND(25)UJ	ND(25)UJ
Benzene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Bromodichloromethane	100	0.32 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Bromoform	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Bromomethane (Methyl Bromide)	10	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Carbon disulfide	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(12)	ND(5.0)	ND(5.0)	ND(20)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)
Carbon tetrachloride	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Chlorobenzene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Chloroethane	430	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	100	2.0	2.1	1.5	1.5	ND(2.5)	ND(1.0)	1.3	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Chloromethane (Methyl Chloride)	260	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)UJ	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)UJ	ND(2.0)UJ	ND(1.0)UJ	ND(1.0)UJ
cis-1,2-Dichloroethene	70	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	50	23	ND(1.0)	33	ND(1.0)	ND(1.0)	ND(1.0)	1.6	42	ND(1.0)	4.2
cis-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	1,700	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)UJ	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)UJ	ND(2.0)UJ	ND(1.0)UJ	ND(1.0)UJ
Ethylbenzene	74	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Isopropylbenzene	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(12)	ND(5.0)	ND(5.0)	ND(20)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)
Methyl acetate	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(25)	ND(10)	ND(10)	ND(40)	ND(10)	ND(10)	ND(10)	ND(10)	ND(20)	ND(10)	ND(10)
Methyl cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Methyl Tert Butyl Ether	40	ND(5.0)	ND(5.0)	0.64 J	ND(5.0)	ND(12)	0.67 J	ND(5.0)	ND(20)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)
Methylene chloride	5.0	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(12)	ND(5.0)	ND(5.0)	ND(20)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)
Styrene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Tetrachloroethene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	2.9
Toluene	790	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
trans-1,2-Dichloroethene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	3.3	2.4	ND(1.0)	13	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Trichloroethene	5.0	0.79 J	0.88 J	3.3	4.3	55	26	ND(1.0)	ND(4.0)	0.36 J	0.37 J	0.31 J	27	28	1.6	1.9
Trichlorofluoromethane (CFC-11)	2,600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(4.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)
Vinyl chloride	2.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	7.2	ND(1.0)	ND(1.0)	130	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	3.7	ND(1.0)	0.43 J
Xylene (total)	280	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(7.5)	ND(3.0)	ND(3.0)	ND(12)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(6.0)	ND(3.0)	ND(3.0)

Notes:

(1) If Criteria is exceeded then the corresponding analytical value is boxed.

ND ( ) – Not detected above the value in parenthesis.

J – The associated value is qualified as an estimated quantity.

UJ – The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.

U - The analyte was analyzed for, but was qualified not detected above the value identified.

NA - Not Available

Boxed value exceed Residential Drinking Water Criteria

TABLE 4.1

ANALYTICAL RESULTS FOR TCL VOCs IN GROUNDWATER SAMPLES
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*C-1*	*C-2*	*C-3*	*Field Rinsate*	*Field Rinsate*	*Field Rinsate*	*Field Rinsate*	*HP1-03*	*HP1-03*	*HP1-03*	*HP1-03*	*HP2-03*	*HP2-03*	*HP2-03*
Sample Identification (GW-17360-)	*Residential &*	*071403-SP-050*	*071403-SP-051*	*071403-SP-052*	*061003-BW-010*	*061303-BW-023*	*061703-BW-032*	*061703-BW-038*	*061303-BW-020*	*061303-BW-021*	*061303-BW-022*	*061303-BW-024*	*061203-BW-017*	*061203-BW-018*	*061203-BW-019*
Sample Depth	*Commercial I*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*24*	*24*	*34*	*41*	*24*	*34*	*41*
Sample Date	*Drinking Water*	*7/14/2003*	*7/14/2003*	*7/14/2003*	*6/10/2003*	*6/13/2003*	*6/17/2003*	*6/17/2003*	*6/13/2003*	*6/13/2003*	*6/13/2003*	*6/13/2003*	*6/12/2003*	*6/12/2003*	*6/12/2003*
Units	*Criteria* [1]	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L Duplicate*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
TCL VOCs (ug/L)															
1,1,1-Trichloroethane	200	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2,2-Tetrachloroethane	8.5	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	880	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	7.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	70	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	6.6	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	75	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	13,000	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(50)	ND(25)	ND(25)	ND(25)	ND(25)
2-Hexanone	1,000	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(100)	ND(50)	ND(50)	ND(50)	ND(50)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	1,800	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(100)	ND(50)	ND(50)	ND(50)	ND(50)
Acetone	730	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(50)	ND(25)	ND(25)	ND(25)	ND(25)
Benzene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromodichloromethane	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	7.3	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromoform	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.0	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromomethane (Methyl Bromide)	10	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Carbon disulfide	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Carbon tetrachloride	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	430	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	9.5	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloromethane (Methyl Chloride)	260	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	70	ND(1.0)	3.5	7.4	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	1.7	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	3.6	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	1,700	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Ethylbenzene	74	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropylbenzene	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methyl acetate	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(20)	ND(10)	ND(10)	ND(10)	ND(10)
Methyl cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl Tert Butyl Ether	40	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methylene chloride	5.0	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Styrene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Tetrachloroethene	5.0	ND(1.0)	0.89 J	2.3	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	7.0	7.1	66	1.5	31	7.2	ND(1.0)
Toluene	790	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,2-Dichloroethene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	5.0	ND(1.0)	1.6	1.6	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	3.8	3.8	2.2	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichlorofluoromethane (CFC-11)	2,600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	2.0	ND(1.0)	ND(1.0)	1.1	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Xylene (total)	280	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(6.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)

Notes:

(1) If Criteria is exceeded then the corresponding analytical value is boxed.
ND ( ) – Not detected above the value in parenthesis.
J – The associated value is qualified as an estimated quantity.
UJ – The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.
U - The analyte was analyzed for, but was qualified not detected above the value identified.
NA - Not Available
Boxed value exceed Residential Drinking Water Criteria

TABLE 4.1

ANALYTICAL RESULTS FOR TCL VOCs IN GROUNDWATER SAMPLES
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*HP3-03*	*HP3-03*	*HP3-03*	*HP3-03*	*HP3-03*	*HP4-03*	*HP4-03*	*HP4-03*	*HP4-03*	*HP4-03*	*HP6-03*	*HP6-03*	*HP6-03*	*HP6-03*
Sample Identification (GW-17360-)	*Residential &*	*061603-BW-025*	*061603-BW-026*	*061603-BW-027*	*061603-BW-028*	*061603-BW-029*	*061103-BW-012*	*061103-BW-013*	*061103-BW-014*	*061103-BW-015*	*061103-BW-016*	*060903-BW-001*	*060903-BW-002*	*060903-BW-003*	*060903-BW-004*
Sample Depth	*Commercial I*	*18*	*28*	*38*	*38*	*43*	*26*	*36*	*46*	*56*	*66*	*16*	*26*	*36*	*45*
Sample Date	*Drinking Water*	*6/16/2003*	*6/16/2003*	*6/16/2003*	*6/16/2003*	*6/16/2003*	*6/11/2003*	*6/11/2003*	*6/11/2003*	*6/11/2003*	*6/11/2003*	*6/9/2003*	*6/9/2003*	*6/9/2003*	*6/9/2003*
Units	*Criteria* [1]	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
					Duplicate										
TCL VOCs (ug/L)															
1,1,1-Trichloroethane	200	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2,2-Tetrachloroethane	8.5	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	880	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	7.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	70	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	6.6	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	75	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	13,000	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)
2-Hexanone	1,000	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	1,800	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
Acetone	730	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)
Benzene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromodichloromethane	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	9.3	9.3	9.3	ND(1.0)	2.4	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromoform	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromomethane (Methyl Bromide)	10	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Carbon disulfide	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Carbon tetrachloride	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	430	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	36	35	37	2.4	11	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloromethane (Methyl Chloride)	260	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	70	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	4.7	4.4	3.7	ND(1.0)	1.1	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	1,700	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Ethylbenzene	74	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropylbenzene	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methyl acetate	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Methyl cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl Tert Butyl Ether	40	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methylene chloride	5.0	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Styrene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Tetrachloroethene	5.0	1.1	1.4	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.4	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Toluene	790	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.1	1.1	ND(1.0)
trans-1,2-Dichloroethene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichlorofluoromethane (CFC-11)	2,600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	2.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Xylene (total)	280	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)

Notes:

(1) If Criteria is exceeded then the corresponding analytical value is boxed.

ND ( ) – Not detected above the value in parenthesis.

J – The associated value is qualified as an estimated quantity.

UJ – The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.

U - The analyte was analyzed for, but was qualified not detected above the value identified.

NA - Not Available

Boxed value exceed Residential Drinking Water Criteria

TABLE 4.1

ANALYTICAL RESULTS FOR TCL VOCs IN GROUNDWATER SAMPLES
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*HP6-03*	*HP7-03*	*HP7-03*	*HP7-03*	*HP7-03*	*HP7-03*	*HP7-03*	*HP7-03*	*HP5-03*	*HP5-03*	*HP5-03*	*HP5-03*	*HP5-03*	*MW1-03*
Sample Identification (GW-17360-)	*Residential &*	*060903-BW-005*	*061703-BW-030*	*061703-BW-031*	*061703-BW-033*	*061703-BW-034*	*061703-BW-035*	*061703-BW-036*	*061703-BW-037*	*061003-BW-006*	*061003-BW-007*	*061003-BW-008*	*061003-BW-009*	*061003-BW-011*	*071403-SP-045*
Sample Depth	*Commercial I*	*45*	*20*	*30*	*40*	*50*	*50*	*60*	*69.5*	*24*	*34*	*44*	*54*	*62*	*30-35*
Sample Date	*Drinking Water*	*6/9/2003*	*6/17/2003*	*6/17/2003*	*6/17/2003*	*6/17/2003*	*6/17/2003*	*6/17/2003*	*6/17/2003*	*6/10/2003*	*6/10/2003*	*6/10/2003*	*6/10/2003*	*6/10/2003*	*7/14/2003*
Units	*Criteria* [1]	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
		Duplicate					*Duplicate*								
TCL VOCs (ug/L)															
1,1,1-Trichloroethane	200	ND(1.0)	ND(1.0)	1.5	2.2	1.9	1.8	1.5	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
1,1,2,2-Tetrachloroethane	8.5	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
1,1,2-Trichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
1,1-Dichloroethane	880	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
1,1-Dichloroethene	7.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
1,2,4-Trichlorobenzene	70	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)
1,2-Dibromo-3-chloropropane (DBCP)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
1,2-Dibromoethane (Ethylene Dibromide)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
1,2-Dichlorobenzene	600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
1,2-Dichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
1,2-Dichloropropane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
1,3-Dichlorobenzene	6.6	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
1,4-Dichlorobenzene	75	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
2-Butanone (Methyl Ethyl Ketone)	13,000	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(50)UJ
2-Hexanone	1,000	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(100)UJ
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	1,800	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(100)
Acetone	730	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(50)UJ
Benzene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Bromodichloromethane	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Bromoform	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Bromomethane (Methyl Bromide)	10	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Carbon disulfide	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)
Carbon tetrachloride	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Chlorobenzene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Chloroethane	430	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Chloroform (Trichloromethane)	100	ND(1.0)	ND(1.0)	ND(1.0)	1.8	2.0	1.9	1.9	1.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Chloromethane (Methyl Chloride)	260	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)UJ
cis-1,2-Dichloroethene	70	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	2.7
cis-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Dibromochloromethane	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Dichlorodifluoromethane (CFC-12)	1,700	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)UJ
Ethylbenzene	74	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Isopropylbenzene	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)
Methyl acetate	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(20)
Methyl cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Methyl Tert Butyl Ether	40	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)
Methylene chloride	5.0	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(10)
Styrene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Tetrachloroethene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.2	ND(1.0)	1.2	ND(1.0)	72
Toluene	790	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.0	ND(1.0)	ND(1.0)	ND(2.0)
trans-1,2-Dichloroethene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
trans-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Trichloroethene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	5.9	3.5	3.6	1.6	1.6 J
Trichlorofluoromethane (CFC-11)	2,600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Trifluorotrichloroethane (Freon 113)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Vinyl chloride	2.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
Xylene (total)	280	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(6.0)

Notes:

(1) If Criteria is exceeded then the corresponding analytical value is boxed.

ND ( ) – Not detected above the value in parenthesis.

J – The associated value is qualified as an estimated quantity.

UJ – The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.

U - The analyte was analyzed for, but was qualified not detected above the value identified.

NA - Not Available

Boxed value exceed Residential Drinking Water Criteria

TABLE 4.1

ANALYTICAL RESULTS FOR TCL VOCs IN GROUNDWATER SAMPLES
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*MW2-03*	*MW3-03*	*MW4-03*	*MW5-03*	*MW6-03*	*MW7-03*	*PWDISCH*			
Sample Identification (GW-17360-)	*Residential &*	*071403-SP-044*	*071503-SP-065*	*071403-SP-043*	*071403-SP-042*	*071403-SP-041*	*071503-SP-057*	*071503-SP-058*	*TB-17360-071403-SP-054*	*TB-17360-071503-SP-066*	*TRIP BLANK*
Sample Depth	*Commercial I*	*22-27*	*25-30*	*52-57*	*30-35*	*13-18*	*36-41*	*45-55*	*NA*	*NA*	*NA*
Sample Date	*Drinking Water*	*7/14/2003*	*7/15/2003*	*7/14/2003*	*7/14/2003*	*7/14/2003*	*7/15/2003*	*7/15/2003*	*7/14/2003*	*7/15/2003*	*8/6/2003*
Units	*Criteria* [1]	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
TCL VOCs (ug/L)											
1,1,1-Trichloroethane	200	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	3.4	0.57 J	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2,2-Tetrachloroethane	8.5	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	880	ND(1.0)	ND(1.0)	ND(1.0)	0.39 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	7.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	70	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	6.6	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	75	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	13,000	ND(25)UJ	ND(25)	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)	ND(25)UJ	1.1 J	0.86 J	0.90 J
2-Hexanone	1,000	ND(50)UJ	ND(50)	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)	ND(50)UJ
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	1,800	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
Acetone	730	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	2.3 J	2.0 J	ND(25)UJ
Benzene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromodichloromethane	100	ND(1.0)	ND(1.0)	2.1	ND(1.0)	ND(1.0)	0.67 J	0.44 J	ND(1.0)	ND(1.0)	ND(1.0)
Bromoform	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromomethane (Methyl Bromide)	10	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)UJ	ND(1.0)	ND(1.0)	ND(1.0)
Carbon disulfide	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Carbon tetrachloride	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	430	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	100	ND(1.0)	0.36 J	11	0.76 J	0.42 J	1.9	3.0	ND(1.0)	ND(1.0)	0.26 J
Chloromethane (Methyl Chloride)	260	ND(1.0)UJ	ND(1.0)	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)	ND(1.0)	ND(1.0)UJ	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	70	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	100	ND(1.0)	ND(1.0)	0.50 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	1,700	ND(1.0)UJ	ND(1.0)	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)	ND(1.0)
Ethylbenzene	74	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropylbenzene	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methyl acetate	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Methyl cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl Tert Butyl Ether	40	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methylene chloride	5.0	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Styrene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Tetrachloroethene	5.0	14	0.85 J	0.58 J	0.55 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Toluene	790	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,2-Dichloroethene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	5.0	ND(1.0)	ND(1.0)	2.0	7.4	ND(1.0)	0.54 J	3.0	ND(1.0)	ND(1.0)	ND(1.0)
Trichlorofluoromethane (CFC-11)	2,600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	2.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Xylene (total)	280	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)

Notes:

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J – The associated value is qualified as an estimated quantity.
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NA - Not Available
Boxed value exceed Residential Drinking Water Criteria

TABLE 4.2

ANALYTICAL RESULTS FOR TCL SVOCs IN GROUNDWATER SAMPLES
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*85-3*
Sample Identification (GW-17360-)	*Residential &*	*071503-SP-064*
Sample Depth	*Commercial I*	*20.3-30.3*
Sample Date	*Drinking Water*	*7/15/2003*
Units	*Criteria* [1]	*ug/L*
TCL SVOCs (ug/L)		
2,2'-oxybis(1-Chloropropane) (bis(2-chloroisopropyl) ether)	NA	ND(250)
2,4,5-Trichlorophenol	730	ND(250)
2,4,6-Trichlorophenol	120	ND(200)
2,4-Dichlorophenol	73	ND(500)
2,4-Dimethylphenol	370	ND(250)
2,4-Dinitrophenol	NA	ND(1000)UJ
2,4-Dinitrotoluene	7.7	ND(250)
2,6-Dinitrotoluene	NA	ND(250)
2-Chloronaphthalene	1,800	ND(250)
2-Chlorophenol	45	ND(250)
2-Methylnaphthalene	260	ND(250)
2-Methylphenol	NA	ND(250)
2-Nitroaniline	NA	ND(1000)
2-Nitrophenol	20	ND(250)
3,3'-Dichlorobenzidine	1.1	ND(200)
3-Nitroaniline	NA	ND(1000)
4,6-Dinitro-2-methylphenol	NA	ND(1000)
4-Bromophenyl phenyl ether	NA	ND(250)
4-Chloro-3-methylphenol	150	ND(250)
4-Chloroaniline	NA	ND(1000)
4-Chlorophenyl phenyl ether	NA	ND(250)
4-Methylphenol	NA	ND(250)
4-Nitroaniline	NA	ND(1000)
4-Nitrophenol	NA	ND(1000)
Acenaphthene	1,300	ND(250)
Acenaphthylene	52	ND(250)
Acetophenone	1,500	ND(250)
Anthracene	43	ND(250)
Atrazine	3.0	ND(250)
Benzaldehyde	NA	ND(500)
Benzo(a)anthracene	2.1	ND(200)
Benzo(a)pyrene	5.0	ND(200)
Benzo(b)fluoranthene	2.0 (M)	ND(200)
Benzo(g,h,i)perylene	5.0 (M)	ND(250)
Benzo(k)fluoranthene	5.0 (M)	ND(250)
Biphenyl	NA	ND(500)
bis(2-Chloroethoxy)methane	NA	ND(250)
bis(2-Chloroethyl)ether	2.0	ND(200)
bis(2-Ethylhexyl)phthalate	6.0	20 J
Butyl benzylphthalate	1,200	ND(250)
Caprolactam	5,800	ND(500)
Carbazole	85	ND(500)
Chrysene	5.0 (M)	ND(250)
Dibenz(a,h)anthracene	2.0 (M)	ND(200)
Dibenzofuran	ID	ND(250)
Diethyl phthalate	5,500	ND(250)
Dimethyl phthalate	73,000	ND(250)
Di-n-butylphthalate	880	ND(250)
Di-n-octyl phthalate	130	ND(250)
Fluoranthene	210	ND(250)
Fluorene	880	ND(250)
Hexachlorobenzene	1.0	ND(250)
Hexachlorobutadiene	15	ND(250)
Hexachlorocyclopentadiene	50	ND(250)
Hexachloroethane	7.3	ND(250)
Indeno(1,2,3-cd)pyrene	2.0	ND(200)
Isophorone	770	ND(250)
Naphthalene	520	ND(250)
Nitrobenzene	3.4	ND(200)
N-Nitrosodi-n-propylamine	5.0 (M)	ND(250)
N-Nitrosodiphenylamine	270	ND(250)
Pentachlorophenol	1.0	ND(1000)
Phenanthrene	52	ND(250)
Phenol	4,400	ND(250)
Pyrene	140	ND(250)

Notes:

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ND ( ) – Not detected above the value in parenthesis.
J – The associated value is qualified as an estimated quantity.
UJ – The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.
U - The analyte was analyzed for, but was qualified not detected above the value identified.
NA - Not Available
Boxed value exceed Residential Drinking Water Criteria

TABLE 4.3

ANALYTICAL RESULTS FOR NATURAL ATTENUATION PARAMETERS IN GROUNDWATER SAMPLES
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location		*85-7*	*85-7*	*86-2*	*86-3*	*87-1*	*87-2*	*87-4*	*87-5*	*87-8*	*87-8*	*87-9*	*87-10*	*87-11*	*87-13*	*93-1*
Sample Identification (GW-17360-)		*071503-SP-055*	*071503-SP-056*	*071503-SP-063*	*071403-SP-053*	*071503-SP-061*	*071503-SP-062*	*071503-SP-059*	*071503-SP-060*	*080603-JB-068*	*080603-JB-069*	*080603-JB-067*	*071403-SP-046*	*071403-SP-047*	*071403-SP-049*	*071403-SP-048*
Sample Depth		*20.6-25.6*	*20.6-25.6*	*NA*	*41.5-46.5*	*24-29*	*33.2-38.2*	*24-27*	*39.5-50.5*	*19.7-22.7*	*19.7-22.7*	*50.5-53.5*	*29-32*	*30-33*	*40-43*	*8.2*
Sample Date		*7/15/2003*	*7/15/2003*	*7/15/2003*	*7/14/2003*	*7/15/2003*	*7/15/2003*	*7/15/2003*	*7/15/2003*	*8/6/2003*	*8/6/2003*	*8/6/2003*	*7/14/2003*	*7/14/2003*	*7/14/2003*	*7/14/2003*
			Duplicate								*Duplicate*					
Natural Attenuation Parameters	*Units*															
Alkalinity, Total (As CaCO3)	mg/L	250	250	270	260	330	280	260	310	290	280	270	300	270	300	180
Chloride	mg/L	253	244	177	328	204	164	219	174	759	756	152	229	142	214	152
Hardness	mg/L	450	460	360	420	410	400	380	380	450	550	320	410	410	430	250
Nitrate (as N)	mg/L	9.7 J	9.5 J	3.3 J	3.5	0.010 J	0.33 J	3.3 J	0.010 J	9.2	9.4	2.6	1.7	0.15	3.0	ND(0.10)
Nitrite (as N)	mg/L	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	0.087 J	0.043 J	ND(0.10)	ND(0.10)	0.22	ND(0.10)
Sulfate	mg/L	45.2	45.3	39.6	40.7	21.4	50.5	33.0	23.8	49.8	50.1	37.9	43.1	95.0	78.9	35.6
Sulfide	mg/L	1.2 J	1.2 J	1.3 J	0.91 J	1.7 J	1.3 J	1.2 J	2.0 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	0.27 J	ND(1.0)	ND(1.0)
Total Organic Carbon (TOC)	mg/L	3	2	2	2	5	2	3	7	0.7 J	0.7 J	0.7 J	ND(3)U	2	2	5
Calcium	mg/L	100	109	92.6	102	89.7	88.8	88.7	84.9	146	158	97.0	95.3	104	118	63.6
Magnesium	mg/L	21.2	23.1	22.7	27.6	24.0	26.6	20.4	22.5	ND(29.8)U	ND(32.1)U	ND(21.0)U	21.0	23.5	27.4	12.8
Manganese	mg/L	ND(0.015)U	ND(0.015)U	ND(0.015)U	ND(0.015)	0.54	ND(0.073)U	ND(0.015)U	ND(0.040)U	ND(0.015)U	ND(0.015)U	ND(0.015)U	ND(0.015)U	ND(0.071)U	ND(0.019)U	ND(0.12)U
Ethane	ug/L	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Ethene	ug/L	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	0.68	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Methane	ug/L	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	88	0.86	ND(0.50)	73	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	2.1

Notes:

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U – The analyte was analyzed for, but was qualified not detected above the value identified.

NA - Not Available

Boxed value exceed Residential Drinking Water Criteria

TABLE 4.3

ANALYTICAL RESULTS FOR NATURAL ATTENUATION PARAMETERS IN GROUNDWATER SAMPLES
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location		*C-1*	*C-2*	*C-3*	*MW1-03*	*MW2-03*	*MW3-03*	*MW4-03*	*MW5-03*	*MW6-03*	*MW7-03*	*PWDISCH*
Sample Identification (GW-17360-)		*071403-SP-050*	*071403-SP-051*	*071403-SP-052*	*071403-SP-045*	*071403-SP-044*	*071503-SP-065*	*071403-SP-043*	*071403-SP-042*	*071403-SP-041*	*071503-SP-057*	*071503-SP-058*
Sample Depth		*NA*	*NA*	*NA*	*30-35*	*22-27*	*25-30*	*52-57*	*30-35*	*13-18*	*36-41*	*45-55*
Sample Date		*7/14/2003*	*7/14/2003*	*7/14/2003*	*7/14/2003*	*7/14/2003*	*7/15/2003*	*7/14/2003*	*7/14/2003*	*7/14/2003*	*7/15/2003*	*7/15/2003*
Natural Attenuation Parameters	*Units*											
Alkalinity, Total (As CaCO3)	mg/L	200	250	230	300	330	320	260	300	260	300	260
Chloride	mg/L	198	229	242	147	346	254	151	176	194	351	203
Hardness	mg/L	300	380	370	420	370	420	300	400	360	400	400
Nitrate (as N)	mg/L	2.1	1.9	2.0	2.5	5.4	4.4 J	2.2	1.8	6.0	7.3 J	3.8 J
Nitrite (as N)	mg/L	0.14	0.14	0.14	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.50)	ND(0.10)
Sulfate	mg/L	42.4	66.2	54.9	35.6	34.6	35.8	33.7	37.0	30.0	53.2	61.2
Sulfide	mg/L	0.75 J	0.91 J	0.27 J	ND(1.0)	ND(1.0)	2.1 J	ND(1.0)	ND(1.0)	ND(1.0)	0.70 J	0.70 J
Total Organic Carbon (TOC)	mg/L	5	4	4	ND(2)U	ND(3)U	2	ND(2)U	ND(3)U	ND(2)U	2	2
Calcium	mg/L	80.6	96.1	87.7	102	97.9	97.8	68.2	95.9	89.1	80.5	105
Magnesium	mg/L	17.0	19.4	17.5	25.2	17.2	23.4	15.2	21.7	18.8	17.0	22.9
Manganese	mg/L	ND(0.056)U	ND(0.064)U	ND(0.078)U	ND(0.033)U	ND(0.022)U	ND(0.020)U	ND(0.023)U	ND(0.015)U	ND(0.015)U	ND(0.020)U	ND(0.015)
Ethane	ug/L	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Ethene	ug/L	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Methane	ug/L	2.5	1.7	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)

Notes:

J – The associated value is qualified as an estimated quantity.

UJ – The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.

ND ( ) – Not detected above the value in parenthesis.

U – The analyte was analyzed for, but was qualified not detected above the value identified.

NA - Not Available

Boxed value exceed Residential Drinking Water Criteria

TABLE 4.4

ANALYTICAL RESULTS FOR TCL VOCs IN GROUNDWATER SAMPLES
SEPTEMBER 2003 QUARTERLY MONITORING EVENT
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*85-3*	*85-5B*	*85-6*	*85-7*	*85-7*	*86-1*	*86-2*	*86-3*	*87-1*	*87-2*
Sample Identifiation (GW-17360-)	*Residential &*	*100703-JB-097*	*100703-JB-096*	*100703-JB-099*	*100203-JB-086*	*100203-JB-087*	*100703-JB-098*	*100703-JB-095*	*093003-JB-073*	*100203-JB-083*	*100203-JB-085*
Sample Depth	*Commercial I*	*20.3-30.3*	*21.9-31.9*	*19.5-24.5*	*20.6-25.6*	*20.6-25.6*	*18.5-29*	*27.5-32.5*	*41.5-46.5*	*24-29*	*33.2-38.2*
Sample Date	*Drinking Water*	*10/7/2003*	*10/7/2003*	*10/7/2003*	*10/2/2003*	*10/2/2003*	*10/7/2003*	*10/7/2003*	*9/30/2003*	*10/2/2003*	*10/2/2003*
Units	*Criteria* [1]	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L Duplicate*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
TCL VOC											
1,1,1-Trichloroethane	200	ND(1.0)	ND(1.0)	0.51 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	0.61 J	ND(3.3)	ND(1.4)
1,1,2,2-Tetrachloroethane	8.5	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
1,1,2-Trichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
1,1-Dichloroethane	880	0.29 J	0.41 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	4.8	ND(1.4)
1,1-Dichloroethene	7.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	3.4	ND(1.4)
1,2,4-Trichlorobenzene	70	ND(5.0)UJ	ND(5.0)UJ	ND(5.0)UJ	ND(5.0)	ND(5.0)	ND(5.0)UJ	ND(5.0)UJ	ND(5.0)	ND(17)U	ND(7.2)
1,2-Dibromo-3-chloropropane (DBCP)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
1,2-Dibromoethane (Ethylene Dibromide)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
1,2-Dichlorobenzene	600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
1,2-Dichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
1,2-Dichloropropane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
1,3-Dichlorobenzene	6.6	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
1,4-Dichlorobenzene	75	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
2-Butanone (Methyl Ethyl Ketone)	13,000	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(83)UJ	ND(36)UJ
2-Hexanone	1,000	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(170)UJ	ND(72)UJ
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	1,800	ND(50)UJ	4.5 J	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)	ND(170)UJ	ND(72)UJ
Acetone	730	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(83)UJ	ND(36)UJ
Benzene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Bromodichloromethane	100	ND(1.0)	ND(1.0)	ND(1.0)	0.39 J	0.40 J	ND(1.0)	ND(1.0)	0.44 J	ND(3.3)	ND(1.4)
Bromoform	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Bromomethane (Methyl Bromide)	10	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Carbon disulfide	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(17)	ND(7.2)
Carbon tetrachloride	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Chlorobenzene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Chloroethane	430	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Chloroform (Trichloromethane)	100	ND(1.0)	ND(1.0)	ND(1.0)	2.7	2.6	ND(1.0)	1.7	2.7	ND(3.3)	ND(1.4)
Chloromethane (Methyl Chloride)	260	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
cis-1,2-Dichloroethene	70	ND(1.0)	0.29 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	100	41
cis-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Dibromochloromethane	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Dichlorodifluoromethane (CFC-12)	1,700	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)UJ	ND(1.4)UJ
Ethylbenzene	74	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Isopropylbenzene	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(17)	ND(7.2)
Methyl acetate	NA	ND(10)	ND(10)	ND(10)	ND(10)UJ	ND(10)UJ	ND(10)	ND(10)	ND(10)	ND(33)UJ	ND(14)UJ
Methyl cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Methyl Tert Butyl Ether	40	ND(5.0)	ND(5.0)	ND(5.0)	0.21 J	0.23 J	ND(5.0)	0.54 J	ND(5.0)	ND(17)	0.85 J
Methylene chloride	5.0	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(17)	ND(7.2)
Styrene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Tetrachloroethene	5.0	0.54 J	0.64 J	5.3	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Toluene	790	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
trans-1,2-Dichloroethene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	8.3	2.6
trans-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Trichloroethene	5.0	0.69 J	1.1	1.3	0.93 J	0.90 J	ND(1.0)	3.8	2.2	1.9 J	8.5
Trichlorofluoromethane (CFC-11)	2,600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)UJ	ND(3.3)	ND(1.4)
Trifluorotrichloroethane (Freon 113)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.4)
Vinyl chloride	2.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	5.1	ND(1.4)
Xylene (total)	280	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(10)	ND(4.3)

Notes:

(1) If Criteria is exceeded then the corresponding analytical value is boxed.
ND ( ) – Not detected above the value in parenthesis.
J – The associated value is qualified as an estimated quantity.
UJ – The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was qualified not detected above the value identified
NA - Not Available
Boxed value exceed Residential Drinking Water Criteria

TABLE 4.4

ANALYTICAL RESULTS FOR TCL VOCs IN GROUNDWATER SAMPLES
SEPTEMBER 2003 QUARTERLY MONITORING EVENT
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*87-4*	*87-5*	*87-8*	*87-9*	*87-10*	*87-11*	*87-13*	*87-13*	*93-1*	*C-1*
Sample Identifiation (GW-17360-)	*Residential &*	*100703-JB-094*	*100203-JB-084*	*093003-JB-074*	*093003-JB-070*	*100103-JB-076*	*100103-JB-075*	*100103-JB-077*	*100103-JB-078*	*100103-JB-079*	*100103-JB-080*
Sample Depth	*Commercial I*	*24-27*	*39.5-50.5*	*19.7-22.7*	*50.5-53.5*	*29-32*	*30-33*	*40-43*	*40-43*	*8.2*	*NA*
Sample Date	*Drinking Water*	*10/7/2003*	*10/2/2003*	*9/30/2003*	*9/30/2003*	*10/1/2003*	*10/1/2003*	*10/1/2003*	*10/1/2003*	*10/1/2003*	*10/1/2003*
Units	*Criteria* [1]	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L Duplicate*	*ug/L*	*ug/L*
TCL VOC											
1,1,1-Trichloroethane	200	ND(1.0)	ND(2.5)	ND(1.0)	0.40 J	2.2	ND(5.0)	0.20 J	0.21 J	0.37 J	0.37 J
1,1,2,2-Tetrachloroethane	8.5	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	5.0	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	880	ND(1.0)	7.3	ND(1.0)	0.52 J	1.4 J	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	7.0	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	70	ND(5.0)UJ	ND(12)U	ND(5.0)	ND(5.0)	ND(10)	ND(25)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	NA	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	NA	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	600	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	5.0	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	5.0	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	6.6	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	75	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	13,000	ND(25)UJ	ND(62)UJ	ND(25)UJ	ND(25)UJ	ND(50)	ND(120)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ
2-Hexanone	1,000	ND(50)UJ	ND(120)UJ	ND(50)UJ	ND(50)	ND(100)	ND(250)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ	ND(50)UJ
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	1,800	ND(50)UJ	ND(120)UJ	ND(50)	ND(50)	ND(100)	ND(250)	ND(50)	ND(50)	ND(50)	ND(50)
Acetone	730	ND(25)UJ	ND(62)UJ	ND(25)UJ	ND(25)UJ	ND(50)	ND(120)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ
Benzene	5.0	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromodichloromethane	100	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	0.22 J
Bromoform	100	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromomethane (Methyl Bromide)	10	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Carbon disulfide	800	ND(5.0)	ND(12)	ND(5.0)	ND(5.0)	ND(10)	ND(25)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Carbon tetrachloride	5.0	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	100	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	430	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)UJ	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	100	1.6	ND(2.5)	ND(1.0)	0.30 J	ND(2.0)	ND(5.0)	ND(1.0)	0.23 J	0.23 J	0.22 J
Chloromethane (Methyl Chloride)	260	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)UJ	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	70	0.28 J	3.0	ND(1.0)	ND(1.0)	1.4 J	130	ND(1.0)	ND(1.0)	5.2	5.4
cis-1,3-Dichloropropene	NA	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cyclohexane	NA	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	100	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	1,700	ND(1.0)	ND(2.5)UJ	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Ethylbenzene	74	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropylbenzene	800	ND(5.0)	ND(12)	ND(5.0)	ND(5.0)	ND(10)	ND(25)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methyl acetate	NA	ND(10)	ND(25)UJ	ND(10)	ND(10)	ND(20)	ND(50)	ND(10)	ND(10)	ND(10)	ND(10)
Methyl cyclohexane	NA	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl Tert Butyl Ether	40	0.50 J	ND(12)	ND(5.0)	ND(5.0)	ND(10)	ND(25)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methylene chloride	5.0	ND(5.0)	ND(12)	ND(5.0)	ND(5.0)	ND(10)	ND(25)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Styrene	100	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Tetrachloroethene	5.0	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	1.9	2.0
Toluene	790	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,2-Dichloroethene	NA	ND(1.0)	2.1 J	ND(1.0)	ND(1.0)	ND(2.0)	1.5 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	NA	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	5.0	3.7	ND(2.5)	0.33 J	0.30 J	44	34	2.0	1.8	1.4	1.4
Trichlorofluoromethane (CFC-11)	2,600	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)UJ	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	NA	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(2.0)	ND(5.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	2.0	ND(1.0)	92	ND(1.0)	ND(1.0)	ND(2.0)	5.0	ND(1.0)	ND(1.0)	0.60 J	0.70 J
Xylene (total)	280	ND(3.0)	ND(7.5)	ND(3.0)	ND(3.0)	ND(6.0)	ND(15)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)

Notes:

(1) If Criteria is exceeded then the corresponding analytical value is boxed.
ND ( ) – Not detected above the value in parenthesis.
J – The associated value is qualified as an estimated quantity.
UJ – The analyte was reported or qualified as not detected however, the sample rep
limit is qualified as an estimated value and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was qualified not detected above the value i
NA - Not Available
Boxed value exceed Residential Drinking Water Criteria

TABLE 4.4

ANALYTICAL RESULTS FOR TCL VOCs IN GROUNDWATER SAMPLES
SEPTEMBER 2003 QUARTERLY MONITORING EVENT
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*C-2*	*C-3*	*MW1-03*	*MW2-03*	*MW3-03*	*MW4-03*	*MW5-03*	*MW6-03*	*MW7-03*	*PWDISCH*
Sample Identification (GW-17360-)	*Residential &*	*100103-JB-081*	*100103-JB-082*	*100303-JB-091*	*100303-JB-092*	*100303-JB-093*	*100903-JB-089*	*100903-JB-090*	*100203-JB-088*	*093003-JB-071*	*093003-JB-072*
Sample Depth	*Commercial I*	*NA*	*NA*	*30-35*	*22-27*	*25-30*	*52-57*	*30-35*	*13-18*	*36-41*	*45-55*
Sample Date	*Drinking Water*	*10/1/2003*	*10/1/2003*	*10/3/2003*	*10/3/2003*	*10/3/2003*	*10/9/2003*	*10/9/2003*	*10/2/2003*	*9/30/2003*	*9/30/2003*
Units	*Criteria* [1]	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
TCL VOC											
1,1,1-Trichloroethane	200	0.39 J	0.43 J	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	0.24 J	ND(1.0)	0.41 J	0.59 J
1,1,2,2-Tetrachloroethane	8.5	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	5.0	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	880	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	0.58 J	ND(1.0)	0.53 J	ND(1.0)
1,1-Dichloroethene	7.0	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	70	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)U	ND(5.0)	ND(5.0)U	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	NA	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	NA	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	600	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	5.0	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	5.0	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	6.6	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	75	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	13,000	ND(25)UJ	ND(25)UJ	ND(83)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)UJ	ND(25)UJ	ND(25)UJ
2-Hexanone	1,000	ND(50)UJ	ND(50)UJ	ND(170)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)UJ	ND(50)UJ	ND(50)UJ
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	1,800	ND(50)	ND(50)	ND(170)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)UJ	ND(50)	ND(50)
Acetone	730	ND(25)UJ	ND(25)UJ	ND(83)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)UJ	ND(25)UJ	ND(25)UJ
Benzene	5.0	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromodichloromethane	100	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	3.7	0.21 J	0.95 J	ND(1.0)	0.45 J
Bromoform	100	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromomethane (Methyl Bromide)	10	ND(1.0)	ND(1.0)	ND(3.3)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Carbon disulfide	800	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	ND(5.0)	0.62 J	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Carbon tetrachloride	5.0	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	100	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)UJ	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	430	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	100	0.22 J	ND(1.0)	ND(3.3)	ND(1.0)	0.69 J	8.6	1.0	1.6	0.37 J	2.6
Chloromethane (Methyl Chloride)	260	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	70	5.2	5.3	2.6 J	ND(1.0)	ND(1.0)	ND(1.0)	0.38 J	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cyclohexane	NA	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	100	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	1.6	ND(1.0)	0.68 J	ND(1.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	1,700	ND(1.0)	ND(1.0)	ND(3.3)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)	ND(1.0)
Ethylbenzene	74	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropylbenzene	800	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methyl acetate	NA	ND(10)	ND(10)	ND(33)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)UJ	ND(10)	ND(10)
Methyl cyclohexane	NA	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl Tert Butyl Ether	40	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methylene chloride	5.0	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Styrene	100	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Tetrachloroethene	5.0	1.9	1.9	83	13	0.90 J	ND(1.0)	0.38 J	0.41 J	ND(1.0)	ND(1.0)
Toluene	790	ND(1.0)	ND(1.0)	ND(3.3)U	ND(1.0)U	ND(1.0)U	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,2-Dichloroethene	NA	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	5.0	1.4	1.5	1.7 J	ND(1.0)	ND(1.0)	0.28 J	6.2	ND(1.0)	0.37 J	2.1
Trichlorofluoromethane (CFC-11)	2,600	ND(1.0)	ND(1.0)	ND(3.3)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)UJ	ND(1.0)UJ
Trifluorotrichloroethane (Freon 113)	NA	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	2.0	0.70 J	0.79 J	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Xylene (total)	280	ND(3.0)	ND(3.0)	ND(10)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)

Notes:

(1) If Criteria is exceeded then the corresponding analytical value is boxed.
ND ( ) – Not detected above the value in parenthesis.
J – The associated value is qualified as an estimated quantity.
UJ – The analyte was reported or qualified as not detected however, the sample rep limit is qualified as an estimated value and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was qualified not detected above the value i
NA - Not Available
Boxed value exceed Residential Drinking Water Criteria

TABLE 4.5

ANALYTICAL RESULTS FOR TCL SVOCs IN GROUNDWATER SAMPLES
SEPTEMBER 2003 QUARTERLY MONITORING EVENT
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*85-3*	*85-5B*	*85-6*	*86-1*
Sample Identifiation (GW-17360-)	*Residential &*	*100703-JB-097*	*100703-JB-096*	*100703-JB-099*	*100703-JB-098*
Sample Depth	*Commercial I*	*20.3-30.3*	*21.9-31.9*	*19.5-24.5*	*18.5-29*
Sample Date	*Drinking Water*	*10/7/2003*	*10/7/2003*	*10/7/2003*	*10/7/2003*
Units	*Criteria* [1]	*ug/L*	*ug/L*	*ug/L*	*ug/L*
TCL SVOC					
2,2'-oxybis(1-Chloropropane) (bis(2-chloroisopropyl) ether)	NA	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
2,4,5-Trichlorophenol	730	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
2,4,6-Trichlorophenol	120	ND(300)	ND(4.0)	ND(4.0)	ND(4.0)
2,4-Dichlorophenol	73	ND(750)	ND(10)	ND(10)	ND(10)
2,4-Dimethylphenol	370	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
2,4-Dinitrophenol	NA	ND(1500)UJ	ND(20)UJ	ND(20)UJ	ND(20)UJ
2,4-Dinitrotoluene	7.7	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
2,6-Dinitrotoluene	NA	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
2-Chloronaphthalene	1,800	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
2-Chlorophenol	45	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
2-Methylnaphthalene	260	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
2-Methylphenol	NA	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
2-Nitroaniline	NA	ND(1500)	ND(20)	ND(20)	ND(20)
2-Nitrophenol	20	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
3,3'-Dichlorobenzidine	1.1	ND(300)	ND(4.0)	ND(4.0)	ND(4.0)
3-Nitroaniline	NA	ND(1500)	ND(20)	ND(20)	ND(20)
4,6-Dinitro-2-methylphenol	NA	ND(1500)UJ	ND(20)UJ	ND(20)UJ	ND(20)UJ
4-Bromophenyl phenyl ether	NA	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
4-Chloro-3-methylphenol	150	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
4-Chloroaniline	NA	ND(1500)	ND(20)	ND(20)	ND(20)
4-Chlorophenyl phenyl ether	NA	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
4-Methylphenol	NA	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
4-Nitroaniline	NA	ND(1500)	ND(20)	ND(20)	ND(20)
4-Nitrophenol	NA	ND(1500)	ND(20)	ND(20)	ND(20)
Acenaphthene	1,300	ND(380)	1.4 J	ND(5.0)	ND(5.0)
Acenaphthylene	52	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Acetophenone	1,500	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Anthracene	43	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Atrazine	3.0	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Benzaldehyde	NA	ND(750)	ND(10)	ND(10)	ND(10)
Benzo(a)anthracene	2.1	ND(300)	ND(4.0)	ND(4.0)	ND(4.0)
Benzo(a)pyrene	5.0	ND(300)	ND(4.0)	ND(4.0)	ND(4.0)
Benzo(b)fluoranthene	2.0 (M)	ND(300)	ND(4.0)	ND(4.0)	ND(4.0)
Benzo(g,h,i)perylene	5.0 (M)	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Benzo(k)fluoranthene	5.0 (M)	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Biphenyl	NA	ND(750)	ND(10)	ND(10)	ND(10)
bis(2-Chloroethoxy)methane	NA	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
bis(2-Chloroethyl)ether	2.0	ND(300)	ND(4.0)	ND(4.0)	ND(4.0)
bis(2-Ethylhexyl)phthalate	6.0	97 J	0.86 J	0.50 J	5.0
Butyl benzylphthalate	1,200	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Caprolactam	5,800	ND(750)	ND(10)	34	12
Carbazole	85	ND(750)	ND(10)	ND(10)	ND(10)
Chrysene	5.0 (M)	36 J	0.86 J	ND(5.0)	ND(5.0)
Dibenz(a,h)anthracene	2.0 (M)	ND(300)	ND(4.0)	ND(4.0)	ND(4.0)
Dibenzofuran	ID	ND(380)	0.81 J	ND(5.0)	ND(5.0)
Diethyl phthalate	5,500	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Dimethyl phthalate	73,000	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Di-n-butylphthalate	880	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Di-n-octyl phthalate	130	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Fluoranthene	210	ND(380)	7.6	ND(5.0)	ND(5.0)
Fluorene	880	ND(380)	1.2 J	ND(5.0)	ND(5.0)
Hexachlorobenzene	1.0	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Hexachlorobutadiene	15	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Hexachlorocyclopentadiene	50	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Hexachloroethane	7.3	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Indeno(1,2,3-cd)pyrene	2.0	ND(300)	ND(4.0)	ND(4.0)	ND(4.0)
Isophorone	770	ND(380)	ND(5.0)	ND(5.0)	ND(5.0).
Naphthalene	520	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Nitrobenzene	3.4	ND(300)	ND(4.0)	ND(4.0)	ND(4.0)
N-Nitrosodi-n-propylamine	5.0 (M)	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
N-Nitrosodiphenylamine	270	ND(380)	ND(5.0)	ND(5.0)	ND(5.0)
Pentachlorophenol	1.0	ND(1500)	ND(20)	ND(20)	ND(20)
Phenanthrene	52	ND(380)	3.7 J	ND(5.0)	ND(5.0)
Phenol	4,400	ND(380)	10	ND(5.0)	1.6 J
Pyrene	140	110 J	6.8	ND(5.0)	ND(5.0)

Notes:

(1) If Criteria is exceeded then the corresponding analytical value is boxed.
ND ( ) – Not detected above the value in parenthesis.
J – The associated value is qualified as an estimated quantity.
UJ – The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was qualified not detected above the value identified.
NA - Not Available
Boxed value exceed Residential Drinking Water Criteria

TABLE 4.6

ANALYTICAL RESULTS FOR TCL VOCs IN GROUNDWATER SAMPLES
DECEMBER 2003 QUARTERLY MONITORING EVENT
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*85-7*	*86-2*	*86-3*	*87-1*	*87-2*	*87-2*	*87-4*	*87-5*	*87-8*	*87-9*	*87-10*	*87-11*	*87-13*
Sample Identifiation (GW-17360-)	*Residential &*	*121703-JB-100*	*121703-JB-094*	*121803-JB-104*	*121703-JB-093*	*121703-JB-095*	*121703-JB-097*	*121703-JB-091*	*121703-JB-092*	*121803-JB-105*	*121803-JB-103*	*121803-JB-114*	*121803-JB-113*	*121803-JB-112*
Sample Depth	*Commercial I*	*20.6-25.6*	*27.5-32.5*	*41.5-46.5*	*24-29*	*33.2-38.2*	*33.2-38.2*	*24-27*	*39.5-50.5*	*19.7-22.7*	*50.5-53.5*	*29-32*	*30-33*	*40-43*
Sample Date	*Drinking Water*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*
Units	*Criteria* [1]	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L* *Duplicate*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
TCL VOC														
1,1,1-Trichloroethane	200	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	3.2 J	ND(1.0)	0.51 J	1.8	ND(4.0)	0.21 J
1,1,2,2-Tetrachloroethane	8.5	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
1,1,2-Trichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
1,1-Dichloroethane	880	ND(1.0)	ND(1.0)	ND(1.0)	4.2	ND(1.0)	ND(1.0)	ND(1.0)	7.8	ND(1.0)	0.78 J	0.90 J	ND(4.0)	ND(1.0)
1,1-Dichloroethene	7.0	ND(1.0)	ND(1.0)	ND(1.0)	3.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
1,2,4-Trichlorobenzene	70	ND(5.0)	ND(5.0)	ND(5.0)	ND(12)	ND(5.0)	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	ND(5.0)UJ	ND(8.4)	ND(20)	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
1,2-Dichlorobenzene	600	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
1,2-Dichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
1,2-Dichloropropane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
1,3-Dichlorobenzene	6.6	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
1,4-Dichlorobenzene	75	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	13,000	ND(25)	ND(25)	ND(25)	ND(62)	ND(25)	ND(25)	ND(25)	ND(83)	ND(25)U	ND(25)UJ	ND(42)	ND(100)	ND(25)
2-Hexanone	1,000	ND(50)	ND(50)	ND(50)	ND(120)	ND(50)	ND(50)	ND(50)	ND(170)	ND(50)	ND(50)UJ	ND(84)	ND(200)	ND(50)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	1,800	ND(50)	ND(50)	0.38 J	ND(120)	ND(50)	ND(50)	ND(50)	ND(170)	ND(50)	ND(50)UJ	ND(84)	ND(200)	ND(50)
Acetone	730	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(62)UJ	ND(25)UJ	ND(25)UJ	ND(25)UJ	ND(83)UJ	3.3 J	ND(25)UJ	1.9 J	5.7 J	0.86 J
Benzene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Bromodichloromethane	100	0.33 J	ND(1.0)	0.38 J	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Bromoform	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)UJ	ND(1.0)UJ	ND(1.7)UJ	ND(4.0)UJ	ND(1.0)UJ
Bromomethane (Methyl Bromide)	10	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Carbon disulfide	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(12)	ND(5.0)	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	ND(5.0)UJ	ND(8.4)	ND(20)	ND(5.0)
Carbon tetrachloride	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Chlorobenzene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Chloroethane	430	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Chloroform (Trichloromethane)	100	2.2 J	2.0	2.5	ND(2.5)	ND(1.0)	ND(1.0)	1.9	ND(3.3)	ND(1.0)	0.23 J	ND(1.7)	ND(4.0)	ND(1.0)
Chloromethane (Methyl Chloride)	260	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
cis-1,2-Dichloroethene	70	ND(1.0)	0.36 J	ND(1.0)	40	23	23	ND(1.0)	23	ND(1.0)	ND(1.0)UJ	1.1 J	130	ND(1.0)
cis-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Dibromochloromethane	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	1,700	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Ethylbenzene	74	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Isopropylbenzene	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(12)	ND(5.0)	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	ND(5.0)UJ	ND(8.4)	ND(20)	ND(5.0)
Methyl acetate	NA	ND(10)	ND(10)	ND(10)	ND(25)	ND(10)	ND(10)	ND(10)	ND(33)	ND(10)	ND(10)UJ	ND(17)	ND(40)	ND(10)
Methyl cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Methyl Tert Butyl Ether	40	ND(5.0)UJ	0.35 J	ND(5.0)UJ	ND(12)UJ	0.62 J	0.53 J	ND(5.0)UJ	ND(17)UJ	ND(5.0)	ND(5.0)UJ	ND(8.4)	ND(20)	ND(5.0)
Methylene chloride	5.0	ND(5.0)	ND(5.0)	ND(5.0)	ND(12)	ND(5.0)	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	0.49 J	ND(8.4)	ND(20)	ND(5.0)
Styrene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Tetrachloroethene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	0.25 J	ND(1.0)UJ	0.34 J	ND(4.0)	ND(1.0)
Toluene	790	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
trans-1,2-Dichloroethene	NA	ND(1.0)	ND(1.0)	ND(1.0)	6.7	3.1	2.9	ND(1.0)	12	ND(1.0)	ND(1.0)UJ	ND(1.7)	1.5 J	ND(1.0)
trans-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Trichloroethene	5.0	0.86 J	4.7	2.1	76	35	33	0.41 J	ND(3.3)	0.53 J	0.50 J	44	11	1.5
Trichlorofluoromethane (CFC-11)	2,600	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.5)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)UJ	ND(1.7)	ND(4.0)	ND(1.0)
Vinyl chloride	2.0	ND(1.0)	ND(1.0)	ND(1.0)	5.2	ND(1.0)	ND(1.0)	ND(1.0)	120	ND(1.0)	ND(1.0)UJ	ND(1.7)	1.3 J	ND(1.0)
Xylene (total)	280	ND(3.0)	ND(3.0)	ND(3.0)	ND(7.5)	ND(3.0)	ND(3.0)	ND(3.0)	ND(10)	ND(3.0)	ND(3.0)UJ	ND(5.0)	ND(12)	ND(3.0)

Notes:

(1) If Criteria is exceeded then the corresponding analytical value is boxed.
ND ( ) – Not detected above the value in parenthesis.
J – The associated value is qualified as an estimated quantity.
UJ – The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was qualified not detected above the value identified
NA - Not Available
Boxed value exceed Residential Drinking Water Criteria

TABLE 4.6

ANALYTICAL RESULTS FOR TCL VOCs IN GROUNDWATER SAMPLES
DECEMBER 2003 QUARTERLY MONITORING EVENT
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*93-1*	*C-1*	*C-2*	*C-3*	*MW1-03*	*MW2-03*	*MW3-03*	*MW4-03*	*MW5-03*	*MW6-03*	*MW7-03*	*PWDISCH*
Sample Identifiation (GW-17360-)	*Residential &*	*121803-JB-116*	*121803-JB-108*	*121803-JB-109*	*121803-JB-107*	*121803-JB-118*	*121803-JB-117*	*121803-JB-119*	*121803-JB-106*	*121803-JB-115*	*121803-JB-111*	*121703-JB-102*	*121803-JB-110*
Sample Depth	*Commercial I*	*8.2*	*NA*	*NA*	*NA*	*30-35*	*22-27*	*25-30*	*52-57*	*30-35*	*13-18*	*36-41*	*45-55*
Sample Date	*Drinking Water*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*
Units	*Criteria* [1]	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
TCL VOC													
1,1,1-Trichloroethane	200	0.38 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	0.32 J	ND(1.0)	4.3	0.55 J
1,1,2,2-Tetrachloroethane	8.5	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	880	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	0.51 J	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	7.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	70	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	6.6	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	75	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	13,000	ND(25)	ND(25)U	ND(25)	ND(25)U	ND(83)	ND(25)	ND(25)UJ	ND(25)	ND(25)	ND(25)	1.6 J	ND(25)U
2-Hexanone	1,000	ND(50)	ND(50)	ND(50)	ND(50)	ND(170)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	1,800	ND(50)	ND(50)	ND(50)	ND(50)	ND(170)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
Acetone	730	ND(25)UJ	1.7 J	1.4 J	1.3 J	5.1 J	0.74 J	ND(25)UJ	0.72 J	ND(25)UJ	ND(25)	ND(25)UJ	0.78 J
Benzene	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromodichloromethane	100	ND(1.0)	0.44 J	0.39 J	0.44 J	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	0.40 J
Bromoform	100	ND(1.0)	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(3.3)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)UJ	ND(1.0)	ND(1.0)UJ	ND(1.0)	ND(1.0)UJ
Bromomethane (Methyl Bromide)	10	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Carbon disulfide	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Carbon tetrachloride	5.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	430	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	100	ND(1.0)	0.62 J	0.67 J	0.60 J	ND(3.3)	ND(1.0)	0.68 J	0.58 J	1.1	0.34 J	1.3	2.6
Chloromethane (Methyl Chloride)	260	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	70	3.4 J	ND(1.0)	ND(1.0)	ND(1.0)	0.91 J	ND(1.0)	ND(1.0)	ND(1.0)	0.41 J	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	100	ND(1.0)	0.32 J	0.34 J	0.34 J	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	1,700	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Ethylbenzene	74	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropylbenzene	800	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methyl acetate	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(33)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Methyl cyclohexane	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl Tert Butyl Ether	40	ND(5.0)UJ	0.28 J	0.30 J	0.27 J	ND(17)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)UJ	ND(5.0)	ND(5.0)UJ	ND(5.0)
Methylene chloride	5.0	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(17)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Styrene	100	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Tetrachloroethene	5.0	1.0 J	0.63 J	0.61 J	0.60 J	86	7.2	0.78 J	0.78 J	0.70 J	0.16 J	ND(1.0)	0.14 J
Toluene	790	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,2-Dichloroethene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	5.0	1.1 J	ND(1.0)	ND(1.0)	ND(1.0)	1.4 J	ND(1.0)	ND(1.0)	1.2	9.8	1.2	0.90 J	1.7
Trichlorofluoromethane (CFC-11)	2,600	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	2.0	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(3.3)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Xylene (total)	280	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(10)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)

Notes:

(1) If Criteria is exceeded then the corresponding analytical value is boxed.
ND ( ) – Not detected above the value in parenthesis.
J – The associated value is qualified as an estimated quantity.
UJ – The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was qualified not detected above the value identifi
NA - Not Available
Boxed value exceed Residential Drinking Water Criteria

TABLE 4.7

ANALYTICAL RESULTS FOR TCL SVOCs IN GROUNDWATER SAMPLES
DECEMBER 2003 QUARTERLY MONITORING EVENT
GENERAL MOTORS CORPORATION
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451, Part 201*	*85-3*	*85-5B*	*85-6*	*86-1*
Sample Identifiation (GW-17360-)	*Residential &*	*121703-JB-096*	*121703-JB-098*	*121703-JB-101*	*121703-JB-099*
Sample Depth	*Commercial I*	*20.3-30.3*	*21.9-31.9*	*19.5-24.5*	*18.5-29*
Sample Date	*Drinking Water*	*12/18/2003*	*12/18/2003*	*12/18/2003*	*12/18/2003*
Units	*Criteria* (1)	*ug/L*	*ug/L*	*ug/L*	*ug/L*
TCL SVOC					
2,2'-oxybis(1-Chloropropane) (bis(2-chloroisopropyl) ether)	NA	ND(50)	ND(20)	ND(5.0)	ND(5.0)
2,4,5-Trichlorophenol	730	ND(50)	ND(20)	ND(5.0)	ND(5.0)
2,4,6-Trichlorophenol	120	ND(40)	ND(16)	ND(4.0)	ND(4.0)
2,4-Dichlorophenol	73	ND(100)	ND(40)	ND(10)	ND(10)
2,4-Dimethylphenol	370	ND(50)	ND(20)	ND(5.0)	ND(5.0)
2,4-Dinitrophenol	NA	ND(200)	ND(80)	ND(20)	ND(20)
2,4-Dinitrotoluene	7.7	ND(50)	ND(20)	ND(5.0)	ND(5.0)
2,6-Dinitrotoluene	NA	ND(50)	ND(20)	ND(5.0)	ND(5.0)
2-Chloronaphthalene	1,800	ND(50)	ND(20)	ND(5.0)	ND(5.0)
2-Chlorophenol	45	ND(50)	ND(20)	ND(5.0)	ND(5.0)
2-Methylnaphthalene	260	ND(50)	ND(20)	ND(5.0)	ND(5.0)
2-Methylphenol	NA	ND(50)	ND(20)	ND(5.0)	ND(5.0)
2-Nitroaniline	NA	ND(200)	ND(80)	ND(20)	ND(20)
2-Nitrophenol	20	ND(50)	ND(20)	ND(5.0)	ND(5.0)
3,3'-Dichlorobenzidine	1.1	ND(40)	ND(16)	ND(4.0)	ND(4.0)
3-Nitroaniline	NA	ND(200)	ND(80)	ND(20)	ND(20)
4,6-Dinitro-2-methylphenol	NA	ND(200)	ND(80)	ND(20)	ND(20)
4-Bromophenyl phenyl ether	NA	ND(50)	ND(20)	ND(5.0)	ND(5.0)
4-Chloro-3-methylphenol	150	ND(50)	ND(20)	ND(5.0)	ND(5.0)
4-Chloroaniline	NA	ND(200)	ND(80)	ND(20)	ND(20)
4-Chlorophenyl phenyl ether	NA	ND(50)	ND(20)	ND(5.0)	ND(5.0)
4-Methylphenol	NA	ND(50)	ND(20)	ND(5.0)	ND(5.0)
4-Nitroaniline	NA	ND(200)	ND(80)	ND(20)	ND(20)
4-Nitrophenol	NA	ND(200)	ND(80)	ND(20)UJ	ND(20)
Acenaphthene	1,300	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Acenaphthylene	52	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Acetophenone	1,500	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Anthracene	43	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Atrazine	3.0	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Benzaldehyde	NA	ND(100)	ND(40)	ND(10)	ND(10)
Benzo(a)anthracene	2.1	ND(40)	ND(16)	ND(4.0)	ND(4.0)
Benzo(a)pyrene	5.0	ND(40)	ND(16)	ND(4.0)	ND(4.0)
Benzo(b)fluoranthene	2.0 (M)	ND(40)	ND(16)	ND(4.0)	ND(4.0)
Benzo(g,h,i)perylene	5.0 (M)	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Benzo(k)fluoranthene	5.0 (M)	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Biphenyl	NA	ND(100)	ND(40)	ND(10)	ND(10)
bis(2-Chloroethoxy)methane	NA	ND(50)	ND(20)	ND(5.0)	ND(5.0)
bis(2-Chloroethyl)ether	2.0	ND(40)	ND(16)	ND(4.0)	ND(4.0)
bis(2-Ethylhexyl)phthalate	6.0	4.7 J	ND(20)	0.79 J	0.97 J
Butyl benzylphthalate	1,200	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Caprolactam	5,800	ND(100)	ND(40)U	ND(10)	ND(10)U
Carbazole	85	ND(100)	ND(40)	ND(10)	ND(10)
Chrysene	5.0 (M)	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Dibenz(a,h)anthracene	2.0 (M)	ND(40)	ND(16)	ND(4.0)	ND(4.0)
Dibenzofuran	ID	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Diethyl phthalate	5,500	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Dimethyl phthalate	73,000	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Di-n-butylphthalate	880	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Di-n-octyl phthalate	130	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Fluoranthene	210	ND(50)	10 J	ND(5.0)	ND(5.0)
Fluorene	880	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Hexachlorobenzene	1.0	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Hexachlorobutadiene	15	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Hexachlorocyclopentadiene	50	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Hexachloroethane	7.3	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Indeno(1,2,3-cd)pyrene	2.0	ND(40)	ND(16)	ND(4.0)	ND(4.0)
Isophorone	770	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Naphthalene	520	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Nitrobenzene	3.4	ND(40)	ND(16)	ND(4.0)	ND(4.0)
N-Nitrosodi-n-propylamine	5.0 (M)	ND(50)	ND(20)	ND(5.0)	ND(5.0)
N-Nitrosodiphenylamine	270	ND(50)	ND(20)	ND(5.0)	ND(5.0)
Pentachlorophenol	1.0	ND(200)	ND(80)	ND(20)	ND(20)
Phenanthrene	52	ND(50)	4.9 J	ND(5.0)	ND(5.0)
Phenol	4,400	ND(50)	ND(20)	9.0	1.3 J
Pyrene	140	ND(50)	12 J	ND(5.0)	ND(5.0)

Notes:
(1) If Criteria is exceeded then the corresponding analytical value is boxed.
ND ( ) – Not detected above the value in parenthesis.
J – The associated value is qualified as an estimated quantity.
UJ – The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was qualified not detected above the value identified.
NA - Not Available

APPENDIX A

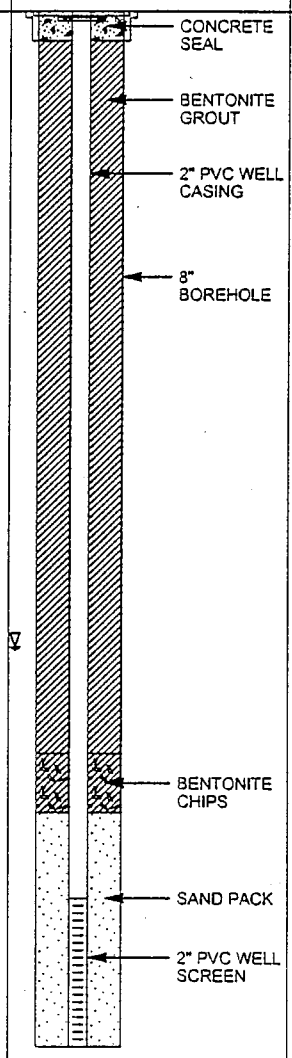
STRATIGRAPHIC AND MONITORING WELL CONSTRUCTION LOGS

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: GM GRAND RAPIDS
PROJECT NUMBER: 17360
CLIENT: GENERAL MOTORS
LOCATION: WYOMING, MI

HOLE DESIGNATION: MW1-03
DATE COMPLETED: June 23, 2003
DRILLING METHOD: 4-1/4" HSA
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	GROUND SURFACE	678.99
0	CONCRETE (SIDEWALK)	678.39
2	SW-SAND, fine to coarse, well graded, trace concrete debris, trace medium gravel, dark brown, moist	676.69
4	SP-SAND, medium grained, poorly graded, trace fine subangular gravel, compact, brown, moist	
6	- slight increase in gravel content at 5.5ft BGS	
8	SW-SAND, with gravel, fine to coarse, fine to medium, well graded, heterogeneous, compact, brown, moist	670.99
10		
12	- becoming denser at 11.7ft BGS	667.69
	SP-SAND, fine grained, poorly graded, brown, moist	667.09
14	SW/GW-SAND AND GRAVEL, fine to coarse, well graded, subangular to subrounded, heterogeneous, dense, multicolored, brown, moist	
16		
18	SW-SAND, with gravel, fine to coarse, fine to medium, well graded, heterogeneous, compact, brown, moist	661.79
20	- moist to wet at 20.0ft BGS	
22	- wet at 21.5ft BGS - medium grained sands, poorly graded at 22.5ft BGS	
24		
26	- increasing medium sands, decreasing gravel content at 24.8ft BGS	653.99
	SP-SAND, medium grained, poorly graded, homogeneous, compact, light brown, wet	
28	- trace fine gravel at 26.4ft BGS - trace medium gravel at 27.0ft BGS	
30		
32		
34		
36		
38		
40		
42	CL-SILTY CLAY, trace fine subangular gravel, competant, low plasticity, gray, dry	637.99
	END OF BOREHOLE @ 42.0ft BGS	636.99
44		



WELL DETAILS
Screened interval:
648.99 to 643.99ft AMSL
30.00 to 35.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
651.89 to 643.99ft AMSL
27.10 to 35.00ft BGS
Material: #6 SAND

SAMPLE NUMBER	INTERVAL	REC (%)	"N" VALUE	PID (ppm)
1SS			8	0.0
2SS			9	0.0
3SS			10	0.0
4SS			6	0.0
5SS			13	0.0
6SS			34	0.0
7SS			40	0.0
8SS			36	0.0
9SS			25	0.0
10SS			14	0.0
11SS			27	0.0
12SS			32	0.0
13SS			14	0.0
14SS			12	0.0
15SS			10	0.0
16SS			12	0.0
17SS			14	0.0
18SS			8	0.0
19SS			2	0.0
20SS			2	0.0
21SS			14	0.0

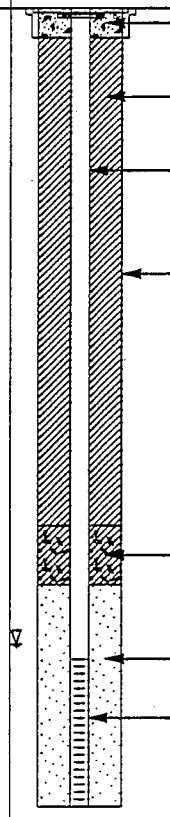
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: GM GRAND RAPIDS
PROJECT NUMBER: 17360
CLIENT: GENERAL MOTORS
LOCATION: WYOMING, MI

HOLE DESIGNATION: MW2-03
DATE COMPLETED: June 12, 2003
DRILLING METHOD: 4-1/4" HSA
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	GROUND SURFACE	680.89
0	CONCRETE (SIDEWALK)	680.29
2	SW-SAND, fine to medium, trace coarse sands, trace coal material, trace vegetation, dark brown, dry to moist	
4		
	- loose at 5.0ft BGS	
6	- increase in coarse sands at 6.6ft BGS	673.99
8	SP-SAND, coarse grained, trace fines and medium sands, light brown, moist	673.69
10	SW-SAND, with gravel, fine to coarse, fine to medium gravels, well graded, subangular to subrounded, light brown, multicolored, moist	
12	- trace rounded medium gravel at 11.3ft BGS - becoming more dense at 11.5ft BGS	
14		
	- decreasing gravel content at 15.0ft BGS	
16		
	- coarse gravel, dense at 17.0ft BGS	
18		
20	SP-SAND, medium grained, poorly graded, homogeneous, dense, light brown, moist to wet	660.89
22	- wet at 21.5ft BGS	
	SW-SAND, with gravel, fine to coarse, fine to medium gravel, well graded, subangular to subrounded, compact, multicolored brown, wet	658.29
24		
26		
28		
30		
32		
34		
36	SM-SILTY SAND, fine grained, homogeneous, non-compact, gray, wet	645.69
38	- trace silty clay at 37.5ft BGS	
40		640.59
42	CL-SILTY CLAY (TILL), with trace fine subangular gravel, compact, competent, low plasticity, dark gray, dry to moist	638.89
	END OF BOREHOLE @ 42.0ft BGS	
44		



WELL DETAILS
Screened interval:
658.89 to 653.89ft AMSL
22.00 to 27.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
661.39 to 653.89ft AMSL
19.50 to 27.00ft BGS
Material: #6 SAND

SAMPLE NUMBER	INTERVAL	REC (%)	"N" VALUE	PID (ppm)
1SS			18	0.0
2SS			10	0.0
3SS			6	0.0
4SS			6	0.0
5SS			12	0.0
6SS			24	0.0
7SS			16	0.0
8SS			23	0.0
9SS			50	0.0
10SS			34	0.0
11SS			19	0.0
12SS			24	0.0
13SS			26	0.0
14SS			17	0.0
15SS			14	0.0
16SS			26	0.0
17SS			18	0.0
18SS			35	0.0
19SS			16	0.0
20SS			11	0.0
21SS			15	0.0

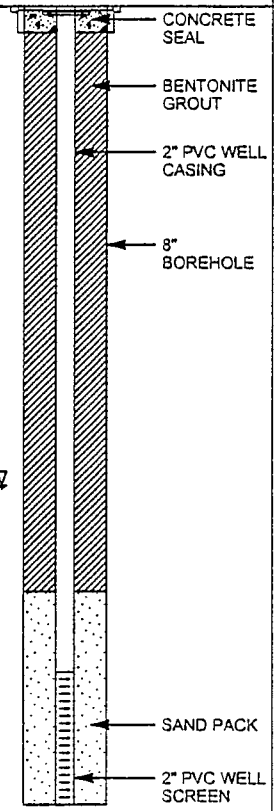
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: GM GRAND RAPIDS
PROJECT NUMBER: 17360
CLIENT: GENERAL MOTORS
LOCATION: WYOMING, MI

HOLE DESIGNATION: MW3-03
DATE COMPLETED: June 16, 2003
DRILLING METHOD: 4-1/4" HSA
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	GROUND SURFACE	676.93
0	ASPHALT	676.43
2	SW/GW-SAND AND GRAVEL (FILL), fine to coarse, well graded, trace asphalt debris, trace concrete, dark brown, dry to moist	
4	- decreasing gravel content at 4.3ft BGS	672.33
6	SW-SAND, fine to coarse, well graded, loose, brown, dry to moist	
8	- trace subrounded medium gravel at 9.0ft BGS	
10	- grading to coarse sands at 10.0ft BGS	666.33
12	SW/GW-SAND AND GRAVEL, fine to coarse, subangular to subrounded, well graded, dense, dark brown, moist	
14		661.73
16	SP-SAND, medium grained, poorly graded, light brown, moist	
18	- wet at 18.0ft BGS	
20	SM-SILTY SAND, fine grained, trace sandy clay, semi-competent, trace plasticity, brown, compact, wet	656.93
22	SP-SAND, medium grained, poorly graded, loose, light brown, wet	654.93
24	- trace coarse sands at 23.3ft BGS - silty sand seam at 24.1ft BGS	
26	- trace fine gravel at 25.0ft BGS	
28	- trace fine sands, loose at 29.2ft BGS	
30		
32		
34		
36		
38		
40	- becoming gray at 40.0ft BGS	
42		
44	CL-SILTY CLAY (TILL), trace fine subanguiar gravel, competent, stiff, low plasticity, dark gray, dry to moist	633.43 632.93
46	END OF BOREHOLE @ 44.0ft BGS	
48		



WELL DETAILS
Screened interval:
651.93 to 646.93ft AMSL
25.00 to 30.00ft BGS
Length: 5ft
Diameter: 30in
Slot Size: 0.010
Material: PVC
Sand Pack:
654.93 to 651.93ft AMSL
22.00 to 25.00ft BGS
Material: #6 SAND

SAMPLE NUMBER	INTERVAL	REC (%)	"N" VALUE	PID (ppm)
1SS			26	0.0
2SS			15	0.0
3SS			7	0.0
4SS			5	0.0
5SS			26	0.0
6SS			23	0.0
7SS			46	0.0
8SS			41	0.0
9SS			10	0.0
10SS			25	0.0
11SS			24	0.0
12SS			9	0.0
13SS			9	0.0
14SS			12	0.0
15SS			7	0.0
16SS			8	0.0
17SS			11	0.0
18SS			8	1.3
19SS			5	NA
20SS			8	NA
21SS			16	0.0
22SS			18	0.0

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

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: GM GRAND RAPIDS
PROJECT NUMBER: 17360
CLIENT: GENERAL MOTORS
LOCATION: WYOMING, MI

HOLE DESIGNATION: MW4-03
DATE COMPLETED: June 11, 2003
DRILLING METHOD: 4-1/4" HSA
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE "N" VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	679.26						
0	SW-SAND, fine to coarse, well graded, trace vegetation and medium subrounded gravels, loose, dark brown, dry		CONCRETE SEAL	1SS			9	0.0
2		676.56	BENTONITE GROUT	2SS			10	0.0
4	SP-SAND, medium grained, poorly graded, trace fine gravels, compact, yellowish brown, moist			3SS			9	0.0
6	- slight increase in gravel content at 6.2ft BGS		2" PVC WELL CASING	4SS			6	0.0
8	- becoming darker brown at 8.2ft BGS			5SS			7	0.0
10			8" BOREHOLE	6SS			4	0.0
12	- increase in moisture content at 12.0ft BGS			7SS			9	0.0
14	- some medium gravel at 13.6ft BGS - moist to wet at 13.8ft BGS	665.26		8SS			8	0.0
16	SW-SAND, with gravel, fine to coarse, well graded, fine subangular gravel, brown, moist	662.96		9SS			16	0.0
18	SP-SAND, medium grained, poorly graded, homogeneous, light brown, moist - grading to finer sands at 18.0ft BGS			10SS			18	0.0
20	- becoming more dense at 21.0ft BGS			11SS			28	0.0
22		657.26		12SS			34	0.0
24	SP-SAND, fine grained, poorly graded, homogeneous, light brown, moist - trace oxidation banding at 22.5ft BGS - wetness at 23.5ft BGS		▽	13SS			5	0.0
26				14SS			10	0.0
28		650.56		15SS			23	0.0
30	SW-SAND, fine to coarse, trace fine gravel, well graded, compact, dark brown, wet	649.76		16SS			6	0.0
32	SP-SAND, medium grained, trace coarse sands, poorly graded, compact, brown, wet	647.86		17SS			8	0.0
34	SW-SAND, with gravel, well graded, fine to coarse, subrounded to subangular, heterogeneous, multicolored brown, wet			18SS			12	0.0
36				19SS			10	0.0
38				20SS			12	0.0
40		639.96		21SS			10	0.0
42	GW/SW-GRAVEL AND SAND, well graded, fine to coarse, subangular to subrounded, compact, heterogeneous, multicolored, wet - some rounded fine gravels at 41.4ft BGS - grading to coarser sands at 43.0ft BGS			22SS			19	0.0

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

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: GM GRAND RAPIDS
PROJECT NUMBER: 17360
CLIENT: GENERAL MOTORS
LOCATION: WYOMING, MI

HOLE DESIGNATION: MW4-03
DATE COMPLETED: June 11, 2003
DRILLING METHOD: 4-1/4" HSA
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE "N" VALUE	SAMPLE PID (ppm)
46	SP-SANDS, coarse grained, poorly graded, trace fine and medium sands, compact, multicolored, wet	635.26	BENTONITE SEAL	23SS			15	0.0
48			BENTONITE CHIPS	24SS			10	0.0
50			2" PVC WELL CASING	25SS			19	0.0
52			8" BOREHOLE	26SS			12	0.0
54				27SS			12	0.0
56	- loose at 55.0ft BGS		SAND PACK	28SS			5	0.0
58	- grading to medium sands at 58.0ft BGS		2" PVC WELL SCREEN	29SS			9	0.0
60	SP-SAND, medium grained, poorly graded, trace fines and coarse sands, compact, light brown, wet	619.96	WELL DETAILS Screened interval: 627.26 to 622.26ft AMSL 52.00 to 57.00ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: PVC Sand Pack: 630.26 to 622.26ft AMSL 49.00 to 57.00ft BGS Material: #6 SAND	30SS			21	0.0
62	- loose at 61.0ft BGS			31SS			4	0.0
64				32SS			13	0.0
66	- grading to coarser sands at 66.0ft BGS			33SS			8	0.0
68		611.26		34SS			17	0.0
70	SP-SAND, coarse grained, poorly graded, trace fines CL-SILTY CLAY (TILL), trace fine subangular gravel, competent, hard, low plasticity, dark gray, dry to moist	610.76		35SS			52	0.0
72	END OF BOREHOLE @ 72.0ft BGS	607.26		36SS			32	0.0
74								
76								
78								
80								
82								
84								
86								

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

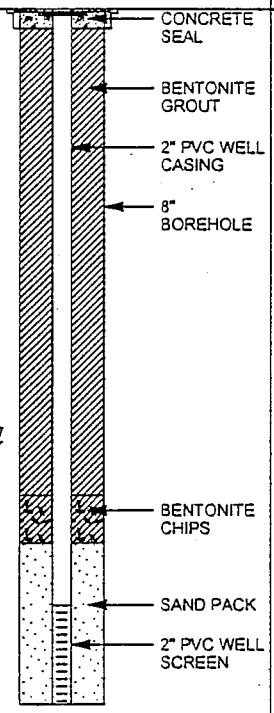
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: GM GRAND RAPIDS
PROJECT NUMBER: 17360
CLIENT: GENERAL MOTORS
LOCATION: WYOMING, MI

HOLE DESIGNATION: MW5-03
DATE COMPLETED: June 10, 2003
DRILLING METHOD: 4-1/4" HSA
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	GROUND SURFACE	675.77
0	SW-SAND, fine to coarse sands, trace vegetation, trace fine gravels, compact, dark brown, moist	
	- dark brown banding at 4.0ft BGS	
5	- slight increase in gravel content at 5.5ft BGS	
	- trace medium, well graded, gravels at 6.7ft BGS	
10	- slight increase in moisture at 10.0ft BGS	
15	SP-SAND, coarse grained, poorly graded, homogeneous, compact, brown, moist	660.77
20	- grading to medium sands at 20.0ft BGS	655.47
	SP-SAND, medium grained, poorly graded, homogeneous, loose, light brown, moist to wet	653.77
	- wet at 21.8ft BGS	653.07
25	SM-SILTY SAND, some fines, stiff, trace plasticity, gray, moist to wet	650.77
	- trace oxidation banding at 23.3ft BGS	
	SP-SAND, medium grained, poorly graded, trace fine sands, homogenous, compact, brown, wet	
30	SW-SAND, trace fine gravels, fine to coarse, heterogeneous, compact, multicolored gray and brown, wet	
	- trace medium well graded gravel at 29.4ft BGS	641.77
35	- coarse sands at 33.0ft BGS	
	- medium sands at 33.7ft BGS	
40	SP-SAND, coarse grained, poorly graded, trace fines, compact, brown, wet	
	- trace medium gravels, subangular at 41.4ft BGS	
45	- grading to at 49.0ft BGS	
50	SW-SAND, with trace well graded gravels, fine to coarse, subangular to subrounded, fine to medium gravels, compact, heterogeneous, multicolored, brown, wet	625.77
		622.77
55	- slight increase in gravel content at 51.5ft BGS	
	SW-SAND, with gravel, fine to coarse, subangular to subrounded, well graded, compact, multicolored, wet	618.77
		617.77
60	CL-SILTY CLAY, with trace very fine subangular gravel, competent, very dense, low plasticity, gray, dry to moist	615.77
	SP-SAND, fine grained, trace silts, poorly graded, dense, light brown, wet	
65	END OF BOREHOLE @ 60.0ft BGS	

MONITORING WELL



WELL DETAILS
Screened interval:
645.77 to 640.77ft AMSL
30.00 to 35.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
648.87 to 640.77ft AMSL
26.90 to 35.00ft BGS
Material: #6 SAND

SAMPLE NUMBER	INTERVAL	REC (%)	"N" VALUE	PID (ppm)
1SS			18	0.0
2SS			10	0.0
3SS			7	0.0
4SS			7	0.0
5SS			6	0.0
6SS			6	0.0
7SS			7	0.0
8SS			11	0.0
9SS			12	0.0
10SS			9	0.0
11SS			7	0.0
12SS			6	0.0
13SS			18	0.0
14SS			11	0.0
15SS			18	0.0
16SS			9	0.0
17SS			8	0.0
18SS			7	0.0
19SS			8	0.0
20SS			6	0.0
21SS			16	0.0
22SS			16	0.0
23SS			16	0.0
24SS			12	0.0
25SS			11	0.0
26SS			14	0.0
27SS			12	0.0
28SS			15	0.0
29SS			94	0.0
30SS			34	0.0

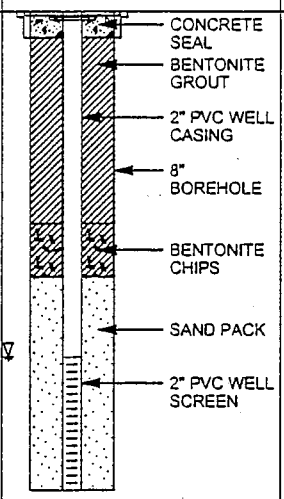
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: GM GRAND RAPIDS
PROJECT NUMBER: 17360
CLIENT: GENERAL MOTORS
LOCATION: WYOMING, MI

HOLE DESIGNATION: MW6-03
DATE COMPLETED: June 18, 2003
DRILLING METHOD: 4-1/4" HSA
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	GROUND SURFACE	665.60
2	SW-SAND, trace fine gravels, well graded, fine to coarse, fine subrounded gravels, loose, brown, dry to moist	
4	- decrease in fine and coarse sands, fine gravels at 2.0ft BGS	663.30
6	SP-SAND, medium grained, poorly graded, trace coarse sands, loose, light brown, moist - very loose at 5.0ft BGS	
8		657.10
10	SW-SAND, with fine well graded gravels, fine to coarse, trace medium subrounded gravel, compact, brownish-gray, moist - slight increase in gravel content at 10.0ft BGS	
12	- becoming light brown at 11.8ft BGS - increase in moisture content at 12.0ft BGS	
14	- wet at 13.0ft BGS	
16	- some medium gravel at 15.0ft BGS	650.20
18	SW/GW-SANDS AND GRAVELS, well graded, fine to coarse, subangular to subrounded, compact, heterogenous, multicolored, wet	
20		
22	- slight decrease in gravel content at 21.0ft BGS - grading to medium sands at 22.5ft BGS	642.60
24	SW-SAND, well graded, fine to coarse, trace fine gravels, compact, light brown, wet	
26		
28	- dense at 29.0ft BGS	
30		634.60
32	SP-SAND, medium grained, poorly graded, homogenous, compact, light brown, wet - trace coarse sand at 32.6ft BGS	
34	- trace very fine gravels at 34.2ft BGS	
36	- trace medium subrounded gravels at 36.0ft BGS	
38		
40		
42	- some fine sands at 43.0ft BGS	
44		620.60
46	CL-SILTY CLAY, trace find subangular gravel, very dense, low plasticity, gray, dry to moist, competent	619.60
48	END OF BOREHOLE @ 46.0ft BGS	



WELL DETAILS
Screened interval:
652.60 to 647.60ft AMSL
13.00 to 18.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
655.60 to 647.60ft AMSL
10.00 to 18.00ft BGS
Material: #6 SAND

SAMPLE NUMBER	INTERVAL	REC (%)	"N" VALUE	PID (ppm)
1SS			7	0.0
2SS			10	0.0
3SS			5	0.0
4SS			10	0.0
5SS			10	0.0
6SS			12	0.0
7SS			17	0.00
8SS			12	0.0
9SS			13	0.0
10SS			10	0.0
11SS			10	0.0
12SS			14	0.0
13SS			21	0.0
14SS			26	0.0
15SS			33	0.0
16SS			20	0.0
17SS			21	0.0
18SS			16	0.0
19SS			27	0.0
20SS			34	0.0
21SS			23	0.0
22SS			36	0.0
23SS			69	0.0

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

OVERBURDEN LOG 17360.GPJ CRA_CORP.GDT 8/26/03

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: GM GRAND RAPIDS
PROJECT NUMBER: 17360
CLIENT: GENERAL MOTORS
LOCATION: WYOMING, MI

HOLE DESIGNATION: MW7-03
DATE COMPLETED: June 17, 2003
DRILLING METHOD: 4-1/4" HSA
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE "N" VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	675.03						
0	ASPHALT (PARKING LOT)	674.53	CONCRETE SEAL	1SS			20	0.0
2	SP-SAND, medium grained, poorly graded, homogeneous, compact, yellowish-brown, moist		BENTONITE GROUT	2SS			15	0.0
4	- loose at 5.0ft BGS		2" PVC WELL CASING	3SS			6	0.0
6				4SS			11	0.0
8	- becoming lighter brown at 9.4ft BGS		8" BOREHOLE	5SS			8	0.0
10	- trace coarse sands at 10.0ft BGS			6SS			10	0.0
12	SW-SAND, medium and coarse sands, trace fines, well graded, loose, light brown, dry to moist	663.03		7SS			9	0.00
14	- trace fine gravel at 15.2ft BGS			8SS			11	0.0
16	SP-SAND, medium grained, poorly graded, homogeneous, compact, grayish-brown, moist	659.53		9SS			22	0.0
18	- wet at 18.5ft BGS		▽	10SS			12	0.0
20	- loose at 20.0ft BGS			11SS			14	0.0
22				12SS			13	0.0
24				13SS			12	0.0
26				14SS			7	0.0
28				15SS			10	0.0
30	- trace subrounded medium gravel at 31.0ft BGS			16SS			22	0.0
32				17SS			12	0.0
34	SW-SAND, fine to coarse, well graded, trace fine gravel, compact, multicolored brown, wet	640.53		18SS			11	0.0
36	- grading to coarse sands at 37.0ft BGS		SAND PACK	19SS			15	0.0
38			2" PVC WELL SCREEN	20SS			12	0.0
40	- some medium subrounded gravels at 40.0ft BGS			21SS			16	0.0
42			WELL DETAILS Screened interval: 639.03 to 634.03ft AMSL 36.00 to 41.00ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: PVC Sand Pack: 642.03 to 634.03ft AMSL	22SS			15	0.0
44				23SS			6	0.0
46				24SS			11	0.0
48	- trace fine gravel at 49.5ft BGS			25SS			23	0.0

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

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: GM GRAND RAPIDS
PROJECT NUMBER: 17360
CLIENT: GENERAL MOTORS
LOCATION: WYOMING, MI

HOLE DESIGNATION: MW7-03
DATE COMPLETED: June 17, 2003
DRILLING METHOD: 4-1/4" HSA
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE "N" VALUE	SAMPLE PID (ppm)
52	GW/SW-GRAVEL AND SAND, fine to coarse, subangular to subrounded, well graded, heterogeneous, multicolored, wet	624.03	33.00 to 41.00ft BGS Material: #6 SAND	26SS			16	0.0
54				27SS			4	0.0
56	SP-SAND, coarse grained, poorly graded, trace fine and medium sands, loose, multicolored, wet	619.83		28SS			8	0.0
58	- trace fine subrounded gravel at 57.3ft BGS			29SS			8	0.0
60	- some subrounded medium gravel at 59.4ft BGS			30SS			14	0.0
62				31SS			13	0.0
64				32SS			20	0.0
66				33SS			12	0.0
68				34SS			20	0.0
70				35SS			79	0.0
72	CL-SILTY CLAY (TILL), trace fine subangular gravel, competent, stiff, low plasticity, dark gray, dry to moist	605.03		36SS			NA	0.0
74	END OF BOREHOLE @ 72.0ft BGS	603.03						
76								
78								
80								
82								
84								
86								
88								
90								
92								
94								
96								
98								

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

OVERBURDEN LOG 17360.GPJ CRA_CORP.GDT 8/26/03

APPENDIX B

FREEDOM OF INFORMATION ACT INFORMATION

CONESTOGA-ROVERS & ASSOCIATES

620 S. Capitol Ave., Suite 100
Lansing, Michigan 48933
Telephone: (517) 316-2397 Fax: (517) 316-2398
www.CRAworld.com

MEMORANDUM

TO:	Kurt Blizzard	REF. NO.:	17360-01
FROM:	Jeni Quigley/Bill Steinmann/jq/19/Lan.	DATE:	November 13, 2003
C.C.:	Gary Klepper		
RE:	**Summary of Adjacent Property Review** **General Motors Corporation** **Grand Rapids Metal Plant** **Wyoming, Michigan**		

1.0 INTRODUCTION

The purpose of this memorandum is to summarize the adjacent property review completed by Conestoga-Rovers & Associates (CRA). These activities were completed in conjunction with the ongoing groundwater investigation and remediation at the General Motors Corporation (GM) Grand Rapids Metal Plant, located at 300 36th Avenue in Wyoming, Michigan (Site). The adjacent industrial/commercial properties identified are located hydraulically upgradient and immediately adjacent to the Site.

2.0 SCOPE OF WORK

2.1 ADJACENT PROPERTY VISUAL INSPECTION

Consistent with our discussion on April 22, 2003, CRA completed an adjacent property review in the immediate upgradient vicinity of the Site on April 24, 2003. The adjacent property review included observing and recording the addresses and facility names of adjacent properties along Buchanan Avenue, 36th Street, and 39th Street, which are located hydraulically upgradient of the Site. The following facilities and corresponding addresses were identified by observing the adjacent properties during a Site walk:

Facility	*Address*
Amoco Station	150 36th Street
Residence	3638 Buchanan Avenue
Unidentified	3650 Buchanan Avenue
Sunshine Systems Factory Showroom	3700 Buchanan Avenue
Toering Electric Company	3714 Buchanan Avenue
MSC Industrial Supply	3718 Buchanan Avenue
Facility	*Address*
Fed-Ex Freight	3740 Buchanan Avenue
Tracer Tool & Die	3800 Buchanan Avenue

Unidentified	3818 Buchanan Avenue
UAW Local 730 (Vandewater Hall)	3852 Buchanan Avenue
Conical Tool Company (Tapered End Mills)	3890 Buchanan Avenue
Mark Meter Co.	3920 Buchanan Avenue
Travis Collision	149 39th Street
Wyoming Body Shop	100 39th Street
G.J. Fabrication LLC	120 39th Street
Accurate Metal Finishing	136 39th Street
George's Foreign Car Service	130 39th Street

2.2 FREEDOM OF INFORMATION ACT FILE REVIEW

Based on the results of the adjacent property identification, a written Freedom of Information Act (FOIA) request was submitted to the Michigan Department of Environmental Quality (MDEQ), Remediation and Redevelopment Section on April 29, 2003. The FOIA request included the aforementioned properties adjacent to the Site.

One file was identified for all requested properties: Conical Tool Company (Conical Tool), located at 3890 Buchanan Avenue. On May 13, 2003, CRA performed a file review at the MDEQ Remediation and Redevelopment office located in Wyoming, Michigan. Documentation that was available for CRA's review on May 13, 2003 included:

- Phase II Environmental Site Assessment (ESA) prepared by Dixon Environmental Consulting, Inc. (Dixon), dated January 28, 2002; and
- Preliminary Soil and Groundwater Data for Conical Tool Company prepared by Dixon, dated September 3, 2002.

In addition, the following reports were obtained from the MDEQ for the properties located at 3700 and 3740 Buchanan Street, and 150 36th Avenue:

- Aboveground Storage Tank (AST) Inspection Reports for 3700 Buchanan Street;
- Underground Storage Tank (UST) Closure Report and associated letters for 3740 Buchanan Street; and
- UST Inspection Reports for 150 36th Street.

A copy of the documents obtained during the FOIA are presented in Attachment A. The following summarizes the information obtained during the review of these documents.

2.2.1 CONICAL TOOL COMPANY

Phase II ESA

A Phase II ESA was conducted by Dixon on January 28, 2002, for Conical Tool. The scope of work for the Phase II ESA was determined based on the results of a Phase I ESA previously conducted by Dixon on January 29, 2002. A copy of the Phase I ESA was not available for review by CRA.

Based on information provided in the Phase II ESA, the Phase I ESA identified one Recognized Environmental Condition (REC) at the Conical Tool site, that being two areas of discolored surface soil. One area was identified during the Site inspection portion of the January 2002 Phase I ESA, and one area was observed by Dixon during the review of 1970 and 1975 aerial photographs. The area observed in the aerial photographs was formerly used as a storage area for scrap steel and empty drums. This area is currently located beneath the northeastern portion of the building. The area of discolored surface soil observed during the Phase I ESA is located outside, near the northeast corner of the existing building.

Based on the results of the Phase I ESA, Dixon completed a Phase II ESA on January 28, 2002, and February 6, 2002. One soil boring, SB-1, was installed in January 2002 to an approximate depth of 5 feet below ground surface (bgs) and one soil boring, SB-2, was installed in February 2002 to an approximate depth of 3.5 feet bgs. Four soil samples, two from each soil boring, were collected for laboratory analysis for volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PNAs), and metals (aluminum, arsenic, cadmium chromium, iron, lead, nickel, molybdenum, silver and zinc).

Trichloroethene (TCE) was detected in the soil sample collected from SB-2 at a concentration of 790 µg/kg, which is above the current Michigan Act 451, Part 201 Residential & Commercial I (Residential) Drinking Water Protection Criterion (DWPC) of 100 µg/kg. The soil sample collected from SB-1 identified 1,3,5-trimethylbenzene at a concentration of 2,400 µg/kg, which is above the Michigan Act, Part 201 Residential DWPC of 1,800 µg/kg. Chromium was detected in the soil samples collected from SB-1 and SB-2 at concentrations of 49,000 µg/kg and 1,500,000 µg/kg, respectively, which are above the Michigan Act 451, Part 201 Residential DWPC of 30,000 µg/kg. Molybdenum was detected in the soil samples collected from SB-1 and SB-2 at concentrations of 43,000 µg/kg and 1,500,000 µg/kg, respectively, which are above the current Michigan Act 451, Part 201 Residential DWPC of 1,500 µg/kg. Nickel was detected in the soil sample collected from SB-2 at a concentration of 120,000 ug/kg, which is the Michigan Act 451, Part 201 Residential DWPC of 100,000 µg/kg. Iron was detected in soil samples collected from SB-2 at concentrations of 46,000,000 µg/kg, and 17,000,000 µg/kg, respectively, which are above the Residential DWPC of 6,000 µg/kg and above the Michigan Statewide Default Background Level Criterion of 12,000,000 µg/kg.

Preliminary Soil and Groundwater Data for Conical Tool Company

Based on the results of the Phase II ESA, additional subsurface investigation activities were conducted by Dixon, including additional soil sampling, the installation of five monitoring wells, and soil excavation and verification sampling in the areas of historic and current soil discoloration. Results were present in preliminary data form in the FOIA file reviewed.

A soil sample collected from GP-9 detected 1,2,4-trimethylbenzene at a concentration of 24,000 µg/kg, which is above the Michigan Act 451, Part 201 Residential DWPC of 2,100 µg/kg. A soil sample collected from GP-9 detected 1,3,5-trimethylbenzene at a concentration of 7,900 µg/kg, which is above the Michigan Act 451, Part 201 Residential DWPC of 1,800 µg/kg. Dibenzo(a,h)anthracene was detected in a soil sample collected from GP-9 at a concentration of 4,400 µg/kg, which is above the Michigan Act 451, Part 201 Residential DWPC of 2,000 µg/kg. Chromium was detected in soil samples collected from VSR-2, VSR-7, VSR-8, GP-2, GP-3, GP-4, GP-5, GP-8 and GP-9 at concentrations of 69,000 µg/kg, 450,00 µg/kg, 110,000 µg/kg, 51,000 µg/kg, 540,000 µg/kg, 82,000 µg/kg, 110,000 µg/kg, 62,000 µg/kg, and 380,000 µg/kg, respectively, which are above the Michigan Act 451, Part 201 DWPC of 30,000 µg/kg. Molybdenum was detected in soil samples collected from VSR-1, VSR-2, VSR-3, VSR-4, VSR-5, VSR-6, VSR-7, VSR-8, VSR-9, VSSR-10, VSR-11, VSR-12, GP-2, GP-3, GP-4, GP-5, GP-6, GP-7, GP-8, GP-9, and GP-10 at concentrations of 3,400 µg/kg, 57,000 µg/kg, 2,800 µg/kg, 18,000 µg/kg, 6,500 µg/kg, 3,400 µg/kg, 330,000 µg/kg, 120,000 µg/kg, 27,000 µg/kg, 24,000 µg/kg, 4,500 µg/kg, 8,900 µg/kg, 38,000 µg/kg, 580,000 µg/kg, 83,000 µg/kg, 230,000 µg/kg, 5,400 µg/kg, 4,500 µg/kg, 53,000 µg/kg, 250,000 µg/kg and 950 µg/kg, respectively, which are above the current Michigan Act 451, Part 201 DWPC of 1,500 µg/kg. Nickel was detected in a soil sample collected from GP-9 at a concentration of 140,000 µg/kg, which is above the Michigan Act 451, Part 201 DWPC of 100,000 µg/kg. Silver was detected in a soil sample collected from GP-9 at a concentration of 15,000 µg/kg, which is above the Michigan Act 451, Part 201 DWPC of 4,500 µg/kg. Iron was detected in soil samples VSR-7, GP-2, and GP-3 at concentrations of 25,000,000 µg/kg, 26,000,000 µg/kg, and 21,000,000 µg/kg, respectively, which are above the Michigan Statewide Default Background Level Criterion of 12,000,000 µg/kg.

TCE was detected in the groundwater samples collected from MW-1, MW-2, MW-3, MW-4, GP-1, and GP-5 at concentrations of 7.8 µg/L, 28 µg/L, 85 µg/L, 17 µg/L, 14 µg/L, and 100 µg/L, respectively, which are above the current Michigan Act 451, Part 201 Drinking Water Criterion (DWC) of 5.0 µg/L, which is above the Michigan Act 451, Part 201 DWC of 5 µg/L. Tetrachloroethene (PCE) was detected in the groundwater sample collected from MW-4 at a concentration of 12 µg/L, which is above the Michigan Act 451, Part 201 DWC of 5 µg/L.

Based on discussions with Mr. Terry O'Brien, the MDEQ Project Manager for the Conical Tool site, no further investigations have been conducted or scheduled at this time.

2.2.2 MISCELLANEOUS ADJACENT PROPERTIES

AST Inspection Reports (Sunshine Systems Factory Showroom, 3700 Buchanan Street)

AST inspection reports were available for July 1980, April 1991, January 1993, July 1994, January 995, May 1995, August 1995, May 1996, January 1997, June 1997, July 1997, August 1997, December 1997, March 1998, May 1998, February 1999, July 1999, August 1999, December 1998, and January 2001. The Michigan State Police approved the installation of two 1,850-gallon liquefied petroleum (LP) gasoline ASTs at the property on November 3, 1980. According to inspection reports, a third 1,850-gallon LP gasoline AST was installed in 1985. Two 1,000-gallon LP gasoline ASTs were installed at the property in April 1991. The two original 1,850-gallon LP gasoline ASTs were removed in April 1991. The three remaining ASTs were removed in 1996 and replaced by a 12,000-gallon LP gasoline AST. AST inspection reports cite non-environmental violations or deficiencies including, but not limited to:

- Electrical inspection needs;
- Verified flow rates;
- Incorrect labeling/painting; and
- Fire extinguisher availability.

UST Closure Report and Associated Letters (currently Fed-Ex Freight, 3740 Buchanan Street)

A UST closure report, prepared by Superior Environmental Corporation, dated October 15, 1990, was available for review. According to the report, three USTs (one 12,000-gallon gasoline UST, one 15,000-gallon diesel UST, and one 1,000-gallon used oil UST) were excavated by Pitsch's Wrecking. No visible staining or petroleum odors were observed during the excavation activities. Two soil samples were collected per tank and analyzed for total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO), and benzene, toluene, ethylbenzene, and xylenes (BTEX). According to the report, the analytical results indicated that no concentrations of TPH-GRO, TPH-DRO, or BTEX were reported above the laboratory detection limits. A letter from the Michigan State Police, dated April 17, 1991, referencing the UST Closure Report, indicates that no further information/action is required.

UST Inspection and Associated Reports (Amoco Station, 150 36th Street)

According to Notifications for Underground Storage Tanks forms received by the Michigan State Police in June 1989, five USTs (one 9,500-gallon gasoline UST, one 6,000-gallon gasoline UST, two 4,000-gallon gasoline USTs, one 500-gallon waste oil UST) were removed and replaced by four USTs (two 10,000-gallon gasoline USTs, one 6,000-gallon gasoline UST, one 4,000 gallon-diesel UST) from the property in March 1989. UST inspection reports were available for June 1990, January 1997, March 1997, June 1999, July 1999, August 1999, June 2002, and July 2002. These UST inspection reports cite non-environmental violations or deficiencies including, but not limited to:

- Inventory control needs;
- Shut-off valve needs;
- Annual testing requirements;
- Tank gauging needs; and
- Fire extinguisher needs.

3.0 DISCUSSION

Based on the observed groundwater flow direction at the Grand Rapids Metal Plant, the Conical Tool property is assumed to be located hydraulically upgradient. However, no groundwater flow direction information for the Conical Tool site was presented in the documentation reviewed by CRA.

Based on the review of available information obtained from the FOIA request, it appears possible that there was a former or current source of TCE at the Conical Tool site. TCE was identified in soil and groundwater at concentrations above the Michigan Act 451, Part 201 Residential DWPC and DWC, respectively. PCE was also detected in groundwater above the Michigan Act 451, Part 201 Residential DWC from the Conical Tool site. However, it is not clear from the information reviewed whether all soil samples were analyzed for PCE. Insufficient information from the MDEQ files was present to determine a possible source location for PCE at the Conical Tool site. Additionally, the vertical extents of TCE and PCE in groundwater were not determined, based on the information reviewed.

Selected excavation was conducted in two areas at the Conical Tool site. Neither of these excavations were conducted where the TCE was detected in soil above the Residential Criterion.

During the investigations conducted by Dixon, five monitoring wells, MW-1 through MW-5, were installed at the Conical Tool site. Groundwater samples collected from these wells ranged from 12 feet bgs to 17.5 feet bgs. Additional delineation grab groundwater samples were collected from depths of approximately 17 to 19 feet bgs. These depths correspond to the upper few feet of the aquifer. Figure 1 presents the approximate sample locations for the Conical Tool site and the Grand Rapids Metal Plant site. Table 1 presents a summary of detected parameters at the Conical Tool site, as presented in the available documentation, and the results from HP1-03, HP2-03, MW1-03, and MW2-03, installed by CRA in June 2003 at the Grand Rapids Metal Plant site.

Concentrations of PCE and TCE in groundwater samples collected during the recent vertical aquifer sampling (VAS) from HP1-03 and HP2-03, and from monitoring wells MW1-03 and MW2-03, indicated that samples collected from near the water table, similar to those collected at the Conical Tool site, are at lower concentrations than in samples collected at greater depths. This is consistent with the hypothesis of an upgradient source located some distance from the Grand Rapids Metal Plant.

4.0 CONCLUSIONS

Based on the review of available documentation, CRA provides the following conclusions:

- TCE was detected in soil, and TCE and PCE have been identified in groundwater on the Conical Tool property, located hydraulically upgradient of the Site. Insufficient information was available to determine whether PCE is present in soil at this property;
- The vertical extent of TCE and PCE in groundwater at the Conical Tool site was not determined;
- Insufficient information was available to determine the actual source of PCE upgradient of the Grand Rapids Metal Plant. However, the file review does confirm that PCE is present in groundwater located hydraulically upgradient of the Site at concentrations above the Residential Criterion, pursuant to Part 201 of Michigan Act 451 of 1994, as amended; and

- Additional potential upgradient properties including Accurate Metal Finishing and Travis Collision were observed; however, no documentation was available during the FOIA review for these properties.

Should you have any questions regarding this memorandum, please contact Jeni Quigley at (517) 316-2397.

TABLE 1

SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
GRAND RAPIDS METAL PLANT AND CONICAL TOOL PROPERTY
WYOMING, MICHIGAN

Sample Location	*Michigan Act 451,*	*MW2-03*	*MW1-03*	*HP2-03*	*HP2-03*	*HP2-03*	***HP1-03***
Sample ID	***Part 201***	*GW-17360-071403-SP-044*	*GW-17360-071403-SP-045*	***W-17360-061203-BW-01***	***W-17360-061203-BW-01***	***W-17360-061203-BW-01***	***W-17360-061303-BW-02***
Sample Depth/Interval (ft bgs)	*Residential & Commercial*	*22 - 27*	*30 - 35*	***24***	***34***	***41***	***24***
Date Sampled	*Drinking Water*	*7/14/03*	*7/14/03*	***06/12/03***	***06/12/03***	***06/12/03***	***06/13/03***
Date Analyzed	*Criteria* [1]	*7/21/03*	*7/21/03*	***06/17/03***	***06/17/03***	***06/17/03***	***06/18/03***
Units		*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Parameter (ug/L)							
cis-1,2-Dichloroethene	70	ND (1.0)	2.7	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	5.0	14	72	31	7.2	ND (1.0)	7.0
1,1,1-Trichloroethane	200	ND (1.0)	ND (2.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	5.0	ND (1.0)	1.6	ND (1.0)	ND (1.0)	ND (1.0)	3.8
Vinyl chloride	2.0	ND (1.0)	ND (2.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

Notes:

[1] Criteria from Rule 7 of the Administrative Rules for Part 201 Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994, PA 451, as amended, December 21, 2002.

ND (1.0) - Parameter not detected at concentration identified

Boxed values exceed Residential Drinking Water Criteria

TABLE 1

SUMMARY OF DETECTED PARAMETERS IN GROUNDWATER
GRAND RAPIDS METAL PLANT AND CONICAL TOOL PROPERTY
WYOMING, MICHIGAN

HP1-03	*HP1-03*	*HP1-03*	*GP-1*
iW-17360-061303-BW-02	*iW-17360-061303-BW-02*	*iW-17360-061303-BW-024*	
24	*34*	*41*	*17.5 - 19*
06/13/03	*06/13/03*	*06/13/03*	
06/18/03	*06/18/03*	*06/18/03*	
ug/L	*ug/L*	*ug/L*	
Duplicate	***MS/MSD***		
ND (1.0)	ND (1.0)	1.7	
7.1	66	1.5	
ND (1.0)	ND (1.0)	ND (1.0)	
3.8	2.2	ND (1.0)	
ND (1.0)	ND (1.0)	ND (1.0)	

APPENDIX C

LABORATORY ANALYTICAL RESULTS

SEVERN TRENT STL

REC'D CRA
JUL - 1 2003
SDG: 36

ANALYTICAL REPORT

PROJECT NO. 17360-01

GM GRAND RAPIDS METAL PLANT

Lot #: A3F100251

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

SEVERN TRENT LABORATORIES, INC.

ORIGINAL ANALYTICAL REPORT
Project#: 17360-01 Lab#: A3F100251
Name: GM GR
Description
Event:
Samples: 6 water
Analysis:
VOC
TAT: 2 day
Lab: STL
Checked Against Preliminary Data:
Date: Init.:
Date of Validation Memo: 10/21/03
Invoice Approval Date:
Comments:

Amy L. McCormick
Project Manager

June 27, 2003

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360-01

PROJECT NAME: GM Grand Rapids Metal Plant

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Brad Williams

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
1	6/9/03	1215	GW-17360-060903-BW-001	H2O	3	X	48 hr TAT
2		1302	002		3	X	
3		1350	003		3	X	
4		1515	004		3	X	
5		1518	005		3	X	
		1640	Trip Blank		1	X	
							CRA Contact Paul Wiseman

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: 1. [signature]	DATE: 6/9/03 TIME: 1900	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FED-EX AIR BILL No.

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

22893

SAMPLE TEAM: BMW

RECEIVED FOR LABORATORY BY: Anne Sanders
DATE: 6-10-03 TIME: 900

SEVERN TRENT STL

CASE NARRATIVE

CASE NARRATIVE

A3F100251

The following report contains the analytical results for five water samples and one quality control sample submitted to STL North Canton by Conestoga-Rovers & Associates, Inc. from the GM Grand Rapids Metal Plant Site, project number 17360-01. The samples were received June 10, 2003, according to documented sample acceptance procedures.

The samples presented in this report were analyzed for the parameter listed on the analytical methods summary page in accordance with the method indicated. Preliminary results were provided to the Chemistry Department on June 13, 2003. A summary of QC data for these analyses is included at the rear of the report.

STL utilizes USEPA approved methods in all analytical work. 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.

Amy McCormick
Project Manager

QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

QUALITY CONTROL ELEMENTS OF SW-846 METHODS
(Continued)

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

STL North Canton Certifications and Approvals:

Alabama (#41170), California (#2157), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#100439), Kansas (#E10336), Kentucky (#90021), Massachusetts (#M-OH048),
Maryland (#272), Minnesota (#39-999-348), Missouri (#6090), New Jersey (#74001),
New York (#10975), North Dakota (#R-156), Ohio (#6090), OhioVAP (#CL0024),
Pennsylvania (#68-340), Rhode Island (#237), South Carolina (#92007001, #92007002, #92007003),
Tennessee (#02903), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY,
USDA Soil Permit, ACIL Seal of Excellence – Participating Lab Status Award (#82)

SEVERN TRENT STL

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A3F100251

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SEVERN TRENT STL

SAMPLE SUMMARY

SAMPLE SUMMARY

A3F100251

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FP9QG	001	GW-17360-060903-BW-001	06/09/03	12:15
FP9QM	002	GW-17360-060903-BW-002	06/09/03	13:02
FP9QN	003	GW-17360-060903-BW-003	06/09/03	13:50
FP9QP	004	GW-17360-060903-BW-004	06/09/03	15:15
FP9QQ	005	GW-17360-060903-BW-005	06/09/03	15:18
FP9QR	006	TRIP BLANK	06/09/03	16:40

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SEVERN TRENT STL

SHIPPING AND RECEIVING DOCUMENTS

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360-01

PROJECT NAME: GM Grand Rapids Metal Plant

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Brian Williams

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
1	6/9/03	1215	GW-17360-060903-BW-001	H2O	3	X	48 hr TAT
2		1302	002		3	X	
3		1350	003		3	X	
4		1515	004		3	X	
5		1518	005		3	X	
		1640	Trip Blank		1	X	
							CRA Contact Paul Widmer

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
1. [signature]	6/9/03	1900	1.		
2.			2.		
3.			1.		

METHOD OF SHIPMENT: FED-EX AIR BILL No.

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

22893

SAMPLE TEAM: BMW

RECEIVED FOR LABORATORY BY: Anna Sanders
DATE: 6-10-03 TIME: 920

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

STL North Canton

RSR280

Client: 57787

Lot #: A3F100251

Case Number/SDG: 17360-01

Storage Location: MS

Severn Trent Laboratories, Inc.
Sample Control Record

Laboratory Sample I.D.	Transferred By	Date	Entered	Removed	Reason	Date Returned
FP9QG	STILLERJ	6/10/03	Yes		Storage	
FP9QM	STILLERJ	6/10/03	Yes		Storage	
FP9QN	STILLERJ	6/10/03	Yes		Storage	
FP9QP	STILLERJ	6/10/03	Yes		Storage	
FP9QQ	STILLERJ	6/10/03	Yes		Storage	
FP9QR	STILLERJ	6/10/03	Yes		Storage	

STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A3F100257

Client: Cra Project: GM Grand Rapids Quote#:
Cooler Received on: 6-10-03 Opened on: 6-10-03 by: Anne SAnders (Signature)

Fedx ☑ Client Drop Off ☐ UPS ☐ Airborne ☐ Other:
Cooler ☐ Safe ☐ Foam Box ☐ Client Cooler ☑ Other:
STL Shipper No#:

1. Were custody seals on the outside of the cooler? Yes ☐ No ☑ Intact? Yes ☐ No ☐ NA ☑
   If YES, Quantity Location
   Were the custody seals signed and dated? Yes ☐ No ☐ NA ☑
2. Shipper's packing slip attached to this form? Yes ☑ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☑ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☑ No ☐
5. Packing material used:
   Peanuts ☐ Bubble Wrap ☑ Vermiculite ☐ Foam ☐ None ☐ Other :
6. Cooler temperature upon receipt 0.9 °C (see back of form for multiple coolers/temp)
   METHOD: Temp Vial ☐ Coolant & Sample ☐ Against Bottles ☐ IR ☑ ICE/H_2O Slurry ☐
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☑ No ☐
9. Were samples at the correct pH? (record on back) Yes ☐ No ☐ NA ☑
10. Were correct bottles used for the tests indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☐
12. Was a sufficient amount of sample sent in each bottle? Yes ☑ No ☐

Contacted PM Date: by: via Voice Mail ☐ Verbal ☐ Other ☐
Concerning:

√	MACRO	MACRO
1. CHAIN OF CUSTODY		
	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred
2. SAMPLE CONDITION		
	SR2A	Sample(s) were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
3. SAMPLE PRESERVATION		
	SR3A	Sample(s) were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 012203-HNO3; Sulfuric Acid Lot # 112801-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 020501-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s) were received with bubble > 6 mm in diameter (cc: PM)
4. Other (see below or back)		

SEVERN TRENT STL

GCMS VOLATILE DATA

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-060903-BW-001

GC/MS Volatiles

Lot-Sample #...:	A3F100251-001	**Work Order #...:**	FP9QG1AA	**Matrix.....:**	WG
Date Sampled...:	06/09/03 12:15	**Date Received..:**	06/10/03		
Prep Date.....:	06/12/03	**Analysis Date..:**	06/12/03		
Prep Batch #...:	3164304				
Dilution Factor:	1	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-060903-BW-001

GC/MS Volatiles

Lot-Sample #...: A3F100251-001 **Work Order #...:** FP9QG1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	77	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-060903-BW-002

GC/MS Volatiles

Lot-Sample #...: A3F100251-002 **Work Order #...:** FP9QM1AA **Matrix.....:** WG
Date Sampled...: 06/09/03 13:02 **Date Received..:** 06/10/03
Prep Date.....: 06/12/03 **Analysis Date..:** 06/12/03
Prep Batch #...: 3164304
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-060903-BW-002

GC/MS Volatiles

Lot-Sample #...: A3F100251-002 **Work Order #...:** FP9QM1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**1.1**	**1.0**	**ug/L**
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
1,2-Dichloroethane-d4	92	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	77	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-060903-BW-003

GC/MS Volatiles

Lot-Sample #...:	A3F100251-003	**Work Order #...:**	FP9QN1AA	**Matrix.....:**	WG
Date Sampled...:	06/09/03 13:50	**Date Received..:**	06/10/03		
Prep Date.....:	06/12/03	**Analysis Date..:**	06/12/03		
Prep Batch #...:	3164304				
Dilution Factor:	1	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-060903-BW-003

GC/MS Volatiles

Lot-Sample #...: A3F100251-003 **Work Order #...:** FP9QN1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**1.1**	**1.0**	**ug/L**
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	92	(61 - 128)
Toluene-d8	96	(76 - 110)
4-Bromofluorobenzene	79	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-060903-BW-004

GC/MS Volatiles

Lot-Sample #...: A3F100251-004 **Work Order #...:** FP9QP1AA **Matrix.....:** WG
Date Sampled...: 06/09/03 15:15 **Date Received..:** 06/10/03
Prep Date.....: 06/12/03 **Analysis Date..:** 06/12/03
Prep Batch #...: 3164304
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-060903-BW-004

GC/MS Volatiles

Lot-Sample #...: A3F100251-004 **Work Order #...:** FP9QP1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	93	(76 - 110)
4-Bromofluorobenzene	75	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-060903-BW-005

GC/MS Volatiles

Lot-Sample #...: A3F100251-005 **Work Order #...:** FP9QQ1AA **Matrix.....:** WG
Date Sampled...: 06/09/03 15:18 **Date Received..:** 06/10/03
Prep Date.....: 06/12/03 **Analysis Date..:** 06/12/03
Prep Batch #...: 3164304
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-060903-BW-005

GC/MS Volatiles

Lot-Sample #...: A3F100251-005 **Work Order #...:** FP9QQ1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
1,2-Dichloroethane-d4	94	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	78	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A3F100251-006 **Work Order #...:** FP9QR1AA **Matrix.....:** WQ
Date Sampled...: 06/09/03 16:40 **Date Received..:** 06/10/03
Prep Date.....: 06/12/03 **Analysis Date..:** 06/12/03
Prep Batch #...: 3164304
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A3F100251-006 **Work Order #...:** FP9QR1AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(73 - 122)
1,2-Dichloroethane-d4	96	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F100251 **Work Order #...:** FQHCL1AA **Matrix.....:** WATER
MB Lot-Sample #: A3F130000-304

Prep Date.....: 06/12/03 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 06/12/03 **Prep Batch #...:** 3164304
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F100251 **Work Order #...:** FQHCL1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(73 - 122)
1,2-Dichloroethane-d4	94	(61 - 128)
Toluene-d8	96	(76 - 110)
4-Bromofluorobenzene	75	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F100251 **Work Order #...:** FQHCL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3F130000-304 FQHCL1AD-LCSD
Prep Date.....: 06/12/03 **Analysis Date..:** 06/12/03
Prep Batch #...: 3164304
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	10	**9.8**	**ug/L**	**98**	**2.2**	**SW846 8260B**
Chlorobenzene	**10**	**10**	**ug/L**	**101**		**SW846 8260B**
	10	**10**	**ug/L**	**103**	**1.5**	**SW846 8260B**
1,1-Dichloroethene	**10**	**9.9**	**ug/L**	**99**		**SW846 8260B**
	10	**9.6**	**ug/L**	**96**	**3.2**	**SW846 8260B**
Toluene	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	10	**9.8**	**ug/L**	**98**	**1.4**	**SW846 8260B**
Trichloroethene	**10**	**10**	**ug/L**	**101**		**SW846 8260B**
	10	**9.8**	**ug/L**	**98**	**2.4**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
	101	(73 - 122)
1,2-Dichloroethane-d4	98	(61 - 128)
	94	(61 - 128)
Toluene-d8	100	(76 - 110)
	95	(76 - 110)
4-Bromofluorobenzene	83	(74 - 116)
	86	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F100251 **Work Order #...:** FQHCL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3F130000-304 FQHCL1AD-LCSD
Prep Date.....: 06/12/03 **Analysis Date..:** 06/12/03
Prep Batch #...: 3164304
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**100**	**(80 - 116)**			**SW846 8260B**
	98	**(80 - 116)**	**2.2**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**101**	**(76 - 117)**			**SW846 8260B**
	103	**(76 - 117)**	**1.5**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**99**	**(63 - 130)**			**SW846 8260B**
	96	**(63 - 130)**	**3.2**	**(0-20)**	**SW846 8260B**
Toluene	**100**	**(74 - 119)**			**SW846 8260B**
	98	**(74 - 119)**	**1.4**	**(0-20)**	**SW846 8260B**
Trichloroethene	**101**	**(75 - 122)**			**SW846 8260B**
	98	**(75 - 122)**	**2.4**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
	101	(73 - 122)
1,2-Dichloroethane-d4	98	(61 - 128)
	94	(61 - 128)
Toluene-d8	100	(76 - 110)
	95	(76 - 110)
4-Bromofluorobenzene	83	(74 - 116)
	86	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F100251 **Work Order #...:** FP5CQ1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A3F060317-005 FP5CQ1AD-MSD
Date Sampled...: 06/05/03 **Date Received..:** 06/06/03
Prep Date.....: 06/12/03 **Analysis Date..:** 06/12/03
Prep Batch #...: 3164304
Dilution Factor: 1000 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10000**	**9800**	**ug/L**	**98**		**SW846 8260B**
	ND	**10000**	**11000**	**ug/L**	**110**	**12**	**SW846 8260B**
Chlorobenzene	**ND**	**10000**	**9700**	**ug/L**	**97**		**SW846 8260B**
	ND	**10000**	**11000**	**ug/L**	**114**	**16**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10000**	**9800**	**ug/L**	**98**		**SW846 8260B**
	ND	**10000**	**10000**	**ug/L**	**105**	**6.6**	**SW846 8260B**
Toluene	**ND**	**10000**	**9900**	**ug/L**	**96**		**SW846 8260B**
	ND	**10000**	**11000**	**ug/L**	**107**	**10**	**SW846 8260B**
Trichloroethene	**20000**	**10000**	**30000**	**ug/L**	**100**		**SW846 8260B**
	20000	**10000**	**34000**	**ug/L**	**131 a**	**9.7**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
	103	(73 - 122)
1,2-Dichloroethane-d4	97	(61 - 128)
	98	(61 - 128)
Toluene-d8	94	(76 - 110)
	99	(76 - 110)
4-Bromofluorobenzene	83	(74 - 116)
	85	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F100251 **Work Order #...:** FP5CQ1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A3F060317-005 FP5CQ1AD-MSD
Date Sampled...: 06/05/03 **Date Received..:** 06/06/03
Prep Date.....: 06/12/03 **Analysis Date..:** 06/12/03
Prep Batch #...: 3164304
Dilution Factor: 1000 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**98**	**(78 - 118)**			**SW846 8260B**
	110	**(78 - 118)**	**12**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**97**	**(76 - 117)**			**SW846 8260B**
	114	**(76 - 117)**	**16**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**98**	**(62 - 130)**			**SW846 8260B**
	105	**(62 - 130)**	**6.6**	**(0-20)**	**SW846 8260B**
Toluene	**96**	**(70 - 119)**			**SW846 8260B**
	107	**(70 - 119)**	**10**	**(0-20)**	**SW846 8260B**
Trichloroethene	**100**	**(62 - 130)**			**SW846 8260B**
	131 a	**(62 - 130)**	**9.7**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
	103	(73 - 122)
1,2-Dichloroethane-d4	97	(61 - 128)
	98	(61 - 128)
Toluene-d8	94	(76 - 110)
	99	(76 - 110)
4-Bromofluorobenzene	83	(74 - 116)
	85	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

SEVERN TRENT STL

END OF REPORT

SEVERN TRENT STL

REC'D CRA
JUL - 1 2003
SDG: 37

ANALYTICAL REPORT

PROJECT NO. 17360

GM GRAND RAPIDS

Lot #: A3F110232

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

SEVERN TRENT LABORATORIES, INC.

ORIGINAL ANALYTICAL REPORT
Project#: 17360 Lab#: A3F110232
Name: GM GR
Description
Event:
Samples: 7 water
Analysis: VOC
TAT: 2 day
Lab: STL
Checked Against Preliminary Data:
Date: Init.:
Date of Validation Memo: 10/2/03
Invoice Approval Date:
Comments:

Amy L. McCormick
Amy L. McCormick
Project Manager

June 27, 2003

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360

PROJECT NAME: GM Grand Rapids

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Bart Williams

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
	6/10/03	1016	GW-17360-061003-BW-006	H_2O	3	X	48 h-TAT
		1100	007		3	X	
		1300	008		3	X	
		1420	009		3	X	
		1330	010		3	X	
		1643	011		3	X	
			Trip Blank		1	X	

BMW

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
1. [signature]	6/10/03	1835	1.		
2.			2.		
3.			1.		

METHOD OF SHIPMENT: FED-EX

AIR BILL No.

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

22421

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: [signature]

DATE: 6/11/03 TIME: 10:00

SEVERN TRENT STL

CASE NARRATIVE

CASE NARRATIVE

A3F110232

The following report contains the analytical results for six water samples and one quality control sample submitted to STL North Canton by Conestoga-Rovers & Associates, Inc. from the GM Grand Rapids Site, project number 17360. The samples were received June 11, 2003, according to documented sample acceptance procedures.

The samples presented in this report were analyzed for the parameter listed on the analytical methods summary page in accordance with the method indicated. Preliminary results were provided to the Chemistry Department on June 17, 2003. A summary of QC data for these analyses is included at the rear of the report.

STL utilizes USEPA approved methods in all analytical work. 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.

Amy McCormick
Project Manager

QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

QUALITY CONTROL ELEMENTS OF SW-846 METHODS
(Continued)

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

STL North Canton Certifications and Approvals:

Alabama (#41170), California (#2157), Connecticut (#PH-0590), Florida (#E87225), Illinois (#100439), Kansas (#E10336), Kentucky (#90021), Massachusetts (#M-OH048), Maryland (#272), Minnesota (#39-999-348), Missouri (#6090), New Jersey (#74001), New York (#10975), North Dakota (#R-156), Ohio (#6090), OhioVAP (#CL0024), Pennsylvania (#68-340), Rhode Island (#237), South Carolina (#92007001, #92007002, #92007003), Tennessee (#02903), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit, ACIL Seal of Excellence – Participating Lab Status Award (#82)

SEVERN TRENT STL

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A3F110232

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SEVERN TRENT STL

SAMPLE SUMMARY

SAMPLE SUMMARY

A3F110232

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FQCH4	001	GW-17360-061003-BW-006	06/10/03	10:16
FQCH8	002	GW-17360-061003-BW-007	06/10/03	11:00
FQCJC	003	GW-17360-061003-BW-008	06/10/03	13:00
FQCJD	004	GW-17360-061003-BW-009	06/10/03	14:20
FQCJF	005	GW-17360-061003-BW-010	06/10/03	13:30
FQCJG	006	GW-17360-061003-BW-011	06/10/03	16:43
FQCJJ	007	TRIP BLANK	06/10/03	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SEVERN TRENT STL

SHIPPING AND RECEIVING DOCUMENTS

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360

PROJECT NAME: GM Grand Rapids

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Bart Williams

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
	6/10/03	1016	GW-17360-061003-BW-006	H20	3	X	48 hr TAT
		1100	007		3	X	
		1300	008		3	X	
		1420	009		3	X	
		1330	010		3	X	
		1643	011		3	X	
			Trip Blank		1	X	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
1. [signature]	6/10/03	1835	1.		
2.			2.		
3.			1.		

METHOD OF SHIPMENT: FEDEX AIR BILL No.

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

22421

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: [signature]
DATE: 6/11/03 TIME: 10:00

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

RSR280

Severn Trent Laboratories, Inc.
Sample Control Record

Client: 57787

Lot #: A3F110232

Case Number/SDG: 17360

Storage Location: MS

Laboratory Sample I.D.	Transferred By	Date	Entered	Removed	Reason	Date Returned
FQCH4	EZZOL	6/11/03	Yes		Storage	
FQCH8	EZZOL	6/11/03	Yes		Storage	
FQCJC	EZZOL	6/11/03	Yes		Storage	
FQCJD	EZZOL	6/11/03	Yes		Storage	
FQCJF	EZZOL	6/11/03	Yes		Storage	
FQCJG	EZZOL	6/11/03	Yes		Storage	
FQCJJ	EZZOL	6/11/03	Yes		Storage	

STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A3F110232

Client: CRA Project: _____ Quote#: 45813

Cooler Received on: 6/11/03 Opened on: 6/11/03 by: DL Williams (Signature)

Fedx ☒ Client Drop Off ☐ UPS ☐ Airborne ☐ Other: _____

Cooler ☒ Safe ☐ Foam Box ☐ Client Cooler ☐ Other: _____

STL Shipper No#: M-248

1. Were custody seals on the outside of the cooler? Yes ☐ No ☒ Intact? Yes ☐ No ☐ NA ☒
   If YES, Quantity _____ Location _____
   Were the custody seals signed and dated? Yes ☐ No ☐ NA ☒
2. Shipper's packing slip attached to this form? Yes ☒ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☒ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☒ No ☐
5. Packing material used:

Peanuts ☐ Bubble Wrap ☒ Vermiculite ☐ Foam ☐ None ☐ Other: _____

6. Cooler temperature upon receipt 1.6 °C (see back of form for multiple coolers/temp)

METHOD: Temp Vial ☐ Coolant & Sample ☐ Against Bottles ☐ IR ☒ ICE/H_20 Slurry ☐

COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐

7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☒ No ☐
9. Were samples at the correct pH? (record on back) Yes ☐ No ☐ NA ☒
10. Were correct bottles used for the tests indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Was a sufficient amount of sample sent in each bottle? Yes ☒ No ☐

Contacted PM _____ Date: _____ by: _____ via Voice Mail ☐ Verbal ☐ Other ☐

Concerning: _____

√	MACRO	MACRO
1. CHAIN OF CUSTODY		
	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred _____
2. SAMPLE CONDITION		
	SR2A	Sample(s) _____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
3. SAMPLE PRESERVATION		
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 012203-HNO3; Sulfuric Acid Lot # 112801-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 020501-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s) _____ were received with bubble > 6 mm in diameter (cc: PM)
4. Other (see below or back)		

a. due 6-17-03 per ALM

SEVERN TRENT STL

GCMS VOLATILE DATA

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061003-BW-006

GC/MS Volatiles

Lot-Sample #...: A3F110232-001 **Work Order #...:** FQCH41AA **Matrix.....:** WG
Date Sampled...: 06/10/03 10:16 **Date Received..:** 06/11/03
Prep Date.....: 06/15/03 **Analysis Date..:** 06/15/03
Prep Batch #...: 3167257
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061003-BW-006

GC/MS Volatiles

Lot-Sample #...: A3F110232-001 **Work Order #...:** FQCH41AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(73 - 122)
1,2-Dichloroethane-d4	97	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	79	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061003-BW-007

GC/MS Volatiles

Lot-Sample #...: A3F110232-002 **Work Order #...:** FQCH81AA **Matrix.....:** WG
Date Sampled...: 06/10/03 11:00 **Date Received..:** 06/11/03
Prep Date.....: 06/15/03 **Analysis Date..:** 06/15/03
Prep Batch #...: 3167257
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061003-BW-007

GC/MS Volatiles

Lot-Sample #...: A3F110232-002 **Work Order #...:** FQCH81AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**1.2**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**5.9**	**1.0**	**ug/L**
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(73 - 122)
1,2-Dichloroethane-d4	95	(61 - 128)
Toluene-d8	92	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061003-BW-008

GC/MS Volatiles

Lot-Sample #...: A3F110232-003 **Work Order #...:** FQCJC1AA **Matrix.....:** WG
Date Sampled...: 06/10/03 13:00 **Date Received..:** 06/11/03
Prep Date.....: 06/15/03 **Analysis Date..:** 06/15/03
Prep Batch #...: 3167257
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061003-BW-008

GC/MS Volatiles

Lot-Sample #...: A3F110232-003 **Work Order #...:** FQCJC1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**1.0**	**1.0**	**ug/L**
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**3.5**	**1.0**	**ug/L**
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	90	(76 - 110)
4-Bromofluorobenzene	74	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061003-BW-009

GC/MS Volatiles

Lot-Sample #...: A3F110232-004 **Work Order #...:** FQCJD1AA **Matrix.....:** WG
Date Sampled...: 06/10/03 14:20 **Date Received..:** 06/11/03
Prep Date.....: 06/15/03 **Analysis Date..:** 06/15/03
Prep Batch #...: 3167257
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061003-BW-009

GC/MS Volatiles

Lot-Sample #...: A3F110232-004 **Work Order #...:** FQCJD1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**1.2**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**3.6**	**1.0**	**ug/L**
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(73 - 122)
1,2-Dichloroethane-d4	93	(61 - 128)
Toluene-d8	92	(76 - 110)
4-Bromofluorobenzene	75	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061003-BW-010

GC/MS Volatiles

Lot-Sample #...: A3F110232-005 **Work Order #...:** FQCJF1AA **Matrix.....:** WG
Date Sampled...: 06/10/03 13:30 **Date Received..:** 06/11/03
Prep Date.....: 06/15/03 **Analysis Date..:** 06/15/03
Prep Batch #...: 3167257
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061003-BW-010

GC/MS Volatiles

Lot-Sample #...: A3F110232-005 **Work Order #...:** FQCJF1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(73 - 122)
1,2-Dichloroethane-d4	96	(61 - 128)
Toluene-d8	94	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061003-BW-011

GC/MS Volatiles

Lot-Sample #...: A3F110232-006 **Work Order #...:** FQCJG1AA **Matrix.....:** WG
Date Sampled...: 06/10/03 16:43 **Date Received..:** 06/11/03
Prep Date.....: 06/15/03 **Analysis Date..:** 06/15/03
Prep Batch #...: 3167257
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

(Continued on next page)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061003-BW-011

GC/MS Volatiles

Lot-Sample #...: A3F110232-006 **Work Order #...:** FQCJG1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**1.6**	**1.0**	**ug/L**
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(73 - 122)
1,2-Dichloroethane-d4	96	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	82	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A3F110232-007 **Work Order #...:** FQCJJ1AA **Matrix.....:** WQ
Date Sampled...: 06/10/03 **Date Received..:** 06/11/03
Prep Date.....: 06/15/03 **Analysis Date..:** 06/15/03
Prep Batch #...: 3167257
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A3F110232-007 **Work Order #...:** FQCJJ1AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(73 - 122)
1,2-Dichloroethane-d4	95	(61 - 128)
Toluene-d8	96	(76 - 110)
4-Bromofluorobenzene	77	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F110232 **Work Order #...:** FQLEF1AA **Matrix.....:** WATER
MB Lot-Sample #: A3F160000-257

Prep Date.....: 06/15/03 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 06/15/03 **Prep Batch #...:** 3167257
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F110232 **Work Order #...:** FQLEF1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(73 - 122)
1,2-Dichloroethane-d4	99	(61 - 128)
Toluene-d8	96	(76 - 110)
4-Bromofluorobenzene	79	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F110232 **Work Order #...:** FQLEF1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3F160000-257 FQLEF1AD-LCSD
Prep Date.....: 06/15/03 **Analysis Date..:** 06/15/03
Prep Batch #...: 3167257
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10**	**9.7**	**ug/L**	**97**		**SW846 8260B**
	10	**9.7**	**ug/L**	**97**	**0.19**	**SW846 8260B**
Chlorobenzene	**10**	**9.9**	**ug/L**	**99**		**SW846 8260B**
	10	**10**	**ug/L**	**102**	**3.3**	**SW846 8260B**
1,1-Dichloroethene	**10**	**10**	**ug/L**	**102**		**SW846 8260B**
	10	**9.7**	**ug/L**	**97**	**4.2**	**SW846 8260B**
Toluene	**10**	**9.6**	**ug/L**	**96**		**SW846 8260B**
	10	**9.9**	**ug/L**	**99**	**2.3**	**SW846 8260B**
Trichloroethene	**10**	**9.9**	**ug/L**	**99**		**SW846 8260B**
	10	**9.8**	**ug/L**	**98**	**1.0**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
	98	(73 - 122)
1,2-Dichloroethane-d4	93	(61 - 128)
	95	(61 - 128)
Toluene-d8	95	(76 - 110)
	96	(76 - 110)
4-Bromofluorobenzene	86	(74 - 116)
	88	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F110232 **Work Order #...:** FQLEF1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3F160000-257 FQLEF1AD-LCSD
Prep Date.....: 06/15/03 **Analysis Date..:** 06/15/03
Prep Batch #...: 3167257
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**97**	**(80 - 116)**			**SW846 8260B**
	97	**(80 - 116)**	**0.19**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**99**	**(76 - 117)**			**SW846 8260B**
	102	**(76 - 117)**	**3.3**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**102**	**(63 - 130)**			**SW846 8260B**
	97	**(63 - 130)**	**4.2**	**(0-20)**	**SW846 8260B**
Toluene	**96**	**(74 - 119)**			**SW846 8260B**
	99	**(74 - 119)**	**2.3**	**(0-20)**	**SW846 8260B**
Trichloroethene	**99**	**(75 - 122)**			**SW846 8260B**
	98	**(75 - 122)**	**1.0**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
	98	(73 - 122)
1,2-Dichloroethane-d4	93	(61 - 128)
	95	(61 - 128)
Toluene-d8	95	(76 - 110)
	96	(76 - 110)
4-Bromofluorobenzene	86	(74 - 116)
	88	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F110232 **Work Order #...:** FQA3R1CT-MS **Matrix.....:** WATER
MS Lot-Sample #: A3F110188-001 FQA3R1CU-MSD
Date Sampled...: 06/10/03 09:00 **Date Received..:** 06/11/03
Prep Date.....: 06/15/03 **Analysis Date..:** 06/15/03
Prep Batch #...: 3167257
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10**	**9.6**	**ug/L**	**96**		**SW846 8260B**
	ND	**10**	**9.5**	**ug/L**	**95**	**0.77**	**SW846 8260B**
Chlorobenzene	**ND**	**10**	**9.8**	**ug/L**	**98**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**100**	**2.1**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10**	**9.8**	**ug/L**	**98**		**SW846 8260B**
	ND	**10**	**9.6**	**ug/L**	**96**	**2.5**	**SW846 8260B**
Toluene	**ND**	**10**	**9.5**	**ug/L**	**95**		**SW846 8260B**
	ND	**10**	**9.6**	**ug/L**	**96**	**0.16**	**SW846 8260B**
Trichloroethene	**ND**	**10**	**9.5**	**ug/L**	**95**		**SW846 8260B**
	ND	**10**	**9.1**	**ug/L**	**91**	**5.0**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(73 - 122)
	103	(73 - 122)
1,2-Dichloroethane-d4	98	(61 - 128)
	95	(61 - 128)
Toluene-d8	99	(76 - 110)
	101	(76 - 110)
4-Bromofluorobenzene	88	(74 - 116)
	91	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F110232 **Work Order #...:** FQA3R1CT-MS **Matrix.....:** WATER
MS Lot-Sample #: A3F110188-001 FQA3R1CU-MSD
Date Sampled...: 06/10/03 09:00 **Date Received..:** 06/11/03
Prep Date.....: 06/15/03 **Analysis Date..:** 06/15/03
Prep Batch #...: 3167257
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**96**	**(78 - 118)**			**SW846 8260B**
	95	**(78 - 118)**	**0.77**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**98**	**(76 - 117)**			**SW846 8260B**
	100	**(76 - 117)**	**2.1**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**98**	**(62 - 130)**			**SW846 8260B**
	96	**(62 - 130)**	**2.5**	**(0-20)**	**SW846 8260B**
Toluene	**95**	**(70 - 119)**			**SW846 8260B**
	96	**(70 - 119)**	**0.16**	**(0-20)**	**SW846 8260B**
Trichloroethene	**95**	**(62 - 130)**			**SW846 8260B**
	91	**(62 - 130)**	**5.0**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(73 - 122)
	103	(73 - 122)
1,2-Dichloroethane-d4	98	(61 - 128)
	95	(61 - 128)
Toluene-d8	99	(76 - 110)
	101	(76 - 110)
4-Bromofluorobenzene	88	(74 - 116)
	91	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

SEVERN TRENT STL

END OF REPORT

SEVERN TRENT STL

REC'D CRA
JUN 30 2003
SDG: 38

ANALYTICAL REPORT

PROJECT NO. 17360-01

GM GRAND RAPIDS METAL

Lot #: A3F120247

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

SEVERN TRENT LABORATORIES, INC.

ORIGINAL ANALYTICAL REPORT
Project#: 17360-01 Lab#: A3F120247
Name: GM GR
Description
Event:
Samples: 6 water
Analysis: VOC

TAT: 2 day
Lab: STL
Checked Against Preliminary Data:
Date: _____ Init.: _____
Date of Validation Memo: 10/21/03
Invoice Approval Date:
Comments:

Amy L. McCormick
Project Manager

June 27, 2003

1/1

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360-01

PROJECT NAME: GM Grand Rapids Metal

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Bart Williams

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
1	6/11/03	1043	GW-17360-061103-BW-012	H2O	2	X	48 hr TAT
2		1110	013		2	X	
3		1300	014		2	X	
4		1348	015		2	X	
5		1458	016		2	X	
			TR.P		1	X	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: 1. [signature]	DATE: 6/11/03 TIME: 1800	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FED EX

AIR BILL No.

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

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: [signature]

DATE: 6/12/03 TIME: 9:30

22420

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

SEVERN TRENT STL

CASE NARRATIVE

CASE NARRATIVE

A3F120247

The following report contains the analytical results for five water samples and one quality control sample submitted to STL North Canton by Conestoga-Rovers & Associates, Inc. from the GM Grand Rapids Metal Site, project number 17360-01. The samples were received June 12, 2003, according to documented sample acceptance procedures.

The samples presented in this report were analyzed for the parameter listed on the analytical methods summary page in accordance with the method indicated. Preliminary results were provided to the Chemistry Department on June 16, 2003. A summary of QC data for these analyses is included at the rear of the report.

STL utilizes USEPA approved methods in all analytical work. 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.

Amy McCormick
Project Manager

QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

QUALITY CONTROL ELEMENTS OF SW-846 METHODS
(Continued)

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

STL North Canton Certifications and Approvals:

Alabama (#41170), California (#2157), Connecticut (#PH-0590), Florida (#E87225), Illinois (#100439), Kansas (#E10336), Kentucky (#90021), Massachusetts (#M-OH048), Maryland (#272), Minnesota (#39-999-348), Missouri (#6090), New Jersey (#74001), New York (#10975), North Dakota (#R-156), Ohio (#6090), OhioVAP (#CL0024), Pennsylvania (#68-340), Rhode Island (#237), South Carolina (#92007001, #92007002, #92007003), Tennessee (#02903), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit, ACIL Seal of Excellence – Participating Lab Status Award (#82)

SEVERN TRENT STL

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A3F120247

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SEVERN TRENT STL

SAMPLE SUMMARY

SAMPLE SUMMARY

A3F120247

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FQFCL	001	GW-17360-061103-BW-012	06/11/03	10:43
FQFCN	002	GW-17360-061103-BW-013	06/11/03	11:10
FQFCQ	003	GW-17360-061103-BW-014	06/11/03	13:00
FQFCR	004	GW-17360-061103-BW-015	06/11/03	13:48
FQFCT	005	GW-17360-061103-BW-016	06/11/03	14:58
FQFCV	006	TRIP	06/11/03	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SEVERN TRENT STL

SHIPPING AND RECEIVING DOCUMENTS

1/1

CRA

CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL

CHAIN OF CUSTODY RECORD

REFERENCE NUMBER: 17360-01

PROJECT NAME: GM Grand Rapids Metal

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Bart Williams

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
1	6/11/03	1043	GW-17360-061103-BW-012	H2O	2	X	48 hr TAT
2		1110	013		2	X	
3		1300	014		2	X	
4		1348	015		2	X	
5		1458	016		2	X	
			TR.P		1	X	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: 1. [signature]	DATE: 6/11/03 TIME: 1800	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FED EX AIR BILL No.

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

22420

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: [signature]
DATE: 6/12/03 TIME: 9:30

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

STL North Canton

RSR280

Severn Trent Laboratories, Inc.
Sample Control Record

Client: 57787

Lot #: A3F120247

Case Number/SDG: 17360-01

Storage Location: MS

Laboratory Sample I.D.	Transferred By	Date	Entered	Removed	Reason	Date Returned
FQFCL	STILLERJ	6/12/03	Yes		Storage	
FQFCN	STILLERJ	6/12/03	Yes		Storage	
FQFCQ	STILLERJ	6/12/03	Yes		Storage	
FQFCR	STILLERJ	6/12/03	Yes		Storage	
FQFCT	STILLERJ	6/12/03	Yes		Storage	
FQFCV	STILLERJ	6/12/03	Yes		Storage	

STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A3F120247

Client: CRA Project: GM Grand Rapids Quote#: 45813

Cooler Received on: 6/12/03 Opened on: 6/12/03 by: JZ Miller (Signature)

Fedx ☒ Client Drop Off ☐ UPS ☐ Airborne ☐ Other:_____

Cooler ☒ Safe ☐ Foam Box ☐ Client Cooler ☐ Other:_____

STL Shipper No#: M-259

1. Were custody seals on the outside of the cooler? Yes ☐ No ☒ Intact? Yes ☐ No ☐ NA ☒
   If YES, Quantity_____ Location_____
   Were the custody seals signed and dated? Yes ☐ No ☐ NA ☒
2. Shipper's packing slip attached to this form? Yes ☒ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☒ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☒ No ☐
5. Packing material used:

Peanuts ☐ Bubble Wrap ☒ Vermiculite ☐ Foam ☐ None ☐ Other :_____

6. Cooler temperature upon receipt 2.9 °C (see back of form for multiple coolers/temp)

METHOD: Temp Vial ☐ Coolant & Sample ☐ Against Bottles ☐ IR ☒ ICE/H_2O Slurry ☐

COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐

7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☒ No ☐
9. Were samples at the correct pH? (record on back) Yes ☐ No ☐ NA ☒
10. Were correct bottles used for the tests indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Was a sufficient amount of sample sent in each bottle? Yes ☒ No ☐

Contacted PM _____ Date:_____ by:_____ via Voice Mail ☒ Verbal ☐ Other ☐

Concerning:_____

√	MACRO	MACRO
1. CHAIN OF CUSTODY		
	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred_____
2. SAMPLE CONDITION		
	SR2A	Sample(s)_____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
3. SAMPLE PRESERVATION		
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 012203-HNO3; Sulfuric Acid Lot # 112801-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 020501-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s)_____ were received with bubble > 6 mm in diameter (cc: PM)
4. Other (see below or back)		

SEVERN TRENT STL

GCMS VOLATILE DATA

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061103-BW-012

GC/MS Volatiles

Lot-Sample #...: A3F120247-001 Work Order #...: FQFCL1AA Matrix.....: WG
Date Sampled...: 06/11/03 10:43 Date Received..: 06/12/03
Prep Date.....: 06/14/03 Analysis Date..: 06/14/03
Prep Batch #...: 3166106
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	**9.3**	**1.0**	**ug/L**
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	**36**	**1.0**	**ug/L**
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	**4.7**	**1.0**	**ug/L**
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061103-BW-012

GC/MS Volatiles

Lot-Sample #...: A3F120247-001 **Work Order #...:** FQFCL1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(73 - 122)
1,2-Dichloroethane-d4	95	(61 - 128)
Toluene-d8	93	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061103-BW-013

GC/MS Volatiles

Lot-Sample #...: A3F120247-002 Work Order #...: FQFCN1AA Matrix.....: WG
Date Sampled...: 06/11/03 11:10 Date Received..: 06/12/03
Prep Date.....: 06/14/03 Analysis Date..: 06/14/03
Prep Batch #...: 3166106
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	**9.3**	**1.0**	**ug/L**
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	**35**	**1.0**	**ug/L**
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	**4.4**	**1.0**	**ug/L**
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061103-BW-013

GC/MS Volatiles

Lot-Sample #...: A3F120247-002 Work Order #...: FQFCN1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(73 - 122)
1,2-Dichloroethane-d4	96	(61 - 128)
Toluene-d8	93	(76 - 110)
4-Bromofluorobenzene	75	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061103-BW-014

GC/MS Volatiles

Lot-Sample #...: A3F120247-003 Work Order #...: FQFCQ1AA Matrix.....: WG
Date Sampled...: 06/11/03 13:00 Date Received..: 06/12/03
Prep Date.....: 06/14/03 Analysis Date..: 06/14/03
Prep Batch #...: 3166106
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	**9.3**	**1.0**	**ug/L**
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	**37**	**1.0**	**ug/L**
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	**3.7**	**1.0**	**ug/L**
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

(Continued on next page)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061103-BW-014

GC/MS Volatiles

Lot-Sample #...: A3F120247-003 Work Order #...: FQFCQ1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(73 - 122)
1,2-Dichloroethane-d4	95	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	79	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061103-BW-015

GC/MS Volatiles

Lot-Sample #...: A3F120247-004 Work Order #...: FQFCR1AA Matrix.....: WG
Date Sampled...: 06/11/03 13:48 Date Received..: 06/12/03
Prep Date.....: 06/14/03 Analysis Date..: 06/14/03
Prep Batch #...: 3166106
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	**2.4**	**1.0**	**ug/L**
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061103-BW-015

GC/MS Volatiles

Lot-Sample #...: A3F120247-004 **Work Order #...:** FQFCR1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**1.4**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(73 - 122)
1,2-Dichloroethane-d4	97	(61 - 128)
Toluene-d8	93	(76 - 110)
4-Bromofluorobenzene	78	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061103-BW-016

GC/MS Volatiles

Lot-Sample #...: A3F120247-005 Work Order #...: FQFCT1AA Matrix.....: WG
Date Sampled...: 06/11/03 14:58 Date Received..: 06/12/03
Prep Date.....: 06/14/03 Analysis Date..: 06/14/03
Prep Batch #...: 3166106
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	**2.4**	**1.0**	**ug/L**
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	**11**	**1.0**	**ug/L**
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	**1.1**	**1.0**	**ug/L**
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061103-BW-016

GC/MS Volatiles

Lot-Sample #...: A3F120247-005 Work Order #...: FQFCT1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	91	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP

GC/MS Volatiles

Lot-Sample #...: A3F120247-006 **Work Order #...:** FQFCV1AA **Matrix.....:** WQ
Date Sampled...: 06/11/03 **Date Received..:** 06/12/03
Prep Date.....: 06/14/03 **Analysis Date..:** 06/14/03
Prep Batch #...: 3166106
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP

GC/MS Volatiles

Lot-Sample #...: A3F120247-006 **Work Order #...:** FQFCV1AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(73 - 122)
1,2-Dichloroethane-d4	96	(61 - 128)
Toluene-d8	94	(76 - 110)
4-Bromofluorobenzene	78	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F120247 **Work Order #...:** FQK3R1AA **Matrix.....:** WATER
MB Lot-Sample #: A3F150000-106

Prep Date.....: 06/14/03 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 06/14/03 **Prep Batch #...:** 3166106
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F120247 **Work Order #...:** FQK3R1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(73 - 122)
1,2-Dichloroethane-d4	95	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	78	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F120247 **Work Order #...:** FQK3R1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3F150000-106 FQK3R1AD-LCSD
Prep Date.....: 06/14/03 **Analysis Date..:** 06/14/03
Prep Batch #...: 3166106
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10**	**10**	**ug/L**	**103**		**SW846 8260B**
	10	**10**	**ug/L**	**100**	**3.5**	**SW846 8260B**
Chlorobenzene	**10**	**11**	**ug/L**	**110**		**SW846 8260B**
	10	**10**	**ug/L**	**104**	**5.7**	**SW846 8260B**
1,1-Dichloroethene	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	10	**10**	**ug/L**	**101**	**1.5**	**SW846 8260B**
Toluene	**10**	**10**	**ug/L**	**104**		**SW846 8260B**
	10	**10**	**ug/L**	**100**	**3.8**	**SW846 8260B**
Trichloroethene	**10**	**10**	**ug/L**	**104**		**SW846 8260B**
	10	**10**	**ug/L**	**100**	**3.8**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
	103	(73 - 122)
1,2-Dichloroethane-d4	96	(61 - 128)
	96	(61 - 128)
Toluene-d8	98	(76 - 110)
	99	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)
	92	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F120247 **Work Order #...:** FQK3R1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3F150000-106 FQK3R1AD-LCSD
Prep Date.....: 06/14/03 **Analysis Date..:** 06/14/03
Prep Batch #...: 3166106
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**103**	**(80 - 116)**			**SW846 8260B**
	100	**(80 - 116)**	**3.5**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**110**	**(76 - 117)**			**SW846 8260B**
	104	**(76 - 117)**	**5.7**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**100**	**(63 - 130)**			**SW846 8260B**
	101	**(63 - 130)**	**1.5**	**(0-20)**	**SW846 8260B**
Toluene	**104**	**(74 - 119)**			**SW846 8260B**
	100	**(74 - 119)**	**3.8**	**(0-20)**	**SW846 8260B**
Trichloroethene	**104**	**(75 - 122)**			**SW846 8260B**
	100	**(75 - 122)**	**3.8**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
	103	(73 - 122)
1,2-Dichloroethane-d4	96	(61 - 128)
	96	(61 - 128)
Toluene-d8	98	(76 - 110)
	99	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)
	92	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F120247 **Work Order #...:** FP2C41AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A3F050302-006 FP2C41AD-MSD
Date Sampled...: 06/04/03 14:45 **Date Received..:** 06/05/03
Prep Date.....: 06/14/03 **Analysis Date..:** 06/14/03
Prep Batch #...: 3166106
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10**	**10**	**ug/L**	**104**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**107**	**3.4**	**SW846 8260B**
Chlorobenzene	**ND**	**10**	**10**	**ug/L**	**102**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**104**	**2.1**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10**	**11**	**ug/L**	**106**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**110**	**3.5**	**SW846 8260B**
Toluene	**ND**	**10**	**10**	**ug/L**	**98**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**100**	**1.4**	**SW846 8260B**
Trichloroethene	**ND**	**10**	**10**	**ug/L**	**104**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**108**	**3.1**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(73 - 122)
	109	(73 - 122)
1,2-Dichloroethane-d4	102	(61 - 128)
	104	(61 - 128)
Toluene-d8	97	(76 - 110)
	98	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)
	88	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F120247 **Work Order #...:** FP2C41AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A3F050302-006 FP2C41AD-MSD
Date Sampled...: 06/04/03 14:45 **Date Received..:** 06/05/03
Prep Date.....: 06/14/03 **Analysis Date..:** 06/14/03
Prep Batch #...: 3166106
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**104**	**(78 - 118)**			**SW846 8260B**
	107	**(78 - 118)**	**3.4**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**102**	**(76 - 117)**			**SW846 8260B**
	104	**(76 - 117)**	**2.1**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**106**	**(62 - 130)**			**SW846 8260B**
	110	**(62 - 130)**	**3.5**	**(0-20)**	**SW846 8260B**
Toluene	**98**	**(70 - 119)**			**SW846 8260B**
	100	**(70 - 119)**	**1.4**	**(0-20)**	**SW846 8260B**
Trichloroethene	**104**	**(62 - 130)**			**SW846 8260B**
	108	**(62 - 130)**	**3.1**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(73 - 122)
	109	(73 - 122)
1,2-Dichloroethane-d4	102	(61 - 128)
	104	(61 - 128)
Toluene-d8	97	(76 - 110)
	98	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)
	88	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F120247 **Work Order #...:** FP2C41AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A3F050302-006 FP2C41AD-MSD
Date Sampled...: 06/04/03 14:45 **Date Received..:** 06/05/03
Prep Date.....: 06/14/03 **Analysis Date..:** 06/14/03
Prep Batch #...: 3166106
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	10	10	ug/L	104		SW846 8260B
	ND	10	11	ug/L	107	3.4	SW846 8260B
Chlorobenzene	ND	10	10	ug/L	102		SW846 8260B
	ND	10	10	ug/L	104	2.1	SW846 8260B
1,1-Dichloroethene	ND	10	11	ug/L	106		SW846 8260B
	ND	10	11	ug/L	110	3.5	SW846 8260B
Toluene	ND	10	10	ug/L	98		SW846 8260B
	ND	10	10	ug/L	100	1.4	SW846 8260B
Trichloroethene	ND	10	10	ug/L	104		SW846 8260B
	ND	10	11	ug/L	108	3.1	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(73 - 122)
	109	(73 - 122)
1,2-Dichloroethane-d4	102	(61 - 128)
	104	(61 - 128)
Toluene-d8	97	(76 - 110)
	98	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)
	88	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...:	A3F120247	**Work Order #...:**	FP2C41AC-MS	**Matrix.....:**	WATER
MS Lot-Sample #:	A3F050302-006		FP2C41AD-MSD		
Date Sampled...:	06/04/03 14:45	**Date Received..:**	06/05/03		
Prep Date.....:	06/14/03	**Analysis Date..:**	06/14/03		
Prep Batch #...:	3166106				
Dilution Factor:	1	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**104**	**(78 - 118)**			**SW846 8260B**
	107	**(78 - 118)**	**3.4**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**102**	**(76 - 117)**			**SW846 8260B**
	104	**(76 - 117)**	**2.1**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**106**	**(62 - 130)**			**SW846 8260B**
	110	**(62 - 130)**	**3.5**	**(0-20)**	**SW846 8260B**
Toluene	**98**	**(70 - 119)**			**SW846 8260B**
	100	**(70 - 119)**	**1.4**	**(0-20)**	**SW846 8260B**
Trichloroethene	**104**	**(62 - 130)**			**SW846 8260B**
	108	**(62 - 130)**	**3.1**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(73 - 122)
	109	(73 - 122)
1,2-Dichloroethane-d4	102	(61 - 128)
	104	(61 - 128)
Toluene-d8	97	(76 - 110)
	98	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)
	88	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

SEVERN TRENT STL

END OF REPORT

SEVERN TRENT STL

REC'D CRA
JUL - 1 2003
SDG: 39

ANALYTICAL REPORT

PROJECT NO. 17360

GM GRAND RAPIDS METAL

Lot #: A3F130153

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

SEVERN TRENT LABORATORIES, INC.

ORIGINAL ANALYTICAL REPORT
Project#: 17360 Lab#: A3F130153
Name: GMGR
Description
Event:
Samples: 4 water
Analysis: TCL VOC
TAT: 2 day
Lab: STL
Checked Against Preliminary Data:
Date: Init.:
Date of Validation Memo: 10/21/03
Invoice Approval Date:
Comments:

Amy L. McCormick
Project Manager

June 27, 2003

Severn Trent Laboratories, Inc.
STL North Canton • 4101 Shuffel Drive NW, North Canton, OH 44720
Tel 330 497 9396 Fax 330 497 0772 • www.stl-inc.com

A part of Severn Trent plc

1/1

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360

PROJECT NAME: GM Grand Rapids Metal

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Bart Williams

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS: 48 hr TAT
	6/12/03	1030	GW-17360-06/203-BW-017	H2O	3	Y	
	↓	1130	↓ 018	↓	3	X	
	↓	1250	↓ 019	↓	2	X	
			Trip Blank	↓	1	Y	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: 1. [signature]	DATE: 6/12/03 TIME: 1500	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FED. EX

AIR BILL No.

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

22419

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: Anne Sandles
DATE: 6/13/03 TIME: 730 950

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

SEVERN TRENT STL

CASE NARRATIVE

CASE NARRATIVE

A3F130153

The following report contains the analytical results for three water samples and one quality control sample submitted to STL North Canton by Conestoga-Rovers & Associates, Inc. from the GM Grand Rapids Metal Site, project number 17360. The samples were received June 13, 2003, according to documented sample acceptance procedures.

The samples presented in this report were analyzed for the parameter listed on the analytical methods summary page in accordance with the method indicated. Preliminary results were provided to the Chemistry Department on June 17, 2003. A summary of QC data for these analyses is included at the rear of the report.

STL utilizes USEPA approved methods in all analytical work. 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.

Amy McCormick
Project Manager

QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

QUALITY CONTROL ELEMENTS OF SW-846 METHODS
(Continued)

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

STL North Canton Certifications and Approvals:

Alabama (#41170), California (#2157), Connecticut (#PH-0590), Florida (#E87225), Illinois (#100439), Kansas (#E10336), Kentucky (#90021), Massachusetts (#M-OH048), Maryland (#272), Minnesota (#39-999-348), Missouri (#6090), New Jersey (#74001), New York (#10975), North Dakota (#R-156), Ohio (#6090), OhioVAP (#CL0024), Pennsylvania (#68-340), Rhode Island (#237), South Carolina (#92007001, #92007002, #92007003), Tennessee (#02903), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit, ACIL Seal of Excellence – Participating Lab Status Award (#82)

SEVERN TRENT STL

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A3F130153

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SEVERN TRENT STL

SAMPLE SUMMARY

SAMPLE SUMMARY

A3F130153

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FQG8T	001	GW-17360-061203-BW-017	06/12/03	10:30
FQG8V	002	GW-17360-061203-BW-018	06/12/03	11:30
FQG8X	003	GW-17360-061203-BW-019	06/12/03	12:50
FQG80	004	TRIP BLANK	06/12/03	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SEVERN TRENT STL

SHIPPING AND RECEIVING DOCUMENTS

1/1

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360

PROJECT NAME: GM Grand Rapids Metal

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: BART WILLIAMS

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
	6/12/03	1030	GW-17360-061203-BW-017	H2O	3	Y	48 hr TAT
	↓	1130	↓ 018	↓	3	X	
	↓	1250	↓ 019	↓	2	Y	
			Trip Blank	↓	1	Y	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: 1. [signature]	DATE: 6/12/03 TIME: 1500	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FED EX AIR BILL No.

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

22419

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: Anne Sanders
DATE: 6/13/03 TIME: 7350

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

11

STL North Canton

RSR280

Severn Trent Laboratories, Inc.
Sample Control Record

Client: 57787

Lot #: A3F130153

Case Number/SDG: 17360

Storage Location: MS

Laboratory Sample I.D.	Transferred By	Date	Entered	Removed	Reason	Date Returned
FQG8T	BURNST	6/13/03	Yes		Storage	
FQG8V	BURNST	6/13/03	Yes		Storage	
FQG8X	BURNST	6/13/03	Yes		Storage	
FQG80	BURNST	6/13/03	Yes		Storage	

STL Cooler Receipt Form/Narrative

Lot Number: A3F130153

North Canton Facility

Client: CTA Project: GM ERD Quote#:

Cooler Received on: 6/13/03 Opened on: 6/13/03 by: (Signature)

Fedex ☒ Client Drop Off ☐ UPS ☐ Airborne ☐ Other:_____

Cooler ☒ Safe ☐ Foam Box ☐ Client Cooler ☐ Other:_____

STL Shipper No#: N/A

1. Were custody seals on the outside of the cooler? Yes ☐ No ☑ Intact? Yes ☐ No ☐ NA ☑
   If YES, Quantity_____ Location_____
   Were the custody seals signed and dated? Yes ☐ No ☐ NA ☑
2. Shipper's packing slip attached to this form? Yes ☑ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☑ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☑ No ☐
5. Packing material used:
   Peanuts ☐ Bubble Wrap ☒ Vermiculite ☐ Foam ☒ None ☐ Other :_____
6. Cooler temperature upon receipt 2.8 °C (see back of form for multiple coolers/temp)

METHOD: Temp Vial ☒ Coolant & Sample ☐ Against Bottles ☐ IR ☐ ICE/H_2O Slurry ☐

COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐

7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☑ No ☐
9. Were samples at the correct pH? (record on back) Yes ☐ No ☐ NA ☑
10. Were correct bottles used for the tests indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☐
12. Was a sufficient amount of sample sent in each bottle? Yes ☑ No ☐

Contacted PM _____ Date:_____ by:_____ via Voice Mail ☐ Verbal ☐ Other ☐

Concerning:_____

√	MACRO	MACRO
	1. CHAIN OF CUSTODY	
	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred_____
	2. SAMPLE CONDITION	
	SR2A	Sample(s)_____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
	3. SAMPLE PRESERVATION	
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 012203-HNO3; Sulfuric Acid Lot # 112801-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 020501-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s)_____ were received with bubble > 6 mm in diameter (cc: PM)
	4. Other (see below or back)	

SEVERN TRENT STL

GCMS VOLATILE DATA

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061203-BW-017

GC/MS Volatiles

Lot-Sample #...: A3F130153-001 **Work Order #...:** FQG8T1AA **Matrix.....:** WG
Date Sampled...: 06/12/03 10:30 **Date Received..:** 06/13/03
Prep Date.....: 06/17/03 **Analysis Date..:** 06/17/03
Prep Batch #...: 3168243
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

(Continued on next page)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061203-BW-017

GC/MS Volatiles

Lot-Sample #...: A3F130153-001 Work Order #...: FQG8T1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**31**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	3.0	ug/L
Xylenes (total)			

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(73 - 122)
1,2-Dichloroethane-d4	98	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	89	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061203-BW-018

GC/MS Volatiles

Lot-Sample #...: A3F130153-002 **Work Order #...:** FQG8V1AA **Matrix.....:** WG
Date Sampled...: 06/12/03 11:30 **Date Received..:** 06/13/03
Prep Date.....: 06/17/03 **Analysis Date..:** 06/17/03
Prep Batch #...: 3168243
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

(Continued on next page)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061203-BW-018

GC/MS Volatiles

Lot-Sample #...: A3F130153-002 **Work Order #...:** FQG8V1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**7.2**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
1,2-Dichloroethane-d4	96	(61 - 128)
Toluene-d8	102	(76 - 110)
4-Bromofluorobenzene	91	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061203-BW-019

GC/MS Volatiles

Lot-Sample #...:	A3F130153-003	**Work Order #...:**	FQG8X1AA	**Matrix.....:**	WG
Date Sampled...:	06/12/03 12:50	**Date Received..:**	06/13/03		
Prep Date.....:	06/17/03	**Analysis Date..:**	06/17/03		
Prep Batch #...:	3168243				
Dilution Factor:	1	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

(Continued on next page)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061203-BW-019

GC/MS Volatiles

Lot-Sample #...: A3F130153-003 **Work Order #...:** FQG8X1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(73 - 122)
1,2-Dichloroethane-d4	95	(61 - 128)
Toluene-d8	94	(76 - 110)
4-Bromofluorobenzene	85	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...:	A3F130153-004	**Work Order #...:**	FQG801AA	**Matrix.....:**	WQ
Date Sampled...:	06/12/03	**Date Received..:**	06/13/03		
Prep Date.....:	06/17/03	**Analysis Date..:**	06/17/03		
Prep Batch #...:	3168243				
Dilution Factor:	1	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A3F130153-004 **Work Order #...:** FQG801AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
1,2-Dichloroethane-d4	98	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	89	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F130153 **Work Order #...:** FQMLT1AA **Matrix.....:** WATER
MB Lot-Sample #: A3F170000-243

Prep Date.....: 06/17/03 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 06/17/03 **Prep Batch #...:** 3168243
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F130153 **Work Order #...:** FQMLT1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(73 - 122)
1,2-Dichloroethane-d4	99	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F130153 **Work Order #...:** FQMLT1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3F170000-243 FQMLT1AD-LCSD
Prep Date.....: 06/17/03 **Analysis Date..:** 06/17/03
Prep Batch #...: 3168243
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10**	**9.4**	**ug/L**	**94**		**SW846 8260B**
	10	**9.9**	**ug/L**	**99**	**5.4**	**SW846 8260B**
Chlorobenzene	**10**	**9.8**	**ug/L**	**98**		**SW846 8260B**
	10	**10**	**ug/L**	**101**	**2.5**	**SW846 8260B**
1,1-Dichloroethene	**10**	**9.9**	**ug/L**	**99**		**SW846 8260B**
	10	**10**	**ug/L**	**104**	**4.7**	**SW846 8260B**
Toluene	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	10	**11**	**ug/L**	**105**	**5.2**	**SW846 8260B**
Trichloroethene	**10**	**9.5**	**ug/L**	**95**		**SW846 8260B**
	10	**9.9**	**ug/L**	**99**	**4.4**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
	103	(73 - 122)
1,2-Dichloroethane-d4	92	(61 - 128)
	100	(61 - 128)
Toluene-d8	105	(76 - 110)
	105	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F130153 **Work Order #...:** FQMLT1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3F170000-243 FQMLT1AD-LCSD
Prep Date.....: 06/17/03 **Analysis Date..:** 06/17/03
Prep Batch #...: 3168243
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**94**	**(80 - 116)**			**SW846 8260B**
	99	**(80 - 116)**	**5.4**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**98**	**(76 - 117)**			**SW846 8260B**
	101	**(76 - 117)**	**2.5**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**99**	**(63 - 130)**			**SW846 8260B**
	104	**(63 - 130)**	**4.7**	**(0-20)**	**SW846 8260B**
Toluene	**100**	**(74 - 119)**			**SW846 8260B**
	105	**(74 - 119)**	**5.2**	**(0-20)**	**SW846 8260B**
Trichloroethene	**95**	**(75 - 122)**			**SW846 8260B**
	99	**(75 - 122)**	**4.4**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
	103	(73 - 122)
1,2-Dichloroethane-d4	92	(61 - 128)
	100	(61 - 128)
Toluene-d8	105	(76 - 110)
	105	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)
	103	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F130153 **Work Order #...:** FQA391AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A3F110189-003 FQA391AD-MSD
Date Sampled...: 06/10/03 14:58 **Date Received..:** 06/11/03
Prep Date.....: 06/17/03 **Analysis Date..:** 06/17/03
Prep Batch #...: 3168243
Dilution Factor: 20 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	200	200	ug/L	98		SW846 8260B
	ND	200	200	ug/L	100	1.9	SW846 8260B
Chlorobenzene	ND	200	190	ug/L	96		SW846 8260B
	ND	200	200	ug/L	98	2.0	SW846 8260B
1,1-Dichloroethene	ND	200	220	ug/L	108		SW846 8260B
	ND	200	210	ug/L	105	2.5	SW846 8260B
Toluene	ND	200	200	ug/L	100		SW846 8260B
	ND	200	200	ug/L	101	1.2	SW846 8260B
Trichloroethene	ND	200	210	ug/L	99		SW846 8260B
	ND	200	210	ug/L	99	0.26	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
	105	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
	103	(61 - 128)
Toluene-d8	102	(76 - 110)
	102	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)
	99	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...:	A3F130153	**Work Order #...:**	FQA391AC-MS	**Matrix.....:**	WATER
MS Lot-Sample #:	A3F110189-003		FQA391AD-MSD		
Date Sampled...:	06/10/03 14:58	**Date Received..:**	06/11/03		
Prep Date.....:	06/17/03	**Analysis Date..:**	06/17/03		
Prep Batch #...:	3168243				
Dilution Factor:	20	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**98**	**(78 - 118)**			**SW846 8260B**
	100	**(78 - 118)**	**1.9**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**96**	**(76 - 117)**			**SW846 8260B**
	98	**(76 - 117)**	**2.0**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**108**	**(62 - 130)**			**SW846 8260B**
	105	**(62 - 130)**	**2.5**	**(0-20)**	**SW846 8260B**
Toluene	**100**	**(70 - 119)**			**SW846 8260B**
	101	**(70 - 119)**	**1.2**	**(0-20)**	**SW846 8260B**
Trichloroethene	**99**	**(62 - 130)**			**SW846 8260B**
	99	**(62 - 130)**	**0.26**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
	105	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
	103	(61 - 128)
Toluene-d8	102	(76 - 110)
	102	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)
	99	(74 - 116)

NOTE(S):

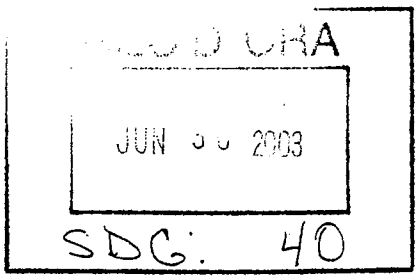
Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

SEVERN TRENT STL

END OF REPORT

SEVERN TRENT STL



ANALYTICAL REPORT

PROJECT NO. 17360

GM G.RAPIDS METAL

Lot #: A3F140121

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

SEVERN TRENT LABORATORIES, INC.

Amy L. McCormick
Project Manager

June 27, 2003

ORIGINAL ANALYTICAL REPORT
Project#: 17360 Lab#: A3F140121
Name: GM GR
Description
Event:
Samples: 6 water
Analysis: TCL VOC
TAT: 2 day
Lab: STL
Checked Against Preliminary Data:
Date: Init.:
Date of Validation Memo: 10/21/03
Invoice Approval Date:
Comments:

1/1

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360

PROJECT NAME: GM G. Rapids Metal

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Bart Williams

SEQ. No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
	6/13/03	0840	GW-17360-061303-BW-020	H2O	3	X	48 hr TAT
		0846	021		3	X	
		0935	022		6	X	MS/MSD
		0946	023		2	X	
		1020	024		3	X	
			Trip Blank		1	X	

BW

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
1. [signature]	6/13/03	1300	1.		
2. RELINQUISHED BY:			2. RECEIVED BY:		
3. RELINQUISHED BY:			1. RECEIVED BY:		

METHOD OF SHIPMENT: FedEx AIR BILL No.

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

22418

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: Anne Sanders
DATE: 6/14/03 TIME: 945

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

SEVERN TRENT STL

CASE NARRATIVE

CASE NARRATIVE

A3F140121

The following report contains the analytical results for five water samples and one quality control sample submitted to STL North Canton by Conestoga-Rovers & Associates, Inc. from the GM G. Rapids Metal Site, project number 17360. The samples were received June 14, 2003, according to documented sample acceptance procedures.

The samples presented in this report were analyzed for the parameter listed on the analytical methods summary page in accordance with the method indicated. Preliminary results were provided to the Chemistry Department on June 19, 2003. A summary of QC data for these analyses is included at the rear of the report.

STL utilizes USEPA approved methods in all analytical work. 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.

Amy McCormick
Project Manager

QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

SEVERN TRENT STL

METHOD REFERENCE

ANALYTICAL METHODS SUMMARY

A3F140121

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SEVERN TRENT STL

SAMPLE SUMMARY

SAMPLE SUMMARY

A3F140121

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FQKHQ	001	GW-17360-061303-BW-020	06/13/03	08:40
FQKHV	002	GW-17360-061303-BW-021	06/13/03	08:46
FQKHW	003	GW-17360-061303-BW-022	06/13/03	09:35
FQKHX	004	GW-17360-061303-BW-023	06/13/03	09:46
FQKH0	005	GW-17360-061303-BW-024	06/13/03	10:20
FQKH2	006	TRIP BLANK	06/13/03	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SEVERN TRENT STL

SHIPPING AND RECEIVING DOCUMENTS

1/1

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360

PROJECT NAME: GM G. Rapids Metal

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Bart Williams

SEQ. No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
	6/13/03	0840	GW-17360-061303-BW-020	H2O	3	X	48 hr TAT
		0846	021		3	X	
		0935	022		6	X	MS/MSD
		0946	023		2	X	
		1020	024		3	X	
			Trip Blank		1	X	

BW

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: 1. [signature]	DATE: 6/13/03 TIME: 1300	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FEDEX AIR BILL No.

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

22410

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: Annie Sanders
DATE: 6/14/03 TIME: 9:45

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

STL North Canton

11

RSR280

Severn Trent Laboratories, Inc.
Sample Control Record

Client: 57787

Lot #: A3F140121

Case Number/SDG: 17360

Storage Location: MS

Laboratory Sample I.D.	Transferred By	Date	Entered	Removed	Reason	Date Returned
FQKHQ	SANDERSA	6/14/03	Yes		Storage	
FQKHV	SANDERSA	6/14/03	Yes		Storage	
FQKHW	SANDERSA	6/14/03	Yes		Storage	
FQKHX	SANDERSA	6/14/03	Yes		Storage	
FQKH0	SANDERSA	6/14/03	Yes		Storage	
FQKH2	SANDERSA	6/14/03	Yes		Storage	

STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: ~~[illegible]~~ A3K140121

Client: CRA Project: Grand Rapids Quote#: _____

Cooler Received on: 12/14/03 Opened on: 12/14/03 by: [signature] (Signature)

Fedx ☑ Client Drop Off ☐ UPS ☐ Airborne ☐ Other: _____

Cooler ☑ Safe ☐ Foam Box ☐ Client Cooler ☐ Other: _____

STL Shipper No#: 11-3602

1. Were custody seals on the outside of the cooler? Yes ☐ No ☑ Intact? Yes ☐ No ☐ NA ☑
   If YES, Quantity _____ Location _____
   Were the custody seals signed and dated? Yes ☐ No ☐ NA ☑
2. Shipper's packing slip attached to this form? Yes ☑ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☑ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☑ No ☐
5. Packing material used:
   Peanuts ☐ Bubble Wrap ☑ Vermiculite ☐ Foam ☐ None ☐ Other: _____
6. Cooler temperature upon receipt 4.1 °C (see back of form for multiple coolers/temp)
   METHOD: Temp Vial ☐ Coolant & Sample ☐ Against Bottles ☐ IR ☑ ICE/H_2O Slurry ☐
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☑ No ☐
9. Were samples at the correct pH? (record on back) Yes ☐ No ☐ NA ☑
10. Were correct bottles used for the tests indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☑ NA ☐
12. Was a sufficient amount of sample sent in each bottle? Yes ☑ No ☐

Contacted PM _____ Date: _____ by: _____ via Voice Mail ☐ Verbal ☐ Other ☐

Concerning: _____

√	MACRO	MACRO
1. CHAIN OF CUSTODY		
	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred _____
2. SAMPLE CONDITION		
	SR2A	Sample(s) _____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
3. SAMPLE PRESERVATION		
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 012203-HNO3; Sulfuric Acid Lot # 112801-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 020501-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s) _____ were received with bubble > 6 mm in diameter (cc: PM)
4. Other (see below or back)		

STL Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler	Temp	Method	Coolant

Discrepancies Cont.

Macro Name:

Macro Name:

Macro Name:

Other Anomalies:

SEVERN TRENT STL

GCMS VOLATILE DATA

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061303-BW-020

GC/MS Volatiles

Lot-Sample #...: A3F140121-001 **Work Order #...:** FQKHQ1AA **Matrix.....:** WG
Date Sampled...: 06/13/03 08:40 **Date Received..:** 06/14/03
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3169338
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

(Continued on next page)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061303-BW-020

GC/MS Volatiles

Lot-Sample #...: A3F140121-001 **Work Order #...:** FQKHQ1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**7.0**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**3.8**	**1.0**	**ug/L**
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(73 - 122)
1,2-Dichloroethane-d4	106	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	95	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061303-BW-021

GC/MS Volatiles

Lot-Sample #...: A3F140121-002 **Work Order #...:** FQKHV1AA **Matrix.....:** WG
Date Sampled...: 06/13/03 08:46 **Date Received..:** 06/14/03
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3169338
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061303-BW-021

GC/MS Volatiles

Lot-Sample #...: A3F140121-002 **Work Order #...:** FQKHV1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**7.1**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**3.8**	**1.0**	**ug/L**
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
1,2-Dichloroethane-d4	105	(61 - 128)
Toluene-d8	103	(76 - 110)
4-Bromofluorobenzene	94	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061303-BW-022

GC/MS Volatiles

Lot-Sample #...: A3F140121-003 Work Order #...: FQKHW1AA Matrix.....: WG
Date Sampled...: 06/13/03 09:35 Date Received..: 06/14/03
Prep Date.....: 06/18/03 Analysis Date..: 06/18/03
Prep Batch #...: 3169338
Dilution Factor: 2 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	50	ug/L
Benzene	ND	2.0	ug/L
Bromodichloromethane	ND	2.0	ug/L
Bromoform	ND	2.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	50	ug/L
Carbon disulfide	ND	10	ug/L
Carbon tetrachloride	ND	2.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	2.0	ug/L
Chloromethane	ND	2.0	ug/L
Cyclohexane	ND	2.0	ug/L
Dibromochloromethane	ND	2.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L
1,2-Dibromoethane	ND	2.0	ug/L
1,2-Dichlorobenzene	ND	2.0	ug/L
1,3-Dichlorobenzene	ND	2.0	ug/L
1,4-Dichlorobenzene	ND	2.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	2.0	ug/L
1,2-Dichloroethane	ND	2.0	ug/L
1,1-Dichloroethene	ND	2.0	ug/L
cis-1,2-Dichloroethene	ND	2.0	ug/L
trans-1,2-Dichloroethene	ND	2.0	ug/L
1,2-Dichloropropane	ND	2.0	ug/L
cis-1,3-Dichloropropene	ND	2.0	ug/L
trans-1,3-Dichloropropene	ND	2.0	ug/L
Ethylbenzene	ND	2.0	ug/L
2-Hexanone	ND	100	ug/L
Isopropylbenzene	ND	10	ug/L
Methyl acetate	ND	20	ug/L
Methylene chloride	ND	10	ug/L
Methylcyclohexane	ND	2.0	ug/L
4-Methyl-2-pentanone	ND	100	ug/L
Methyl tert-butyl ether	ND	10	ug/L
Styrene	ND	2.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061303-BW-022

GC/MS Volatiles

Lot-Sample #...: A3F140121-003 **Work Order #...:** FQKHW1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L
Tetrachloroethene	**66**	**2.0**	**ug/L**
Toluene	ND	2.0	ug/L
1,2,4-Trichloro-benzene	ND	10	ug/L
1,1,1-Trichloroethane	ND	2.0	ug/L
1,1,2-Trichloroethane	ND	2.0	ug/L
Trichloroethene	**2.2**	**2.0**	**ug/L**
Trichlorofluoromethane	ND	2.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	6.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	91	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061303-BW-023

GC/MS Volatiles

Lot-Sample #...: A3F140121-004 **Work Order #...:** FQKHX1AA **Matrix.....:** WG
Date Sampled...: 06/13/03 09:46 **Date Received..:** 06/14/03
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3169338
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061303-BW-023

GC/MS Volatiles

Lot-Sample #...: A3F140121-004 **Work Order #...:** FQKHX1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(73 - 122)
1,2-Dichloroethane-d4	107	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	90	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061303-BW-024

GC/MS Volatiles

Lot-Sample #...: A3F140121-005 Work Order #...: FQKH01AA Matrix.....: WG
Date Sampled...: 06/13/03 10:20 Date Received..: 06/14/03
Prep Date.....: 06/18/03 Analysis Date..: 06/18/03
Prep Batch #...: 3169338
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	**1.7**	**1.0**	**ug/L**
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061303-BW-024

GC/MS Volatiles

Lot-Sample #...: A3F140121-005 **Work Order #...:** FQKH01AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**1.5**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
Toluene-d8	102	(76 - 110)
4-Bromofluorobenzene	91	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A3F140121-006 **Work Order #...:** FQKH21AA **Matrix.....:** WQ
Date Sampled...: 06/13/03 **Date Received..:** 06/14/03
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3169338
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A3F140121-006 **Work Order #...:** FQKH21AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(73 - 122)
1,2-Dichloroethane-d4	102	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	91	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F140121 **Work Order #...:** FQQD11AA **Matrix.....:** WATER
MB Lot-Sample #: A3F180000-338

Prep Date.....: 06/18/03 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 06/18/03 **Prep Batch #...:** 3169338
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F140121 **Work Order #...:** FQQD11AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
1,2-Dichloroethane-d4	102	(61 - 128)
Toluene-d8	103	(76 - 110)
4-Bromofluorobenzene	89	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F140121 **Work Order #...:** FQQD11AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3F180000-338 FQQD11AD-LCSD
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3169338
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	10	10	ug/L	102		SW846 8260B
	10	10	ug/L	103	1.1	SW846 8260B
Chlorobenzene	10	10	ug/L	102		SW846 8260B
	10	10	ug/L	103	0.95	SW846 8260B
1,1-Dichloroethene	10	9.9	ug/L	99		SW846 8260B
	10	10	ug/L	100	0.71	SW846 8260B
Toluene	10	10	ug/L	103		SW846 8260B
	10	10	ug/L	104	1.1	SW846 8260B
Trichloroethene	10	9.9	ug/L	99		SW846 8260B
	10	10	ug/L	101	1.2	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
	101	(73 - 122)
1,2-Dichloroethane-d4	100	(61 - 128)
	105	(61 - 128)
Toluene-d8	104	(76 - 110)
	103	(76 - 110)
4-Bromofluorobenzene	101	(74 - 116)
	104	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F140121 **Work Order #...:** FQQD11AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3F180000-338 FQQD11AD-LCSD
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3169338
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**102**	**(80 - 116)**			**SW846 8260B**
	103	**(80 - 116)**	**1.1**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**102**	**(76 - 117)**			**SW846 8260B**
	103	**(76 - 117)**	**0.95**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**99**	**(63 - 130)**			**SW846 8260B**
	100	**(63 - 130)**	**0.71**	**(0-20)**	**SW846 8260B**
Toluene	**103**	**(74 - 119)**			**SW846 8260B**
	104	**(74 - 119)**	**1.1**	**(0-20)**	**SW846 8260B**
Trichloroethene	**99**	**(75 - 122)**			**SW846 8260B**
	101	**(75 - 122)**	**1.2**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
	101	(73 - 122)
1,2-Dichloroethane-d4	100	(61 - 128)
	105	(61 - 128)
Toluene-d8	104	(76 - 110)
	103	(76 - 110)
4-Bromofluorobenzene	101	(74 - 116)
	104	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F140121 **Work Order #...:** FQKHW1AC-MS **Matrix.....:** WG
MS Lot-Sample #: A3F140121-003 FQKHW1AD-MSD
Date Sampled...: 06/13/03 09:35 **Date Received..:** 06/14/03
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3169338
Dilution Factor: 2 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**20**	**21**	**ug/L**	**101**		**SW846 8260B**
	ND	**20**	**21**	**ug/L**	**103**	**1.4**	**SW846 8260B**
Chlorobenzene	**ND**	**20**	**21**	**ug/L**	**103**		**SW846 8260B**
	ND	**20**	**21**	**ug/L**	**104**	**0.45**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**20**	**20**	**ug/L**	**101**		**SW846 8260B**
	ND	**20**	**20**	**ug/L**	**101**	**0.24**	**SW846 8260B**
Toluene	**ND**	**20**	**22**	**ug/L**	**103**		**SW846 8260B**
	ND	**20**	**22**	**ug/L**	**103**	**0.23**	**SW846 8260B**
Trichloroethene	**2.2**	**20**	**22**	**ug/L**	**98**		**SW846 8260B**
	2.2	**20**	**23**	**ug/L**	**103**	**4.6**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
	102	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
	101	(61 - 128)
Toluene-d8	102	(76 - 110)
	105	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)
	105	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F140121 **Work Order #...:** FQKHW1AC-MS **Matrix.....:** WG
MS Lot-Sample #: A3F140121-003 FQKHW1AD-MSD
Date Sampled...: 06/13/03 09:35 **Date Received..:** 06/14/03
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3169338
Dilution Factor: 2 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**101**	**(78 - 118)**			**SW846 8260B**
	103	**(78 - 118)**	**1.4**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**103**	**(76 - 117)**			**SW846 8260B**
	104	**(76 - 117)**	**0.45**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**101**	**(62 - 130)**			**SW846 8260B**
	101	**(62 - 130)**	**0.24**	**(0-20)**	**SW846 8260B**
Toluene	**103**	**(70 - 119)**			**SW846 8260B**
	103	**(70 - 119)**	**0.23**	**(0-20)**	**SW846 8260B**
Trichloroethene	**98**	**(62 - 130)**			**SW846 8260B**
	103	**(62 - 130)**	**4.6**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
	102	(73 - 122)
1,2-Dichloroethane-d4	101	(61 - 128)
	101	(61 - 128)
Toluene-d8	102	(76 - 110)
	105	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)
	105	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

SEVERN TRENT STL

END OF REPORT

SEVERN TRENT STL

REC'D CRA
JUL - 1 2003
SDG. 41

ANALYTICAL REPORT

PROJECT NO. 17360

GM GRAND RAPIDS

Lot #: A3F170129

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

SEVERN TRENT LABORATORIES, INC.

ORIGINAL ANALYTICAL REPORT
Project#: 17360 Lab#: A3F170129
Name: GM GR
Description
Event:
Samples: 6 water
Analysis: TCL VOC
TAT: 2 day
Lab: STL
Checked Against Preliminary Data:
Date: Init.:
Date of Validation Memo: 10/21/03
Invoice Approval Date:
Comments:

Amy L. McCormick
Project Manager

June 27, 2003

Y1

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL

CHAIN OF CUSTODY RECORD

REFERENCE NUMBER: 17360

PROJECT NAME: GM Grand Rapids

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Bart Williams

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
	6/16/03	0910	GW-17360-061603-BW-025	H2O	3	X	
		1010	026		6	X	MS/MSD
		1102	027		3	X	
		1103	028		3	X	
		1236	029		3	X	
			Trip Blank		1	X	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
1. [signature]	6/16/03		1.		
2.			2.		
3.			1.		

METHOD OF SHIPMENT: FED-EX

AIR BILL No.

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

23828

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: JJ Williams

DATE: 6/17/03 TIME: 10:05

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

SEVERN TRENT STL

CASE NARRATIVE

CASE NARRATIVE

A3F170129

The following report contains the analytical results for five water samples and one quality control sample submitted to STL North Canton by Conestoga-Rovers & Associates, Inc. from the GM Grand Rapids Site, project number 17360. The samples were received June 17, 2003, according to documented sample acceptance procedures.

The samples presented in this report were analyzed for the parameter listed on the analytical methods summary page in accordance with the method indicated. Preliminary results were provided to the Chemistry Department on June 20, 2003. A summary of QC data for these analyses is included at the rear of the report.

STL utilizes USEPA approved methods in all analytical work. 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.

Amy McCormick
Project Manager

QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

SEVERN TRENT STL

METHOD REFERENCE

ANALYTICAL METHODS SUMMARY

A3F170129

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SEVERN TRENT STL

SAMPLE SUMMARY

SAMPLE SUMMARY

A3F170129

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FQMM3	001	GW-17360-061603-BW-025	06/16/03	09:10
FQMM6	002	GW-17360-061603-BW-026	06/16/03	10:10
FQMM9	003	GW-17360-061603-BW-027	06/16/03	11:02
FQMNA	004	GW-17360-061603-BW-028	06/16/03	11:03
FQMNC	005	GW-17360-061603-BW-029	06/16/03	12:36
FQMND	006	TRIP BLANK	06/16/03	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SEVERN TRENT STL

SHIPPING AND RECEIVING DOCUMENTS

Y1

CRA

CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360

PROJECT NAME: GM Grand Rapids

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Bart Williams

SEQ. No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
	6/16/03	1610	GW-17360-061603-BW-025	H2O	3	X	48 hr TAT
		1610	026		6	X	
		1102	027		3	X	MS/MSD
		1103	028		3	X	
		1236	029		3	X	
			Trip Blank		1	X	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY:	DATE: 6/16/03	RECEIVED BY:	DATE:
1. [signature]	TIME:	1.	TIME:
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
2.	TIME:	2.	TIME:
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
3.	TIME:	1.	TIME:

METHOD OF SHIPMENT: FedEx AIR BILL No.

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

23828

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: JJ Williams

DATE: 6/17/03 TIME: 10:05

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

STL North Canton

11

RSR280

Client: 57787

Lot #: A3F170129

Case Number/SDG: 17360

Storage Location: MS

Severn Trent Laboratories, Inc.
Sample Control Record

Laboratory Sample I.D.	Transferred By	Date	Entered	Removed	Reason	Date Returned
FQMM3	EARLES	6/17/03	Yes		Storage	
FQMM6	EARLES	6/17/03	Yes		Storage	
FQMM9	EARLES	6/17/03	Yes		Storage	
FQMNA	EARLES	6/17/03	Yes		Storage	
FQMNC	EARLES	6/17/03	Yes		Storage	
FQMND	EARLES	6/17/03	Yes		Storage	

STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A3F170129

Client: CRA Project: _____ Quote#: _____

Cooler Received on: 6/17/03 Opened on: 6/17/03 by: TJ Williams (Signature)

Fedx [X] Client Drop Off [ ] UPS [ ] Airborne [ ] Other: _____

Cooler [X] Safe [ ] Foam Box [ ] Client Cooler [ ] Other: _____

STL Shipper No#: M-203

1. Were custody seals on the outside of the cooler? Yes [X] No [ ] Intact? Yes [X] No [ ] NA [ ]
   If YES, Quantity 2 Location top
   Were the custody seals signed and dated? Yes [X] No [ ] NA [ ]
2. Shipper's packing slip attached to this form? Yes [X] No [ ]
3. Were custody papers included inside the cooler and relinquished? Yes [X] No [ ]
4. Did you sign the custody papers in the appropriate place? Yes [X] No [ ]
5. Packing material used:

Peanuts [ ] Bubble Wrap [X] Vermiculite [ ] Foam [ ] None [ ] Other : _____

6. Cooler temperature upon receipt 3.3 °C (see back of form for multiple coolers/temp)

METHOD: Temp Vial [ ] Coolant & Sample [ ] Against Bottles [ ] IR [X] ICE/H_2O Slurry [ ]

COOLANT: Wet Ice [X] Blue Ice [ ] Dry Ice [ ] Water [ ] None [ ]

7. Did all bottles arrive in good condition (Unbroken)? Yes [X] No [ ]
8. Did all bottle labels and tags agree with the custody papers? Yes [X] No [ ]
9. Were samples at the correct pH? (record on back) Yes [ ] No [ ] NA [X]
10. Were correct bottles used for the tests indicated? Yes [X] No [ ]
11. Were air bubbles >6 mm in any VOA vials? Yes [ ] No [X] NA [ ]
12. Was a sufficient amount of sample sent in each bottle? Yes [X] No [ ]

Contacted PM _____ Date: _____ by: _____ via Voice Mail [ ] Verbal [ ] Other [ ]

Concerning: _____

√	MACRO	MACRO
1. CHAIN OF CUSTODY		
	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred _____
2. SAMPLE CONDITION		
	SR2A	Sample(s) _____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
3. SAMPLE PRESERVATION		
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 012203-HNO3; Sulfuric Acid Lot # 112801-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 020501-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s) _____ were received with bubble > 6 mm in diameter (cc: PM)
4. Other (see below or back)		

STL Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler	Temp	Method	Coolant

Discrepancies Cont.

Macro Name:

Macro Name:

Macro Name:

Other Anomalies:

SEVERN TRENT STL

GCMS VOLATILE DATA

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061603-BW-025

GC/MS Volatiles

Lot-Sample #...: A3F170129-001 **Work Order #...:** FQMM31AA **Matrix.....:** WG
Date Sampled...: 06/16/03 09:10 **Date Received..:** 06/17/03
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3170611
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061603-BW-025

GC/MS Volatiles

Lot-Sample #...: A3F170129-001 Work Order #...: FQMM31AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**1.1**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(73 - 122)
1,2-Dichloroethane-d4	72	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	85	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061603-BW-026

GC/MS Volatiles

Lot-Sample #...:	A3F170129-002	**Work Order #...:**	FQMM61AA	**Matrix.....:**	WG
Date Sampled...:	06/16/03 10:10	**Date Received..:**	06/17/03		
Prep Date.....:	06/18/03	**Analysis Date..:**	06/18/03		
Prep Batch #...:	3170611				
Dilution Factor:	1	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061603-BW-026

GC/MS Volatiles

Lot-Sample #...: A3F170129-002 Work Order #...: FQMM61AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**1.4**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(73 - 122)
1,2-Dichloroethane-d4	82	(61 - 128)
Toluene-d8	93	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061603-BW-027

GC/MS Volatiles

Lot-Sample #...: A3F170129-003 Work Order #...: FQMM91AA Matrix.....: WG
Date Sampled...: 06/16/03 11:02 Date Received..: 06/17/03
Prep Date.....: 06/19/03 Analysis Date..: 06/19/03
Prep Batch #...: 3170611
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

(Continued on next page)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061603-BW-027

GC/MS Volatiles

Lot-Sample #...: A3F170129-003 **Work Order #...:** FQMM91AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(73 - 122)
1,2-Dichloroethane-d4	71	(61 - 128)
Toluene-d8	93	(76 - 110)
4-Bromofluorobenzene	82	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061603-BW-028

GC/MS Volatiles

Lot-Sample #...: A3F170129-004 **Work Order #...:** FQMNA1AA **Matrix.....:** WG
Date Sampled...: 06/16/03 11:03 **Date Received..:** 06/17/03
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170611
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

(Continued on next page)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061603-BW-028

GC/MS Volatiles

Lot-Sample #...: A3F170129-004 **Work Order #...:** FQMNA1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	73	(61 - 128)
Toluene-d8	92	(76 - 110)
4-Bromofluorobenzene	86	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061603-BW-029

GC/MS Volatiles

Lot-Sample #...: A3F170129-005 **Work Order #...:** FQMNC1AA **Matrix.....:** WG
Date Sampled...: 06/16/03 12:36 **Date Received..:** 06/17/03
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170611
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061603-BW-029

GC/MS Volatiles

Lot-Sample #...: A3F170129-005 Work Order #...: FQMNC1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(73 - 122)
1,2-Dichloroethane-d4	71	(61 - 128)
Toluene-d8	92	(76 - 110)
4-Bromofluorobenzene	82	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A3F170129-006	**Work Order #...:** FQMND1AA	**Matrix.....:** WQ	
Date Sampled...: 06/16/03	**Date Received..:** 06/17/03		
Prep Date.....: 06/18/03	**Analysis Date..:** 06/18/03		
Prep Batch #...: 3170611			
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A3F170129-006 **Work Order #...:** FQMND1AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
1,2-Dichloroethane-d4	71	(61 - 128)
Toluene-d8	93	(76 - 110)
4-Bromofluorobenzene	84	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F170129 **Work Order #...:** FQWF61AA **Matrix.....:** WATER
MB Lot-Sample #: A3F190000-611

Prep Date.....: 06/18/03 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 06/18/03 **Prep Batch #...:** 3170611
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F170129 **Work Order #...:** FQWF61AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	86	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F170129 **Work Order #...:** FQWF61AC **Matrix.....:** WATER
LCS Lot-Sample#: A3F190000-611
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3170611
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10**	**9.6**	**ug/L**	**96**	**SW846 8260B**
Chlorobenzene	**10**	**9.7**	**ug/L**	**97**	**SW846 8260B**
1,1-Dichloroethene	**10**	**9.3**	**ug/L**	**93**	**SW846 8260B**
Toluene	**10**	**10**	**ug/L**	**100**	**SW846 8260B**
Trichloroethene	**10**	**9.3**	**ug/L**	**93**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(73 - 122)
1,2-Dichloroethane-d4	76	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F170129 **Work Order #...:** FQWF61AC **Matrix.....:** WATER
LCS Lot-Sample#: A3F190000-611
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3170611
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**96**	**(80 - 116)**	**SW846 8260B**
Chlorobenzene	**97**	**(76 - 117)**	**SW846 8260B**
1,1-Dichloroethene	**93**	**(63 - 130)**	**SW846 8260B**
Toluene	**100**	**(74 - 119)**	**SW846 8260B**
Trichloroethene	**93**	**(75 - 122)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(73 - 122)
1,2-Dichloroethane-d4	76	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F170129 **Work Order #...:** FQMM61AC-MS **Matrix.....:** WG
MS Lot-Sample #: A3F170129-002 FQMM61AD-MSD
Date Sampled...: 06/16/03 10:10 **Date Received..:** 06/17/03
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3170611
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	10	11	ug/L	105		SW846 8260B
	ND	10	11	ug/L	106	0.33	SW846 8260B
Chlorobenzene	ND	10	10	ug/L	102		SW846 8260B
	ND	10	10	ug/L	100	2.8	SW846 8260B
1,1-Dichloroethene	ND	10	10	ug/L	100		SW846 8260B
	ND	10	9.6	ug/L	96	3.5	SW846 8260B
Toluene	ND	10	11	ug/L	106		SW846 8260B
	ND	10	11	ug/L	105	0.20	SW846 8260B
Trichloroethene	ND	10	9.7	ug/L	97		SW846 8260B
	ND	10	9.9	ug/L	99	1.9	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(73 - 122)
	91	(73 - 122)
1,2-Dichloroethane-d4	79	(61 - 128)
	73	(61 - 128)
Toluene-d8	96	(76 - 110)
	96	(76 - 110)
4-Bromofluorobenzene	93	(74 - 116)
	90	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F170129 **Work Order #...:** FQMM61AC-MS **Matrix.....:** WG
MS Lot-Sample #: A3F170129-002 FQMM61AD-MSD
Date Sampled...: 06/16/03 10:10 **Date Received..:** 06/17/03
Prep Date.....: 06/18/03 **Analysis Date..:** 06/18/03
Prep Batch #...: 3170611
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**105**	**(78 - 118)**			**SW846 8260B**
	106	**(78 - 118)**	**0.33**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**102**	**(76 - 117)**			**SW846 8260B**
	100	**(76 - 117)**	**2.8**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**100**	**(62 - 130)**			**SW846 8260B**
	96	**(62 - 130)**	**3.5**	**(0-20)**	**SW846 8260B**
Toluene	**106**	**(70 - 119)**			**SW846 8260B**
	105	**(70 - 119)**	**0.20**	**(0-20)**	**SW846 8260B**
Trichloroethene	**97**	**(62 - 130)**			**SW846 8260B**
	99	**(62 - 130)**	**1.9**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(73 - 122)
	91	(73 - 122)
1,2-Dichloroethane-d4	79	(61 - 128)
	73	(61 - 128)
Toluene-d8	96	(76 - 110)
	96	(76 - 110)
4-Bromofluorobenzene	93	(74 - 116)
	90	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

SEVERN TRENT STL

END OF REPORT

SEVERN TRENT STL

REC'D CRA
JUL 2003
SDG: 42

ANALYTICAL REPORT

PROJECT NO. 17360

GM GRAND RAPIDS METAL

Lot #: A3F180106

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

SEVERN TRENT LABORATORIES, INC.

ORIGINAL ANALYTICAL REPORT
Project#: 17360 Lab#: A3F180106
Name: GM GR
Description
Event:
Samples: 10 water
Analysis: TCL VOC
TAT: 2 day
Lab: STL
Checked Against Preliminary Data:
Date: Init.:
Date of Validation Memo: 10/21/03
Invoice Approval Date:
Comments:

Amy L. McCormick
Project Manager

June 29, 2003

Y1

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360

PROJECT NAME: GM Grand Rapids Metal

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Bart Williams

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
	6/17/03	0935	GW-17360-061703-BW-030	H2O	3	X	48 hr TAT
		1025	031		3	X	
		1041	032		3	X	
		1128	033		3	X	
		1230	034		3	X	
		1240	035		3	X	
		1423	036		3	X	
		1555	037		3	X	
		1602	038		3	X	
			Trip Blank	H2O	1	X	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: 1. [signature]	DATE: 6/17/03 TIME: 1900	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FED EX AIR BILL No.

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

23829

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: TL Williams
DATE: 6/18/03 TIME: 9:20

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

SEVERN TRENT STL

CASE NARRATIVE

CASE NARRATIVE

A3F180106

The following report contains the analytical results for nine water samples and one quality control sample submitted to STL North Canton by Conestoga-Rovers & Associates, Inc. from the GM Grand Rapids Metal Site, project number 17360. The samples were received June 18, 2003, according to documented sample acceptance procedures.

The samples presented in this report were analyzed for the parameter listed on the analytical methods summary page in accordance with the method indicated. Preliminary results were provided to the Chemistry Department on June 20, 2003. A summary of QC data for these analyses is included at the rear of the report.

STL utilizes USEPA approved methods in all analytical work. 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.

Amy McCormick
Project Manager

QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

SEVERN TRENT STL

METHOD REFERENCE

ANALYTICAL METHODS SUMMARY

A3F180106

PARAMETER	ANALYTICAL METHOD
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SEVERN TRENT STL

SAMPLE SUMMARY

SAMPLE SUMMARY

A3F180106

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FQPQC	001	GW-17360-061703-BW-030	06/17/03	09:35
FQPQJ	002	GW-17360-061703-BW-031	06/17/03	10:25
FQPQK	003	GW-17360-061703-BW-032	06/17/03	10:41
FQPQL	004	GW-17360-061703-BW-033	06/17/03	11:28
FQPQM	005	GW-17360-061703-BW-034	06/17/03	12:30
FQPQN	006	GW-17360-061703-BW-035	06/17/03	12:40
FQPQP	007	GW-17360-061703-BW-036	06/17/03	14:23
FQPQQ	008	GW-17360-061703-BW-037	06/17/03	15:55
FQPQR	009	GW-17360-061703-BW-038	06/17/03	16:02
FQPQT	010	TRIP BLANK	06/17/03	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SEVERN TRENT STL

SHIPPING AND RECEIVING DOCUMENTS

1/1

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360

PROJECT NAME: GM Grand Rapids Metal

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Bart Williams

SEQ. No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCL VOC	REMARKS
	6/17/03	0935	GW-17360-061703-BW-030	H2O	3	X	48 hr TAT
		1035	031		3	X	
		1041	032		3	X	
		1128	033		3	X	
		1230	034		3	X	
		1240	035		3	X	
		1423	036		3	X	
		1555	037		3	X	
	↓	1600	038	↓	3	X	
			TRIP Blank	H2O	1	X	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: 1. [signature]	DATE: 6/17/03 TIME: 1900	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FED EX AIR BILL No.

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

23829

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: DZ Williams
DATE: 6/18/03 TIME: 9:20

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

STL North Canton

11

RSR280

Severn Trent Laboratories, Inc.
Sample Control Record

Client: 57787

Lot #: A3F180106

Case Number/SDG: 17360

Storage Location: MS

Laboratory Sample I.D.	Transferred By	Date	Entered	Removed	Reason	Date Returned
FQPQC	EARLES	6/18/03	Yes		Storage	
FQPQJ	EARLES	6/18/03	Yes		Storage	
FQPQK	EARLES	6/18/03	Yes		Storage	
FQPQL	EARLES	6/18/03	Yes		Storage	
FQPQM	EARLES	6/18/03	Yes		Storage	
FQPQN	EARLES	6/18/03	Yes		Storage	
FQPQP	EARLES	6/18/03	Yes		Storage	
FQPQQ	EARLES	6/18/03	Yes		Storage	
FQPQR	EARLES	6/18/03	Yes		Storage	
FQPQT	EARLES	6/18/03	Yes		Storage	

STL Cooler Receipt Form/Narrative

North Canton Facility

Lot Number: A3F180106

Client: CRA Project: Quote#:

Cooler Received on: 6/18/03 Opened on: 6/18/03 by: R Miller (Signature)

Fedx ☒ Client Drop Off ☐ UPS ☐ Airborne ☐ Other:

Cooler ☐ Safe ☐ Foam Box ☐ Client Cooler ☒ Other:

STL Shipper No#:

1. Were custody seals on the outside of the cooler? Yes ☐ No ☒ Intact? Yes ☐ No ☐ NA ☒
   If YES, Quantity Location
   Were the custody seals signed and dated? Yes ☐ No ☐ NA ☒
2. Shipper's packing slip attached to this form? Yes ☒ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☒ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☒ No ☐
5. Packing material used:

Peanuts ☐ Bubble Wrap ☒ Vermiculite ☐ Foam ☐ None ☐ Other :

6. Cooler temperature upon receipt 3.8 °C (see back of form for multiple coolers/temp)

METHOD: Temp Vial ☐ Coolant & Sample ☐ Against Bottles ☐ IR ☒ ICE/H_2O Slurry ☐

COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐

7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☒ No ☐
9. Were samples at the correct pH? (record on back) Yes ☐ No ☐ NA ☒
10. Were correct bottles used for the tests indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Was a sufficient amount of sample sent in each bottle? Yes ☒ No ☐

Contacted PM Date: by: via Voice Mail ☐ Verbal ☐ Other ☐

Concerning:

√	MACRO	MACRO
1. CHAIN OF CUSTODY		
	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred
2. SAMPLE CONDITION		
	SR2A	Sample(s) were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
3. SAMPLE PRESERVATION		
	SR3A	Sample(s) were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 012203-HNO3; Sulfuric Acid Lot # 112801-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 020501-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s) were received with bubble > 6 mm in diameter (cc: PM)
4. Other (see below or back)		

STL Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler	Temp	Method	Coolant

Discrepancies Cont.

Macro Name:

Macro Name:

Macro Name:

Other Anomalies:

SEVERN TRENT STL

GCMS VOLATILE DATA

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-030

GC/MS Volatiles

Lot-Sample #...: A3F180106-001 **Work Order #...:** FQPQC1AA **Matrix.....:** WG
Date Sampled...: 06/17/03 09:35 **Date Received..:** 06/18/03
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-030

GC/MS Volatiles

Lot-Sample #...: A3F180106-001 **Work Order #...:** FQPQC1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(73 - 122)
1,2-Dichloroethane-d4	105	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	91	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-031

GC/MS Volatiles

Lot-Sample #...: A3F180106-002 Work Order #...: FQPQJ1AA Matrix.....: WG
Date Sampled...: 06/17/03 10:25 Date Received..: 06/18/03
Prep Date.....: 06/19/03 Analysis Date..: 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-031

GC/MS Volatiles

Lot-Sample #...: A3F180106-002 **Work Order #...:** FQPQJ1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	**1.5**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	92	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-032

GC/MS Volatiles

Lot-Sample #...: A3F180106-003 Work Order #...: FQPQK1AA Matrix.....: WG
Date Sampled...: 06/17/03 10:41 Date Received..: 06/18/03
Prep Date.....: 06/19/03 Analysis Date..: 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-032

GC/MS Volatiles

Lot-Sample #...: A3F180106-003 **Work Order #...:** FQPQK1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(73 - 122)
1,2-Dichloroethane-d4	105	(61 - 128)
Toluene-d8	102	(76 - 110)
4-Bromofluorobenzene	91	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-033

GC/MS Volatiles

Lot-Sample #...: A3F180106-004 **Work Order #...:** FQPQL1AA **Matrix.....:** WG
Date Sampled...: 06/17/03 11:28 **Date Received..:** 06/18/03
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	**1.8**	**1.0**	**ug/L**
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-033

GC/MS Volatiles

Lot-Sample #...: A3F180106-004 **Work Order #...:** FQPQL1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	**2.2**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(73 - 122)
1,2-Dichloroethane-d4	107	(61 - 128)
Toluene-d8	102	(76 - 110)
4-Bromofluorobenzene	89	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-034

GC/MS Volatiles

Lot-Sample #...: A3F180106-005 **Work Order #...:** FQPQM1AA **Matrix.....:** WG
Date Sampled...: 06/17/03 12:30 **Date Received..:** 06/18/03
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	**2.0**	**1.0**	**ug/L**
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-034

GC/MS Volatiles

Lot-Sample #...: A3F180106-005 **Work Order #...:** FQPQM1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	**1.9**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(73 - 122)
1,2-Dichloroethane-d4	107	(61 - 128)
Toluene-d8	102	(76 - 110)
4-Bromofluorobenzene	92	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-035

GC/MS Volatiles

Lot-Sample #...: A3F180106-006 **Work Order #...:** FQPQN1AA **Matrix.....:** WG
Date Sampled...: 06/17/03 12:40 **Date Received..:** 06/18/03
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	**1.9**	**1.0**	**ug/L**
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-035

GC/MS Volatiles

Lot-Sample #...: A3F180106-006 **Work Order #...:** FQPQN1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	**1.8**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(73 - 122)
1,2-Dichloroethane-d4	108	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	91	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-036

GC/MS Volatiles

Lot-Sample #...: A3F180106-007 **Work Order #...:** FQPQP1AA **Matrix.....:** WG
Date Sampled...: 06/17/03 14:23 **Date Received..:** 06/18/03
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	**1.9**	**1.0**	**ug/L**
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-036

GC/MS Volatiles

Lot-Sample #...: A3F180106-007 **Work Order #...:** FQPQP1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	**1.5**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(73 - 122)
1,2-Dichloroethane-d4	106	(61 - 128)
Toluene-d8	102	(76 - 110)
4-Bromofluorobenzene	92	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-037

GC/MS Volatiles

Lot-Sample #...: A3F180106-008 **Work Order #...:** FQPQQ1AA **Matrix.....:** WG
Date Sampled...: 06/17/03 15:55 **Date Received..:** 06/18/03
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	**1.0**	**1.0**	**ug/L**
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-037

GC/MS Volatiles

Lot-Sample #...: A3F180106-008 **Work Order #...:** FQPQQ1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(73 - 122)
1,2-Dichloroethane-d4	105	(61 - 128)
Toluene-d8	103	(76 - 110)
4-Bromofluorobenzene	92	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-038

GC/MS Volatiles

Lot-Sample #...:	A3F180106-009	**Work Order #...:**	FQPQR1AA	**Matrix.....:**	WG
Date Sampled...:	06/17/03 16:02	**Date Received..:**	06/18/03		
Prep Date.....:	06/19/03	**Analysis Date..:**	06/19/03		
Prep Batch #...:	3170631				
Dilution Factor:	1	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	**7.3**	**1.0**	**ug/L**
Bromoform	**1.0**	**1.0**	**ug/L**
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	**9.5**	**1.0**	**ug/L**
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	**3.6**	**1.0**	**ug/L**
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-061703-BW-038

GC/MS Volatiles

Lot-Sample #...: A3F180106-009 **Work Order #...:** FQPQR1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(73 - 122)
1,2-Dichloroethane-d4	107	(61 - 128)
Toluene-d8	102	(76 - 110)
4-Bromofluorobenzene	88	(74 - 116)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A3F180106-010 **Work Order #...:** FQPQT1AA **Matrix.....:** WQ
Date Sampled...: 06/17/03 **Date Received..:** 06/18/03
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	1.0	ug/L
Cyclohexane	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	5.0	ug/L
Methyl acetate	ND	10	ug/L
Methylene chloride	ND	5.0	ug/L
Methylcyclohexane	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
Styrene	ND	1.0	ug/L

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Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: A3F180106-010 **Work Order #...:** FQPQT1AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,4-Trichloro-benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(73 - 122)
1,2-Dichloroethane-d4	107	(61 - 128)
Toluene-d8	102	(76 - 110)
4-Bromofluorobenzene	91	(74 - 116)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F180106 **Work Order #...:** FQWJF1AA **Matrix.....:** WATER
MB Lot-Sample #: A3F190000-631

Prep Date.....: 06/19/03 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 06/19/03 **Prep Batch #...:** 3170631
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3F180106 **Work Order #...:** FQWJF1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(73 - 122)
1,2-Dichloroethane-d4	108	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	90	(74 - 116)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F180106 **Work Order #...:** FQWJF1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3F190000-631 FQWJF1AD-LCSD
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10**	**11**	**ug/L**	**106**		**SW846 8260B**
	10	**11**	**ug/L**	**106**	**0.17**	**SW846 8260B**
Chlorobenzene	**10**	**10**	**ug/L**	**104**		**SW846 8260B**
	10	**10**	**ug/L**	**105**	**1.1**	**SW846 8260B**
1,1-Dichloroethene	**10**	**10**	**ug/L**	**104**		**SW846 8260B**
	10	**10**	**ug/L**	**104**	**0.28**	**SW846 8260B**
Toluene	**10**	**11**	**ug/L**	**105**		**SW846 8260B**
	10	**11**	**ug/L**	**106**	**0.59**	**SW846 8260B**
Trichloroethene	**10**	**10**	**ug/L**	**105**		**SW846 8260B**
	10	**11**	**ug/L**	**105**	**0.17**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
	102	(73 - 122)
1,2-Dichloroethane-d4	106	(61 - 128)
	104	(61 - 128)
Toluene-d8	103	(76 - 110)
	102	(76 - 110)
4-Bromofluorobenzene	103	(74 - 116)
	104	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F180106 **Work Order #...:** FQWJF1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3F190000-631 FQWJF1AD-LCSD
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**106**	**(80 - 116)**			**SW846 8260B**
	106	**(80 - 116)**	**0.17**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**104**	**(76 - 117)**			**SW846 8260B**
	105	**(76 - 117)**	**1.1**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**104**	**(63 - 130)**			**SW846 8260B**
	104	**(63 - 130)**	**0.28**	**(0-20)**	**SW846 8260B**
Toluene	**105**	**(74 - 119)**			**SW846 8260B**
	106	**(74 - 119)**	**0.59**	**(0-20)**	**SW846 8260B**
Trichloroethene	**105**	**(75 - 122)**			**SW846 8260B**
	105	**(75 - 122)**	**0.17**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
	102	(73 - 122)
1,2-Dichloroethane-d4	106	(61 - 128)
	104	(61 - 128)
Toluene-d8	103	(76 - 110)
	102	(76 - 110)
4-Bromofluorobenzene	103	(74 - 116)
	104	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F180106 **Work Order #...:** FP7921AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A3F100102-001 FP7921AD-MSD
Date Sampled...: 06/09/03 09:50 **Date Received..:** 06/10/03
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10**	**11**	**ug/L**	**107**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**108**	**1.1**	**SW846 8260B**
Chlorobenzene	**ND**	**10**	**10**	**ug/L**	**104**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**107**	**3.5**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10**	**10**	**ug/L**	**104**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**105**	**1.2**	**SW846 8260B**
Toluene	**1.2**	**10**	**12**	**ug/L**	**106**		**SW846 8260B**
	1.2	**10**	**12**	**ug/L**	**109**	**2.2**	**SW846 8260B**
Trichloroethene	**ND**	**10**	**10**	**ug/L**	**104**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**109**	**4.1**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(73 - 122)
	106	(73 - 122)
1,2-Dichloroethane-d4	109	(61 - 128)
	108	(61 - 128)
Toluene-d8	101	(76 - 110)
	104	(76 - 110)
4-Bromofluorobenzene	101	(74 - 116)
	104	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F180106 **Work Order #...:** FP7921AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A3F100102-001 FP7921AD-MSD
Date Sampled...: 06/09/03 09:50 **Date Received..:** 06/10/03
Prep Date.....: 06/19/03 **Analysis Date..:** 06/19/03
Prep Batch #...: 3170631
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**107**	**(78 - 118)**			**SW846 8260B**
	108	**(78 - 118)**	**1.1**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**104**	**(76 - 117)**			**SW846 8260B**
	107	**(76 - 117)**	**3.5**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**104**	**(62 - 130)**			**SW846 8260B**
	105	**(62 - 130)**	**1.2**	**(0-20)**	**SW846 8260B**
Toluene	**106**	**(70 - 119)**			**SW846 8260B**
	109	**(70 - 119)**	**2.2**	**(0-20)**	**SW846 8260B**
Trichloroethene	**104**	**(62 - 130)**			**SW846 8260B**
	109	**(62 - 130)**	**4.1**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(73 - 122)
	106	(73 - 122)
1,2-Dichloroethane-d4	109	(61 - 128)
	108	(61 - 128)
Toluene-d8	101	(76 - 110)
	104	(76 - 110)
4-Bromofluorobenzene	101	(74 - 116)
	104	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

SEVERN TRENT STL

END OF REPORT

SEVERN TRENT STL

REC'D CRA

SDG: 43

ANALYTICAL REPORT

PROJECT NO. 17360

GM GRAND RAPIDS METAL

Lot #: A3F250310

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

SEVERN TRENT LABORATORIES, INC.

ORIGINAL ANALYTICAL REPORT
Project#: 17360 Lab#: A3F250310
Name: GM-GR
Description
Event: WASTE CHAR.
Samples: 2 SOIL
Analysis: TCLP VOC, SVOC, RCI, MTLS
TAT: 14 day
Lab: STL
Checked Against Preliminary Data:
Date: _____ Init.: _____
Date of Validation Memo: _____
Invoice Approval Date: _____
Comments: _____

Amy L. McCormick
Project Manager

July 23, 2003

Y1

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360

PROJECT NAME: Gm Grand Rapids Metal

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: BART Williams

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCLP metals	TCLP VOCs	TCLP SVOC	Reactivity	Corrosivity	RCI	REMARKS
	06/24/03	1300	S-17360-062403-BW-039	Soil	5	X	X	X	X	X	X	2 LK TAL
	"	1330	S-17360-062403-BW-040	"	2	X	X	X	X	X	X	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: 1. [signature]	DATE: 6/24/03 TIME: 1800	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FEDEX AIR BILL No.

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

23823

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: [signature]
DATE: 6/25/03 TIME: 10:35

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

CASE NARRATIVE

A3F250310

The following report contains the analytical results for two solid samples submitted to STL North Canton by Conestoga-Rovers & Associates, Inc. from the GM Grand Rapids Metal Site, project number 17360. The samples were received June 25, 2003, according to documented sample acceptance procedures.

The samples presented in this report were analyzed for the parameters listed on the analytical methods summary page in accordance with the methods indicated. Preliminary results were provided to the Chemistry Department on July 9, 2003. A summary of QC data for these analyses is included at the rear of the report.

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

Samples were received at the laboratory at a temperature of 12.6° C. in water.

GENERAL CHEMISTRY

Matrix spike/spike duplicate spike recoveries were outside the acceptance limits for some analytes. The acceptable laboratory control sample analysis data indicated that the analytical system was operating within control and this condition is most likely due to matrix interference. See the Matrix Spike Report for the affected analytes, which have been flagged with "N".

The Flashpoint sample/sample duplicate associated with batch 3188487 also supports samples in batch 3188488.

STL utilizes USEPA approved methods in all analytical work. 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.

Amy McCormick
Project Manager

QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

QUALITY CONTROL ELEMENTS OF SW-846 METHODS
(Continued)

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

STL North Canton Certifications and Approvals:

Alabama (#41170), California (#2157), Connecticut (#PH-0590), Florida (#E87225), Illinois (#100439), Kansas (#E10336), Kentucky (#90021), Massachusetts (#M-OH048), Maryland (#272), Minnesota (#39-999-348), Missouri (#6090), New Jersey (#74001), New York (#10975), North Dakota (#R-156), Ohio (#6090), OhioVAP (#CL0024), Pennsylvania (#68-340), Rhode Island (#237), South Carolina (#92007001, #92007002, #92007003), Tennessee (#02903), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit, ACIL Seal of Excellence – Participating Lab Status Award (#82)

ANALYTICAL METHODS SUMMARY

A3F250310

PARAMETER	ANALYTICAL METHOD
Corrosivity	SW846 9045C
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Pensky-Martens Method for Determining Ignitability	SW846 1010
Reactive Cyanide	SW846 7.3.3
Reactive Sulfide	SW846 7.3.4
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

A3F250310

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FQ7MA	001	S-17360-062403-BW-039	06/24/03	13:00
FQ7MH	002	S-17360-062403-BW-040	06/24/03	13:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: S-17360-062403-BW-039

TCLP GC/MS Volatiles

Lot-Sample #...: A3F250310-001 Work Order #...: FQ7MA1AA Matrix.....: SO
Date Sampled...: 06/24/03 13:00 Date Received..: 06/25/03
Leach Date.....: 06/26/03 Prep Date.....: 07/01/03 Analysis Date..: 07/01/03
Leach Batch #..: P317712 Prep Batch #...: 3183288
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	0.025	mg/L
Carbon tetrachloride	ND	0.025	mg/L
Chlorobenzene	ND	0.025	mg/L
Chloroform	ND	0.025	mg/L
1,2-Dichloroethane	ND	0.025	mg/L
1,1-Dichloroethylene	ND	0.070	mg/L
Methyl ethyl ketone	ND	0.050	mg/L
Tetrachloroethylene	ND	0.070	mg/L
Trichloroethylene	ND	0.050	mg/L
Vinyl chloride	ND	0.050	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(59 - 138)
1,2-Dichloroethane-d4	81	(61 - 130)
Toluene-d8	89	(60 - 143)
4-Bromofluorobenzene	90	(47 - 158)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: S-17360-062403-BW-040

TCLP GC/MS Volatiles

Lot-Sample #...:	A3F250310-002	Work Order #...:	FQ7MH1AA	Matrix.....:	SO
Date Sampled...:	06/24/03 13:30	Date Received..:	06/25/03		
Leach Date.....:	06/26/03	Prep Date.....:	07/01/03	Analysis Date..:	07/01/03
Leach Batch #..:	P317712	Prep Batch #...:	3183288		
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	0.025	mg/L
Carbon tetrachloride	ND	0.025	mg/L
Chlorobenzene	ND	0.025	mg/L
Chloroform	ND	0.025	mg/L
1,2-Dichloroethane	ND	0.025	mg/L
1,1-Dichloroethylene	ND	0.070	mg/L
Methyl ethyl ketone	ND	0.050	mg/L
Tetrachloroethylene	ND	0.070	mg/L
Trichloroethylene	ND	0.050	mg/L
Vinyl chloride	ND	0.050	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	97	(59 - 138)
1,2-Dichloroethane-d4	91	(61 - 130)
Toluene-d8	100	(60 - 143)
4-Bromofluorobenzene	98	(47 - 158)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: S-17360-062403-BW-039

TCLP GC/MS Semivolatiles

Lot-Sample #...:	A3F250310-001	Work Order #...:	FQ7MA1AD	Matrix.....:	SO
Date Sampled...:	06/24/03 13:00	Date Received..:	06/25/03		
Leach Date.....:	06/30/03	Prep Date.....:	07/01/03	Analysis Date..:	07/07/03
Leach Batch #..:	P318202	Prep Batch #...:	3182273		
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
o-Cresol	ND	0.050	mg/L
m-Cresol & p-Cresol	ND	0.10	mg/L
1,4-Dichlorobenzene	ND	0.050	mg/L
2,4-Dinitrotoluene	ND	0.050	mg/L
Hexachlorobenzene	ND	0.050	mg/L
Hexachlorobutadiene	ND	0.050	mg/L
Hexachloroethane	ND	0.050	mg/L
Nitrobenzene	ND	0.050	mg/L
Pentachlorophenol	ND	0.10	mg/L
Pyridine	ND	0.10	mg/L
2,4,5-Trichloro-phenol	ND	0.25	mg/L
2,4,6-Trichloro-phenol	ND	0.050	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	58	(32 - 112)
2-Fluorobiphenyl	50	(30 - 110)
Terphenyl-d14	95	(10 - 144)
Phenol-d5	48	(10 - 113)
2-Fluorophenol	33	(13 - 110)
2,4,6-Tribromophenol	52	(21 - 122)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: S-17360-062403-EW-040

TCLP GC/MS Semivolatiles

Lot-Sample #...: A3F250310-002 Work Order #...: FQ7MH1AD Matrix.....: SO
Date Sampled...: 06/24/03 13:30 Date Received..: 06/25/03
Leach Date.....: 06/30/03 Prep Date.....: 07/01/03 Analysis Date..: 07/07/03
Leach Batch #..: P318202 Prep Batch #...: 3182273
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
o-Cresol	ND	0.050	mg/L
m-Cresol & p-Cresol	ND	0.10	mg/L
1,4-Dichlorobenzene	ND	0.050	mg/L
2,4-Dinitrotoluene	ND	0.050	mg/L
Hexachlorobenzene	ND	0.050	mg/L
Hexachlorobutadiene	ND	0.050	mg/L
Hexachloroethane	ND	0.050	mg/L
Nitrobenzene	ND	0.050	mg/L
Pentachlorophenol	ND	0.10	mg/L
Pyridine	ND	0.10	mg/L
2,4,5-Trichloro-phenol	ND	0.25	mg/L
2,4,6-Trichloro-phenol	ND	0.050	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	67	(32 - 112)
2-Fluorobiphenyl	61	(30 - 110)
Terphenyl-d14	107	(10 - 144)
Phenol-d5	67	(10 - 113)
2-Fluorophenol	55	(13 - 110)
2,4,6-Tribromophenol	70	(21 - 122)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: S-17360-062403-BW-039

TCLP Metals

Lot-Sample #...: A3F250310-001 **Matrix.....:** SO
Date Sampled...: 06/24/03 13:00 **Date Received..:** 06/25/03
Leach Date.....: 06/30/03 **Leach Batch #..:** P318202

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3183111						
Arsenic	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FQ7MA1AE
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	07/02-07/03/03	FQ7MA1AF
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	07/02-07/03/03	FQ7MA1AG
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FQ7MA1AH
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FQ7MA1AJ
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	07/02-07/03/03	FQ7MA1AK
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FQ7MA1AL
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	07/02-07/03/03	FQ7MA1AM
		Dilution Factor: 1				

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: S-17360-062403-BW-040

TCLP Metals

Lot-Sample #...: A3F250310-002 Matrix.....: SO
Date Sampled...: 06/24/03 13:30 Date Received..: 06/25/03
Leach Date.....: 06/30/03 Leach Batch #..: P318202

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3183111						
Arsenic	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FQ7MH1AE
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	07/02-07/03/03	FQ7MH1AF
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	07/02-07/03/03	FQ7MH1AG
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FQ7MH1AH
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FQ7MH1AJ
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	07/02-07/03/03	FQ7MH1AK
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FQ7MH1AL
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	07/02-07/03/03	FQ7MH1AM
		Dilution Factor: 1				

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: S-17360-062403-BW-039

General Chemistry

Lot-Sample #...: A3F250310-001 Work Order #...: FQ7MA Matrix.....: SO
Date Sampled...: 06/24/03 13:00 Date Received..: 06/25/03
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Corrosivity	9.4		No Units	SW846 9045C	06/25/03	3176643
	Dilution Factor: 1					
Flashpoint	>180		deg F	SW846 1010	07/07/03	3188488
	Dilution Factor: 1					
Reactive Cyanide	ND	200	mg/kg	SW846 7.3.3	07/02/03	3183306
	Dilution Factor: 1					
Reactive Sulfide	ND	500	mg/kg	SW846 7.3.4	07/02/03	3183304
	Dilution Factor: 1					

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: S-17360-062403-BW-040

General Chemistry

Lot-Sample #...: A3F250310-002 Work Order #...: FQ7MH Matrix.....: SO
Date Sampled...: 06/24/03 13:30 Date Received..: 06/25/03
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Corrosivity	9.3		No Units	SW846 9045C	06/25/03	3176643
	Dilution Factor: 1					
Flashpoint	>180		deg F	SW846 1010	07/07/03	3188488
	Dilution Factor: 1					
Reactive Cyanide	ND	200	mg/kg	SW846 7.3.3	07/02/03	3183306
	Dilution Factor: 1					
Reactive Sulfide	ND	500	mg/kg	SW846 7.3.4	07/02/03	3183304
	Dilution Factor: 1					

QUALITY CONTROL SECTION

METHOD BLANK REPORT

TCLP GC/MS Volatiles

Client Lot #...: A3F250310 **Work Order #...:** FQ9Q71AA **Matrix.....:** SOLID
MB Lot-Sample #: A3F260000-414
Leach Date.....: 06/26/03 **Prep Date.....:** 07/01/03 **Analysis Date..:** 07/01/03
Leach Batch #..: P317712 **Prep Batch #...:** 3183288
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	0.025	mg/L	SW846 8260B
Carbon tetrachloride	ND	0.025	mg/L	SW846 8260B
Chlorobenzene	ND	0.025	mg/L	SW846 8260B
Chloroform	ND	0.025	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.025	mg/L	SW846 8260B
1,1-Dichloroethylene	ND	0.070	mg/L	SW846 8260B
Methyl ethyl ketone	ND	0.050	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.070	mg/L	SW846 8260B
Trichloroethylene	ND	0.050	mg/L	SW846 8260B
Vinyl chloride	ND	0.050	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	97	(59 - 138)
1,2-Dichloroethane-d4	90	(61 - 130)
Toluene-d8	98	(60 - 143)
4-Bromofluorobenzene	101	(47 - 158)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3F250310 **Work Order #...:** FRLWT1AA **Matrix.....:** SOLID
LCS Lot-Sample#: A3G020000-288
Prep Date.....: 07/01/03 **Analysis Date..:** 07/01/03
Prep Batch #...: 3183288
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**0.25**	**0.25**	**mg/L**	**100**	**SW846 8260B**
Chlorobenzene	**0.25**	**0.26**	**mg/L**	**104**	**SW846 8260B**
1,1-Dichloroethylene	**0.25**	**0.24**	**mg/L**	**98**	**SW846 8260B**
Trichloroethylene	**0.25**	**0.25**	**mg/L**	**100**	**SW846 8260B**
Toluene	**0.25**	**0.27**	**mg/L**	**108**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	95	(59 - 138)
1,2-Dichloroethane-d4	90	(61 - 130)
Toluene-d8	98	(60 - 143)
4-Bromofluorobenzene	106	(47 - 158)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3F250310 **Work Order #...:** FRLWT1AA **Matrix.....:** SOLID
LCS Lot-Sample#: A3G020000-288
Prep Date.....: 07/01/03 **Analysis Date..:** 07/01/03
Prep Batch #...: 3183288
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**100**	**(75 - 129)**	**SW846 8260B**
Chlorobenzene	**104**	**(75 - 127)**	**SW846 8260B**
1,1-Dichloroethylene	**98**	**(55 - 142)**	**SW846 8260B**
Trichloroethylene	**100**	**(70 - 131)**	**SW846 8260B**
Toluene	**108**	**(71 - 130)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	95	(59 - 138)
1,2-Dichloroethane-d4	90	(61 - 130)
Toluene-d8	98	(60 - 143)
4-Bromofluorobenzene	106	(47 - 158)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

TCLP GC/MS Volatiles

Client Lot #...: A3F250310 **Work Order #...:** FQ7MH1AV-MS **Matrix.....:** SO
MS Lot-Sample #: A3F250310-002 FQ7MH1AW-MSD
Date Sampled...: 06/24/03 13:30 **Date Received..:** 06/25/03
Leach Date.....: 06/26/03 **Prep Date.....:** 07/01/03 **Analysis Date..:** 07/01/03
Leach Batch #..: P317712 **Prep Batch #...:** 3183288
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	0.25	0.22	mg/L	89		SW846 8260B
	ND	0.25	0.24	mg/L	96	7.4	SW846 8260B
Chlorobenzene	ND	0.25	0.23	mg/L	94		SW846 8260B
	ND	0.25	0.25	mg/L	99	5.4	SW846 8260B
1,1-Dichloroethylene	ND	0.25	0.21	mg/L	86		SW846 8260B
	ND	0.25	0.23	mg/L	93	8.3	SW846 8260B
Trichloroethylene	ND	0.25	0.21	mg/L	85		SW846 8260B
	ND	0.25	0.24	mg/L	94	11	SW846 8260B
Toluene	ND	0.25	0.24	mg/L	96		SW846 8260B
	ND	0.25	0.26	mg/L	101	5.8	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(59 - 138)
	93	(59 - 138)
1,2-Dichloroethane-d4	83	(61 - 130)
	88	(61 - 130)
Toluene-d8	90	(60 - 143)
	96	(60 - 143)
4-Bromofluorobenzene	99	(47 - 158)
	104	(47 - 158)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP GC/MS Volatiles

Client Lot #...: A3F250310 **Work Order #...:** FQ7MH1AV-MS **Matrix.....:** SO
MS Lot-Sample #: A3F250310-002 FQ7MH1AW-MSD
Date Sampled...: 06/24/03 13:30 **Date Received..:** 06/25/03
Leach Date.....: 06/26/03 **Prep Date.....:** 07/01/03 **Analysis Date..:** 07/01/03
Leach Batch #..: P317712 **Prep Batch #...:** 3183288
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**89**	**(55 - 138)**			**SW846 8260B**
	96	**(55 - 138)**	**7.4**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**94**	**(49 - 139)**			**SW846 8260B**
	99	**(49 - 139)**	**5.4**	**(0-22)**	**SW846 8260B**
1,1-Dichloroethylene	**86**	**(43 - 147)**			**SW846 8260B**
	93	**(43 - 147)**	**8.3**	**(0-27)**	**SW846 8260B**
Trichloroethylene	**85**	**(46 - 143)**			**SW846 8260B**
	94	**(46 - 143)**	**11**	**(0-23)**	**SW846 8260B**
Toluene	**96**	**(46 - 147)**			**SW846 8260B**
	101	**(46 - 147)**	**5.8**	**(0-24)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(59 - 138)
	93	(59 - 138)
1,2-Dichloroethane-d4	83	(61 - 130)
	88	(61 - 130)
Toluene-d8	90	(60 - 143)
	96	(60 - 143)
4-Bromofluorobenzene	99	(47 - 158)
	104	(47 - 158)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

TCLP GC/MS Semivolatiles

Client Lot #...: A3F250310 **Work Order #...:** FRJGH1AA **Matrix.....:** SOLID
MB Lot-Sample #: A3G010000-273
Leach Date.....: 06/30/03 **Prep Date.....:** 07/01/03 **Analysis Date..:** 07/07/03
Leach Batch #..: P318202 **Prep Batch #...:** 3182273
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
o-Cresol	ND	0.050	mg/L	SW846 8270C
m-Cresol & p-Cresol	ND	0.10	mg/L	SW846 8270C
1,4-Dichlorobenzene	ND	0.050	mg/L	SW846 8270C
2,4-Dinitrotoluene	ND	0.050	mg/L	SW846 8270C
Hexachlorobenzene	ND	0.050	mg/L	SW846 8270C
Hexachlorobutadiene	ND	0.050	mg/L	SW846 8270C
Hexachloroethane	ND	0.050	mg/L	SW846 8270C
Nitrobenzene	ND	0.050	mg/L	SW846 8270C
Pentachlorophenol	ND	0.10	mg/L	SW846 8270C
Pyridine	ND	0.10	mg/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	0.25	mg/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	0.050	mg/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	58	(32 - 112)
2-Fluorobiphenyl	51	(30 - 110)
Terphenyl-d14	91	(10 - 144)
Phenol-d5	60	(10 - 113)
2-Fluorophenol	49	(13 - 110)
2,4,6-Tribromophenol	58	(21 - 122)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A3F250310 Work Order #...: FRJGH1AC-LCS Matrix.....: SOLID
LCS Lot-Sample#: A3G010000-273 FRJGH1AD-LCSD
Prep Date.....: 07/01/03 Analysis Date..: 07/07/03
Prep Batch #...: 3182273
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
o-Cresol	0.080	0.049	mg/L	62		SW846 8270C
	0.080	0.054	mg/L	67	8.1	SW846 8270C
m-Cresol & p-Cresol	0.16	0.10	mg/L	65		SW846 8270C
	0.16	0.11	mg/L	71	8.6	SW846 8270C
1,4-Dichlorobenzene	0.080	0.056	mg/L	69		SW846 8270C
	0.080	0.057	mg/L	72	3.3	SW846 8270C
2,4-Dinitrotoluene	0.080	0.058	mg/L	73		SW846 8270C
	0.080	0.060	mg/L	75	3.2	SW846 8270C
Hexachlorobenzene	0.080	0.058	mg/L	73		SW846 8270C
	0.080	0.061	mg/L	76	3.9	SW846 8270C
Hexachlorobutadiene	0.080	0.047	mg/L	59		SW846 8270C
	0.080	0.048	mg/L	60	1.9	SW846 8270C
Hexachloroethane	0.080	0.050	mg/L	63		SW846 8270C
	0.080	0.052	mg/L	66	4.6	SW846 8270C
Nitrobenzene	0.080	0.062	mg/L	78		SW846 8270C
	0.080	0.064	mg/L	80	2.5	SW846 8270C
Pentachlorophenol	0.080	0.036	mg/L	44		SW846 8270C
	0.080	0.049	mg/L	62	33	SW846 8270C
Pyridine	0.080	0.062	mg/L	78		SW846 8270C
	0.080	0.065	mg/L	82	5.0	SW846 8270C
2,4,5-Trichloro-phenol	0.080	0.048	mg/L	60		SW846 8270C
	0.080	0.055	mg/L	69	14	SW846 8270C
2,4,6-Trichloro-phenol	0.080	0.046	mg/L	58		SW846 8270C
	0.080	0.054	mg/L	68	15	SW846 8270C
Cresols (total)	0.24	0.15	mg/L	64		SW846 8270C
	0.24	0.17	mg/L	69	8.4	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	74	(32 - 112)
	77	(32 - 112)
2-Fluorobiphenyl	65	(30 - 110)
	66	(30 - 110)
Terphenyl-d14	101	(10 - 144)
	107	(10 - 144)
Phenol-d5	57	(10 - 113)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A3F250310 **Work Order #...:** FRJGH1AC-LCS **Matrix.....:** SOLID
LCS Lot-Sample#: A3G010000-273 FRJGH1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	68	(10 - 113)
	39	(13 - 110)
2,4,6-Tribromophenol	49	(13 - 110)
	68	(21 - 122)
	75	(21 - 122)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A3F250310 **Work Order #...:** FRJGH1AC-LCS **Matrix.....:** SOLID
LCS Lot-Sample#: A3G010000-273 FRJGH1AD-LCSD
Prep Date.....: 07/01/03 **Analysis Date..:** 07/07/03
Prep Batch #...: 3182273
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
o-Cresol	62	(33 - 115)			SW846 8270C
	67	(33 - 115)	8.1	(0-31)	SW846 8270C
m-Cresol & p-Cresol	65	(46 - 109)			SW846 8270C
	71	(46 - 109)	8.6	(0-32)	SW846 8270C
1,4-Dichlorobenzene	69	(28 - 110)			SW846 8270C
	72	(28 - 110)	3.3	(0-36)	SW846 8270C
2,4-Dinitrotoluene	73	(47 - 131)			SW846 8270C
	75	(47 - 131)	3.2	(0-32)	SW846 8270C
Hexachlorobenzene	73	(57 - 128)			SW846 8270C
	76	(57 - 128)	3.9	(0-22)	SW846 8270C
Hexachlorobutadiene	59	(36 - 116)			SW846 8270C
	60	(36 - 116)	1.9	(0-32)	SW846 8270C
Hexachloroethane	63	(30 - 110)			SW846 8270C
	66	(30 - 110)	4.6	(0-33)	SW846 8270C
Nitrobenzene	78	(45 - 130)			SW846 8270C
	80	(45 - 130)	2.5	(0-50)	SW846 8270C
Pentachlorophenol	44	(10 - 140)			SW846 8270C
	62	(10 - 140)	33	(0-56)	SW846 8270C
Pyridine	78	(10 - 148)			SW846 8270C
	82	(10 - 148)	5.0	(0-65)	SW846 8270C
2,4,5-Trichloro-phenol	60	(41 - 125)			SW846 8270C
	69	(41 - 125)	14	(0-22)	SW846 8270C
2,4,6-Trichloro-phenol	58	(46 - 135)			SW846 8270C
	68	(46 - 135)	15	(0-27)	SW846 8270C
Cresols (total)	64	(46 - 109)			SW846 8270C
	69	(46 - 109)	8.4	(0-32)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	74	(32 - 112)
	77	(32 - 112)
2-Fluorobiphenyl	65	(30 - 110)
	66	(30 - 110)
Terphenyl-d14	101	(10 - 144)
	107	(10 - 144)
Phenol-d5	57	(10 - 113)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A3F250310 **Work Order #...:** FRJGH1AC-LCS **Matrix.....:** SOLID
LCS Lot-Sample#: A3G010000-273 FRJGH1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
	68	(10 - 113)
2-Fluorophenol	39	(13 - 110)
	49	(13 - 110)
2,4,6-Tribromophenol	68	(21 - 122)
	75	(21 - 122)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: A3F250310 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A3G010000-122 **Prep Batch #...:** 3183111						
Leach Date.....: 06/30/03 **Leach Batch #..:** P318202						
Arsenic	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FRHW01AA
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	07/02-07/03/03	FRHW01AC
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	07/02-07/03/03	FRHW01AD
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FRHW01AE
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FRHW01AF
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	07/02-07/03/03	FRHW01AG
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FRHW01AH
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	07/02-07/03/03	FRHW01AJ
		Dilution Factor: 1				

NOTE(S):

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

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: A3F250310 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A3G020000-111 **Prep Batch #...:** 3183111						
Arsenic	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FRLD81AC
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	07/02-07/03/03	FRLD81AD
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	07/02-07/03/03	FRLD81A8
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FRLD81AL
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FRLD81AF
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	07/02-07/03/03	FRLD81AH
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	07/02-07/03/03	FRLD81A9
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	07/02-07/03/03	FRLD81AM
		Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

TCLP Metals

Client Lot #...: A3F250310 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A3G020000-111 **Prep Batch #...:** 3183111							
Arsenic	2.0	2.0	mg/L	102	SW846 6010B	07/02-07/03/03	FRLD81AT
			Dilution Factor: 1				
Barium	2.0	2.1	mg/L	106	SW846 6010B	07/02-07/03/03	FRLD81AU
			Dilution Factor: 1				
Cadmium	0.050	0.053	mg/L	105	SW846 6010B	07/02-07/03/03	FRLD81CA
			Dilution Factor: 1				
Chromium	0.20	0.21	mg/L	106	SW846 6010B	07/02-07/03/03	FRLD81A3
			Dilution Factor: 1				
Lead	0.50	0.52	mg/L	104	SW846 6010B	07/02-07/03/03	FRLD81AW
			Dilution Factor: 1				
Selenium	2.0	2.1	mg/L	104	SW846 6010B	07/02-07/03/03	FRLD81A0
			Dilution Factor: 1				
Silver	0.050	0.058	mg/L	116	SW846 6010B	07/02-07/03/03	FRLD81CC
			Dilution Factor: 1				
Mercury	0.0050	0.0061	mg/L	122	SW846 7470A	07/02-07/03/03	FRLD81A4
			Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: A3F250310 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A3G020000-111 **Prep Batch #...:** 3183111					
Arsenic	102	(50 - 150)	SW846 6010B Dilution Factor: 1	07/02-07/03/03	FRLD81AT
Barium	106	(50 - 150)	SW846 6010B Dilution Factor: 1	07/02-07/03/03	FRLD81AU
Cadmium	105	(50 - 150)	SW846 6010B Dilution Factor: 1	07/02-07/03/03	FRLD81CA
Chromium	106	(50 - 150)	SW846 6010B Dilution Factor: 1	07/02-07/03/03	FRLD81A3
Lead	104	(50 - 150)	SW846 6010B Dilution Factor: 1	07/02-07/03/03	FRLD81AW
Selenium	104	(50 - 150)	SW846 6010B Dilution Factor: 1	07/02-07/03/03	FRLD81A0
Silver	116	(50 - 150)	SW846 6010B Dilution Factor: 1	07/02-07/03/03	FRLD81CC
Mercury	122	(50 - 150)	SW846 7470A Dilution Factor: 1	07/02-07/03/03	FRLD81A4

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TCLP Metals

Client Lot #...: A3F250310 **Matrix.....:** SOLID
Date Sampled...: 06/26/03 08:10 **Date Received..:** 06/26/03

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A3F260238-001 **Prep Batch #...:** 3183111									
Leach Date.....: 06/30/03 **Leach Batch #..:** P318202									
Arsenic									
	ND	5.0	5.7	mg/L	113		SW846 6010B	07/02-07/03/03	FQ9EG1CW
	ND	5.0	5.8	mg/L	116	2.5	SW846 6010B	07/02-07/03/03	FQ9EG1CX
			Dilution Factor: 5						
Barium									
	ND	50.0	56.8	mg/L	109		SW846 6010B	07/02-07/03/03	FQ9EG1C0
	ND	50.0	58.0	mg/L	111	2.0	SW846 6010B	07/02-07/03/03	FQ9EG1C1
			Dilution Factor: 5						
Cadmium									
	ND	1.0	1.1	mg/L	111		SW846 6010B	07/02-07/03/03	FQ9EG1DT
	ND	1.0	1.1	mg/L	114	2.3	SW846 6010B	07/02-07/03/03	FQ9EG1DU
			Dilution Factor: 5						
Chromium									
	ND	5.0	5.7	mg/L	113		SW846 6010B	07/02-07/03/03	FQ9EG1DF
	ND	5.0	5.8	mg/L	115	2.3	SW846 6010B	07/02-07/03/03	FQ9EG1DG
			Dilution Factor: 5						
Lead									
	ND	5.0	5.7	mg/L	112		SW846 6010B	07/02-07/03/03	FQ9EG1C4
	ND	5.0	5.8	mg/L	115	2.3	SW846 6010B	07/02-07/03/03	FQ9EG1C5
			Dilution Factor: 5						
Selenium									
	ND	1.0	1.2	mg/L	115		SW846 6010B	07/02-07/03/03	FQ9EG1C8
	ND	1.0	1.2	mg/L	117	1.8	SW846 6010B	07/02-07/03/03	FQ9EG1C9
			Dilution Factor: 5						
Silver									
	ND	1.0	1.1	mg/L	109		SW846 6010B	07/02-07/03/03	FQ9EG1DW
	ND	1.0	1.1	mg/L	112	1.9	SW846 6010B	07/02-07/03/03	FQ9EG1DX
			Dilution Factor: 5						
Mercury									
	ND	0.0050	0.0054	mg/L	105		SW846 7470A	07/02-07/03/03	FQ9EG1DH
	ND	0.0050	0.0055	mg/L	106	0.54	SW846 7470A	07/02-07/03/03	FQ9EG1DJ
			Dilution Factor: 1						

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: A3F250310 **Matrix.....:** SOLID
Date Sampled...: 06/26/03 08:10 **Date Received..:** 06/26/03

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A3F260238-001 **Prep Batch #...:** 3183111							
Leach Date.....: 06/30/03 **Leach Batch #..:** P318202							
Arsenic	113	(50 - 150)			SW846 6010B	07/02-07/03/03	FQ9EG1CW
	116	(50 - 150)	2.5	(0-20)	SW846 6010B	07/02-07/03/03	FQ9EG1CX
		Dilution Factor: 5					
Barium	109	(50 - 150)			SW846 6010B	07/02-07/03/03	FQ9EG1C0
	111	(50 - 150)	2.0	(0-20)	SW846 6010B	07/02-07/03/03	FQ9EG1C1
		Dilution Factor: 5					
Cadmium	111	(50 - 150)			SW846 6010B	07/02-07/03/03	FQ9EG1DT
	114	(50 - 150)	2.3	(0-20)	SW846 6010B	07/02-07/03/03	FQ9EG1DU
		Dilution Factor: 5					
Chromium	113	(50 - 150)			SW846 6010B	07/02-07/03/03	FQ9EG1DF
	115	(50 - 150)	2.3	(0-20)	SW846 6010B	07/02-07/03/03	FQ9EG1DG
		Dilution Factor: 5					
Lead	112	(50 - 150)			SW846 6010B	07/02-07/03/03	FQ9EG1C4
	115	(50 - 150)	2.3	(0-20)	SW846 6010B	07/02-07/03/03	FQ9EG1C5
		Dilution Factor: 5					
Selenium	115	(50 - 150)			SW846 6010B	07/02-07/03/03	FQ9EG1C8
	117	(50 - 150)	1.8	(0-20)	SW846 6010B	07/02-07/03/03	FQ9EG1C9
		Dilution Factor: 5					
Silver	109	(50 - 150)			SW846 6010B	07/02-07/03/03	FQ9EG1DW
	112	(50 - 150)	1.9	(0-20)	SW846 6010B	07/02-07/03/03	FQ9EG1DX
		Dilution Factor: 5					
Mercury	105	(50 - 150)			SW846 7470A	07/02-07/03/03	FQ9EG1DH
	106	(50 - 150)	0.54	(0-20)	SW846 7470A	07/02-07/03/03	FQ9EG1DJ
		Dilution Factor: 1					

NOTE(S):

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

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A3F250310 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Reactive Cyanide		Work Order #: FRNAG1AA		MB Lot-Sample #:	A3G020000-306	
	ND	200	mg/kg	SW846 7.3.3	07/02/03	3183306
		Dilution Factor: 1				
Reactive Sulfide		Work Order #: FRNAP1AA		MB Lot-Sample #:	A3G020000-304	
	ND	500	mg/kg	SW846 7.3.4	07/02/03	3183304
		Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A3F250310 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Corrosivity			Work Order #: FQ75A1AA LCS Lot-Sample#: A3F250000-643				
	8.1	8.0	No Units	99	SW846 9045C	06/25-06/26/03	3176643
			Dilution Factor: 1				
Reactive Cyanide			Work Order #: FRNAG1AC LCS Lot-Sample#: A3G020000-306				
	1000	200	mg/kg	20	SW846 7.3.3	07/02/03	3183306
			Dilution Factor: 1				
Reactive Sulfide			Work Order #: FRNAP1AC LCS Lot-Sample#: A3G020000-304				
	1000	450	mg/kg	45	SW846 7.3.4	07/02/03	3183304
			Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A3F250310 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Corrosivity		Work Order #: FQ75A1AA		LCS Lot-Sample#: A3F250000-643	
	99	(97 - 103)	SW846 9045C	06/25-06/26/03	3176643
		Dilution Factor: 1			
Reactive Cyanide		Work Order #: FRNAG1AC		LCS Lot-Sample#: A3G020000-306	
	20	(10 - 200)	SW846 7.3.3	07/02/03	3183306
		Dilution Factor: 1			
Reactive Sulfide		Work Order #: FRNAP1AC		LCS Lot-Sample#: A3G020000-304	
	45	(10 - 200)	SW846 7.3.4	07/02/03	3183304
		Dilution Factor: 1			

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A3F250310 **Matrix.....:** SO
Date Sampled...: 06/24/03 13:00 **Date Received..:** 06/25/03

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Reactive Cyanide			WO#: FQ7MA1AU-MS/FQ7MA1AV-MSD				MS Lot-Sample #: A3F250310-001		
	ND	1000	62 N	mg/kg	5.0		SW846 7.3.3	07/02/03	3183306
	ND	1000	62 N	mg/kg	5.0	0.0	SW846 7.3.3	07/02/03	3183306
			Dilution Factor: 1						
Reactive Sulfide			WO#: FQ7MA1AW-MS/FQ7MA1AX-MSD				MS Lot-Sample #: A3F250310-001		
	ND	1000	130	mg/kg	13		SW846 7.3.4	07/02/03	3183304
	ND	1000	160	mg/kg	16	21	SW846 7.3.4	07/02/03	3183304
			Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A3F250310 **Matrix.....:** SO
Date Sampled...: 06/24/03 13:00 **Date Received..:** 06/25/03

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Reactive Cyanide		WO#: FQ7MA1AU-MS/FQ7MA1AV-MSD				MS Lot-Sample #: A3F250310-001	
	5.0 N	(10 - 200)			SW846 7.3.3	07/02/03	3183306
	5.0 N	(10 - 200)	0.0	(0-100)	SW846 7.3.3	07/02/03	3183306
		Dilution Factor: 1					
Reactive Sulfide		WO#: FQ7MA1AW-MS/FQ7MA1AX-MSD				MS Lot-Sample #: A3F250310-001	
	13	(10 - 200)			SW846 7.3.4	07/02/03	3183304
	16	(10 - 200)	21	(0-100)	SW846 7.3.4	07/02/03	3183304
		Dilution Factor: 1					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A3F250310 **Work Order #...:** FQ7MH-SMP FQ7MH-DUP **Matrix.....:** SO

Date Sampled...: 06/24/03 13:30 **Date Received..:** 06/25/03

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Corrosivity						SD Lot-Sample #: A3F250310-002		
	9.3	9.3	No Units	0.11	(0-20)	SW846 9045C	06/25/03	3176643

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A3F250310 **Work Order #...:** FQJWX-SMP FQJWX-DUP **Matrix.....:** WASTE

Date Sampled...: 06/11/03 10:45 **Date Received..:** 06/13/03

% Moisture.....: 0.0

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
						SD Lot-Sample #:	C3F130341-001	
Flashpoint	144	143	deg F	0.35	(0-20)	SW846 1010	07/07/03	3188487

Dilution Factor: 1

Y1

CRA

CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL

REFERENCE NUMBER: 17360

PROJECT NAME: GM Grand Rapids Metal

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Bart Williams

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: TCLP metals	TCLP VOCs	TCLP SVOC	Reactivity	Corrosivity	RCI	REMARKS
	6/24/03	1300	S-17360-062403-BW-039	so.	5	X	X	X	X	X	X	2 x TAL
	6/24/03	1330	S-17360-062403-BW-040	"	2	X	X	X	X	X	X	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: 1. [signature]	DATE: 6/24/03 TIME: 1800	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: FEDEX AIR BILL No.

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

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY: [signature]
DATE: 6/25/03 TIME: 10:35

23823

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

39

STL North Canton

SEVERN TRENT STL

END OF REPORT

SEVERN TRENT STL

REC'D CRA
AUG -5 2003
SDG: G-1

ANALYTICAL REPORT

PROJECT NO. 17360-09

GM-GRAND RAPIDS

Lot #: A3G150131

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

ORIGINAL ANALYTICAL REPORT
Project#: 17360-09 Lab#: A3G150131
Name: GM GR
Description
Event: GW Monitoring
Samples: 14 water
Analysis: VOC, diss gas, TOC, Hardness, Sulfide MTL
TAT: 14 day
Lab: STL
Checked Against Preliminary Data:
Date: _____ Init.: _____
Date of Validation Memo: 8/28/03
Invoice Approval Date: _____
Comments: _____

SEVERN TRENT LABORATORIES, INC.

Amy L. McCormick
Project Manager

July 31, 2003

Page 1 of 1 Coolers M-129, M-60, M-20

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17306-09

PROJECT NAME: GM-Grand Rapids

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Pooler

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: VOC	Dissolved Fe	TOC	Nitrate *	Hardness	Sulfide	Metals			REMARKS
1	07/14/03		GW-17360-071403-SP-041	W	11	X	X	X	X	X	X	X			
2			-042		11	X	X	X	X	X	X	X			*Nitrite, Sulfate, Alkalinity, Chloride
3			-043		11	X	X	X	X	X	X	X			
4			-044		11	X	X	X	X	X	X	X			
5			-045		11	X	X	X	X	X	X	X			
6			-046		11	X	X	X	X	X	X	X			Note: Bottle labels
7			-047		11	X	X	X	X	X	X	X			should have 17360
8			-048		11	X	X	X	X	X	X	X			before date in
9			-049		11	X	X	X	X	X	X	X			sample ID.
10			-050		11	X	X	X	X	X	X	X			
11			-051		11	X	X	X	X	X	X	X			Standard TAT
12			-052		11	X	X	X	X	X	X	X			CRA Contact:
13			-053		11	X	X	X	X	X	X	X			Paul Wisman
14			TB-17360-071403-SP-054		3	X									
1			TOTAL NUMBER OF CONTAINERS		146										

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
1. S. Pooler	07/14/03	1900	1.		
2.			2.		
3.			1.		

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 8384 6514 0250

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

25115

SAMPLE TEAM: S. Pooler, Joe Branch, Bart Williams

RECEIVED FOR LABORATORY BY: [signature]
DATE: 7/15/03 TIME: 9:15

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

SEVERN TRENT STL

CASE NARRATIVE

CASE NARRATIVE

A3G150131

The following report contains the analytical results for thirteen water samples and one quality control sample submitted to STL North Canton by Conestoga-Rovers & Associates, Inc. from the GM Grand Rapids Site, project number 17360-09. The samples were received July 15, 2003, according to documented sample acceptance procedures.

The samples presented in this report were analyzed for the parameters listed on the analytical methods summary page in accordance with the methods indicated. Preliminary results were provided to the Chemistry Department on July 29, 2003. A summary of QC data for these analyses is included at the rear of the report.

SUPPLEMENTAL QC INFORMATION

GC/MS VOLATILES

Sample(s) that contain results between the MDL and the RL were flagged with "J". There is the possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

METALS

ICP Trace Form IX was not provided for batch 3198099. The serial dilution was performed on an unrelated sample from the same batch.

Samples that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive of mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are ± the standard reporting limit (SRL).

GENERAL CHEMISTRY

Samples that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive of mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are ± the standard reporting limit (SRL).

Sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analyte(s).

STL utilizes USEPA approved methods in all analytical work. 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.

Amy McCormick
Project Manager

QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

STL North Canton Certifications and Approvals:
Alabama (#41170), California (#2157), Connecticut (#PH-0590), Florida (#E87225), Illinois (#100439), Kansas (#E10336), Kentucky (#90021), Massachusetts (#M-OH048), Maryland (#272), Minnesota (#39-999-348), Missouri (#6090), New Jersey (#74001), New York (#10975), North Dakota (#R-156), Ohio (#6090), OhioVAP (#CL0024), Pennsylvania (#68-340), Rhode Island (#237), South Carolina (#92007001, #92007002, #92007003), Tennessee (#02903), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit, ACIL Seal of Excellence – Participating Lab Status Award (#82)

SEVERN TRENT STL

METHOD REFERENCE

ANALYTICAL METHODS SUMMARY

A3G150131

PARAMETER	ANALYTICAL METHOD
Alkalinity	MCAWW 310.1
Chloride	MCAWW 300.0A
Dissolved Gases in Water	RSK SOP-175
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Nitrate as N	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A
Sulfate	MCAWW 300.0A
Sulfide	MCAWW 376.1
Total Hardness (Titrimetric, EDTA)	MCAWW 130.2
Total Organic Carbon	MCAWW 415.1
Volatile Organics by GC/MS	SW846 8260B

References:

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

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SEVERN TRENT STL

SAMPLE SUMMARY

SAMPLE SUMMARY

A3G150131

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FR962	001	GW-17360-071403-SP-041	07/14/03	
FR97A	002	GW-17360-071403-SP-042	07/14/03	
FR97D	003	GW-17360-071403-SP-043	07/14/03	
FR97E	004	GW-17360-071403-SP-044	07/14/03	
FR97F	005	GW-17360-071403-SP-045	07/14/03	
FR97G	006	GW-17360-071403-SP-046	07/14/03	
FR97H	007	GW-17360-071403-SP-047	07/14/03	
FR97K	008	GW-17360-071403-SP-048	07/14/03	
FR97M	009	GW-17360-071403-SP-049	07/14/03	
FR97N	010	GW-17360-071403-SP-050	07/14/03	
FR97P	011	GW-17360-071403-SP-051	07/14/03	
FR97R	012	GW-17360-071403-SP-052	07/14/03	
FR97T	013	GW-17360-071403-SP-053	07/14/03	
FR97W	014	TB-17360-071403-SP-054	07/14/03	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SEVERN TRENT STL

SHIPPING AND RECEIVING DOCUMENTS

Page 1 of 1 Coolers M-120, M-60, M-70

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17306-09

PROJECT NAME: GM-Grand Rapids

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Pooler

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: VOC	Dissolved Fe	TOC	Nitrate +	Hardness	Sulfide	Metals			REMARKS
1	07/14/03		GW-17360-071403-SP-041	W	11	X	X	X	X	X	X	X			
2			-042		11	X	X	X	X	X	X	X			*Nitrate, Sulfate, Alkalinity, Chloride
3			-043		11	X	X	X	X	X	X	X			
4			-044		11	X	X	X	X	X	X	X			
5			-045		11	X	X	X	X	X	X	X			
6			-046		11	X	X	X	X	X	X	X			Note: Bottle labels
7			-047		11	X	X	X	X	X	X	X			should have 17360
8			-048		11	X	X	X	X	X	X	X			before date in
9			-049		11	X	X	X	X	X	X	X			sample ID
10			-050		11	X	X	X	X	X	X	X			
11			-051		11	X	X	X	X	X	X	X			Standard TAT
12			-052		11	X	X	X	X	X	X	X			CRA Contact:
13			-053		11	X	X	X	X	X	X	X			Paul Wisman
14			TB-17360-071403 SP-054		3	X									
1			TOTAL NUMBER OF CONTAINERS		146										

RELINQUISHED BY: 1. S. Pooler	DATE: 07/14/03 TIME: 1900	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 8384 6514 0250

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

25115

SAMPLE TEAM: S. Pooler, Joe Branch, Bart Williams

RECEIVED FOR LABORATORY BY: [signature]
DATE: 7/15/03 TIME: 9:15

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

STL North Canton

RSR280

Client: 57787

Lot #: A3G150131

Case Number/SDG: 17306-09

Storage Location: MS/W76 S36 MS GCS

Severn Trent Laboratories, Inc.
Sample Control Record

Laboratory Sample I.D.	Transferred By	Date	Entered	Removed	Reason	Date Returned
FR962	EARLES	7/15/03	Yes		Storage	
FR97A	EARLES	7/15/03	Yes		Storage	
FR97D	EARLES	7/15/03	Yes		Storage	
FR97E	EARLES	7/15/03	Yes		Storage	
FR97F	EARLES	7/15/03	Yes		Storage	
FR97G	EARLES	7/15/03	Yes		Storage	
FR97H	EARLES	7/15/03	Yes		Storage	
FR97K	EARLES	7/15/03	Yes		Storage	
FR97M	EARLES	7/15/03	Yes		Storage	
FR97N	EARLES	7/15/03	Yes		Storage	
FR97P	EARLES	7/15/03	Yes		Storage	
FR97R	EARLES	7/15/03	Yes		Storage	
FR97T	EARLES	7/15/03	Yes		Storage	
FR97W	EARLES	7/15/03	Yes		Storage	

STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A36 150613

Client: CRA Project: GM-Grand Rapids Quote#: 501154

Cooler Received on: 7/15/03 Opened on: 7/15/03 by: JL Willa (Signature)

Fedx [X] Client Drop Off [ ] UPS [ ] Airborne [ ] Other:_____

Cooler [X] Safe [ ] Foam Box [ ] Client Cooler [ ] Other:_____

STL Shipper No#: See back

1. Were custody seals on the outside of the cooler? Yes [ ] No [X] Intact? Yes [ ] No [ ] NA [X]
   If YES, Quantity_____ Location_____
   Were the custody seals signed and dated? Yes [ ] No [ ] NA [X]
2. Shipper's packing slip attached to this form? Yes [X] No [ ]
3. Were custody papers included inside the cooler and relinquished? Yes [X] No [ ]
4. Did you sign the custody papers in the appropriate place? Yes [X] No [ ]
5. Packing material used:

Peanuts [ ] Bubble Wrap [X] Vermiculite [ ] Foam [ ] None [ ] Other :_____

6. Cooler temperature upon receipt _____ °C (see back of form for multiple coolers/temp)

METHOD: Temp Vial [ ] Coolant & Sample [ ] Against Bottles [ ] IR [X] ICE/H_2O Slurry [ ]

COOLANT: Wet Ice [X] Blue Ice [ ] Dry Ice [ ] Water [ ] None [ ]

7. Did all bottles arrive in good condition (Unbroken)? Yes [X] No [ ]
8. Did all bottle labels and tags agree with the custody papers? Yes [X] No [ ]
9. Were samples at the correct pH? (record on back) Yes [X] No [ ] NA [ ]
10. Were correct bottles used for the tests indicated? Yes [X] No [ ]
11. Were air bubbles >6 mm in any VOA vials? Yes [ ] No [X] NA [ ]
12. Was a sufficient amount of sample sent in each bottle? Yes [X] No [ ]

Contacted PM _____ Date:_____ by:_____ via Voice Mail [ ] Verbal [ ] Other [ ]

Concerning:_____

√	MACRO	MACRO
1. CHAIN OF CUSTODY		
	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred_____
2. SAMPLE CONDITION		
	SR2A	Sample(s)_____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
3. SAMPLE PRESERVATION		
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 061603-HNO3; Sulfuric Acid Lot # 112801-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 020501-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s)_____ were received with bubble > 6 mm in diameter (cc: PM)
4. Other (see below or back)		

STL Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials
41	<2 <2 >9	7/15/03	KW
42	<2 <2 >9	↓	↓
43	<2 <2 >9		
44	<2 <2 >9		
45	<2 <2 >9		
46	<2 <2 >9		
47	<2 <2 >9		
48	<2 <2 >9		
49	<2 <2 >9		
50	<2 <2 >9		
51	<2 <2 >9		
52	<2 <2 >9		
53	<2 <2 >9	↓	↓
~~54~~	<2 <2 >9		

Cooler	Temp	Method	Coolant
M-60	4.8	IR	wet ice
M-208	5.4	↓	↓
M-120	2.7		

Discrepancies Cont.

Macro Name:

Macro Name:

Macro Name:

Other Anomalies:

SEVERN TRENT STL

GCMS VOLATILE DATA

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-041

GC/MS Volatiles

Lot-Sample #...: A3G150131-001	**Work Order #...:** FR9621AA	**Matrix.....:** WG	
Date Sampled...: 07/14/03	**Date Received..:** 07/15/03		
Prep Date.....: 07/21/03	**Analysis Date..:** 07/21/03		
Prep Batch #...: 3203654			
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	**0.42 J**	**1.0**	**ug/L**	**0.35**
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

(Continued on next page)

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-041

GC/MS Volatiles

Lot-Sample #...: A3G150131-001 Work Order #...: FR9621AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	ND	1.0	ug/L	0.42
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
1,2-Dichloroethane-d4	111	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	99	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-042

GC/MS Volatiles

Lot-Sample #...: A3G150131-002	**Work Order #...:** FR97A1AA	**Matrix.....:** WG	
Date Sampled...: 07/14/03	**Date Received..:** 07/15/03		
Prep Date.....: 07/21/03	**Analysis Date..:** 07/21/03		
Prep Batch #...: 3203654			
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	**0.76 J**	**1.0**	**ug/L**	**0.35**
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	**0.39 J**	**1.0**	**ug/L**	**0.30**
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-042

GC/MS Volatiles

Lot-Sample #...: A3G150131-002 **Work Order #...:** FR97A1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	**0.55 J**	**1.0**	**ug/L**	**0.42**
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**7.4**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
1,2-Dichloroethane-d4	106	(61 - 128)
Toluene-d8	102	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-043

GC/MS Volatiles

Lot-Sample #...: A3G150131-003	**Work Order #...:** FR97D1AA	**Matrix.....:** WG	
Date Sampled...: 07/14/03	**Date Received..:** 07/15/03		
Prep Date.....: 07/21/03	**Analysis Date..:** 07/21/03		
Prep Batch #...: 3203654			
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	**2.1**	**1.0**	**ug/L**	**0.32**
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	**11**	**1.0**	**ug/L**	**0.35**
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	**0.50 J**	**1.0**	**ug/L**	**0.37**
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-043

GC/MS Volatiles

Lot-Sample #...: A3G150131-003 **Work Order #...:** FR97D1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	**0.58 J**	**1.0**	**ug/L**	**0.42**
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**2.0**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
1,2-Dichloroethane-d4	109	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	99	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-044

GC/MS Volatiles

Lot-Sample #...: A3G150131-004	**Work Order #...:** FR97E1AA	**Matrix.....:** WG	
Date Sampled...: 07/14/03	**Date Received..:** 07/15/03		
Prep Date.....: 07/21/03	**Analysis Date..:** 07/21/03		
Prep Batch #...: 3203654			
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	ND	1.0	ug/L	0.35
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-044

GC/MS Volatiles

Lot-Sample #...: A3G150131-004 Work Order #...: FR97E1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	**14**	**1.0**	**ug/L**	**0.42**
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	ND	1.0	ug/L	0.42
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
1,2-Dichloroethane-d4	108	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-045

GC/MS Volatiles

Lot-Sample #...: A3G150131-005 **Work Order #...:** FR97F1AA **Matrix.....:** WG
Date Sampled...: 07/14/03 **Date Received..:** 07/15/03
Prep Date.....: 07/21/03 **Analysis Date..:** 07/21/03
Prep Batch #...: 3203654
Dilution Factor: 2 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	50	ug/L	2.2
Benzene	ND	2.0	ug/L	0.74
Bromodichloromethane	ND	2.0	ug/L	0.64
Bromoform	ND	2.0	ug/L	0.74
Bromomethane	ND	2.0	ug/L	0.60
2-Butanone	ND	50	ug/L	1.2
Carbon disulfide	ND	10	ug/L	0.48
Carbon tetrachloride	ND	2.0	ug/L	0.74
Chlorobenzene	ND	2.0	ug/L	0.76
Chloroethane	ND	2.0	ug/L	0.58
Chloroform	ND	2.0	ug/L	0.70
Chloromethane	ND	2.0	ug/L	0.98
Cyclohexane	ND	2.0	ug/L	0.66
Dibromochloromethane	ND	2.0	ug/L	0.74
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L	1.6
1,2-Dibromoethane	ND	2.0	ug/L	0.68
1,2-Dichlorobenzene	ND	2.0	ug/L	0.76
1,3-Dichlorobenzene	ND	2.0	ug/L	0.76
1,4-Dichlorobenzene	ND	2.0	ug/L	0.76
Dichlorodifluoromethane	ND	2.0	ug/L	0.98
1,1-Dichloroethane	ND	2.0	ug/L	0.60
1,2-Dichloroethane	ND	2.0	ug/L	0.56
1,1-Dichloroethene	ND	2.0	ug/L	0.62
cis-1,2-Dichloroethene	**2.7**	**2.0**	**ug/L**	**0.70**
trans-1,2-Dichloroethene	ND	2.0	ug/L	0.66
1,2-Dichloropropane	ND	2.0	ug/L	0.82
cis-1,3-Dichloropropene	ND	2.0	ug/L	0.70
trans-1,3-Dichloropropene	ND	2.0	ug/L	0.70
Ethylbenzene	ND	2.0	ug/L	0.82
2-Hexanone	ND	100	ug/L	1.2
Isopropylbenzene	ND	10	ug/L	0.78
Methyl acetate	ND	20	ug/L	1.1
Methylene chloride	ND	10	ug/L	0.58
Methylcyclohexane	ND	2.0	ug/L	0.84
4-Methyl-2-pentanone	ND	100	ug/L	0.52
Methyl tert-butyl ether	ND	10	ug/L	0.54
Styrene	ND	2.0	ug/L	0.70

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-045

GC/MS Volatiles

Lot-Sample #...: A3G150131-005 Work Order #...: FR97F1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L	0.72
Tetrachloroethene	**72**	**2.0**	**ug/L**	**0.84**
Toluene	ND	2.0	ug/L	0.78
1,2,4-Trichloro-benzene	ND	10	ug/L	0.80
1,1,1-Trichloroethane	ND	2.0	ug/L	0.78
1,1,2-Trichloroethane	ND	2.0	ug/L	0.72
Trichloroethene	**1.6 J**	**2.0**	**ug/L**	**0.84**
Trichlorofluoromethane	ND	2.0	ug/L	1.1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.0	ug/L	0.64
Vinyl chloride	ND	2.0	ug/L	0.72
Xylenes (total)	ND	6.0	ug/L	0.88

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
1,2-Dichloroethane-d4	107	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	101	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-046

GC/MS Volatiles

Lot-Sample #...: A3G150131-006 Work Order #...: FR97G1AA Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03
Prep Date.....: 07/21/03 Analysis Date..: 07/21/03
Prep Batch #...: 3203654
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	ND	1.0	ug/L	0.35
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	**1.5**	**1.0**	**ug/L**	**0.30**
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	**0.51 J**	**1.0**	**ug/L**	**0.31**
cis-1,2-Dichloroethene	**1.6**	**1.0**	**ug/L**	**0.35**
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-046

GC/MS Volatiles

Lot-Sample #...: A3G150131-006 Work Order #...: FR97G1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	1.8	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	27	1.0	ug/L	0.42
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	111	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	101	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-047

GC/MS Volatiles

Lot-Sample #...: A3G150131-007	**Work Order #...:** FR97H1AA	**Matrix.....:** WG
Date Sampled...: 07/14/03	**Date Received..:** 07/15/03	
Prep Date.....: 07/21/03	**Analysis Date..:** 07/21/03	
Prep Batch #...: 3203654		
Dilution Factor: 2	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL
	Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**2.6 J**	**50**	**ug/L**	**2.2**
Benzene	ND	2.0	ug/L	0.74
Bromodichloromethane	ND	2.0	ug/L	0.64
Bromoform	ND	2.0	ug/L	0.74
Bromomethane	ND	2.0	ug/L	0.60
2-Butanone	ND	50	ug/L	1.2
Carbon disulfide	ND	10	ug/L	0.48
Carbon tetrachloride	ND	2.0	ug/L	0.74
Chlorobenzene	ND	2.0	ug/L	0.76
Chloroethane	ND	2.0	ug/L	0.58
Chloroform	ND	2.0	ug/L	0.70
Chloromethane	ND	2.0	ug/L	0.98
Cyclohexane	ND	2.0	ug/L	0.66
Dibromochloromethane	ND	2.0	ug/L	0.74
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L	1.6
1,2-Dibromoethane	ND	2.0	ug/L	0.68
1,2-Dichlorobenzene	ND	2.0	ug/L	0.76
1,3-Dichlorobenzene	ND	2.0	ug/L	0.76
1,4-Dichlorobenzene	ND	2.0	ug/L	0.76
Dichlorodifluoromethane	ND	2.0	ug/L	0.98
1,1-Dichloroethane	ND	2.0	ug/L	0.60
1,2-Dichloroethane	ND	2.0	ug/L	0.56
1,1-Dichloroethene	ND	2.0	ug/L	0.62
cis-1,2-Dichloroethene	**42**	**2.0**	**ug/L**	**0.70**
trans-1,2-Dichloroethene	ND	2.0	ug/L	0.66
1,2-Dichloropropane	ND	2.0	ug/L	0.82
cis-1,3-Dichloropropene	ND	2.0	ug/L	0.70
trans-1,3-Dichloropropene	ND	2.0	ug/L	0.70
Ethylbenzene	ND	2.0	ug/L	0.82
2-Hexanone	ND	100	ug/L	1.2
Isopropylbenzene	ND	10	ug/L	0.78
Methyl acetate	ND	20	ug/L	1.1
Methylene chloride	ND	10	ug/L	0.58
Methylcyclohexane	ND	2.0	ug/L	0.84
4-Methyl-2-pentanone	ND	100	ug/L	0.52
Methyl tert-butyl ether	ND	10	ug/L	0.54
Styrene	ND	2.0	ug/L	0.70

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-047

GC/MS Volatiles

Lot-Sample #...: A3G150131-007 Work Order #...: FR97H1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L	0.72
Tetrachloroethene	ND	2.0	ug/L	0.84
Toluene	ND	2.0	ug/L	0.78
1,2,4-Trichloro-benzene	ND	10	ug/L	0.80
1,1,1-Trichloroethane	ND	2.0	ug/L	0.78
1,1,2-Trichloroethane	ND	2.0	ug/L	0.72
Trichloroethene	**28**	**2.0**	**ug/L**	**0.84**
Trichlorofluoromethane	ND	2.0	ug/L	1.1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.0	ug/L	0.64
Vinyl chloride	**3.7**	**2.0**	**ug/L**	**0.72**
Xylenes (total)	ND	6.0	ug/L	0.88

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
1,2-Dichloroethane-d4	108	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	99	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-048

GC/MS Volatiles

Lot-Sample #...: A3G150131-008	**Work Order #...:** FR97K1AA	**Matrix.....:** WG
Date Sampled...: 07/14/03	**Date Received..:** 07/15/03	
Prep Date.....: 07/21/03	**Analysis Date..:** 07/21/03	
Prep Batch #...: 3203654		
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL
	Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	ND	1.0	ug/L	0.35
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	**4.2**	**1.0**	**ug/L**	**0.35**
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-048

GC/MS Volatiles

Lot-Sample #...: A3G150131-008 **Work Order #...:** FR97K1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	**2.9**	**1.0**	**ug/L**	**0.42**
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**1.9**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	**0.43 J**	**1.0**	**ug/L**	**0.36**
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
1,2-Dichloroethane-d4	110	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	101	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-049

GC/MS Volatiles

Lot-Sample #...: A3G150131-009	**Work Order #...:** FR97M1AA	**Matrix.....:** WG	
Date Sampled...: 07/14/03	**Date Received..:** 07/15/03		
Prep Date.....: 07/21/03	**Analysis Date..:** 07/21/03		
Prep Batch #...: 3203654			
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	ND	1.0	ug/L	0.35
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-049

GC/MS Volatiles

Lot-Sample #...: A3G150131-009 Work Order #...: FR97M1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**1.6**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
1,2-Dichloroethane-d4	108	(61 - 128)
Toluene-d8	102	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-050

GC/MS Volatiles

Lot-Sample #...: A3G150131-010 Work Order #...: FR97N1AA Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03
Prep Date.....: 07/21/03 Analysis Date..: 07/21/03
Prep Batch #...: 3203654
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	ND	1.0	ug/L	0.35
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-050

GC/MS Volatiles

Lot-Sample #...: A3G150131-010 Work Order #...: FR97N1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	ND	1.0	ug/L	0.42
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	107	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	97	(74 - 116)

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-051

GC/MS Volatiles

Lot-Sample #...: A3G150131-011	**Work Order #...:** FR97P1AA	**Matrix.....:** WG
Date Sampled...: 07/14/03	**Date Received..:** 07/15/03	
Prep Date.....: 07/21/03	**Analysis Date..:** 07/21/03	
Prep Batch #...: 3203654		
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL
	Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	ND	1.0	ug/L	0.35
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	**3.5**	**1.0**	**ug/L**	**0.35**
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-051

GC/MS Volatiles

Lot-Sample #...: A3G150131-011 Work Order #...: FR97P1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	**0.89 J**	**1.0**	**ug/L**	**0.42**
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**1.6**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
1,2-Dichloroethane-d4	107	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	101	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-052

GC/MS Volatiles

Lot-Sample #...: A3G150131-012	**Work Order #...:** FR97R1AA	**Matrix.....:** WG	
Date Sampled...: 07/14/03	**Date Received..:** 07/15/03		
Prep Date.....: 07/21/03	**Analysis Date..:** 07/21/03		
Prep Batch #...: 3203654			
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	ND	1.0	ug/L	0.35
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	**7.4**	**1.0**	**ug/L**	**0.35**
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-052

GC/MS Volatiles

Lot-Sample #...: A3G150131-012 Work Order #...: FR97R1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	**2.3**	**1.0**	**ug/L**	**0.42**
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**1.6**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	**1.1**	**1.0**	**ug/L**	**0.36**
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	109	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	101	(74 - 116)

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-053

GC/MS Volatiles

Lot-Sample #...: A3G150131-013	**Work Order #...:** FR97T1AA	**Matrix.....:** WG
Date Sampled...: 07/14/03	**Date Received..:** 07/15/03	
Prep Date.....: 07/21/03	**Analysis Date..:** 07/21/03	
Prep Batch #...: 3203654		
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL
	Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	**1.5**	**1.0**	**ug/L**	**0.35**
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-053

GC/MS Volatiles

Lot-Sample #...: A3G150131-013 Work Order #...: FR97T1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**4.3**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
1,2-Dichloroethane-d4	104	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	99	(74 - 116)

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: TB-17360-071403-SP-054

GC/MS Volatiles

Lot-Sample #...: A3G150131-014	**Work Order #...:** FR97W1AA	**Matrix.....:** WQ
Date Sampled...: 07/14/03	**Date Received..:** 07/15/03	
Prep Date.....: 07/21/03	**Analysis Date..:** 07/21/03	
Prep Batch #...: 3203654		
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL
	Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**2.3 J**	**25**	**ug/L**	**1.1**
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	**1.1 J**	**25**	**ug/L**	**0.59**
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	ND	1.0	ug/L	0.35
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: TB-17360-071403-SP-054

GC/MS Volatiles

Lot-Sample #...: A3G150131-014 Work Order #...: FR97W1AA Matrix.....: WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	ND	1.0	ug/L	0.42
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	97	(73 - 122)
1,2-Dichloroethane-d4	103	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	101	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3G150131 **Work Order #...:** FTVPR1AA **Matrix.....:** WATER
MB Lot-Sample #: A3G220000-654

Prep Date.....: 07/21/03 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 07/21/03 **Prep Batch #...:** 3203654
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3G150131 **Work Order #...:** FTVPR1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	**0.80 J**	**5.0**	**ug/L**	**SW846 8260B**
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
1,2-Dichloroethane-d4	108	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	100	(74 - 116)

NOTE(S):

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

J Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3G150131 **Work Order #...:** FTVPR1AC **Matrix.....:** WATER
LCS Lot-Sample#: A3G220000-654
Prep Date.....: 07/21/03 **Analysis Date..:** 07/21/03
Prep Batch #...: 3203654
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10**	**10**	**ug/L**	**102**	**SW846 8260B**
Chlorobenzene	**10**	**9.9**	**ug/L**	**99**	**SW846 8260B**
1,1-Dichloroethene	**10**	**10**	**ug/L**	**104**	**SW846 8260B**
Toluene	**10**	**9.9**	**ug/L**	**99**	**SW846 8260B**
Trichloroethene	**10**	**8.8**	**ug/L**	**88**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
1,2-Dichloroethane-d4	115	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3G150131 **Work Order #...:** FTVPR1AC **Matrix.....:** WATER
LCS Lot-Sample#: A3G220000-654
Prep Date.....: 07/21/03 **Analysis Date..:** 07/21/03
Prep Batch #...: 3203654
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**102**	**(80 - 116)**	**SW846 8260B**
Chlorobenzene	**99**	**(76 - 117)**	**SW846 8260B**
1,1-Dichloroethene	**104**	**(63 - 130)**	**SW846 8260B**
Toluene	**99**	**(74 - 119)**	**SW846 8260B**
Trichloroethene	**88**	**(75 - 122)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
1,2-Dichloroethane-d4	115	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	102	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3G150131 **Work Order #...:** FR9881AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A3G150140-001 FR9881AD-MSD
Date Sampled...: 07/14/03 10:00 **Date Received..:** 07/15/03
Prep Date.....: 07/21/03 **Analysis Date..:** 07/21/03
Prep Batch #...: 3203654
Dilution Factor: 6.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	67	64	ug/L	97		SW846 8260B
	ND	67	63	ug/L	95	1.6	SW846 8260B
Chlorobenzene	ND	67	65	ug/L	97		SW846 8260B
	ND	67	64	ug/L	97	0.05	SW846 8260B
1,1-Dichloroethene	ND	67	63	ug/L	94		SW846 8260B
	ND	67	60	ug/L	90	4.5	SW846 8260B
Toluene	ND	67	52	ug/L	78		SW846 8260B
	ND	67	50	ug/L	75	3.8	SW846 8260B
Trichloroethene	ND	67	55	ug/L	83		SW846 8260B
	ND	67	55	ug/L	83	0.01	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
	99	(73 - 122)
1,2-Dichloroethane-d4	102	(61 - 128)
	111	(61 - 128)
Toluene-d8	101	(76 - 110)
	102	(76 - 110)
4-Bromofluorobenzene	104	(74 - 116)
	104	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3G150131 **Work Order #...:** FR9881AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A3G150140-001 FR9881AD-MSD
Date Sampled...: 07/14/03 10:00 **Date Received..:** 07/15/03
Prep Date.....: 07/21/03 **Analysis Date..:** 07/21/03
Prep Batch #...: 3203654
Dilution Factor: 6.67 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**97**	**(78 - 118)**			**SW846 8260B**
	95	**(78 - 118)**	**1.6**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**97**	**(76 - 117)**			**SW846 8260B**
	97	**(76 - 117)**	**0.05**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**94**	**(62 - 130)**			**SW846 8260B**
	90	**(62 - 130)**	**4.5**	**(0-20)**	**SW846 8260B**
Toluene	**78**	**(70 - 119)**			**SW846 8260B**
	75	**(70 - 119)**	**3.8**	**(0-20)**	**SW846 8260B**
Trichloroethene	**83**	**(62 - 130)**			**SW846 8260B**
	83	**(62 - 130)**	**0.01**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
	99	(73 - 122)
1,2-Dichloroethane-d4	102	(61 - 128)
	111	(61 - 128)
Toluene-d8	101	(76 - 110)
	102	(76 - 110)
4-Bromofluorobenzene	104	(74 - 116)
	104	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

SEVERN TRENT STL

DISSOLVED GASES/RSK DATA

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-041

GC Volatiles

Lot-Sample #...:	A3G150131-001	**Work Order #...:**	FR9621AK	**Matrix.....:**	WG
Date Sampled...:	07/14/03	**Date Received..:**	07/15/03		
Prep Date.....:	07/22/03	**Analysis Date..:**	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-042

GC Volatiles

Lot-Sample #...:	A3G150131-002	**Work Order #...:**	FR97A1AK	**Matrix.....:**	WG
Date Sampled...:	07/14/03	**Date Received..:**	07/15/03		
Prep Date.....:	07/22/03	**Analysis Date..:**	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-043

GC Volatiles

Lot-Sample #...:	A3G150131-003	**Work Order #...:**	FR97D1AK	**Matrix.....:**	WG
Date Sampled...:	07/14/03	**Date Received..:**	07/15/03		
Prep Date.....:	07/22/03	**Analysis Date..:**	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-044

GC Volatiles

Lot-Sample #...:	A3G150131-004	Work Order #...:	FR97E1AK	Matrix.....:	WG
Date Sampled...:	07/14/03	Date Received..:	07/15/03		
Prep Date.....:	07/22/03	Analysis Date..:	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	Initial Wgt/Vol:	1 mL	Final Wgt/Vol..:	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-045

GC Volatiles

Lot-Sample #...:	A3G150131-005	**Work Order #...:**	FR97F1AK	**Matrix.....:**	WG
Date Sampled...:	07/14/03	**Date Received..:**	07/15/03		
Prep Date.....:	07/22/03	**Analysis Date..:**	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-046

GC Volatiles

Lot-Sample #...:	A3G150131-006	**Work Order #...:**	FR97G1AK	**Matrix.....:**	WG
Date Sampled...:	07/14/03	**Date Received..:**	07/15/03		
Prep Date.....:	07/22/03	**Analysis Date..:**	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-047

GC Volatiles

Lot-Sample #...:	A3G150131-007	**Work Order #...:**	FR97H1AK	**Matrix.....:**	WG
Date Sampled...:	07/14/03	**Date Received..:**	07/15/03		
Prep Date.....:	07/22/03	**Analysis Date..:**	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-048

GC Volatiles

Lot-Sample #...:	A3G150131-008	**Work Order #...:**	FR97K1AK	**Matrix.....:**	WG
Date Sampled...:	07/14/03	**Date Received..:**	07/15/03		
Prep Date.....:	07/22/03	**Analysis Date..:**	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	**2.1**	**0.50**	**ug/L**	**0.39**

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-049

GC Volatiles

Lot-Sample #...:	A3G150131-009	**Work Order #...:**	FR97M1AK	**Matrix.....:**	WG
Date Sampled...:	07/14/03	**Date Received..:**	07/15/03		
Prep Date.....:	07/22/03	**Analysis Date..:**	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-050

GC Volatiles

Lot-Sample #...:	A3G150131-010	Work Order #...:	FR97N1AK	Matrix.....:	WG
Date Sampled...:	07/14/03	Date Received..:	07/15/03		
Prep Date.....:	07/22/03	Analysis Date..:	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	Initial Wgt/Vol:	1 mL	Final Wgt/Vol..:	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	2.5	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-051

GC Volatiles

Lot-Sample #...:	A3G150131-011	Work Order #...:	FR97P1AK	Matrix.....:	WG
Date Sampled...:	07/14/03	Date Received..:	07/15/03		
Prep Date.....:	07/22/03	Analysis Date..:	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	Initial Wgt/Vol:	1 mL	Final Wgt/Vol..:	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	1.7	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-052

GC Volatiles

Lot-Sample #...:	A3G150131-012	**Work Order #...:**	FR97R1AK	**Matrix.....:**	WG
Date Sampled...:	07/14/03	**Date Received..:**	07/15/03		
Prep Date.....:	07/22/03	**Analysis Date..:**	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-053

GC Volatiles

Lot-Sample #...:	A3G150131-013	**Work Order #...:**	FR97T1AK	**Matrix.....:**	WG
Date Sampled...:	07/14/03	**Date Received..:**	07/15/03		
Prep Date.....:	07/22/03	**Analysis Date..:**	07/22/03		
Prep Batch #...:	3203120				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: A3G150131 **Work Order #...:** FTQV71AA **Matrix.....:** WATER
MB Lot-Sample #: A3G220000-120

Prep Date.....: 07/22/03 **Final Wgt/Vol..:** 1 mL
Analysis Date..: 07/22/03 **Prep Batch #...:** 3203120
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	0.50	ug/L	RSK SOP-175
Ethane	ND	0.50	ug/L	RSK SOP-175
Ethene	ND	0.50	ug/L	RSK SOP-175

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A3G150131 **Work Order #...:** FTQV71AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3G220000-120 FTQV71AD-LCSD
Prep Date.....: 07/22/03 **Analysis Date..:** 07/22/03
Prep Batch #...: 3203120
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Methane	**73**	**66**	**ug/L**	**90**		**RSK SOP-175**
	73	**68**	**ug/L**	**93**	**3.0**	**RSK SOP-175**
Ethane	**140**	**120**	**ug/L**	**88**		**RSK SOP-175**
	140	**120**	**ug/L**	**91**	**3.3**	**RSK SOP-175**
Ethene	**130**	**110**	**ug/L**	**87**		**RSK SOP-175**
	130	**110**	**ug/L**	**90**	**3.5**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A3G150131 **Work Order #...:** FTQV71AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3G220000-120 FTQV71AD-LCSD
Prep Date.....: 07/22/03 **Analysis Date..:** 07/22/03
Prep Batch #...: 3203120
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	**90**	**(70 - 130)**			**RSK SOP-175**
	93	**(70 - 130)**	**3.0**	**(0-30)**	**RSK SOP-175**
Ethane	**88**	**(70 - 130)**			**RSK SOP-175**
	91	**(70 - 130)**	**3.3**	**(0-30)**	**RSK SOP-175**
Ethene	**87**	**(70 - 130)**			**RSK SOP-175**
	90	**(70 - 130)**	**3.5**	**(0-30)**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

SEVERN TRENT STL

METALS DATA

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-041

TOTAL Metals

Lot-Sample #...: A3G150131-001 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	89.1	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR9621AL
		Dilution Factor: 1		Analysis Time..: 15:24	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	18.8	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR9621AM
		Dilution Factor: 1		Analysis Time..: 15:24	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.0032 B	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR9621AN
		Dilution Factor: 1		Analysis Time..: 15:24	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

NOTE(S):

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-042

TOTAL Metals

Lot-Sample #...: A3G150131-002 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	95.9	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97A1AL
		Dilution Factor: 1		Analysis Time..: 15:40	Analyst ID.....: 001644	
		Instrument ID..: IS		MDL.....: 0.059		
Magnesium	21.7	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97A1AM
		Dilution Factor: 1		Analysis Time..: 15:40	Analyst ID.....: 001644	
		Instrument ID..: IS		MDL.....: 0.035		
Manganese	0.0028 B	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR97A1AN
		Dilution Factor: 1		Analysis Time..: 15:40	Analyst ID.....: 001644	
		Instrument ID..: IS		MDL.....: 0.00068		

NOTE(S):

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-043

TOTAL Metals

Lot-Sample #...: A3G150131-003 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	68.2	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97D1AL
		Dilution Factor: 1		Analysis Time..: 15:45	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	15.2	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97D1AM
		Dilution Factor: 1		Analysis Time..: 15:45	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.023	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR97D1AN
		Dilution Factor: 1		Analysis Time..: 15:45	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-044

TOTAL Metals

Lot-Sample #...: A3G150131-004 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	97.9	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97E1AL
		Dilution Factor: 1		Analysis Time..: 15:49	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	17.2	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97E1AM
		Dilution Factor: 1		Analysis Time..: 15:49	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.022	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR97E1AN
		Dilution Factor: 1		Analysis Time..: 15:49	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-045

TOTAL Metals

Lot-Sample #...: A3G150131-005 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	102	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97F1AL
		Dilution Factor: 1		Analysis Time..: 15:54	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	25.2	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97F1AM
		Dilution Factor: 1		Analysis Time..: 15:54	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.033	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR97F1AN
		Dilution Factor: 1		Analysis Time..: 15:54	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-046

TOTAL Metals

Lot-Sample #...: A3G150131-006 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	95.3	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97G1AL
		Dilution Factor: 1		Analysis Time..: 15:59	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	21.0	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97G1AM
		Dilution Factor: 1		Analysis Time..: 15:59	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.0074 B	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR97G1AN
		Dilution Factor: 1		Analysis Time..: 15:59	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

NOTE(S):

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-047

TOTAL Metals

Lot-Sample #...: A3G150131-007 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	104	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97H1AL
		Dilution Factor: 1		Analysis Time..: 16:03	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	23.5	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97H1AM
		Dilution Factor: 1		Analysis Time..: 16:03	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.071	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR97H1AN
		Dilution Factor: 1		Analysis Time..: 16:03	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-048

TOTAL Metals

Lot-Sample #...: A3G150131-008 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	63.6	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97K1AL
		Dilution Factor: 1		Analysis Time..: 16:08	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	12.8	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97K1AM
		Dilution Factor: 1		Analysis Time..: 16:08	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.12	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR97K1AN
		Dilution Factor: 1		Analysis Time..: 16:08	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-049

TOTAL Metals

Lot-Sample #...: A3G150131-009 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	118	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97M1AL
		Dilution Factor: 1		Analysis Time..: 16:12	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	27.4	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97M1AM
		Dilution Factor: 1		Analysis Time..: 16:12	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.019	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR97M1AN
		Dilution Factor: 1		Analysis Time..: 16:12	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-050

TOTAL Metals

Lot-Sample #...: A3G150131-010 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	80.6	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97N1AL
		Dilution Factor: 1		Analysis Time..: 16:17	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	17.0	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97N1AM
		Dilution Factor: 1		Analysis Time..: 16:17	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.056	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR97N1AN
		Dilution Factor: 1		Analysis Time..: 16:17	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-051

TOTAL Metals

Lot-Sample #...: A3G150131-011 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	96.1	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97P1AL
		Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 001644	
		Instrument ID..: IS		MDL.....: 0.059		
Magnesium	19.4	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97P1AM
		Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 001644	
		Instrument ID..: IS		MDL.....: 0.035		
Manganese	0.064	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR97P1AN
		Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 001644	
		Instrument ID..: IS		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-052

TOTAL Metals

Lot-Sample #...: A3G150131-012 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	87.7	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97R1AL
		Dilution Factor: 1		Analysis Time..: 16:38	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	17.5	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97R1AM
		Dilution Factor: 1		Analysis Time..: 16:38	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.078	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR97R1AN
		Dilution Factor: 1		Analysis Time..: 16:38	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-053

TOTAL Metals

Lot-Sample #...: A3G150131-013 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198099						
Calcium	102	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97T1AL
		Dilution Factor: 1		Analysis Time..: 16:43	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	27.6	5.0	mg/L	SW846 6010B	07/17-07/18/03	FR97T1AM
		Dilution Factor: 1		Analysis Time..: 16:43	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	ND	0.015	mg/L	SW846 6010B	07/17-07/18/03	FR97T1AN
		Dilution Factor: 1		Analysis Time..: 16:43	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A3G150131 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A3G170000-099 **Prep Batch #...:** 3198099						
Calcium	ND	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTF1L1AD
		Dilution Factor: 1				
		Analysis Time..: 15:14		Analyst ID.....: 001644	Instrument ID..: IS	
Magnesium	ND	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTF1L1AE
		Dilution Factor: 1				
		Analysis Time..: 15:14		Analyst ID.....: 001644	Instrument ID..: IS	
Manganese	ND	0.015	mg/L	SW846 6010B	07/17-07/18/03	FTF1L1AF
		Dilution Factor: 1				
		Analysis Time..: 15:14		Analyst ID.....: 001644	Instrument ID..: IS	

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A3G150131 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A3G170000-099 **Prep Batch #...:** 3198099							
Calcium	50.0	49.5	mg/L	99	SW846 6010B	07/17-07/18/03	FTF1L1AG
			Dilution Factor: 1		Analysis Time..: 15:18	Analyst ID.....: 001644	
			Instrument ID..: I5				
Magnesium	50.0	47.3	mg/L	95	SW846 6010B	07/17-07/18/03	FTF1L1AH
			Dilution Factor: 1		Analysis Time..: 15:18	Analyst ID.....: 001644	
			Instrument ID..: I5				
Manganese	0.50	0.51	mg/L	101	SW846 6010B	07/17-07/18/03	FTF1L1AJ
			Dilution Factor: 1		Analysis Time..: 15:18	Analyst ID.....: 001644	
			Instrument ID..: I5				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A3G150131 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A3G170000-099 **Prep Batch #...:** 3198099					
Calcium	99	(80 - 120)	SW846 6010B	07/17-07/18/03	FTF1L1AG
		Dilution Factor: 1	Analysis Time..: 15:18	Analyst ID.....: 001644	
		Instrument ID..: I5			
Magnesium	95	(80 - 120)	SW846 6010B	07/17-07/18/03	FTF1L1AH
		Dilution Factor: 1	Analysis Time..: 15:18	Analyst ID.....: 001644	
		Instrument ID..: I5			
Manganese	101	(80 - 120)	SW846 6010B	07/17-07/18/03	FTF1L1AJ
		Dilution Factor: 1	Analysis Time..: 15:18	Analyst ID.....: 001644	
		Instrument ID..: I5			

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A3G150131 **Matrix.....:** WATER
Date Sampled...: 07/14/03 **Date Received..:** 07/16/03

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A3G160292-011 **Prep Batch #...:** 3198099									
Calcium									
	8.4	50.0	58.0	mg/L	99		SW846 6010B	07/17-07/18/03	FTFAC1AF
	8.4	50.0	57.8	mg/L	99	0.38	SW846 6010B	07/17-07/18/03	FTFAC1AG
			Dilution Factor: 1						
			Analysis Time..: 17:01		Instrument ID..: I5			Analyst ID.....: 001644	
Magnesium									
	1.4	50.0	49.1	mg/L	95		SW846 6010B	07/17-07/18/03	FTFAC1AJ
	1.4	50.0	49.0	mg/L	95	0.20	SW846 6010B	07/17-07/18/03	FTFAC1AK
			Dilution Factor: 1						
			Analysis Time..: 17:01		Instrument ID..: I5			Analyst ID.....: 001644	
Manganese									
	0.021	0.50	0.52	mg/L	101		SW846 6010B	07/17-07/18/03	FTFAC1AM
	0.021	0.50	0.52	mg/L	100	0.40	SW846 6010B	07/17-07/18/03	FTFAC1AN
			Dilution Factor: 1						
			Analysis Time..: 17:01		Instrument ID..: I5			Analyst ID.....: 001644	

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A3G150131 **Matrix.....:** WATER
Date Sampled...: 07/14/03 **Date Received..:** 07/16/03

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A3G160292-011 **Prep Batch #...:** 3198099							
Calcium	99	(75 - 125)			SW846 6010B	07/17-07/18/03	FTFAC1AF
	99	(75 - 125)	0.38	(0-20)	SW846 6010B	07/17-07/18/03	FTFAC1AG
		Dilution Factor: 1					
		Analysis Time..: 17:01			Instrument ID..: I5	Analyst ID.....: 001644	
Magnesium	95	(75 - 125)			SW846 6010B	07/17-07/18/03	FTFAC1AJ
	95	(75 - 125)	0.20	(0-20)	SW846 6010B	07/17-07/18/03	FTFAC1AK
		Dilution Factor: 1					
		Analysis Time..: 17:01			Instrument ID..: I5	Analyst ID.....: 001644	
Manganese	101	(75 - 125)			SW846 6010B	07/17-07/18/03	FTFAC1AM
	100	(75 - 125)	0.40	(0-20)	SW846 6010B	07/17-07/18/03	FTFAC1AN
		Dilution Factor: 1					
		Analysis Time..: 17:01			Instrument ID..: I5	Analyst ID.....: 001644	

NOTE(S):

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

SEVERN TRENT STL

GENERAL CHEMISTRY DATA

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-041

General Chemistry

Lot-Sample #...: A3G150131-001 Work Order #...: FR962 Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	194	1.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 1		MDL.....: 0.094		
Hardness, as CaCO3	360	5	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1		MDL.....: 2		
Nitrate as N	6.0	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	30.0	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	260 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	07/22/03	3203436
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-042

General Chemistry

Lot-Sample #...: A3G150131-002 Work Order #...: FR97A Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	176	1.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 1		MDL.....: 0.094		
Hardness, as CaCO3	400	10	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 2		MDL.....: 4		
Nitrate as N	1.8	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	37.0	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	300 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1	07/22/03	3203436
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-043

General Chemistry

Lot-Sample #...: A3G150131-003 Work Order #...: FR97D Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	151	1.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 1		MDL.....: 0.094		
Hardness, as CaCO3	300	5	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1		MDL.....: 2		
Nitrate as N	2.2	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	33.7	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	260 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	07/22/03	3203436
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-044

General Chemistry

Lot-Sample #...: A3G150131-004 Work Order #...: FR97E Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	346	10.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 10		MDL.....: 0.94		
Hardness, as CaCO3	370	5	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1		MDL.....: 2		
Nitrate as N	5.4	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	34.6	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	330 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1	07/22/03	3203436
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-045

General Chemistry

Lot-Sample #...: A3G150131-005 Work Order #...: FR97F Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	147	1.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 1		MDL.....: 0.094		
Hardness, as CaCO3	420	10	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 2		MDL.....: 4		
Nitrate as N	2.5	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	35.6	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	300 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	07/22/03	3203436
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071403-SP-046

General Chemistry

Lot-Sample #...: A3G150131-006 Work Order #...: FR97G Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	229	5.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 5		MDL.....: 0.47		
Hardness, as CaCO3	410	10	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 2		MDL.....: 4		
Nitrate as N	1.7	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	43.1	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	300 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1	07/22/03	3203436
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-047

General Chemistry

Lot-Sample #...: A3G150131-007 Work Order #...: FR97H Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	142	1.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 1		MDL.....: 0.094		
Hardness, as CaCO3	410	10	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 2		MDL.....: 4		
Nitrate as N	0.15	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	95.0	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	270 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	2	1	mg/L	MCAWW 415.1	07/22/03	3204442
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	0.27 B	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-048

General Chemistry

Lot-Sample #...: A3G150131-008 Work Order #...: FR97K Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	152	1.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 1		MDL.....: 0.094		
Hardness, as CaCO3	250	5	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1		MDL.....: 2		
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	35.6	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	180 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	5	1	mg/L	MCAWW 415.1	07/22/03	3204442
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-049

General Chemistry

Lot-Sample #...: A3G150131-009 Work Order #...: FR97M Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	214	5.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 5		MDL.....: 0.47		
Hardness, as CaCO3	430	10	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 2		MDL.....: 4		
Nitrate as N	3.0	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	0.22	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	78.9	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	300 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	2	1	mg/L	MCAWW 415.1	07/22/03	3204442
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	ND	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-050

General Chemistry

Lot-Sample #...: A3G150131-010 Work Order #...: FR97N Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	198	1.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 1		MDL.....: 0.094		
Hardness, as CaCO3	300	5	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1		MDL.....: 2		
Nitrate as N	2.1	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	0.14	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	42.4	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	200 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	5	1	mg/L	MCAWW 415.1	07/22/03	3204442
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	0.75 B	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-051

General Chemistry

Lot-Sample #...: A3G150131-011 Work Order #...: FR97P Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	229	5.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 5		MDL.....: 0.47		
Hardness, as CaCO3	380	5	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1		MDL.....: 2		
Nitrate as N	1.9	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	0.14	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	66.2	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	250 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	4	1	mg/L	MCAWW 415.1	07/22/03	3204442
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	0.91 B	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-052

General Chemistry

Lot-Sample #...: A3G150131-012 Work Order #...: FR97R Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	242	5.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 5		MDL.....: 0.47		
Hardness, as CaCO3	370	5	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1		MDL.....: 2		
Nitrate as N	2.0	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	0.14	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	54.9	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	230 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	4	1	mg/L	MCAWW 415.1	07/22/03	3204442
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	0.27 B	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071403-SP-053

General Chemistry

Lot-Sample #...: A3G150131-013 Work Order #...: FR97T Matrix.....: WG
Date Sampled...: 07/14/03 Date Received..: 07/15/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	328	10.0	mg/L	MCAWW 300.0A	07/16/03	3197409
		Dilution Factor: 10		MDL.....: 0.94		
Hardness, as CaCO3	420	10	mg/L	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 2		MDL.....: 4		
Nitrate as N	3.5	0.10	mg/L	MCAWW 300.0A	07/16/03	3197411
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/16/03	3197410
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	40.7	1.0	mg/L	MCAWW 300.0A	07/16/03	3197412
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	260 J	5.0	mg/L	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	2	1	mg/L	MCAWW 415.1	07/22/03	3204442
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	0.91 B	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A3G150131 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: FTEL81AA		MB Lot-Sample #:	A3G160000-409	
	ND	1.0	mg/L	MCAWW 300.0A	07/15/03	3197409
		Dilution Factor: 1				
Hardness, as CaCO3		Work Order #: FTK6F1AA		MB Lot-Sample #:	A3G170000-509	
	ND	5	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1				
Hardness, as CaCO3		Work Order #: FTLLT1AA		MB Lot-Sample #:	A3G180000-463	
	ND	5	mg/L	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 1				
Nitrate as N		Work Order #: FTEMJ1AA		MB Lot-Sample #:	A3G160000-411	
	ND	0.10	mg/L	MCAWW 300.0A	07/15/03	3197411
		Dilution Factor: 1				
Nitrite as N		Work Order #: FTEMD1AA		MB Lot-Sample #:	A3G160000-410	
	ND	0.10	mg/L	MCAWW 300.0A	07/15/03	3197410
		Dilution Factor: 1				
Sulfate		Work Order #: FTEMK1AA		MB Lot-Sample #:	A3G160000-412	
	ND	1.0	mg/L	MCAWW 300.0A	07/15/03	3197412
		Dilution Factor: 1				
Total Alkalinity		Work Order #: FTFV61AA		MB Lot-Sample #:	A3G160000-611	
	3.5 B	**5.0**	**mg/L**	**MCAWW 310.1**	**07/15/03**	**3197611**
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: FTTC21AA		MB Lot-Sample #:	A3G220000-436	
	0.7 B	**1**	**mg/L**	**MCAWW 415.1**	**07/21/03**	**3203436**
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: FTW271AA		MB Lot-Sample #:	A3G230000-442	
	ND	1	mg/L	MCAWW 415.1	07/22/03	3204442
		Dilution Factor: 1				
Total Sulfide		Work Order #: FTMKG1AA		MB Lot-Sample #:	A3G180000-568	
	ND	1.0	mg/L	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A3G150131 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		WO#:FTEL81AC-LCS/FTEL81AD-LCSD				LCS Lot-Sample#: A3G160000-409		
	50.0	49.2	mg/L	98		MCAWW 300.0A	07/15/03	3197409
	50.0	49.1	mg/L	98	0.06	MCAWW 300.0A	07/15/03	3197409
		Dilution Factor: 1						
Nitrate as N		WO#:FTEMJ1AC-LCS/FTEMJ1AD-LCSD				LCS Lot-Sample#: A3G160000-411		
	2.5	2.5	mg/L	100		MCAWW 300.0A	07/15/03	3197411
	2.5	2.5	mg/L	101	0.79	MCAWW 300.0A	07/15/03	3197411
		Dilution Factor: 1						
Nitrite as N		WO#:FTEMD1AC-LCS/FTEMD1AD-LCSD				LCS Lot-Sample#: A3G160000-410		
	2.5	2.5	mg/L	98		MCAWW 300.0A	07/15/03	3197410
	2.5	2.4	mg/L	98	0.40	MCAWW 300.0A	07/15/03	3197410
		Dilution Factor: 1						
Sulfate		WO#:FTEMK1AC-LCS/FTEMK1AD-LCSD				LCS Lot-Sample#: A3G160000-412		
	50.0	48.9	mg/L	98		MCAWW 300.0A	07/15/03	3197412
	50.0	48.8	mg/L	98	0.16	MCAWW 300.0A	07/15/03	3197412
		Dilution Factor: 1						
Total Sulfide		WO#:FTMKG1AC-LCS/FTMKG1AD-LCSD				LCS Lot-Sample#: A3G180000-568		
	18	18	mg/L	99		MCAWW 376.1	07/18/03	3199568
	18	18	mg/L	99	0.88	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1						

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A3G150131 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		WO#:FTEL81AC-LCS/FTEL81AD-LCSD LCS Lot-Sample#: A3G160000-409					
	98	(90 - 110)			MCAWW 300.0A	07/15/03	3197409
	98	(90 - 110)	0.06	(0-20)	MCAWW 300.0A	07/15/03	3197409
		Dilution Factor: 1					
Nitrate as N		WO#:FTEMJ1AC-LCS/FTEMJ1AD-LCSD LCS Lot-Sample#: A3G160000-411					
	100	(90 - 110)			MCAWW 300.0A	07/15/03	3197411
	101	(90 - 110)	0.79	(0-20)	MCAWW 300.0A	07/15/03	3197411
		Dilution Factor: 1					
Nitrite as N		WO#:FTEMD1AC-LCS/FTEMD1AD-LCSD LCS Lot-Sample#: A3G160000-410					
	98	(88 - 110)			MCAWW 300.0A	07/15/03	3197410
	98	(88 - 110)	0.40	(0-20)	MCAWW 300.0A	07/15/03	3197410
		Dilution Factor: 1					
Sulfate		WO#:FTEMK1AC-LCS/FTEMK1AD-LCSD LCS Lot-Sample#: A3G160000-412					
	98	(90 - 110)			MCAWW 300.0A	07/15/03	3197412
	98	(90 - 110)	0.16	(0-20)	MCAWW 300.0A	07/15/03	3197412
		Dilution Factor: 1					
Total Sulfide		WO#:FTMKG1AC-LCS/FTMKG1AD-LCSD LCS Lot-Sample#: A3G180000-568					
	99	(79 - 104)			MCAWW 376.1	07/18/03	3199568
	99	(79 - 104)	0.88	(0-20)	MCAWW 376.1	07/18/03	3199568
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A3G150131 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hardness, as CaCO3			Work Order #: FTK6F1AC LCS Lot-Sample#: A3G170000-509				
	200	210	mg/L	101	MCAWW 130.2	07/17/03	3198509
			Dilution Factor: 1				
Hardness, as CaCO3			Work Order #: FTLLT1AC LCS Lot-Sample#: A3G180000-463				
	200	200	mg/L	100	MCAWW 130.2	07/18/03	3199463
			Dilution Factor: 1				
Total Alkalinity			Work Order #: FTFV61AC LCS Lot-Sample#: A3G160000-611				
	84	85	mg/L	101	MCAWW 310.1	07/15/03	3197611
			Dilution Factor: 1				
Total Organic Carbon			Work Order #: FTTC21AC LCS Lot-Sample#: A3G220000-436				
	31	32	mg/L	103	MCAWW 415.1	07/21/03	3203436
			Dilution Factor: 1				
Total Organic Carbon			Work Order #: FTW271AC LCS Lot-Sample#: A3G230000-442				
	31	33	mg/L	105	MCAWW 415.1	07/22/03	3204442
			Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A3G150131 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hardness, as CaCO3		Work Order #: FTK6F1AC	LCS Lot-Sample#: A3G170000-509		
	101	(84 - 116)	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1			
Hardness, as CaCO3		Work Order #: FTLLT1AC	LCS Lot-Sample#: A3G180000-463		
	100	(84 - 116)	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 1			
Total Alkalinity		Work Order #: FTFV61AC	LCS Lot-Sample#: A3G160000-611		
	101	(90 - 127)	MCAWW 310.1	07/15/03	3197611
		Dilution Factor: 1			
Total Organic Carbon		Work Order #: FTTC21AC	LCS Lot-Sample#: A3G220000-436		
	103	(88 - 115)	MCAWW 415.1	07/21/03	3203436
		Dilution Factor: 1			
Total Organic Carbon		Work Order #: FTW271AC	LCS Lot-Sample#: A3G230000-442		
	105	(88 - 115)	MCAWW 415.1	07/22/03	3204442
		Dilution Factor: 1			

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A3G150131 **Matrix.....:** WATER
Date Sampled...: 07/17/03 14:00 **Date Received..:** 07/19/03

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hardness, as CaCO3			WO#: FTEKR1CW-MS/FTEKR1CX-MSD				MS Lot-Sample #: A3G160206-003		
	400	200	640	mg/L	120		MCAWW 130.2	07/17/03	3198509
	400	200	660	mg/L	128	2.4	MCAWW 130.2	07/17/03	3198509
			Dilution Factor: 1						
Hardness, as CaCO3			WO#: FTEKT1CJ-MS/FTEKT1CK-MSD				MS Lot-Sample #: A3G160206-004		
	400	400	780	mg/L	95		MCAWW 130.2	07/18/03	3199463
	400	400	770	mg/L	91	2.1	MCAWW 130.2	07/18/03	3199463
			Dilution Factor: 1						
Total Organic Carbon			WO#: FTNDV1AF-MS/FTNDV1AG-MSD				MS Lot-Sample #: A3G190164-004		
	3	25	29	mg/L	104		MCAWW 415.1	07/22/03	3204442
	3	25	30	mg/L	107	1.9	MCAWW 415.1	07/22/03	3204442
			Dilution Factor: 1						

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A3G150131 **Matrix.....:** WATER
Date Sampled...: 07/17/03 14:00 **Date Received..:** 07/19/03

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hardness, as CaCO3		WO#: FTEKR1CW-MS/FTEKR1CX-MSD				MS Lot-Sample #: A3G160206-003	
	120	(10 - 176)			MCAWW 130.2	07/17/03	3198509
	128	(10 - 176)	2.4	(0-23)	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1					
Hardness, as CaCO3		WO#: FTEKT1CJ-MS/FTEKT1CK-MSD				MS Lot-Sample #: A3G160206-004	
	95	(10 - 176)			MCAWW 130.2	07/18/03	3199463
	91	(10 - 176)	2.1	(0-23)	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 1					
Total Organic Carbon		WO#: FTNDV1AF-MS/FTNDV1AG-MSD				MS Lot-Sample #: A3G190164-004	
	104	(72 - 136)			MCAWW 415.1	07/22/03	3204442
	107	(72 - 136)	1.9	(0-20)	MCAWW 415.1	07/22/03	3204442
		Dilution Factor: 1					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A3G150131 **Matrix.....:** WG
Date Sampled...: 07/14/03 **Date Received..:** 07/15/03

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity			WO#: FR9621AQ-MS/FR9621AR-MSD				MS Lot-Sample #: A3G150131-001		
	260	500	560	mg/L	59		MCAWW 310.1	07/16/03	3197611
	260	500	530	mg/L	53	5.5	MCAWW 310.1	07/16/03	3197611
			Dilution Factor: 1						
Total Organic Carbon			WO#: FR9621AT-MS/FR9621AU-MSD				MS Lot-Sample #: A3G150131-001		
	2	25	26	mg/L	97		MCAWW 415.1	07/21/03	3203436
	2	25	24	mg/L	89	7.6	MCAWW 415.1	07/21/03	3203436
			Dilution Factor: 1						

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A3G150131 **Matrix.....:** WG
Date Sampled...: 07/14/03 **Date Received..:** 07/15/03

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity		WO#: FR9621AQ-MS/FR9621AR-MSD				MS Lot-Sample #: A3G150131-001	
	59	(10 - 160)			MCAWW 310.1	07/16/03	3197611
	53	(10 - 160)	5.5	(0-24)	MCAWW 310.1	07/16/03	3197611
		Dilution Factor: 1					
Total Organic Carbon		WO#: FR9621AT-MS/FR9621AU-MSD				MS Lot-Sample #: A3G150131-001	
	97	(72 - 136)			MCAWW 415.1	07/21/03	3203436
	89	(72 - 136)	7.6	(0-20)	MCAWW 415.1	07/21/03	3203436
		Dilution Factor: 1					

NOTE(S):

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

SEVERN TRENT STL

END OF REPORT

SEVERN TRENT STL

REC'D CRA
AUG 14 2003
SDG: G-2

ANALYTICAL REPORT

PROJECT NO. 17360-09

GM-GRAND RAPIDS

Lot #: A3G160206

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

SEVERN TRENT LABORATORIES, INC.

ORIGINAL ANALYTICAL REPORT
Project#: 17360-09 Lab#: A3G160206
Name: GM - GR
Description
Event: GW - Monitoring
Samples: 12 water
Analysis: Quarterly
Parameter
TAT: 14 day
Lab: STL
Checked Against Preliminary Data:
Date: _____ Init.: _____
Date of Validation Memo: 8/28/03
Invoice Approval Date: _____
Comments: _____

Amy L. McCormick
Project Manager

August 13, 2003

Page 1 of 1 Cooler # M-316

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: GM - Grand Rapids

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Pooler

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: VOC	TOC	DISSOLVED GAS	REMARKS
1	07/15/03	0816	GW-17360-071503-SP-055	W	7	X	X	X	
2		0830	-056		7	X	X	X	
3		0926	-057		7	X	X	X	
4		1015	-058		7	X	X	X	
5		1211	-059		7	X	X	X	
6		1152	-060		7	X	X	X	
7		1501	-061		7	X	X	X	
8		1531	-062		7	X	X	X	
9		1620	-063		7	X	X	X	Standard TAT 2 week
10		1711	-065		7	X	X	X	
11		—	TB-17360-071503-SP-066		1	X			CRA Contact Paul Wisman
TOTAL NUMBER OF CONTAINERS					71				

RELINQUISHED BY 1. S. Pooler	DATE: 07/15/03 TIME: 1900	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 8384 6514 0191

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

25116

SAMPLE TEAM: S. Pooler, Joe Branch

RECEIVED FOR LABORATORY BY: [signature]
DATE: 7/16/03 TIME: 9:30

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

Page 1 of 1 Cooler # M-97

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL-North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: GM-Grand Rapids

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Pooler

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: * Nitrate, Hardness, Sulfide, Metals								REMARKS
1	07/15/03	0926	GW-17360-071503-SP-057	W	8	X	X	X	X		MS/MSD			
2	"	1015	" " " -058	W	8	X	X	X	X		MS/MSD			* Nitrate, Sulfate, Alkalinity, Chloride
														Standard 2 Week TAT
														CRA Contact: Paul Wisman
			TOTAL NUMBER OF CONTAINERS		16									

RELINQUISHED BY: 1. S. Pooler	DATE: 07/15/03 TIME: 1900	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 8384 6514 0206

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

25117

SAMPLE TEAM: Steve Pooler, Joe Branch

RECEIVED FOR LABORATORY BY: [signature] DATE: 7/16/03 TIME: 9:30

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

Page 1 of 1 Cooler # M-66

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: GM - Grand Rapids

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Paler

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	VOC	Dissolved Cat's	TOC	Nitrate*	Hardness	Sulfide	Metals	REMARKS
1	07/15/03	0816	GW-17360-071503-SP-055	W	4	X		X	X	X	X		
2		0830	-056		4			X	X	X	X		* Nitrite, Sulfate, Alkalinity, Chloride
3		1211	-059		4			X	X	X	X		
4		1152	-060		4			X	X	X	X		
5		1501	-061		4			X	X	X	X		
6		1531	-062		4			X	X	X	X		
7		1620	-063		4			X	X	X	X		
8		1711	-065		4			X	X	X	X		Standard TAT 2 Week
			S.P.										CRA Contact: Paul Wisman
TOTAL NUMBER OF CONTAINERS					32								

RELINQUISHED BY: 1. S. Pooler	DATE: 07/15/03 TIME: 1900	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 8384 6514 0180

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

25118

SAMPLE TEAM: S. Pooler, Joe Branch

RECEIVED FOR LABORATORY BY: [signature]
DATE: 7/16/03 TIME: 9:30

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

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: EM - Grand Rapids

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Pooler

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: SVOC	REMARKS
1	07/15/03	1310	GW-17360-071503-SP-0~~5~~4	W	2	X	

Standard 2 Week TAT

CRA Contact Paul Wisman

TOTAL NUMBER OF CONTAINERS: 2

RELINQUISHED BY: 1. S. Pooler	DATE: 07/15/03 TIME: 1900	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 8384 6514 0217

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

24574

SAMPLE TEAM: Steve Pooler, Joe Branch

RECEIVED FOR LABORATORY BY:

DATE: 7/16/03 TIME: 9:30

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

SEVERN TRENT STL

CASE NARRATIVE

CASE NARRATIVE

A3G160206

The following report contains the analytical results for eleven water samples and one quality control sample submitted to STL North Canton by Conestoga-Rovers & Associates, Inc. from the GM-Grand Rapids Site, project number 17360-09. The samples were received July 16, 2003, according to documented sample acceptance procedures.

The samples presented in this report were analyzed for the parameters listed on the analytical methods summary page in accordance with the methods indicated. Preliminary results were provided to the Chemistry Department on July 30, 2003. A summary of QC data for these analyses is included at the rear of the report.

SUPPLEMENTAL QC INFORMATION

GC/MS VOLATILES

Sample(s) that contain results between the MDL and the RL were flagged with "J". There is the possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

GC/MS SEMIVOLATILES

Sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "B". All target analytes in the Method Blank must be below the reporting limit (RL) or the associated sample(s) must be ND with the exception of common laboratory contaminants.

Sample(s) that contain results between the MDL and the RL were flagged with "J". There is the possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

Sample SP-064 had elevated reporting limits due to sample matrix.

METALS

ICP Trace Form IX was not provided for batch 3198098. The serial dilution was performed on an unrelated sample from the same batch.

CASE NARRATIVE (continued)

METALS (continued)

Samples that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive of mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are ± the standard reporting limit (SRL).

GENERAL CHEMISTRY

Samples that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive of mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are ± the standard reporting limit (SRL).

Sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analyte(s).

The sample(s) had elevated reporting limits due to matrix interferences. Refer to the sample report pages for the affected analyte(s) flagged with "G".

Matrix spike/spike duplicate spike recoveries were outside the acceptance limits for some analytes. The acceptable laboratory control sample analysis data indicated that the analytical system was operating within control and this condition is most likely due to matrix interference. See the Matrix Spike Report for the affected analytes, which have been flagged with "N".

STL utilizes USEPA approved methods in all analytical work. 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.

Amy McCormick
Project Manager

QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the *reporting limits* (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

STL North Canton Certifications and Approvals:
Alabama (#41170), California (#2157), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#100439), Kansas (#E10336), Kentucky (#90021), Massachusetts (#M-OH048),
Maryland (#272), Minnesota (#39-999-348), Missouri (#6090), New Jersey (#74001),
New York (#10975), North Dakota (#R-156), Ohio (#6090), OhioVAP (#CL0024),
Pennsylvania (#68-340), Rhode Island (#237), South Carolina (#92007001, #92007002, #92007003),
Tennessee (#02903), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY,
USDA Soil Permit, ACIL Seal of Excellence – Participating Lab Status Award (#82)

SEVERN TRENT STL

METHOD REFERENCE

ANALYTICAL METHODS SUMMARY

A3G160206

PARAMETER	ANALYTICAL METHOD
Alkalinity	MCAWW 310.1
Chloride	MCAWW 300.0A
Dissolved Gases in Water	RSK SOP-175
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Nitrate as N	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Sulfate	MCAWW 300.0A
Sulfide	MCAWW 376.1
Total Hardness (Titrimetric, EDTA)	MCAWW 130.2
Total Organic Carbon	MCAWW 415.1
Volatile Organics by GC/MS	SW846 8260B

References:

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

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SEVERN TRENT STL

SAMPLE SUMMARY

SAMPLE SUMMARY

A3G160206

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FTEKE	001	GW-17360-071503-SP-055	07/15/03	08:16
FTEKQ	002	GW-17360-071503-SP-056	07/15/03	08:30
FTEKR	003	GW-17360-071503-SP-057	07/15/03	09:26
FTEKT	004	GW-17360-071503-SP-058	07/15/03	10:15
FTEKV	005	GW-17360-071503-SP-059	07/15/03	12:11
FTEKW	006	GW-17360-071503-SP-060	07/15/03	11:52
FTEKX	007	GW-17360-071503-SP-061	07/15/03	15:01
FTEK0	008	GW-17360-071503-SP-062	07/15/03	15:31
FTEK1	009	GW-17360-071503-SP-063	07/15/03	16:20
FTEK2	010	GW-17360-071503-SP-065	07/15/03	17:11
FTEK3	011	GW-17360-071503-SP-064	07/15/03	13:10
FTEK6	012	TB-17360-071503-SP-066	07/15/03	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SEVERN TRENT STL

SHIPPING AND RECEIVING DOCUMENTS

Page 1 of 1 Cooler # M-316

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: GM - Grand Rapids

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Pooler

SEQ. No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: VOC	VOC	DISSOLVED Cr	REMARKS
1	01/15/03	0816	(GW) - 17360 - 011503 - SP - 055	W	7	X	X	X	
2		0830	- 056		7	X	X	X	
3		0926	- 057		7	X	X	X	
4		1015	- 058		7	X	X	X	
5		1211	- 059		7	X	X	X	
6		1152	- 060		7	X	X	X	
7		1301	- 061		7	X	X	X	
8		1531	- 062		7	X	X	X	
9		1620	- 063		7	X	X	X	Standard TAT 2 week
10		1711	- 065		7	X	X	X	
11		—	TB - 17360 - 011503 - SP - 066		1	X			CRA Contact Paul Wiman

TOTAL NUMBER OF CONTAINERS: 71

RELINQUISHED BY 1. S. Pooler	DATE: 01/15/03 TIME: 1900	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 8384 6514 0191

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

25116

SAMPLE TEAM: S. Pooler, Joe Branch

RECEIVED FOR LABORATORY BY: [signature]
DATE: 1/16/03 TIME: 9:30

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

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STL North Canton

Page 1 of 1 Cooler # M-97

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL-North Canton

REFERENCE NUMBER: 17360.09

PROJECT NAME: GM-Grand Rapids

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: S Peeler PRINTED NAME: Steve Peeler

SEQ. No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: Nitrate	Hardness	Sulfide	Metals	MS/MSD	REMARKS
1	07/15/03	0926	GW-17360-07MS03-SP-057	W	8	X	X	X	X	MS/MSD	
2	"	1015	" " " -058	W	8	X	X	X	X	MS/MSD	* Nitrate, Sulfate, Alkalinity, Chloride
											Standard 2 Week TAT
											CRA Contact: Paul Wisman
			TOTAL NUMBER OF CONTAINERS		16						

RELINQUISHED BY: 1. S Peeler	DATE: 07/15/03 TIME: 1900	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 8364 6514 0206

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

25117

SAMPLE TEAM: Steve Peeler, Joe Branch

RECEIVED FOR LABORATORY BY: [signature]
DATE: 7/16/03 TIME: 9:30

1991 (FORMS)-APRIL 29, 93-REV.0-(C)(F-01)

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STL North Canton

Page 1 of 1 Cooler # M-66

CRA
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Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: GM - Grand Rapids

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Paler

SEQ. No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	VOC	Dissolved Gases	TOC	Nitrate	Hardness	Sulfide	Metals	REMARKS
1	07/15/03	0816	GW-17360-071503-SP-055	W	4		X	X	X	X	X	X	
2		0833	-056		4			X	X	X	X	X	* Nitrite, Sulfide, Alkalinity, Chloride
3		1211	-059		4			X	X	X	X	X	
4		1152	-060		4			X	X	X	X	X	
5		1501	-061		4			X	X	X	X	X	
6		1521	-062		4			X	X	X	X	X	
7		1620	-063		4			X	X	X	X	X	
8		1711	-065		4			X	X	X	X	X	
													Standard TAT 2 Week
													CRA Contact: Paul Wisman
			TOTAL NUMBER OF CONTAINERS		32								

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
1. S. Pooler	07/15/03	1900	1.		
2.			2.		
3.			1.		

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 8384 6514 0180

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

25118

SAMPLE TEAM: S. Pooler, Joe Branch

RECEIVED FOR LABORATORY BY:

DATE: 7/16/03 TIME: 9:30

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

14

STL North Canton

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: GM - Grand Rapids

SAMPLER'S SIGNATURE: S. Poole PRINTED NAME: Steve Poole

SEQ. No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: SVOC	REMARKS
1	07/15/03	1310	GW-17360-07150301-SP-004	W	2	X	

S.P.

Standard 2 Week TAT

CRA Contact Paul Wisman

TOTAL NUMBER OF CONTAINERS: 2

RELINQUISHED BY: 1. S. Poole	DATE: 07/15/03 TIME: 1900	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 8384 6514 0217

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

24.14

SAMPLE TEAM: Steve Poole, Joe Branch

RECEIVED FOR LABORATORY BY:

DATE: 7/16/03 TIME: 9:30

1901 (FORMS)-APRIL 29, 93-REV.0-(C)(F-01)

15

STL North Canton

RSR280

Severn Trent Laboratories, Inc.
Sample Control Record

Client: 57787

Lot #: A3G160206

Case Number/SDG: 17360-09

Storage Location: MS/W81/W81 S33 MS GCS

Laboratory Sample I.D.	Transferred By	Date	Entered	Removed	Reason	Date Returned
FTEKE	STILLERJ	7/16/03	Yes		Storage	
FTEKQ	STILLERJ	7/16/03	Yes		Storage	
FTEKR	STILLERJ	7/16/03	Yes		Storage	
FTEKT	STILLERJ	7/16/03	Yes		Storage	
FTEKV	STILLERJ	7/16/03	Yes		Storage	
FTEKW	STILLERJ	7/16/03	Yes		Storage	
FTEKX	STILLERJ	7/16/03	Yes		Storage	
FTEK0	STILLERJ	7/16/03	Yes		Storage	
FTEK1	STILLERJ	7/16/03	Yes		Storage	
FTEK2	STILLERJ	7/16/03	Yes		Storage	
FTEK3	STILLERJ	7/16/03	Yes		Storage	
FTEK6	STILLERJ	7/16/03	Yes		Storage	

STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: 436160206

Client: CRA Project: Gilt Grid Vapor Quote#: 53154

Cooler Received on: 7/16/03 Opened on: 7/16/03 by: (Signature)

Fedx [X] Client Drop Off [ ] UPS [ ] Airborne [ ] Other:

Cooler [X] Safe [ ] Foam Box [ ] Client Cooler [ ] Other:

STL Shipper No#: See back

1. Were custody seals on the outside of the cooler? Yes [ ] No [X] Intact? Yes [ ] No [ ] NA [X]
   If YES, Quantity Location
   Were the custody seals signed and dated? Yes [ ] No [ ] NA [X]
2. Shipper's packing slip attached to this form? Yes [X] No [ ]
3. Were custody papers included inside the cooler and relinquished? Yes [X] No [ ]
4. Did you sign the custody papers in the appropriate place? Yes [X] No [ ]
5. Packing material used:
   Peanuts [ ] Bubble Wrap [X] Vermiculite [ ] Foam [ ] None [ ] Other :
6. Cooler temperature upon receipt °C (see back of form for multiple coolers/temp)

METHOD: Temp Vial [ ] Coolant & Sample [ ] Against Bottles [ ] IR [X] ICE/H_2O Slurry [ ]

COOLANT: Wet Ice [X] Blue Ice [ ] Dry Ice [ ] Water [ ] None [ ]

7. Did all bottles arrive in good condition (Unbroken)? Yes [X] No [ ]
8. Did all bottle labels and tags agree with the custody papers? Yes [X] No [ ]
9. Were samples at the correct pH? (record on back) Yes [X] No [ ] NA [ ]
10. Were correct bottles used for the tests indicated? Yes [X] No [ ]
11. Were air bubbles >6 mm in any VOA vials? Yes [ ] No [X] NA [ ]
12. Was a sufficient amount of sample sent in each bottle? Yes [X] No [ ]

Contacted PM Date: by: via Voice Mail [ ] Verbal [ ] Other [ ]

Concerning:

√	MACRO	MACRO

1. CHAIN OF CUSTODY

√	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred Rec'd MS/MSD volume for VOC, tac, + diss gases for -057 + -058, not marked on COC, will log. 7087-1603

2. SAMPLE CONDITION

	SR2A	Sample(s) were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.

3. SAMPLE PRESERVATION

	SR3A	Sample(s) were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot # 061603-HNO3; Sulfuric Acid Lot # 112801-H2SO4; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 020501-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s) were received with bubble > 6 mm in diameter (cc: PM)

4. Other (see below or back)

STL Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials
57	<2 <2 <2 <2 >9 >9	7/16/03	KW
58	<2 <2 <2 <2 >9 >9	↓	↓
55	<2 <2 >9		
56	<2 <2 >9		
59	<2 <2 >9		
60	<2 <2 >9		
61	<2 <2 >9		
62	<2 <2 >9		
63	<2 <2 >9		
65	<2 <2 >9	↓	↓

Cooler	Temp	Method	Coolant
client cooler	4.3	IR	wet ice
M-97	5.2	↓	↓
M-64	1.9		
M-316	2.2		

Discrepancies Cont.

Macro Name:

Macro Name:

Macro Name:

Other Anomalies:

SEVERN TRENT STL

GCMS VOLATILE DATA

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-055

GC/MS Volatiles

Lot-Sample #...: A3G160206-001 Work Order #...: FTEKE1AA Matrix.....: WG
Date Sampled...: 07/15/03 08:16 Date Received..: 07/16/03
Prep Date.....: 07/23/03 Analysis Date..: 07/23/03
Prep Batch #...: 3205241
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	**0.32 J**	**1.0**	**ug/L**	**0.32**
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	**2.0**	**1.0**	**ug/L**	**0.35**
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-055

GC/MS Volatiles

Lot-Sample #...: A3G160206-001 Work Order #...: FTEKE1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**0.79 J**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
1,2-Dichloroethane-d4	82	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-056

GC/MS Volatiles

Lot-Sample #...: A3G160206-002 Work Order #...: FTEKQ1AA Matrix.....: WG
Date Sampled...: 07/15/03 08:30 Date Received..: 07/16/03
Prep Date.....: 07/23/03 Analysis Date..: 07/23/03
Prep Batch #...: 3205241
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	**2.1**	**1.0**	**ug/L**	**0.35**
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-056

GC/MS Volatiles

Lot-Sample #...: A3G160206-002 Work Order #...: FTEKQ1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**0.88 J**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-057

GC/MS Volatiles

Lot-Sample #...:	A3G160206-003	**Work Order #...:**	FTEKR1AA	**Matrix.....:**	WG
Date Sampled...:	07/15/03 09:26	**Date Received..:**	07/16/03		
Prep Date.....:	07/24/03	**Analysis Date..:**	07/24/03		
Prep Batch #...:	3206166				
Dilution Factor:	1	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	**0.67 J**	**1.0**	**ug/L**	**0.32**
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	**1.9**	**1.0**	**ug/L**	**0.35**
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-057

GC/MS Volatiles

Lot-Sample #...: A3G160206-003 Work Order #...: FTEKR1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	**3.4**	**1.0**	**ug/L**	**0.39**
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**0.54 J**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(73 - 122)
1,2-Dichloroethane-d4	82	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	91	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-058

GC/MS Volatiles

Lot-Sample #...: A3G160206-004 **Work Order #...:** FTEKT1AA **Matrix.....:** WG
Date Sampled...: 07/15/03 10:15 **Date Received..:** 07/16/03
Prep Date.....: 07/24/03 **Analysis Date..:** 07/24/03
Prep Batch #...: 3206213
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	**0.44 J**	**1.0**	**ug/L**	**0.32**
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	**3.0**	**1.0**	**ug/L**	**0.35**
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-058

GC/MS Volatiles

Lot-Sample #...: A3G160206-004 Work Order #...: FTEKT1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	**0.57 J**	**1.0**	**ug/L**	**0.39**
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**3.0**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(73 - 122)
1,2-Dichloroethane-d4	120	(61 - 128)
Toluene-d8	96	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-059

GC/MS Volatiles

Lot-Sample #...:	A3G160206-005	**Work Order #...:**	FTEKV1AA	**Matrix.....:**	WG
Date Sampled...:	07/15/03 12:11	**Date Received..:**	07/16/03		
Prep Date.....:	07/23/03	**Analysis Date..:**	07/23/03		
Prep Batch #...:	3205241				
Dilution Factor:	1	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	**1.3**	**1.0**	**ug/L**	**0.35**
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-059

GC/MS Volatiles

Lot-Sample #...: A3G160206-005 Work Order #...: FTEKV1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	ND	1.0	ug/L	0.42
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-060

GC/MS Volatiles

Lot-Sample #...: A3G160206-006 Work Order #...: FTEKW1AA Matrix.....: WG
Date Sampled...: 07/15/03 11:52 Date Received..: 07/16/03
Prep Date.....: 07/23/03 Analysis Date..: 07/23/03
Prep Batch #...: 3205241
Dilution Factor: 4 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	100	ug/L	4.4
Benzene	ND	4.0	ug/L	1.5
Bromodichloromethane	ND	4.0	ug/L	1.3
Bromoform	ND	4.0	ug/L	1.5
Bromomethane	ND	4.0	ug/L	1.2
2-Butanone	ND	100	ug/L	2.4
Carbon disulfide	ND	20	ug/L	0.96
Carbon tetrachloride	ND	4.0	ug/L	1.5
Chlorobenzene	ND	4.0	ug/L	1.5
Chloroethane	ND	4.0	ug/L	1.2
Chloroform	ND	4.0	ug/L	1.4
Chloromethane	ND	4.0	ug/L	2.0
Cyclohexane	ND	4.0	ug/L	1.3
Dibromochloromethane	ND	4.0	ug/L	1.5
1,2-Dibromo-3-chloro-propane	ND	4.0	ug/L	3.3
1,2-Dibromoethane	ND	4.0	ug/L	1.4
1,2-Dichlorobenzene	ND	4.0	ug/L	1.5
1,3-Dichlorobenzene	ND	4.0	ug/L	1.5
1,4-Dichlorobenzene	ND	4.0	ug/L	1.5
Dichlorodifluoromethane	ND	4.0	ug/L	2.0
1,1-Dichloroethane	**6.9**	**4.0**	**ug/L**	**1.2**
1,2-Dichloroethane	ND	4.0	ug/L	1.1
1,1-Dichloroethene	ND	4.0	ug/L	1.2
cis-1,2-Dichloroethene	**33**	**4.0**	**ug/L**	**1.4**
trans-1,2-Dichloroethene	**13**	**4.0**	**ug/L**	**1.3**
1,2-Dichloropropane	ND	4.0	ug/L	1.6
cis-1,3-Dichloropropene	ND	4.0	ug/L	1.4
trans-1,3-Dichloropropene	ND	4.0	ug/L	1.4
Ethylbenzene	ND	4.0	ug/L	1.6
2-Hexanone	ND	200	ug/L	2.3
Isopropylbenzene	ND	20	ug/L	1.6
Methyl acetate	ND	40	ug/L	2.2
Methylene chloride	ND	20	ug/L	1.2
Methylcyclohexane	ND	4.0	ug/L	1.7
4-Methyl-2-pentanone	ND	200	ug/L	1.0
Methyl tert-butyl ether	ND	20	ug/L	1.1
Styrene	ND	4.0	ug/L	1.4

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-060

GC/MS Volatiles

Lot-Sample #...: A3G160206-006 Work Order #...: FTEKW1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	4.0	ug/L	1.4
Tetrachloroethene	ND	4.0	ug/L	1.7
Toluene	ND	4.0	ug/L	1.6
1,2,4-Trichloro-benzene	ND	20	ug/L	1.6
1,1,1-Trichloroethane	**3.4 J**	**4.0**	**ug/L**	**1.6**
1,1,2-Trichloroethane	ND	4.0	ug/L	1.4
Trichloroethene	ND	4.0	ug/L	1.7
Trichlorofluoromethane	ND	4.0	ug/L	2.2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	4.0	ug/L	1.3
Vinyl chloride	**130**	**4.0**	**ug/L**	**1.4**
Xylenes (total)	ND	12	ug/L	1.8

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	82	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	86	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-061

GC/MS Volatiles

Lot-Sample #...: A3G160206-007	**Work Order #...:** FTEKX1AA	**Matrix.....:** WG	
Date Sampled...: 07/15/03 15:01	**Date Received..:** 07/16/03		
Prep Date.....: 07/23/03	**Analysis Date..:** 07/23/03		
Prep Batch #...: 3205241			
Dilution Factor: 2.5	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	62	ug/L	2.8
Benzene	ND	2.5	ug/L	0.92
Bromodichloromethane	ND	2.5	ug/L	0.80
Bromoform	ND	2.5	ug/L	0.92
Bromomethane	ND	2.5	ug/L	0.75
2-Butanone	ND	62	ug/L	1.5
Carbon disulfide	ND	12	ug/L	0.60
Carbon tetrachloride	ND	2.5	ug/L	0.92
Chlorobenzene	ND	2.5	ug/L	0.95
Chloroethane	ND	2.5	ug/L	0.72
Chloroform	ND	2.5	ug/L	0.88
Chloromethane	ND	2.5	ug/L	1.2
Cyclohexane	ND	2.5	ug/L	0.82
Dibromochloromethane	ND	2.5	ug/L	0.92
1,2-Dibromo-3-chloro-propane	ND	2.5	ug/L	2.0
1,2-Dibromoethane	ND	2.5	ug/L	0.85
1,2-Dichlorobenzene	ND	2.5	ug/L	0.95
1,3-Dichlorobenzene	ND	2.5	ug/L	0.95
1,4-Dichlorobenzene	ND	2.5	ug/L	0.95
Dichlorodifluoromethane	ND	2.5	ug/L	1.2
1,1-Dichloroethane	**3.7**	**2.5**	**ug/L**	**0.75**
1,2-Dichloroethane	ND	2.5	ug/L	0.70
1,1-Dichloroethene	**2.4 J**	**2.5**	**ug/L**	**0.78**
cis-1,2-Dichloroethene	**50**	**2.5**	**ug/L**	**0.88**
trans-1,2-Dichloroethene	**3.3**	**2.5**	**ug/L**	**0.82**
1,2-Dichloropropane	ND	2.5	ug/L	1.0
cis-1,3-Dichloropropene	ND	2.5	ug/L	0.88
trans-1,3-Dichloropropene	ND	2.5	ug/L	0.88
Ethylbenzene	ND	2.5	ug/L	1.0
2-Hexanone	ND	120	ug/L	1.4
Isopropylbenzene	ND	12	ug/L	0.98
Methyl acetate	ND	25	ug/L	1.4
Methylene chloride	ND	12	ug/L	0.72
Methylcyclohexane	ND	2.5	ug/L	1.0
4-Methyl-2-pentanone	ND	120	ug/L	0.65
Methyl tert-butyl ether	ND	12	ug/L	0.68
Styrene	ND	2.5	ug/L	0.88

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-061

GC/MS Volatiles

Lot-Sample #...: A3G160206-007 Work Order #...: FTEKX1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	2.5	ug/L	0.90
Tetrachloroethene	ND	2.5	ug/L	1.0
Toluene	ND	2.5	ug/L	0.98
1,2,4-Trichloro-benzene	ND	12	ug/L	1.0
1,1,1-Trichloroethane	ND	2.5	ug/L	0.98
1,1,2-Trichloroethane	ND	2.5	ug/L	0.90
Trichloroethene	**55**	**2.5**	**ug/L**	**1.0**
Trichlorofluoromethane	ND	2.5	ug/L	1.4
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.5	ug/L	0.80
Vinyl chloride	**7.2**	**2.5**	**ug/L**	**0.90**
Xylenes (total)	ND	7.5	ug/L	1.1

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
1,2-Dichloroethane-d4	81	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	85	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-062

GC/MS Volatiles

Lot-Sample #...:	A3G160206-008	**Work Order #...:**	FTEK01AA	**Matrix.....:**	WG
Date Sampled...:	07/15/03 15:31	**Date Received..:**	07/16/03		
Prep Date.....:	07/23/03	**Analysis Date..:**	07/23/03		
Prep Batch #...:	3205241				
Dilution Factor:	1	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	ND	1.0	ug/L	0.35
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	**23**	**1.0**	**ug/L**	**0.35**
trans-1,2-Dichloroethene	**2.4**	**1.0**	**ug/L**	**0.33**
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	**0.67 J**	**5.0**	**ug/L**	**0.27**
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-062

GC/MS Volatiles

Lot-Sample #...: A3G160206-008 Work Order #...: FTEK01AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**26**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-063

GC/MS Volatiles

Lot-Sample #...: A3G160206-009 **Work Order #...:** FTEK11AA **Matrix.....:** WG
Date Sampled...: 07/15/03 16:20 **Date Received..:** 07/16/03
Prep Date.....: 07/23/03 **Analysis Date..:** 07/23/03
Prep Batch #...: 3205241
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	**1.5**	**1.0**	**ug/L**	**0.35**
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	**0.64 J**	**5.0**	**ug/L**	**0.27**
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-063

GC/MS Volatiles

Lot-Sample #...: A3G160206-009 Work Order #...: FTEK11AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	**3.3**	**1.0**	**ug/L**	**0.42**
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	86	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-065

GC/MS Volatiles

Lot-Sample #...: A3G160206-010 **Work Order #...:** FTEK21AA **Matrix.....:** WG
Date Sampled...: 07/15/03 17:11 **Date Received..:** 07/16/03
Prep Date.....: 07/24/03 **Analysis Date..:** 07/24/03
Prep Batch #...: 3205241
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	1.1
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	ND	25	ug/L	0.59
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	**0.36 J**	**1.0**	**ug/L**	**0.35**
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-065

GC/MS Volatiles

Lot-Sample #...: A3G160206-010 Work Order #...: FTEK21AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	**0.85 J**	**1.0**	**ug/L**	**0.42**
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	ND	1.0	ug/L	0.42
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: TB-17360-071503-SP-066

GC/MS Volatiles

Lot-Sample #...: A3G160206-012	**Work Order #...:** FTEK61AA	**Matrix.....:** WQ	
Date Sampled...: 07/15/03	**Date Received..:** 07/16/03		
Prep Date.....: 07/24/03	**Analysis Date..:** 07/24/03		
Prep Batch #...: 3205241			
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**2.0 J**	**25**	**ug/L**	**1.1**
Benzene	ND	1.0	ug/L	0.37
Bromodichloromethane	ND	1.0	ug/L	0.32
Bromoform	ND	1.0	ug/L	0.37
Bromomethane	ND	1.0	ug/L	0.30
2-Butanone	**0.86 J**	**25**	**ug/L**	**0.59**
Carbon disulfide	ND	5.0	ug/L	0.24
Carbon tetrachloride	ND	1.0	ug/L	0.37
Chlorobenzene	ND	1.0	ug/L	0.38
Chloroethane	ND	1.0	ug/L	0.29
Chloroform	ND	1.0	ug/L	0.35
Chloromethane	ND	1.0	ug/L	0.49
Cyclohexane	ND	1.0	ug/L	0.33
Dibromochloromethane	ND	1.0	ug/L	0.37
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.82
1,2-Dibromoethane	ND	1.0	ug/L	0.34
1,2-Dichlorobenzene	ND	1.0	ug/L	0.38
1,3-Dichlorobenzene	ND	1.0	ug/L	0.38
1,4-Dichlorobenzene	ND	1.0	ug/L	0.38
Dichlorodifluoromethane	ND	1.0	ug/L	0.49
1,1-Dichloroethane	ND	1.0	ug/L	0.30
1,2-Dichloroethane	ND	1.0	ug/L	0.28
1,1-Dichloroethene	ND	1.0	ug/L	0.31
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.35
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.33
1,2-Dichloropropane	ND	1.0	ug/L	0.41
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.35
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.35
Ethylbenzene	ND	1.0	ug/L	0.41
2-Hexanone	ND	50	ug/L	0.58
Isopropylbenzene	ND	5.0	ug/L	0.39
Methyl acetate	ND	10	ug/L	0.54
Methylene chloride	ND	5.0	ug/L	0.29
Methylcyclohexane	ND	1.0	ug/L	0.42
4-Methyl-2-pentanone	ND	50	ug/L	0.26
Methyl tert-butyl ether	ND	5.0	ug/L	0.27
Styrene	ND	1.0	ug/L	0.35

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: TB-17360-071503-SP-066

GC/MS Volatiles

Lot-Sample #...: A3G160206-012 Work Order #...: FTEK61AA Matrix.....: WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.36
Tetrachloroethene	ND	1.0	ug/L	0.42
Toluene	ND	1.0	ug/L	0.39
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.40
1,1,1-Trichloroethane	ND	1.0	ug/L	0.39
1,1,2-Trichloroethane	ND	1.0	ug/L	0.36
Trichloroethene	ND	1.0	ug/L	0.42
Trichlorofluoromethane	ND	1.0	ug/L	0.54
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.32
Vinyl chloride	ND	1.0	ug/L	0.36
Xylenes (total)	ND	3.0	ug/L	0.44

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	91	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	86	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3G160206
MB Lot-Sample #: A3G240000-241

Work Order #...: FT04L1AA
Prep Date.....: 07/23/03
Prep Batch #...: 3205241
Initial Wgt/Vol: 5 mL

Matrix.....: WATER
Final Wgt/Vol..: 5 mL

Analysis Date..: 07/23/03
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	**0.35 J**	**5.0**	**ug/L**	**SW846 8260B**
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FT04L1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	92	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	87	(74 - 116)

NOTE(S):

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

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FT3GN1AA **Matrix.....:** WATER
MB Lot-Sample #: A3G250000-166

Prep Date.....: 07/24/03 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 07/24/03 **Prep Batch #...:** 3206166
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FT3GN1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	90	(73 - 122)
1,2-Dichloroethane-d4	83	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	88	(74 - 116)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FT3NQ1AA **Matrix.....:** WATER
MB Lot-Sample #: A3G250000-213

Prep Date.....: 07/24/03 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 07/24/03 **Prep Batch #...:** 3206213
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	**0.46 J**	**5.0**	**ug/L**	**SW846 8260B**
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FT3NQ1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
1,2-Dichloroethane-d4	115	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	100	(74 - 116)

NOTE(S):

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

J Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3G160206
Work Order #...: FT04L1AC-LCS FT04L1AD-LCSD
Matrix.....: WATER
LCS Lot-Sample#: A3G240000-241
Prep Date.....: 07/23/03
Analysis Date..: 07/23/03
Prep Batch #...: 3205241
Dilution Factor: 1
Final Wgt/Vol..: 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	10	9.4	ug/L	94		SW846 8260B
	10	9.5	ug/L	95	1.7	SW846 8260B
Chlorobenzene	10	10	ug/L	104		SW846 8260B
	10	11	ug/L	106	2.2	SW846 8260B
1,1-Dichloroethene	10	9.6	ug/L	96		SW846 8260B
	10	9.7	ug/L	97	1.3	SW846 8260B
Toluene	10	10	ug/L	101		SW846 8260B
	10	10	ug/L	103	1.9	SW846 8260B
Trichloroethene	10	8.4	ug/L	84		SW846 8260B
	10	8.8	ug/L	88	4.7	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(73 - 122)
	87	(73 - 122)
1,2-Dichloroethane-d4	79	(61 - 128)
	84	(61 - 128)
Toluene-d8	99	(76 - 110)
	99	(76 - 110)
4-Bromofluorobenzene	99	(74 - 116)
	101	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FT04L1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3G240000-241 FT04L1AD-LCSD
Prep Date.....: 07/23/03 **Analysis Date..:** 07/23/03
Prep Batch #...: 3205241
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**94**	**(80 - 116)**			**SW846 8260B**
	95	**(80 - 116)**	**1.7**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**104**	**(76 - 117)**			**SW846 8260B**
	106	**(76 - 117)**	**2.2**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**96**	**(63 - 130)**			**SW846 8260B**
	97	**(63 - 130)**	**1.3**	**(0-20)**	**SW846 8260B**
Toluene	**101**	**(74 - 119)**			**SW846 8260B**
	103	**(74 - 119)**	**1.9**	**(0-20)**	**SW846 8260B**
Trichloroethene	**84**	**(75 - 122)**			**SW846 8260B**
	88	**(75 - 122)**	**4.7**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(73 - 122)
	87	(73 - 122)
1,2-Dichloroethane-d4	79	(61 - 128)
	84	(61 - 128)
Toluene-d8	99	(76 - 110)
	99	(76 - 110)
4-Bromofluorobenzene	99	(74 - 116)
	101	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FT3GN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3G250000-166 FT3GN1AD-LCSD
Prep Date.....: 07/24/03 **Analysis Date..:** 07/24/03
Prep Batch #...: 3206166
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	10	9.2	ug/L	92		SW846 8260B
	10	9.5	ug/L	95	2.8	SW846 8260B
Chlorobenzene	10	10	ug/L	104		SW846 8260B
	10	11	ug/L	107	2.6	SW846 8260B
1,1-Dichloroethene	10	9.3	ug/L	93		SW846 8260B
	10	9.5	ug/L	95	2.3	SW846 8260B
Toluene	10	10	ug/L	102		SW846 8260B
	10	10	ug/L	104	2.1	SW846 8260B
Trichloroethene	10	8.3	ug/L	83		SW846 8260B
	10	8.6	ug/L	86	4.5	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(73 - 122)
	88	(73 - 122)
1,2-Dichloroethane-d4	84	(61 - 128)
	81	(61 - 128)
Toluene-d8	100	(76 - 110)
	100	(76 - 110)
4-Bromofluorobenzene	99	(74 - 116)
	101	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FT3GN1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3G250000-166 FT3GN1AD-LCSD
Prep Date.....: 07/24/03 **Analysis Date..:** 07/24/03
Prep Batch #...: 3206166
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**92**	**(80 - 116)**			**SW846 8260B**
	95	**(80 - 116)**	**2.8**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**104**	**(76 - 117)**			**SW846 8260B**
	107	**(76 - 117)**	**2.6**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**93**	**(63 - 130)**			**SW846 8260B**
	95	**(63 - 130)**	**2.3**	**(0-20)**	**SW846 8260B**
Toluene	**102**	**(74 - 119)**			**SW846 8260B**
	104	**(74 - 119)**	**2.1**	**(0-20)**	**SW846 8260B**
Trichloroethene	**83**	**(75 - 122)**			**SW846 8260B**
	86	**(75 - 122)**	**4.5**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	87	(73 - 122)
	88	(73 - 122)
1,2-Dichloroethane-d4	84	(61 - 128)
	81	(61 - 128)
Toluene-d8	100	(76 - 110)
	100	(76 - 110)
4-Bromofluorobenzene	99	(74 - 116)
	101	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FT3NQ1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3G250000-213 FT3NQ1AD-LCSD
Prep Date.....: 07/24/03 **Analysis Date..:** 07/24/03
Prep Batch #...: 3206213
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	10	10	ug/L	102		SW846 8260B
	10	11	ug/L	113	9.8	SW846 8260B
Chlorobenzene	10	9.8	ug/L	98		SW846 8260B
	10	11	ug/L	106	8.4	SW846 8260B
1,1-Dichloroethene	10	10	ug/L	102		SW846 8260B
	10	11	ug/L	107	4.9	SW846 8260B
Toluene	10	9.9	ug/L	99		SW846 8260B
	10	11	ug/L	110	9.9	SW846 8260B
Trichloroethene	10	9.0	ug/L	90		SW846 8260B
	10	9.7	ug/L	97	7.8	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	95	(73 - 122)
	96	(73 - 122)
1,2-Dichloroethane-d4	113	(61 - 128)
	112	(61 - 128)
Toluene-d8	100	(76 - 110)
	101	(76 - 110)
4-Bromofluorobenzene	113	(74 - 116)
	113	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FT3NQ1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3G250000-213 FT3NQ1AD-LCSD
Prep Date.....: 07/24/03 **Analysis Date..:** 07/24/03
Prep Batch #...: 3206213
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**102**	**(80 - 116)**			**SW846 8260B**
	113	**(80 - 116)**	**9.8**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**98**	**(76 - 117)**			**SW846 8260B**
	106	**(76 - 117)**	**8.4**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**102**	**(63 - 130)**			**SW846 8260B**
	107	**(63 - 130)**	**4.9**	**(0-20)**	**SW846 8260B**
Toluene	**99**	**(74 - 119)**			**SW846 8260B**
	110	**(74 - 119)**	**9.9**	**(0-20)**	**SW846 8260B**
Trichloroethene	**90**	**(75 - 122)**			**SW846 8260B**
	97	**(75 - 122)**	**7.8**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	95	(73 - 122)
	96	(73 - 122)
1,2-Dichloroethane-d4	113	(61 - 128)
	112	(61 - 128)
Toluene-d8	100	(76 - 110)
	101	(76 - 110)
4-Bromofluorobenzene	113	(74 - 116)
	113	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FTEKR1AC-MS **Matrix.....:** WG
MS Lot-Sample #: A3G160206-003 FTEKR1AD-MSD
Date Sampled...: 07/15/03 09:26 **Date Received..:** 07/16/03
Prep Date.....: 07/24/03 **Analysis Date..:** 07/24/03
Prep Batch #...: 3206166
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	10	9.6	ug/L	96		SW846 8260B
	ND	10	9.8	ug/L	98	2.0	SW846 8260B
Chlorobenzene	ND	10	11	ug/L	107		SW846 8260B
	ND	10	11	ug/L	106	1.1	SW846 8260B
1,1-Dichloroethene	ND	10	10	ug/L	102		SW846 8260B
	ND	10	10	ug/L	100	1.9	SW846 8260B
Toluene	ND	10	11	ug/L	104		SW846 8260B
	ND	10	11	ug/L	104	0.48	SW846 8260B
Trichloroethene	0.54	10	9.1	ug/L	86		SW846 8260B
	0.54	10	9.3	ug/L	88	2.1	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(73 - 122)
	88	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	85	(61 - 128)
Toluene-d8	101	(76 - 110)
	99	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)
	99	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FTEKR1AC-MS **Matrix.....:** WG
MS Lot-Sample #: A3G160206-003 FTEKR1AD-MSD
Date Sampled...: 07/15/03 09:26 **Date Received..:** 07/16/03
Prep Date.....: 07/24/03 **Analysis Date..:** 07/24/03
Prep Batch #...: 3206166
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	96	(78 - 118)			SW846 8260B
	98	(78 - 118)	2.0	(0-20)	SW846 8260B
Chlorobenzene	107	(76 - 117)			SW846 8260B
	106	(76 - 117)	1.1	(0-20)	SW846 8260B
1,1-Dichloroethene	102	(62 - 130)			SW846 8260B
	100	(62 - 130)	1.9	(0-20)	SW846 8260B
Toluene	104	(70 - 119)			SW846 8260B
	104	(70 - 119)	0.48	(0-20)	SW846 8260B
Trichloroethene	86	(62 - 130)			SW846 8260B
	88	(62 - 130)	2.1	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(73 - 122)
	88	(73 - 122)
1,2-Dichloroethane-d4	85	(61 - 128)
	85	(61 - 128)
Toluene-d8	101	(76 - 110)
	99	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)
	99	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FTEKT1AC-MS **Matrix.....:** WG
MS Lot-Sample #: A3G160206-004 FTEKT1AD-MSD
Date Sampled...: 07/15/03 10:15 **Date Received..:** 07/16/03
Prep Date.....: 07/24/03 **Analysis Date..:** 07/24/03
Prep Batch #...: 3206213
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10**	**10**	**ug/L**	**103**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**102**	**1.3**	**SW846 8260B**
Chlorobenzene	**ND**	**10**	**9.3**	**ug/L**	**93**		**SW846 8260B**
	ND	**10**	**9.2**	**ug/L**	**92**	**0.93**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10**	**11**	**ug/L**	**106**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**103**	**3.5**	**SW846 8260B**
Toluene	**ND**	**10**	**9.9**	**ug/L**	**99**		**SW846 8260B**
	ND	**10**	**9.8**	**ug/L**	**98**	**0.76**	**SW846 8260B**
Trichloroethene	**3.0**	**10**	**11**	**ug/L**	**84**		**SW846 8260B**
	3.0	**10**	**11**	**ug/L**	**85**	**0.42**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
	104	(73 - 122)
1,2-Dichloroethane-d4	119	(61 - 128)
	120	(61 - 128)
Toluene-d8	100	(76 - 110)
	102	(76 - 110)
4-Bromofluorobenzene	112	(74 - 116)
	113	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FTEKT1AC-MS **Matrix.....:** WG
MS Lot-Sample #: A3G160206-004 FTEKT1AD-MSD
Date Sampled...: 07/15/03 10:15 **Date Received..:** 07/16/03
Prep Date.....: 07/24/03 **Analysis Date..:** 07/24/03
Prep Batch #...: 3206213
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	103	(78 - 118)			SW846 8260B
	102	(78 - 118)	1.3	(0-20)	SW846 8260B
Chlorobenzene	93	(76 - 117)			SW846 8260B
	92	(76 - 117)	0.93	(0-20)	SW846 8260B
1,1-Dichloroethene	106	(62 - 130)			SW846 8260B
	103	(62 - 130)	3.5	(0-20)	SW846 8260B
Toluene	99	(70 - 119)			SW846 8260B
	98	(70 - 119)	0.76	(0-20)	SW846 8260B
Trichloroethene	84	(62 - 130)			SW846 8260B
	85	(62 - 130)	0.42	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
	104	(73 - 122)
1,2-Dichloroethane-d4	119	(61 - 128)
	120	(61 - 128)
Toluene-d8	100	(76 - 110)
	102	(76 - 110)
4-Bromofluorobenzene	112	(74 - 116)
	113	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

SEVERN TRENT STL

GCMS SEMIVOLATILE DATA

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-064

GC/MS Semivolatiles

Lot-Sample #...: A3G160206-011 **Work Order #...:** FTEK31AA **Matrix.....:** WG
Date Sampled...: 07/15/03 13:10 **Date Received..:** 07/16/03
Prep Date.....: 07/17/03 **Analysis Date..:** 07/23/03
Prep Batch #...: 3198113
Dilution Factor: 50 **Initial Wgt/Vol:** 1000 mL **Final Wgt/Vol..:** 2 mL
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	250	ug/L	34
Acenaphthylene	ND	250	ug/L	20
Acetophenone	ND	250	ug/L	32
Anthracene	ND	250	ug/L	30
Atrazine	ND	250	ug/L	18
Benzo(a)anthracene	ND	200	ug/L	34
Benzo(a)pyrene	ND	200	ug/L	26
Benzo(b)fluoranthene	ND	200	ug/L	36
Benzo(ghi)perylene	ND	250	ug/L	35
Benzo(k)fluoranthene	ND	250	ug/L	32
Benzaldehyde	ND	500	ug/L	30
1,1'-Biphenyl	ND	500	ug/L	32
bis(2-Chloroethoxy) methane	ND	250	ug/L	50
bis(2-Chloroethyl)-ether	ND	200	ug/L	85
bis(2-Ethylhexyl) phthalate	**20 J,B**	**250**	**ug/L**	**10**
4-Bromophenyl phenyl ether	ND	250	ug/L	39
Butyl benzyl phthalate	ND	250	ug/L	12
Caprolactam	ND	500	ug/L	22
Carbazole	ND	500	ug/L	30
4-Chloroaniline	ND	1000	ug/L	45
4-Chloro-3-methylphenol	ND	250	ug/L	28
2-Chloronaphthalene	ND	250	ug/L	36
2-Chlorophenol	ND	250	ug/L	65
4-Chlorophenyl phenyl ether	ND	250	ug/L	33
Chrysene	ND	250	ug/L	34
Dibenz(a,h)anthracene	ND	200	ug/L	34
Dibenzofuran	ND	250	ug/L	33
3,3'-Dichlorobenzidine	ND	200	ug/L	24
2,4-Dichlorophenol	ND	500	ug/L	35
Diethyl phthalate	ND	250	ug/L	12
2,4-Dimethylphenol	ND	250	ug/L	50
Dimethyl phthalate	ND	250	ug/L	10
Di-n-butyl phthalate	ND	250	ug/L	18

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-064

GC/MS Semivolatiles

Lot-Sample #...: A3G160206-011 Work Order #...: FTEK31AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
4,6-Dinitro-2-methylphenol	ND	1000	ug/L	100
2,4-Dinitrophenol	ND	1000	ug/L	160
2,4-Dinitrotoluene	ND	250	ug/L	23
2,6-Dinitrotoluene	ND	250	ug/L	36
Di-n-octyl phthalate	ND	250	ug/L	34
Fluoranthene	ND	250	ug/L	36
Fluorene	ND	250	ug/L	38
Hexachlorobenzene	ND	250	ug/L	38
Hexachlorobutadiene	ND	250	ug/L	75
Hexachlorocyclopentadiene	ND	250	ug/L	55
Hexachloroethane	ND	250	ug/L	80
Indeno(1,2,3-cd)pyrene	ND	200	ug/L	34
Isophorone	ND	250	ug/L	43
2-Methylnaphthalene	ND	250	ug/L	46
2-Methylphenol	ND	250	ug/L	45
4-Methylphenol	ND	250	ug/L	36
Naphthalene	ND	250	ug/L	65
2-Nitroaniline	ND	1000	ug/L	24
3-Nitroaniline	ND	1000	ug/L	24
4-Nitroaniline	ND	1000	ug/L	30
Nitrobenzene	ND	200	ug/L	65
2-Nitrophenol	ND	250	ug/L	48
4-Nitrophenol	ND	1000	ug/L	180
N-Nitrosodi-n-propylamine	ND	250	ug/L	55
N-Nitrosodiphenylamine	ND	250	ug/L	32
2,2'-oxybis(1-Chloropropane)	ND	250	ug/L	90
Pentachlorophenol	ND	1000	ug/L	130
Phenanthrene	ND	250	ug/L	34
Phenol	ND	250	ug/L	65
Pyrene	ND	250	ug/L	32
2,4,5-Trichlorophenol	ND	250	ug/L	43
2,4,6-Trichlorophenol	ND	200	ug/L	36

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	0.0 DIL,*	(32 - 112)
2-Fluorobiphenyl	0.0 DIL,*	(30 - 110)
Terphenyl-d14	0.0 DIL,*	(10 - 144)
Phenol-d5	70 DIL	(10 - 113)
2-Fluorophenol	0.0 DIL,*	(13 - 110)
2,4,6-Tribromophenol	0.0 DIL,*	(21 - 122)

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-064

GC/MS Semivolatiles

Lot-Sample #...: A3G160206-011 Work Order #...: FTEK31AA Matrix.....: WG

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A3G160206 **Work Order #...:** FTF2M1AA **Matrix.....:** WATER
MB Lot-Sample #: A3G170000-113

Prep Date.....: 07/17/03 **Final Wgt/Vol..:** 2 mL
Analysis Date..: 07/22/03 **Prep Batch #...:** 3198113
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	5.0	ug/L	SW846 8270C
Acenaphthylene	ND	5.0	ug/L	SW846 8270C
Acetophenone	ND	5.0	ug/L	SW846 8270C
Anthracene	ND	5.0	ug/L	SW846 8270C
Atrazine	ND	5.0	ug/L	SW846 8270C
Benzo(a)anthracene	ND	4.0	ug/L	SW846 8270C
Benzo(a)pyrene	ND	4.0	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	4.0	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	5.0	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	5.0	ug/L	SW846 8270C
Benzaldehyde	ND	10	ug/L	SW846 8270C
1,1'-Biphenyl	ND	10	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	5.0	ug/L	SW846 8270C
bis(2-Chloroethyl)-ether	ND	4.0	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	**0.83 J**	**5.0**	**ug/L**	**SW846 8270C**
4-Bromophenyl phenyl ether	ND	5.0	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	5.0	ug/L	SW846 8270C
Caprolactam	ND	10	ug/L	SW846 8270C
Carbazole	ND	10	ug/L	SW846 8270C
4-Chloroaniline	ND	20	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	5.0	ug/L	SW846 8270C
2-Chloronaphthalene	ND	5.0	ug/L	SW846 8270C
2-Chlorophenol	ND	5.0	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	5.0	ug/L	SW846 8270C
Chrysene	ND	5.0	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	4.0	ug/L	SW846 8270C
Dibenzofuran	ND	5.0	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	4.0	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C
Diethyl phthalate	ND	5.0	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	5.0	ug/L	SW846 8270C
Dimethyl phthalate	ND	5.0	ug/L	SW846 8270C
Di-n-butyl phthalate	ND	5.0	ug/L	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	20	ug/L	SW846 8270C
2,4-Dinitrophenol	ND	20	ug/L	SW846 8270C

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A3G160206 **Work Order #...:** FTF2M1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4-Dinitrotoluene	ND	5.0	ug/L	SW846 8270C
2,6-Dinitrotoluene	ND	5.0	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	5.0	ug/L	SW846 8270C
Fluoranthene	ND	5.0	ug/L	SW846 8270C
Fluorene	ND	5.0	ug/L	SW846 8270C
Hexachlorobenzene	ND	5.0	ug/L	SW846 8270C
Hexachlorobutadiene	ND	5.0	ug/L	SW846 8270C
Hexachlorocyclopenta-diene	ND	5.0	ug/L	SW846 8270C
Hexachloroethane	ND	5.0	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	4.0	ug/L	SW846 8270C
Isophorone	ND	5.0	ug/L	SW846 8270C
2-Methylnaphthalene	ND	5.0	ug/L	SW846 8270C
2-Methylphenol	ND	5.0	ug/L	SW846 8270C
4-Methylphenol	ND	5.0	ug/L	SW846 8270C
Naphthalene	ND	5.0	ug/L	SW846 8270C
2-Nitroaniline	ND	20	ug/L	SW846 8270C
3-Nitroaniline	ND	20	ug/L	SW846 8270C
4-Nitroaniline	ND	20	ug/L	SW846 8270C
Nitrobenzene	ND	4.0	ug/L	SW846 8270C
2-Nitrophenol	ND	5.0	ug/L	SW846 8270C
4-Nitrophenol	ND	20	ug/L	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	5.0	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	5.0	ug/L	SW846 8270C
2,2'-oxybis(1-Chloropropa	ND	5.0	ug/L	SW846 8270C
Pentachlorophenol	ND	20	ug/L	SW846 8270C
Phenanthrene	ND	5.0	ug/L	SW846 8270C
Phenol	ND	5.0	ug/L	SW846 8270C
Pyrene	ND	5.0	ug/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	5.0	ug/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	4.0	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	71	(32 - 112)
2-Fluorobiphenyl	55	(30 - 110)
Terphenyl-d14	61	(10 - 144)
Phenol-d5	69	(10 - 113)
2-Fluorophenol	60	(13 - 110)
2,4,6-Tribromophenol	60	(21 - 122)

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A3G160206 **Work Order #...:** FTF2M1AA **Matrix.....:** WATER

NOTE(S):

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

J Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A3G160206 **Work Order #...:** FTF2M1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3G170000-113 FTF2M1AD-LCSD
Prep Date.....: 07/17/03 **Analysis Date..:** 07/22/03
Prep Batch #...: 3198113
Dilution Factor: 1 **Final Wgt/Vol..:** 2 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Acenaphthene	20	15	ug/L	73		SW846 8270C
	20	14	ug/L	70	4.5	SW846 8270C
1,2,4-Trichloro-benzene	20	14	ug/L	69		SW846 8270C
	20	13	ug/L	66	5.1	SW846 8270C
1,4-Dichlorobenzene	20	15	ug/L	73		SW846 8270C
	20	14	ug/L	70	3.5	SW846 8270C
4-Chloro-3-methylphenol	20	16	ug/L	78		SW846 8270C
	20	15	ug/L	73	6.7	SW846 8270C
2-Chlorophenol	20	15	ug/L	73		SW846 8270C
	20	14	ug/L	70	3.7	SW846 8270C
2,4-Dinitrotoluene	20	15	ug/L	77		SW846 8270C
	20	15	ug/L	75	1.8	SW846 8270C
4-Nitrophenol	20	16	ug/L	79		SW846 8270C
	20	15	ug/L	73	7.3	SW846 8270C
N-Nitrosodi-n-propyl-amine	20	16	ug/L	78		SW846 8270C
	20	15	ug/L	77	1.8	SW846 8270C
Pentachlorophenol	20	16	ug/L	81		SW846 8270C
	20	15	ug/L	77	5.7	SW846 8270C
Phenol	20	13	ug/L	66		SW846 8270C
	20	12	ug/L	61	9.0	SW846 8270C
Pyrene	20	13	ug/L	64		SW846 8270C
	20	12	ug/L	62	2.4	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	86	(32 - 112)
	82	(32 - 112)
2-Fluorobiphenyl	70	(30 - 110)
	68	(30 - 110)
Terphenyl-d14	71	(10 - 144)
	67	(10 - 144)
Phenol-d5	79	(10 - 113)
	71	(10 - 113)
2-Fluorophenol	72	(13 - 110)
	66	(13 - 110)

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A3G160206 **Work Order #...:** FTF2M1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3G170000-113 FTF2M1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	79	(21 - 122)
	75	(21 - 122)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A3G160206 Work Order #...: FTF2M1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: A3G170000-113 FTF2M1AD-LCSD
Prep Date.....: 07/17/03 Analysis Date..: 07/22/03
Prep Batch #...: 3198113
Dilution Factor: 1 Final Wgt/Vol..: 2 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	73	(39 - 118)			SW846 8270C
	70	(39 - 118)	4.5	(0-35)	SW846 8270C
1,2,4-Trichloro-benzene	69	(31 - 110)			SW846 8270C
	66	(31 - 110)	5.1	(0-37)	SW846 8270C
1,4-Dichlorobenzene	73	(28 - 110)			SW846 8270C
	70	(28 - 110)	3.5	(0-36)	SW846 8270C
4-Chloro-3-methylphenol	78	(29 - 124)			SW846 8270C
	73	(29 - 124)	6.7	(0-55)	SW846 8270C
2-Chlorophenol	73	(19 - 124)			SW846 8270C
	70	(19 - 124)	3.7	(0-43)	SW846 8270C
2,4-Dinitrotoluene	77	(47 - 131)			SW846 8270C
	75	(47 - 131)	1.8	(0-32)	SW846 8270C
4-Nitrophenol	79	(19 - 144)			SW846 8270C
	73	(19 - 144)	7.3	(0-34)	SW846 8270C
N-Nitrosodi-n-propyl-amine	78	(30 - 115)			SW846 8270C
	77	(30 - 115)	1.8	(0-36)	SW846 8270C
Pentachlorophenol	81	(10 - 140)			SW846 8270C
	77	(10 - 140)	5.7	(0-56)	SW846 8270C
Phenol	66	(10 - 131)			SW846 8270C
	61	(10 - 131)	9.0	(0-43)	SW846 8270C
Pyrene	64	(46 - 130)			SW846 8270C
	62	(46 - 130)	2.4	(0-31)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	86	(32 - 112)
	82	(32 - 112)
2-Fluorobiphenyl	70	(30 - 110)
	68	(30 - 110)
Terphenyl-d14	71	(10 - 144)
	67	(10 - 144)
Phenol-d5	79	(10 - 113)
	71	(10 - 113)
2-Fluorophenol	72	(13 - 110)
	66	(13 - 110)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A3G160206 **Work Order #...:** FTF2M1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3G170000-113 FTF2M1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	79	(21 - 122)
	75	(21 - 122)

NOTE(S):

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

Bold print denotes control parameters

SEVERN TRENT STL

DISSOLVED GASES/RSK DATA

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-055

GC Volatiles

Lot-Sample #...: A3G160206-001 Work Order #...: FTEKE1AK Matrix.....: WG
Date Sampled...: 07/15/03 08:16 Date Received..: 07/16/03
Prep Date.....: 07/28/03 Analysis Date..: 07/28/03
Prep Batch #...: 3209119
Dilution Factor: 1 Initial Wgt/Vol: 1 mL Final Wgt/Vol..: 1 mL
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-056

GC Volatiles

Lot-Sample #...:	A3G160206-002	**Work Order #...:**	FTEKQ1AK	**Matrix.....:**	WG
Date Sampled...:	07/15/03 08:30	**Date Received..:**	07/16/03		
Prep Date.....:	07/28/03	**Analysis Date..:**	07/28/03		
Prep Batch #...:	3209119				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-057

GC Volatiles

Lot-Sample #...:	A3G160206-003	**Work Order #...:**	FTEKR1A4	**Matrix.....:**	WG
Date Sampled...:	07/15/03 09:26	**Date Received..:**	07/16/03		
Prep Date.....:	07/28/03	**Analysis Date..:**	07/28/03		
Prep Batch #...:	3209119				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-058

GC Volatiles

Lot-Sample #...:	A3G160206-004	**Work Order #...:**	FTEKT1A4	**Matrix.....:**	WG
Date Sampled...:	07/15/03 10:15	**Date Received..:**	07/16/03		
Prep Date.....:	07/28/03	**Analysis Date..:**	07/28/03		
Prep Batch #...:	3209119				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-059

GC Volatiles

Lot-Sample #...:	A3G160206-005	**Work Order #...:**	FTEKV1AK	**Matrix.....:**	WG
Date Sampled...:	07/15/03 12:11	**Date Received..:**	07/16/03		
Prep Date.....:	07/28/03	**Analysis Date..:**	07/28/03		
Prep Batch #...:	3209119				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-060

GC Volatiles

Lot-Sample #...:	A3G160206-006	**Work Order #...:**	FTEKW1AK	**Matrix.....:**	WG
Date Sampled...:	07/15/03 11:52	**Date Received..:**	07/16/03		
Prep Date.....:	07/28/03	**Analysis Date..:**	07/28/03		
Prep Batch #...:	3209119				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	**0.68**	**0.50**	**ug/L**	**0.29**
Methane	**73**	**0.50**	**ug/L**	**0.39**

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-061

GC Volatiles

Lot-Sample #...:	A3G160206-007	**Work Order #...:**	FTEKX1AK	**Matrix.....:**	WG
Date Sampled...:	07/15/03 15:01	**Date Received..:**	07/16/03		
Prep Date.....:	07/28/03	**Analysis Date..:**	07/28/03		
Prep Batch #...:	3209119				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	**88**	**0.50**	**ug/L**	**0.39**

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-062

GC Volatiles

Lot-Sample #...:	A3G160206-008	**Work Order #...:**	FTEK01AK	**Matrix.....:**	WG
Date Sampled...:	07/15/03 15:31	**Date Received..:**	07/16/03		
Prep Date.....:	07/28/03	**Analysis Date..:**	07/28/03		
Prep Batch #...:	3209119				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	**0.86**	**0.50**	**ug/L**	**0.39**

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-063

GC Volatiles

Lot-Sample #...:	A3G160206-009	**Work Order #...:**	FTEK11AK	**Matrix.....:**	WG
Date Sampled...:	07/15/03 16:20	**Date Received..:**	07/16/03		
Prep Date.....:	07/28/03	**Analysis Date..:**	07/28/03		
Prep Batch #...:	3209119				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-065

GC Volatiles

Lot-Sample #...:	A3G160206-010	**Work Order #...:**	FTEK21AK	**Matrix.....:**	WG
Date Sampled...:	07/15/03 17:11	**Date Received..:**	07/16/03		
Prep Date.....:	07/28/03	**Analysis Date..:**	07/28/03		
Prep Batch #...:	3209119				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Ethane	ND	0.50	ug/L	0.30
Ethene	ND	0.50	ug/L	0.29
Methane	ND	0.50	ug/L	0.39

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: A3G160206
MB Lot-Sample #: A3G280000-119

Work Order #...: FT6QD1AA

Matrix.....: WATER

Prep Date.....: 07/28/03
Prep Batch #...: 3209119

Final Wgt/Vol..: 1 mL

Analysis Date..: 07/28/03
Dilution Factor: 1
Initial Wgt/Vol: 1 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	0.50	ug/L	RSK SOP-175
Ethane	ND	0.50	ug/L	RSK SOP-175
Ethene	ND	0.50	ug/L	RSK SOP-175

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FT6QD1AC **Matrix.....:** WATER
LCS Lot-Sample#: A3G280000-119
Prep Date.....: 07/28/03 **Analysis Date..:** 07/28/03
Prep Batch #...: 3209119
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Methane	**73**	**72**	**ug/L**	**99**	**RSK SOP-175**
Ethane	**140**	**140**	**ug/L**	**102**	**RSK SOP-175**
Ethene	**130**	**130**	**ug/L**	**101**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FT6QD1AC **Matrix.....:** WATER
LCS Lot-Sample#: A3G280000-119
Prep Date.....: 07/28/03 **Analysis Date..:** 07/28/03
Prep Batch #...: 3209119
Dilution Factor: 1 **Final Wgt/Vol..:** 1 mL
Initial Wgt/Vol: 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Methane	**99**	**(70 - 130)**	**RSK SOP-175**
Ethane	**102**	**(70 - 130)**	**RSK SOP-175**
Ethene	**101**	**(70 - 130)**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FTEKR1A5-MS **Matrix.....:** WG
MS Lot-Sample #: A3G160206-003 FTEKR1A6-MSD
Date Sampled...: 07/15/03 09:26 **Date Received..:** 07/16/03
Prep Date.....: 07/28/03 **Analysis Date..:** 07/28/03
Prep Batch #...: 3209119
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Methane	**ND**	**73**	**72**	**ug/L**	**99**		**RSK SOP-175**
	ND	**73**	**71**	**ug/L**	**97**	**2.0**	**RSK SOP-175**
Ethane	**ND**	**140**	**140**	**ug/L**	**103**		**RSK SOP-175**
	ND	**140**	**140**	**ug/L**	**101**	**2.2**	**RSK SOP-175**
Ethene	**ND**	**130**	**130**	**ug/L**	**104**		**RSK SOP-175**
	ND	**130**	**130**	**ug/L**	**101**	**2.5**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...:	A3G160206	**Work Order #...:**	FTEKR1A5-MS	**Matrix.....:**	WG
MS Lot-Sample #:	A3G160206-003		FTEKR1A6-MSD		
Date Sampled...:	07/15/03 09:26	**Date Received..:**	07/16/03		
Prep Date.....:	07/28/03	**Analysis Date..:**	07/28/03		
Prep Batch #...:	3209119				
Dilution Factor:	1	**Initial Wgt/Vol:**	1 mL	**Final Wgt/Vol..:**	1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	**99**	**(70 - 130)**			**RSK SOP-175**
	97	**(70 - 130)**	**2.0**	**(0-30)**	**RSK SOP-175**
Ethane	**103**	**(70 - 130)**			**RSK SOP-175**
	101	**(70 - 130)**	**2.2**	**(0-30)**	**RSK SOP-175**
Ethene	**104**	**(70 - 130)**			**RSK SOP-175**
	101	**(70 - 130)**	**2.5**	**(0-30)**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FTEKT1A5-MS **Matrix.....:** WG
MS Lot-Sample #: A3G160206-004 FTEKT1A6-MSD
Date Sampled...: 07/15/03 10:15 **Date Received..:** 07/16/03
Prep Date.....: 07/28/03 **Analysis Date..:** 07/28/03
Prep Batch #...: 3209119
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Methane	ND	73	73	ug/L	100		RSK SOP-175
	ND	73	72	ug/L	99	0.44	RSK SOP-175
Ethane	ND	140	140	ug/L	104		RSK SOP-175
	ND	140	140	ug/L	103	0.56	RSK SOP-175
Ethene	ND	130	130	ug/L	104		RSK SOP-175
	ND	130	130	ug/L	103	1.2	RSK SOP-175

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A3G160206 **Work Order #...:** FTEKT1A5-MS **Matrix.....:** WG
MS Lot-Sample #: A3G160206-004 FTEKT1A6-MSD
Date Sampled...: 07/15/03 10:15 **Date Received..:** 07/16/03
Prep Date.....: 07/28/03 **Analysis Date..:** 07/28/03
Prep Batch #...: 3209119
Dilution Factor: 1 **Initial Wgt/Vol:** 1 mL **Final Wgt/Vol..:** 1 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Methane	**100**	**(70 - 130)**			**RSK SOP-175**
	99	**(70 - 130)**	**0.44**	**(0-30)**	**RSK SOP-175**
Ethane	**104**	**(70 - 130)**			**RSK SOP-175**
	103	**(70 - 130)**	**0.56**	**(0-30)**	**RSK SOP-175**
Ethene	**104**	**(70 - 130)**			**RSK SOP-175**
	103	**(70 - 130)**	**1.2**	**(0-30)**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

SEVERN TRENT STL

METALS DATA

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-055

TOTAL Metals

Lot-Sample #...: A3G160206-001 Matrix.....: WG
Date Sampled...: 07/15/03 08:16 Date Received..: 07/16/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198098						
Calcium	100	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEKE1AL
		Dilution Factor: 1		Analysis Time..: 17:43	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	21.2	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEKE1AM
		Dilution Factor: 1		Analysis Time..: 17:43	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.0033 B	0.015	mg/L	SW846 6010B	07/17-07/18/03	FTEKE1AN
		Dilution Factor: 1		Analysis Time..: 17:43	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

NOTE(S):

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-056

TOTAL Metals

Lot-Sample #...: A3G160206-002 Matrix.....: WG
Date Sampled...: 07/15/03 08:30 Date Received..: 07/16/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198098						
Calcium	109	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEKQ1AL
		Dilution Factor: 1		Analysis Time..: 17:48	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	23.1	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEKQ1AM
		Dilution Factor: 1		Analysis Time..: 17:48	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.0021 B	0.015	mg/L	SW846 6010B	07/17-07/18/03	FTEKQ1AN
		Dilution Factor: 1		Analysis Time..: 17:48	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

NOTE(S):

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-057

TOTAL Metals

Lot-Sample #...: A3G160206-003 Matrix.....: WG
Date Sampled...: 07/15/03 09:26 Date Received..: 07/16/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198098						
Calcium	80.5	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEKR1A7
		Dilution Factor: 1		Analysis Time..: 17:52	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	17.0	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEKR1CA
		Dilution Factor: 1		Analysis Time..: 17:52	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.020	0.015	mg/L	SW846 6010B	07/17-07/18/03	FTEKR1CE
		Dilution Factor: 1		Analysis Time..: 17:52	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-058

TOTAL Metals

Lot-Sample #...: A3G160206-004 Matrix.....: WG
Date Sampled...: 07/15/03 10:15 Date Received..: 07/16/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198098						
Calcium	105	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEKT1A7
		Dilution Factor: 1		Analysis Time..: 18:07	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	22.9	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEKT1CA
		Dilution Factor: 1		Analysis Time..: 18:07	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	ND	0.015	mg/L	SW846 6010B	07/17-07/18/03	FTEKT1CE
		Dilution Factor: 1		Analysis Time..: 18:07	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-059

TOTAL Metals

Lot-Sample #...: A3G160206-005 Matrix.....: WG
Date Sampled...: 07/15/03 12:11 Date Received..: 07/16/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198098						
Calcium	88.7	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEKV1AL
		Dilution Factor: 1		Analysis Time..: 18:21	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	20.4	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEKV1AM
		Dilution Factor: 1		Analysis Time..: 18:21	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.0081 B	0.015	mg/L	SW846 6010B	07/17-07/18/03	FTEKV1AN
		Dilution Factor: 1		Analysis Time..: 18:21	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

NOTE(S):

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-060

TOTAL Metals

Lot-Sample #...: A3G160206-006 Matrix.....: WG
Date Sampled...: 07/15/03 11:52 Date Received..: 07/16/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198098						
Calcium	84.9	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEKW1AL
		Dilution Factor: 1		Analysis Time..: 18:38	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	22.5	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEKW1AM
		Dilution Factor: 1		Analysis Time..: 18:38	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.040	0.015	mg/L	SW846 6010B	07/17-07/18/03	FTEKW1AN
		Dilution Factor: 1		Analysis Time..: 18:38	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-061

TOTAL Metals

Lot-Sample #...: A3G160206-007 Matrix.....: WG
Date Sampled...: 07/15/03 15:01 Date Received..: 07/16/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198098						
Calcium	89.7	5.0 Dilution Factor: 1 Instrument ID..: I5	mg/L	SW846 6010B Analysis Time..: 18:43 MDL.....: 0.059	07/17-07/18/03 Analyst ID.....: 001644	FTEKX1AL
Magnesium	24.0	5.0 Dilution Factor: 1 Instrument ID..: I5	mg/L	SW846 6010B Analysis Time..: 18:43 MDL.....: 0.035	07/17-07/18/03 Analyst ID.....: 001644	FTEKX1AM
Manganese	0.54	0.015 Dilution Factor: 1 Instrument ID..: I5	mg/L	SW846 6010B Analysis Time..: 18:43 MDL.....: 0.00068	07/17-07/18/03 Analyst ID.....: 001644	FTEKX1AN

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-062

TOTAL Metals

Lot-Sample #...: A3G160206-008 **Matrix.....:** WG
Date Sampled...: 07/15/03 15:31 **Date Received..:** 07/16/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198098						
Calcium	88.8	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTKK01AL
		Dilution Factor: 1		Analysis Time..: 18:47	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	26.6	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTKK01AM
		Dilution Factor: 1		Analysis Time..: 18:47	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.073	0.015	mg/L	SW846 6010B	07/17-07/18/03	FTKK01AN
		Dilution Factor: 1		Analysis Time..: 18:47	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-063

TOTAL Metals

Lot-Sample #...: A3G160206-009 Matrix.....: WG
Date Sampled...: 07/15/03 16:20 Date Received..: 07/16/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198098						
Calcium	92.6	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEK11AL
		Dilution Factor: 1		Analysis Time..: 18:52	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	22.7	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEK11AM
		Dilution Factor: 1		Analysis Time..: 18:52	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.0012 B	0.015	mg/L	SW846 6010B	07/17-07/18/03	FTEK11AN
		Dilution Factor: 1		Analysis Time..: 18:52	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

NOTE(S):

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-065

TOTAL Metals

Lot-Sample #...: A3G160206-010 Matrix.....: WG
Date Sampled...: 07/15/03 17:11 Date Received..: 07/16/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3198098						
Calcium	97.8	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEK21AL
		Dilution Factor: 1		Analysis Time..: 18:56	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.059		
Magnesium	23.4	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTEK21AM
		Dilution Factor: 1		Analysis Time..: 18:56	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.035		
Manganese	0.020	0.015	mg/L	SW846 6010B	07/17-07/18/03	FTEK21AN
		Dilution Factor: 1		Analysis Time..: 18:56	Analyst ID.....: 001644	
		Instrument ID..: I5		MDL.....: 0.00068		

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A3G160206 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A3G170000-098 **Prep Batch #...:** 3198098						
Calcium	ND	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTF1J1AA
		Dilution Factor: 1				
		Analysis Time..: 17:21		Analyst ID.....: 001644	Instrument ID..: I5	
Magnesium	ND	5.0	mg/L	SW846 6010B	07/17-07/18/03	FTF1J1AC
		Dilution Factor: 1				
		Analysis Time..: 17:21		Analyst ID.....: 001644	Instrument ID..: I5	
Manganese	ND	0.015	mg/L	SW846 6010B	07/17-07/18/03	FTF1J1AD
		Dilution Factor: 1				
		Analysis Time..: 17:21		Analyst ID.....: 001644	Instrument ID..: I5	

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A3G160206 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A3G170000-098 **Prep Batch #...:** 3198098							
Calcium	50.0	50.0	mg/L	100	SW846 6010B	07/17-07/18/03	FTF1J1AE
			Dilution Factor: 1		Analysis Time..: 17:38	Analyst ID.....: 001644	
			Instrument ID..: I5				
Magnesium	50.0	47.8	mg/L	96	SW846 6010B	07/17-07/18/03	FTF1J1AF
			Dilution Factor: 1		Analysis Time..: 17:38	Analyst ID.....: 001644	
			Instrument ID..: I5				
Manganese	0.50	0.51	mg/L	101	SW846 6010B	07/17-07/18/03	FTF1J1AG
			Dilution Factor: 1		Analysis Time..: 17:38	Analyst ID.....: 001644	
			Instrument ID..: I5				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A3G160206 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A3G170000-098 **Prep Batch #...:** 3198098					
Calcium	100	(80 - 120)	SW846 6010B	07/17-07/18/03	FTF1J1AE
		Dilution Factor: 1	Analysis Time..: 17:38	Analyst ID.....: 001644	
		Instrument ID..: I5			
Magnesium	96	(80 - 120)	SW846 6010B	07/17-07/18/03	FTF1J1AF
		Dilution Factor: 1	Analysis Time..: 17:38	Analyst ID.....: 001644	
		Instrument ID..: I5			
Manganese	101	(80 - 120)	SW846 6010B	07/17-07/18/03	FTF1J1AG
		Dilution Factor: 1	Analysis Time..: 17:38	Analyst ID.....: 001644	
		Instrument ID..: I5			

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A3G160206 **Matrix.....:** WG
Date Sampled...: 07/15/03 09:26 **Date Received..:** 07/16/03

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A3G160206-003 **Prep Batch #...:** 3198098									
Calcium									
	80.5	50.0	133	mg/L	105		SW846 6010B	07/17-07/18/03	FTEKR1A8
	80.5	50.0	128	mg/L	94	4.1	SW846 6010B	07/17-07/18/03	FTEKR1A9
			Dilution Factor: 1						
			Analysis Time..: 17:57		Instrument ID..: I5			Analyst ID.....: 001644	
Magnesium									
	17.0	50.0	67.1	mg/L	100		SW846 6010B	07/17-07/18/03	FTEKR1CC
	17.0	50.0	65.6	mg/L	97	2.3	SW846 6010B	07/17-07/18/03	FTEKR1CD
			Dilution Factor: 1						
			Analysis Time..: 17:57		Instrument ID..: I5			Analyst ID.....: 001644	
Manganese									
	0.020	0.50	0.54	mg/L	104		SW846 6010B	07/17-07/18/03	FTEKR1CF
	0.020	0.50	0.53	mg/L	102	1.3	SW846 6010B	07/17-07/18/03	FTEKR1CG
			Dilution Factor: 1						
			Analysis Time..: 17:57		Instrument ID..: I5			Analyst ID.....: 001644	

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A3G160206 **Matrix.....:** WG
Date Sampled...: 07/15/03 09:26 **Date Received..:** 07/16/03

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A3G160206-003 **Prep Batch #...:** 3198098							
Calcium	105	(75 - 125)			SW846 6010B	07/17-07/18/03	FTEKR1A8
	94	(75 - 125)	4.1	(0-20)	SW846 6010B	07/17-07/18/03	FTEKR1A9
		Dilution Factor: 1					
		Analysis Time..: 17:57			Instrument ID..: I5	Analyst ID.....: 001644	
Magnesium	100	(75 - 125)			SW846 6010B	07/17-07/18/03	FTEKR1CC
	97	(75 - 125)	2.3	(0-20)	SW846 6010B	07/17-07/18/03	FTEKR1CD
		Dilution Factor: 1					
		Analysis Time..: 17:57			Instrument ID..: I5	Analyst ID.....: 001644	
Manganese	104	(75 - 125)			SW846 6010B	07/17-07/18/03	FTEKR1CF
	102	(75 - 125)	1.3	(0-20)	SW846 6010B	07/17-07/18/03	FTEKR1CG
		Dilution Factor: 1					
		Analysis Time..: 17:57			Instrument ID..: I5	Analyst ID.....: 001644	

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A3G160206 **Matrix.....:** WG
Date Sampled...: 07/15/03 10:15 **Date Received..:** 07/16/03

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A3G160206-004 **Prep Batch #...:** 3198098									
Calcium									
	105	50.0	147	mg/L	86		SW846 6010B	07/17-07/18/03	FTEKT1A8
	105	50.0	149	mg/L	89	1.2	SW846 6010B	07/17-07/18/03	FTEKT1A9
			Dilution Factor: 1						
			Analysis Time..: 18:11		Instrument ID..: I5			Analyst ID.....: 001644	
Magnesium									
	22.9	50.0	69.5	mg/L	93		SW846 6010B	07/17-07/18/03	FTEKT1CC
	22.9	50.0	70.7	mg/L	96	1.6	SW846 6010B	07/17-07/18/03	FTEKT1CD
			Dilution Factor: 1						
			Analysis Time..: 18:11		Instrument ID..: I5			Analyst ID.....: 001644	
Manganese									
	ND	0.50	0.50	mg/L	99		SW846 6010B	07/17-07/18/03	FTEKT1CF
	ND	0.50	0.51	mg/L	101	1.7	SW846 6010B	07/17-07/18/03	FTEKT1CG
			Dilution Factor: 1						
			Analysis Time..: 18:11		Instrument ID..: I5			Analyst ID.....: 001644	

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A3G160206 **Matrix.....:** WG
Date Sampled...: 07/15/03 10:15 **Date Received..:** 07/16/03

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A3G160206-004 **Prep Batch #...:** 3198098							
Calcium	86	(75 - 125)			SW846 6010B	07/17-07/18/03	FTEKT1A8
	89	(75 - 125)	1.2	(0-20)	SW846 6010B	07/17-07/18/03	FTEKT1A9
		Dilution Factor: 1					
		Analysis Time..: 18:11			Instrument ID..: IS	Analyst ID.....: 001644	
Magnesium	93	(75 - 125)			SW846 6010B	07/17-07/18/03	FTEKT1CC
	96	(75 - 125)	1.6	(0-20)	SW846 6010B	07/17-07/18/03	FTEKT1CD
		Dilution Factor: 1					
		Analysis Time..: 18:11			Instrument ID..: IS	Analyst ID.....: 001644	
Manganese	99	(75 - 125)			SW846 6010B	07/17-07/18/03	FTEKT1CF
	101	(75 - 125)	1.7	(0-20)	SW846 6010B	07/17-07/18/03	FTEKT1CG
		Dilution Factor: 1					
		Analysis Time..: 18:11			Instrument ID..: IS	Analyst ID.....: 001644	

NOTE(S):

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

SEVERN TRENT STL

GENERAL CHEMISTRY DATA

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-055

General Chemistry

Lot-Sample #...: A3G160206-001 Work Order #...: FTEKE Matrix.....: WG
Date Sampled...: 07/15/03 08:16 Date Received..: 07/16/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	253	5.0	mg/L	MCAWW 300.0A	07/17/03	3198364
		Dilution Factor: 5		MDL.....: 0.47		
Hardness, as CaCO3	450	10	mg/L	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 2		MDL.....: 4		
Nitrate as N	9.7 J	0.10	mg/L	MCAWW 300.0A	07/17/03	3198367
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/17/03	3198366
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	45.2	1.0	mg/L	MCAWW 300.0A	07/17/03	3198369
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	250 J	5.0	mg/L	MCAWW 310.1	07/16/03	3198582
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1	07/23/03	3205394
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	1.2	1.0	mg/L	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-056

General Chemistry

Lot-Sample #...: A3G160206-002 Work Order #...: FTEKQ Matrix.....: WG
Date Sampled...: 07/15/03 08:30 Date Received..: 07/16/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	244	5.0	mg/L	MCAWW 300.0A	07/17/03	3198364
		Dilution Factor: 5		MDL.....: 0.47		
Hardness, as CaCO3	460	10	mg/L	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 2		MDL.....: 4		
Nitrate as N	9.5 J	0.10	mg/L	MCAWW 300.0A	07/17/03	3198367
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/17/03	3198366
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	45.3	1.0	mg/L	MCAWW 300.0A	07/17/03	3198369
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	250 J	5.0	mg/L	MCAWW 310.1	07/16/03	3198582
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	07/23/03	3205394
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	1.2	1.0	mg/L	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-057

General Chemistry

Lot-Sample #...: A3G160206-003 Work Order #...: FTEKR Matrix.....: WG
Date Sampled...: 07/15/03 09:26 Date Received..: 07/16/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	351	5.0 Dilution Factor: 5	mg/L	MCAWW 300.0A MDL.....: 0.47	07/17/03	3198364
Hardness, as CaCO3	400	10 Dilution Factor: 2	mg/L	MCAWW 130.2 MDL.....: 4	07/17/03	3198509
Nitrate as N	7.3 J	0.10 Dilution Factor: 1	mg/L	MCAWW 300.0A MDL.....: 0.0076	07/17/03	3198367
Nitrite as N	ND G	0.50 Dilution Factor: 5	mg/L	MCAWW 300.0A MDL.....: 0.10	07/17/03	3198366
Sulfate	53.2	1.0 Dilution Factor: 1	mg/L	MCAWW 300.0A MDL.....: 0.11	07/17/03	3198369
Total Alkalinity	300 J	5.0 Dilution Factor: 1	mg/L	MCAWW 310.1 MDL.....: 1.3	07/16/03	3198582
Total Organic Carbon	2 J	1 Dilution Factor: 1	mg/L	MCAWW 415.1 MDL.....: 0.7	07/23/03	3205394
Total Sulfide	0.70 B	1.0 Dilution Factor: 1	mg/L	MCAWW 376.1 MDL.....: 0.25	07/21/03	3202471

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-058

General Chemistry

Lot-Sample #...: A3G160206-004 Work Order #...: FTEKT Matrix.....: WG
Date Sampled...: 07/15/03 10:15 Date Received..: 07/16/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	203	5.0	mg/L	MCAWW 300.0A	07/17/03	3198364
		Dilution Factor: 5		MDL.....: 0.47		
Hardness, as CaCO3	400	10	mg/L	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 2		MDL.....: 4		
Nitrate as N	3.8 J	0.10	mg/L	MCAWW 300.0A	07/17/03	3198367
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/17/03	3198366
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	61.2	1.0	mg/L	MCAWW 300.0A	07/17/03	3198369
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	260 J	5.0	mg/L	MCAWW 310.1	07/16/03	3198582
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	2	1	mg/L	MCAWW 415.1	07/23/03	3205395
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	0.70 B	1.0	mg/L	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-059

General Chemistry

Lot-Sample #...: A3G160206-005 Work Order #...: FTEKV Matrix.....: WG
Date Sampled...: 07/15/03 12:11 Date Received..: 07/16/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	219	5.0	mg/L	MCAWW 300.0A	07/17/03	3198364
		Dilution Factor: 5		MDL.....: 0.47		
Hardness, as CaCO3	380	5	mg/L	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 1		MDL.....: 2		
Nitrate as N	3.3 J	0.10	mg/L	MCAWW 300.0A	07/17/03	3198367
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/17/03	3198366
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	33.0	1.0	mg/L	MCAWW 300.0A	07/17/03	3198369
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	260 J	5.0	mg/L	MCAWW 310.1	07/16/03	3198582
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1	07/23/03	3205394
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	1.2	1.0	mg/L	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-060

General Chemistry

Lot-Sample #...: A3G160206-006 Work Order #...: FTEKW Matrix.....: WG
Date Sampled...: 07/15/03 11:52 Date Received..: 07/16/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	174	1.0	mg/L	MCAWW 300.0A	07/17/03	3198364
		Dilution Factor: 1		MDL.....: 0.094		
Hardness, as CaCO3	380	5	mg/L	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 1		MDL.....: 2		
Nitrate as N	0.010 B,J	0.10	mg/L	MCAWW 300.0A	07/17/03	3198367
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/17/03	3198366
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	23.8	1.0	mg/L	MCAWW 300.0A	07/17/03	3198369
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	310 J	5.0	mg/L	MCAWW 310.1	07/16/03	3198582
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	7 J	1	mg/L	MCAWW 415.1	07/23/03	3205394
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	2.0	1.0	mg/L	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-071503-SP-061

General Chemistry

Lot-Sample #...: A3G160206-007 Work Order #...: FTEKX Matrix.....: WG
Date Sampled...: 07/15/03 15:01 Date Received..: 07/16/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	204	5.0	mg/L	MCAWW 300.0A	07/17/03	3198364
		Dilution Factor: 5		MDL.....: 0.47		
Hardness, as CaCO3	410	10	mg/L	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 2		MDL.....: 4		
Nitrate as N	0.010 B,J	0.10	mg/L	MCAWW 300.0A	07/17/03	3198367
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/17/03	3198366
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	21.4	1.0	mg/L	MCAWW 300.0A	07/17/03	3198369
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	330 J	5.0	mg/L	MCAWW 310.1	07/16/03	3198582
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	5 J	1	mg/L	MCAWW 415.1	07/23/03	3205394
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	1.7	1.0	mg/L	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-062

General Chemistry

Lot-Sample #...: A3G160206-008 Work Order #...: FTEK0 Matrix.....: WG
Date Sampled...: 07/15/03 15:31 Date Received..: 07/16/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	164	1.0	mg/L	MCAWW 300.0A	07/17/03	3198364
		Dilution Factor: 1		MDL.....: 0.094		
Hardness, as CaCO3	400	5	mg/L	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 1		MDL.....: 2		
Nitrate as N	0.33 J	0.10	mg/L	MCAWW 300.0A	07/17/03	3198367
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/17/03	3198366
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	50.5	1.0	mg/L	MCAWW 300.0A	07/17/03	3198369
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	280 J	5.0	mg/L	MCAWW 310.1	07/17/03	3198582
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	07/23/03	3205394
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	1.3	1.0	mg/L	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-063

General Chemistry

Lot-Sample #...: A3G160206-009 Work Order #...: FTEK1 Matrix.....: WG
Date Sampled...: 07/15/03 16:20 Date Received..: 07/16/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	177	1.0	mg/L	MCAWW 300.0A	07/17/03	3198364
		Dilution Factor: 1		MDL.....: 0.094		
Hardness, as CaCO3	360	5	mg/L	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 1		MDL.....: 2		
Nitrate as N	3.3 J	0.10	mg/L	MCAWW 300.0A	07/17/03	3198367
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/17/03	3198366
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	39.6	1.0	mg/L	MCAWW 300.0A	07/17/03	3198369
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	270 J	5.0	mg/L	MCAWW 310.1	07/17/03	3198582
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	07/23/03	3205394
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	1.3	1.0	mg/L	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-071503-SP-065

General Chemistry

Lot-Sample #...: A3G160206-010 Work Order #...: FTEK2 Matrix.....: WG
Date Sampled...: 07/15/03 17:11 Date Received..: 07/16/03

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	254	5.0	mg/L	MCAWW 300.0A	07/17/03	3198364
		Dilution Factor: 5		MDL.....: 0.47		
Hardness, as CaCO3	420	10	mg/L	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 2		MDL.....: 4		
Nitrate as N	4.4 J	0.10	mg/L	MCAWW 300.0A	07/17/03	3198367
		Dilution Factor: 1		MDL.....: 0.0076		
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	07/17/03	3198366
		Dilution Factor: 1		MDL.....: 0.020		
Sulfate	35.8	1.0	mg/L	MCAWW 300.0A	07/17/03	3198369
		Dilution Factor: 1		MDL.....: 0.11		
Total Alkalinity	320 J	5.0	mg/L	MCAWW 310.1	07/17/03	3198582
		Dilution Factor: 1		MDL.....: 1.3		
Total Organic Carbon	2 J	1	mg/L	MCAWW 415.1	07/23/03	3205394
		Dilution Factor: 1		MDL.....: 0.7		
Total Sulfide	2.1	1.0	mg/L	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1		MDL.....: 0.25		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A3G160206 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: FTG6V1AA		MB Lot-Sample #:	A3G170000-364	
	ND	1.0	mg/L	MCAWW 300.0A	07/16/03	3198364
		Dilution Factor: 1				
Hardness, as CaCO3		Work Order #: FTK6F1AA		MB Lot-Sample #:	A3G170000-509	
	ND	5	mg/L	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1				
Hardness, as CaCO3		Work Order #: FTLLT1AA		MB Lot-Sample #:	A3G180000-463	
	ND	5	mg/L	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 1				
Nitrate as N		Work Order #: FTG7G1AA		MB Lot-Sample #:	A3G170000-367	
	0.010 B	**0.10**	**mg/L**	**MCAWW 300.0A**	**07/16/03**	**3198367**
		Dilution Factor: 1				
Nitrite as N		Work Order #: FTG7F1AA		MB Lot-Sample #:	A3G170000-366	
	ND	0.10	mg/L	MCAWW 300.0A	07/16/03	3198366
		Dilution Factor: 1				
Sulfate		Work Order #: FTG7H1AA		MB Lot-Sample #:	A3G170000-369	
	ND	1.0	mg/L	MCAWW 300.0A	07/16/03	3198369
		Dilution Factor: 1				
Total Alkalinity		Work Order #: FTJRE1AA		MB Lot-Sample #:	A3G170000-582	
	4.0 B	**5.0**	**mg/L**	**MCAWW 310.1**	**07/16/03**	**3198582**
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: FT1RD1AA		MB Lot-Sample #:	A3G240000-394	
	0.7 B	**1**	**mg/L**	**MCAWW 415.1**	**07/23/03**	**3205394**
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: FT1RF1AA		MB Lot-Sample #:	A3G240000-395	
	ND	1	mg/L	MCAWW 415.1	07/23/03	3205395
		Dilution Factor: 1				
Total Sulfide		Work Order #: FTP811AA		MB Lot-Sample #:	A3G210000-471	
	ND	1.0	mg/L	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A3G160206 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride			Work Order #: FTG6V1AC	LCS Lot-Sample#:		A3G170000-364	
	50.0	48.6	mg/L	97	MCAWW 300.0A	07/16/03	3198364
			Dilution Factor: 1				
Hardness, as CaCO3			Work Order #: FTK6F1AC	LCS Lot-Sample#:		A3G170000-509	
	200	210	mg/L	101	MCAWW 130.2	07/17/03	3198509
			Dilution Factor: 1				
Hardness, as CaCO3			Work Order #: FTLLT1AC	LCS Lot-Sample#:		A3G180000-463	
	200	200	mg/L	100	MCAWW 130.2	07/18/03	3199463
			Dilution Factor: 1				
Nitrate as N			Work Order #: FTG7G1AC	LCS Lot-Sample#:		A3G170000-367	
	2.5	2.5	mg/L	100	MCAWW 300.0A	07/16/03	3198367
			Dilution Factor: 1				
Nitrite as N			Work Order #: FTG7F1AC	LCS Lot-Sample#:		A3G170000-366	
	2.5	2.4	mg/L	97	MCAWW 300.0A	07/16/03	3198366
			Dilution Factor: 1				
Sulfate			Work Order #: FTG7H1AC	LCS Lot-Sample#:		A3G170000-369	
	50.0	48.3	mg/L	97	MCAWW 300.0A	07/16/03	3198369
			Dilution Factor: 1				
Total Alkalinity			Work Order #: FTJRE1AC	LCS Lot-Sample#:		A3G170000-582	
	84	85	mg/L	100	MCAWW 310.1	07/16/03	3198582
			Dilution Factor: 1				
Total Organic Carbon			Work Order #: FT1RD1AC	LCS Lot-Sample#:		A3G240000-394	
	31	32	mg/L	102	MCAWW 415.1	07/23/03	3205394
			Dilution Factor: 1				
Total Organic Carbon			Work Order #: FT1RF1AC	LCS Lot-Sample#:		A3G240000-395	
	31	31	mg/L	100	MCAWW 415.1	07/23/03	3205395
			Dilution Factor: 1				
Total Sulfide			Work Order #: FTP811AC	LCS Lot-Sample#:		A3G210000-471	
	17	17	mg/L	101	MCAWW 376.1	07/21/03	3202471
			Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A3G160206 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: FTG6V1AC LCS Lot-Sample#: A3G170000-364			
	97	(90 - 110)	MCAWW 300.0A	07/16/03	3198364
		Dilution Factor: 1			
Hardness, as CaCO3		Work Order #: FTK6F1AC LCS Lot-Sample#: A3G170000-509			
	101	(84 - 116)	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1			
Hardness, as CaCO3		Work Order #: FTLLT1AC LCS Lot-Sample#: A3G180000-463			
	100	(84 - 116)	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 1			
Nitrate as N		Work Order #: FTG7G1AC LCS Lot-Sample#: A3G170000-367			
	100	(90 - 110)	MCAWW 300.0A	07/16/03	3198367
		Dilution Factor: 1			
Nitrite as N		Work Order #: FTG7F1AC LCS Lot-Sample#: A3G170000-366			
	97	(88 - 110)	MCAWW 300.0A	07/16/03	3198366
		Dilution Factor: 1			
Sulfate		Work Order #: FTG7H1AC LCS Lot-Sample#: A3G170000-369			
	97	(90 - 110)	MCAWW 300.0A	07/16/03	3198369
		Dilution Factor: 1			
Total Alkalinity		Work Order #: FTJRE1AC LCS Lot-Sample#: A3G170000-582			
	100	(90 - 127)	MCAWW 310.1	07/16/03	3198582
		Dilution Factor: 1			
Total Organic Carbon		Work Order #: FT1RD1AC LCS Lot-Sample#: A3G240000-394			
	102	(88 - 115)	MCAWW 415.1	07/23/03	3205394
		Dilution Factor: 1			
Total Organic Carbon		Work Order #: FT1RF1AC LCS Lot-Sample#: A3G240000-395			
	100	(88 - 115)	MCAWW 415.1	07/23/03	3205395
		Dilution Factor: 1			
Total Sulfide		Work Order #: FTP811AC LCS Lot-Sample#: A3G210000-471			
	101	(79 - 104)	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1			

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A3G160206 **Matrix.....:** WG
Date Sampled...: 07/15/03 10:15 **Date Received..:** 07/16/03

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride			WO#: FTEKR1AF-MS/FTEKR1AG-MSD MS Lot-Sample #: A3G160206-003						
	351	50.0	386	mg/L			MCAWW 300.0A	07/17/03	3198364
			Qualifiers: NC,MSB						
	351	50.0	385	mg/L			MCAWW 300.0A	07/17/03	3198364
			Qualifiers: NC,MSB						
			Dilution Factor: 5						
Chloride			WO#: FTEKT1AF-MS/FTEKT1AG-MSD MS Lot-Sample #: A3G160206-004						
	203	50.0	247	mg/L			MCAWW 300.0A	07/17/03	3198364
			Qualifiers: NC,MSB						
	203	50.0	246	mg/L			MCAWW 300.0A	07/17/03	3198364
			Qualifiers: NC,MSB						
			Dilution Factor: 5						
Hardness, as CaCO3			WO#: FTEKR1CW-MS/FTEKR1CX-MSD MS Lot-Sample #: A3G160206-003						
	400	200	640	mg/L	120		MCAWW 130.2	07/17/03	3198509
	400	200	660	mg/L	128	2.4	MCAWW 130.2	07/17/03	3198509
			Dilution Factor: 1						
Hardness, as CaCO3			WO#: FTEKT1CJ-MS/FTEKT1CK-MSD MS Lot-Sample #: A3G160206-004						
	400	400	780	mg/L	95		MCAWW 130.2	07/18/03	3199463
	400	400	770	mg/L	91	2.1	MCAWW 130.2	07/18/03	3199463
			Dilution Factor: 1						
Nitrate as N			WO#: FTEKR1AJ-MS/FTEKR1AK-MSD MS Lot-Sample #: A3G160206-003						
	7.3	2.5	8.5 N	mg/L	46		MCAWW 300.0A	07/17/03	3198367
	7.3	2.5	8.5 N	mg/L	46	0.11	MCAWW 300.0A	07/17/03	3198367
			Dilution Factor: 1						
Nitrate as N			WO#: FTEKT1AJ-MS/FTEKT1AK-MSD MS Lot-Sample #: A3G160206-004						
	3.8	2.5	6.3	mg/L	103		MCAWW 300.0A	07/17/03	3198367
	3.8	2.5	6.3	mg/L	102	0.15	MCAWW 300.0A	07/17/03	3198367
			Dilution Factor: 1						
Nitrite as N			WO#: FTEKR1AM-MS/FTEKR1AN-MSD MS Lot-Sample #: A3G160206-003						
	ND	2.5	2.5	mg/L	101		MCAWW 300.0A	07/17/03	3198366
	ND	2.5	2.6	mg/L	104	2.3	MCAWW 300.0A	07/17/03	3198366
			Dilution Factor: 5						

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MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A3G160206 **Matrix.....:** WG
Date Sampled...: 07/15/03 10:15 **Date Received..:** 07/16/03

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrite as N			WO#: FTEKT1AM-MS/FTEKT1AN-MSD				MS Lot-Sample #: A3G160206-004		
	ND	2.5	2.5	mg/L	102		MCAWW 300.0A	07/17/03	3198366
	ND	2.5	2.6	mg/L	102	0.78	MCAWW 300.0A	07/17/03	3198366
			Dilution Factor: 1						
Sulfate			WO#: FTEKR1AQ-MS/FTEKR1AR-MSD				MS Lot-Sample #: A3G160206-003		
	53.2	50.0	107	mg/L	108		MCAWW 300.0A	07/17/03	3198369
	53.2	50.0	107	mg/L	107	0.33	MCAWW 300.0A	07/17/03	3198369
			Dilution Factor: 1						
Sulfate			WO#: FTEKT1AQ-MS/FTEKT1AR-MSD				MS Lot-Sample #: A3G160206-004		
	61.2	50.0	114	mg/L	106		MCAWW 300.0A	07/17/03	3198369
	61.2	50.0	114	mg/L	106	0.0	MCAWW 300.0A	07/17/03	3198369
			Dilution Factor: 1						
Total Alkalinity			WO#: FTEKR1AU-MS/FTEKR1AV-MSD				MS Lot-Sample #: A3G160206-003		
	300	500	600	mg/L	60		MCAWW 310.1	07/16/03	3198582
	300	500	610	mg/L	61	0.74	MCAWW 310.1	07/16/03	3198582
			Dilution Factor: 1						
Total Alkalinity			WO#: FTEKT1AU-MS/FTEKT1AV-MSD				MS Lot-Sample #: A3G160206-004		
	260	500	690	mg/L	86		MCAWW 310.1	07/16/03	3198582
	260	500	690	mg/L	86	0.07	MCAWW 310.1	07/16/03	3198582
			Dilution Factor: 1						
Total Organic Carbon			WO#: FTEKR1A2-MS/FTEKR1A3-MSD				MS Lot-Sample #: A3G160206-003		
	2	25	28	mg/L	105		MCAWW 415.1	07/23/03	3205394
	2	25	29	mg/L	107	2.3	MCAWW 415.1	07/23/03	3205394
			Dilution Factor: 1						
Total Organic Carbon			WO#: FTEKT1A2-MS/FTEKT1A3-MSD				MS Lot-Sample #: A3G160206-004		
	2	25	28	mg/L	103		MCAWW 415.1	07/23/03	3205395
	2	25	27	mg/L	101	1.8	MCAWW 415.1	07/23/03	3205395
			Dilution Factor: 1						
Total Sulfide			WO#: FTEKR1C0-MS/FTEKR1C1-MSD				MS Lot-Sample #: A3G160206-003		
	0.70	17	19	mg/L	104		MCAWW 376.1	07/21/03	3202471
	0.70	17	19	mg/L	106	1.7	MCAWW 376.1	07/21/03	3202471
			Dilution Factor: 1						
Total Sulfide			WO#: FTEKT1CL-MS/FTEKT1CM-MSD				MS Lot-Sample #: A3G160206-004		
	0.70	17	20 N	mg/L	110		MCAWW 376.1	07/21/03	3202471
	0.70	17	19 N	mg/L	108	1.6	MCAWW 376.1	07/21/03	3202471
			Dilution Factor: 1						

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MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A3G160206 **Matrix.....:** WG
Date Sampled...: 07/15/03 10:15 **Date Received..:** 07/16/03

NOTE(S):

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

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A3G160206 **Matrix.....:** WG
Date Sampled...: 07/15/03 10:15 **Date Received..:** 07/16/03

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		WO#: FTEKR1AF-MS/FTEKR1AG-MSD				MS Lot-Sample #: A3G160206-003	
	NC,MSB	(90 - 110)			MCAWW 300.0A	07/17/03	3198364
	NC,MSB	(90 - 110)		(0-20)	MCAWW 300.0A	07/17/03	3198364
		Dilution Factor: 5					
Chloride		WO#: FTEKT1AF-MS/FTEKT1AG-MSD				MS Lot-Sample #: A3G160206-004	
	NC,MSB	(90 - 110)			MCAWW 300.0A	07/17/03	3198364
	NC,MSB	(90 - 110)		(0-20)	MCAWW 300.0A	07/17/03	3198364
		Dilution Factor: 5					
Hardness, as CaCO3		WO#: FTEKR1CW-MS/FTEKR1CX-MSD				MS Lot-Sample #: A3G160206-003	
	120	(10 - 176)			MCAWW 130.2	07/17/03	3198509
	128	(10 - 176)	2.4	(0-23)	MCAWW 130.2	07/17/03	3198509
		Dilution Factor: 1					
Hardness, as CaCO3		WO#: FTEKT1CJ-MS/FTEKT1CK-MSD				MS Lot-Sample #: A3G160206-004	
	95	(10 - 176)			MCAWW 130.2	07/18/03	3199463
	91	(10 - 176)	2.1	(0-23)	MCAWW 130.2	07/18/03	3199463
		Dilution Factor: 1					
Nitrate as N		WO#: FTEKR1AJ-MS/FTEKR1AK-MSD				MS Lot-Sample #: A3G160206-003	
	46 N	(90 - 110)			MCAWW 300.0A	07/17/03	3198367
	46 N	(90 - 110)	0.11	(0-20)	MCAWW 300.0A	07/17/03	3198367
		Dilution Factor: 1					
Nitrate as N		WO#: FTEKT1AJ-MS/FTEKT1AK-MSD				MS Lot-Sample #: A3G160206-004	
	103	(90 - 110)			MCAWW 300.0A	07/17/03	3198367
	102	(90 - 110)	0.15	(0-20)	MCAWW 300.0A	07/17/03	3198367
		Dilution Factor: 1					
Nitrite as N		WO#: FTEKR1AM-MS/FTEKR1AN-MSD				MS Lot-Sample #: A3G160206-003	
	101	(90 - 110)			MCAWW 300.0A	07/17/03	3198366
	104	(90 - 110)	2.3	(0-20)	MCAWW 300.0A	07/17/03	3198366
		Dilution Factor: 5					
Nitrite as N		WO#: FTEKT1AM-MS/FTEKT1AN-MSD				MS Lot-Sample #: A3G160206-004	
	102	(90 - 110)			MCAWW 300.0A	07/17/03	3198366
	102	(90 - 110)	0.78	(0-20)	MCAWW 300.0A	07/17/03	3198366
		Dilution Factor: 1					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A3G160206 **Matrix.....:** WG
Date Sampled...: 07/15/03 10:15 **Date Received..:** 07/16/03

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#: FTEKR1AQ-MS/FTEKR1AR-MSD				MS Lot-Sample #:	A3G160206-003
	108	(90 - 110)			MCAWW 300.0A	07/17/03	3198369
	107	(90 - 110)	0.33	(0-20)	MCAWW 300.0A	07/17/03	3198369
		Dilution Factor: 1					
Sulfate		WO#: FTEKT1AQ-MS/FTEKT1AR-MSD				MS Lot-Sample #:	A3G160206-004
	106	(90 - 110)			MCAWW 300.0A	07/17/03	3198369
	106	(90 - 110)	0.0	(0-20)	MCAWW 300.0A	07/17/03	3198369
		Dilution Factor: 1					
Total Alkalinity		WO#: FTEKR1AU-MS/FTEKR1AV-MSD				MS Lot-Sample #:	A3G160206-003
	60	(10 - 160)			MCAWW 310.1	07/16/03	3198582
	61	(10 - 160)	0.74	(0-24)	MCAWW 310.1	07/16/03	3198582
		Dilution Factor: 1					
Total Alkalinity		WO#: FTEKT1AU-MS/FTEKT1AV-MSD				MS Lot-Sample #:	A3G160206-004
	86	(10 - 160)			MCAWW 310.1	07/16/03	3198582
	86	(10 - 160)	0.07	(0-24)	MCAWW 310.1	07/16/03	3198582
		Dilution Factor: 1					
Total Organic Carbon		WO#: FTEKR1A2-MS/FTEKR1A3-MSD				MS Lot-Sample #:	A3G160206-003
	105	(72 - 136)			MCAWW 415.1	07/23/03	3205394
	107	(72 - 136)	2.3	(0-20)	MCAWW 415.1	07/23/03	3205394
		Dilution Factor: 1					
Total Organic Carbon		WO#: FTEKT1A2-MS/FTEKT1A3-MSD				MS Lot-Sample #:	A3G160206-004
	103	(72 - 136)			MCAWW 415.1	07/23/03	3205395
	101	(72 - 136)	1.8	(0-20)	MCAWW 415.1	07/23/03	3205395
		Dilution Factor: 1					
Total Sulfide		WO#: FTEKR1C0-MS/FTEKR1C1-MSD				MS Lot-Sample #:	A3G160206-003
	104	(75 - 107)			MCAWW 376.1	07/21/03	3202471
	106	(75 - 107)	1.7	(0-20)	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1					
Total Sulfide		WO#: FTEKT1CL-MS/FTEKT1CM-MSD				MS Lot-Sample #:	A3G160206-004
	110 N	(75 - 107)			MCAWW 376.1	07/21/03	3202471
	108 N	(75 - 107)	1.6	(0-20)	MCAWW 376.1	07/21/03	3202471
		Dilution Factor: 1					

NOTE(S):

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

NC The recovery and/or RPD were not calculated.

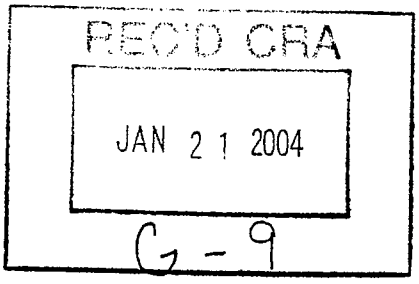
MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

N Spiked analyte recovery is outside stated control limits.

SEVERN TRENT STL

END OF REPORT

SEVERN TRENT STL



ANALYTICAL REPORT

PROJECT NO. 17360-09

GM-GRAND RAPIDS

Lot #: A3L200162

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

SEVERN TRENT LABORATORIES, INC.

ORIGINAL ANALYTICAL REPORT
Project#: 17360-09 Lab#: A3L200162
Name: GM-GRMF
Description
Event: 1/4Ly G.W. Monit.
Samples: 30 WATER
Analysis: VOC, SVOC
TAT: 14 day
Lab: STL
Checked Against Preliminary Data:
Date: _____ Init.: _____
Date of Validation Memo: 2/3/04
Invoice Approval Date: _____
Comments: Revised

Amy L. McCormick
Project Manager

January 20, 2004

Severn Trent Laboratories, Inc.
STL North Canton • 4101 Shuffel Drive NW, North Canton, OH 44720
Tel 330 497 9396 Fax 330 497 0772 • www.stl-inc.com

A part of Severn Trent plc

SEVERN TRENT STL

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4101 Shuffel Drive NW
North Canton, OH 44720

Tel: 330 497 9396 Fax: 330 497 0772
www.stl-inc.com

ANALYTICAL REPORT

REVISED

PROJECT NO. 17360-09

GM-GRAND RAPIDS

Lot #: A3L200162

Paul Wiseman

Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170

SEVERN TRENT LABORATORIES, INC.

Amy L. McCormick
Project Manager

February 2, 2004

 Cooler # M-334, M-484

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: GM - Grand Rapids

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Pooler

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS VOC	PARAMETERS SVOC	REMARKS
1	12/18/03	1045	GW-17360-121703-JB-091	Water	3	X		
2		1130	-092		3	X		
3		1145	-093		3	X		TAT: Standard
4		1014	-094		3	X		
5		1347	-095		3	X		
6		1350	-097		3	X		
7		1312	-096		2		X	
8		1327	-098		2		X	
9		1330	-099		2		X	
10		1512	-100		3	X		
11		1607	-101		2		X	
12		1657	-102		3	X		CRA Contact Paul Wiseman
13		0910	GW-17360-121803-JB -103		3	X		
14		0957	" " -104		3	X		
			TOTAL NUMBER OF CONTAINERS		38			

RELINQUISHED BY: 1. S. Pooler	DATE: 12/19/03 TIME: 1500	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No.

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

25554

SAMPLE TEAM: Joe Branch, S. Pooler, Adam Eade

RECEIVED FOR LABORATORY BY:
DATE: 12/20/03 TIME: 11:00

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

 Cooler # M-337, M-284

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: GM - Grand Rapids

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Pooler

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: VOC	PARAMETERS: MS/MSD	REMARKS
15	12/18/03	1022	EW-17360-121803-105	Water	3	X		
16		1107	-106		6	X	X	
17		0942	-107		3	X		TAT: Standard
18		0958	-108		3	X		
19		0916	-109		3	X		
20		1032	-110		3	X		
21		1121	-111		3	X		
22		1207	-112		3	X		CRA Contact Paul Wiseman
23		1335	-113		3	X		
24		1347	-114		3	X		
25		1412	-115		3	X		
26		1502	-116		3	X		
27		1547	-117		3	X		
28		1607	-118		3	X		
TOTAL NUMBER OF CONTAINERS					45			

RELINQUISHED BY: 1. S. Pooler	DATE: 12/18/03 TIME: 1500	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 6247 7746 7108, 7093

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

25555

SAMPLE TEAM: Joe Branch, Steve Pooler

RECEIVED FOR LABORATORY BY: [signature]
DATE: 12/20/03 TIME: 11:00

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

 Cooler # M-337, M-284

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL- North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: GM- Grand Rapids

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Pooler

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: VOC	REMARKS
29	12/18/03	1652	GW-17360-121803-JB-119	Water	3	X	
30	"	—	TB-17360-121803-JB-120		1	X	TRIP BLANK
							TAT- Standard
							CRA Contact Paul Waseman
			TOTAL NUMBER OF CONTAINERS				

RELINQUISHED BY: 1. S. Pooler	DATE: 12/19/03 TIME: 1500	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No.

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

25557

SAMPLE TEAM: Joe Branch, Steve Pooler

RECEIVED FOR LABORATORY BY: JJ Williams
DATE: 12/20/03 TIME: 11:00

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

SEVERN TRENT STL

CASE NARRATIVE

CASE NARRATIVE

A3L200162

The following report contains the analytical results for twenty-nine water samples and one quality control sample submitted to STL North Canton by Conestoga-Rovers & Associates, Inc. from the GM-Grand Rapids Site, project number 17360-09. The samples were received December 20, 2003, according to documented sample acceptance procedures.

The samples presented in this report were analyzed for the parameters listed on the analytical methods summary page in accordance with the methods indicated. Preliminary results were provided to the Chemistry Department on January 5, 2004. A summary of QC data for these analyses is included at the back of the report.

STL North Canton attests to the validity of the laboratory data generated by STL facilities reported herein. All analyses performed by STL facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. STL's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

SUPPLEMENTAL QC INFORMATION

GC/MS VOLATILES

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "B". All target analytes in the Method Blank must be below the reporting limit (RL) or the associated sample(s) must be ND with the exception of common laboratory contaminants.

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

Surrogate recoveries were outside acceptance limits in sample GW-17360-121703-JB-100. Re-extraction and/or reanalysis achieved similar results; therefore, the original data has been reported.

CASE NARRATIVE (continued)

GC/MS VOLATILES

Samples GW-17360-121803-JB-103 and GW-17360-121803-JB-116 exhibited surrogate recoveries outside acceptance limits. Upon re-extraction and reanalysis, all surrogates were within acceptance limits; however, the recommended sample holding times had been exceeded. Both sets of results have been reported.

The matrix spike/matrix spike duplicate associated with batch 4002237, sample A3L230276-002, failed spike recovery criteria. The laboratory control sample/laboratory control sample duplicate and method blank associated with this batch were in control; therefore, no corrective action was necessary.

GC/MS SEMIVOLATILES

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "B". All target analytes in the Method Blank must be below the reporting limit (RL) or the associated sample(s) must be ND with the exception of common laboratory contaminants.

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

Samples GW-17360-121703-JB-096 and GW-17360-121703-JB-098 had elevated reporting limits due to matrix interference.

STL utilizes USEPA approved methods in all analytical work. 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.

Amy McCormick
Project Manager

QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

QUALITY CONTROL ELEMENTS OF SW-846 METHODS
(Continued)

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

STL North Canton Certifications and Approvals:

Alabama (#41170), California (#2157), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#100439), Kansas (#E10336), Kentucky (#90021), Massachusetts (#M-OH048),
Maryland (#272), Minnesota (#39-999-348), Missouri (#6090), New Jersey (#74001),
New York (#10975), North Dakota (#R-156), Ohio (#6090), OhioVAP (#CL0024),
Pennsylvania (#68-340), Rhode Island (#237), South Carolina (#92007001, #92007002, #92007003),
Tennessee (#02903), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY,
USDA Soil Permit, ACIL Seal of Excellence – Participating Lab Status Award (#82)

SEVERN TRENT STL

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A3L200162

PARAMETER	ANALYTICAL METHOD
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SEVERN TRENT STL

SAMPLE SUMMARY

SAMPLE SUMMARY

A3L200162

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
F6639	001	GW-17360-121703-JB-091	12/18/03	10:45
F664E	002	GW-17360-121703-JB-092	12/18/03	11:30
F664F	003	GW-17360-121703-JB-093	12/18/03	11:45
F664H	004	GW-17360-121703-JB-094	12/18/03	10:14
F664K	005	GW-17360-121703-JB-095	12/18/03	13:47
F664M	006	GW-17360-121703-JB-097	12/18/03	13:50
F664P	007	GW-17360-121703-JB-096	12/18/03	13:12
F664W	008	GW-17360-121703-JB-098	12/18/03	13:27
F6640	009	GW-17360-121703-JB-099	12/18/03	13:30
F6643	010	GW-17360-121703-JB-100	12/18/03	15:12
F6646	011	GW-17360-121703-JB-101	12/18/03	16:07
F665C	012	GW-17360-121703-JB-102	12/18/03	16:57
F665F	013	GW-17360-121803-JB-103	12/18/03	09:10
F665G	014	GW-17360-121803-JB-104	12/18/03	09:57
F665H	015	GW-17360-121803-JB-105	12/18/03	10:22
F665J	016	GW-17360-121803-JB-106	12/18/03	11:07
F665K	017	GW-17360-121803-JB-107	12/18/03	09:42
F665L	018	GW-17360-121803-JB-108	12/18/03	09:58
F665M	019	GW-17360-121803-JB-109	12/18/03	09:16
F665N	020	GW-17360-121803-JB-110	12/18/03	10:32
F665P	021	GW-17360-121803-JB-111	12/18/03	11:21
F665Q	022	GW-17360-121803-JB-112	12/18/03	12:07
F665R	023	GW-17360-121803-JB-113	12/18/03	13:35
F665T	024	GW-17360-121803-JB-114	12/18/03	13:47
F665V	025	GW-17360-121803-JB-115	12/18/03	14:12
F665W	026	GW-17360-121803-JB-116	12/18/03	15:02
F665X	027	GW-17360-121803-JB-117	12/18/03	15:47
F6651	028	GW-17360-121803-JB-118	12/18/03	16:07
F6652	029	GW-17360-121803-JB-119	12/18/03	16:52
F6654	030	TB-17360-121803-JB-120	12/18/03	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SEVERN TRENT STL

SHIPPING AND RECEIVING DOCUMENTS

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: GM - Grand Rapids

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Pooler

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: VOC	PARAMETERS: SVOC	REMARKS
1	12/18/03	1045	GW-17360-121703-JB-091	Water	3	X		
2		1130	-092		3	X		
3		1145	-093		3	X		TAT: Standard
4		1014	-094		3	X		
5		1347	-095		3	X		
6		1350	-096		3	X		
7		1312	-096		2		X	
8		1327	-098		2		X	
9		1330	-099		2		X	
10		1512	-100		3	X		
11		1607	-101		2		X	
12		1657	-102		3	X		CRA Contact Paul Wiseman
13		0910	GW-17360-121803-JB -103		3	X		
14		0957	" " -104		3	X		
			TOTAL NUMBER OF CONTAINERS		38			

RELINQUISHED BY: 1. S. Pooler	DATE: 12/19/03 TIME: 1500	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No.

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

23554

SAMPLE TEAM: Joe Branch, S. Pooler, Adam Eisele

RECEIVED FOR LABORATORY BY:

DATE: 12/20/03 TIME: 11:00

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

12

STL North Canton

 Cooler # M-337, M-284

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: GM - Grand Rapids

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Pooler

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: VOC	PARAMETERS: MS/MSD	REMARKS
15	12/18/03	1022	EW-17360-121803-105	Water	3	X		
16		1107	-106		6	X	X	
17		0942	-107		3	X		TAT: Standard
18		0958	-108		3	X		
19		0916	-109		3	X		
20		1032	-110		3	X		
21		1121	-111		3	X		
22		1207	-112		3	X		
23		1335	-113		3	X		CRA Contact Paul Wiseman
24		1347	-114		3	X		
25		1412	-115		3	X		
26		1502	-116		3	X		
27		1547	-117		3	X		
28		1607	-118		3	X		
TOTAL NUMBER OF CONTAINERS					45			

RELINQUISHED BY: 1. S. Pooler	DATE: 12/18/03 TIME: 1500	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 6247 7746 7108, 7093

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

25555

SAMPLE TEAM: Joe Branch, Steve Pooler

RECEIVED FOR LABORATORY BY: JJ Wilson

DATE: 12/20/03 TIME: 11:00

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

STL North Canton 13

 Cooler # M-337, M-284

CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
14496 Sheldon Road, Suite 200
Plymouth, MI 48170 • (734) 453-5123

SHIPPED TO (Laboratory Name): STL - North Canton

REFERENCE NUMBER: 17360-09

PROJECT NAME: GM - Grand Rapids

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: S. Pooler PRINTED NAME: Steve Pooler

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: VOC	REMARKS
29	12/18/03	1652	GW-17360-121803-JB-119	Water	3	X	
30	"	—	TB-17360-121803-JB-120		1	X	TRIP BLANK
							TAT: Standard
							CRA Contact Paul Waseman
			TOTAL NUMBER OF CONTAINERS				

RELINQUISHED BY: 1. S. Pooler	DATE: 12/19/03 TIME: 1500	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No.

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

25557

SAMPLE TEAM: Joe Branch, Steve Pooler

RECEIVED FOR LABORATORY BY: JJ Wilk
DATE: 12/20/03 TIME: 11:00

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

14 STL North Canton

RSR280

Severn Trent Laboratories, Inc.
Sample Control Record

Client: 57787

Lot #: A3L200162

Case Number/SDG: 17360-09

Storage Location: C172/MS

Laboratory Sample I.D.	Transferred By	Date	Entered	Removed	Reason	Date Returned
F6639	EARLES	12/20/03	Yes		Storage	
F664E	EARLES	12/20/03	Yes		Storage	
F664F	EARLES	12/20/03	Yes		Storage	
F664H	EARLES	12/20/03	Yes		Storage	
F664K	EARLES	12/20/03	Yes		Storage	
F664M	EARLES	12/20/03	Yes		Storage	
F664P	EARLES	12/20/03	Yes		Storage	
F664W	EARLES	12/20/03	Yes		Storage	
F6640	EARLES	12/20/03	Yes		Storage	
F6643	EARLES	12/20/03	Yes		Storage	
F6646	EARLES	12/20/03	Yes		Storage	
F665C	EARLES	12/20/03	Yes		Storage	
F665F	EARLES	12/20/03	Yes		Storage	
F665G	EARLES	12/20/03	Yes		Storage	
F665H	EARLES	12/20/03	Yes		Storage	
F665J	EARLES	12/20/03	Yes		Storage	
F665K	EARLES	12/20/03	Yes		Storage	
F665L	EARLES	12/20/03	Yes		Storage	
F665M	EARLES	12/20/03	Yes		Storage	
F665N	EARLES	12/20/03	Yes		Storage	
F665P	EARLES	12/20/03	Yes		Storage	
F665Q	EARLES	12/20/03	Yes		Storage	
F665R	EARLES	12/20/03	Yes		Storage	

RSR280

Severn Trent Laboratories, Inc.
Sample Control Record

Client: 57787

Lot #: A3L200162

Case Number/SDG: 17360-09

Storage Location: C172/MS

Laboratory Sample I.D.	Transferred By	Date	Entered	Removed	Reason	Date Returned
F665T	EARLES	12/20/03	Yes		Storage	
F665V	EARLES	12/20/03	Yes		Storage	
F665W	EARLES	12/20/03	Yes		Storage	
F665X	EARLES	12/20/03	Yes		Storage	
F6651	EARLES	12/20/03	Yes		Storage	
F6652	EARLES	12/20/03	Yes		Storage	
F6654	EARLES	12/20/03	Yes		Storage	

STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A3L20162

Client: CRA Project: GM-Grand Rapids Quote#: 45813

Cooler Received on: 12/20/03 Opened on: 12/20/03 by: (Signature)

Fedx ☒ Client Drop Off ☐ UPS ☐ Airborne ☐ FAS ☐ Other:

Cooler ☒ Safe ☐ Foam Box ☐ Client Cooler ☐ Other:

STL Cooler No#: See back

1. Were custody seals on the outside of the cooler? Yes ☒ No ☐ Intact? Yes ☒ No ☐ NA ☐
   If YES, Quantity 1
   Were the custody seals signed and dated? Yes ☒ No ☐ NA ☐
2. Shipper's packing slip attached to this form? Yes ☒ No ☐ NA ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☒ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☒ No ☐
5. Packing material used:

Peanuts ☐ Bubble Wrap ☒ Vermiculite ☐ Foam ☐ None ☐ Other :

6. Cooler temperature upon receipt _____ °C (see back of form for multiple coolers/temp)

METHOD: Temp Vial ☐ Coolant & Sample ☐ Against Bottles ☐ IR ☒ ICE/H_2O Slurry ☐

COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐

7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☒ No ☐
9. Were samples at the correct pH? (record on back) Yes ☐ No ☐ NA ☒
10. Were correct bottles used for the tests indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Was a sufficient amount of sample sent in each bottle? Yes ☒ No ☐

Contacted PM _____ Date: _____ by: _____ via Voice Mail ☐ Verbal ☐ Other ☐

Concerning: _____

√	MACRO	MACRO
1. CHAIN OF CUSTODY		
	SR1A	The chain of custody and sample bottles did not agree. The following discrepancies occurred _____
2. SAMPLE CONDITION		
	SR2A	Sample(s) _____ were received or requested after the recommended holding time had expired.
	SR2B	Sample(s) were received with insufficient volume.
	SR2C	Sample(s) were received in a broken container.
3. SAMPLE PRESERVATION		
	SR3A	Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). *Nitric Acid Lot #120503-HNO3; Sulfuric Acid Lot # 101503-H2SO4; Sodium Hydroxide Lot # 101503-NaOH; Hydrochloric Acid Lot # 100902-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH*
	SR3B	Sample(s) _____ were received with bubble > 6 mm in diameter (cc: PM)
4. Other (see below or back)		

COC 25555 Does not have JB in ID SHEW, will log with JB for consistency

STL Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler	Temp	Method	Coolant
M-284	1.9	IR	Wet ice
M-337	4.6	↓	↓

Discrepancies Cont.

Macro Name:

Macro Name:

Macro Name:

Other Anomalies:

SEVERN TRENT STL

GCMS VOLATILE DATA

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-091

GC/MS Volatiles

Lot-Sample #...: A3L200162-001 **Work Order #...:** F66391AA **Matrix.....:** WG
Date Sampled...: 12/18/03 10:45 **Date Received..:** 12/20/03
Prep Date.....: 12/31/03 **Analysis Date..:** 12/31/03
Prep Batch #...: 3365170
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	0.66
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**1.9**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16

(Continued on next page)

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-091

GC/MS Volatiles

Lot-Sample #...: A3L200162-001 Work Order #...: F66391AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	ND	1.0	ug/L	0.12
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**0.41 J**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	119	(73 - 122)
1,2-Dichloroethane-d4	110	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-092

GC/MS Volatiles

Lot-Sample #...: A3L200162-002 **Work Order #...:** F664E1AA **Matrix.....:** WG
Date Sampled...: 12/18/03 11:30 **Date Received..:** 12/20/03
Prep Date.....: 12/31/03 **Analysis Date..:** 12/31/03
Prep Batch #...: 3365170
Dilution Factor: 3.33 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**3.9 J,B**	**83**	**ug/L**	**2.2**
Benzene	ND	3.3	ug/L	0.67
Bromodichloromethane	ND	3.3	ug/L	0.67
Bromoform	ND	3.3	ug/L	1.1
Bromomethane	ND	3.3	ug/L	0.53
2-Butanone	ND	83	ug/L	1.2
Carbon disulfide	ND	17	ug/L	0.70
Carbon tetrachloride	ND	3.3	ug/L	0.60
Chlorobenzene	ND	3.3	ug/L	0.53
Chloroethane	ND	3.3	ug/L	0.73
Chloroform	ND	3.3	ug/L	0.70
Chloromethane	ND	3.3	ug/L	0.87
Cyclohexane	ND	3.3	ug/L	1.1
Dibromochloromethane	ND	3.3	ug/L	0.83
1,2-Dibromo-3-chloro-propane	ND	3.3	ug/L	1.8
1,2-Dibromoethane	ND	3.3	ug/L	0.73
1,2-Dichlorobenzene	ND	3.3	ug/L	0.50
1,3-Dichlorobenzene	ND	3.3	ug/L	0.67
1,4-Dichlorobenzene	ND	3.3	ug/L	0.53
Dichlorodifluoromethane	ND	3.3	ug/L	0.77
1,1-Dichloroethane	**7.8**	**3.3**	**ug/L**	**0.87**
1,2-Dichloroethane	ND	3.3	ug/L	0.73
1,1-Dichloroethene	ND	3.3	ug/L	0.73
cis-1,2-Dichloroethene	**23**	**3.3**	**ug/L**	**0.83**
trans-1,2-Dichloroethene	**12**	**3.3**	**ug/L**	**0.80**
1,2-Dichloropropane	ND	3.3	ug/L	0.60
cis-1,3-Dichloropropene	ND	3.3	ug/L	0.50
trans-1,3-Dichloropropene	ND	3.3	ug/L	0.57
Ethylbenzene	ND	3.3	ug/L	0.63
2-Hexanone	ND	170	ug/L	1.0
Isopropylbenzene	ND	17	ug/L	0.50
Methyl acetate	ND	33	ug/L	2.3
Methylene chloride	ND	17	ug/L	0.93
Methylcyclohexane	ND	3.3	ug/L	0.80
4-Methyl-2-pentanone	ND	170	ug/L	1.1
Methyl tert-butyl ether	ND	17	ug/L	0.70
Styrene	ND	3.3	ug/L	0.53

(Continued on next page)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-092

GC/MS Volatiles

Lot-Sample #...: A3L200162-002 **Work Order #...:** F664E1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	3.3	ug/L	0.77
Tetrachloroethene	ND	3.3	ug/L	0.40
Toluene	ND	3.3	ug/L	0.57
1,2,4-Trichloro-benzene	ND	17	ug/L	0.50
1,1,1-Trichloroethane	**3.2 J**	**3.3**	**ug/L**	**0.60**
1,1,2-Trichloroethane	ND	3.3	ug/L	0.70
Trichloroethene	ND	3.3	ug/L	0.73
Trichlorofluoromethane	ND	3.3	ug/L	0.83
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	3.3	ug/L	0.77
Vinyl chloride	**120**	**3.3**	**ug/L**	**0.87**
Xylenes (total)	ND	10	ug/L	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	115	(73 - 122)
1,2-Dichloroethane-d4	114	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	74	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-093

GC/MS Volatiles

Lot-Sample #...: A3L200162-003 **Work Order #...:** F664F1AA **Matrix.....:** WG
Date Sampled...: 12/18/03 11:45 **Date Received..:** 12/20/03
Prep Date.....: 12/31/03 **Analysis Date..:** 12/31/03
Prep Batch #...: 3365170
Dilution Factor: 2.5 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**3.2 J,B**	**62**	**ug/L**	**1.6**
Benzene	ND	2.5	ug/L	0.50
Bromodichloromethane	ND	2.5	ug/L	0.50
Bromoform	ND	2.5	ug/L	0.80
Bromomethane	ND	2.5	ug/L	0.40
2-Butanone	ND	62	ug/L	0.90
Carbon disulfide	ND	12	ug/L	0.52
Carbon tetrachloride	ND	2.5	ug/L	0.45
Chlorobenzene	ND	2.5	ug/L	0.40
Chloroethane	ND	2.5	ug/L	0.55
Chloroform	ND	2.5	ug/L	0.52
Chloromethane	ND	2.5	ug/L	0.65
Cyclohexane	ND	2.5	ug/L	0.85
Dibromochloromethane	ND	2.5	ug/L	0.62
1,2-Dibromo-3-chloro-propane	ND	2.5	ug/L	1.3
1,2-Dibromoethane	ND	2.5	ug/L	0.55
1,2-Dichlorobenzene	ND	2.5	ug/L	0.38
1,3-Dichlorobenzene	ND	2.5	ug/L	0.50
1,4-Dichlorobenzene	ND	2.5	ug/L	0.40
Dichlorodifluoromethane	ND	2.5	ug/L	0.58
1,1-Dichloroethane	**4.2**	**2.5**	**ug/L**	**0.65**
1,2-Dichloroethane	ND	2.5	ug/L	0.55
1,1-Dichloroethene	**3.0**	**2.5**	**ug/L**	**0.55**
cis-1,2-Dichloroethene	**40**	**2.5**	**ug/L**	**0.62**
trans-1,2-Dichloroethene	**6.7**	**2.5**	**ug/L**	**0.60**
1,2-Dichloropropane	ND	2.5	ug/L	0.45
cis-1,3-Dichloropropene	ND	2.5	ug/L	0.38
trans-1,3-Dichloropropene	ND	2.5	ug/L	0.42
Ethylbenzene	ND	2.5	ug/L	0.48
2-Hexanone	ND	120	ug/L	0.78
Isopropylbenzene	ND	12	ug/L	0.38
Methyl acetate	ND	25	ug/L	1.7
Methylene chloride	ND	12	ug/L	0.70
Methylcyclohexane	ND	2.5	ug/L	0.60
4-Methyl-2-pentanone	ND	120	ug/L	0.85
Methyl tert-butyl ether	ND	12	ug/L	0.52
Styrene	ND	2.5	ug/L	0.40

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-093

GC/MS Volatiles

Lot-Sample #...: A3L200162-003 Work Order #...: F664F1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	2.5	ug/L	0.58
Tetrachloroethene	ND	2.5	ug/L	0.30
Toluene	ND	2.5	ug/L	0.42
1,2,4-Trichloro-benzene	ND	12	ug/L	0.38
1,1,1-Trichloroethane	ND	2.5	ug/L	0.45
1,1,2-Trichloroethane	ND	2.5	ug/L	0.52
Trichloroethene	**76**	**2.5**	**ug/L**	**0.55**
Trichlorofluoromethane	ND	2.5	ug/L	0.62
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.5	ug/L	0.58
Vinyl chloride	**5.2**	**2.5**	**ug/L**	**0.65**
Xylenes (total)	ND	7.5	ug/L	1.1

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	121	(73 - 122)
1,2-Dichloroethane-d4	112	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	80	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-094

GC/MS Volatiles

Lot-Sample #...: A3L200162-004 **Work Order #...:** F664H1AA **Matrix.....:** WG
Date Sampled...: 12/18/03 10:14 **Date Received..:** 12/20/03
Prep Date.....: 12/31/03 **Analysis Date..:** 12/31/03
Prep Batch #...: 3365170
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**0.71 J,B**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**2.0**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	**0.36 J**	**1.0**	**ug/L**	**0.25**
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	**0.35 J**	**5.0**	**ug/L**	**0.21**
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-094

GC/MS Volatiles

Lot-Sample #...: A3L200162-004 **Work Order #...:** F664H1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	ND	1.0	ug/L	0.12
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**4.7**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	121	(73 - 122)
1,2-Dichloroethane-d4	114	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	75	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-095

GC/MS Volatiles

Lot-Sample #...: A3L200162-005 **Work Order #...:** F664K1AA **Matrix.....:** WG
Date Sampled...: 12/18/03 13:47 **Date Received..:** 12/20/03
Prep Date.....: 12/31/03 **Analysis Date..:** 12/31/03
Prep Batch #...: 3365170
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**0.79 J,B**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	ND	1.0	ug/L	0.21
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	**23**	**1.0**	**ug/L**	**0.25**
trans-1,2-Dichloroethene	**3.1**	**1.0**	**ug/L**	**0.24**
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	**0.62 J**	**5.0**	**ug/L**	**0.21**
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-095

GC/MS Volatiles

Lot-Sample #...: A3L200162-005 **Work Order #...:** F664K1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	ND	1.0	ug/L	0.12
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**35**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	120	(73 - 122)
1,2-Dichloroethane-d4	112	(61 - 128)
Toluene-d8	101	(76 - 110)
4-Bromofluorobenzene	75	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-097

GC/MS Volatiles

Lot-Sample #...: A3L200162-006 **Work Order #...:** F664M1AA **Matrix.....:** WG
Date Sampled...: 12/18/03 13:50 **Date Received..:** 12/20/03
Prep Date.....: 12/31/03 **Analysis Date..:** 12/31/03
Prep Batch #...: 3365170
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	0.66
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	ND	1.0	ug/L	0.21
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	**23**	**1.0**	**ug/L**	**0.25**
trans-1,2-Dichloroethene	**2.9**	**1.0**	**ug/L**	**0.24**
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	**0.53 J**	**5.0**	**ug/L**	**0.21**
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-097

GC/MS Volatiles

Lot-Sample #...: A3L200162-006 Work Order #...: F664M1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	ND	1.0	ug/L	0.12
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**33**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	116	(73 - 122)
1,2-Dichloroethane-d4	109	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	75	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-100

GC/MS Volatiles

Lot-Sample #...: A3L200162-010 Work Order #...: F66431AA Matrix.....: WG
Date Sampled...: 12/18/03 15:12 Date Received..: 12/20/03
Prep Date.....: 12/31/03 Analysis Date..: 12/31/03
Prep Batch #...: 3365170
Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	0.66
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	**0.33 J**	**1.0**	**ug/L**	**0.20**
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**2.2**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-100

GC/MS Volatiles

Lot-Sample #...: A3L200162-010 Work Order #...: F66431AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Tetrachloroethene	ND	1.0	ug/L	0.12
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**0.86 J**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	125 *	(73 - 122)
1,2-Dichloroethane-d4	114	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-102

GC/MS Volatiles

Lot-Sample #...: A3L200162-012 **Work Order #...:** F665C1AA **Matrix.....:** WG
Date Sampled...: 12/18/03 16:57 **Date Received..:** 12/20/03
Prep Date.....: 12/31/03 **Analysis Date..:** 12/31/03
Prep Batch #...: 3365170
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	0.66
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	**1.6 J**	**25**	**ug/L**	**0.36**
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**1.3**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-102

GC/MS Volatiles

Lot-Sample #...: A3L200162-012 **Work Order #...:** F665C1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	ND	1.0	ug/L	0.12
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	**4.3**	**1.0**	**ug/L**	**0.18**
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**0.90 J**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	118	(73 - 122)
1,2-Dichloroethane-d4	113	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-103

GC/MS Volatiles

Lot-Sample #...: A3L200162-013 Work Order #...: F665F2AA Matrix.....: WG
Date Sampled...: 12/18/03 09:10 Date Received..: 12/20/03
Prep Date.....: 12/31/03 Analysis Date..: 12/31/03
Prep Batch #...: 3365170
Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**0.72 J,B**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**0.23 J**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	**0.78 J**	**1.0**	**ug/L**	**0.26**
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	**0.49 J**	**5.0**	**ug/L**	**0.28**
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-103

GC/MS Volatiles

Lot-Sample #...: A3L200162-013 Work Order #...: F665F2AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Tetrachloroethene	ND	1.0	ug/L	0.12
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	**0.51 J**	**1.0**	**ug/L**	**0.18**
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**0.50 J**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	122	(73 - 122)
1,2-Dichloroethane-d4	112	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	73 *	(74 - 116)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-104

GC/MS Volatiles

Lot-Sample #...: A3L200162-014 **Work Order #...:** F665G1AA **Matrix.....:** WG
Date Sampled...: 12/18/03 09:57 **Date Received..:** 12/20/03
Prep Date.....: 12/31/03 **Analysis Date..:** 12/31/03
Prep Batch #...: 3365170
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**1.7 J,B**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	**0.38 J**	**1.0**	**ug/L**	**0.20**
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**2.5**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	**0.38 J**	**50**	**ug/L**	**0.34**
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-104

GC/MS Volatiles

Lot-Sample #...: A3L200162-014 Work Order #...: F665G1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	ND	1.0	ug/L	0.12
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**2.1**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	119	(73 - 122)
1,2-Dichloroethane-d4	117	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	75	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-105

GC/MS Volatiles

Lot-Sample #...: A3L200162-015 **Work Order #...:** F665H1AA **Matrix.....:** WG
Date Sampled...: 12/18/03 10:22 **Date Received..:** 12/20/03
Prep Date.....: 12/30/03 **Analysis Date..:** 12/30/03
Prep Batch #...: 3365253
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**3.3 J**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	**0.81 J**	**25**	**ug/L**	**0.36**
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	ND	1.0	ug/L	0.21
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-105

GC/MS Volatiles

Lot-Sample #...: A3L200162-015 Work Order #...: F665H1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	**0.25 J**	**1.0**	**ug/L**	**0.12**
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**0.53 J**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-106

GC/MS Volatiles

Lot-Sample #...:	A3L200162-016	**Work Order #...:**	F665J1AA	**Matrix.....:**	WG
Date Sampled...:	12/18/03 11:07	**Date Received..:**	12/20/03		
Prep Date.....:	12/30/03	**Analysis Date..:**	12/30/03		
Prep Batch #...:	3365253				
Dilution Factor:	1	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**0.72 J**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**0.58 J**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-106

GC/MS Volatiles

Lot-Sample #...: A3L200162-016 Work Order #...: F665J1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	**0.78 J**	**1.0**	**ug/L**	**0.12**
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**1.2**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	88	(61 - 128)
Toluene-d8	96	(76 - 110)
4-Bromofluorobenzene	95	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-107

GC/MS Volatiles

Lot-Sample #...: A3L200162-017 Work Order #...: F665K1AA Matrix.....: WG
Date Sampled...: 12/18/03 09:42 Date Received..: 12/20/03
Prep Date.....: 12/30/03 Analysis Date..: 12/30/03
Prep Batch #...: 3365253
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**1.3 J**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	**0.44 J**	**1.0**	**ug/L**	**0.20**
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	**0.51 J**	**25**	**ug/L**	**0.36**
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**0.60 J**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	**0.34 J**	**1.0**	**ug/L**	**0.25**
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	**0.27 J**	**5.0**	**ug/L**	**0.21**
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-107

GC/MS Volatiles

Lot-Sample #...: A3L200162-017 Work Order #...: F665K1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	**0.60 J**	**1.0**	**ug/L**	**0.12**
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	ND	1.0	ug/L	0.22
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(73 - 122)
1,2-Dichloroethane-d4	87	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-108

GC/MS Volatiles

Lot-Sample #...: A3L200162-018 **Work Order #...:** F665L1AA **Matrix.....:** WG
Date Sampled...: 12/18/03 09:58 **Date Received..:** 12/20/03
Prep Date.....: 12/30/03 **Analysis Date..:** 12/30/03
Prep Batch #...: 3365253
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**1.7 J**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	**0.44 J**	**1.0**	**ug/L**	**0.20**
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	**0.41 J**	**25**	**ug/L**	**0.36**
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**0.62 J**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	**0.32 J**	**1.0**	**ug/L**	**0.25**
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	**0.28 J**	**5.0**	**ug/L**	**0.21**
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-108

GC/MS Volatiles

Lot-Sample #...: A3L200162-018 Work Order #...: F665L1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	**0.63 J**	**1.0**	**ug/L**	**0.12**
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	ND	1.0	ug/L	0.22
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	96	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-109

GC/MS Volatiles

Lot-Sample #...: A3L200162-019 Work Order #...: F665M1AA Matrix.....: WG
Date Sampled...: 12/18/03 09:16 Date Received..: 12/20/03
Prep Date.....: 12/30/03 Analysis Date..: 12/30/03
Prep Batch #...: 3365253
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**1.4 J**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	**0.39 J**	**1.0**	**ug/L**	**0.20**
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**0.67 J**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	**0.34 J**	**1.0**	**ug/L**	**0.25**
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	**0.30 J**	**5.0**	**ug/L**	**0.21**
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-109

GC/MS Volatiles

Lot-Sample #...: A3L200162-019 Work Order #...: F665M1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	**0.61 J**	**1.0**	**ug/L**	**0.12**
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	ND	1.0	ug/L	0.22
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-110

GC/MS Volatiles

Lot-Sample #...: A3L200162-020 Work Order #...: F665N1AA Matrix.....: WG
Date Sampled...: 12/18/03 10:32 Date Received..: 12/20/03
Prep Date.....: 12/30/03 Analysis Date..: 12/30/03
Prep Batch #...: 3365253
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**0.78 J**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	**0.40 J**	**1.0**	**ug/L**	**0.20**
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	**4.1 J**	**25**	**ug/L**	**0.36**
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**2.6**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-110

GC/MS Volatiles

Lot-Sample #...: A3L200162-020 Work Order #...: F665N1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	**0.14 J**	**1.0**	**ug/L**	**0.12**
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	**0.55 J**	**1.0**	**ug/L**	**0.18**
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**1.7**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	94	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-111

GC/MS Volatiles

Lot-Sample #...: A3L200162-021	**Work Order #...:** F665P1AA	**Matrix.....:** WG	
Date Sampled...: 12/18/03 11:21	**Date Received..:** 12/20/03		
Prep Date.....: 12/30/03	**Analysis Date..:** 12/30/03		
Prep Batch #...: 3365253			
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	0.66
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**0.34 J**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-111

GC/MS Volatiles

Lot-Sample #...: A3L200162-021 **Work Order #...:** F665P1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	**0.16 J**	**1.0**	**ug/L**	**0.12**
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**1.2**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-112

GC/MS Volatiles

Lot-Sample #...: A3L200162-022 Work Order #...: F665Q1AA Matrix.....: WG
Date Sampled...: 12/18/03 12:07 Date Received..: 12/20/03
Prep Date.....: 12/30/03 Analysis Date..: 12/30/03
Prep Batch #...: 3365253
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**0.86 J**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	ND	1.0	ug/L	0.21
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-112

GC/MS Volatiles

Lot-Sample #...: A3L200162-022 **Work Order #...:** F665Q1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	ND	1.0	ug/L	0.12
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	**0.21 J**	**1.0**	**ug/L**	**0.18**
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**1.5**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
1,2-Dichloroethane-d4	93	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-113

GC/MS Volatiles

Lot-Sample #...: A3L200162-023	**Work Order #...:** F665R1AA	**Matrix.....:** WG	
Date Sampled...: 12/18/03 13:35	**Date Received..:** 12/20/03		
Prep Date.....: 12/30/03	**Analysis Date..:** 12/30/03		
Prep Batch #...: 3365253			
Dilution Factor: 4	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**5.7 J**	**100**	**ug/L**	**2.6**
Benzene	ND	4.0	ug/L	0.80
Bromodichloromethane	ND	4.0	ug/L	0.80
Bromoform	ND	4.0	ug/L	1.3
Bromomethane	ND	4.0	ug/L	0.64
2-Butanone	ND	100	ug/L	1.4
Carbon disulfide	ND	20	ug/L	0.84
Carbon tetrachloride	ND	4.0	ug/L	0.72
Chlorobenzene	ND	4.0	ug/L	0.64
Chloroethane	ND	4.0	ug/L	0.88
Chloroform	ND	4.0	ug/L	0.84
Chloromethane	ND	4.0	ug/L	1.0
Cyclohexane	ND	4.0	ug/L	1.4
Dibromochloromethane	ND	4.0	ug/L	1.0
1,2-Dibromo-3-chloro-propane	ND	4.0	ug/L	2.1
1,2-Dibromoethane	ND	4.0	ug/L	0.88
1,2-Dichlorobenzene	ND	4.0	ug/L	0.60
1,3-Dichlorobenzene	ND	4.0	ug/L	0.80
1,4-Dichlorobenzene	ND	4.0	ug/L	0.64
Dichlorodifluoromethane	ND	4.0	ug/L	0.92
1,1-Dichloroethane	ND	4.0	ug/L	1.0
1,2-Dichloroethane	ND	4.0	ug/L	0.88
1,1-Dichloroethene	ND	4.0	ug/L	0.88
cis-1,2-Dichloroethene	**130**	**4.0**	**ug/L**	**1.0**
trans-1,2-Dichloroethene	**1.5 J**	**4.0**	**ug/L**	**0.96**
1,2-Dichloropropane	ND	4.0	ug/L	0.72
cis-1,3-Dichloropropene	ND	4.0	ug/L	0.60
trans-1,3-Dichloropropene	ND	4.0	ug/L	0.68
Ethylbenzene	ND	4.0	ug/L	0.76
2-Hexanone	ND	200	ug/L	1.2
Isopropylbenzene	ND	20	ug/L	0.60
Methyl acetate	ND	40	ug/L	2.7
Methylene chloride	ND	20	ug/L	1.1
Methylcyclohexane	ND	4.0	ug/L	0.96
4-Methyl-2-pentanone	ND	200	ug/L	1.4
Methyl tert-butyl ether	ND	20	ug/L	0.84
Styrene	ND	4.0	ug/L	0.64

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-113

GC/MS Volatiles

Lot-Sample #...: A3L200162-023 **Work Order #...:** F665R1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	4.0	ug/L	0.92
Tetrachloroethene	ND	4.0	ug/L	0.48
Toluene	ND	4.0	ug/L	0.68
1,2,4-Trichloro-benzene	ND	20	ug/L	0.60
1,1,1-Trichloroethane	ND	4.0	ug/L	0.72
1,1,2-Trichloroethane	ND	4.0	ug/L	0.84
Trichloroethene	**11**	**4.0**	**ug/L**	**0.88**
Trichlorofluoromethane	ND	4.0	ug/L	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	4.0	ug/L	0.92
Vinyl chloride	**1.3 J**	**4.0**	**ug/L**	**1.0**
Xylenes (total)	ND	12	ug/L	1.8

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
1,2-Dichloroethane-d4	94	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-114

GC/MS Volatiles

Lot-Sample #...: A3L200162-024	**Work Order #...:** F665T1AA	**Matrix.....:** WG	
Date Sampled...: 12/18/03 13:47	**Date Received..:** 12/20/03		
Prep Date.....: 12/30/03	**Analysis Date..:** 12/30/03		
Prep Batch #...: 3365253			
Dilution Factor: 1.67	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**1.9 J**	**42**	**ug/L**	**1.1**
Benzene	ND	1.7	ug/L	0.33
Bromodichloromethane	ND	1.7	ug/L	0.33
Bromoform	ND	1.7	ug/L	0.53
Bromomethane	ND	1.7	ug/L	0.27
2-Butanone	ND	42	ug/L	0.60
Carbon disulfide	ND	8.4	ug/L	0.35
Carbon tetrachloride	ND	1.7	ug/L	0.30
Chlorobenzene	ND	1.7	ug/L	0.27
Chloroethane	ND	1.7	ug/L	0.37
Chloroform	ND	1.7	ug/L	0.35
Chloromethane	ND	1.7	ug/L	0.43
Cyclohexane	ND	1.7	ug/L	0.57
Dibromochloromethane	ND	1.7	ug/L	0.42
1,2-Dibromo-3-chloro-propane	ND	1.7	ug/L	0.89
1,2-Dibromoethane	ND	1.7	ug/L	0.37
1,2-Dichlorobenzene	ND	1.7	ug/L	0.25
1,3-Dichlorobenzene	ND	1.7	ug/L	0.33
1,4-Dichlorobenzene	ND	1.7	ug/L	0.27
Dichlorodifluoromethane	ND	1.7	ug/L	0.38
1,1-Dichloroethane	**0.90 J**	**1.7**	**ug/L**	**0.43**
1,2-Dichloroethane	ND	1.7	ug/L	0.37
1,1-Dichloroethene	ND	1.7	ug/L	0.37
cis-1,2-Dichloroethene	**1.1 J**	**1.7**	**ug/L**	**0.42**
trans-1,2-Dichloroethene	ND	1.7	ug/L	0.40
1,2-Dichloropropane	ND	1.7	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.7	ug/L	0.25
trans-1,3-Dichloropropene	ND	1.7	ug/L	0.28
Ethylbenzene	ND	1.7	ug/L	0.32
2-Hexanone	ND	84	ug/L	0.52
Isopropylbenzene	ND	8.4	ug/L	0.25
Methyl acetate	ND	17	ug/L	1.1
Methylene chloride	ND	8.4	ug/L	0.47
Methylcyclohexane	ND	1.7	ug/L	0.40
4-Methyl-2-pentanone	ND	84	ug/L	0.57
Methyl tert-butyl ether	ND	8.4	ug/L	0.35
Styrene	ND	1.7	ug/L	0.27

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-114

GC/MS Volatiles

Lot-Sample #...: A3L200162-024 Work Order #...: F665T1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.7	ug/L	0.38
Tetrachloroethene	**0.34 J**	**1.7**	**ug/L**	**0.20**
Toluene	ND	1.7	ug/L	0.28
1,2,4-Trichloro-benzene	ND	8.4	ug/L	0.25
1,1,1-Trichloroethane	**1.8**	**1.7**	**ug/L**	**0.30**
1,1,2-Trichloroethane	ND	1.7	ug/L	0.35
Trichloroethene	**44**	**1.7**	**ug/L**	**0.37**
Trichlorofluoromethane	ND	1.7	ug/L	0.42
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.7	ug/L	0.38
Vinyl chloride	ND	1.7	ug/L	0.43
Xylenes (total)	ND	5.0	ug/L	0.75

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(73 - 122)
1,2-Dichloroethane-d4	95	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-115

GC/MS Volatiles

Lot-Sample #...: A3L200162-025	**Work Order #...:** F665V1AA	**Matrix.....:** WG	
Date Sampled...: 12/18/03 14:12	**Date Received..:** 12/20/03		
Prep Date.....: 12/31/03	**Analysis Date..:** 12/31/03		
Prep Batch #...: 3365170			
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	0.66
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**1.1**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	**0.51 J**	**1.0**	**ug/L**	**0.26**
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	**0.41 J**	**1.0**	**ug/L**	**0.25**
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-115

GC/MS Volatiles

Lot-Sample #...: A3L200162-025 **Work Order #...:** F665V1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	**0.70 J**	**1.0**	**ug/L**	**0.12**
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	**0.32 J**	**1.0**	**ug/L**	**0.18**
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**9.8**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	117	(73 - 122)
1,2-Dichloroethane-d4	114	(61 - 128)
Toluene-d8	96	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-116

GC/MS Volatiles

Lot-Sample #...: A3L200162-026 Work Order #...: F665W2AA Matrix.....: WG
Date Sampled...: 12/18/03 15:02 Date Received..: 12/20/03
Prep Date.....: 12/31/03 Analysis Date..: 12/31/03
Prep Batch #...: 3365170
Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	25	ug/L	0.66
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	ND	1.0	ug/L	0.21
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	**3.4**	**1.0**	**ug/L**	**0.25**
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-116

GC/MS Volatiles

Lot-Sample #...: A3L200162-026 Work Order #...: F665W2AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Tetrachloroethene	**1.0**	**1.0**	**ug/L**	**0.12**
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	**0.38 J**	**1.0**	**ug/L**	**0.18**
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	**1.1**	**1.0**	**ug/L**	**0.22**
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	123 *	(73 - 122)
1,2-Dichloroethane-d4	116	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	76	(74 - 116)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-117

GC/MS Volatiles

Lot-Sample #...: A3L200162-027 Work Order #...: F665X1AA Matrix.....: WG
Date Sampled...: 12/18/03 15:47 Date Received..: 12/20/03
Prep Date.....: 12/30/03 Analysis Date..: 12/30/03
Prep Batch #...: 3365253
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**0.74 J**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	ND	25	ug/L	0.36
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	ND	1.0	ug/L	0.21
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-117

GC/MS Volatiles

Lot-Sample #...: A3L200162-027 **Work Order #...:** F665X1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	**7.2**	**1.0**	**ug/L**	**0.12**
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	ND	1.0	ug/L	0.22
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	100	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-118

GC/MS Volatiles

Lot-Sample #...: A3L200162-028	**Work Order #...:** F66511AA	**Matrix.....:** WG	
Date Sampled...: 12/18/03 16:07	**Date Received..:** 12/20/03		
Prep Date.....: 12/30/03	**Analysis Date..:** 12/30/03		
Prep Batch #...: 3365253			
Dilution Factor: 3.33	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**5.1 J**	**83**	**ug/L**	**2.2**
Benzene	ND	3.3	ug/L	0.67
Bromodichloromethane	ND	3.3	ug/L	0.67
Bromoform	ND	3.3	ug/L	1.1
Bromomethane	ND	3.3	ug/L	0.53
2-Butanone	ND	83	ug/L	1.2
Carbon disulfide	ND	17	ug/L	0.70
Carbon tetrachloride	ND	3.3	ug/L	0.60
Chlorobenzene	ND	3.3	ug/L	0.53
Chloroethane	ND	3.3	ug/L	0.73
Chloroform	ND	3.3	ug/L	0.70
Chloromethane	ND	3.3	ug/L	0.87
Cyclohexane	ND	3.3	ug/L	1.1
Dibromochloromethane	ND	3.3	ug/L	0.83
1,2-Dibromo-3-chloro-propane	ND	3.3	ug/L	1.8
1,2-Dibromoethane	ND	3.3	ug/L	0.73
1,2-Dichlorobenzene	ND	3.3	ug/L	0.50
1,3-Dichlorobenzene	ND	3.3	ug/L	0.67
1,4-Dichlorobenzene	ND	3.3	ug/L	0.53
Dichlorodifluoromethane	ND	3.3	ug/L	0.77
1,1-Dichloroethane	ND	3.3	ug/L	0.87
1,2-Dichloroethane	ND	3.3	ug/L	0.73
1,1-Dichloroethene	ND	3.3	ug/L	0.73
cis-1,2-Dichloroethene	**0.91 J**	**3.3**	**ug/L**	**0.83**
trans-1,2-Dichloroethene	ND	3.3	ug/L	0.80
1,2-Dichloropropane	ND	3.3	ug/L	0.60
cis-1,3-Dichloropropene	ND	3.3	ug/L	0.50
trans-1,3-Dichloropropene	ND	3.3	ug/L	0.57
Ethylbenzene	ND	3.3	ug/L	0.63
2-Hexanone	ND	170	ug/L	1.0
Isopropylbenzene	ND	17	ug/L	0.50
Methyl acetate	ND	33	ug/L	2.3
Methylene chloride	ND	17	ug/L	0.93
Methylcyclohexane	ND	3.3	ug/L	0.80
4-Methyl-2-pentanone	ND	170	ug/L	1.1
Methyl tert-butyl ether	ND	17	ug/L	0.70
Styrene	ND	3.3	ug/L	0.53

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-118

GC/MS Volatiles

Lot-Sample #...: A3L200162-028 Work Order #...: F66511AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	3.3	ug/L	0.77
Tetrachloroethene	**86**	**3.3**	**ug/L**	**0.40**
Toluene	ND	3.3	ug/L	0.57
1,2,4-Trichloro-benzene	ND	17	ug/L	0.50
1,1,1-Trichloroethane	ND	3.3	ug/L	0.60
1,1,2-Trichloroethane	ND	3.3	ug/L	0.70
Trichloroethene	**1.4 J**	**3.3**	**ug/L**	**0.73**
Trichlorofluoromethane	ND	3.3	ug/L	0.83
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	3.3	ug/L	0.77
Vinyl chloride	ND	3.3	ug/L	0.87
Xylenes (total)	ND	10	ug/L	1.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
1,2-Dichloroethane-d4	91	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121803-JB-119

GC/MS Volatiles

Lot-Sample #...: A3L200162-029 Work Order #...: F66521AA Matrix.....: WG
Date Sampled...: 12/18/03 16:52 Date Received..: 12/20/03
Prep Date.....: 12/31/03 Analysis Date..: 12/31/03
Prep Batch #...: 4002234
Dilution Factor: 1 Initial Wgt/Vol: 5 mL Final Wgt/Vol..: 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**0.88 J,B**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	**6.7 J**	**25**	**ug/L**	**0.36**
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	**0.68 J**	**1.0**	**ug/L**	**0.21**
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121803-JB-119

GC/MS Volatiles

Lot-Sample #...: A3L200162-029 Work Order #...: F66521AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	**0.78 J**	**1.0**	**ug/L**	**0.12**
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	ND	1.0	ug/L	0.22
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TB-17360-121803-JB-120

GC/MS Volatiles

Lot-Sample #...: A3L200162-030	**Work Order #...:** F66541AA	**Matrix.....:** WQ	
Date Sampled...: 12/18/03	**Date Received..:** 12/20/03		
Prep Date.....: 12/31/03	**Analysis Date..:** 12/31/03		
Prep Batch #...: 4002234			
Dilution Factor: 1	**Initial Wgt/Vol:** 5 mL	**Final Wgt/Vol..:** 5 mL	
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**2.8 J,B**	**25**	**ug/L**	**0.66**
Benzene	ND	1.0	ug/L	0.20
Bromodichloromethane	ND	1.0	ug/L	0.20
Bromoform	ND	1.0	ug/L	0.32
Bromomethane	ND	1.0	ug/L	0.16
2-Butanone	**1.3 J**	**25**	**ug/L**	**0.36**
Carbon disulfide	ND	5.0	ug/L	0.21
Carbon tetrachloride	ND	1.0	ug/L	0.18
Chlorobenzene	ND	1.0	ug/L	0.16
Chloroethane	ND	1.0	ug/L	0.22
Chloroform	ND	1.0	ug/L	0.21
Chloromethane	ND	1.0	ug/L	0.26
Cyclohexane	ND	1.0	ug/L	0.34
Dibromochloromethane	ND	1.0	ug/L	0.25
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	0.53
1,2-Dibromoethane	ND	1.0	ug/L	0.22
1,2-Dichlorobenzene	ND	1.0	ug/L	0.15
1,3-Dichlorobenzene	ND	1.0	ug/L	0.20
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	1.0	ug/L	0.23
1,1-Dichloroethane	ND	1.0	ug/L	0.26
1,2-Dichloroethane	ND	1.0	ug/L	0.22
1,1-Dichloroethene	ND	1.0	ug/L	0.22
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.25
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.24
1,2-Dichloropropane	ND	1.0	ug/L	0.18
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.15
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.17
Ethylbenzene	ND	1.0	ug/L	0.19
2-Hexanone	ND	50	ug/L	0.31
Isopropylbenzene	ND	5.0	ug/L	0.15
Methyl acetate	ND	10	ug/L	0.68
Methylene chloride	ND	5.0	ug/L	0.28
Methylcyclohexane	ND	1.0	ug/L	0.24
4-Methyl-2-pentanone	ND	50	ug/L	0.34
Methyl tert-butyl ether	ND	5.0	ug/L	0.21
Styrene	ND	1.0	ug/L	0.16

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: TB-17360-121803-JB-120

GC/MS Volatiles

Lot-Sample #...: A3L200162-030 **Work Order #...:** F66541AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.23
Tetrachloroethene	ND	1.0	ug/L	0.12
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	5.0	ug/L	0.15
1,1,1-Trichloroethane	ND	1.0	ug/L	0.18
1,1,2-Trichloroethane	ND	1.0	ug/L	0.21
Trichloroethene	ND	1.0	ug/L	0.22
Trichlorofluoromethane	ND	1.0	ug/L	0.25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	0.23
Vinyl chloride	ND	1.0	ug/L	0.26
Xylenes (total)	ND	3.0	ug/L	0.45

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
1,2-Dichloroethane-d4	92	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7GT21AA **Matrix.....:** WATER
MB Lot-Sample #: A3L310000-170

Prep Date.....: 12/30/03 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 12/30/03 **Prep Batch #...:** 3365170
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	**1.3 J**	**25**	**ug/L**	**SW846 8260B**
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7GT21AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	**0.42 J**	**5.0**	**ug/L**	**SW846 8260B**
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	116	(73 - 122)
1,2-Dichloroethane-d4	110	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	77	(74 - 116)

NOTE(S):

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

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7G4J1AA **Matrix.....:** WATER
MB Lot-Sample #: A3L310000-253

Prep Date.....: 12/30/03 **Final Wgt/Vol...:** 5 mL
Analysis Date...: 12/30/03 **Prep Batch #...:** 3365253
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7G4J1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
1,2-Dichloroethane-d4	86	(61 - 128)
Toluene-d8	96	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7H711AA **Matrix.....:** WATER
MB Lot-Sample #: A4A020000-234

Prep Date.....: 12/31/03 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 12/31/03 **Prep Batch #...:** 4002234
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	**0.79 J**	**25**	**ug/L**	**SW846 8260B**
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7H711AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	ND	5.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	93	(74 - 116)

NOTE(S):

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

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7H8E1AA **Matrix.....:** WATER
MB Lot-Sample #: A4A020000-237

Prep Date.....: 01/02/04 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 01/02/04 **Prep Batch #...:** 4002237
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	25	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	25	ug/L	SW846 8260B
Carbon disulfide	ND	5.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Cyclohexane	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	50	ug/L	SW846 8260B
Isopropylbenzene	ND	5.0	ug/L	SW846 8260B
Methyl acetate	ND	10	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
Methylcyclohexane	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7H8E1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2,4-Trichloro-benzene	**0.46 J**	**5.0**	**ug/L**	**SW846 8260B**
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	119	(73 - 122)
1,2-Dichloroethane-d4	112	(61 - 128)
Toluene-d8	99	(76 - 110)
4-Bromofluorobenzene	77	(74 - 116)

NOTE(S):

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

J Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7GT21AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3L310000-170 F7GT21AD-LCSD
Prep Date.....: 12/30/03 **Analysis Date..:** 12/30/03
Prep Batch #...: 3365170
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10**	**9.9**	**ug/L**	**99**		**SW846 8260B**
	10	**10**	**ug/L**	**104**	**5.0**	**SW846 8260B**
Chlorobenzene	**10**	**9.6**	**ug/L**	**96**		**SW846 8260B**
	10	**10**	**ug/L**	**101**	**5.6**	**SW846 8260B**
1,1-Dichloroethene	**10**	**11**	**ug/L**	**114**		**SW846 8260B**
	10	**12**	**ug/L**	**117**	**2.2**	**SW846 8260B**
Toluene	**10**	**10**	**ug/L**	**103**		**SW846 8260B**
	10	**11**	**ug/L**	**105**	**2.6**	**SW846 8260B**
Trichloroethene	**10**	**10**	**ug/L**	**105**		**SW846 8260B**
	10	**10**	**ug/L**	**103**	**2.1**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(73 - 122)
	106	(73 - 122)
1,2-Dichloroethane-d4	107	(61 - 128)
	108	(61 - 128)
Toluene-d8	106	(76 - 110)
	109	(76 - 110)
4-Bromofluorobenzene	93	(74 - 116)
	100	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7GT21AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3L310000-170 F7GT21AD-LCSD
Prep Date.....: 12/30/03 **Analysis Date..:** 12/30/03
Prep Batch #...: 3365170
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**99**	**(80 - 116)**			**SW846 8260B**
	104	**(80 - 116)**	**5.0**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**96**	**(76 - 117)**			**SW846 8260B**
	101	**(76 - 117)**	**5.6**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**114**	**(63 - 130)**			**SW846 8260B**
	117	**(63 - 130)**	**2.2**	**(0-20)**	**SW846 8260B**
Toluene	**103**	**(74 - 119)**			**SW846 8260B**
	105	**(74 - 119)**	**2.6**	**(0-20)**	**SW846 8260B**
Trichloroethene	**105**	**(75 - 122)**			**SW846 8260B**
	103	**(75 - 122)**	**2.1**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(73 - 122)
	106	(73 - 122)
1,2-Dichloroethane-d4	107	(61 - 128)
	108	(61 - 128)
Toluene-d8	106	(76 - 110)
	109	(76 - 110)
4-Bromofluorobenzene	93	(74 - 116)
	100	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7G4J1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3L310000-253 F7G4J1AD-LCSD
Prep Date.....: 12/30/03 **Analysis Date..:** 12/30/03
Prep Batch #...: 3365253
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10**	**9.2**	**ug/L**	**92**		**SW846 8260B**
	10	**9.2**	**ug/L**	**92**	**0.20**	**SW846 8260B**
Chlorobenzene	**10**	**9.3**	**ug/L**	**93**		**SW846 8260B**
	10	**9.4**	**ug/L**	**94**	**0.51**	**SW846 8260B**
1,1-Dichloroethene	**10**	**9.6**	**ug/L**	**96**		**SW846 8260B**
	10	**9.5**	**ug/L**	**95**	**0.86**	**SW846 8260B**
Toluene	**10**	**9.4**	**ug/L**	**94**		**SW846 8260B**
	10	**9.4**	**ug/L**	**94**	**0.36**	**SW846 8260B**
Trichloroethene	**10**	**8.9**	**ug/L**	**89**		**SW846 8260B**
	10	**9.0**	**ug/L**	**90**	**0.52**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
	100	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
	89	(61 - 128)
Toluene-d8	99	(76 - 110)
	97	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	96	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7G4J1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3L310000-253 F7G4J1AD-LCSD
Prep Date.....: 12/30/03 **Analysis Date..:** 12/30/03
Prep Batch #...: 3365253
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**92**	**(80 - 116)**			**SW846 8260B**
	92	**(80 - 116)**	**0.20**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**93**	**(76 - 117)**			**SW846 8260B**
	94	**(76 - 117)**	**0.51**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**96**	**(63 - 130)**			**SW846 8260B**
	95	**(63 - 130)**	**0.86**	**(0-20)**	**SW846 8260B**
Toluene	**94**	**(74 - 119)**			**SW846 8260B**
	94	**(74 - 119)**	**0.36**	**(0-20)**	**SW846 8260B**
Trichloroethene	**89**	**(75 - 122)**			**SW846 8260B**
	90	**(75 - 122)**	**0.52**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
	100	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
	89	(61 - 128)
Toluene-d8	99	(76 - 110)
	97	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	96	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7H711AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A4A020000-234 F7H711AD-LCSD
Prep Date.....: 12/31/03 **Analysis Date..:** 12/31/03
Prep Batch #...: 4002234
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10**	**9.5**	**ug/L**	**95**		**SW846 8260B**
	10	**9.6**	**ug/L**	**96**	**0.82**	**SW846 8260B**
Chlorobenzene	**10**	**8.8**	**ug/L**	**88**		**SW846 8260B**
	10	**9.2**	**ug/L**	**92**	**5.2**	**SW846 8260B**
1,1-Dichloroethene	**10**	**10**	**ug/L**	**104**		**SW846 8260B**
	10	**11**	**ug/L**	**107**	**2.6**	**SW846 8260B**
Toluene	**10**	**9.1**	**ug/L**	**91**		**SW846 8260B**
	10	**9.6**	**ug/L**	**96**	**5.1**	**SW846 8260B**
Trichloroethene	**10**	**8.7**	**ug/L**	**87**		**SW846 8260B**
	10	**8.7**	**ug/L**	**87**	**0.24**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
	101	(73 - 122)
1,2-Dichloroethane-d4	96	(61 - 128)
	95	(61 - 128)
Toluene-d8	96	(76 - 110)
	100	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	99	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7H711AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A4A020000-234 F7H711AD-LCSD
Prep Date.....: 12/31/03 **Analysis Date..:** 12/31/03
Prep Batch #...: 4002234
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**95**	**(80 - 116)**			**SW846 8260B**
	96	**(80 - 116)**	**0.82**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**88**	**(76 - 117)**			**SW846 8260B**
	92	**(76 - 117)**	**5.2**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**104**	**(63 - 130)**			**SW846 8260B**
	107	**(63 - 130)**	**2.6**	**(0-20)**	**SW846 8260B**
Toluene	**91**	**(74 - 119)**			**SW846 8260B**
	96	**(74 - 119)**	**5.1**	**(0-20)**	**SW846 8260B**
Trichloroethene	**87**	**(75 - 122)**			**SW846 8260B**
	87	**(75 - 122)**	**0.24**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(73 - 122)
	101	(73 - 122)
1,2-Dichloroethane-d4	96	(61 - 128)
	95	(61 - 128)
Toluene-d8	96	(76 - 110)
	100	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	99	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7H8E1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A4A020000-237 F7H8E1AD-LCSD
Prep Date.....: 01/02/04 **Analysis Date..:** 01/02/04
Prep Batch #...: 4002237
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	10	**11**	**ug/L**	**107**	**6.8**	**SW846 8260B**
Chlorobenzene	**10**	**9.8**	**ug/L**	**98**		**SW846 8260B**
	10	**11**	**ug/L**	**106**	**8.7**	**SW846 8260B**
1,1-Dichloroethene	**10**	**11**	**ug/L**	**110**		**SW846 8260B**
	10	**12**	**ug/L**	**120**	**9.0**	**SW846 8260B**
Toluene	**10**	**10**	**ug/L**	**102**		**SW846 8260B**
	10	**11**	**ug/L**	**111**	**8.4**	**SW846 8260B**
Trichloroethene	**10**	**10**	**ug/L**	**101**		**SW846 8260B**
	10	**11**	**ug/L**	**110**	**8.4**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(73 - 122)
	106	(73 - 122)
1,2-Dichloroethane-d4	109	(61 - 128)
	105	(61 - 128)
Toluene-d8	107	(76 - 110)
	107	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)
	97	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F7H8E1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A4A020000-237 F7H8E1AD-LCSD
Prep Date.....: 01/02/04 **Analysis Date..:** 01/02/04
Prep Batch #...: 4002237
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**100**	**(80 - 116)**			**SW846 8260B**
	107	**(80 - 116)**	**6.8**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**98**	**(76 - 117)**			**SW846 8260B**
	106	**(76 - 117)**	**8.7**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**110**	**(63 - 130)**			**SW846 8260B**
	120	**(63 - 130)**	**9.0**	**(0-20)**	**SW846 8260B**
Toluene	**102**	**(74 - 119)**			**SW846 8260B**
	111	**(74 - 119)**	**8.4**	**(0-20)**	**SW846 8260B**
Trichloroethene	**101**	**(75 - 122)**			**SW846 8260B**
	110	**(75 - 122)**	**8.4**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(73 - 122)
	106	(73 - 122)
1,2-Dichloroethane-d4	109	(61 - 128)
	105	(61 - 128)
Toluene-d8	107	(76 - 110)
	107	(76 - 110)
4-Bromofluorobenzene	98	(74 - 116)
	97	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F665J1AC-MS **Matrix.....:** WG
MS Lot-Sample #: A3L200162-016 F665J1AD-MSD
Date Sampled...: 12/18/03 11:07 **Date Received..:** 12/20/03
Prep Date.....: 12/30/03 **Analysis Date..:** 12/30/03
Prep Batch #...: 3365253
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10**	**8.9**	**ug/L**	**89**		**SW846 8260B**
	ND	**10**	**9.7**	**ug/L**	**97**	**8.7**	**SW846 8260B**
Chlorobenzene	**ND**	**10**	**8.7**	**ug/L**	**87**		**SW846 8260B**
	ND	**10**	**9.8**	**ug/L**	**98**	**11**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**102**	**2.0**	**SW846 8260B**
Toluene	**ND**	**10**	**9.1**	**ug/L**	**91**		**SW846 8260B**
	ND	**10**	**9.9**	**ug/L**	**99**	**8.5**	**SW846 8260B**
Trichloroethene	**1.2**	**10**	**9.8**	**ug/L**	**86**		**SW846 8260B**
	1.2	**10**	**11**	**ug/L**	**95**	**8.6**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
	103	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
	95	(61 - 128)
Toluene-d8	98	(76 - 110)
	99	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	100	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F665J1AC-MS **Matrix.....:** WG
MS Lot-Sample #: A3L200162-016 F665J1AD-MSD
Date Sampled...: 12/18/03 11:07 **Date Received..:** 12/20/03
Prep Date.....: 12/30/03 **Analysis Date..:** 12/30/03
Prep Batch #...: 3365253
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**89**	**(78 - 118)**			**SW846 8260B**
	97	**(78 - 118)**	**8.7**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**87**	**(76 - 117)**			**SW846 8260B**
	98	**(76 - 117)**	**11**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**100**	**(62 - 130)**			**SW846 8260B**
	102	**(62 - 130)**	**2.0**	**(0-20)**	**SW846 8260B**
Toluene	**91**	**(70 - 119)**			**SW846 8260B**
	99	**(70 - 119)**	**8.5**	**(0-20)**	**SW846 8260B**
Trichloroethene	**86**	**(62 - 130)**			**SW846 8260B**
	95	**(62 - 130)**	**8.6**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(73 - 122)
	103	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
	95	(61 - 128)
Toluene-d8	98	(76 - 110)
	99	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)
	100	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A3L200162 **Work Order #...:** F69M31AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A3L230162-003 F69M31AD-MSD
Date Sampled...: 12/19/03 10:52 **Date Received..:** 12/20/03
Prep Date.....: 12/31/03 **Analysis Date..:** 12/31/03
Prep Batch #...: 4002234
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10**	**9.4**	**ug/L**	**94**		**SW846 8260B**
	ND	**10**	**9.9**	**ug/L**	**99**	**4.6**	**SW846 8260B**
Chlorobenzene	**ND**	**10**	**8.9**	**ug/L**	**89**		**SW846 8260B**
	ND	**10**	**9.5**	**ug/L**	**95**	**6.7**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10**	**10**	**ug/L**	**102**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**107**	**4.6**	**SW846 8260B**
Toluene	**ND**	**10**	**9.3**	**ug/L**	**93**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**100**	**7.4**	**SW846 8260B**
Trichloroethene	**ND**	**10**	**8.4**	**ug/L**	**84**		**SW846 8260B**
	ND	**10**	**8.5**	**ug/L**	**85**	**1.4**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
	98	(73 - 122)
1,2-Dichloroethane-d4	97	(61 - 128)
	97	(61 - 128)
Toluene-d8	100	(76 - 110)
	101	(76 - 110)
4-Bromofluorobenzene	97	(74 - 116)
	98	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...:	A3L200162	**Work Order #...:**	F69M31AC-MS F69M31AD-MSD	**Matrix.....:**	WATER
MS Lot-Sample #:	A3L230162-003				
Date Sampled...:	12/19/03 10:52	**Date Received..:**	12/20/03		
Prep Date.....:	12/31/03	**Analysis Date..:**	12/31/03		
Prep Batch #...:	4002234				
Dilution Factor:	1	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	94	(78 - 118)			**SW846 8260B**
	99	(78 - 118)	4.6	(0-20)	**SW846 8260B**
Chlorobenzene	89	(76 - 117)			**SW846 8260B**
	95	(76 - 117)	6.7	(0-20)	**SW846 8260B**
1,1-Dichloroethene	102	(62 - 130)			**SW846 8260B**
	107	(62 - 130)	4.6	(0-20)	**SW846 8260B**
Toluene	93	(70 - 119)			**SW846 8260B**
	100	(70 - 119)	7.4	(0-20)	**SW846 8260B**
Trichloroethene	84	(62 - 130)			**SW846 8260B**
	85	(62 - 130)	1.4	(0-20)	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(73 - 122)
	98	(73 - 122)
1,2-Dichloroethane-d4	97	(61 - 128)
	97	(61 - 128)
Toluene-d8	100	(76 - 110)
	101	(76 - 110)
4-Bromofluorobenzene	97	(74 - 116)
	98	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...:	A3L200162	**Work Order #...:**	F7ALK1CE-MS	**Matrix.....:**	WATER
MS Lot-Sample #:	A3L230276-002		F7ALK1CF-MSD		
Date Sampled...:	12/22/03 15:10	**Date Received..:**	12/23/03		
Prep Date.....:	01/02/04	**Analysis Date..:**	01/02/04		
Prep Batch #...:	4002237				
Dilution Factor:	125	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**1200**	**1200**	**ug/L**	**100**		**SW846 8260B**
	ND	**1200**	**1300**	**ug/L**	**102**	**2.5**	**SW846 8260B**
Chlorobenzene	**20**	**1200**	**1200**	**ug/L**	**93**		**SW846 8260B**
	20	**1200**	**1200**	**ug/L**	**94**	**0.86**	**SW846 8260B**
1,1-Dichloroethene	**31**	**1200**	**1500**	**ug/L**	**115**		**SW846 8260B**
	31	**1200**	**1500**	**ug/L**	**114**	**0.62**	**SW846 8260B**
Toluene	**ND**	**1200**	**1300**	**ug/L**	**101**		**SW846 8260B**
	ND	**1200**	**1300**	**ug/L**	**102**	**1.1**	**SW846 8260B**
Trichloroethene	**4800**	**1200**	**5700**	**ug/L**	**77**		**SW846 8260B**
	4800	**1200**	**5500**	**ug/L**	**59 a**	**3.9**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	112	(73 - 122)
	109	(73 - 122)
1,2-Dichloroethane-d4	115	(61 - 128)
	113	(61 - 128)
Toluene-d8	109	(76 - 110)
	107	(76 - 110)
4-Bromofluorobenzene	101	(74 - 116)
	99	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...:	A3L200162	**Work Order #...:**	F7ALK1CE-MS	**Matrix.....:**	WATER
MS Lot-Sample #:	A3L230276-002		F7ALK1CF-MSD		
Date Sampled...:	12/22/03 15:10	**Date Received..:**	12/23/03		
Prep Date.....:	01/02/04	**Analysis Date..:**	01/02/04		
Prep Batch #...:	4002237				
Dilution Factor:	125	**Initial Wgt/Vol:**	5 mL	**Final Wgt/Vol..:**	5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**100**	**(78 - 118)**			**SW846 8260B**
	102	**(78 - 118)**	**2.5**	**(0-20)**	**SW846 8260B**
Chlorobenzene	**93**	**(76 - 117)**			**SW846 8260B**
	94	**(76 - 117)**	**0.86**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethene	**115**	**(62 - 130)**			**SW846 8260B**
	114	**(62 - 130)**	**0.62**	**(0-20)**	**SW846 8260B**
Toluene	**101**	**(70 - 119)**			**SW846 8260B**
	102	**(70 - 119)**	**1.1**	**(0-20)**	**SW846 8260B**
Trichloroethene	**77**	**(62 - 130)**			**SW846 8260B**
	59 a	**(62 - 130)**	**3.9**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	112	(73 - 122)
	109	(73 - 122)
1,2-Dichloroethane-d4	115	(61 - 128)
	113	(61 - 128)
Toluene-d8	109	(76 - 110)
	107	(76 - 110)
4-Bromofluorobenzene	101	(74 - 116)
	99	(74 - 116)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

SEVERN TRENT STL

GCMS SEMIVOLATILE DATA

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-096

GC/MS Semivolatiles

Lot-Sample #...: A3L200162-007 Work Order #...: F664P1AA Matrix.....: WG
Date Sampled...: 12/18/03 13:12 Date Received..: 12/20/03
Prep Date.....: 12/22/03 Analysis Date..: 12/31/03
Prep Batch #...: 3356118
Dilution Factor: 10 Initial Wgt/Vol: 1030 mL Final Wgt/Vol..: 2 mL
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	50	ug/L	6.9
Acenaphthylene	ND	50	ug/L	4.1
Acetophenone	ND	50	ug/L	6.5
Anthracene	ND	50	ug/L	5.9
Atrazine	ND	50	ug/L	3.5
Benzo(a)anthracene	ND	40	ug/L	6.8
Benzo(a)pyrene	ND	40	ug/L	5.3
Benzo(b)fluoranthene	ND	40	ug/L	7.1
Benzo(ghi)perylene	ND	50	ug/L	7.0
Benzo(k)fluoranthene	ND	50	ug/L	6.4
Benzaldehyde	ND	100	ug/L	5.9
1,1'-Biphenyl	ND	100	ug/L	6.5
bis(2-Chloroethoxy) methane	ND	50	ug/L	10
bis(2-Chloroethyl)-ether	ND	40	ug/L	17
bis(2-Ethylhexyl) phthalate	**4.7 J**	**50**	**ug/L**	**2.0**
4-Bromophenyl phenyl ether	ND	50	ug/L	7.8
Butyl benzyl phthalate	ND	50	ug/L	2.3
Caprolactam	ND	100	ug/L	4.5
Carbazole	ND	100	ug/L	6.1
4-Chloroaniline	ND	200	ug/L	9.0
4-Chloro-3-methylphenol	ND	50	ug/L	5.5
2-Chloronaphthalene	ND	50	ug/L	7.3
2-Chlorophenol	ND	50	ug/L	13
4-Chlorophenyl phenyl ether	ND	50	ug/L	6.6
Chrysene	ND	50	ug/L	6.7
Dibenz(a,h)anthracene	ND	40	ug/L	6.8
Dibenzofuran	ND	50	ug/L	6.6
3,3'-Dichlorobenzidine	ND	40	ug/L	4.7
2,4-Dichlorophenol	ND	100	ug/L	7.0
Diethyl phthalate	ND	50	ug/L	2.5
2,4-Dimethylphenol	ND	50	ug/L	10
Dimethyl phthalate	ND	50	ug/L	2.0
Di-n-butyl phthalate	ND	50	ug/L	3.7

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-096

GC/MS Semivolatiles

Lot-Sample #...: A3L200162-007 Work Order #...: F664P1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
4,6-Dinitro-2-methylphenol	ND	200	ug/L	21
2,4-Dinitrophenol	ND	200	ug/L	33
2,4-Dinitrotoluene	ND	50	ug/L	4.6
2,6-Dinitrotoluene	ND	50	ug/L	7.1
Di-n-octyl phthalate	ND	50	ug/L	6.9
Fluoranthene	ND	50	ug/L	7.1
Fluorene	ND	50	ug/L	7.5
Hexachlorobenzene	ND	50	ug/L	7.7
Hexachlorobutadiene	ND	50	ug/L	15
Hexachlorocyclopenta-diene	ND	50	ug/L	11
Hexachloroethane	ND	50	ug/L	16
Indeno(1,2,3-cd)pyrene	ND	40	ug/L	6.9
Isophorone	ND	50	ug/L	8.6
2-Methylnaphthalene	ND	50	ug/L	9.3
2-Methylphenol	ND	50	ug/L	9.0
4-Methylphenol	ND	50	ug/L	7.1
Naphthalene	ND	50	ug/L	13
2-Nitroaniline	ND	200	ug/L	4.9
3-Nitroaniline	ND	200	ug/L	4.8
4-Nitroaniline	ND	200	ug/L	5.9
Nitrobenzene	ND	40	ug/L	13
2-Nitrophenol	ND	50	ug/L	9.5
4-Nitrophenol	ND	200	ug/L	35
N-Nitrosodi-n-propyl-amine	ND	50	ug/L	11
N-Nitrosodiphenylamine	ND	50	ug/L	6.4
2,2'-oxybis(1-Chloropropane)	ND	50	ug/L	18
Pentachlorophenol	ND	200	ug/L	26
Phenanthrene	ND	50	ug/L	6.8
Phenol	ND	50	ug/L	13
Pyrene	ND	50	ug/L	6.3
2,4,5-Trichloro-phenol	ND	50	ug/L	8.6
2,4,6-Trichloro-phenol	ND	40	ug/L	7.1

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	72 DIL	(32 - 112)
2-Fluorobiphenyl	77 DIL	(30 - 110)
Terphenyl-d14	71 DIL	(10 - 144)
Phenol-d5	68 DIL	(10 - 113)
2-Fluorophenol	70 DIL	(13 - 110)
2,4,6-Tribromophenol	78 DIL	(21 - 122)

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-096

GC/MS Semivolatiles

Lot-Sample #...: A3L200162-007 Work Order #...: F664P1AA Matrix.....: WG

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

J Estimated result. Result is less than RL.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-098

GC/MS Semivolatiles

Lot-Sample #...: A3L200162-008	Work Order #...: F664W1AA	Matrix.....: WG	
Date Sampled...: 12/18/03 13:27	Date Received..: 12/20/03		
Prep Date.....: 12/22/03	Analysis Date..: 12/31/03		
Prep Batch #...: 3356118			
Dilution Factor: 4	Initial Wgt/Vol: 975 mL	Final Wgt/Vol..: 2 mL	
	Method.....: SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	20	ug/L	2.8
Acenaphthylene	ND	20	ug/L	1.6
Acetophenone	ND	20	ug/L	2.6
Anthracene	ND	20	ug/L	2.4
Atrazine	ND	20	ug/L	1.4
Benzo(a)anthracene	ND	16	ug/L	2.7
Benzo(a)pyrene	ND	16	ug/L	2.1
Benzo(b)fluoranthene	ND	16	ug/L	2.8
Benzo(ghi)perylene	ND	20	ug/L	2.8
Benzo(k)fluoranthene	ND	20	ug/L	2.6
Benzaldehyde	ND	40	ug/L	2.4
1,1'-Biphenyl	ND	40	ug/L	2.6
bis(2-Chloroethoxy) methane	ND	20	ug/L	4.0
bis(2-Chloroethyl)-ether	ND	16	ug/L	6.8
bis(2-Ethylhexyl) phthalate	ND	20	ug/L	0.80
4-Bromophenyl phenyl ether	ND	20	ug/L	3.1
Butyl benzyl phthalate	ND	20	ug/L	0.92
Caprolactam	**19 J,B**	**40**	**ug/L**	**1.8**
Carbazole	ND	40	ug/L	2.4
4-Chloroaniline	ND	80	ug/L	3.6
4-Chloro-3-methylphenol	ND	20	ug/L	2.2
2-Chloronaphthalene	ND	20	ug/L	2.9
2-Chlorophenol	ND	20	ug/L	5.2
4-Chlorophenyl phenyl ether	ND	20	ug/L	2.6
Chrysene	ND	20	ug/L	2.7
Dibenz(a,h)anthracene	ND	16	ug/L	2.7
Dibenzofuran	ND	20	ug/L	2.6
3,3'-Dichlorobenzidine	ND	16	ug/L	1.9
2,4-Dichlorophenol	ND	40	ug/L	2.8
Diethyl phthalate	ND	20	ug/L	1.0
2,4-Dimethylphenol	ND	20	ug/L	4.0
Dimethyl phthalate	ND	20	ug/L	0.80
Di-n-butyl phthalate	ND	20	ug/L	1.5

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-098

GC/MS Semivolatiles

Lot-Sample #...: A3L200162-008 Work Order #...: F664W1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
4,6-Dinitro-2-methylphenol	ND	80	ug/L	8.4
2,4-Dinitrophenol	ND	80	ug/L	13
2,4-Dinitrotoluene	ND	20	ug/L	1.8
2,6-Dinitrotoluene	ND	20	ug/L	2.8
Di-n-octyl phthalate	ND	20	ug/L	2.8
Fluoranthene	**10 J**	**20**	**ug/L**	**2.8**
Fluorene	ND	20	ug/L	3.0
Hexachlorobenzene	ND	20	ug/L	3.1
Hexachlorobutadiene	ND	20	ug/L	6.0
Hexachlorocyclopenta-diene	ND	20	ug/L	4.4
Hexachloroethane	ND	20	ug/L	6.4
Indeno(1,2,3-cd)pyrene	ND	16	ug/L	2.8
Isophorone	ND	20	ug/L	3.4
2-Methylnaphthalene	ND	20	ug/L	3.7
2-Methylphenol	ND	20	ug/L	3.6
4-Methylphenol	ND	20	ug/L	2.8
Naphthalene	ND	20	ug/L	5.2
2-Nitroaniline	ND	80	ug/L	2.0
3-Nitroaniline	ND	80	ug/L	1.9
4-Nitroaniline	ND	80	ug/L	2.4
Nitrobenzene	ND	16	ug/L	5.2
2-Nitrophenol	ND	20	ug/L	3.8
4-Nitrophenol	ND	80	ug/L	14
N-Nitrosodi-n-propyl-amine	ND	20	ug/L	4.4
N-Nitrosodiphenylamine	ND	20	ug/L	2.6
2,2'-oxybis(1-Chloropropane)	ND	20	ug/L	7.2
Pentachlorophenol	ND	80	ug/L	10
Phenanthrene	**4.9 J**	**20**	**ug/L**	**2.7**
Phenol	ND	20	ug/L	5.2
Pyrene	**12 J**	**20**	**ug/L**	**2.5**
2,4,5-Trichloro-phenol	ND	20	ug/L	3.4
2,4,6-Trichloro-phenol	ND	16	ug/L	2.8

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	71 DIL	(32 - 112)
2-Fluorobiphenyl	74 DIL	(30 - 110)
Terphenyl-d14	86 DIL	(10 - 144)
Phenol-d5	64 DIL	(10 - 113)
2-Fluorophenol	64 DIL	(13 - 110)
2,4,6-Tribromophenol	69 DIL	(21 - 122)

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CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-098

GC/MS Semivolatiles

Lot-Sample #...: A3L200162-008 Work Order #...: F664W1AA Matrix.....: WG

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-099

GC/MS Semivolatiles

Lot-Sample #...: A3L200162-009 Work Order #...: F66401AA Matrix.....: WG
Date Sampled...: 12/18/03 13:30 Date Received..: 12/20/03
Prep Date.....: 12/22/03 Analysis Date..: 12/30/03
Prep Batch #...: 3356118
Dilution Factor: 1 Initial Wgt/Vol: 1030 mL Final Wgt/Vol..: 2 mL
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	5.0	ug/L	0.69
Acenaphthylene	ND	5.0	ug/L	0.41
Acetophenone	ND	5.0	ug/L	0.65
Anthracene	ND	5.0	ug/L	0.59
Atrazine	ND	5.0	ug/L	0.35
Benzo(a)anthracene	ND	4.0	ug/L	0.68
Benzo(a)pyrene	ND	4.0	ug/L	0.53
Benzo(b)fluoranthene	ND	4.0	ug/L	0.71
Benzo(ghi)perylene	ND	5.0	ug/L	0.70
Benzo(k)fluoranthene	ND	5.0	ug/L	0.64
Benzaldehyde	ND	10	ug/L	0.59
1,1'-Biphenyl	ND	10	ug/L	0.65
bis(2-Chloroethoxy) methane	ND	5.0	ug/L	1.0
bis(2-Chloroethyl)-ether	ND	4.0	ug/L	1.7
bis(2-Ethylhexyl) phthalate	**0.97 J**	**5.0**	**ug/L**	**0.20**
4-Bromophenyl phenyl ether	ND	5.0	ug/L	0.78
Butyl benzyl phthalate	ND	5.0	ug/L	0.23
Caprolactam	**5.6 J,B**	**10**	**ug/L**	**0.45**
Carbazole	ND	10	ug/L	0.61
4-Chloroaniline	ND	20	ug/L	0.90
4-Chloro-3-methylphenol	ND	5.0	ug/L	0.55
2-Chloronaphthalene	ND	5.0	ug/L	0.73
2-Chlorophenol	ND	5.0	ug/L	1.3
4-Chlorophenyl phenyl ether	ND	5.0	ug/L	0.66
Chrysene	ND	5.0	ug/L	0.67
Dibenz(a,h)anthracene	ND	4.0	ug/L	0.68
Dibenzofuran	ND	5.0	ug/L	0.66
3,3'-Dichlorobenzidine	ND	4.0	ug/L	0.47
2,4-Dichlorophenol	ND	10	ug/L	0.70
Diethyl phthalate	ND	5.0	ug/L	0.25
2,4-Dimethylphenol	ND	5.0	ug/L	1.0
Dimethyl phthalate	ND	5.0	ug/L	0.20
Di-n-butyl phthalate	ND	5.0	ug/L	0.37

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CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-099

GC/MS Semivolatiles

Lot-Sample #...: A3L200162-009 Work Order #...: F66401AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
4,6-Dinitro-2-methylphenol	ND	20	ug/L	2.1
2,4-Dinitrophenol	ND	20	ug/L	3.3
2,4-Dinitrotoluene	ND	5.0	ug/L	0.46
2,6-Dinitrotoluene	ND	5.0	ug/L	0.71
Di-n-octyl phthalate	ND	5.0	ug/L	0.69
Fluoranthene	ND	5.0	ug/L	0.71
Fluorene	ND	5.0	ug/L	0.75
Hexachlorobenzene	ND	5.0	ug/L	0.77
Hexachlorobutadiene	ND	5.0	ug/L	1.5
Hexachlorocyclopentadiene	ND	5.0	ug/L	1.1
Hexachloroethane	ND	5.0	ug/L	1.6
Indeno(1,2,3-cd)pyrene	ND	4.0	ug/L	0.69
Isophorone	ND	5.0	ug/L	0.86
2-Methylnaphthalene	ND	5.0	ug/L	0.93
2-Methylphenol	ND	5.0	ug/L	0.90
4-Methylphenol	ND	5.0	ug/L	0.71
Naphthalene	ND	5.0	ug/L	1.3
2-Nitroaniline	ND	20	ug/L	0.49
3-Nitroaniline	ND	20	ug/L	0.48
4-Nitroaniline	ND	20	ug/L	0.59
Nitrobenzene	ND	4.0	ug/L	1.3
2-Nitrophenol	ND	5.0	ug/L	0.95
4-Nitrophenol	ND	20	ug/L	3.5
N-Nitrosodi-n-propylamine	ND	5.0	ug/L	1.1
N-Nitrosodiphenylamine	ND	5.0	ug/L	0.64
2,2'-oxybis(1-Chloropropane)	ND	5.0	ug/L	1.8
Pentachlorophenol	ND	20	ug/L	2.6
Phenanthrene	ND	5.0	ug/L	0.68
Phenol	**1.3 J**	**5.0**	**ug/L**	**1.3**
Pyrene	ND	5.0	ug/L	0.63
2,4,5-Trichlorophenol	ND	5.0	ug/L	0.86
2,4,6-Trichlorophenol	ND	4.0	ug/L	0.71

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	66	(32 - 112)
2-Fluorobiphenyl	59	(30 - 110)
Terphenyl-d14	75	(10 - 144)
Phenol-d5	60	(10 - 113)
2-Fluorophenol	63	(13 - 110)
2,4,6-Tribromophenol	67	(21 - 122)

(Continued on next page)

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-099

GC/MS Semivolatiles

Lot-Sample #...: A3L200162-009 Work Order #...: F66401AA Matrix.....: WG

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-101

GC/MS Semivolatiles

Lot-Sample #...: A3L200162-011 Work Order #...: F66461AA Matrix.....: WG
Date Sampled...: 12/18/03 16:07 Date Received..: 12/20/03
Prep Date.....: 12/22/03 Analysis Date..: 12/29/03
Prep Batch #...: 3356118
Dilution Factor: 1 Initial Wgt/Vol: 1040 mL Final Wgt/Vol..: 2 mL
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	5.0	ug/L	0.69
Acenaphthylene	ND	5.0	ug/L	0.41
Acetophenone	ND	5.0	ug/L	0.65
Anthracene	ND	5.0	ug/L	0.59
Atrazine	ND	5.0	ug/L	0.35
Benzo(a)anthracene	ND	4.0	ug/L	0.68
Benzo(a)pyrene	ND	4.0	ug/L	0.53
Benzo(b)fluoranthene	ND	4.0	ug/L	0.71
Benzo(ghi)perylene	ND	5.0	ug/L	0.70
Benzo(k)fluoranthene	ND	5.0	ug/L	0.64
Benzaldehyde	ND	10	ug/L	0.59
1,1'-Biphenyl	ND	10	ug/L	0.65
bis(2-Chloroethoxy) methane	ND	5.0	ug/L	1.0
bis(2-Chloroethyl)-ether	ND	4.0	ug/L	1.7
bis(2-Ethylhexyl) phthalate	**0.79 J**	**5.0**	**ug/L**	**0.20**
4-Bromophenyl phenyl ether	ND	5.0	ug/L	0.78
Butyl benzyl phthalate	ND	5.0	ug/L	0.23
Caprolactam	ND	10	ug/L	0.45
Carbazole	ND	10	ug/L	0.61
4-Chloroaniline	ND	20	ug/L	0.90
4-Chloro-3-methylphenol	ND	5.0	ug/L	0.55
2-Chloronaphthalene	ND	5.0	ug/L	0.73
2-Chlorophenol	ND	5.0	ug/L	1.3
4-Chlorophenyl phenyl ether	ND	5.0	ug/L	0.66
Chrysene	ND	5.0	ug/L	0.67
Dibenz(a,h)anthracene	ND	4.0	ug/L	0.68
Dibenzofuran	ND	5.0	ug/L	0.66
3,3'-Dichlorobenzidine	ND	4.0	ug/L	0.47
2,4-Dichlorophenol	ND	10	ug/L	0.70
Diethyl phthalate	ND	5.0	ug/L	0.25
2,4-Dimethylphenol	ND	5.0	ug/L	1.0
Dimethyl phthalate	ND	5.0	ug/L	0.20
Di-n-butyl phthalate	ND	5.0	ug/L	0.37

(Continued on next page)

CONESTOGA ROVERS & ASSOC., INC.

Client Sample ID: GW-17360-121703-JB-101

GC/MS Semivolatiles

Lot-Sample #...: A3L200162-011 Work Order #...: F66461AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
4,6-Dinitro-2-methylphenol	ND	20	ug/L	2.1
2,4-Dinitrophenol	ND	20	ug/L	3.3
2,4-Dinitrotoluene	ND	5.0	ug/L	0.46
2,6-Dinitrotoluene	ND	5.0	ug/L	0.71
Di-n-octyl phthalate	ND	5.0	ug/L	0.69
Fluoranthene	ND	5.0	ug/L	0.71
Fluorene	ND	5.0	ug/L	0.75
Hexachlorobenzene	ND	5.0	ug/L	0.77
Hexachlorobutadiene	ND	5.0	ug/L	1.5
Hexachlorocyclopentadiene	ND	5.0	ug/L	1.1
Hexachloroethane	ND	5.0	ug/L	1.6
Indeno(1,2,3-cd)pyrene	ND	4.0	ug/L	0.69
Isophorone	ND	5.0	ug/L	0.86
2-Methylnaphthalene	ND	5.0	ug/L	0.93
2-Methylphenol	ND	5.0	ug/L	0.90
4-Methylphenol	ND	5.0	ug/L	0.71
Naphthalene	ND	5.0	ug/L	1.3
2-Nitroaniline	ND	20	ug/L	0.49
3-Nitroaniline	ND	20	ug/L	0.48
4-Nitroaniline	ND	20	ug/L	0.59
Nitrobenzene	ND	4.0	ug/L	1.3
2-Nitrophenol	ND	5.0	ug/L	0.95
4-Nitrophenol	ND	20	ug/L	3.5
N-Nitrosodi-n-propylamine	ND	5.0	ug/L	1.1
N-Nitrosodiphenylamine	ND	5.0	ug/L	0.64
2,2'-oxybis(1-Chloropropane)	ND	5.0	ug/L	1.8
Pentachlorophenol	ND	20	ug/L	2.6
Phenanthrene	ND	5.0	ug/L	0.68
Phenol	**9.0**	**5.0**	**ug/L**	**1.3**
Pyrene	ND	5.0	ug/L	0.63
2,4,5-Trichlorophenol	ND	5.0	ug/L	0.86
2,4,6-Trichlorophenol	ND	4.0	ug/L	0.71

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	82	(32 - 112)
2-Fluorobiphenyl	66	(30 - 110)
Terphenyl-d14	71	(10 - 144)
Phenol-d5	66	(10 - 113)
2-Fluorophenol	63	(13 - 110)
2,4,6-Tribromophenol	74	(21 - 122)

(Continued on next page)

CONESTOGA ROVERS & ASSOC.,INC.

Client Sample ID: GW-17360-121703-JB-101

GC/MS Semivolatiles

Lot-Sample #...: A3L200162-011 Work Order #...: F66461AA Matrix.....: WG

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A3L200162 **Work Order #...:** F67KM1AA **Matrix.....:** WATER
MB Lot-Sample #: A3L220000-118

Prep Date.....: 12/22/03 **Final Wgt/Vol..:** 2 mL
Analysis Date..: 12/29/03 **Prep Batch #...:** 3356118
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	5.0	ug/L	SW846 8270C
Acenaphthylene	ND	5.0	ug/L	SW846 8270C
Acetophenone	ND	5.0	ug/L	SW846 8270C
Anthracene	ND	5.0	ug/L	SW846 8270C
Atrazine	ND	5.0	ug/L	SW846 8270C
Benzo(a)anthracene	ND	4.0	ug/L	SW846 8270C
Benzo(a)pyrene	ND	4.0	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	4.0	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	5.0	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	5.0	ug/L	SW846 8270C
Benzaldehyde	ND	10	ug/L	SW846 8270C
1,1'-Biphenyl	ND	10	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	5.0	ug/L	SW846 8270C
bis(2-Chloroethyl)-ether	ND	4.0	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	5.0	ug/L	SW846 8270C
4-Bromophenyl phenyl ether	ND	5.0	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	5.0	ug/L	SW846 8270C
Caprolactam	**3.2 J**	**10**	**ug/L**	**SW846 8270C**
Carbazole	ND	10	ug/L	SW846 8270C
4-Chloroaniline	ND	20	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	5.0	ug/L	SW846 8270C
2-Chloronaphthalene	ND	5.0	ug/L	SW846 8270C
2-Chlorophenol	ND	5.0	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	5.0	ug/L	SW846 8270C
Chrysene	ND	5.0	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	4.0	ug/L	SW846 8270C
Dibenzofuran	ND	5.0	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	4.0	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C
Diethyl phthalate	ND	5.0	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	5.0	ug/L	SW846 8270C
Dimethyl phthalate	ND	5.0	ug/L	SW846 8270C
Di-n-butyl phthalate	ND	5.0	ug/L	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	20	ug/L	SW846 8270C
2,4-Dinitrophenol	ND	20	ug/L	SW846 8270C

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A3L200162 **Work Order #...:** F67KM1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4-Dinitrotoluene	ND	5.0	ug/L	SW846 8270C
2,6-Dinitrotoluene	ND	5.0	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	5.0	ug/L	SW846 8270C
Fluoranthene	ND	5.0	ug/L	SW846 8270C
Fluorene	ND	5.0	ug/L	SW846 8270C
Hexachlorobenzene	ND	5.0	ug/L	SW846 8270C
Hexachlorobutadiene	ND	5.0	ug/L	SW846 8270C
Hexachlorocyclopenta-diene	ND	5.0	ug/L	SW846 8270C
Hexachloroethane	ND	5.0	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	4.0	ug/L	SW846 8270C
Isophorone	ND	5.0	ug/L	SW846 8270C
2-Methylnaphthalene	ND	5.0	ug/L	SW846 8270C
2-Methylphenol	ND	5.0	ug/L	SW846 8270C
4-Methylphenol	ND	5.0	ug/L	SW846 8270C
Naphthalene	ND	5.0	ug/L	SW846 8270C
2-Nitroaniline	ND	20	ug/L	SW846 8270C
3-Nitroaniline	ND	20	ug/L	SW846 8270C
4-Nitroaniline	ND	20	ug/L	SW846 8270C
Nitrobenzene	ND	4.0	ug/L	SW846 8270C
2-Nitrophenol	ND	5.0	ug/L	SW846 8270C
4-Nitrophenol	ND	20	ug/L	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	5.0	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	5.0	ug/L	SW846 8270C
2,2'-oxybis(1-Chloropropa	ND	5.0	ug/L	SW846 8270C
Pentachlorophenol	ND	20	ug/L	SW846 8270C
Phenanthrene	ND	5.0	ug/L	SW846 8270C
Phenol	ND	5.0	ug/L	SW846 8270C
Pyrene	ND	5.0	ug/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	5.0	ug/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	4.0	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	84	(32 - 112)
2-Fluorobiphenyl	66	(30 - 110)
Terphenyl-d14	79	(10 - 144)
Phenol-d5	68	(10 - 113)
2-Fluorophenol	64	(13 - 110)
2,4,6-Tribromophenol	77	(21 - 122)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A3L200162 **Work Order #...:** F67KM1AA **Matrix.....:** WATER

NOTE(S):

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

J Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A3L200162 **Work Order #...:** F67KM1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3L220000-118 F67KM1AD-LCSD
Prep Date.....: 12/22/03 **Analysis Date..:** 12/29/03
Prep Batch #...: 3356118
Dilution Factor: 1 **Final Wgt/Vol..:** 2 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Acenaphthene	20	16	ug/L	79		SW846 8270C
	20	15	ug/L	74	7.3	SW846 8270C
1,2,4-Trichloro-benzene	20	12	ug/L	61		SW846 8270C
	20	11	ug/L	54	12	SW846 8270C
1,4-Dichlorobenzene	20	12	ug/L	60		SW846 8270C
	20	11	ug/L	56	7.8	SW846 8270C
4-Chloro-3-methylphenol	20	14	ug/L	68		SW846 8270C
	20	13	ug/L	66	3.5	SW846 8270C
2-Chlorophenol	20	14	ug/L	68		SW846 8270C
	20	13	ug/L	64	5.7	SW846 8270C
2,4-Dinitrotoluene	20	17	ug/L	84		SW846 8270C
	20	16	ug/L	80	4.6	SW846 8270C
4-Nitrophenol	20	17	ug/L	84		SW846 8270C
	20	16	ug/L	82	2.2	SW846 8270C
N-Nitrosodi-n-propyl-amine	20	18	ug/L	92		SW846 8270C
	20	17	ug/L	87	5.2	SW846 8270C
Pentachlorophenol	20	15	ug/L	74		SW846 8270C
	20	14	ug/L	71	3.8	SW846 8270C
Phenol	20	14	ug/L	70		SW846 8270C
	20	13	ug/L	66	5.4	SW846 8270C
Pyrene	20	12	ug/L	62		SW846 8270C
	20	12	ug/L	59	5.6	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	92	(32 - 112)
	88	(32 - 112)
2-Fluorobiphenyl	81	(30 - 110)
	75	(30 - 110)
Terphenyl-d14	72	(10 - 144)
	69	(10 - 144)
Phenol-d5	74	(10 - 113)
	71	(10 - 113)
2-Fluorophenol	69	(13 - 110)
	66	(13 - 110)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A3L200162 **Work Order #...:** F67KM1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3L220000-118 F67KM1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	82	(21 - 122)
	76	(21 - 122)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A3L200162 Work Order #...: F67KM1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: A3L220000-118 F67KM1AD-LCSD
Prep Date.....: 12/22/03 Analysis Date..: 12/29/03
Prep Batch #...: 3356118
Dilution Factor: 1 Final Wgt/Vol..: 2 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	79	(39 - 118)			SW846 8270C
	74	(39 - 118)	7.3	(0-35)	SW846 8270C
1,2,4-Trichloro-benzene	61	(31 - 110)			SW846 8270C
	54	(31 - 110)	12	(0-37)	SW846 8270C
1,4-Dichlorobenzene	60	(28 - 110)			SW846 8270C
	56	(28 - 110)	7.8	(0-36)	SW846 8270C
4-Chloro-3-methylphenol	68	(29 - 124)			SW846 8270C
	66	(29 - 124)	3.5	(0-55)	SW846 8270C
2-Chlorophenol	68	(19 - 124)			SW846 8270C
	64	(19 - 124)	5.7	(0-43)	SW846 8270C
2,4-Dinitrotoluene	84	(47 - 131)			SW846 8270C
	80	(47 - 131)	4.6	(0-32)	SW846 8270C
4-Nitrophenol	84	(19 - 144)			SW846 8270C
	82	(19 - 144)	2.2	(0-34)	SW846 8270C
N-Nitrosodi-n-propyl-amine	92	(30 - 115)			SW846 8270C
	87	(30 - 115)	5.2	(0-36)	SW846 8270C
Pentachlorophenol	74	(10 - 140)			SW846 8270C
	71	(10 - 140)	3.8	(0-56)	SW846 8270C
Phenol	70	(10 - 131)			SW846 8270C
	66	(10 - 131)	5.4	(0-43)	SW846 8270C
Pyrene	62	(46 - 130)			SW846 8270C
	59	(46 - 130)	5.6	(0-31)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	92	(32 - 112)
	88	(32 - 112)
2-Fluorobiphenyl	81	(30 - 110)
	75	(30 - 110)
Terphenyl-d14	72	(10 - 144)
	69	(10 - 144)
Phenol-d5	74	(10 - 113)
	71	(10 - 113)
2-Fluorophenol	69	(13 - 110)
	66	(13 - 110)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A3L200162 **Work Order #...:** F67KM1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A3L220000-118 F67KM1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	82	(21 - 122)
	76	(21 - 122)

NOTE(S):

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

Bold print denotes control parameters

SEVERN TRENT STL

END OF REPORT

APPENDIX D

WASTE DISPOSAL DOCUMENTATION

40780

NON-HAZARDOUS WASTE MANIFEST

8157631501

NO. 54522

GENERATOR:
General Motors
3126 31st St SE
Grand Rapids, MI
49548

Transporter: Wills Trucking

Vehicle No.: _____

☐ _____

☐ Woodland Meadows RDF (Wayne, MI)

DELIVER TO:

☐ Cedar Ridge RDF (Lewisburg, TN)
☐ Flat Oak RDF (Oklahoma City, OK)
☐ Evergreen RDF (Northwood, OH)
☐ Twin Bridges RDF (Danville, IN)
☐ Venice Park RDF (Lemon, MI)
☑ Chemical Waste Management (Model City, NY)
☐ Middle Peninsula (Glenns, VA)
☐ Chemical Waste Management (Lake Charles, LA)
☐ Milam RDF (East St. Louis, IL)
☐ DeerTrack Park Landfill (Watertown, WI)

Approval No.	Name of Waste Stream	Physical Description (i.e., solid, color)	Volume
6mm179	Soil	Brown	52 CYD
6mm179	PPE	Plastic	1 DM

On behalf of General Motors

Generator Signature: Budget Team Date: 8/21/03

Transporter Signature: _____ Date: 8/22/03

Destination Signature: _____ Date: _____

White: Generator Canary: Disposal Facility Pink: Carrier Gold: Generator

111-0064A

GWM Drum Disk 7187040358 4/4

Date 8/22/03
Time 9:19:22

Page . . :
Program name

Data Error/Discrepancy Report

Report Initiation Date: 8/22/03
Five Day Resolution Period Begin Date: 8/23/03

Initiated By : WM0766RML

Receiving Ticket: 081576315 Line # 1
Profile Number : GMM179
Generator Name : GENERAL MOTORS CORP
City : GRAND RAPIDS

Manifest : 8157631501

Federal EPA ID# : MID006020408
State: MI Zip Code : 49548-2107

TYPE OF DISCREPANCY

Manifest* :
Drum Count* :

Weight :
LDR Form* :

Analytical* :
Physical St* :

Problem (be specific) Profile Modification

Profile calls for 100% soil, 0% liquid. About 30% of the received drums have water in them, anywhere from a few inches to 9-10". Drums are marked "soil cuttings", so one would expect to find water. We may modify profile to include 0-20% water but we need generator to acknowledge it is just water and to give us permission to modify profile. TRUCK BEING HELD pending resolution Please notify gen

Assumption is correct, I agree with profile modification.

Resolved:
Time In : 9:10:44

Unresolved: X
Time Out : 0:00:00

On behalf of General Motors

Kurt D. Bliggard

Authorized Signature

Date Resolved:

** END OF REPORT **

Date 8/22/03
Time 9:19:12

Data Error/Discrepancy Report

Page . . :
Program name

Report Initiation Date: 8/22/03
Five Day Resolution Period Begin Date: 8/23/03

Initiated By : WM0766RML

Receiving Ticket: 0015976315 Line # 2
Profile Number : HMM178
Generator Name : GENERAL MOTORS CORP
City : GRAND RAPIDS

Manifest : 8157631501

Federal EPA ID# : MID006020408
State: MI Zip Code : 49548-2107

TYPE OF DISCREPANCY

Manifest* :
Drum Count* :
Weight* :
LDR Form* :
Analytical* :
Physical St* :

Problem Item specifics: Physical Off Spec

Profile calls for 100% soil, 0% free liquid.
1 drum is marked plastic sheeting and is in fact plastic sheeting and about 2" aqueous liquid. The other drum is marked PPE and appears to be plastic sheeting, some PPE, some sand-like soil moist with we believe again is water. If this waste was generated as a result of the generating the other line item, we suggest a profile mod to account for 0-100% Poron debris (PPE, Plastic sheeting, etc..) and of course 0-20% water. Gen must verify our assumptions are correct and agree to PMOD.TRUCK BRINC HELD pending resolution. Please notify gen.

Assumptions are correct, I agree with profile modification,

Received:
Time In : 9:10:53

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on behalf of General Motors

Kurt D. Bluyard
Authorized Signature

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** END OF REPORT **

APPENDIX E

DATA QUALITY VALIDATION MEMORANDUMS

CONESTOGA-ROVERS
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MEMORANDUM

TO: Gary Klepper

REF. NO.: 17360 – 01

FROM: Kathy Shaw/tl/29/Det

DATE: October 21, 2003

RE: Data Quality Assessment and Validation
Vertical Aquifer Sampling (VAS)
GM Grand Rapids Site – Grand Rapids, Michigan

The following details a quality assessment and validation of the analytical data resulting from the June 2003, collection of 30 groundwater and 15 quality control samples from the GM Grand Rapids Site in Grand Rapids, Mihigan. The sample summary detailing sample identification, sample location, quality control samples, and analytical parameters is presented in Table 1. Sample analysis was completed at Severn Trent Laboratories, Inc. in North Canton, Ohio (STL) in accordance with Method 8260B from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition and Promulgated Updates, November 1986. The quality control criteria used to assess the data were established by the methods and the quality assurance project plan (QAPP).[1]

Holding Time Period and Sample Analysis

The holding time periods for volatile organic compounds (VOC) analysis is 14 days from sample collection until completion of analysis. The samples, as indicated by the sample collection, extraction and analysis dates on the chain-of-custody forms and analytical reports provided by STL, were prepared and analyzed within the required holding time periods.

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 from detectable concentrations of target analytes, indicating no laboratory-attributable contamination occurred.

Laboratory Control Sample / Laboratory Control Sample Duplicate Analysis

The laboratory control sample and laboratory control sample duplicate (LCS/LCSD) analyses serve as a monitor of the overall performance in all steps of the sample analysis. The LCS percent recoveries were within the laboratory control limits, indicating that an acceptable level of overall performance was achieved.

[1] Application of quality assurance criteria was consistent with "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-99/008, October 1999.

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Laboratory Control Sample / Laboratory Control Sample Duplicate Analysis Cont'd)

Laboratory precision was verified by the relative percent difference (RPD) of the LCS/LCSD when a matrix spike/matrix spike duplicate was not analyzed. The RPDs were within the laboratory control limits, indicating that an acceptable level of overall laboratory precision was achieved.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for the organic analyses was monitored by assessing the results of surrogate compound percent recoveries. The surrogate recovery acceptance criteria was met for all samples.

Matrix Spike/Matrix Spike Duplicate Percent Recoveries

To assess the long term accuracy and precision of the analytical methods on various matrices, matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and the relative percent difference (RPD) of the concentrations were determined. The samples selected for MS/MSD analysis are identified in Table 1. The MS/MSD percent recoveries and associate RPDs acceptance criteria were met for all analyses.

Field Quality Assurance/Quality Control

The field quality assurance/quality control consisted of four (4) field blanks (rinsate) samples, four (4) field duplicate sample sets and seven (7) trip blank samples.

To assess the efficiency of field decontamination procedures, the rinsate samples (identified in Table 1) were collected and analyzed for VOC. No targeted analytes were reported as detected in the rinsate samples.

Overall precision for the sampling event and laboratory procedures was monitored using the results of the field duplicate sample sets. Table 2 summarizes the results of the detected analytes in the field duplicate sample sets. The data indicate that an adequate level of precision was achieved for the sampling event.

To monitor potential cross-contamination of VOC during aqueous sample transportation and storage, a trip blank was submitted to the laboratory for VOC analysis with each shipping cooler containing multiple samples. No target analytes were reported as detected in the trip blank samples.

Overall Assessment

The data presented in Table 3 were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used without qualification.

TABLE 1

SAMPLE SUMMARY
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Sample Identification	*Sample Location*	*Matrix*	*QC Sample*	*Parameter*
GW-17360-060903-BW-01	HP6-03 16 ft.	Water		TCL VOC
GW-17360-060903-BW-02	HP6-03 26 ft.	Water		TCL VOC
GW-17360-060903-BW-03	HP6-03 36 ft.	Water		TCL VOC
GW-17360-060903-BW-04	HP6-03 45 ft.	Water		TCL VOC
GW-17360-060903-BW-05	HP6-03 45 ft.	Water	Duplicate (04)	TCL VOC
Trip Blank	--	Water	Trip Blank	TCL VOC
GW-17360-061003-BW-06	HP5-03 24 ft.	Water		TCL VOC
GW-17360-061003-BW-07	HP5-03 34 ft.	Water		TCL VOC
GW-17360-061003-BW-08	HP5-03 44 ft.	Water		TCL VOC
GW-17360-061003-BW-09	HP5-03 54 ft.	Water		TCL VOC
GW-17360-061003-BW-10	--	Water	Equipment Blank	TCL VOC
GW-17360-061003-BW-11	HP5-03 62 ft.	Water		TCL VOC
Trip Blank	--	Water	Trip Blank	TCL VOC
GW-17360-061103-BW-12	HP4-03 26 ft.	Water		TCL VOC
GW-17360-061103-BW-13	HP4-03 36 ft.	Water		TCL VOC
GW-17360-061103-BW-14	HP4-03 46 ft.	Water		TCL VOC
GW-17360-061103-BW-15	HP4-03 56 ft.	Water		TCL VOC
GW-17360-061103-BW-16	HP4-03 66 ft.	Water		TCL VOC
Trip	--	Water	Trip Blank	TCL VOC
GW-17360-061203-BW-17	HP2-03 24 ft.	Water		TCL VOC
GW-17360-061203-BW-18	HP2-03 34 ft.	Water		TCL VOC
GW-17360-061203-BW-19	HP2-03 41 ft.	Water		TCL VOC
Trip Blank	--	Water	Trip Blank	TCL VOC
GW-17360-061303-BW-20	HP1-03 24 ft.	Water		TCL VOC
GW-17360-061303-BW-21	HP1-03 24 ft.	Water	Duplicate (20)	TCL VOC
GW-17360-061303-BW-22	HP1-03 34 ft.	Water	MS/MSD	TCL VOC
GW-17360-061303-BW-23	--	Water	Equipment Blank	TCL VOC
GW-17360-061303-BW-24	HP1-03 41 ft.	Water		TCL VOC
Trip Blank	--	Water	Trip Blank	TCL VOC
GW-17360-061603-BW-25	HP3-03 18 ft.	Water		TCL VOC
GW-17360-061603-BW-26	HP3-03 28 ft.	Water	MS/MSD	TCL VOC
GW-17360-061603-BW-27	HP3-03 38 ft.	Water		TCL VOC
GW-17360-061603-BW-28	HP3-03 38 ft.	Water	Duplicate (27)	TCL VOC
GW-17360-061603-BW-29	HP3-03 43 ft.	Water		TCL VOC
Trip Blank	--	Water	Trip Blank	TCL VOC
GW-17360-061703-BW-30	HP7-03 20 ft.	Water		TCL VOC
GW-17360-061703-BW-31	HP7-03 30 ft.	Water		TCL VOC
GW-17360-061703-BW-32	--	Water	Equipment Blank	TCL VOC
GW-17360-061703-BW-33	HP7-03 40 ft.	Water		TCL VOC
GW-17360-061703-BW-34	HP7-03 50 ft.	Water		TCL VOC
GW-17360-061703-BW-35	HP7-03 50 ft.	Water	Duplicate (34)	TCL VOC

TABLE 1

SAMPLE SUMMARY
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Sample Identification	*Sample Location*	*Matrix*	*QC Sample*	*Parameter*
GW-17360-061703-BW-36	HP7-03 60 ft.	Water		TCL VOC
GW-17360-061703-BW-37	HP7-03 69.5	Water		TCL VOC
GW-17360-061703-BW-38	--	Water	Equipment Blank	TCL VOC
Trip Blank	--	Water	Trip Blank	TCL VOC

TCL - Target Compound List
VOC - Volatile Organic Compounds
QC - Quality Control
MS/MSD - Matrix Spike /Matrix Spike Duplicate

TABLE 2

SUMMARY OF DETECTED ANALYTES IN FIELD DUPLICATE SAMPLE SETS
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Parameter	*Investigative Sample*	*Duplicate Sample*	*RPD* [1]
	GW-17360-061303-BW-020	GW-17360-061303-BW-021	
TCL VOC (µg/L)			
Tetrachloroethene	7.0	7.1	1.4
Trichloroethene	3.8	3.8	0
	GW-17360-061703-BW-034	GW-17360-061703-BW-035	
TCL VOC (µg/L)			
Chloroform	2.0	1.9	5.1
1,1,1-Trichloroethane	1.9	1.8	5.4

[1] RPD - Relative Percent Difference

TABLE 3

ANALYTICAL RESULTS SUMMARY
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Sample Location		*HP1-03*	*HP1-03*	*HP1-03*	*HP1-03*	*HP2-03*	*HP2-03*	*HP2-03*	*HP3-03*
Sample Identification		*GW-17360-061303-BW-020*	*GW-17360-061303-BW-021*	*GW-17360-061303-BW-022*	*GW-17360-061303-BW-024*	*GW-17360-061203-BW-017*	*GW-17360-061203-BW-018*	*GW-17360-061203-BW-019*	*GW-17360-061603-BW-025*
Sample Depth (ft BGS)		*24*	*24*	*34*	*41*	*24*	*34*	*41*	*18*
Sample Date		*6/13/2003*	*6/13/2003*	*6/13/2003*	*6/13/2003*	*6/12/2003*	*6/12/2003*	*6/12/2003*	*6/16/2003*
Sample Type	*Units*		*Duplicate*						
TCL VOC									
1,1,1-Trichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2,2-Tetrachloroethane	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	ug/L	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	ug/L	ND(25)	ND(25)	ND(50)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)
2-Hexanone	ug/L	ND(50)	ND(50)	ND(100)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ug/L	ND(50)	ND(50)	ND(100)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
Acetone	ug/L	ND(25)	ND(25)	ND(50)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)
Benzene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromodichloromethane	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromoform	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromomethane (Methyl Bromide)	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Carbon disulfide	ug/L	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Carbon tetrachloride	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloromethane (Methyl Chloride)	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	1.7	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cyclohexane	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Ethylbenzene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropylbenzene	ug/L	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methyl acetate	ug/L	ND(10)	ND(10)	ND(20)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Methyl cyclohexane	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl Tert Butyl Ether	ug/L	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methylene chloride	ug/L	ND(5.0)	ND(5.0)	ND(10)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Styrene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Tetrachloroethene	ug/L	7.0	7.1	66	1.5	31	7.2	ND(1.0)	1.1
Toluene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	ug/L	3.8	3.8	2.2	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichlorofluoromethane (CFC-11)	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	ug/L	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Xylene (total)	ug/L	ND(3.0)	ND(3.0)	ND(6.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)

TABLE 3

ANALYTICAL RESULTS SUMMARY
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Sample Location		*HP3-03*	*HP3-03*	*HP3-03*	*HP3-03*	*HP4-03*	*HP4-03*	*HP4-03*	*HP4-03*
Sample Identification		*GW-17360-061603-BW-026*	*GW-17360-061603-BW-027*	*GW-17360-061603-BW-028*	*GW-17360-061603-BW-029*	*GW-17360-061103-BW-012*	*GW-17360-061103-BW-013*	*GW-17360-061103-BW-014*	*GW-17360-061103-BW-015*
Sample Depth (ft BGS)		*28*	*38*	*38*	*43*	*26*	*36*	*46*	*56*
Sample Date		*6/16/2003*	*6/16/2003*	*6/16/2003*	*6/16/2003*	*6/11/2003*	*6/11/2003*	*6/11/2003*	*6/11/2003*
Sample Type	*Units*			*Duplicate*					
TCL VOC									
1,1,1-Trichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2,2-Tetrachloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	ug/L	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)
2-Hexanone	ug/L	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ug/L	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
Acetone	ug/L	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)
Benzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromodichloromethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	9.3	9.3	9.3	ND(1.0)
Bromoform	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromomethane (Methyl Bromide)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Carbon disulfide	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Carbon tetrachloride	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	36	35	37	2.4
Chloromethane (Methyl Chloride)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cyclohexane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	4.7	4.4	3.7	ND(1.0)
Dichlorodifluoromethane (CFC-12)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Ethylbenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropylbenzene	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methyl acetate	ug/L	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Methyl cyclohexane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl Tert Butyl Ether	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methylene chloride	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Styrene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Tetrachloroethene	ug/L	1.4	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.4
Toluene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichlorofluoromethane (CFC-11)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Xylene (total)	ug/L	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)

TABLE 3

ANALYTICAL RESULTS SUMMARY
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Sample Location		*HP4-03*	*HP6-03*	*HP6-03*	*HP6-03*	*HP6-03*	*HP6-03*	*HP7-03*	*HP7-03*
Sample Identification		*GW-17360-061103-BW-016*	*GW-17360-060903-BW-001*	*GW-17360-060903-BW-002*	*GW-17360-060903-BW-003*	*GW-17360-060903-BW-004*	*GW-17360-060903-BW-005*	*GW-17360-061703-BW-030*	*GW-17360-061703-BW-031*
Sample Depth (ft BGS)		*66*	*16*	*26*	*36*	*45*	*45*	*20*	*30*
Sample Date		*6/11/2003*	*6/9/2003*	*6/9/2003*	*6/9/2003*	*6/9/2003*	*6/9/2003*	*6/17/2003*	*6/17/2003*
Sample Type	*Units*						*Duplicate*		
TCL VOC									
1,1,1-Trichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.5
1,1,2,2-Tetrachloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	ug/L	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)
2-Hexanone	ug/L	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ug/L	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
Acetone	ug/L	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)
Benzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromodichloromethane	ug/L	2.4	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromoform	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromomethane (Methyl Bromide)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Carbon disulfide	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Carbon tetrachloride	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	ug/L	11	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloromethane (Methyl Chloride)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cyclohexane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	ug/L	1.1	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Ethylbenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropylbenzene	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methyl acetate	ug/L	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Methyl cyclohexane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl Tert Butyl Ether	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methylene chloride	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Styrene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Tetrachloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Toluene	ug/L	ND(1.0)	ND(1.0)	1.1	1.1	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichlorofluoromethane (CFC-11)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Xylene (total)	ug/L	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)

TABLE 3

ANALYTICAL RESULTS SUMMARY
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Sample Location		*HP7-03*	*HP7-03*	*HP7-03*	*HP7-03*	*HP7-03*	*HP5-03*	*HP5-03*	*HP5-03*
Sample Identification		*GW-17360-061703-BW-033*	*GW-17360-061703-BW-034*	*GW-17360-061703-BW-035*	*GW-17360-061703-BW-036*	*GW-17360-061703-BW-037*	*GW-17360-061003-BW-006*	*GW-17360-061003-BW-007*	*GW-17360-061003-BW-008*
Sample Depth (ft BGS)		*40*	*50*	*50*	*60*	*69.5*	*24*	*34*	*44*
Sample Date		*6/17/2003*	*6/17/2003*	*6/17/2003*	*6/17/2003*	*6/17/2003*	*6/10/2003*	*6/10/2003*	*6/10/2003*
Sample Type	*Units*			*Duplicate*					
TCL VOC									
1,1,1-Trichloroethane	ug/L	2.2	1.9	1.8	1.5	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2,2-Tetrachloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	ug/L	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)
2-Hexanone	ug/L	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ug/L	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
Acetone	ug/L	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)
Benzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromodichloromethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromoform	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromomethane (Methyl Bromide)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Carbon disulfide	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Carbon tetrachloride	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	ug/L	1.8	2.0	1.9	1.9	1.0	ND(1.0)	ND(1.0)	ND(1.0)
Chloromethane (Methyl Chloride)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cyclohexane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Ethylbenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropylbenzene	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methyl acetate	ug/L	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Methyl cyclohexane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl Tert Butyl Ether	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methylene chloride	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Styrene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Tetrachloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.2	ND(1.0)
Toluene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.0
trans-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	5.9	3.5
Trichlorofluoromethane (CFC-11)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Xylene (total)	ug/L	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)

TABLE 3

ANALYTICAL RESULTS SUMMARY
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Sample Location		*HP5-03*	*HP5-03*	*Field Blank*	*Field Blank*	*Field Blank*	*Field Blank*
Sample Identification		*GW-17360-061003-BW-009*	*GW-17360-061003-BW-011*	*GW-17360-061003-BW-010*	*GW-17360-061303-BW-023*	*GW-17360-061703-BW-032*	*GW-17360-061703-BW-038*
Sample Depth (ft BGS)		*54*	*62*				
Sample Date		*6/10/2003*	*6/10/2003*	*6/10/2003*	*6/13/2003*	*6/17/2003*	*6/17/2003*
Sample Type	*Units*						
TCL VOC							
1,1,1-Trichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2,2-Tetrachloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene Dibromide)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl Ethyl Ketone)	ug/L	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)
2-Hexanone	ug/L	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ug/L	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
Acetone	ug/L	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)
Benzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromodichloromethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	7.3
Bromoform	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.0
Bromomethane (Methyl Bromide)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Carbon disulfide	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Carbon tetrachloride	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	9.5
Chloromethane (Methyl Chloride)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cyclohexane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	3.6
Dichlorodifluoromethane (CFC-12)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Ethylbenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropylbenzene	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methyl acetate	ug/L	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Methyl cyclohexane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl Tert Butyl Ether	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Methylene chloride	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Styrene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Tetrachloroethene	ug/L	1.2	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Toluene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	ug/L	3.6	1.6	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichlorofluoromethane (CFC-11)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Xylene (total)	ug/L	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)

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MEMORANDUM

TO: Gary Klepper

REF. NO.: 17360-09

FROM: Kathy Shaw/tl/30/Det

DATE: December 15, 2003

RE: Data Quality Assessment and Validation – Expanded Deliverables
Quarterly Groundwater Monitoring
GM Grand Rapids Site – Grand Rapids, Michigan

The following details a quality assessment and validation of the analytical data resulting from the September and October 2003, collection of 28 groundwater, and six (6) quality control samples from the GM Grand Rapids Site in Grand Rapids, Michigan. The sample summary detailing sample identification, sample location, quality control samples, and analytical parameters is presented in Table 1. Sample analysis was completed at Severn Trent Laboratories, Inc. in North Canton, Ohio (STL) in accordance with the methodologies presented in Table 2. The quality control criteria used to assess the data were established by the methods and the quality assurance project plan (QAPP).[1]

Sample Quantitation

The laboratory reported detected concentrations of volatile organic compounds (VOC), and semi-volatile organic compounds (SVOC), below the laboratory's report limit (RL) but above the laboratory's method detection limit (MDL). The laboratory flagged these sample concentrations with a "J". These concentrations should be qualified as estimated (J) values unless otherwise qualified in this memorandum.

Holding Time Period and Sample Analysis

The holding time periods are presented in Table 3. The samples, as indicated by the sample collection, extraction and analysis dates on the chain-of-custody forms and analytical reports provided by STL, were prepared and analyzed within the required holding time periods.

Gas Chromatography/Mass Spectrometer Mass Calibration (Instrument Performance Check)

To ensure adequate mass resolution, identification, and to some degree, sensitivity; the performance of each gas chromatography/mass spectrometry (GC/MS) instrument used for volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) analyses was checked at the beginning of each 12-hour period using bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The results of all instrument performance checks were within the acceptance criteria, indicating acceptable instrument performance.

[1] Application of quality assurance criteria was consistent with "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-99/008, October 1999.

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Initial Calibration

Initial calibration data were used to demonstrate that each instrument was capable of generating acceptable quantitative data. Initial calibration criteria for organic analyses performed by GC/MS required that all compounds meet a method-specific minimum mean relative response factor (RRF) and a maximum percent relative standard deviation (RSD) or a minimum correlation coefficient. The initial calibration data for organic analyses by GC/MS were within the acceptance criteria indicating the instruments were capable of acceptable performance prior to analysis.

Continuing Calibration – Organics

To ensure that each instrument was capable of producing acceptable quantitative data over the analysis period, routine checks upon the instrument calibrations were performed. Continuing calibration acceptance criteria for organic analyses by GC/MS require that compounds meet a method-specific minimum RRF. Organic analyses require a maximum percent difference (D) between the mean initial calibration RRF and the continuing calibration RRF for GC/MS analyses. A maximum percent drift between the known concentration and the calculated concentration based on the calibration curve is required when used. Table 4 presents the samples, which should be qualified due to violation of continuing calibration criteria. The remaining continuing calibration data was found to be within the acceptance criteria.

Method Blank Samples

Contamination of samples contributed by laboratory conditions or procedures was monitored by concurrent preparation and analysis of method blank samples. The samples presented in Table 5 should be qualified due to laboratory contamination. The laboratory flagged these concentrations with a "B", which may be disregarded. The remaining method blank samples were reported to be free from detectable levels of target analytes, indicating no additional laboratory-attributable contamination occurred.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Percent Recoveries

To assess the long term accuracy and precision of the analytical methods on various matrices, MS/MSD percent recoveries and the relative percent difference (RPD) of the concentrations were determined. The samples selected for MS/MSD analysis are identified in Table 1. The samples that should be qualified due to violation of MS/MSD percent recovery criteria are outlined in Table 6. The MS/MSD percent recoveries and associate RPDs acceptance criteria were met for the remaining analyses.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analyses serve as a monitor of the overall performance in all steps of the sample analysis. The LCS percent recoveries were within the laboratory control limits, indicating that an acceptable level of overall performance was achieved.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for organic analyses was monitored by assessing the results of surrogate compound percent recoveries.

Surrogate Compound Percent Recoveries (Surrogate Recoveries) Cond't

The SVOC surrogate recovery could not be measured in a sample due to dilutions required to successfully analyze the sample. No qualification was required. The surrogate recovery acceptance criteria was met for the remaining samples.

Internal Standard Summaries

Overall instrument stability and performance for VOC and SVOC analyses was monitored using internal standard peak area and retention time (RT) data. The internal standard peak areas of the samples are required to fall within the method-specific percent recovery of their respective internal standard areas, in the continuing calibration standard. The RT for each internal standard in the samples is also required to be within method-specific time intervals of their respective internal standard RT in the continuing calibration standard. The VOC and SVOC internal standard and retention time data were within the acceptance criteria.

Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to identification criteria established by the methods. The organic compounds reported adhered to the specified identification criteria.

Compound Quantitation

The reported quantitation results and detection limits were checked to ensure results reported were accurate. No discrepancies were found between the raw data and the sample results reported by the laboratory.

Field Quality Assurance/Quality Control

The field quality assurance/quality control consisted of two (2) field duplicate sample sets and four (4) trip blank samples.

Overall precision for the sampling event and laboratory procedures was monitored using the results of the field duplicate sample sets. Table 7 summarizes the results of the detected analytes in the field duplicate sample sets. The data indicate that an adequate level of precision was achieved for the sampling event. The remainder of the data indicates that an adequate level of precision was achieved for the sampling event.

To monitor potential cross-contamination of VOC during aqueous sample transportation and storage, a trip blank was submitted to the laboratory for VOC analysis with each shipping cooler containing multiple samples. The samples that should be qualified due to trip blank contamination are summarized in Table 8. No additional target analytes were reported as detected in the trip blank samples.

System Performance

System performance between various quality control checks was evaluated to monitor for changes that may have caused the degradation of data quality. No technical problems or chromatographic anomalies were observed which require qualification of the data.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted.

TABLE 1

SAMPLE SUMMARY
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHGAN

Sample Identification	*Sample Location*	*Matrix*	*QC Sample*	*Parameters*
GW-17360-093003-JB-070	87-9	Water		TCL VOC
GW-17360-093003-JB-071	MW-7-03	Water		TCL VOC
GW-17360-093003-JB-072	PWDISCH	Water		TCL VOC
GW-17360-093003-JB-073	86-3	Water	MS/MSD	TCL VOC
GW-17360-093003-JB-074	87-8	Water		TCL VOC
GW-17360-100103-JB-075	87-11	Water		TCL VOC
GW-17360-100103-JB-076	87-10	Water		TCL VOC
GW-17360-100103-JB-077	87-13	Water		TCL VOC
GW-17360-100103-JB-078	87-13	Water	Duplicate (077)	TCL VOC
GW-17360-100103-JB-079	93-1	Water		TCL VOC
GW-17360-100103-JB-080	C-1	Water		TCL VOC
GW-17360-100103-JB-081	C-2	Water		TCL VOC
GW-17360-100103-JB-082	C-3	Water		TCL VOC
Trip Blank		Water	Trip Blank	TCL VOC
GW-17360-100203-JB-083	87-1	Water		TCL VOC
GW-17360-100203-JB-084	87-5	Water		TCL VOC
GW-17360-100203-JB-085	87-2	Water		TCL VOC
GW-17360-100203-JB-086	85-7	Water		TCL VOC
GW-17360-100203-JB-087	85-7	Water	Duplicate (086)	TCL VOC
GW-17360-100203-JB-088	MW-6-03	Water		TCL VOC
Trip Blank	--	Water	Trip Blank	TCL VOC
GW-17360-100303-JB-091	MW1-03	Water		TCL VOC
GW-17360-100303-JB-092	MW-2-03	Water		TCL VOC
GW-17360-100303-JB-093	MW-3-03	Water		TCL VOC
Trip Blank		Water	Trip Blank	TCL VOC
GW-17360-100703-JB-094	87-4	Water		TCL VOC
GW-17360-100703-JB-095	86-2	Water		TCL VOC
GW-17360-100703-JB-096	85-5B	Water		TCL VOC, TCL SVOC
GW-17360-100703-JB-097	85-3	Water		TCL VOC, TCL SVOC
GW-17360-100703-JB-098	86-1	Water		TCL VOC, TCL SVOC
GW-17360-100703-JB-099	85-6	Water		TCL VOC, TCL SVOC
GW-17360-100903-JB-089	MW-4-03	Water	MS/MSD	TCL VOC
GW-17360-100903-JB-090	MW-5-03	Water		TCL VOC
Trip Blank	--	Water	Trip Blank	TCL VOC

TCL - Target Compound List
VOC - Volatile Organic Compounds
SVOC - Semi-Volatile Organic Compounds
QC - Quality Control
MS/MSD - Matrix Spike /Matrix Spike Duplicate

TABLE 2

SUMMARY OF ANALYTICAL METHODS
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Parameter	*Method*
TCL VOC	SW-846 8260B [1]
TCL SVOC	SW-846 8270C

[1] SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition, and Promulgated updates, November 1986

TABLE 3

HOLDING TIME PERIODS
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Holding Time Period*
TCL VOC	- 14 days from sample collection to completion of analysis
TCL SVOC	- 7 days from sample collection to extraction - 40 days from extraction to completion of analysis

TABLE 4

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO
VIOLATION OF CONTINUING CALIBRATION ACCEPTANCE CRITERIA
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Parameters*	*Associated Samples*	*Qualifiers* [1]
TCL VOC	1,2,4-Trichlorobenzene	GW-17360-100703-JB-094	UJ
		GW-17360-100703-JB-095	
		GW-17360-100703-JB-096	
		GW-17360-100703-JB-097	
		GW-17360-100703-JB-098	
		GW-17360-100703-JB-099	
TCL VOC	2-Butanone	GW-17360-093003-JB-070	J/UJ
		GW-17360-093003-JB-071	
		GW-17360-093003-JB-072	
		GW-17360-093003-JB-073	
		GW-17360-093003-JB-074	
		GW-17360-100103-JB-075	
		GW-17360-100103-JB-077	
		GW-17360-100103-JB-078	
		GW-17360-100103-JB-079	
		GW-17360-100103-JB-080	
		GW-17360-100103-JB-081	
		GW-17360-100103-JB-082	
		GW-17360-100203-JB-083	
		GW-17360-100203-JB-084	
		GW-17360-100203-JB-085	
		GW-17360-100203-JB-086	
		GW-17360-100203-JB-087	
		GW-17360-100203-JB-088	
		GW-17360-100703-JB-094	
		GW-17360-100703-JB-095	
		GW-17360-100703-JB-096	
		GW-17360-100703-JB-097	
		GW-17360-100703-JB-098	
		GW-17360-100703-JB-099	
		Trip Blank	
		Trip Blank	
TCL VOC	2-Hexanone	GW-17360-093003-JB-071	UJ
		GW-17360-093003-JB-072	
		GW-17360-093003-JB-073	
		GW-17360-093003-JB-074	
		GW-17360-100103-JB-075	
		GW-17360-100103-JB-077	
		GW-17360-100103-JB-078	
		GW-17360-100103-JB-079	
		GW-17360-100103-JB-080	
		GW-17360-100103-JB-081	

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO
VIOLATION OF CONTINUING CALIBRATION ACCEPTANCE CRITERIA
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Parameters*	*Associated Samples*	*Qualifiers* [1]
TCL VOC	Acetone	GW-17360-100203-JB-085 GW-17360-100203-JB-086 GW-17360-100203-JB-087 GW-17360-100203-JB-088 GW-17360-100703-JB-094 GW-17360-100703-JB-095 GW-17360-100703-JB-096 GW-17360-100703-JB-097 GW-17360-100703-JB-098 GW-17360-100703-JB-099 Trip Blank Trip Blank	J/UJ
TCL VOC	Bromomethane	GW-17360-100303-JB-091 GW-17360-100303-JB-092 GW-17360-100303-JB-093 Trip Blank	UJ
TCL VOC	Chloroethane	GW-17360-100103-JB-076 GW-17360-100903-JB-089 GW-17360-100903-JB-090 Trip Blank	UJ
TCL VOC	Chloromethane	GW-17360-100103-JB-076 GW-17360-100903-JB-089 GW-17360-100903-JB-090 Trip Blank	UJ
TCL VOC	Dichlorodifluoromethane	GW-17360-100203-JB-083 GW-17360-100203-JB-084 GW-17360-100203-JB-085 GW-17360-100203-JB-086 GW-17360-100203-JB-087 GW-17360-100203-JB-088 GW-17360-100303-JB-091 GW-17360-100303-JB-092 GW-17360-100303-JB-093 GW-17360-100903-JB-089 GW-17360-100903-JB-090 Trip Blank Trip Blank Trip Blank	UJ

TABLE 4

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO
VIOLATION OF CONTINUING CALIBRATION ACCEPTANCE CRITERIA
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Parameters*	*Associated Samples*	*Qualifiers* [1]
TCL VOC	Methyl acetate	GW-17360-100203-JB-083 GW-17360-100203-JB-084 GW-17360-100203-JB-085 GW-17360-100203-JB-086 GW-17360-100203-JB-087 GW-17360-100203-JB-088 Trip Blank	UJ
TCL VOC	Trichlorofluoromethane	GW-17360-093003-JB-070 GW-17360-093003-JB-071 GW-17360-093003-JB-072 GW-17360-093003-JB-073 GW-17360-100303-JB-091 GW-17360-100303-JB-092 GW-17360-100303-JB-093 Trip Blank	UJ
TCL SVOC	2,4-Dinitrophenol	GW-17360-100703-JB-096 GW-17360-100703-JB-097 GW-17360-100703-JB-098 GW-17360-100703-JB-099	UJ
TCL SVOC	4,6-Dinitro-2-methylphenol	GW-17360-100703-JB-096 GW-17360-100703-JB-097 GW-17360-100703-JB-098 GW-17360-100703-JB-099	UJ

[1] The parameter results should be qualified for the listed samples as:

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample (for detected parameters).

UJ – The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample (non-detected parameters).

TABLE 5

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO
METHOD BLANK CONTAMINATION
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Analyte*	*Associated Samples*	*Qualified Sample Result*[1]
TCL VOC (µg/L)	1,2,4-Trichlorobenzene	GW-17360-100203-JB-083	ND (17) U
		GW-17360-100203-JB-084	ND (12) U
		GW-17360-100903-JB-090	ND (5.0) U
		GW-17360-093003-JB-071	ND (5.0) U

[1] The analyte should be qualified for the listed samples as:

ND ( ) U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit in parenthesis.

TABLE 6

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO VIOLATION OF
ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE ACCEPTANCE CRITERIA
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Parameters*	*Associated Samples*	*Qualifiers* [1]
TCL VOC	Chlorobenzene	GW-17360-100903-JB-089	UJ
	Trichloroethene		J

[1] The parameter results should be qualified for the listed samples as:

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample (for detected parameters).

UJ – The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample (non-detected parameters).

TABLE 7

SUMMARY OF DETECTED ANALYTES IN FIELD DUPLICATE SAMPLE SETS
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analyte	*Investigative Sample*	*Duplicate Sample*	*RPD* [1]
	GW-17360-100103-JB-077	GW-17360-100103-JB-078	
TCL VOC (µg/L)			
1,1,1-Trichloroethane	0.20 J [2]	0.21 J	4.9
Chloroform	ND(1.0) [3]	0.23 J	NC [4]
Trichloroethene	2.0	1.8	11
	GW-17360-100203-JB-086	GW-17360-100203-JB-087	
TCL VOC (µg/L)			
Bromodichloromethane	0.39 J	0.40 J	2.5
Chloroform	2.7	2.6	3.8
Methyl Tert Butyl Ether	0.21 J	0.23 J	9.1
Trichloroethene	0.93 J	0.90 J	3.3

[1] RPD - Relative Percent Difference
[2] J - The associated numerical value is an estimated quantity.
[3] ND( ) - Not detected at the quantitation limit stated in parentheses.
[4] NC - Not calculable.

TABLE 8

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO
TRIP BLANK
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Parameters*	*Associated Samples*	*Qualified Sample Results* [1]
TCL VOC	Toluene	GW-17360-100303-JB-091	ND (3.3) U
		GW-17360-100303-JB-092	ND (1.0) U
		GW-17360-100303-JB-093	ND (1.0) U

[1] The analyte should be qualifed for the listed samples as:

ND ( ) U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit in parenthesis.

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MEMORANDUM

TO: Gary Klepper

REF. NO.: 17360-09

FROM: Kathy Shaw/tl/32/Det

DATE: January 30, 2004

RE: Data Quality Assessment and Validation – Expanded Deliverables
Quarterly Groundwater Monitoring
GM Grand Rapids Site – Grand Rapids, Michigan

The following details a quality assessment and validation of the analytical data resulting from the December 17 and 18, 2003, collection of 28 groundwater samples, and two (2) quality control samples from the GMGrand Rapids Site in Grand Rapids, Michigan. The sample summary detailing sample identification, sample location, quality control samples, and analytical parameters is presented in Table 1. Sample analysis was completed at Severn Trent Laboratories in North Canton, Ohio (STL) in accordance with the methodologies presented in Table 2. The quality control criteria used to assess the data were established by the methods and the quality assurance project plan (QAPP).[1]

Sample Quantitation

The laboratory reported detected concentrations of volatile organic compounds (VOC), and semi-volatile organic compounds (SVOC), below the laboratory's report limit (RL) but above the laboratory's method detection limit (MDL). The laboratory flagged these sample concentrations with a "J". These concentrations should be qualified as estimated (J) values unless otherwise qualified in this memorandum.

Holding Time Period and Sample Analysis

The holding time periods are presented in Table 3. Samples that violated the holding time period are detailed in Table 4. The remaining samples, as indicated by the sample collection, extraction and analysis dates on the chain of custody forms and analytical reports provided by STL, were prepared and analyzed within the required holding time periods.

Gas Chromatography/Mass Spectrometer Mass Calibration (Instrument Performance Check)

To ensure adequate mass resolution, identification, and to some degree, sensitivity; the performance of each gas chromatography/mass spectrometry (GC/MS) instrument used for VOC and SVOC analyses was checked at the beginning of each 12-hour period using bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The results of all instrument performance checks were within the acceptance criteria, indicating acceptable instrument performance.

[1] Application of quality assurance criteria was consistent with "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-99/008, October 1999 and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Review", EPA-540/R-94/013, February 1994.

REGISTERED COMPANY ISO 9001 ENGINEERING DESIGN

Initial Calibration

Initial calibration data were used to demonstrate that each instrument was capable of generating acceptable quantitative data. Initial calibration criteria for organic analyses performed by GC/MS required that all compounds meet a minimum mean relative response factor (RRF) and a maximum percent relative standard deviation (RSD) or a minimum correlation coefficient when a calibration curve is used. Initial calibration criteria for organic analyses performed by gas chromatography (GC) require that all compounds meet a maximum percent RSD. The initial calibration data for organic analyses by GC/MS and GC were within the acceptance criteria indicating the instruments were capable of acceptable performance prior to analysis.

Continuing Calibration

To ensure that each instrument was capable of producing acceptable quantitative data over the analysis period, routine checks upon the instrument calibrations were performed. Continuing calibration acceptance criteria for organic analyses by GC/MS require that compounds meet a minimum RRF. Organic analyses require a maximum percent difference (D) between the mean initial calibration RRF and the continuing calibration RRF for GC/MS analyses; or the initial calibration factor and the continuing calibration factor for GC analyses. A maximum percent drift between the known concentration and the calculated concentration based on the calibration curve is required when used.

Table 5 presents the samples, which should be qualified due to violation of continuing calibration criteria. The remaining continuing calibration data was found to be within the acceptance criteria.

Method Blank Samples

Contamination of samples contributed by laboratory conditions or procedures was monitored by concurrent preparation and analysis of method blank samples. The samples presented in Table 6 should be qualified due to laboratory contamination. The laboratory flagged these concentrations with a "B", which may be disregarded. The remaining method blank samples were reported to be free from detectable levels of target analytes, indicating no additional laboratory-attributable contamination occurred.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Percent Recoveries

To assess the long term accuracy and precision of the analytical methods on various matrices MS/MSD percent recoveries and the relative percent difference (RPD) of the concentrations were determined. The samples selected for MS/MSD analysis are identified in Table 1. The MS/MSD percent recoveries and associate RPDs acceptance criteria were met for all analyses.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analyses serve as a monitor of the overall performance in all steps of the sample analysis. The LCS percent recoveries were within the laboratory control limits, indicating that an acceptable level of overall performance was achieved.

Laboratory precision was verified by the relative percent difference (RPD) of the LCS/LCSD when a MS/MSD was not analyzed. The RPDs were within the laboratory control limits, indicating that an acceptable level of overall laboratory precision was achieved.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for organic analyses was monitored by assessing the results of surrogate compound percent recoveries. The sample analyses that violated surrogate acceptance criteria are identified and qualified in Table 7.

Internal Standard Summaries

Overall instrument stability and performance for VOC and SVOC analyses was monitored using internal standard peak area and retention time (RT) data. The internal standard peak areas of the samples are required to fall within the method-specific percent recovery of their respective continuing calibration internal standard areas, in the continuing calibration standard. The RT for each internal standard in the samples is also required to be within method-specific time intervals of their respective internal standard RT in the continuing calibration standard. The VOC and SVOC internal standard and retention time data were within the acceptance criteria.

Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to identification criteria established by the methods. The organic compounds reported adhered to the specified identification criteria.

Compound Quantitation

The reported quantitation results and detection limits were checked to ensure results reported were accurate. No discrepancies were found between the raw data and the sample results reported by the laboratory.

Field Quality Assurance/Quality Control

The field quality assurance/quality control consisted of one (1) field duplicate sample set and one (1) trip blank sample.

Overall precision for the sampling event and laboratory procedures was monitored using the results of the field duplicate sample set.

1. Table 8 summarizes the results of the detected analytes in the field duplicate sample set.

2. The data indicate that an adequate level of precision was achieved for the sampling event.

3. The high RPD value for _____ analysis could be attributed to the variability of soil samples and the natural heterogeneity of soil.

4. The RPD between the investigative sample and the duplicate sample collected for several analytes is greater than 100 percent, which represents a significant difference. Although the data does not require qualification, the data should be used with caution.

The remainder of the data indicates that an adequate level of precision was achieved for the sampling event.

To monitor potential cross-contamination of VOC during aqueous sample transportation and storage, a trip blank was submitted to the laboratory for VOC analysis with each shipping cooler containing multiple samples. The samples that should be qualified due to trip blank contamination are summarized in Table 9. No additional target analytes were reported as detected in the trip blank sample.

System Performance

System performance between various quality control checks was evaluated to monitor for changes that may have caused the degradation of data quality. No technical problems or chromatographic anomalies were observed which require qualification of the data.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted.

TABLE 1

SAMPLE SUMMARY
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Sample Identification	*Sample Location*	*Matrix*	*QC Sample*	*Parameters*
GW-17360-121703-JB-091	87-4	Water		TCL VOC
GW-17360-121703-JB-092	87-5	Water		TCL VOC
GW-17360-121703-JB-093	87-1	Water		TCL VOC
GW-17360-121703-JB-094	86-2	Water		TCL VOC
GW-17360-121703-JB-095	87-2	Water		TCL VOC
GW-17360-121703-JB-096	85-3	Water		TCL SVOC
GW-17360-121703-JB-097	87-2	Water	Duplicate (095)	TCL VOC
GW-17360-121703-JB-098	85-5B	Water		TCL SVOC
GW-17360-121703-JB-099	86-1	Water		TCL SVOC
GW-17360-121703-JB-100	85-7	Water		TCL VOC
GW-17360-121703-JB-101	85-6	Water		TCL SVOC
GW-17360-121703-JB-102	MW7-03	Water		TCL VOC
GW-17360-121803-JB-103	87-9	Water		TCL VOC
GW-17360-121803-JB-104	86-3	Water		TCL VOC
GW-17360-121803-JB-105	87-8	Water		TCL VOC
GW-17360-121803-JB-106	MW4-03	Water	MS/MSD	TCL VOC
GW-17360-121803-JB-107	C-3	Water		TCL VOC
GW-17360-121803-JB-108	C-1	Water		TCL VOC
GW-17360-121803-JB-109	C-2	Water		TCL VOC
GW-17360-121803-JB-110	PWDISCH	Water		TCL VOC
GW-17360-121803-JB-111	MW6-03	Water		TCL VOC
GW-17360-121803-JB-112	87-13	Water		TCL VOC
GW-17360-121803-JB-113	87-11	Water		TCL VOC
GW-17360-121803-JB-114	87-10	Water		TCL VOC
GW-17360-121803-JB-115	MW5-03	Water		TCL VOC
GW-17360-121803-JB-116	93-1	Water		TCL VOC
GW-17360-121803-JB-117	MW2-03	Water		TCL VOC
GW-17360-121803-JB-118	MW1-03	Water		TCL VOC
GW-17360-121803-JB-119	MW3-03	Water		TCL VOC
TB-17360-121803-JB-120	--	Water		TCL VOC

TCL - Target Compound List
VOC - Volatile Organic Compounds
SVOC - Semi-Volatile Organic Compounds
QC - Quality Control
MS/MSD - Matrix Spike /Matrix Spike Duplicate

TABLE 2

SUMMARY OF ANALYTICAL METHODS
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Parameter	*Method*
TCL VOC	SW-846 8260B [1]
TCL SVOC	SW-846 8270C

[1] SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition, and Promulgated updates, November 1986

TABLE 3

HOLDING TIME PERIODS
GM GRAND RAPIDS SITE
RAPIDS, MICHIGAN

Analysis	*Holding Time Period*
TCL VOC	- 14 days from sample collection to completion of analysis
TCL SVOC	- 7 days from sample collection to extraction - 40 days from extraction to completion of analysis

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MEMORANDUM

TO: Gary Klepper REF. NO.: 17360-09

FROM: Kathy Shaw/tl/33/Det DATE: February 3, 2004

RE: Data Quality Assessment and Validation – Expanded Deliverables
Quarterly Groundwater Monitoring
GM Grand Rapids Site – Grand Rapids, Michigan

The following details a quality assessment and validation of the analytical data resulting from the December 17 and 18, 2003, collection of 28 groundwater samples, and two (2) quality control samples from the GM Grand Rapids Site in Grand Rapids, Michigan. The sample summary detailing sample identification, sample location, quality control samples, and analytical parameters is presented in Table 1. Sample analysis was completed at Severn Trent Laboratories in North Canton, Ohio (STL) in accordance with the methodologies presented in Table 2. The quality control criteria used to assess the data were established by the methods and the quality assurance project plan (QAPP).[1]

Sample Quantitation

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The holding time periods are presented in Table 3. The samples, as indicated by the sample collection, extraction and analysis dates on the chain of custody forms and analytical reports provided by STL, were prepared and analyzed within the required holding time periods.

Gas Chromatography/Mass Spectrometer Mass Calibration (Instrument Performance Check)

To ensure adequate mass resolution, identification, and to some degree, sensitivity; the performance of each gas chromatography/mass spectrometry (GC/MS) instrument used for VOC and SVOC analyses was checked at the beginning of each 12-hour period using bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The results of all instrument performance checks were within the acceptance criteria, indicating acceptable instrument performance.

[1] Application of quality assurance criteria was consistent with "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-99/008, October 1999.

Initial Calibration

Initial calibration data were used to demonstrate that each instrument was capable of generating acceptable quantitative data. Initial calibration criteria for organic analyses performed by GC/MS required that all compounds meet a minimum mean relative response factor (RRF) and a maximum percent relative standard deviation (RSD) or a minimum correlation coefficient when a calibration curve is used. Initial calibration criteria for organic analyses performed by gas chromatography (GC) require that all compounds meet a maximum percent RSD. The initial calibration data for organic analyses by GC/MS and GC were within the acceptance criteria indicating the instruments were capable of acceptable performance prior to analysis.

Continuing Calibration

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Matrix Spike/Matrix Spike Duplicate (MS/MSD) Percent Recoveries

To assess the long term accuracy and precision of the analytical methods on various matrices MS/MSD percent recoveries and the relative percent difference (RPD) of the concentrations were determined. The samples selected for MS/MSD analysis are identified in Table 1. The MS/MSD percent recoveries and associate RPDs acceptance criteria were met for all analyses.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analyses serve as a monitor of the overall performance in all steps of the sample analysis. The LCS percent recoveries were within the laboratory control limits, indicating that an acceptable level of overall performance was achieved.

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Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to identification criteria established by the methods. The organic compounds reported adhered to the specified identification criteria.

Compound Quantitation

The reported quantitation results and detection limits were checked to ensure results reported were accurate. No discrepancies were found between the raw data and the sample results reported by the laboratory.

Field Quality Assurance/Quality Control

The field quality assurance/quality control consisted of one (1) field duplicate sample set and one (1) trip blank sample.

Overall precision for the sampling event and laboratory procedures was monitored using the results of the field duplicate sample set. Table 7 summarizes the results of the detected analytes in the field duplicate sample set. The data indicate that an adequate level of precision was achieved for the sampling event.

To monitor potential cross-contamination of VOC during aqueous sample transportation and storage, a trip blank was submitted to the laboratory for VOC analysis with each shipping cooler containing multiple samples. The samples that should be qualified due to trip blank contamination are summarized in Table 8. No additional target analytes were reported as detected in the trip blank sample.

System Performance

System performance between various quality control checks was evaluated to monitor for changes that may have caused the degradation of data quality. No technical problems or chromatographic anomalies were observed which require qualification of the data.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted.

TABLE 1

SAMPLE SUMMARY
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Sample Identification	*Sample Location*	*Matrix*	*QC Sample*	*Parameters*
GW-17360-121703-JB-091	87-4	Water		TCL VOC
GW-17360-121703-JB-092	87-5	Water		TCL VOC
GW-17360-121703-JB-093	87-1	Water		TCL VOC
GW-17360-121703-JB-094	86-2	Water		TCL VOC
GW-17360-121703-JB-095	87-2	Water		TCL VOC
GW-17360-121703-JB-096	85-3	Water		TCL SVOC
GW-17360-121703-JB-097	87-2	Water	Duplicate (095)	TCL VOC
GW-17360-121703-JB-098	85-5B	Water		TCL SVOC
GW-17360-121703-JB-099	86-1	Water		TCL SVOC
GW-17360-121703-JB-100	85-7	Water		TCL VOC
GW-17360-121703-JB-101	85-6	Water		TCL SVOC
GW-17360-121703-JB-102	MW7-03	Water		TCL VOC
GW-17360-121803-JB-103	87-9	Water		TCL VOC
GW-17360-121803-JB-104	86-3	Water		TCL VOC
GW-17360-121803-JB-105	87-8	Water		TCL VOC
GW-17360-121803-JB-106	MW4-03	Water	MS/MSD	TCL VOC
GW-17360-121803-JB-107	C-3	Water		TCL VOC
GW-17360-121803-JB-108	C-1	Water		TCL VOC
GW-17360-121803-JB-109	C-2	Water		TCL VOC
GW-17360-121803-JB-110	PWDISCH	Water		TCL VOC
GW-17360-121803-JB-111	MW6-03	Water		TCL VOC
GW-17360-121803-JB-112	87-13	Water		TCL VOC
GW-17360-121803-JB-113	87-11	Water		TCL VOC
GW-17360-121803-JB-114	87-10	Water		TCL VOC
GW-17360-121803-JB-115	MW5-03	Water		TCL VOC
GW-17360-121803-JB-116	93-1	Water		TCL VOC
GW-17360-121803-JB-117	MW2-03	Water		TCL VOC
GW-17360-121803-JB-118	MW1-03	Water		TCL VOC
GW-17360-121803-JB-119	MW3-03	Water		TCL VOC
TB-17360-121803-JB-120	--	Water		TCL VOC

TCL - Target Compound List
VOC - Volatile Organic Compounds
SVOC - Semi-Volatile Organic Compounds
QC - Quality Control
MS/MSD - Matrix Spike /Matrix Spike Duplicate

TABLE 2

SUMMARY OF ANALYTICAL METHODS
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Parameter	*Method*
TCL VOC	SW-846 8260B [1]
TCL SVOC	SW-846 8270C

[1] SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition, and Promulgated updates, November 1986

TABLE 3

HOLDING TIME PERIODS
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Holding Time Period*
TCL VOC	- 14 days from sample collection to completion of analysis
TCL SVOC	- 7 days from sample collection to extraction - 40 days from extraction to completion of analysis

TABLE 4

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO
VIOLATION OF CONTINUING CALIBRATION ACCEPTANCE CRITERIA
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Parameters*	*Associated Samples*	*Qualifiers*[1]
TCL VOC	Methyl tert-butyl Ether	GW-17360-121703-JB-091	J/UJ
	Acetone	GW-17360-121703-JB-092	UJ
		GW-17360-121703-JB-093	
		GW-17360-121703-JB-094	
		GW-17360-121703-JB-095	
		GW-17360-121703-JB-097	
		GW-17360-121703-JB-100	
		GW-17360-121703-JB-102	
		GW-17360-121803-JB-103	
		GW-17360-121803-JB-104	
		GW-17360-121803-JB-115	
		GW-17360-121803-JB-116	
TCL VOC	Bromoform	GW-17360-121803-JB-105	UJ
		GW-17360-121803-JB-106	
		GW-17360-121803-JB-107	
		GW-17360-121803-JB-108	
		GW-17360-121803-JB-109	
		GW-17360-121803-JB-110	
		GW-17360-121803-JB-111	
		GW-17360-121803-JB-112	
		GW-17360-121803-JB-113	
		GW-17360-121803-JB-114	
		GW-17360-121803-JB-117	
		GW-17360-121803-JB-118	
TCL VOC	Acetone	GW-17360-121803-JB-119	UJ
	Bromoform	TB-17360-121803-JB-120	UJ
	2-Butanone		J/UJ
TCL SVOC	4-Nitrophenol	GW-17360-121703-JB-101	UJ

[1] The parameter results should be qualified for the listed samples as:

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample (for detected parameters).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analytes in the sample (for non-detected parameters).

TABLE 5

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO
METHOD BLANK CONTAMINATION
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Analyte*	*Associated Samples*	*Qualified Sample Result*[1]
TCL VOC (µg/L)	Acetone	GW-17360-121803-JB-103	ND (25) U
		GW-17360-121703-JB-092	ND (83) U
		GW-17360-121703-JB-093	ND (62) U
		GW-17360-121703-JB-094	ND (25) U
		GW-17360-121703-JB-095	ND (25) U
		GW-17360-121803-JB-104	ND (25) U
		GW-17360-121803-JB-119	ND (25) U
		TB-17360-121803-JB-120	ND (25) U
TCL SVOC (µg/L)	Caprolactam	GW-17360-121703-JB-098	ND (40) U
		GW-17360-121703-JB-099	ND (10) U

[1] The analyte should be qualified for the listed samples as:

ND ( ) U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit in parenthesis.

TABLE 5

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO
METHOD BLANK CONTAMINATION
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Analyte*	*Associated Samples*	*Qualified Sample Result*[1]
TCL VOC (µg/L)	Acetone	GW-17360-121803-JB-103	ND (25) U
		GW-17360-121703-JB-092	ND (83) U
		GW-17360-121703-JB-093	ND (62) U
		GW-17360-121703-JB-094	ND (25) U
		GW-17360-121703-JB-095	ND (25) U
		GW-17360-121803-JB-104	ND (25) U
		GW-17360-121803-JB-119	ND (25) U
		TB-17360-121803-JB-120	ND (25) U
TCL SVOC (µg/L)	Caprolactam	GW-17360-121703-JB-098	ND (40) U
		GW-17360-121703-JB-099	ND (10) U

[1] The analyte should be qualified for the listed samples as:

ND ( ) U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit in parenthesis.

TABLE 6

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO
VIOLATION OF SURROGATE PERCENT RECOVERY CRITERIA
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Parameter*	*Associated Samples*	*Qualifiers* [1]
TCL VOC	Trichloroethene	GW-17360-121703-JB-100	J
	Chloroform		J
	Bromodichloromethane		J
TCL VOC	1,1,1-Trichloroethane	GW-17360-121803-JB-116	J
	cis-1,2-Dichloroethene		J
	Trichloroethene		J
	Tetrachloroethene		J
TCL VOC	All Compounds	GW-17360-121803-JB-103	J/UJ

[1] The sample parameter results should be qualified as:

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample (for detected parameters).

UJ – The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample (non-detected parameters).

TABLE 7

SUMMARY OF DETECTED ANALYTES IN FIELD DUPLICATE SAMPLE SET
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Parameter	*Analyte*	*Investigative Sample*	*Duplicate Sample*	*RPD* [1]
		GW-17360-121703-JB-095	GW-17360-121703-JB-097	
TCL VOC (µg/L)				
	cis-1,2-Dichloroethene	23	23	0
	Methyl tert-butyl Ether	0.62 J	0.53 J	16
	trans-1,2-Dichloroethene	3.1	2.9	6.7
	Trichloroethene	35	33	5.9

[1] RPD - Relative Percent Difference
[2] J - The associated numerical value is an estimated quantity.

TABLE 8

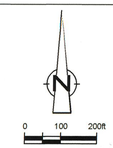
SUMMARY OF QUALIFIED SAMPLE DATA DUE TO
TRIP BLANK
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Analysis	*Parameters*	*Associated Samples*	*Qualified Sample Results* [1]
TCL VOC (µg/L)	2-Butanone	GW-17360-121803-JB-105	ND (25) U
		GW-17360-121803-JB-107	ND (25) U
		GW-17360-121803-JB-108	ND (25) U
		GW-17360-121803-JB-110	ND (25) U
		GW-17360-121803-JB-119	ND (25) U

[1] The analyte should be qualifed for the listed samples as:

ND ( ) U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit in parenthesis.

NO	Revision	Date	Initial



LEGEND

- MONITORING WELL LOCATION
- PURGE WELL LOCATION
- SOIL BORING LOCATION
- DESTROYED/REMOVED MONITORING WELL LOCATION
- CULVERT LOCATION
- AIR PURGE WELL
- APPROXIMATE LOCATION OF DEWATERING WELLS
- APPROXIMATE SITE BOUNDARY
- FENCE
- RAILROAD
- COLE DRAIN

SOURCE: EDI ENGINEERING & SCIENCE, JUNE 1987 AND JUNE 1988 AND EARTH TECH, SEPTEMBER 2001.

83 EXCEEDS MICHIGAN PART 201 RESIDENTIAL DRINKING WATER CRITERIA

TCL VOC	Criteria (ug/L)
1,1,1-Trichloroethane	200
1,1-Dichloroethene	7
cis-1,2-Dichloroethene	70
Tetrachloroethene	5
trans-1,2-Dichloroethene	100
Trichloroethene	5
Vinyl chloride	2

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

SELECT TCL VOC CONCENTRATIONS IN GROUNDWATER

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
G.K.	B.M.	FEBRUARY, 2004	
Scale: 1"=200'	Project N°: 17360-09	Report N°: 007	Drawing N°: PLAN 1

17360-09(007)GN-DE008 FEB 27/2004

MW5-03	7/14/2003 ug/L	10/9/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)	0.24 J	0.32 J
1,1-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)	0.38 J	0.41 J
Tetrachloroethene	0.55 J	0.38 J	0.70 J
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	7.6	5.3	3.6
Vinyl chloride	ND (1.0)	ND (1.0)	ND (1.0)

MW5-03	7/14/2003 ug/L	10/2/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	ND (1.0)	0.41 J	0.16 J
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	ND (1.0)	ND (1.0)	1.2
Vinyl chloride	ND (1.0)	ND (1.0)	ND (1.0)

87-10	7/14/2003 ug/L	10/1/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	1.8	2.2	1.8
1,1-Dichloroethene	0.61 J	ND (2.0)	ND (1.7)
cis-1,2-Dichloroethene	1.6	1.4 J	1.1 J
Tetrachloroethene	ND (1.0)	ND (2.0)	0.34 J
trans-1,2-Dichloroethene	ND (1.0)	ND (2.0)	ND (1.7)
Trichloroethene	37	44	44
Vinyl chloride	ND (1.0)	ND (2.0)	ND (1.7)

MW4-03	7/14/2003 ug/L	10/9/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	0.58 J	ND (1.0)	0.78 J
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	2.0	0.28 J	1.2
Vinyl chloride	ND (1.0)	ND (1.0)	ND (1.0)

87-8	8/6/2003 ug/L	9/30/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)/ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	ND (1.0)/ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)/ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	ND (1.0)/ND (1.0)	ND (1.0)	0.25 J
trans-1,2-Dichloroethene	ND (1.0)/ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	0.36 J/0.37 J	0.33 J	0.53 J
Vinyl chloride	ND (1.0)/ND (1.0)	ND (1.0)	ND (1.0)

85-7	7/15/2003 ug/L	10/2/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)/ND (1.0)	ND (1.0)/ND (1.0)	ND (1.0)
1,1-Dichloroethene	ND (1.0)/ND (1.0)	ND (1.0)/ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)/ND (1.0)	ND (1.0)/ND (1.0)	ND (1.0)
Tetrachloroethene	ND (1.0)/ND (1.0)	ND (1.0)/ND (1.0)	ND (1.0)
trans-1,2-Dichloroethene	ND (1.0)/ND (1.0)	ND (1.0)/ND (1.0)	ND (1.0)
Trichloroethene	0.79 J/0.88 J	0.90 J/0.93 J	0.86 J
Vinyl chloride	ND (1.0)/ND (1.0)	ND (1.0)/ND (1.0)	ND (1.0)

MW2-03	7/14/2003 ug/L	10/3/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	14	13	7.2
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl chloride	ND (1.0)	ND (1.0)	ND (1.0)

87-1	7/15/2003 ug/L	10/2/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (2.5)	ND (3.3)	ND (2.5)
1,1-Dichloroethene	2.4 J	3.4	3.0
cis-1,2-Dichloroethene	50	160	40
Tetrachloroethene	ND (2.5)	ND (3.3)	ND (2.5)
trans-1,2-Dichloroethene	3.3	8.3	0.7
Trichloroethene	55	1.9 J	76
Vinyl chloride	7.2	5.1	5.2

MW1-03	7/14/2003 ug/L	10/3/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (2.0)	ND (3.3)	ND (3.3)
1,1-Dichloroethene	ND (2.0)	ND (3.3)	ND (3.3)
cis-1,2-Dichloroethene	2.7	2.6 J	0.91 J
Tetrachloroethene	72	83	86
trans-1,2-Dichloroethene	ND (2.0)	ND (3.3)	ND (3.3)
Trichloroethene	1.6 J	1.7 J	1.4 J
Vinyl chloride	ND (2.0)	ND (3.3)	ND (3.3)

MW3-03	7/15/2003 ug/L	10/3/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	0.85 J	0.90 J	0.78 J
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl chloride	ND (1.0)	ND (1.0)	ND (1.0)

87-2	7/15/2003 ug/L	10/2/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)	ND (1.4)	ND (1.0)/ND (1.0)
1,1-Dichloroethene	ND (1.0)	ND (1.4)	ND (1.0)/ND (1.0)
cis-1,2-Dichloroethene	23	41	23/23
Tetrachloroethene	ND (1.0)	ND (1.4)	ND (1.0)/ND (1.0)
trans-1,2-Dichloroethene	2.4	2.6	2.9/3.1
Trichloroethene	46	80	39/37
Vinyl chloride	ND (1.0)	ND (1.4)	ND (1.0)/ND (1.0)

86-3	7/14/2003 ug/L	9/30/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)	0.61 J	ND (1.0)
1,1-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	ND (1.0)	ND (1.0)	ND (1.0)
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	4.3	2.2	2.1
Vinyl chloride	ND (1.0)	ND (1.0)	ND (1.0)

87-13	7/14/2003 ug/L	10/1/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)	0.20 J/0.21 J	0.21 J
1,1-Dichloroethene	ND (1.0)	ND (1.0)/ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)	ND (1.0)/ND (1.0)	ND (1.0)
Tetrachloroethene	ND (1.0)	ND (1.0)/ND (1.0)	ND (1.0)
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)/ND (1.0)	ND (1.0)
Trichloroethene	1.6	1.8/2.0	1.5
Vinyl chloride	ND (1.0)	ND (1.0)/ND (1.0)	ND (1.0)

93-1	7/14/2003 ug/L	10/1/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)	0.37 J	0.38 J
1,1-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	4.2	5.2	3.4 J
Tetrachloroethene	2.9	1.9	1.0 J
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	1.9	1.4	1.1 J
Vinyl chloride	0.43 J	0.60 J	ND (1.0)

87-11	7/14/2003 ug/L	10/1/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (2.0)	ND (5.0)	ND (4.0)
1,1-Dichloroethene	ND (2.0)	ND (5.0)	ND (4.0)
cis-1,2-Dichloroethene	42	130	100
Tetrachloroethene	ND (2.0)	ND (5.0)	ND (4.0)
trans-1,2-Dichloroethene	ND (2.0)	1.5 J	1.5 J
Trichloroethene	28	34	31
Vinyl chloride	3.7	5.5	1.3 J

PWDISCH	7/15/2003 ug/L	9/30/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	0.57 J	0.59 J	0.55 J
1,1-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	ND (1.0)	ND (1.0)	0.14 J
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	3.0	2.1	1.7
Vinyl chloride	ND (1.0)	ND (1.0)	ND (1.0)

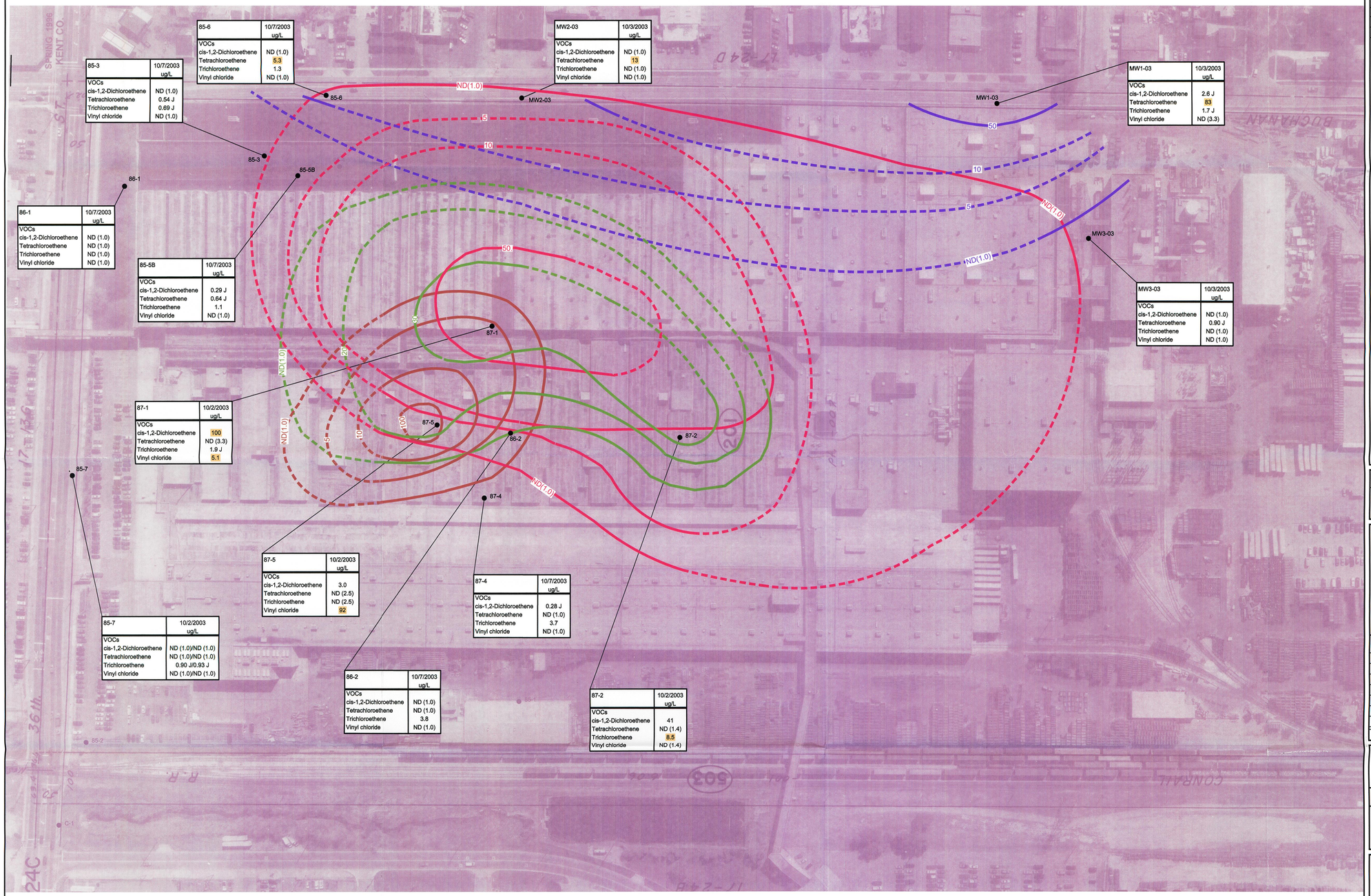
MW7-03	7/15/2003 ug/L	9/30/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	3.4	0.41 J	4.3
1,1-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	ND (1.0)	ND (1.0)	ND (1.0)
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	0.54 J	0.37 J	0.90 J
Vinyl chloride	ND (1.0)	ND (1.0)	ND (1.0)

87-9	8/6/2003 ug/L	9/30/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)	0.40 J	0.51 J
1,1-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0) UJ
cis-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0) UJ
Tetrachloroethene	ND (1.0)	ND (1.0)	ND (1.0) UJ
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0) UJ
Trichloroethene	0.31 J	0.30 J	0.50 J
Vinyl chloride	ND (1.0)	ND (1.0)	ND (1.0) UJ

87-5	7/15/2003 ug/L	10/2/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	3.4 J	ND (2.5)	3.2 J
1,1-Dichloroethene	ND (4.0)	ND (2.5)	ND (3.3)
cis-1,2-Dichloroethene	33	3.0	23
Tetrachloroethene	ND (4.0)	ND (2.5)	ND (3.3)
trans-1,2-Dichloroethene	13	2.1 J	12
Trichloroethene	ND (4.0)	ND (2.5)	ND (3.3)
Vinyl chloride	130	92	100

87-4	7/15/2003 ug/L	10/7/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)	0.28 J	ND (1.0)
Tetrachloroethene	ND (1.0)	ND (1.0)	ND (1.0)
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	ND (1.0)	3.7	0.41 J
Vinyl chloride	ND (1.0)	ND (1.0)	ND (1.0)

86-2	7/15/2003 ug/L	10/7/2003 ug/L	12/18/2003 ug/L
VOCs			
1,1,1-Trichloroethane	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ND (1.0)	ND (1.0)	0.36 J
Tetrachloroethene	ND (1.0)	ND (1.0)	ND (1.0)
trans-1,2-Dichloroethene	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	3.3	3.8	4.7
Vinyl chloride	ND (1.0)	ND (1.0)	ND (1.0)



NO	Revision	Date	Initial

0 50 100ft

LEGEND

- 5 cis-1,2-DICHLOROETHENE CONTOUR LINE
- 5 TRICHLOROETHENE CONTOUR LINE
- 5 TETRACHLOROETHENE CONTOUR LINE
- 5 VINYL CHLORIDE CONTOUR LINE
- INFERRED CONCENTRATION CONTOURS
- 27 VALUE EXCEEDS CRITERIA

TCL VOC	Criteria (ug/L) (1)
cis-1,2-Dichloroethene	70
Tetrachloroethene	5
Trichloroethene	5
Vinyl chloride	2

(1) MICHIGAN ACT 451, PART 201 RESIDENTIAL DRINKING WATER CRITERIA

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

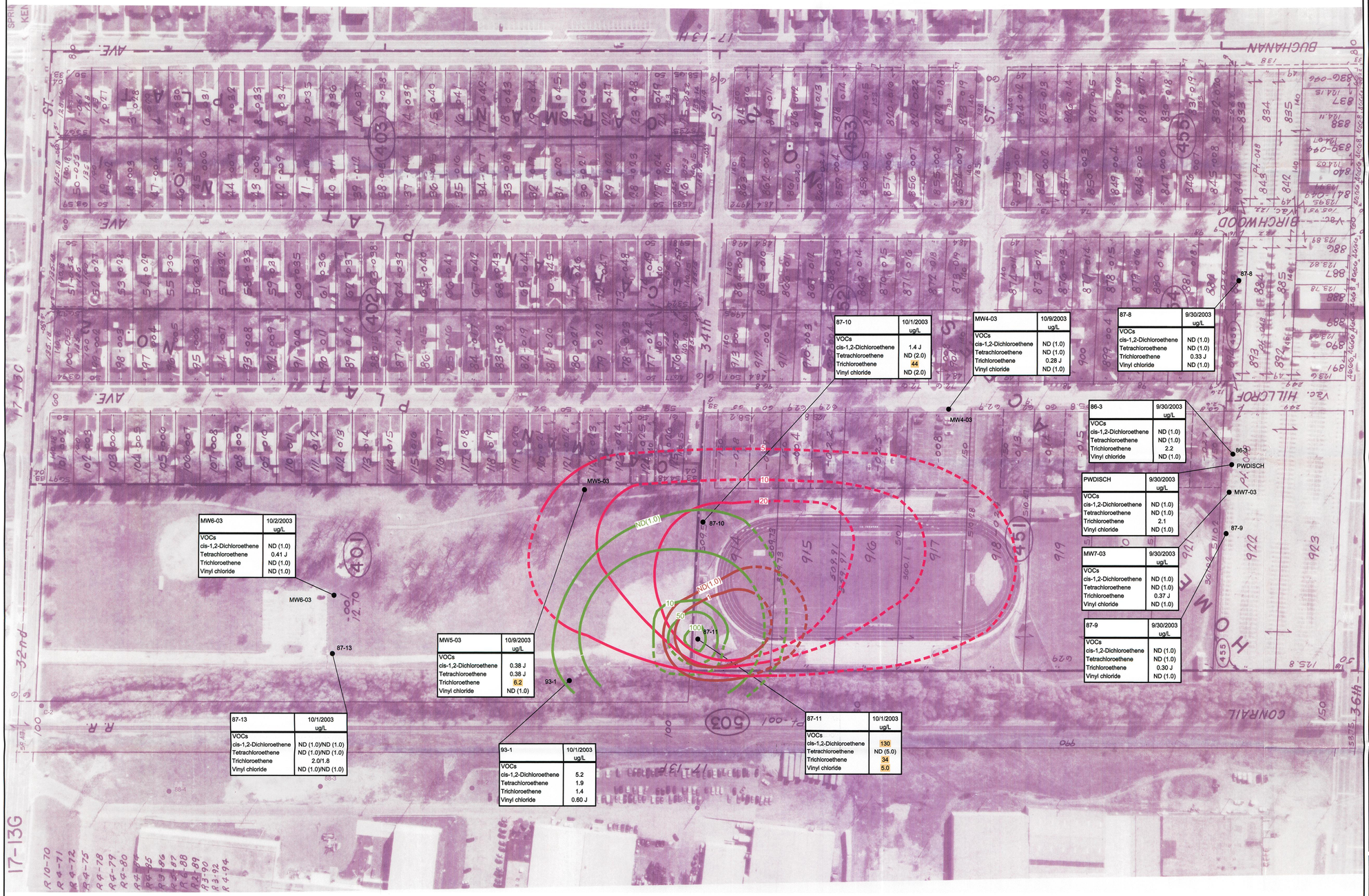
SELECT TCL VOCs ISO CONTOURS
SOUTHERN AREA

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
G.K.	B.M.	FEBRUARY, 2004	
Scale: 1"=100'	Project Nº: 17360-09	Report Nº: 007	Drawing Nº: PLAN 2

17360-09(007)GN-DE011 FEB 27/2004



No	Revision	Date	Initial

N

0 50 100ft

LEGEND

- 5 cis-1,2-DICHLOROETHENE CONTOUR LINE
- 5 *TRICHLOROETHENE CONTOUR LINE*
- 5 TETRACHLOROETHENE CONTOUR LINE
- 5 VINYL CHLORIDE CONTOUR LINE
- INFERRED CONCENTRATION CONTOURS
- 27 VALUE EXCEEDS CRITERIA

TCL VOC	Criteria (ug/L) (1)
cis-1,2-Dichloroethene	70
Tetrachloroethene	5
Trichloroethene	5
Vinyl chloride	2

(1) MICHIGAN ACT 451, PART 201 RESIDENTIAL DRINKING WATER CRITERIA

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

SELECT TCL VOCs ISO CONTOURS NORTHERN AREA

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
G.K.	B.M.	FEBRUARY, 2004	
Scale: 1"=100'	Project N°: 17360-09	Report N°: 007	Drawing N°: PLAN 3

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