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**PHASE II ENVIRONMENTAL SITE EVALUATION
LMC SUNOCO STATION
3575 VT ROUTE 7A
ARLINGTON, VERMONT 05250**



Prepared For:

Mr. James Williams
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March 1999



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March 9, 1999

Mr. James Williams
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Windsor Facilities Service Office
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Re: Phase II Environmental Site Evaluation
LMC Sunoco Station
3575 VT Route 7A
Arlington, Vermont 05250

Dear Mr. Williams:

In accordance with our proposal dated January 5, 1999, Apex Environmental, Inc. (Apex), performed a Phase II Environmental Site Evaluation of the LMC Sunoco site (Site) located on 3575 VT Interstate 7A in Arlington, Vermont on February 3, 1999. It was the objective of the Phase II study to evaluate present soil and groundwater quality for potential impacts associated with on-site areas of concern. To achieve the objective stated above, Apex retained T&K Drilling, Inc. of Troy, New Hampshire to drill four soil borings that were completed as groundwater monitoring wells. Apex personnel also collected and analyzed shallow soil samples at the site and groundwater samples from the new wells.

Apex compared the laboratory results of soil and groundwater samples to standards provided in Chapter 12 - Groundwater Protection Rule and Strategy (State of Vermont) dated November 1997 and the USEPA Region III Table of Risk-Based Criteria (RBC) to formulate our opinions, regarding site conditions. This report has been prepared in accordance with the Terms and Conditions of our contract and the Limitations set forth in Appendix A.

As discussed in the report, it is our conclusion that the Site continues to show the effects of petroleum contamination from the historic UST release reported in 1990 and from a potential release from the existing UST and pump island area. Groundwater results from MW-3, MW-5 and MW-7 exceed the VTGES for benzene, ethyl benzene, MTBE and toluene. The soil sample MW-7 (S-02) exceeded the State of Vermont TPH Soils Cleanup Guidelines as recommended in a December 30, 1992, VTDEC letter.

Except for those groundwater and soil sample results associated with the release from the Underground Storage Tanks (USTs) and pump island, soil and groundwater sample results from other potential areas of concern (AOC) did not exceed the State of Vermont cleanup guidelines or the Federal USEPA Region III Table of Risk-Based Criteria (RBC) dated April 1998. Although soil and groundwater results from these AOCs did not exceed the cleanup guidelines, observed site conditions and historic waste storage and disposal practices indicate that unidentified, localized impacts may be present. These localized "pockets" of contamination may be encountered during Site development activities and, if encountered, should be characterized and managed consistent with USEPA and VTDEC requirements.

Mr. James Williams
March 9, 1999
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Apexenvironmental, inc.

Based on observed site conditions and information reviewed as part of the Phase I Assessment, it is likely that historic automobile related debris and disposal has occurred in the western portion of the Site. Excavated materials observed in Trench T-1 included: four used tires, wooden materials, a metal conveyor system and a large metal object believed to be a portion of an automobile.

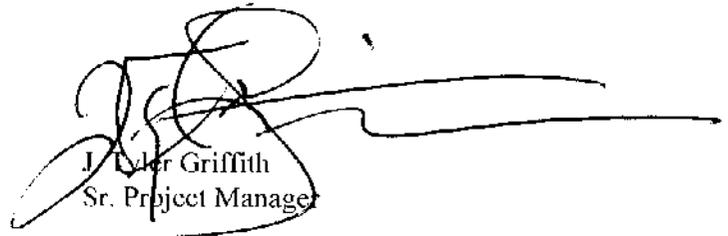
We appreciate the opportunity to work with you on this project. Should you have any questions, please contact the undersigned.

Very truly yours,

Apex Environmental, Inc.



William P. Drouin
Project Manager



J. Elder Griffith
Sr. Project Manager

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1.0 INTRODUCTION

In accordance with our proposal dated January 5, 1999, Apex Environmental, Inc. (Apex), performed a Phase II Environmental Site Evaluation of the LMC Sunoco site (Site) located on 3575 VT Interstate 7A in Arlington, Vermont on February 3, 1999. It was the objective of the Phase II study to evaluate soil and groundwater quality at the Site for potential impacts associated with on-site areas of concern. The areas of concern were identified and reported in the Phase I Environmental Site Assessment LMC Sunoco Site (ESA) prepared for the United States Postal Service by Apex Environmental, Inc. dated November 28, 1998.

To achieve the objective stated above, Apex personnel completed eight shallow soil borings, four deep soil borings and installed four monitoring wells. Deep soil borings and monitoring wells were installed by T&K Drilling, Inc. of Troy, New Hampshire. Eleven soil samples and six groundwater samples were submitted to Con-test Analytical Laboratory (CAL) of East Longmeadow, Massachusetts (Vermont Certification Number LL015036).

Apex compared the laboratory results of groundwater samples to standards provided in Chapter 12 - Groundwater Protection Rule and Strategy (State of Vermont) dated November 1997. Soil sample results were compared to the USEPA Region III Table of Risk-Based Criteria (RBC) and other Vermont cleanup guideline (Section 3.0)

This report has been prepared in accordance with the Terms and Conditions of our contract and the Limitations set forth in Appendix A.

1.1 Historic Information

The Site is 1.48 acres of land which rises steeply to the west and is occupied by a 2,476 square foot concrete block building. The LMC Sunoco building was constructed in 1956 and has been used as an automotive repair shop and as a gasoline and diesel fuel dispensing facility since that time. A concrete dispensing island is located in front of the building.

Two 3,000-gallon leaking underground storage tanks were detected and removed from the LMC site during a 1990 underground storage tank (UST) upgrade activity. Four groundwater monitoring wells (MW-1 through MW-4) were installed in May 1990, and site personnel perform quarterly product bailing and annual groundwater monitoring. The Site is a state CERCLIS (SCL) site due to on-site, petroleum-related contamination. Based on conversations with Ms. June Middleton, UST Permit Administrator and Mr. Matt Moran, Site Manager, from the Vermont Department of Environmental Conservation (VTDEC), the site is currently considered a low priority.

Apex personnel reviewed the Annual Groundwater Monitoring Reports from May 1990, August 1992, May 1996, July 1997 and July 1998. As of the July 1998 report, analysis of the groundwater samples collected from monitoring wells MW-2, MW-3 and MW-4 indicate concentrations of benzene and ethyl benzene, exceeding the Vermont Groundwater Enforcement Standard (VTGES). Monitoring Well MW-1 has been out of service since 1996. At present, the cleanup approach approved by the VTDEC to mitigate the contamination is to monitor the Site periodically and allow the contaminated area to clean itself up naturally.

Presently, two 6,000-gallon underground gasoline storage tanks, two 500-gallon aboveground diesel tanks, a 275-gallon aboveground heating fuel tank, and a 275-gallon underground heating fuel tank are located on-site. The site and surrounding area are serviced by municipal water.

2.0 SUBSURFACE INVESTIGATION

In addition to the 1990 UST contamination, Apex identified eight potential areas of concern (AOCs) in the November 28, 1998 Phase I ESA:

1. an existing UST area;
2. an existing pump island area;
3. an existing on-site septic system;
4. an existing oil/water separator/oil storage system;
5. an existing interior floor drain;
6. an existing interior hydraulic lift;
7. interior and exterior waste oil drum storage areas; and,
8. existing exterior debris disposal/stained soil areas.

The locations of the AOCs are shown on Figure 1. The following sections describe the activities conducted in and around the AOCs to evaluate the potential environmental impacts.

2.1 Soil Borings and Monitoring Well Installation Program

2.1.1 Deep Soil Borings and Monitoring Wells

On February 3, 1999, four deep soil borings/monitoring wells (MW-5 through MW-8) were advanced to assess potential soil and groundwater impacts from several areas of concern stated above. Subsurface explorations were observed and logged by Apex staff (Appendix B). The soil boring/monitoring wells locations are shown on Figure 1. Soil boring and groundwater monitoring wells were located as follows:

MW-5 This soil boring is located in the southwestern portion of the Site and was positioned as a downgradient monitoring point from the on-site septic system. This septic system is believed to receive wastewaters from an existing oil/water separator/oil storage system and an existing interior floor drain. The soil boring was advanced to a depth of approximately 17 feet below ground surface.

MW-6 This boring is located in the northwestern portion of the Site and was positioned as a perimeter monitoring point for a "backdoor" of the garage, interior and exterior waste oil drum storage areas and an on-site underground fuel oil (kerosene) storage tank. The age of the tank is unknown, but because the UST is located under the concrete floor, it may have been installed around 1956. During the Phase II Evaluation, the waste oil drum storage areas included twelve 55-gallon drums. The soil boring was advanced to a depth of approximately 13.0 feet below ground surface.

MW-7 This boring is located in the eastern portion of the Site and was positioned as a downgradient monitoring point from the gasoline pump island and the existing UST. The soil boring was advanced to a depth of approximately 15 feet below ground surface.

MW-8 This boring was located in the northern portion of the Site and was positioned as an upgradient monitoring point. The soil boring was advanced to a depth of approximately 15 feet below ground surface.

The soil borings were advanced using standard hollow-stem auger techniques without the use of drilling water. Soil samples were collected every 5 feet using 2-foot long, 2-inch diameter split-spoon sampler and standard penetration tests (140 pound hammer falling 30-inches). Soil samples were placed in clean glass jars and classified by Apex personnel. Split-spoon samplers were washed between samples using an alkaline soap solution and water rinse. Soil samples obtained during the boring operations were screened in the field for aromatic volatile organic compounds (VOCs) using a Photo-Ionization Detector (PID) with a 10.2 eV lamp.

One soil sample with the greatest PID soil measurement from each well was sent for analysis. Based on the results of the PID field screening, MW-5/S-3, MW-6/S-1, MW-7/S-2 and MW-8/S-1 were analyzed for aromatic VOC (EPA Method 8020) and total petroleum hydrocarbons (TPH) (EPA Method 8100 modified). PID screening results are provided on the boring logs included in Appendix B.

2.1.2 Shallow Exterior Soil Borings

Four exterior soil samples were collected at the Site (Figure 1). The location of the exterior soil samples was based on observed surficial soil staining or material storage activities. Soil samples from these areas were collected using a one-inch driven soil sampler (Bosch Hollow-Stem Soil Probe) to evaluate potential impacts from petroleum products (oil and gasoline) and other automotive-related storage activities. Soil samples could not be collected below 1-foot in depth using the 1-inch driven soil sampler due to the dense make-up of the soils and frost conditions. Dense soil conditions preclude sampling at locations SS-2 and SS-3. Therefore, an excavator was utilized to dig two test pits (T-1 and T-2) west of the building. The specific analyses performed on these samples are described below and the results are discussed in Section 4.3.

SS-1 Sample SS-1 was collected in the southern portion of the Site and is located in the on-site septic system. This sample is also downgradient from the storage of automotive gas tanks, transmissions and other automotive parts. Surficial runoff from these storage areas could impact the Site. One sample was collected from 1 foot below grade and analyzed for aromatic VOC (USEPA Method 8020) and TPH (USEPA Method 8100 modified). *→ to be identified by Sept. 2011*

SS-4 Sample SS-4 was collected in the northwestern portion of the Site and was located in a stained soil area. This sample is also located downgradient from a used tire pile. A soil sample was collected from 4 inches below grade and analyzed for aromatic VOC (USEPA Method 8020) and TPH (USEPA Method 8100 modified).

T-1 This test pit (T-1) was excavated in the southwestern portion of the Site and is located near an area of accumulated trash (truck dump body) which includes old batteries, aerosol cans, oil filters, oil cans, etc. Surficial runoff from this disposal area could impact the Site. A sample was collected 3 feet below grade on the eastern wall of a 3-foot-wide by 4-foot-long by 4-foot-deep trench. This trench is located directly west of the building and to the north of the truck dump body (Figure 1). Excavated material observed in the trench included: four used tires, wooden materials, a metal conveyor system and a large metal object believed to be a portion of an automobile. One soil sample was collected and analyzed for aromatic VOC (USEPA Method

8020), TPH (USEPA Method 8100 modified). This soil sample was also analyzed for total lead due to the historic storage of used batteries and other miscellaneous metal materials upgradient.

T-2 This test pit (T-2) was excavated in the southwestern portion of the Site and is located in a soil stained area. A sample was collected 3 feet deep on the eastern wall of a 3-foot-wide by 4-foot-long by 4-foot-deep trench. This trench is located southwest of T-1 (Figure 1). Excavated materials observed in this trench were "clean fill". One soil sample was collected and analyzed for aromatic VOC (USEPA Method 8020) and TPH (USEPA Method 8100 modified).

2.1.3 Interior Soil Samples

Subsurface soils below the concrete floor in the interior of the building were exposed using a 6" concrete coring device. Three soil samples were then collected using a 1-inch driven soil sampler (Bosch Hollow-Stem Soil Probe) or other hand implements. The location of the interior samples was based on observed surficial staining, the vicinity of petroleum storage activities and/or the condition of the floor (i.e. cracks, erosion, etc.). No soil samples were collected below 16 inches in depth using the 1-inch driven soil sampler due to the dense nature of the soils and the presence of granite cobbles. The specific analyses performed on these samples are described below, and the results are discussed in Section 4.3.

CC-1 Soil sample CC-1 was collected approximately 4 feet downgradient of the hydraulic lift and in the vicinity of an existing oil/water separator-oil storage system (Figure 1). The concrete floor in this area is approximately 16 inches thick. A soil sample was collected 16 inches below the bottom of the concrete slab and was analyzed for aromatic VOC (USEPA Method 8020) and TPH (USEPA Method 8100 modified).

X CC-2 Soil sample CC-2 was collected in the rear automotive bay of the garage approximately 2 feet downgradient from a floor drain (Figure 1). This floor drain reportedly discharges to the on-site septic system. The concrete floor in this area is approximately 8 inches thick. A soil sample was collected 2 inches below the bottom of the concrete slab and was analyzed for aromatic VOC (USEPA Method 8020) and TPH (USEPA Method 8100 modified).
No sample from floor drain itself or intercept @ septic

CC-3 Soil sample CC-3 was collected beneath a concrete core located in the northern automotive bay approximately 3 feet west of the kerosene UST (Figure 1). The concrete floor in this area is approximately 8 inches thick. A soil sample was collected 2 inches below the bottom of the concrete slab and was analyzed for aromatic VOC (USEPA Method 8020) and TPH (USEPA Method 8100 modified).

2.1.4 Groundwater Monitoring Wells

Two-inch diameter PVC monitoring wells were installed in each of the four soil borings. The wells were screened across the groundwater table using a 10-foot long PVC well screen. Well risers consisted of 2-inch diameter solid PVC pipe. No glue or solvents were used in well construction. A fine sand filter pack was installed around the well screens at each monitoring well and a 1- to 2-foot-thick bentonite seal was placed above each screen. Bolt-down road boxes and cement seals were placed at the ground surface. Each well was fitted with a locking expansion plug to prevent the infiltration of surface water into the well.

Well installation details and soil descriptions are provided on the boring logs included in Appendix B.

2.2 Groundwater Sampling and Analyses

Groundwater samples were obtained from Monitoring Wells MW-3 through MW-8. According to the Report on the Monitoring of the Groundwater report dated May 1996, MW-1 was destroyed. MW-2 could not be located due to heavy ice cover at the Site and was not sampled. The remaining two historic groundwater monitoring wells sampled (MW-3 and MW-4) are described as follows:

MW-3 This monitoring well is located to the east of the building and was positioned as a perimeter monitoring point for a previously identified release from an historic UST grave area. The well is 14.0 feet deep below ground surface.

MW-4 This monitoring well is located to the west of Route 7A and was positioned as a perimeter monitoring point from a previously identified release from an historic UST grave area. The well is 14.0 feet deep below ground surface.

Prior to sampling, the depth to static groundwater was measured and three times the volume of standing water in each well was purged using 4-foot-long Teflon disposable bailers with ball check valves. Purged groundwater was discharged to the ground. Samples were collected after the wells were allowed to recharge. No floating product, petroleum sheen or odors were noted in the sampled groundwater from MW-5, MW-6 and MW-8. However, groundwater from MW-3 was "hazy" in color, and distinct petroleum odors were noted from MW-3, MW-4 and MW-7. Groundwater level measurements are reported in Table 1.

Groundwater samples were screened in the field for pH and specific conductance at the time of collection. The pH of a sample provides a measure of the relative alkalinity or acidity of water; specific conductance provides a measure of dissolved ions in water. Prior to sampling, both the pH and the specific conductance meters were calibrated using standard solutions. Field screening results are summarized on Table 2.

Groundwater samples from each of the wells were analyzed for aromatic VOCs (including MTBE) by EPA Method 602 and TPH (USEPA Method 8100 modified) for the presence of gasoline and/or petroleum substances. VOC samples were collected in clean 40 milliliter glass vials with Teflon-lined septa and were preserved with hydrochloric acid to a pH less than 2 to retard biodegradation. TPH samples were collected in a 1,000-ml amber bottle. Additionally, groundwater collected from MW-5 was analyzed for dissolved RCRA 8 metals and for Polychlorinated Biphenyls (PCBs) by Method 8080. The additional analyses were performed because MW-5 is located downgradient from the on-site septic system, which may have received aqueous automotive fluids from interior repair activities. Dissolved metal samples were filtered in the field through a 45 micron filter and acidified to a pH less than 2 using nitric acid. No preservative was required for the PCB groundwater sample.

Analyses were performed by Con-Test Analytical Laboratory, which is certified by the state of Vermont to perform these analyses. Water samples were kept in iced coolers until their delivery to the analytical laboratory. Chain-of-Custody procedures were followed throughout the sample handling process.

2.3 Groundwater Elevation Survey

To provide data regarding groundwater flow direction, a well survey was performed by Parks Associates on February 22, 1999, on MW-3, MW-5 through MW-8, relative to an arbitrary benchmark. Groundwater was measured from the top of the PVC standpipe for each monitoring well. Groundwater elevation

measurements were calculated from survey data and depth to water measurements. These data are summarized on Table 1 and a groundwater contour map is shown in Figure 2.

3.0 CRITERIA FOR EVALUATING CONTAMINANTS IN GROUNDWATER AND SOIL

Based on conversations with Ms. June Middleton, UST Permit Administrator and Mr. Matt Moran, Site Manager, from the Vermont Department of Environmental Conservation (VTDEC), Site groundwater sample results were compared to standards provided in the State of Vermont Chapter 12 - Groundwater Protection Rule and Strategy (GPRS) dated November 1997. Specifically, metal and VOC standards are reported in Appendix One of the GPRS in Table 1: Primary Groundwater Quality Standards. Two groups of standards are listed in Table 1, the VTGES and the "Preventative Action Levels" (PALs). The PALs are criteria used for facilities that are permitted to discharge wastewaters to either the ground or directly to groundwater. The VTGES criteria are applicable to the LMC Sunoco site because it is not a permitted facility.

The VTDEC does not have cleanup standards for TPH in groundwater. However, TPH results from groundwater sampling are compared to neighboring state cleanup standards or regulations to formulate a professional opinion in regard to TPH levels at the Site.

Mr. Moran also stated that Site soil results (aromatic VOCs and metals) should be compared to the USEPA Region III Table of Risk-Based Criteria (RBC) dated April 1998. The RBC values used for comparison in this report are the Industrial and Residential Soil Criteria.

Inorganic lead is not included in the RBC Table because USEPA considers lead to be a special case because of the difficulty in identifying the classic "threshold" needed to develop the RBC. Therefore, the USEPA uses a detailed directive on risk assessment and cleanup of residential soils from the USEPA Office of Solid Waste. The directive recommends that soil lead levels less than 400 mg/kg are generally safe for residential use. For the purpose of screening, therefore, 400 mg/kg is used to compare the soil sample result.

Mr. Moran stated that TPH results in soil are compared to the State of Vermont TPH Soils Cleanup Guidelines as recommended in a December 30, 1992, letter from Mr. Richard F. Spiess, Site Coordinator Sites Management Sections, to Mr. Chuck Schwer, Supervisor Sites Management Section, of the VTDEC. These guidelines recommend cleanup criteria of 1,000 mg/kg for non-residential areas and 200 mg/kg in residential areas. Soil TPH results are compared to both of these criteria.

4.0 RESULTS OF SAMPLING AND ANALYSES

The sections below summarize the results of the field exploration and analytical program. The results are compared to the applicable proposed media protection or enforcement standards described above.

4.1 Subsurface Materials Encountered

The subsurface materials encountered generally consisted of brown and gray sands and silts 4 to 8 feet thick with trace gravel/fractured rock and cobbles. Groundwater was encountered at approximately 3 to 6 feet below grade in the borings.

During excavation of Test Pit T-1, located directly west of the building, Apex personnel observed a variety of foreign materials including four used tires, wooden materials, a metal conveyor system and a large metal object which appeared to be a portion of an automobile. Observed Site conditions indicate that subsurface disposal of automobile related debris appears to have occurred across the western portion of the Site. Excavated materials observed in Test Pit T-2 were observed to be "clean fill".

4.2 Subsurface Hydrogeology

Depth to groundwater measurements were obtained in monitoring wells MW-3, MW-4, MW-5, MW-6, MW-7, and MW-8. Static groundwater was measured in the wells at depths ranging from 3.87 feet (MW-8) to 6.75 feet (MW-5). Based on the elevation of the top of the PVC standpipes, calculated groundwater elevations in each monitoring well were generated. Based on the data, groundwater contours were developed which indicate that groundwater flow beneath the Site is generally towards the southwest, in the direction of the Battenkill River (Figure 2). This is consistent with the previously reported groundwater flow direction.

4.3 Soil Screening and Analytical Results

Soil samples were screened in the field for the presence of VOCs. Based on the field results, one sample from each boring was submitted to the laboratory for quantitative analysis of aromatic VOCs by EPA Method 8020 and TPH by USEPA Method 8100 modified. In addition, one soil sample from an apparent debris disposal area was analyzed for Total Lead.

4.3.1 Photoionization Detector (PID) Field Screening Results

PID field screening results are provided on the boring logs attached in Appendix B. The lowest PID result was from MW-6/S-3 at 0.9 ppm and the highest was 1493.0 ppm from MW-7/S-2. A distinct petroleum odor was observed in soils excavated for MW-7, and these soils excavated during well construction were stock-piled on plastic in the back of the building for disposal by the owner. PID readings were above anticipated background readings (1-meter unit).

4.3.2 Volatile Organic Compound Analyses

Eleven soil samples were submitted for analysis of aromatic VOCs by EPA Method 8020. Analytical results are summarized on Table 3 and laboratory data sheets are included in Appendix C. Results from soil samples collected from MW-5/S-3, MW-6/S-1 and MW-8/S-1 were below laboratory detection limits for Method 8020. One VOC, m&p-Xylene, was detected in soil sample MW-7/S-02 at 0.0073 mg/kg. This constituent did not exceed the USEPA Region III Table of Risk Based Criteria (RBC) for VOC constituents (Table 3).

As stated previously, four exterior and three interior soil samples were also collected at the Site. The location of the exterior soil samples was based on observed surficial soil staining or material storage activities (Figure 1). VOCs were not detected above laboratory detection limits in SS-1 (0-1'), SS-4 (0-4") and T-02 (0-3'). Trace levels of m&p-Xylene was found in soil sample T-01 (0-3'). No VOC results for the exterior soil samples exceeded the USEPA Region III Table of Risk Based Criteria (RBC) for these constituents (Table 3).

Three subsurface soil samples collected below the concrete floor in the interior of the building were forwarded to the laboratory and analyzed for aromatic VOCs. No VOCs were detected above the

laboratory detection limit for soil samples CC-1, CC-2 or CC-3. Analytical results are summarized in Table 3 and laboratory data sheets are included in Appendix C.

4.3.3 TPH Analyses

Eleven soil samples were submitted for analysis for TPH. TPH was detected above the laboratory limit in each of the samples at concentrations ranging from 10.0 mg/kg in CC-02 to 3,100 mg/kg in MW-7/S-02. TPH results in soil were compared to the State of Vermont TPH Soils Cleanup Guidelines which recommends cleanup criteria of 1,000 mg/kg for non-residential areas and 200 mg/kg in residential areas. One soil sample, MW-7/S-02 (3,100 mg/kg) exceeds the cleanup guidance for industrial areas of 1,000 kg/mg. Two other soil sample locations, MW-6/S-01 and CC-03, exceeded the cleanup guidance for residential areas of 200 kg/mg. Analytical results are summarized on Table 3 and laboratory data sheets are included in Appendix C.

4.3.4 Metals Analyses

One soil sample, T-01 (0-3'), was submitted to the laboratory for analysis of total lead. This soil sample was analyzed for total lead due to the historic storage of used batteries and other miscellaneous storage of automotive in the vicinity of the sample location. The total lead result for this soil sample is 15 kg/mg. Soil sample T-01 (0-3') is below the 400 mg/kg threshold recommended by the USEPA for residential sites. Analytical laboratory data sheets are included in Appendix C.

4.4 Groundwater Analytical Results

On February 3, 1999, Apex personnel collected groundwater samples from six monitoring wells (MW-3 through MW-8). Sampling results are summarized on Tables 4 and laboratory data sheets are included in Appendix C.

4.4.1 pH and Specific Conductance

Groundwater samples were screened in the field for pH and specific conductance; results are provided on Table 2. The pH of the samples ranged from 7.1 to 7.8 standard units and specific conductance ranged from 711 to 1289 μ mhos/cm. These concentrations are within the range typically anticipated for sites in similar areas.

4.4.2 VOC and TPH Analyses

Six monitoring wells were sampled for VOCs and TPH. Analytical results are summarized on Table 4 and laboratory data sheets are included in Appendix C.

Free floating product was not observed in any of the monitoring wells sampled at the Site. Aromatic VOCs were detected in samples from five of six monitoring wells at total VOC concentrations ranging from 8.285 mg/l in MW-3 to 0.0987 mg/l in MW-8. The highest concentrations were located around the historic tank pit. Total VOC concentrations do not include compounds which were detected in trace concentrations below laboratory detection limits (BDL). No VOCs were detected in MW-6.

The distribution of the VOCs detected in groundwater indicate the presence of gasoline discharges from the historic tank pit (MW-3 and MW-4), the possible release of gasoline from the existing USTs and dispensing pump island area (MW-7) and the possible release of gasoline in the on-site septic system

(MW-5). Detected concentrations of VOCs were compared to the VTGES reported in Chapter 12 - Groundwater Protection Rule and Strategy as discussed in Section 3.0 and presented on Table 4.

Three constituents exceeded the groundwater VTGES during this sampling and analysis for wells MW-3 and MW-7; benzene, ethyl benzene and toluene. Benzene levels in both of these wells (633 and 125 ug/L, respectively) were significantly higher than the "Enforcement Standard" (5.0 ug/L). Ethyl Benzene, in MW-3, was also reported above the standard of 700 mg/L. Toluene (1,000 mg/L) exceeded the standard in the groundwater sample collected from MW-7 (1,080 mg/L). Lower values of these constituents were detected in MW-4, MW-5 and MW-8.

The highest concentration of aromatic VOCs on the Site are found in MW-3. This well is downgradient from the existing UST area and the pump island area and is located in the vicinity of the historic UST grave area. The next largest source of aromatic VOCs is from MW-7. MW-7 is downgradient from the existing UST area and the pump island area. Elevated aromatic VOCs in this well indicate the possibility of releases from these upgradient sources. Based on this data a release of gasoline appears to have occurred from the historic UST system and the existing UST system.

Monitoring well MW-5, located downgradient of the on-site septic system, exhibited elevated levels of ethyl benzene, methyl-tert-butyl-ether (MTBE), and o-Xylene. MTBE results from groundwater sample MW-5 (43.8 mg/L) exceeds the VTGES (40.0 mg/L). The elevated MTBE levels in MW-5 indicate the possible discharge of gasoline into the on-site septic system from interior activities or it could be indicative of the gasoline plume from the upgradient sources (i.e. UST systems).

MW-8, the Site upgradient well, exhibited elevated levels of Benzene, Ethyl Benzene, m&p-Xylenes and o-Xylene. No results from MW-8 exceeded the VTGES for these constituents.

TPH was detected in five of the six groundwater samples from monitoring wells ranging from 0.35 mg/l in MW-8 to 15.6 mg/l in MW-3. TPH was not detected above laboratory detection limits in MW-6. Although no Vermont standard exists for TPH in groundwater, other New England States have adopted a TPH cleanup criteria between 0.200 to 0.500 mg/L. Based on the regional cleanup criteria, MW-3, MW-4, MW-5, MW-7 and MW-8 would exceed these cleanup standards. Analytical results are summarized on Table 4 and the laboratory data sheet is included in Appendix C.

4.4.3 PCB Analyses

One monitoring well, MW-5, was sampled for the presence of PCBs. PCBs analysis was performed on this well due to the potential for waste oil discharges into the on-site septic system from automotive activities inside the building. The PCB VTGES is 0.5 ug/L. No PCBs were detected above the laboratory detection limit of 0.1 ug/L. Analytical results are summarized on Table 4 and the laboratory data sheet is included in Appendix C.

4.4.4 Dissolved Metals

One monitoring well, MW-5, was sampled for dissolved RCRA-8 metals¹. Analytical results are summarized on Table 5 and laboratory data sheets are included in Appendix C. Dissolved metals analysis was performed on this well due to the potential for waste oil discharges into the on-site septic system from

¹ arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver.

automotive activities inside the building. Two dissolved metals, barium and cadmium, were detected above laboratory detection limits. Both of these dissolved metals were below the VTGES (Table 5).

5.0 DISCUSSION

Apex Environmental, Inc. (Apex) conducted a Limited Phase II Environmental Site Evaluation of the LMC Sunoco Site at 3575 VT Route 7A in Arlington, Vermont. The evaluation included groundwater sampling of existing monitoring wells; the advancement of four soil borings and the installation of groundwater monitoring wells; the sampling and analysis of soil and groundwater for VOCs and dissolved metals from MW-5; and the collection and analysis of four exterior and three interior soil samples.

The results of groundwater analyses were compared to the State of Vermont Chapter 12 - Groundwater Protection Rule and Strategy (GPRS) dated November 1997. VOCs in soils are compared to the USEPA Region III Table of Risk-Based Criteria (RBC) dated April 1998. The RBC values used for comparison in this report are the Industrial and Residential Soil Criteria.

5.1 UST and Pump Island Investigations

The most significant environmental impact on the Site is localized around the historic UST grave area and the existing UST system. Two groundwater sampling locations, MW-3 and MW-7, exceeded the VTGES for aromatic VOCs. Benzene levels in both of these wells (633 and 125 ug/L, respectively) were significantly higher than the VTGES of 5.0 ug/L. Ethyl Benzene, in MW-3 (942.0 ug/L), was also reported above the VTGES of 700.0 ug/L. Toluene exceeded the standard of 1,000 ug/L in MW-7 (1,080 ug/L). The upgradient location of MW-7 from the historic USTs indicates that a release from the existing USTs and/or the pump island has likely occurred.

Elevated levels of VOCs in the groundwater sample from MW-5 (43.8 ug/L) suggest either gasoline discharges to the on-site septic system or the migration of gasoline constituents from the upgradient pump island and/or USTs. MTBE exceeded the VTGES of 40.0 ug/L in this sample.

Although no Vermont standard exists for TPH in groundwater, other New England States have adopted a TPH cleanup criteria between 0.200 to 0.500 mg/L. Based on the regional cleanup criteria, MW-3, MW-4, MW-5, and MW-7 would exceed these cleanup standards.

A TPH soil sample result of 3,100 mg/kg was also collected from MW-7 (S-02). This result exceeds the cleanup guidance for industrial areas of 1,000 kg/mg for TPH in soil when compared to the State of Vermont TPH Soils Cleanup Guidelines as recommended in a December 30, 1992, VTDEC letter.

The State of Vermont and Federal Regulations do not have standards that consider VOC volatilization from groundwater or soil into confined overlying structures. However, Federal and State agencies generally agree that VOC contaminated soils and/or groundwater can result in VOC concentrations in enclosed work environments that threaten the health and safety of the public or on-site employees. Since Benzene, Toluene, Ethyl Benzene and Xylenes are VOCs associated with gasoline contamination, vapor migration could be a concern if the proposed building is located over or near the UST/pump island area.

5.2 Other Areas of Concern Investigations

The sample and analysis programs investigating the remaining areas of concern do not indicate the presence of significant wide-spread impacts. VOC, TPH and metal constituents were detected in trace amounts across the Site; however, with the exception of impacts from gasoline USTs or the pump island, soil or groundwater sample results did not exceed the State of Vermont cleanup guidelines or the Federal USEPA Region III Table of Risk-Based Criteria (RBC) dated April 1998. However, observed Site conditions and historic waste storage and disposal practices indicate that unidentified, localized impacts may exist.

Based on observed site conditions and information reviewed as part of the Phase I Assessment, it is likely that historic automobile related debris and disposal has occurred in the western portion of the Site. Excavated materials observed in Trench T-1 included: four used tires, wooden materials, a metal conveyor system and a large metal object believed to be a portion of an automobile.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the discussion described above, Apex makes the following conclusions:

- ◆ The Site continues to show the effects of petroleum contamination from the historic UST release reported in 1990 and from a potential release from the existing UST and pump island area. Groundwater results from MW-3, MW-5 and MW-7 exceed the VTGES for benzene, ethyl benzene, MTBE and toluene. The soil sample MW-7 (S-02) exceeded the State of Vermont TPH Soils Cleanup Guidelines as recommended in a December 30, 1992, VTDEC letter.
- ◆ Except for those groundwater and soil sample results associated with the release from the USTs and pump island, soil and groundwater sample results from other sources did not exceed the State of Vermont cleanup guidelines or the Federal USEPA Region III Table of Risk-Based Criteria (RBC) dated April 1998. Although soil and groundwater results from these AOCs did not exceed cleanup guidelines, observed site conditions and historic waste storage and disposal practices indicate that unidentified, localized impacts may be present. These localized “pockets” of contamination may be encountered during Site development activities and, if encountered, should be characterized and managed consistent with USEPA and VTDEC requirements.
- ◆ Based on observed site conditions and information reviewed as part of the Phase I Assessment, it is likely that historic automobile related debris and disposal has occurred in the western portion of the Site. Excavated materials observed in Trench T-1 included: four used tires, wooden materials, a metal conveyor system and a large metal object believed to be a portion of an automobile.

Based on the conclusions described above, Apex makes the following recommendations should the United States Postal Service proceed with a new construction leased project at the Site:

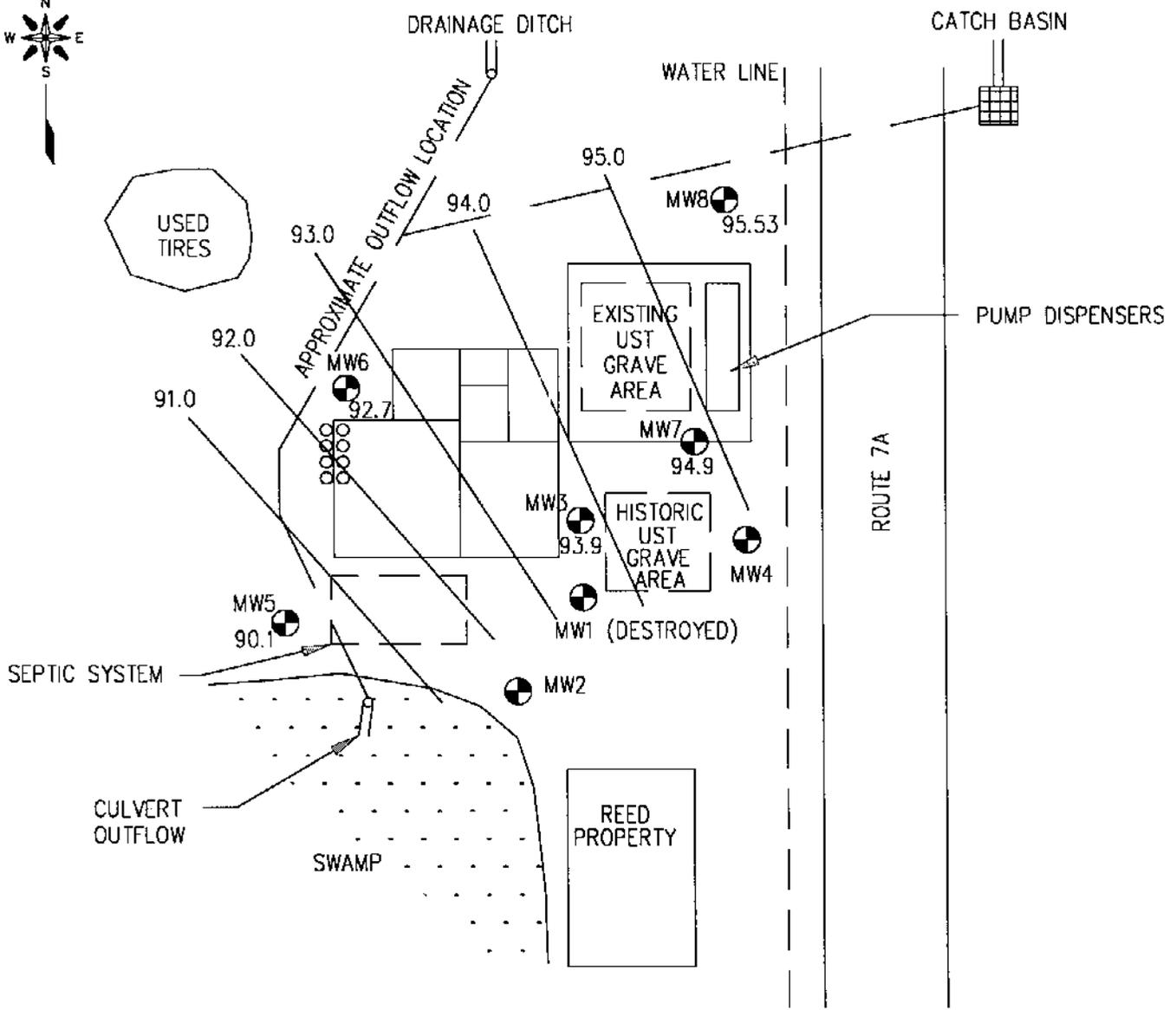
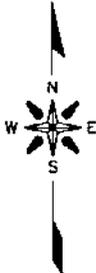
1. Identified soil and groundwater contamination present in the vicinity of current and historic USTs and/or the pump island should be remediated to the State of Vermont and Federal Cleanup Standards. Additional localized impacted areas potentially present but not identified in this report should also be cleaned up to the applicable State or Federal cleanup standards if encountered during construction activities.

2. Documentation indicating that the Site has been cleaned up to VTDEC or Federal standards and that appropriate management of impacted environmental media encountered has occurred should be provided to the USPS.
3. Due to the potential for aromatic VOC volatilization from contaminated soils and/or groundwater into confined overlying structures, Apex recommends one or more of the following management practices be implemented for the new building:
 - ◆ Do not locate the structure over or near VOC contaminated soil and/or groundwater;
 - ◆ Excavate and remove VOC contaminated soils;
 - ◆ Design and operate a groundwater treatment system if required; and/or
 - ◆ Construct a vapor barrier between the building foundation and the contaminated media.

7.0 LIMITATIONS

Our Site evaluation was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area, and we observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. Our findings and conclusions must be considered not as scientific certainties, but our professional opinion concerning the significance of the limited data gathered during the course of the preliminary Site assessment. Specifically, we do not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by us during our Site assessment. This assessment is also subject to the Limitations presented in Appendix A.

This study and report have been prepared on behalf of and for the exclusive use of the United States Postal Service solely for use in an environmental evaluation of the Site. This report and findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party in whole or in part, without our prior written consent. Apex's aggregate liability to all parties who may come to rely on this report is limited to the amount set forth in the Terms and Conditions of our contract and is not hereby expanded. No other warranty, express or implied, is made.



LEGEND

● MONITORING WELL

H: /LIBRARY/CADFILES/5563-022/CONTOUR.DWG

Adx
Environmental, Inc.
63 EAST CENTER ST.
MANCHESTER, CT
(860) 533-4177

PROJECT 5563-022
DATE: 02-26-99
DESIGN: WO
DRAWN: WW
CHKD: WO
NOT TO SCALE

LMC SERVICE STATION
ARLINGTON, VERMONT

GROUNDWATER CONTOUR

FIGURE-2

DRAWING:
CONTOUR.DWG

TABLE 1
GROUNDWATER LEVEL MEASUREMENTS
LMC Sunoco
Arlington, Vermont

WELL DESIGNATION	REFERENCE ELEVATION ⁽¹⁾ (feet)	(February 3, 1999)	
		DEPTH TO GROUNDWATER ⁽²⁾ (feet)	GROUNDWATER ELEVATION (feet)
MW- 3	100.3	6.38	93.9
MW- 4	-	4.00	-
MW- 5	96.8	6.75	90.1
MW- 6	97.9	5.15	92.8
MW- 7	100.1	5.20	94.9
MW- 8	99.4	3.87	95.5

Legend:

"-" indicates no measurement obtained.

Notes:

1. Survey was performed by Parks Associates on 2/22/99. Reference elevation is top of PVC. Elevations are based on an assumed site datum.
2. Groundwater depth survey was performed by Apex personnel on 2/3/99.

TABLE 2
pH and SPECIFIC CONDUCTANCE DATA
LMC Sunoco
Arlington, Vermont

SAMPLE DESIGNATION	pH ⁽¹⁾ (Standard Units)	Specific Conductance ⁽²⁾ (umhos/cm)
MW - 3	7.1	1289
MW - 4	7.2	1100
MW - 5	7.4	711
MW - 6	7.2	867
MW - 7	7.4	917
MW - 8	7.8	989

Notes:

1. pH readings were obtained on 2/3/99 with a pH Tester 1 Oakton meter, calibrated using standard solutions.
2. Specific conductance readings were obtained on 2/3/99 with a Cole-Parmer 19815 Conductivity Meter, calibrated to a 700 umhos/cm solution.

TABLE 3
RESULTS OF ORGANIC COMPOUNDS IN SOIL¹
LMC Sunoco
Route 7A
Arlington, Vermont

Volatile Organic Compound (mg/kg)	Sample Location and Depth											Standards ³	
	MW-05 (S-03)	MW-06 (S-01)	MW-07 (S-02)	MW-08 (S-01)	SS-01 (00-01)	SS-04 (00-04)	T-01 (0-3')	T-02 (0-3')	CC-01 (00-16)	CC-02 (00-02)	CC-03 (00-02)	Residential (mg/kg)	Industrial (mg/kg)
Benzene	ND	ND	4.1	ND	ND	ND	ND	ND	ND	ND	ND	22.0	200.0
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1600.0	41000.0
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7000.0	180000.0
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2300.0	61000.0
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	27.0	240.0
Ethyl Benzene	ND	ND	331.0	ND	ND	ND	ND	ND	ND	ND	ND	7800.0	200000.0
Methyl-tert-butyl-Ether (MTBE)	ND	ND	2.2	ND	ND	ND	ND	ND	ND	ND	ND	***	***
Toluene	ND	ND	162.0	ND	ND	ND	ND	ND	ND	ND	ND	16000.0	410000.0
m&p-Xylenes	ND	ND	1380.0	ND	ND	ND	0.0073	ND	ND	ND	ND	160000.0	4100000.0
o-Xylene	ND	ND	453.0	ND	ND	ND	ND	ND	ND	ND	ND	160000.0	4100000.0
Total VOCs ² :	ND	ND	2332.3	ND	ND	ND	0.0073	ND	ND	ND	ND		
TPH	12.0	<i>860.0</i>	<i>3100.0</i>	14.0	48.0	13.0	BDL	18.0	16.0	10.0	<i>770.0</i>	200.0 ⁽⁴⁾	1000.0 ⁽⁴⁾

Legend:

ND = None Detected; BDL = Below Detection Limit; *** = No standard has been established for the constituent

Notes:

1. Soil samples were collected by Apex personnel on 2/3/99 and analyzed by EPA Method 8020 (and MTBE) by Con-Test Laboratory in Longmeadow, MA. (Vermont DOH (lead) No. 15036/Massachusetts MA 100)
2. Total VOCs calculation does not include compounds which were detected Below Minimum Quantification Limits.
3. Standards were obtained from the USEPA Region III RBC Tables dated 4/98. Results which exceed Standards are indicated in bold italics.
4. TPH Soil Clean-up Guidelines as recommended from VTDEC Site Coordinator to VTDEC Site Supervisor dated December 30, 1992.

TABLE 4
RESULTS OF ORGANIC COMPOUNDS IN GROUNDWATER¹
LMC Sunoco
Route 7A
Arlington, Vermont

Volatile Organic Compound (ug/L)	Well Designation						Standards ¹ Enforcement Standards (ug/L)
	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	
Benzene	633	4.7	ND	ND	125	1.3	5.0
Chlorobenzene	ND	ND	ND	ND	ND	ND	100.0
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	600.0
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	600.0
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	75.0
Ethyl Benzene	942	20.4	55.4	ND	424	14.1	700.0
Methyl-tert-butyl-Ether (MTBE)	ND	3.4	43.8	ND	ND	ND	40.0
Toluene	BDL	9.4	ND	ND	1080	25.4	1000.0
m&p-Xylenes	5590	170	BDL	ND	1650	62.4	10000.0
o-Xylene	1120	11.2	126	ND	620	20.9	10000.0
Total VOCs ² :	8285	219.1	225.2	ND	3899	98.7	
PCBs	NA	NA	ND	NA	NA	NA	0.5
TPH (mg/l)	15.6	1.62	1.09	BDL	5.83	0.35	***

Legend:

ND = None Detected; BDL = Below Detection Limit; *** = No standard has been established for the constituent;
 NA=Not Analyzed

Notes:

1. Groundwater samples were collected by Apex personnel on 2/3/99 and analyzed by EPA Method 602 (and MTBE) by Con-Test Laboratory in Longmeadow, MA. (Vermont DOH (lead) No. 15036)
2. Total VOCs calculation does not include compounds which were detected Below Detection Limits.
3. Standards were obtained from the State of Vermont Department of Environmental Conservation Chapter 12 Groundwater Protection Rule and Strategy Appendix One dated 10/97. Results which exceed Standards are indicated in bold.

TABLE 5
RESULTS OF INORGANIC ANALYSES OF GROUNDWATER¹
LMC Sunoco
Route 7A
Arlington, Vermont

Parameter	Well Designation	STANDARDS ²
	MW-5 (ug/L)	Enforcement Standard (ug/L)
Arsenic	ND	50
Barium	116.0	2000
Cadmium	0.6	5.0
Chromium (Total)	ND	100.0
Lead	ND	15.0
Mercury	ND	2.0
Selenium	ND	50.0
Silver	ND	***

Legend:

NA = Not Analyzed; BDL = Below Detection Limit

*** = None Established

Notes:

1. Soil samples were collected on 2/3/99 and analyzed by Con-Test Laboratory in Longmeadow, MA. Samples were analyzed using and ICP Emission Spectroscopy. (Vermont DOH (lead) No. 15036/Massachusetts MA 100).
2. Standards for soils were obtained from State of Vermont Department of Environmental Conservation Chapter 12 Groundwater Protection Rule and Strategy Appendix One dated 10/97. Results which exceed the Standards are indicated in bold.

Appendix A

Limitations

APPENDIX A

SUBSURFACE INVESTIGATION LIMITATIONS

1. The observations described in this report were made under the conditions stated therein. The conclusions presented in the report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by Client. The work described in this report was carried out in accordance with the attached Terms and Conditions.
2. In preparing this report, Apex Environmental, Inc. (Apex) has relied on certain information provided by state and local officials and other parties referenced therein, and on information contained in the files of state and/or local agencies available to Apex at the time of the site assessment. Although there may have been some degree of overlap in the information provided by these various sources, Apex did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this site assessment.
3. Observations were made of the site and of structures on the site as indicated within the report. Where access to portions of the site or to structures on the site was unavailable or limited, Apex renders no opinion as to the presence of hazardous material or oil, or to the presence of indirect evidence relating to hazardous material or oil, in that portion of the site or structure. In addition, Apex renders no opinion as to the presence of hazardous material or oil, or to the presence of indirect evidence relating to hazardous material or oil, where direct observation of the interior walls, floor, or ceiling of a structure on a site was obstructed by objects or coverings on or over these surfaces.
4. Unless otherwise specified in the report, Apex did not perform testing or analyses to determine the presence or concentration of asbestos at the site or in the environment at the site.
5. The conclusions and recommendations contained in this report are based in part upon the data obtained from a limited number of soil and/or groundwater samples obtained from widely spaced subsurface explorations. The nature and extent of variations between these explorations may not become evident until further exploration. If variations or other latent conditions then appear evident, it will be necessary to reevaluate the conclusions and recommendations of this report.
6. Water level readings have been made in the test pits, borings, and/or observation wells at the times and under the conditions stated on the test pit or boring logs. However, it must be noted that fluctuations in the level of groundwater may occur due to variations in rainfall and other factors different from those prevailing at the time measurements were made.
7. The conclusions and recommendations contained in this report are based in part upon various types of chemical data and are contingent upon their validity. These data have been reviewed and interpretations made in the report. As indicated within the report, some of these data are preliminary "screening" level data, and should be confirmed with quantitative analyses if more specific information is necessary. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time, and other factors. Should additional chemical data become available in the future, these data should be reviewed by Apex and the conclusions and recommendations presented herein modified accordingly.
8. Chemical analyses have been performed for specific parameters during the course of this site assessment, as described in the text. However, it should be noted that additional chemical constituents not searched for during the current study may be present in soil and/or groundwater at the site.

9. It is recommended that Apex be retained to provide further engineering services during construction and/or implementation of any remedial measures recommended in this report. This is to allow Apex to observe compliance with the concepts and recommendations contained herein, and to allow the development of design changes in the event that subsurface conditions differ from those anticipated.

Appendix B

Boring Logs

APEX ENVIRONMENTAL, INC.

63 East Center Street, Suite 2-B
 Manchester Connecticut 06040
 (860) 533-4177/Fax: (860) 533-4183

Boring No.: MW-5
 Page: 1 of 1
 Proj. No.: 5563-022
 Checked By: JTG

Boring Co	TK Drilling	Casing	HSA	Sampler	S.S.
Foreman	Allan Cutler	Type			
Apex Rep	Allan Cutler	I.D./O.D.	4-1/4"	2" O.D.	
Date Start	2/3/99	Date End	2/3/99	Hammer Wt.	140 lb.
Location	Arlington, Vermont Sunoco	Hammer Fall		30"	
G.S. Elevation		Datum		Other	

Date	Time	Depth	Casing	Stabilization Time
2/3/99	10:00 AM	9'		5 min
2/3/99	12:00 AM	7'		2 hrs.

Depth	Sample Information					Sample Description & Classification	Stratum Description	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in)	Depth (ft)	Blows/6"	Field Test Data					
5	S-1	24/9	0-2'	9 32	1.4	S-1: Dense, brown fine-medium SAND, little Silt, little fine Gravel	BROWN FINE-MEDIUM SAND	1	Flush mount road box	Sand 0-2'
				12 9						
	S-2	24/4	5'-7'	3 2	NA	S-2: Loose, brown fine-medium SAND, little Silt, trace metal wire				
10				4 22				2		Silica sand filter 4-15'
	S-3	24/2	10'-12'	2 5	16.5	S-3: Medium dense, brown fine-medium SAND, little Silt				2" #10 slot PVC well screen 5-15'
15				23 26			13'			
	S-4	24/15	15'-17'	27 26	1.9	S-4: Dense, gray fine SAND, and Silt	GRAY SAND AND SILT	3		
20				23 31			17' END OF EXPLORATION			
25										
30										

R 1. Soil samples field screened with a 10 eV photoionization detector (PID). PID values represent meter response in parts per million (ppm) relative to a benzene in air and above background readings. "ND" = None Detected above background. "NA" = Not Analyzed.

E 2. Samples saturated below 9' feet below grade.

M 1. 10 feet of 2-inch diameter, Schedule 40, threaded, flush joint, 10-slot PVC well screen set at approximately 15 feet below grade. Well completed to surface with a 2 inch diameter, Schedule 40 threaded, flush joint, PVC riser. Filter sand placed in annulus around PVC from 0 to 2 feet below grade. Bentonite seal installed from 2' to 4 feet below grade. Well protected with cap and curb box.

A

R

K

S

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: MW-5

APEX ENVIRONMENTAL, INC.
 63 East Center Street, Suite 2-B
 Manchester Connecticut 06040
 (860) 533-4177 / Fax: (860) 533-4183

Boring No.: MW-6
 Page: 1 of 1
 Proj No.: 5561-022
 Checked By: ITG

Boring Co: TK Drilling
 Foreman: Allan Cutler
 Apex Rep: Allan Cutler
 Date Start: 2/3/99 Date End: 2/3/99
 Location: Arlington, Vermont Success
 G.S. Elevation: Datum

Type: ID/O.D.
 Casing: HSA 4-1/4"
 Sampler: S.S. 2" O.D.
 Hammer Wt: 140 lb.
 Hammer Fall: 30"
 Other:

Groundwater Readings				
Date	Time	Depth	Casing	Stabilization Time
2/3/99	11:55 AM	5.6'		5 min.
2/3/99				

Depth	Sample Information					Sample Description & Classification	Stratum Description	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in)	Depth (ft)	Blows/6"	Field Test Data					
5	S-1	24/7	1'-2'	24 50	2.2	S-1: Dense, brown, fine-medium SAND, little fine Gravel, trace Silt	BROWN FINE-MEDIUM SAND	1	Flush mount curb box -Sand 0-1.5'	3" PVC riser 0-3' Bentonite seal 1.5'-2.5'
	S-2	24/3	5'-7'	10 10 12 9	NA	S-2: Medium dense, brown, fine-medium SAND, and fractured rock				
10	S-3	24/15	10-11.16'	8 21 100/2"	0.9	S-3: Very dense, gray, fine SAND, and Silt	8' GRAY SAND AND SILT	3	Silica sand filter 2.5-13'	2" #10 slot PVC well screen 3-13'
							13' END OF EXPLORATION			

R
F
M
A
R
K
S

- Soil samples field screened with a 10 eV photoionization detector (PID). PID values represent meter response in parts per million (ppm) relative to a benzene in air and above background readings. "ND" = None Detected above background. "NA" = Not Analyzed
- Samples saturated below 5.6 feet below grade.
- 10 feet of 2 inch diameter, Schedule 40, threaded, flush joint, 10-slot PVC well screen set at approximately 13 feet below grade. Well completed to surface with a 2 inch diameter, Schedule 40, threaded, flush joint, PVC riser. Filter sand placed in annulus around PVC from 0 to 1.5 feet below grade. Bentonite seal installed from 1.5 to 2.5 feet below grade. Well protected with cap and curb box.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: MW-6

APEX ENVIRONMENTAL, INC.

63 East Center Street, Suite 2-B
 Manchester Connecticut 06040
 (860) 533-4177 / Fax: (860) 533-4183

Boring No.: MW-7
 Page: 1 of 1
 Proj. No.: 5563-022
 Checked By: JTG

Boring Co: TK Drilling
 Foreman: Allan Cutler
 Apex Rep: Allan Cutler
 Date Start: 2/3/99 Date End: 2/3/99
 Location: Arlington, Vermont Sunoco
 G.S. Elevation: Datum

Casing: HSA
 Type: I.D./O.D.: 4-1/4"
 Hammer Wt.: Hammer Fall: Other:

Sampler: S.S.
 2" O.D.
 140 lb.
 30"

Groundwater Readings				
Date	Time	Depth	Casing	Stabilization Time
2/3/99	2:20 PM	8'		5 min.
2/3/99				

Depth	Sample Information					Sample Description & Classification	Stratum Description	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in)	Depth (ft)	Blows/6"	Field Test Data					
5	S-1	24/5	2'-4"	8 10 14 17	1.9	S-1: Medium dense, brown, fine-medium SAND, little Silt, trace fine Gravel	BROWN FINE-MEDIUM SAND			
	S-2	24/8	5'-7"	4 8 10 9	1493.0	S-2: Medium dense, gray/black, fine-medium SAND, little Silt, trace fine Gravel	GRAY/BLACK FINE-MEDIUM SAND			
10	S-3	24/12	10'-12"	17 25 22 22	1253.0	S-3: Dense, gray/black, fine-medium SAND, little Silt, trace fine Gravel				
	S-4	24/20	13'-15"	6 11 19 25	140.0	S-4: Top 10" gray/black, fine-medium SAND, and Silt Bottom 10" brown, fine SAND and Silt	14' BROWN SAND 15' END OF EXPLORATION			
15										
20										
25										
30										

R 1. Soil samples field screened with a 10 eV photoionization detector (PID). PID values represent meter response in parts per million (ppm) relative to a benzene in air and above background readings. "ND" - None Detected above background. "NA" = Not Analyzed.

E 2. Strong Petroleum Odor.

M 3. Samples saturated below 8 feet below grade

A 4. 10 feet of 2 inch diameter, Schedule 40, threaded, flush joint, 10-slot PVC well screen set at approximately 13 feet below grade. Well completed to surface with a 2 inch diameter, Schedule 40, threaded, flush joint, PVC riser. Filter sand placed in annulus around PVC from 0 to 1.5 feet below grade. Bentonite seal installed from 1.5 to 2.5 feet below grade. Well protected with cap and curb box.

R

K

S

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No. MW-7

APEX ENVIRONMENTAL, INC.
 63 East Center Street, Suite 2-B
 Manchester Connecticut 06040
 (860) 533-4177 / Fax: (860) 533-4183

Boring No.: MW-8
 Page: 1 of 1
 Proj. No.: 5563-022
 Checked By: JTG

Hiring Co: TK Drilling
 Foreman: Allan Cutler
 Apex Rep: Allan Cutler
 Date Start: 2/3/99 Date End: 2/3/99
 Location: Arlington, Vermont Sunoco
 C.S. Elevation: Datum
 Type: HSA
 I.D./O.D.: 4 1/4" / 2" O.D.
 Hammer Wt: Hammer Fall
 Other: 30"

Groundwater Readings				
Date	Time	Depth	Casing	Stabilization Time
2/3/99	4:00 PM	6'		5 min.

Depth	Sample Information					Sample Description & Classification	Stratum Description	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in)	Depth (ft)	Blows/6"	Field Test Data					
5	S-1	24/17	2'-4'	37 20 10 14	14.4	S-1: Dense, brown, fine-medium SAND, some fractured rock, little Silt	BROWN FINE-MEDIUM SAND	1	2" PVC riser 0-3' Bentonite seal 1.5' 2.5'	
	S-2	24/2	5'-7'	4 5 8 32	11.2	S-2: Loose, brown, fine-medium SAND, little Silt with fractured rock (some)				
10	S-3	24/16	10'-12'	11 15 13 15	2.7	S-3: Medium dense, gray, fine SAND and Silt with fractured rock (trace)	8' GRAY SAND AND SILT	3	Silica sand filter 3-13' 2" #10 slot PVC well screen 3-13'	
15	S-4	24/16	13'-15'	15 36 48 58	2.5	S-4: Very dense, gray, fine SAND, and Silt with fractured rock (trace)	15' END OF EXPLORATION			

1. Soil samples field screened with a 10 eV photoionization detector (PID). PID values represent meter response in parts per million (ppm) relative to a benzene in air and above background readings. "ND" = None Detected above background. "NA" = Not Analyzed.
 2. Samples saturated below 6" feet below grade.
 3. 10 feet of 2 inch diameter, Schedule 40, threaded, flush joint, 10-slot PVC well screen set at approximately 13 feet below grade. Well completed to surface with a 2 inch diameter, Schedule 40, threaded, flush joint, PVC riser. Filter sand placed in annulus around PVC from 0 to 1.5 feet below grade. Bentonite seal installed from .5 to 2.5 feet below grade. Well protected with cap and curb box.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: MW-8

Appendix C

Laboratory Data Sheets

APEX ENVIRONMENTAL
 63 EAST CENTER ST, SUITE 2-B
 MANCHESTER, CT 06040
 ATTN: TY GRIFFITH

REPORT DATE: 02/16/99

PURCHASE ORDER NUMBER: 5563-022

PROJECT NUMBER: 5563-022

ANALYTICAL SUMMARY

LIMS BAT #: LIMS-40241

JOB NUMBER: -

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report

PROJECT LOCATION: ARLINGTON,VT SUNOCO

FIELD SAMPLE #	LAB ID	MATRIX	SAMPLE DESCRIPTION	TEST
CC-01/00-16	99802286	SOIL	NOT SPECIFIED	8020 - solid
CC-01/00-16	99802286	SOIL	NOT SPECIFIED	tph gc 8100m
CC-02/00-02	99802287	SOIL	NOT SPECIFIED	8020 - solid
CC-02/00-02	99802287	SOIL	NOT SPECIFIED	tph gc 8100m
CC-03/00-02	99802285	SOIL	NOT SPECIFIED	8020 - solid
CC-03/00-02	99802285	SOIL	NOT SPECIFIED	tph gc 8100m
MW-03	99802296	GRND WATER	NOT SPECIFIED	tph gc h2o 8100m
MW-03	99802300	GRND WATER	NOT SPECIFIED	602/8020 water
MW-04	99802297	GRND WATER	NOT SPECIFIED	tph gc h2o 8100m
MW-04	99802301	GRND WATER	NOT SPECIFIED	602/8020 water
MW-05	99802292	GRND WATER	NOT SPECIFIED	tph gc h2o 8100m
MW-05	99802298	GRND WATER	NOT SPECIFIED	pcb - water
MW-05	99802299	GRND WATER	NOT SPECIFIED	metals-8rcra dis
MW-05	99802302	GRND WATER	NOT SPECIFIED	602/8020 water
MW-05/S-03	99802281	SOIL	NOT SPECIFIED	8020 - solid
MW-05/S-03	99802281	SOIL	NOT SPECIFIED	tph gc 8100m
MW-06	99802293	GRND WATER	NOT SPECIFIED	tph gc h2o 8100m
MW-06	99802303	GRND WATER	NOT SPECIFIED	602/8020 water
MW-06/S-01	99802284	SOIL	NOT SPECIFIED	8020 - solid
MW-06/S-01	99802284	SOIL	NOT SPECIFIED	tph gc 8100m
MW-07	99802294	GRND WATER	NOT SPECIFIED	tph gc h2o 8100m
MW-07	99802304	GRND WATER	NOT SPECIFIED	602/8020 water
MW-07/S-02	99802283	SOIL	NOT SPECIFIED	8020 - solid
MW-07/S-02	99802283	SOIL	NOT SPECIFIED	tph gc 8100m
MW-08	99802295	GRND WATER	NOT SPECIFIED	tph gc h2o 8100m
MW-08	99802305	GRND WATER	NOT SPECIFIED	602/8020 water
MW-08/S-01	99802282	SOIL	NOT SPECIFIED	8020 - solid
MW-08/S-01	99802282	SOIL	NOT SPECIFIED	tph gc 8100m
SS-01/00-01	99802290	SOIL	NOT SPECIFIED	8020 - solid
SS-01/00-01	99802290	SOIL	NOT SPECIFIED	tph gc 8100m
SS-04/00-04	99802288	SOIL	NOT SPECIFIED	8020 - solid
SS-04/00-04	99802288	SOIL	NOT SPECIFIED	tph gc 8100m
T-01/03' EAST	99802289	SOIL	NOT SPECIFIED	8020 - solid
T-01/03' EAST	99802289	SOIL	NOT SPECIFIED	pb (mg/kg) aa
T-01/03' EAST	99802289	SOIL	NOT SPECIFIED	tph gc 8100m
T-02/03' EAST	99802291	SOIL	NOT SPECIFIED	8020 - solid
T-02/03' EAST	99802291	SOIL	NOT SPECIFIED	tph gc 8100m



39 Spruce Street • 2nd Floor • East Longmeadow, MA 01028 • FAX 413/525-6405 • TEL 413/525-2332

APEX ENVIRONMENTAL

REPORT DATE: 02/16/99

63 EAST CENTER ST, SUITE 2-B
MANCHESTER, CT 06040
ATTN: TY GRIFFITH

PURCHASE ORDER NUMBER: 5563-022
PROJECT NUMBER: 5563-022

ANALYTICAL SUMMARY

LIMS BAT #: LIMS-40241
JOB NUMBER: -

FIELD SAMPLE #	LAB ID	MATRIX	SAMPLE DESCRIPTION	TEST
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The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

- AIHA 308
- MASSACHUSETTS MA100
- CONNECTICUT PH-0567
- NEW YORK ELAP 10899
- AIHA ELLAP (LEAD) 6838
- NEW HAMPSHIRE 2516
- VERMONT DOH (LEAD) No. 15036
- RHODE ISLAND (LIC. No. 112)

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Edward Denson 2/16/99
SIGNATURE DATE

Tod Kopyscinski
Director of Operations

Edward Denson
Technical Director



39 Spruce Street • 2nd Floor • East Longmeadow, MA 01028 • FAX 413/525-6405 • TEL 413/525 2332

TY GRIFFITH
 APEX ENVIRONMENTAL
 63 EAST CENTER ST, SUITE 2-B
 MANCHESTER, CT 06040

02/16/99
 page 1 of 19

Purchase Order Number: 5563-022
 Project Number: 5563-022

Project Location: ARLINGTON,VT SUNOCO
 Date Received: 02/05/99

LIMS-BAT #: LIMS-40241
 Job Number: -
 Sample Matrix: GRND WATER

Sampled: 02/03/99
 NOT SPECIFIED
 MW-03

	Units	99802300	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/l	633	02/11/99	MFF	10.0		
Chlorobenzene	ug/l	ND	02/11/99	MFF	25.0		
1,2-Dichlorobenzene	ug/l	ND	02/11/99	MFF	25.0		
1,3-Dichlorobenzene	ug/l	ND	02/11/99	MFF	25.0		
1,4-Dichlorobenzene	ug/l	ND	02/11/99	MFF	25.0		
Ethyl Benzene	ug/l	942	02/11/99	MFF	25.0		
MTBE	ug/l	ND	02/11/99	MFF	25.0		
Toluene	ug/l	BDL	02/11/99	MFF	50.0		
m/p-Xylene	ug/l	5590	02/11/99	MFF	50.0		
o-Xylene	ug/l	1120	02/11/99	MFF	25.0		

Sampled: 02/03/99
 NOT SPECIFIED
 MW-04

	Units	99802301	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/l	4.7	02/11/99	MFF	0.2		
Chlorobenzene	ug/l	ND	02/11/99	MFF	0.5		
1,2-Dichlorobenzene	ug/l	ND	02/11/99	MFF	0.5		
1,3-Dichlorobenzene	ug/l	ND	02/11/99	MFF	0.5		
1,4-Dichlorobenzene	ug/l	ND	02/11/99	MFF	0.5		
Ethyl Benzene	ug/l	20.4	02/11/99	MFF	0.5		
MTBE	ug/l	3.4	02/11/99	MFF	0.5		
Toluene	ug/l	9.4	02/11/99	MFF	1.0		
m/p-Xylene	ug/l	170	02/11/99	MFF	1.0		
o-Xylene	ug/l	11.2	02/11/99	MFF	0.5		

MDL = Method Detection Limit
 ND = Not Detected
 BDL = Below Detection Limit
 NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022

Project Number: 5563-022

LIMS-BAT #: LIMS-40241

Job Number: -

Sample Matrix: GRND WATER

Sampled: 02/03/99

NOT SPECIFIED

MW-05

	Units	99802302	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/l	ND	02/11/99	MFF	10.0		
Chlorobenzene	ug/l	ND	02/11/99	MFF	25.0		
1,2-Dichlorobenzene	ug/l	ND	02/11/99	MFF	25.0		
1,3-Dichlorobenzene	ug/l	ND	02/11/99	MFF	25.0		
1,4-Dichlorobenzene	ug/l	ND	02/11/99	MFF	25.0		
Ethyl Benzene	ug/l	55.4	02/11/99	MFF	25.0		
MTBE	ug/l	43.8	02/11/99	MFF	25.0		
Toluene	ug/l	ND	02/11/99	MFF	50.0		
m/p-Xylene	ug/l	BDL	02/11/99	MFF	50.0		
o-Xylene	ug/l	126	02/11/99	MFF	25.0		

Sampled: 02/03/99

NOT SPECIFIED

MW-06

	Units	99802303	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/l	ND	02/11/99	MFF	0.2		
Chlorobenzene	ug/l	ND	02/11/99	MFF	0.5		
1,2-Dichlorobenzene	ug/l	ND	02/11/99	MFF	0.5		
1,3-Dichlorobenzene	ug/l	ND	02/11/99	MFF	0.5		
1,4-Dichlorobenzene	ug/l	ND	02/11/99	MFF	0.5		
Ethyl Benzene	ug/l	ND	02/11/99	MFF	0.5		
MTBE	ug/l	ND	02/11/99	MFF	0.5		
Toluene	ug/l	ND	02/11/99	MFF	1.0		
m/p-Xylene	ug/l	ND	02/11/99	MFF	1.0		
o-Xylene	ug/l	ND	02/11/99	MFF	0.5		

MDL = Method Detection Limit

ND = Not Detected

BDL = Below Detection Limit

NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022

Project Number: 5563-022

LIMS-BAT #: LIMS-40241

Job Number: -

Sample Matrix: GRND WATER

Sampled: 02/03/99

NOT SPECIFIED

MW-07

	Units	99B02304	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/l	125	02/11/99	MFF	10.0		
Chlorobenzene	ug/l	ND	02/11/99	MFF	25.0		
1,2-Dichlorobenzene	ug/l	ND	02/11/99	MFF	25.0		
1,3-Dichlorobenzene	ug/l	ND	02/11/99	MFF	25.0		
1,4-Dichlorobenzene	ug/l	ND	02/11/99	MFF	25.0		
Ethyl Benzene	ug/l	424	02/11/99	MFF	25.0		
MTBE	ug/l	ND	02/11/99	MFF	25.0		
Toluene	ug/l	1080	02/11/99	MFF	50.0		
m/p-Xylene	ug/l	1650	02/11/99	MFF	50.0		
o-Xylene	ug/l	620	02/11/99	MFF	25.0		

Sampled: 02/03/99

NOT SPECIFIED

MW-08

	Units	99B02305	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/l	1.3	02/11/99	MFF	0.2		
Chlorobenzene	ug/l	ND	02/11/99	MFF	0.5		
1,2-Dichlorobenzene	ug/l	ND	02/11/99	MFF	0.5		
1,3-Dichlorobenzene	ug/l	ND	02/11/99	MFF	0.5		
1,4-Dichlorobenzene	ug/l	ND	02/11/99	MFF	0.5		
Ethyl Benzene	ug/l	14.1	02/11/99	MFF	0.5		
MTBE	ug/l	ND	02/11/99	MFF	0.5		
Toluene	ug/l	25.4	02/11/99	MFF	1.0		
m/p-Xylene	ug/l	62.4	02/11/99	MFF	1.0		
o-Xylene	ug/l	20.9	02/11/99	MFF	0.5		

MDL = Method Detection Limit

ND = Not Detected

BDL = Below Detection Limit

NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Analytical Method(s):

602/8020

SAMPLES ARE CONCENTRATED BY PURGE AND TRAP FOLLOWED BY GAS CHROMATOGRAPHIC ANALYSIS WITH PHOTOIONIZATION DETECTION (PID).

MDL = Method Detection Limit
ND = Not Detected
BDL = Below Detection Limit
NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022
Project Number: 5563-022

LIMS-BAT #: LIMS-40241
Job Number: -
Sample Matrix: SOIL

Sampled: 02/03/99
NOT SPECIFIED
CC-01/00-16

	Units	99B02286	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/kg	ND	02/10/99	MFF	1.0		
Chlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,2-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,3-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,4-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
Ethyl Benzene	ug/kg	ND	02/10/99	MFF	2.5		
MTBE	ug/kg	ND	02/10/99	MFF	2.5		
Toluene	ug/kg	ND	02/10/99	MFF	5.0		
m/p-xylene	ug/kg	ND	02/10/99	MFF	5.0		
o-Xylene	ug/kg	ND	02/10/99	MFF	2.5		

Sampled: 02/03/99
NOT SPECIFIED
CC-02/00-02

	Units	99B02287	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/kg	ND	02/10/99	MFF	1.0		
Chlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,2-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,3-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,4-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
Ethyl Benzene	ug/kg	ND	02/10/99	MFF	2.5		
MTBE	ug/kg	ND	02/10/99	MFF	2.5		
Toluene	ug/kg	ND	02/10/99	MFF	5.0		
m/p-xylene	ug/kg	ND	02/10/99	MFF	5.0		
o-Xylene	ug/kg	ND	02/10/99	MFF	2.5		

MDL = Method Detection Limit
ND = Not Detected
BDL = Below Detection Limit
NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022

Project Number: 5563-022

LIMS-BAT #: LIMS-40241

Job Number: -

Sample Matrix: SOIL

Sampled: 02/03/99

NOT SPECIFIED

CC-03/00-02

	Units	99802285	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/kg	ND	02/10/99	MFF	1.0		
Chlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,2-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,3-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,4-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
Ethyl Benzene	ug/kg	ND	02/10/99	MFF	2.5		
MTBE	ug/kg	ND	02/10/99	MFF	2.5		
Toluene	ug/kg	BDL	02/10/99	MFF	5.0		
m/p-xylene	ug/kg	BDL	02/10/99	MFF	5.0		
o-Xylene	ug/kg	ND	02/10/99	MFF	2.5		

Sampled: 02/03/99

NOT SPECIFIED

MW-05/S-03

	Units	99802281	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/kg	ND	02/10/99	MFF	1.0		
Chlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,2-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,3-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,4-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
Ethyl Benzene	ug/kg	ND	02/10/99	MFF	2.5		
MTBE	ug/kg	ND	02/10/99	MFF	2.5		
Toluene	ug/kg	ND	02/10/99	MFF	5.0		
m/p-xylene	ug/kg	ND	02/10/99	MFF	5.0		
o-Xylene	ug/kg	ND	02/10/99	MFF	2.5		

MDL = Method Detection Limit
 ND = Not Detected
 BDL = Below Detection Limit
 NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022

Project Number: 5563-022

LIMS-BAT #: LIMS-40241

Job Number: -

Sample Matrix: SOIL

Sampled: 02/03/99

NOT SPECIFIED

MW-06/S-01

	Units	99B02284	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/kg	ND	02/10/99	MFF	1.0	-----	---
Chlorobenzene	ug/kg	ND	02/10/99	MFF	2.5	-----	---
1,2-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5	-----	---
1,3-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5	-----	---
1,4-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5	-----	---
Ethyl Benzene	ug/kg	ND	02/10/99	MFF	2.5	-----	---
MTBE	ug/kg	ND	02/10/99	MFF	2.5	-----	---
Toluene	ug/kg	ND	02/10/99	MFF	5.0	-----	---
m/p-xylene	ug/kg	ND	02/10/99	MFF	5.0	-----	---
o-Xylene	ug/kg	ND	02/10/99	MFF	2.5	-----	---

Sampled: 02/03/99

NOT SPECIFIED

MW-07/S-02

	Units	99B02283	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/kg	4100	02/10/99	MFF	20.0	-----	---
Chlorobenzene	ug/kg	ND	02/10/99	MFF	50.0	-----	---
1,2-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	50.0	-----	---
1,3-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	50.0	-----	---
1,4-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	50.0	-----	---
Ethyl Benzene	ug/kg	331000	02/10/99	MFF	50.0	-----	---
MTBE	ug/kg	2200	02/10/99	MFF	50.0	-----	---
Toluene	ug/kg	162000	02/10/99	MFF	100	-----	---
m/p-xylene	ug/kg	1380000	02/10/99	MFF	100	-----	---
o-Xylene	ug/kg	453000	02/10/99	MFF	50.0	-----	---

MDL = Method Detection Limit
ND = Not Detected
BDL = Below Detection Limit
NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022
Project Number: 5563-022

LIMS-BAT #: LIMS-40241
Job Number: -
Sample Matrix: SOIL

Sampled: 02/03/99
NOT SPECIFIED
MW-08/S-01

	Units	99802282	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/kg	ND	02/10/99	MFF	1.0		
Chlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,2-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,3-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,4-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
Ethyl Benzene	ug/kg	ND	02/10/99	MFF	2.5		
MTBE	ug/kg	ND	02/10/99	MFF	2.5		
Toluene	ug/kg	ND	02/10/99	MFF	5.0		
m/p-xylene	ug/kg	ND	02/10/99	MFF	5.0		
o-Xylene	ug/kg	ND	02/10/99	MFF	2.5		

Sampled: 02/03/99
NOT SPECIFIED
SS-01/00-01

	Units	99802290	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/kg	ND	02/10/99	MFF	1.0		
Chlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,2-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,3-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,4-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
Ethyl Benzene	ug/kg	ND	02/10/99	MFF	2.5		
MTBE	ug/kg	ND	02/10/99	MFF	2.5		
Toluene	ug/kg	ND	02/10/99	MFF	5.0		
m/p-xylene	ug/kg	ND	02/10/99	MFF	5.0		
o-Xylene	ug/kg	ND	02/10/99	MFF	2.5		

MDL = Method Detection Limit
ND = Not Detected
BDL = Below Detection Limit
NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022
Project Number: 5563-022

LIMS-BAT #: LIMS-40241
Job Number: -
Sample Matrix: SOIL

Sampled: 02/03/99
NOT SPECIFIED
SS-04/00-04

	Units	99802288	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/kg	ND	02/10/99	MFF	1.0		
Chlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,2-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,3-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,4-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
Ethyl Benzene	ug/kg	ND	02/10/99	MFF	2.5		
MTBE	ug/kg	ND	02/10/99	MFF	2.5		
Toluene	ug/kg	ND	02/10/99	MFF	5.0		
m/p-xylene	ug/kg	ND	02/10/99	MFF	5.0		
o-Xylene	ug/kg	ND	02/10/99	MFF	2.5		

Sampled: 02/03/99
NOT SPECIFIED
T-01/03' EAST

	Units	99802289	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/kg	ND	02/10/99	MFF	1.0		
Chlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,2-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,3-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,4-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
Ethyl Benzene	ug/kg	ND	02/10/99	MFF	2.5		
MTBE	ug/kg	ND	02/10/99	MFF	2.5		
Toluene	ug/kg	ND	02/10/99	MFF	5.0		
m/p-xylene	ug/kg	7.3	02/10/99	MFF	5.0		
o-Xylene	ug/kg	ND	02/10/99	MFF	2.5		

MDL = Method Detection Limit
ND = Not Detected
BDL = Below Detection Limit
NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022
Project Number: 5563-022

LIMS-BAT #: LIMS-40241
Job Number: -
Sample Matrix: SOIL

Sampled: 02/03/99
NOT SPECIFIED
T-02/03'EAST

	Units	99B02291	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Benzene	ug/kg	ND	02/10/99	MFF	1.0		
Chlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,2-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,3-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
1,4-Dichlorobenzene	ug/kg	ND	02/10/99	MFF	2.5		
Ethyl Benzene	ug/kg	ND	02/10/99	MFF	2.5		
MTBE	ug/kg	ND	02/10/99	MFF	2.5		
Toluene	ug/kg	ND	02/10/99	MFF	5.0		
m/p-xylene	ug/kg	ND	02/10/99	MFF	5.0		
o-Xylene	ug/kg	ND	02/10/99	MFF	2.5		

Analytical Method(s):

SWB46 8020

CONCENTRATION BY PURGE AND TRAP FOLLOWED BY GAS CHROMATOGRAPHY ANALYSIS WITH PHOTOIONIZATION DETECTION.

MDL = Method Detection Limit
ND = Not Detected
BDL = Below Detection Limit
NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022
 Project Number: 5563-022

LIMS-BAT #: LIMS-40241
 Job Number: -
 Sample Matrix: GRND WATER

Sampled: 02/03/99
 NOT SPECIFIED
 MW-05

	Units	99802299	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Dissolved Arsenic	mg/l	ND	02/10/99	PM	0.05		
Dissolved Barium	mg/l	0.116	02/10/99	PM	0.0010		
Dissolved Cadmium	mg/l	0.0006	02/10/99	PM	0.0005		
Dissolved Chromium	mg/l	ND	02/10/99	PM	0.004		
Dissolved Lead	mg/l	ND	02/10/99	PM	0.02		
Dissolved Mercury	mg/l	ND	02/10/99	JER	0.00004		
Dissolved Selenium	mg/l	ND	02/10/99	PM	0.05		
Dissolved Silver	mg/l	ND	02/10/99	PM	0.0050		

Analytical Method(s):

Dissolved Arsenic
 EPA 200.7

Inductively Coupled Plasma Emission Spectroscopy
 Dissolved Barium
 EPA 200.7

Inductively Coupled Plasma Emission Spectroscopy
 Dissolved Cadmium
 EPA 200.7

Inductively Coupled Plasma Emission Spectroscopy
 Dissolved Chromium
 EPA 200.7

Inductively Coupled Plasma Emission Spectroscopy
 Dissolved Lead

MDL = Method Detection Limit
 ND = Not Detected
 BDL = Below Detection Limit
 NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

EPA 200.7

Inductively Coupled Plasma Emission Spectroscopy

Dissolved Mercury

EPA 245.1

COLD VAPOR TECHNIQUE (FLAMELESS ABSORPTION AT 254 NM)

Dissolved Selenium

EPA 200.7

Inductively Coupled Plasma Emission Spectroscopy

Dissolved Silver

EPA 200.7

Inductively Coupled Plasma Emission Spectroscopy

MDL = Method Detection Limit

ND = Not Detected

BDL = Below Detection Limit

NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022

Project Number: 5563-022

LIMS-BAT #: LIMS-40241

Job Number: -

Sample Matrix: SOIL

Sampled: 02/03/99

NOT SPECIFIED

T-01/03' EAST

	Units	99B02289	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
-----	-----	-----	-----	-----	---	-----	---
LEAD	MG/KG	15.0	02/09/99	PM	2.50		

Analytical Method(s):

SW846 3050/7420

SAMPLES ARE DIGESTED IN NITRIC ACID AND ANALYZED BY FLAME ATOMIC ABSORPTION SPECTROPHOTOMETRY.

MDL = Method Detection Limit
ND = Not Detected
BDL = Below Detection Limit
NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022
 Project Number: 5563-022

LIMS-BAT #: LIMS-40241
 Job Number: -
 Sample Matrix: GRND WATER

Sampled: 02/03/99
 NOT SPECIFIED
 MW-05

	Units	99B02298	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
PCB-1221	ug/l	ND	02/12/99	MFF			
PCB-1232	ug/l	ND	02/12/99	MFF			
PCB-1242	ug/l	ND	02/12/99	MFF			
PCB-1248	ug/l	ND	02/12/99	MFF			
PCB-1254	ug/l	ND	02/12/99	MFF			
PCB-1260	ug/l	ND	02/12/99	MFF			
PCB's	ug/l	ND	02/12/99	MFF	0.10		

Analytical Method(s):

EPA 608/8080

SAMPLES ARE EXTRACTED INTO METHYLENE CHLORIDE, SOLVENT EXCHANGED WITH HEXANE, CONCENTRATED BY KUDERNA-DANISH EVAPORATIVE METHODS, AND ANALYZED BY GAS CHROMATOGRAPHY WITH ELECTRON CAPTURE DETECTION.

MDL = Method Detection Limit
 ND = Not Detected
 BDL = Below Detection Limit
 NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022
Project Number: 5563-022

LIMS-BAT #: LIMS-40241
Job Number: -
Sample Matrix: SOIL

Sampled: 02/03/99
NOT SPECIFIED
CC-01/00-16

	Units	99B02286	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
-----	-----	-----	-----	-----	-----	-----	-----
Unknown Hydrocarbons	MG/KG	16	02/11/99	MFF	8.3		

Sampled: 02/03/99
NOT SPECIFIED
CC-02/00-02

	Units	99B02287	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
-----	-----	-----	-----	-----	-----	-----	-----
Unknown Hydrocarbons	MG/KG	10	02/11/99	MFF	8.3		

Sampled: 02/03/99
NOT SPECIFIED
CC-03/00-02

	Units	99B02285	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
-----	-----	-----	-----	-----	-----	-----	-----
Unknown Hydrocarbons	MG/KG	770	02/11/99	MFF	83		

Sampled: 02/03/99
NOT SPECIFIED
MW-05/S-03

	Units	99B02281	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
-----	-----	-----	-----	-----	-----	-----	-----
Unknown Hydrocarbons	MG/KG	12	02/11/99	MFF	8.3		

MDL = Method Detection Limit
ND = Not Detected
BDL = Below Detection Limit
NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022
Project Number: 5563-022

LIMS-BAT #: LIMS-40241
Job Number: -
Sample Matrix: SOIL

Sampled: 02/03/99
NOT SPECIFIED
MW-06/S-01

	Units	99802284	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Unknown Hydrocarbons	MG/KG	860	02/11/99	MFF	42		

Sampled: 02/03/99
NOT SPECIFIED
MW-07/S-02

	Units	99802283	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Unknown Hydrocarbons	MG/KG	3100	02/11/99	MFF	8.3		

Sampled: 02/03/99
NOT SPECIFIED
MW-08/S-01

	Units	99802282	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Unknown Hydrocarbons	MG/KG	14	02/11/99	MFF	8.3		

Sampled: 02/03/99
NOT SPECIFIED
SS-01/00-01

	Units	99802290	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Unknown Hydrocarbons	MG/KG	48	02/11/99	MFF	8.3		

MDL = Method Detection Limit
ND = Not Detected
BDL = Below Detection Limit
NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022
Project Number: 5563-022

LIMS-BAT #: LIMS-40241
Job Number: -
Sample Matrix: SOIL

Sampled: 02/03/99
NOT SPECIFIED
SS-04/00-04

	Units	99802288	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
-----	-----	-----	-----	-----	---	-----	---
Unknown Hydrocarbons	MG/KG	13	02/11/99	MFF	8.3		

Sampled: 02/03/99
NOT SPECIFIED
T-01/03' EAST

	Units	99802289	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
-----	-----	-----	-----	-----	---	-----	---
Unknown Hydrocarbons	MG/KG	BDL	02/11/99	MFF	8.3		

Sampled: 02/03/99
NOT SPECIFIED
T-02/03' EAST

	Units	99802291	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
-----	-----	-----	-----	-----	---	-----	---
Unknown Hydrocarbons	MG/KG	18	02/11/99	MFF	8.3		

Analytical Method(s):

MODIFIED SW846 8100

SAMPLES ARE EXTRACTED INTO METHYLENE CHLORIDE AND ANALYZED BY GAS CHROMATOGRAPHY WITH FLAME IONIZATION DETECTION (FID). ALL PEAKS ELUTING IN THE PETROLEUM FUEL REGION ARE QUANTITATED AS #2 FUEL OIL.

MDL = Method Detection Limit
ND = Not Detected
BDL = Below Detection Limit
NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022
Project Number: 5563-022

LIMS-BAT #: LIMS-40241
Job Number: -
Sample Matrix: GRND WATER

Sampled: 02/03/99
NOT SPECIFIED
MW-03

	Units	99B02296	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
-----	-----	-----	-----	-----	---	-----	---
Unknown Hydrocarbons	MG/L	15.6	02/08/99	MFF	0.25		

Sampled: 02/03/99
NOT SPECIFIED
MW-04

	Units	99B02297	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
-----	-----	-----	-----	-----	---	-----	---
Unknown Hydrocarbons	MG/L	1.62	02/08/99	MFF	0.25		

Sampled: 02/03/99
NOT SPECIFIED
MW-05

	Units	99B02292	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
-----	-----	-----	-----	-----	---	-----	---
Unknown Hydrocarbons	MG/L	1.09	02/08/99	MFF	0.25		

Sampled: 02/03/99
NOT SPECIFIED
MW-06

	Units	99B02293	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
-----	-----	-----	-----	-----	---	-----	---
Unknown Hydrocarbons	MG/L	BDL	02/08/99	MFF	0.25		

MDL = Method Detection Limit
ND = Not Detected
BDL = Below Detection Limit
NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

Purchase Order Number: 5563-022
Project Number: 5563-022

LIMS-BAT #: LIMS-40241
Job Number: -
Sample Matrix: GRND WATER

Sampled: 02/03/99
NOT SPECIFIED
MW-07

	Units	99802294	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
----- Unknown Hydrocarbons	MG/L	5.83	02/08/99	MFF	0.25	-----	---

Sampled: 02/03/99
NOT SPECIFIED
MW-08

	Units	99802295	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
----- Unknown Hydrocarbons	MG/L	0.35	02/08/99	MFF	0.25	-----	---

Analytical Method(s):

MODIFIED SW846 8100

SAMPLES ARE EXTRACTED INTO METHYLENE CHLORIDE AND ANALYZED BY GAS CHROMATOGRAPHY WITH FLAME IONIZATION DETECTION (FID). ALL PEAKS ELUTING IN THE PETROLEUM FUEL REGION ARE QUANTITATED AS #2 FUEL OIL.

MDL = Method Detection Limit
ND = Not Detected
BDL = Below Detection Limit
NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

QC SUMMARY REPORT

SAMPLE QC: Sample Results with Duplicates
 Sample Matrix Spikes and Matrix Spike Duplicates

BATCH QC: Lab Fortified Blanks and Duplicates
 Standard Reference Materials and Duplicates
 Method Blanks

Report Date: 02/16/99

Lims Bat #: LIMS-40241

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QC Batch Number: GC/ECD-2258

Sample Id	Analysis	QC Analysis	Values	Units	Limits
-----	-----	-----	-----	-----	-----
99802298	Dibutyl Chlorendate	Surrogate Recovery	51.5	%	
BLANK-17440	PCB-1232	Blank	0.00	ug/l	
	PCB-1242	Blank	0.00	ug/l	
	PCB-1254	Blank	0.00	ug/l	
	PCB-1260	Blank	0.00	ug/l	
	PCB-1248	Blank	0.00	ug/l	
	PCB-1221	Blank	0.00	ug/l	
	PCB's	Blank	<0.05	ug/l	

SAMPLE QC: Sample Results with Duplicates
Sample Matrix Spikes and Matrix Spike Duplicates

BATCH QC: Lab Fortified Blanks and Duplicates
Standard Reference Materials and Duplicates
Method Blanks

Report Date: 02/16/99

Lims Bat #: LIMS-40241

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QC Batch Number: GC/FID-2183

Sample Id	Analysis	QC Analysis	Values	Units	Limits
-----	-----	-----	-----	-----	-----
BLANK-17380	Unknown Hydrocarbons	Blank	<0.25	MG/L	
LFBLANK-07657	Unknown Hydrocarbons	Lab Fort Blank Amt.	1.00	MG/L	
		Lab Fort Bik. Found	0.68	MG/L	
		Lab Fort Bik. % Rec.	67.70	%	

SAMPLE QC: Sample Results with Duplicates
Sample Matrix Spikes and Matrix Spike Duplicates

BATCH QC: Lab Fortified Blanks and Duplicates
Standard Reference Materials and Duplicates
Method Blanks

Report Date: 02/16/99

Lims Bat #: LIMS-40241

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QC Batch Number: GC/FID-2194

Sample Id	Analysis	QC Analysis	Values	Units	Limits
-----	-----	-----	-----	-----	-----
99802282	Unknown Hydrocarbons	Sample Amount	13.8	MG/KG	
		Duplicate Value	25.6	MG/KG	
		Duplicate RPD	59.7	%	
		Sample Amount	13.8	MG/KG	
		Matrix Spk Amt Added	33.3	MG/KG	
		MS Amt Measured	41.5	MG/KG	
		Matrix Spike % Rec.	82.9	%	
99802290	Unknown Hydrocarbons	Sample Amount	48.3	MG/KG	
		Duplicate Value	75.1	MG/KG	
		Duplicate RPD	43.4	%	
BLANK-17449	Unknown Hydrocarbons	Blank	<8.3	MG/KG	

SAMPLE QC: Sample Results with Duplicates
 Sample Matrix Spikes and Matrix Spike Duplicates

BATCH QC: Lab Fortified Blanks and Duplicates
 Standard Reference Materials and Duplicates
 Method Blanks

Report Date: 02/16/99

Lims Bat #: LIMS-40241

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QC Batch Number: GC/P10-2817

Sample Id	Analysis	QC Analysis	Values	Units	Limits
99802281	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	95.2	%	70.2-130.0
99802282	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	92.3	%	70.2-130.0
99802283	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	101.4	%	70.2-130.0
99802284	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	99.3	%	70.2-130.0
99802285	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	84.7	%	70.2-130.0
99802286	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	100.9	%	70.2-130.0
99802287	Benzene	Sample Amount	<1.0	ug/kg	
		Matrix Spk Amt Added	50.0	ug/kg	
		MS Amt Measured	48.1	ug/kg	
		Matrix Spike % Rec.	96.2	%	
		Duplicate Sample Amt	<1.0	ug/kg	
		MSD Amount Added	50.0	ug/kg	
		MSD Amt Measured	46.6	ug/kg	
		MSD % Recovery	93.2	%	
		MSD Range	3.0	units	
	1,4-Dichlorobenzene	Sample Amount	<2.5	ug/kg	
		Matrix Spk Amt Added	50.0	ug/kg	
		MS Amt Measured	53.2	ug/kg	
		Matrix Spike % Rec.	106.5	%	
		Duplicate Sample Amt	<2.5	ug/kg	
		MSD Amount Added	50.0	ug/kg	
		MSD Amt Measured	51.6	ug/kg	
		MSD % Recovery	103.3	%	
		MSD Range	3.2	units	
	Ethyl Benzene	Sample Amount	<2.5	ug/kg	
		Matrix Spk Amt Added	50.0	ug/kg	
		MS Amt Measured	49.4	ug/kg	
		Matrix Spike % Rec.	98.9	%	
		Duplicate Sample Amt	<2.5	ug/kg	
		MSD Amount Added	50.0	ug/kg	
		MSD Amt Measured	47.8	ug/kg	
		MSD % Recovery	95.7	%	
		MSD Range	3.2	units	
	Toluene	Sample Amount	<5.0	ug/kg	
		Matrix Spk Amt Added	50.0	ug/kg	
		MS Amt Measured	50.2	ug/kg	
		Matrix Spike % Rec.	100.4	%	
		Duplicate Sample Amt	<5.0	ug/kg	
		MSD Amount Added	50.0	ug/kg	

SAMPLE QC: Sample Results with Duplicates
Sample Matrix Spikes and Matrix Spike Duplicates

BATCH QC: Lab Fortified Blanks and Duplicates
Standard Reference Materials and Duplicates
Method Blanks

Report Date: 02/16/99

Lims Bat #: LIMS-40241

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QC Batch Number: GC/PI0-2817

Sample Id	Analysis	QC Analysis	Values	Units	Limits
		MSD Amt Measured	49.2	ug/kg	
		MSD % Recovery	98.4	%	
		MSD Range	2.0	units	
	o-Xylene	Sample Amount	<2.5	ug/kg	
		Matrix Spk Amt Added	50.0	ug/kg	
		MS Amt Measured	50.4	ug/kg	
		Matrix Spike % Rec.	100.8	%	
		Duplicate Sample Amt	<2.5	ug/kg	
		MSD Amount Added	50.0	ug/kg	
		MSD Amt Measured	49.2	ug/kg	
		MSD % Recovery	98.5	%	
		MSD Range	2.3	units	
	m/p-xylene	Sample Amount	<5.0	ug/kg	
		Matrix Spk Amt Added	100.0	ug/kg	
		MS Amt Measured	100.6	ug/kg	
		Matrix Spike % Rec.	100.6	%	
		Duplicate Sample Amt	<5.0	ug/kg	
		MSD Amount Added	100.0	ug/kg	
		MSD Amt Measured	98.2	ug/kg	
		MSD % Recovery	98.2	%	
		MSD Range	2.5	units	
	1,2-Dichlorobenzene	Sample Amount	<2.5	ug/kg	
		Matrix Spk Amt Added	50.0	ug/kg	
		MS Amt Measured	51.0	ug/kg	
		Matrix Spike % Rec.	102.0	%	
		Duplicate Sample Amt	<2.5	ug/kg	
		MSD Amount Added	50.0	ug/kg	
		MSD Amt Measured	52.2	ug/kg	
		MSD % Recovery	104.5	%	
		MSD Range	2.5	units	
	1,3-Dichlorobenzene	Sample Amount	<2.5	ug/kg	
		Matrix Spk Amt Added	50.0	ug/kg	
		MS Amt Measured	52.0	ug/kg	
		Matrix Spike % Rec.	104.1	%	
		Duplicate Sample Amt	<2.5	ug/kg	
		MSD Amount Added	50.0	ug/kg	
		MSD Amt Measured	50.4	ug/kg	
		MSD % Recovery	100.8	%	
		MSD Range	3.3	units	

SAMPLE QC: Sample Results with Duplicates
 Sample Matrix Spikes and Matrix Spike Duplicates

BATCH QC: Lab Fortified Blanks and Duplicates
 Standard Reference Materials and Duplicates
 Method Blanks

Report Date: 02/16/99

Lims Bat #: LIMS-40241

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QC Batch Number: GC/PID-2817

Sample Id	Analysis	QC Analysis	Values	Units	Limits
	MTBE	Sample Amount	<2.5	ug/kg	
		Matrix Spk Amt Added	50.0	ug/kg	
		MS Amt Measured	49.2	ug/kg	
		Matrix Spike % Rec.	98.3	%	
		Duplicate Sample Amt	<2.5	ug/kg	
		MSD Amount Added	50.0	ug/kg	
		MSD Amt Measured	50.6	ug/kg	
		MSD % Recovery	101.3	%	
		MSD Range	3.0	units	
	Chlorobenzene	Sample Amount	<2.5	ug/kg	
		Matrix Spk Amt Added	50.0	ug/kg	
		MS Amt Measured	51.6	ug/kg	
		Matrix Spike % Rec.	103.3	%	
		Duplicate Sample Amt	<2.5	ug/kg	
		MSD Amount Added	50.0	ug/kg	
		MSD Amt Measured	51.6	ug/kg	
		MSD % Recovery	103.2	%	
		MSD Range	0.1	units	
99802288	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	99.8	%	70.2-130.0
99802289	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	94.7	%	70.2-130.0
99802290	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	98.1	%	70.2-130.0
99802291	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	88.3	%	70.2-130.0
BLANK-17409	Benzene	Blank	<1.0	ug/kg	
	1,4-Dichlorobenzene	Blank	<2.5	ug/kg	
	Ethyl Benzene	Blank	<2.5	ug/kg	
	Toluene	Blank	<5.0	ug/kg	
	o-Xylene	Blank	<2.5	ug/kg	
	m/p-xylene	Blank	<5.0	ug/kg	
	1,2-Dichlorobenzene	Blank	<2.5	ug/kg	
	1,3-Dichlorobenzene	Blank	<2.5	ug/kg	
	MTBE	Blank	<2.5	ug/kg	
	Chlorobenzene	Blank	<2.5	ug/kg	

SAMPLE QC: Sample Results with Duplicates
 Sample Matrix Spikes and Matrix Spike Duplicates

BATCH QC: Lab Fortified Blanks and Duplicates
 Standard Reference Materials and Duplicates
 Method Blanks

Report Date: 02/16/99

Lims Bat #: LIMS-40241

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QC Batch Number: GC/PID-2819

Sample Id	Analysis	QC Analysis	Values	Units	Limits
99802300	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	106.4	%	83.2-111.6
99802301	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	103.7	%	83.2-111.6
99802302	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	103.7	%	83.2-111.6
99802303	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	101.6	%	83.2-111.6
99802304	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	104.6	%	83.2-111.6
99802305	1-Chloro-2-Fluoroben	Sur. Recovery (PID)	103.3	%	83.2-111.6
BLANK-17435	Benzene	Blank	<0.2	ug/l	
	1,4-Dichlorobenzene	Blank	<0.5	ug/l	
	Ethyl Benzene	Blank	<0.5	ug/l	
	Toluene	Blank	<1.0	ug/l	
	o-Xylene	Blank	<0.5	ug/l	
	m/p-Xylene	Blank	<1.0	ug/l	
	1,2-Dichlorobenzene	Blank	<0.5	ug/l	
	1,3-Dichlorobenzene	Blank	<0.5	ug/l	
	MTBE	Blank	<0.5	ug/l	
	Chlorobenzene	Blank	<0.5	ug/l	

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Lims Bat #: LIMS-40241

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QC Batch Number: HG-0972

Sample Id	Analysis	QC Analysis	Values	Units	Limits
-----	-----	-----	-----	-----	-----
99802299	Dissolved Mercury	Sample Amount	<0.00004	mg/l	
		Duplicate Value	<0.00004	mg/l	
		Sample Amount	<0.00004	mg/l	
		Matrix Spk Amt Added	0.00200	mg/l	
		MS Amt Measured	0.00215	mg/l	
		Matrix Spike % Rec.	107.50000	%	
BLANK-17398	Dissolved Mercury	Blank	<0.00004	mg/l	
STDADD-11073	Dissolved Mercury	Standard Measured	0.00204	mg/l	
		Standard Amt Added	0.00200	mg/l	
		Standard % Recovery	102.00000	%	



SAMPLE QC: Sample Results with Duplicates
 Sample Matrix Spikes and Matrix Spike Duplicates

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 Method Blanks

Report Date: 02/16/99

Lims Bat #: LIMS-40241

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QC Batch Number: ICP-3106

Sample Id	Analysis	QC Analysis	Values	Units	Limits
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BLANK-17403	Dissolved Silver	Blank	<0.0050	mg/l	
	Dissolved Arsenic	Blank	<0.05	mg/l	
	Dissolved Barium	Blank	<0.0010	mg/l	
	Dissolved Cadmium	Blank	<0.0005	mg/l	
	Dissolved Chromium	Blank	<0.004	mg/l	
	Dissolved Lead	Blank	<0.02	mg/l	
	Dissolved Selenium	Blank	<0.05	mg/l	
STDADD-11074	Dissolved Silver	Standard Measured	1.0110	mg/l	
		Standard Amt Added	1.0000	mg/l	
		Standard % Recovery	101.1000	%	
	Dissolved Arsenic	Standard Measured	1.04	mg/l	
		Standard Amt Added	1.00	mg/l	
		Standard % Recovery	103.70	%	
	Dissolved Barium	Standard Measured	1.0760	mg/l	
		Standard Amt Added	1.0000	mg/l	
		Standard % Recovery	107.6000	%	
	Dissolved Cadmium	Standard Measured	1.0690	mg/l	
		Standard Amt Added	1.0000	mg/l	
		Standard % Recovery	106.9000	%	
	Dissolved Chromium	Standard Measured	1.088	mg/l	
		Standard Amt Added	1.000	mg/l	
		Standard % Recovery	108.800	%	
	Dissolved Lead	Standard Measured	1.05	mg/l	
		Standard Amt Added	1.00	mg/l	
		Standard % Recovery	104.90	%	
	Dissolved Selenium	Standard Measured	0.99	mg/l	
		Standard Amt Added	1.00	mg/l	
		Standard % Recovery	98.69	%	



(413) 525-2332
FAX (413) 525-6405

CHAIN OF CUSTODY RECORD

39 SPRUCE ST. • 2ND FLOOR • EAST LONGMEADOW, MA 01028

41MS-40241

Client Name: Apex Environmental
 Attn: Ty Griffin
 Address: 63 E. Center St Suite 2-B
Manchester, CT 06040
 Site Location: Arlington VT, Suroco
 Sampled By: Allen Cutler
 Call Results: Yes No
 Fax Results: Yes No

Telephone: 860-533-4171
 Batch #: _____
 Project #: 5563-022
 Client P.O. #: 5563-022
 Fax #: 533-4183

Analysis Required

Field Sample I.D.	Sample Description	Lab #	DATE SAMPLED		Composite	Grab	MATRIX						Preservative (Use Code)	Container (Use Code)	8020 MTBE	TPH 8100(m)	Total Lead
			Start Date/Time	Stop Date/Time			WASTE WATER	GROUND WATER	DKG WATER	Soil	Air	Other					
✓	CC-1 0-16"	99B02286	2/3	2/3	X					X			I O	X	X		
✓	CC-2 0-2'	99B02287	2/3	2/3	X					X			I O	X	X		
	SS-3 0-2'		2/3	2/3	X					X			I O	X	X		
✓	SS-4 0-4"	99B02288	2/3	2/3	X					X			I O	X	X		
	SS-2 0-4"		2/3	2/3	X					X			I O	X	X		
✓	T-1 3' East	99B02289	2/3	2/3	X					X			I O	X	X	X	
✓	SS-1 0-1'	99B02290	2/3	2/3	X					X			I O	X	X		
✓	T-2 3' East	99B02291	2/3	2/3	X					X			I O	X	X		

CONTAINER CODE
 P: PLASTIC (___ Size) V = 40 ml vial G = Glass (___ size) A = 1000 ml Amber O = Other

PRESERVATIVE CODE:
 I = ICED N = HNO₃ H = HCl S = NaOH T = Na₂S₂O₃ O = OTHER

Relinquished by: (Signature) Susan Water Date Time 11:00 2-5-99
 Received by: (Signature) W.A.M. Huntington

Turnaround Requested: _____ 24-Hour _____ 48-Hour _____ Normal
 _____ Other _____ Date Required _____

Relinquished by: (Signature) W.A.M. Huntington Date Time 1:00 2-5-99
 Received by: (Signature) P.A. Brown

Remarks/Comments: samples rec'd cool. PMS

Relinquished by: (Signature) _____ Date Time _____
 Received by: (Signature) _____

APEX ENVIRONMENTAL, INC.
 63 East Center Street, Suite 2B
 Manchester, CT 06040-5221
 (860) 533-4177

LETTER OF TRANSMITTAL

TO: Mr. Matt Moran
Dept. of Environmental Conservation
Waste Management Division
103 South Main Street
Waterbury, VT 05671-0404

DATE: <u>July 13, 1999</u>	PROJECT NO.: <u>5563-022</u>
ATTN: <u>Mr. Matt Moran</u>	
RE: <u>LMC Sunoco - Phase II Report</u>	

WE ARE SENDING YOU: Attached Under separate cover via _____ the following items:

COPIES	DATE	FILE NO.	DESCRIPTION
1	7/13/99	5563-022	LMC Sunoco (Arlington VT) - Phase II Report

THESE ARE TRANSMITTED as checked below:

- For approval Approval as submitted For Payment For Signature
 For your use For review and comment Draft

REMARKS:

Dear Matt:

In accordance with my conversation with Mr. James Williams of the United States Postal Service on July 9, 1999, I am forwarding a copy of the "Phase II Environmental Site Evaluation for the LMC Sunoco Station 3575 VT Route 7A Arlington, Vermont" for your use. Please feel free to contact me if you should have any questions related to this issue.

Thank you.

COPY TO: _____

SIGNED: 