

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

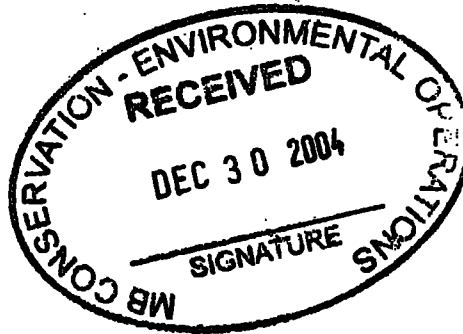
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December 30, 2004

File No.: 04-217-02

Manitoba Conservation
Attn: Randy Webber
123 Main Street
Suite 160
Winnipeg, Manitoba
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Dear Mr. Webber,

The City of Winnipeg has requested that Manitoba Conservation receive a copy of the Phase II Environmental Site Assessment (ESA) report conducted at #2 Point Douglas Avenue (South) in Winnipeg, Manitoba. Attached are two copies of the report for your files regarding impacted and contaminated sites.

If there are any questions, please call me.

Sincerely,
ENG-TECH Consulting Limited


Clark Hryhoruk, M.Sc., P. Eng.
President

Enclosures: Phase II ESA, Final Report - # 2 Point Douglas Avenue (South) (2)

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**PHASE II ENVIRONMENTAL SITE ASSESSMENT
FINAL REPORT**

SITE B: # 2 POINT DOUGLAS AVENUE (South)

File 04-217-02



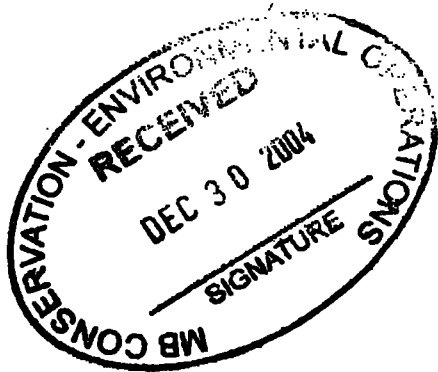
December 2004

SUBMITTED BY:



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EXECUTIVE SUMMARY

ENG-TECH Consulting Limited (ENG-TECH) was retained by the City of Winnipeg to conduct a Phase II Environmental Site Assessment (ESA) of a property known as #2 Point Douglas Avenue (South), Winnipeg, Manitoba, owned by Gateway Industries Ltd. The purpose of the Phase II ESA was to determine whether any subsurface impact was present in areas where a potential source for environmental concern existed as identified in the Phase I ESA completed by ENG-TECH in December 2004.

The Phase II ESA consisted of a test hole drilling and soil sampling program, an analytical laboratory testing program for petroleum hydrocarbons benzene, toluene, ethyl-benzene, xylene (BTEX) and fractions F1 to F4, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), metals, asbestos, hydrocarbons in leachate and water, an evaluation of the results and preparation of this report.

The Phase II ESA was conducted using several published documents and guidelines relating to environmental site assessments.

The Phase II ESA was focussed in the following areas:

- Area 1 - near the northwest property corner in proximity to a former underground gasoline tank
- Area 2 - in the centre of the Site near an above-grade fuel tank, two bunker-C tanks and asphalt storage tanks
- Area 3 - near the southwest property corner near two above ground tanks
- Area 4 - on the south side of the mill operation near a suspected underground gasoline tank
- Area 5 - along the eastern half of the railroad spurs
- Area 6 - near a transformer area with known PCB contamination
- Area 7 - around the perimeter of the Site to test for metals and PAHs
- Area 8 - tanks with suspected asbestos insulation
- Area 9 - riverbank areas embedded with asphaltic shingles
- Area 10 - possible oil spill area near the asphalt tanks
- Area 11 - floor and ceiling tiles with suspected asbestos content
- Area 12 - transformer oils with suspected PCB content
- Area 13 - existing monitoring wells
- Area 14 - the tar spill in the basement of the roofing felt paper operation building

From the field and laboratory programs the following was determined:

Area 1 - near the northwest property corner in proximity to a former underground gasoline tank

The test results revealed that hydrocarbon contamination is still present when compared to the CCME residential/parkland criteria, however it is in limited quantities, deep in the subsurface soil. ENG-TECH recommends installing a monitoring well to observe the groundwater for potential contaminants in this area.

Area 2 - in the centre of the Site near an above-grade fuel tank, two bunker-C tanks and asphalt storage tanks

Minor diesel staining of the soil was noted below grade near an above-grade fuel tank, however the test results showed only trace quantities of fractions F1 to F4. Therefore no further action is required

at this time. Visual observations and odours of petroleum impact were detected in the subsurface soils near the two partially below grade bunker-C tanks. The test results in one of the four samples tested revealed levels of ethylbenzene, xylenes and fraction F2 above the CCME residential criteria. ENG-TECH recommends installing three monitoring wells to observe the groundwater for potential contaminants in this area. Visual observations of petroleum impact were not detected in the subsurface soils near the asphalt tanks and a surface oil spill. The testing revealed BTEX and fractions F1 to F4 concentrations below CCME criteria. Consequently, no further action is required at this time.

Area 3 - near the southwest property corner near two above ground tanks

Visual evidence of impact with depth was not detected at the time of drilling. The test results revealed trace quantities of fractions F1 to F4. The potential for soil contamination is unlikely, therefore no further action is required at this time.

Area 4 - on the south side of the mill operation near a suspected underground gasoline tank

Visual impact to the underlain native soils was not detected. The test results revealed trace quantities of fractions F1 to F4. Based on the drilling and testing results, it is unlikely that an underground fuel tank exists in this area. Consequently, no further action is required at this time.

Area 5 - along the eastern half of the railroad spurs

The results revealed PAH compound concentrations above the CCME residential/parkland criteria, while the copper concentration was only slightly greater than the residential/parkland criterion. The copper concentrations are likely in limited quantities. The PAH soil contamination does exist along the railroad spurs, however the extent is presently unknown. As such, ENG-TECH recommends further drilling and sampling along the railroad spurs to determine the extent of the PAH contamination laterally and with depth.

Area 6 - near a transformer area with known PCB contamination

The PCB content in soils surrounding a set of transformers on a concrete pad adjoining is greater than the CCME residential/parkland criteria, but below the CCME industrial criteria. The soil surrounding the perimeter of the concrete pad should be removed to a minimum depth of 1m if the Site is no longer to be used for industrial purposes.

Area 7 - around the perimeter of the Site to test for metals and PAHs

The results of the metals testing revealed lead, selenium, copper and zinc concentrations that exceeded the CCME residential/parkland and/or industrial criteria in some areas. Only trace amounts of PAH compounds were detected. The metals concentrations are limited in quantity and surficial. The surface soils should be removed to a depth of approximately 150 mm after the surplus metal equipment being stored on the Site's perimeter is removed.

Area 8 - tanks with suspected asbestos insulation

The test results revealed no asbestos fibres in the insulation, therefore no further action is required at this time.

Area 9 - riverbank areas embedded with asphaltic shingles

The results of the hydrocarbon leachate testing revealed PAH parameters below method detection limits with trace concentrations of total extractable hydrocarbons. As such, there is no environmental threat from the embedded asphalt shingles. ENG-TECH recommends no further action at this time.

Area 10 - possible oil spill area east of Building E

The surface oil spill on the east side of Building E was confirmed by the testing. It is presently contained in a shallow concrete berm and should be cleaned up immediately.

Area 11 - floor and ceiling tiles with suspected asbestos content

The main office has flooring that contains asbestos while the floor tiles in the cafeteria also contain trace amounts of asbestos. Both are in a bound form and not considered friable. If the flooring is to be removed it is recommended that the workers be informed not to grind the tiles and cause airborne fibres. Ceiling tiles in the cafeteria contain one percent asbestos. Ceiling tiles are considered a friable material, as such the tiles should be removed in a manner similar to an asbestos containing material.

Area 12 - transformer oils with suspected PCB content

One group of transformers located near the east end of the Site, contain trace concentrations of PCBs as outlined by the Canadian Environmental Protection Act. As such, no further action is required at this time.

Area 13 - existing monitoring wells

Only two (2) of the four monitoring wells installed for the previous property owner in the late 1980s could be located. The groundwater samples from the two located wells had trace hydrocarbon concentrations. The two located wells should be decommissioned. Further investigation should be undertaken to locate the two missing wells which may include researching low elevation aerial photographs. If the two missing wells are located, they should be decommissioned.

Area 14 - the tar spill in the basement of the roofing felt paper operation building

Two-thirds of the basement of the roofing felt paper operation is covered in tar from a burst pipe. This may create hazardous working conditions if the plant operation were to resume or be a concern if the building is demolished and the tar covered concrete needs to be disposed. The tar should be cleaned from the basement.

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1.0 INTRODUCTION

1.1 Terms of Reference

ENG-TECH Consulting Limited (ENG-TECH) was retained by the City of Winnipeg to conduct a Phase II Environmental Site Assessment (ESA) at a property known as #2 Point Douglas Avenue (South), Winnipeg, Manitoba, owned by Gateway Industries Ltd. The Site is registered under six Certificates of Title, specifically Nos. 1569469, 1569475, 1569477, 1569478, 1569481 and 1569144 in the City of Winnipeg Land Titles Office. In this report the property will subsequently be referred to as the Site.

ENG-TECH received authorization to proceed with the investigation from Ed Dolhun, Land Development Co-coordinator with the City of Winnipeg on September 17, 2004.

1.2 Background

ENG-TECH completed a Phase I ESA of the Site in November 2004. Consequently, the Phase II ESA was concentrated in areas where a potential source for environmental concern existed, as identified in the Phase I ESA. Specifically, the following areas were identified:

- Area 1 - near the northwest property corner in proximity to a former underground gasoline tank
- Area 2 - in the centre of the Site near an above-grade fuel tank, two bunker-C tanks and asphalt storage tanks
- Area 3 - near the southwest property corner near two above ground tanks
- Area 4 - on the south side of the mill operation near a suspected underground gasoline tank
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- Area 7 - around the perimeter of the Site to test for metals and PAHs
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- Area 11 - floor and ceiling tiles with suspected asbestos content
- Area 12 - transformer oils with suspected PCB content
- Area 13 - existing monitoring wells
- Area 14 - the tar spill in the basement of the roofing felt paper operation building

Consequently test holes were drilled and samples taken in close proximity to the majority of these areas.

1.3 Objectives

The purpose of the Phase II ESA was to determine whether any subsurface impact was present in areas where a potential source for environmental concern existed as identified in the Phase I ESA completed by ENG-TECH in November 2004.

1.4 Scope of Work

The scope of work for this project consisted of:

- A test hole drilling program within the immediate areas where a potential source for environmental concern existed. The test holes in areas of potential hydrocarbon contamination were to be drilled to 6 m below existing grade or to the full depth of

hydrocarbon impacted soils, if encountered. Test holes in areas of potential PCB and/or metals contamination were to be drilled approximately 0.5 m in depth.

- Obtaining soil samples from the test holes at regular depth intervals and at stratigraphic changes, and field test these samples for volatile hydrocarbon vapours. Duplicate soils samples were to be collected at locations of potential concern, and tested for petroleum hydrocarbons.
- Collecting insulation samples from storage tanks, embedded asphalt shingles from the riverbank, floor and ceiling tile samples, transformer oil samples and monitoring well samples.
- A laboratory testing program. Specifically, a total of sixteen (16) soil samples were to be tested for various petroleum hydrocarbons (benzene, toluene, ethyl-benzene, xylene (BTEX) and fractions F1 to F4), four (4) soil samples were to be tested for polycyclic aromatic hydrocarbons (PAHs), nine (9) soil samples were to be tested for various metals, two (2) soil samples were to be tested for PCBs, two (2) insulation samples, six (6) floor tiles and six (6) ceiling tiles were to be tested for asbestos, two (2) samples were to be tested for hydrocarbon leachate, three (3) water samples were to be tested for hydrocarbons and three (3) transformer oil samples were to be tested for PCBs.
- An evaluation of the results.
- An ESA report outlining the work conducted, evaluations, conclusions and recommendations.

1.5 Methodology

The Phase II ESA was conducted using guidelines and criteria outlined in publications from the American Society for Testing and Materials (ASTM), the Canadian Standards Association (CSA) and the Canadian Council of Ministers of the Environment (CCME). A bibliography/reference list of the publications used are attached.

2.0 SITE CONDITION

2.1 Site Locations and Descriptions

The Site is located at the eastern end of Point Douglas Avenue, on the south side of the CPR main line in the Point Douglas area of Winnipeg Manitoba, as shown in Figure 1. The Site is irregularly shaped, occupying a thin panhandle east of Higgins Avenue along the south side of the CPR main line and the eastern half of the south side of a peninsula from the beginning of an inside bend to the midpoint of the bend along the Red River, as shown in Figure 2. Further details on the Site description are outlined in ENG-TECH's Phase I ESA.

2.2 Site Topography and Drainage

The ground surface was predominantly level, with a slight grade towards the river. Drainage from the Site would be directed towards the river. A private storm drainage system is located on the Site and drains to the river.

2.3 Site Geology and Groundwater

Local geological maps and water well logs show that the subsurface stratigraphy in this area of Winnipeg normally consists of fill soils (such as topsoil and granular), underlain by alluvial and lacustrine silt and clay deposits, ranging in depth from 15 to 21 m. A deposit of silty till, varying in thickness from 6 to 12 m is encountered between the lacustrine deposits and the underlying bedrock. Bedrock in this area of Winnipeg typically consists of dolomitic limestone beds of various thicknesses from the Selkirk Member of the Red River Formation. Bedrock formation was from the Paleozoic Era during the Ordovician Period.

Near-surface groundwater elevations (perched groundwater) can exist at the Site and throughout the area, and will vary on a seasonal basis and from site to site. Perched groundwater elevations are predominantly controlled by site conditions, such as the type and thickness of fill soils. The near static groundwater elevation will typically vary with the river elevations, but mainly be located approximately 5 m below existing grade. The groundwater elevation is controlled by the underlying bedrock aquifer. There are no aquifers above the bedrock. The potential for impact to the aquifer was considered unlikely due to the thickness of the highly plastic clay deposits and Site usage.

3.0 FIELD INVESTIGATION AND LABORATORY ANALYSES

3.1 Test Hole Drilling and Soil Sampling Program

Test Hole Drilling

On October 22, 27 through 29, 2004 ENG-TECH supervised the drilling of thirty-two (32) test holes (TH1 to TH32) at the Site. The test holes were drilled using either a hand auger or a truck mounted drill rig (CME-75) owned and operated by Subterranean (Manitoba) Ltd. The test holes were drilled using 125 mm diameter solid stem augers to a maximum depth of 7.6 m below existing grade. Upon completion of the drilling program, each test hole was examined for indication of sloughing and seepage, then backfilled using the soil cuttings. Bentonite pellets were placed in each test hole to minimize the potential of surface runoff from entering the hole. The test hole locations are shown in Figure 2, while stratigraphic logs outlining the soil and groundwater conditions at the Site are shown in Appendix A.

Sampling

Soil samples were collected from each test hole and visually classified using the Unified Soil Classification System (USCS). Soils samples were collected off the auger flights at all test hole locations. Each soil sample collected was subjected to an Ambient Temperature Headspace (ATH) vapour test using a GasTech Tracetehtor calibrated using hexane. Briefly, the procedures used for ATH vapour testing were as follows:

- Collect a soil sample from the auger flight and remove the perimeter edges. Cut the sample into small pieces and place then into a plastic sealable bag.
- Seal the bag in a manner that traps air into the bag such that the bag is taut.
- Allow the vapours emanating from the soil to accumulate in the headspace of the bag at a warm ambient temperature for approximately 15 minutes.

- Measure the hydrocarbon vapour concentration in the headspace of the bag by placing the probe of the GasTech Tracetehtor into the bag.

In addition to the above, each soil sample was examined for the presence of hydrocarbon odours and staining. A duplicate soil sample was obtained for near surface soils samples, and at locations where visual signs of hydrocarbon staining were detected or at locations where elevated ATH vapour concentrations were recorded. The duplicate soil samples were placed in clean glass jars, sealed, and placed in a cooler packed with ice. Upon the completion of drilling the cooler was transported to Enviro.Test Laboratories in Winnipeg, Manitoba.

Insulation was removed from cracked, eroding portions of two outdoor tanks and placed in clean glass jars and transported to Enviro.Test Laboratories in Winnipeg, Manitoba for asbestos testing.

Embedded shingle samples were obtained from the riverbank, from just below the surface. The samples were placed in clean plastic bags and transported to Enviro.Test Laboratories in Winnipeg, Manitoba for hydrocarbon leachate testing.

A surface water sample was collected in a clean glass bottle, sealed and placed in a cooler packed with ice and sent to Enviro.Test Laboratories in Winnipeg, Manitoba for BTEX testing.

ENG-TECH obtained water samples from each of 2 functional monitoring wells (MW-1 and MW-4) located on site after the wells had been purged and allowed to recharge. Samples were placed in clean glass jars and upon completion of sampling the samples were placed in a cooler packed with ice and then transported to Enviro-Test Laboratories in Winnipeg, Manitoba for BTEX testing.

Transformer oils from several different transformers throughout the Site were drained into clean glass jars, placed in a cooler packed with ice and then transported to Enviro.Test Laboratories in Winnipeg, Manitoba for PCB testing.

Portions of floor and ceiling tiles were removed from various locations throughout the Site and placed in clean plastic bags and then transported to Enviro.Test Laboratories in Winnipeg, Manitoba for asbestos testing.

3.2 Analytical Results

A total of thirty (30) soil samples, two (2) insulation samples, two (2) shingle samples, three (3) water samples, three (3) transformer oil samples, six (6) floor tiles and six (6) ceiling tiles were submitted to Enviro-Test Laboratories in Winnipeg, Manitoba for analysis. Specifically, sixteen (16) soil samples were tested for benzene, ethyl-benzene, toluene, xylene (BTEX) and fractions F1 to F4, with two (2) of the above samples and two (2) additional soil samples tested for PAHs. Nine (9) soil samples were tested for various metals and two (2) soil samples were tested for PCBs. Two (2) insulation samples were tested for asbestos and two (2) shingle samples were tested for PAHs leachate. Three (3) water samples, including one (1) surface sample and two (2) groundwater samples, were tested for hydrocarbons. Six (6) floor tiles and six (6) ceiling tiles were tested for asbestos and three (3) transformer oil samples were tested for PCBs. An outline of the locations, depths, sample descriptions and results are shown in Tables 1 to 8. A copy of the analytical test results from Enviro.Test Laboratories are shown in Appendix B.

3.3 Remediation Criteria

The BTEX, fractions F1 to F4, PAHs, PCB and ICP metals results from the analysis were compared to the values outlined by the Canadian Council of the Ministers of the Environment (CCME), including the Canadian Wide Standards (CWS) for petroleum hydrocarbons in soil. The PCB concentrations were compared to the Canadian Environmental Protection Act.

3.4 Soil Stratigraphy

In general, the stratigraphy at the Site typically consisted of concrete or asphalt surface layer ranging from 50 to 250 mm in thickness, followed by granular fill, medium to highly plastic silty clays, and then medium plastic sandy clay. At some test hole locations a 0.1 to 0.7 m thick cinder layer was encountered within the upper 1.0 m. The near static groundwater level is expected to be between 4.3 to 5.3 m below existing grade based on the information obtained during drilling. A summary of the subsurface conditions are shown on the stratigraphic test hole logs (TH1 to TH33) in Appendix A.

4.0 DISCUSSION and CONCLUSIONS

The test hole and various sampling locations are shown on Figure 2, with the sample numbers, depths and analytical test results shown in Tables 1 through 8. Outlined below are discussions and conclusions based on the results of field observations and testing, and analytical testing.

Area 1 - near the northwest property corner in proximity to a former underground gasoline tank

Seven (7) test holes (TH10 through TH16) were drilled in Area 1 where an underground gasoline tank and hydrocarbon contaminated soil was removed in 1993 as shown in Figure 3. From the seven (7) test holes, a total of five (5) soil samples were submitted from TH12, TH13 and TH15 for BTEX and fractions F1 to F4 analysis as shown in Table 1. These samples were chosen based on visual observations of the stains, odours, and field test results (volatile vapour readings). Trace quantities of fractions F1 to F4 were found in all five samples, however none of the concentrations were above the CCME CWS. Zero to trace quantities of BTEX were found in four (4) of the five (5) samples, although sample S5 from TH13 at a 5.3 m depth below grade had benzene, ethylbenzene and xylene concentrations above the CCME criteria for residential/parkland land use. The hydrocarbon contamination is still present, however it is in limited quantities, and located at a depth of 5.3 m below grade.

Area 2 - in the centre of the Site near an above-grade fuel tank, two bunker-C tanks and asphalt storage tanks

A total of six (6) test holes were drilled in Area 2 as detailed in Figure 4. Two (2) test holes, (TH 8 and TH9) were drilled near an above-grade fuel tank. Diesel staining of the soil was noted at approximately 0.6 m in TH9. The results from the field vapour readings were typical of background values. Two (2) soil samples, one from each test hole, were submitted for BTEX and fractions F1 to F4 analysis. The results, shown in Table 1, revealed BTEX concentrations below method detection limits and trace quantities of fractions F1 to F4 were detected. The potential for significant soil contamination and the likelihood of negative impact to human health is limited.

Two (2) test holes, (TH17 and TH18) were drilled adjacent to two (2) partially below grade bunker-C tanks. Visual observations and odours of petroleum impact were detected in the subsurface soils at

both test hole locations between 3.2 and 7 m below grade. The results from the field vapour readings indicated the presence of hydrocarbons in the stained zone above typical background values. One (1) soil sample from TH17 and three (3) soil samples from TH18 were submitted for BTEX, fractions F1 to F4, while two of the three samples from TH18 were submitted for PAH analysis. The results, shown in Tables 1 and 2, revealed concentrations of ethylbenzene and xylenes greater than the residential CCME criteria and a fraction F2 concentration greater than the industrial CCME criteria in the one sample from TH17. The test sample was located 5.3 m below grade in silty clay soils. The three samples from TH18 revealed trace to low levels of BTEX and fractions F1 to F4, all of which were below CCME criteria. The PAH analysis revealed a naphthalene concentration greater than the residential CCME criteria. The observed contamination appears to be in a concentrated zone between 3 and 7 m below grade and tapers out with distance as evidenced by the visual observations in TH19.

Two (2) test holes, (TH19 and TH20) were drilled adjacent to five (5) asphalt tanks and a surface oil spill. Visual observations of petroleum impact were not detected in the subsurface soils at either test hole. The results from the field vapour readings were typical of background values. Two (2) soil samples, one from each test hole, were submitted for BTEX and fractions F1 to F4 analysis. The results, shown in Table 1, revealed BTEX concentrations below method detection limits and trace to low quantities of fractions F1 to F4, all of which were below CCME criteria.

Area 3 - near the southwest property corner near two above ground tanks

Three (3) test holes (TH21 to TH23) were drilled in the above area, as shown in Figure 5. Visual evidence of impact with depth was not detected at the time of drilling. The field vapour readings were typical of background values. One (1) soil sample from TH22 was submitted for BTEX and fractions F1 to F4 testing. The results, shown in Table 1, indicated BTEX concentrations below method detection limits and trace quantities of fractions F1 to F4. The potential for soil contamination is unlikely.

Area 4 - on the south side of the mill operation near a suspected underground gasoline tank

Five test holes (TH24 through TH28) were drilled in the above area, as seen in Figure 6. Visual impact to the underlain native soils was not detected. The results from the field vapour readings were typical of background values. Two (2) soil samples from TH26 and TH28 were tested for BTEX and fractions F1 to F4. The results, shown in Table 1, revealed BTEX concentrations below method detection limits and trace quantities of fractions F1 to F4. Since no physical evidence was found indicating the existence, past or present, of an underground fuel tank, it is possible that there was an error on the fire insurance maps identifying an underground fuel tank in this area or the tank was installed followed by removal within a few years. Based on the drilling and testing results it is unlikely that any soil contamination occurred.

Area 5 - along the eastern half of the railroad spurs

One (1) test hole (TH29) was drilled approximately 3 m south of the rail spur on the eastern half of the Site, as detailed in Figure 7. No visual impact was detected at the test hole location. Two (2) soil samples were submitted for PAH and metals analysis. The results, as shown in Tables 2 and 3, revealed that three of the PAH compound concentrations were more than double the CCME residential/parkland criteria, while the copper amounts was only slightly greater than the residential/parkland criterion. The following PAH compound concentrations exceeded the guidelines: Benzo (a) Anthracene, Benzo (a) Pyrene, Benzo (b) Fluoranthene, Benzo (k) Fluoranthene and Indeno (1 2 3-cd) Pyrene. The copper amounts are likely in limited quantities at random locations.

The PAH soil contamination does exist along the railroad spurs, however the extent, both horizontal and vertical, is presently unknown.

Area 6 - near a transformer area with known PCB contamination

As outlined in the Phase I ESA, ENG-TECH completed a soil investigation report in 2002, revealing that PCBs were present in the surrounding soil at levels greater than the CCME residential/park guidelines at the former location of nine transformers north of Building K. As a result, two (2) test holes (TH2 and TH3) were drilled, using a hand auger, in the same area, as shown in Figure 8. Two (2) soil samples were submitted for PCB analysis. The results, shown in Table 4, revealed that both samples were below CCME commercial/industrial guidelines, however, the TH2 sample was above the CCME residential/parkland criteria. PCB soil contamination exists, however it is in a limited area, near the surface.

Area 7 - around the perimeter of the Site to test for metals and PAHs

Nine (9) test holes (TH1, TH4 to TH7, TH30 to TH33) were drilled around the perimeter of the Site, as shown in Figure 9. A soil sample from each test hole was tested for metals, with the exception of a soil sample from TH31 which was tested for PAHs. The results of the metals testing, shown in Table 3, revealed that the lead concentration from the TH1 sample, and the selenium concentration from the TH7 sample were greater than the CCME residential/parkland criteria. Copper concentrations exceeded the CCME residential/parkland criterion in TH5 and TH29, while samples from TH7 and TH30 exceeded the CCME industrial criterion for copper concentrations. Three zinc concentrations exceeded the CCME criteria: TH30 and TH33 samples exceeded the residential/parkland criterion while the TH7 sample exceeded the industrial criterion. All other metals concentrations were below the CCME criteria. The soil sample from TH31 showed only trace amounts of PAH parameters. The metals concentrations are limited in quantity and are surficial. The majority of the Site is covered in concrete and pavement, limiting the metals contamination to the perimeter of the Site.

Area 8 - tanks with suspected asbestos insulation

Two (2) insulation samples were taken from two separate tanks between Buildings E and J, as seen in Figure 10, and analysed for asbestos. The results, shown in Table 5, revealed that neither sample contained any asbestos fibres.

Area 9 - riverbank areas embedded with asphaltic shingles

Two (2) embedded asphaltic shingle samples were obtained along the riverbank on the south side of the Site, as shown in Figure 11. The two (2) samples were submitted for PAH leachate testing. The results, shown in Table 6, revealed PAH parameters below method detection limits, however trace concentrations of total extractable hydrocarbons were detected in both samples. As such, there is no major environmental concern from the embedded asphalt shingles.

Area 10 - possible oil spill area east of Building E

One (1) water sample, taken from an area where ponding is occurring with what appears to be an oil spill as detailed in Figure 12, was submitted for hydrocarbon analysis. The results, shown in Table 7, revealed a high concentration of total extractable hydrocarbons, specifically 3400 mg/L, confirming an oil spill.

Area 11 - floor and ceiling tiles with suspected asbestos content

Twelve (12) floor and ceiling tiles (AS-3 to AS-14) from various locations throughout the Site, as detailed in Figure 13, were tested for asbestos content. The results are shown in Table 5. All samples revealed zero percent asbestos content, with the exception of three (3) samples: AS-3, AS-5 and AS-8. AS-3, a floor tile sample from Building D had an asbestos content between 10 and 25 percent, while AS-5, a floor tile from Building E, contained trace amounts of asbestos. AS-8, a ceiling tile also from Building E, contained one (1) percent asbestos. As such, asbestos containing materials do exist at the Site in limited quantities in specific areas.

Area 12 - transformer oils with suspected PCB content

Three (3) oil samples (T1 to T3) were tested for PCB content from three different transformers located at two locations on the Site, as shown in Figure 14. The results are shown in Table 8. Samples T1 and T2 had PCB concentrations below the method detection limit, while the T3 sample had a PCB concentration of 16 mg/kg. This concentration is considered to be a trace PCB amount by the Canadian Environmental Protection Act.

Area 13 - existing monitoring wells

Four (4) monitoring wells at various locations throughout the Site were reportedly installed by Paddock Drilling Ltd. for the previous property owner in the late 1980s. Only two (2) of the four monitoring wells could be located after discussions with Paddock Drilling Ltd. and a thorough search of the Site. Two (2) groundwater samples from the two located wells (MW-1 and MW-4) were tested for total extractable hydrocarbons. The results, shown in Table 7, revealed trace hydrocarbon concentrations in one of the monitoring wells (MW-4).

Two monitoring wells were installed through the till layer to bedrock by KGS Group (MW-5 and MW-6 as seen in Figure 2) in January, 2003 as part of a sewer replacement investigation for the City of Winnipeg. Consequently water samples from these wells were not tested. The locations of the monitoring wells are shown in Figure 15.

Area 14 - the tar spill in the basement of the roofing felt paper operation building

Two-thirds of the basement of the roofing felt paper operation in Building E as shown in Figure 16, is covered in tar from a burst pipe. This may create hazardous working conditions if the plant operation were to resume or be a concern if the building is demolished.

5.0 RECOMMENDATIONS

Area 1 - near the northwest property corner in proximity to a former underground gasoline tank

The underground gasoline tank and the majority of the hydrocarbon contaminated soil in this area was removed in 1993. The test results revealed that hydrocarbon contamination is still present when compared to the CCME residential/parkland criteria, however it is in limited quantities, deep in the subsurface soil. ENG-TECH recommends installing a monitoring well to observe the groundwater for potential contaminants in this area.

Area 2 - in the centre of the Site near an above-grade fuel tank, two bunker-C tanks and asphalt storage tanks

Diesel staining of the soil was noted at approximately 0.6 m below grade near an above-grade fuel tank, however the test results showed only trace quantities of fractions F1 to F4. The potential for soil contamination is limited. Therefore no further action is required at this time.

Visual observations and odours of petroleum impact were detected in the subsurface soils between 3.2 and 7 m below grade near the two partially below grade bunker-C tanks. The test results revealed ethylbenzene and xylenes concentrations above the CCME residential criteria and a fraction F2 concentration above the CCME industrial criteria. The observed contamination appears to be in a concentrated zone that tapers out with distance as evidenced by the visual observations from surrounding test holes. ENG-TECH recommends installing three monitoring wells to observe the groundwater for potential contaminants in this area.

Visual observations of petroleum impact were not detected in the subsurface soils near the asphalt tanks and a surface oil spill. The testing revealed BTEX concentrations below method detection limits and trace to low quantities of fractions F1 to F4, all of which were below CCME criteria. Consequently, no further action is required at this time.

Area 3 - near the southwest property corner near two above ground tanks

Visual evidence of impact with depth was not detected at the time of drilling. The test results revealed trace quantities of fractions F1 to F4. The potential for soil contamination is unlikely, therefore no further action is required at this time.

Area 4 - on the south side of the mill operation near a suspected underground gasoline tank

Visual impact to the underlain native soils was not detected. The test results revealed trace quantities of fractions F1 to F4. Based on the drilling and testing results, it is unlikely that an underground fuel tank existed in this area, or if an underground fuel tank did exist and was previously removed, it is unlikely that any soil contamination occurred. Consequently, no further action is required at this time.

Area 5 - along the eastern half of the railroad spurs

The results revealed PAH compound concentrations above the CCME residential/parkland criteria, while the copper concentration was only slightly greater than the residential/parkland criterion. The copper amounts are likely in limited quantities. The PAH soil contamination does exist along the railroad spurs, however the extent is presently unknown. As such, ENG-TECH recommends further drilling and sampling along the railroad spurs to determine the extent of the contamination laterally and with depth.

Area 6 - near a transformer area with known PCB contamination

The PCB content in soils surrounding a set of transformers on a concrete pad adjoining Building K are greater than the CCME residential/parkland criteria, but below the CCME industrial criteria. The soil surrounding the perimeter of the concrete pad should be removed to a minimum depth of 1m if the Site is no longer to be used for industrial purposes.

Area 7 - around the perimeter of the Site to test for metals and PAHs

The results of the metals testing revealed lead, selenium, copper and zinc concentrations that exceeded the CCME residential/parkland and/or industrial criteria. Only trace amounts of PAH compounds were detected. The metals concentrations are limited in quantity and surficial. The majority of the Site is covered in concrete, limiting the metals contamination to the perimeter of the Site. To limit the amount of metals above the residential criteria, the surface soils could be removed to a depth of approximately 150 mm in areas where there is no concrete cover after the surplus metal equipment being stored on the Site's perimeter is removed.

Area 8 - tanks with suspected asbestos insulation

The test results revealed no asbestos fibres in the insulation, therefore no further action is required at this time.

Area 9 - riverbank areas embedded with asphaltic shingles

The results of the hydrocarbon leachate testing revealed PAH compounds below method detection limits with trace concentrations of total extractable hydrocarbons. As such, there is no major environmental concern from the embedded asphalt shingles. ENG-TECH recommends no further action at this time.

Area 10 - possible oil spill area east of Building E

The surface oil spill on the east side of Building E was confirmed through testing. It is presently contained in a shallow concrete berm and should be cleaned up immediately.

Area 11 - floor and ceiling tiles with suspected asbestos content

The main office in Building D has flooring that contains an asbestos content between 10 and 25 percent. Floor tiles in the cafeteria in Building E also contain trace amounts of asbestos. However they are in a bound form and not considered friable. If these tiles are to be removed, it is recommended that the workers be informed not to grind the tiles and cause airborne fibres.

Ceiling tiles in the cafeteria in Building E contain one percent asbestos. Ceiling tiles are considered a friable material, as such the tiles should be removed in a manner similar to an ACM.

Area 12 - transformer oils with suspected PCB content

One group of transformers located east of Building C, contain trace concentrations of PCBs as outlined by the Canadian Environmental Protection Act. As such, no further action is required at this time.

Area 13 - existing monitoring wells

Only two (2) of the four monitoring wells (MW-1 and MW-4) installed for the previous property owner in the late 1980s could be located, as shown in Figure 2. The groundwater samples from the two located wells had trace hydrocarbon concentrations. The two located wells should be decommissioned. Further investigation should be undertaken to locate the two missing wells which may include researching low elevation aerial photographs. If the two missing wells are located, they should be decommissioned.

Area 14 - the tar spill in the basement of the roofing felt paper operation building

Two-thirds of the basement of the roofing felt paper operation in Building E is covered in tar from a burst pipe. This may create hazardous working conditions if the plant operation were to resume or be a concern if the building is demolished and the tar covered concrete needs to be disposed. As such, the tar should be cleaned from the basement as best as possible prior to demolishing the building.

6.0 CLOSURE

The conclusions and recommendations presented in this report were based on the scope of work outlined for the purpose of the investigation, and were prepared in accordance with accepted professional engineering/geo-science principles and practises. However, as with any environmental site assessment the intent is to identify and address, not eliminate, potential environmental concerns.

The observations made at the Site do not apply to areas which could not be observed. In addition, other materials or compounds not investigated or addressed or beyond the scope of work could be present at the Site. If this occurs, ENG-TECH Consulting Limited must be notified to determine whether modification to any part of this report should be conducted. If you have any questions or concerns regarding the findings, conclusions or recommendations presented herein, please contact the undersigned.

Sincerely,
ENG-TECH Consulting Limited



Clark Hryhoruk, M.Sc., P.Eng.
President

CDH/



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**TABLE 1
PETROLEUM HYDROCARBONS IN SOIL
PHASE II ESA - #2 POINT DOUGLAS AVENUE (SOUTH)**

Sample No., Depth, Soil Type & Area				Parameter ⁽¹⁾							
				Benzene	Toluene	Ethylbenzene	Xylenes	F1 (C ₈ -C ₁₀)	F2 (C ₁₀ -C ₁₄)	F3 (C ₁₄ -C ₂₄)	F4 (C ₂₄ -C ₃₀)
TH8-S7	(4.9 m)	Sandy Clay	Area 2	< 0.005	< 0.01	< 0.01	< 0.03	< 5	< 5	16	< 5
TH9-S1	(0.6 m)	Silty Clay	Area 2	< 0.005	< 0.01	< 0.01	< 0.03	< 5	6	39	9
TH12-S2	(0.75 m)	Silty Clay	Area 1	< 0.005	< 0.01	< 0.01	< 0.03	< 5	< 5	37	< 5
TH12-S6	(6.1 m)	Sandy Clay	Area 1	< 0.005	< 0.01	< 0.01	< 0.03	< 5	< 5	40	< 5
TH13-S5	(5.3 m)	Sandy Clay	Area 1	0.76	0.03	2.6	3	89	9	6	< 5
TH13-S7	(6.7 m)	Sand	Area 1	< 0.005	< 0.01	0.04	0.4	< 5	< 5	< 5	< 5
TH15-S6	(5.3 m)	Sand	Area 1	0.05	< 0.01	< 0.01	< 0.03	< 5	< 5	5	< 5
TH17-S5	(5.3 m)	Silty Clay	Area 2	0.013	0.04	2.9	12	180	3700	1200	27
TH18-S3	(3.4 m)	Silty Clay	Area 2	< 0.005	< 0.01	0.26	0.83	31	410	140	14
TH18-S4	(4.3 m)	Sandy Clay	Area 2	< 0.005	< 0.01	0.10	0.26	25	240	100	< 5
TH18-S7	(6.7 m)	Sandy Clay	Area 2	< 0.005	< 0.01	< 0.01	< 0.03	< 5	12	< 5	< 5
TH19-S6	(5.2 m)	Sandy Clay	Area 2	< 0.005	< 0.01	< 0.01	< 0.03	< 5	9	260	8
TH20-S6	(5.3 m)	Sand	Area 2	< 0.005	< 0.01	< 0.01	< 0.03	< 5	< 5	16	< 5
TH22-S1	(0.75 m)	Granular Fill	Area 3	< 0.005	< 0.01	< 0.01	< 0.03	< 5	< 5	22	6
TH26-S3	(5.3 m)	Silty Clay	Area 4	< 0.005	< 0.01	< 0.01	< 0.03	< 5	< 5	73	7
TH28-S7	(5.3 m)	Silty Sand	Area 4	< 0.005	< 0.01	< 0.01	< 0.03	< 5	< 5	9	< 5
Method Detection Limit				< 0.005	< 0.01	< 0.01	< 0.03	< 5	< 5	< 5	< 5
CCME ⁽²⁾ 1999 Canadian Environmental Quality Guidelines for Soil											
Residential/Parkland				0.5	0.8	1.2	1	NV	NV	NV	NV
Commercial				5	0.8	20	17	NV	NV	NV	NV
Industrial				5	0.8	20	20	NV	NV	NV	NV
CCME CWS ⁽³⁾ for PHCs in Soil, 2001, Table 2, Tier 1 levels for fine grained surface soils											
Residential/Parkland				NV	NV	NV	NV	260	800	800	5600
Commercial				NV	NV	NV	NV	660	1500	2500	6600
Industrial				NV	NV	NV	NV	660	1500	2500	6600
CCME CWS for PHCs in Soil, 2001, Table 3, Tier 1 levels for coarse grained surface soils											
Residential/Parkland				NV	NV	NV	NV	30	150	400	2800
Commercial				NV	NV	NV	NV	310	760	1700	3300
Industrial				NV	NV	NV	NV	310	760	1700	3300
CCME CWS for PHCs in Soil, 2001, Table 4, Generic levels in fine grained subsoil (>1.5 m depth)											
Residential/Parkland				NV	NV	NV	NV	750	2200	3500	10000
Commercial				NV	NV	NV	NV	1000	3000	5000	10000
Industrial				NV	NV	NV	NV	1000	3000	5000	10000
CCME CWS for PHCs in Soil, 2001, Table 5, Generic levels in coarse grained subsoil (>1.5 m depth)											
Residential/Parkland				NV	NV	NV	NV	350	1500	2500	10000
Commercial				NV	NV	NV	NV	700	2000	3500	10000
Industrial				NV	NV	NV	NV	700	2000	3500	10000

Notes: ⁽¹⁾ All concentrations are in mg/kg
Shaded area greater than criterion.

⁽²⁾ Canadian Council of Ministers of the Environment
P:\2004\Projects\217COW-General\02(Site_B-#2Point_Douglas-S)\Phase II\Tables\Table 1 BTEX Additional Tests.wpd

⁽³⁾ Canada Wide Standards

NV = no value

TABLE 2
POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL
PHASE II ESA - #2 POINT DOUGLAS AVENUE (SOUTH)

Parameters ⁽¹⁾	M.D.L.	Sample Location, Depth, Area & Soil Type				CCME Criteria ⁽²⁾		
		TH18-S3	TH18-S7	TH29-S2	TH31-S1			
		3.4 m	6.7 m	0.75 m	0.5 m			
		Area 2	Area 2	Area 5	Area 7			
		Silty Clay	Sandy Clay	Silty Clay	Sandy Clay	Residential/ Parkland	Commercial	Industrial
Benzo (a) Anthracene	0.05	< 0.05	< 0.05	2.3	< 0.05	1	10	10
Benzo (a) Pyrene	0.05	< 0.05	< 0.05	2.8	< 0.05	0.7	0.7	0.7
Benzo (b) Fluoranthene	0.05	< 0.05	< 0.05	2.0	< 0.05	1	10	10
Benzo (k) Fluoranthene	0.05	< 0.05	< 0.05	1.8	< 0.05	1	10	10
Dibenzo (a h) Anthracene	0.05	< 0.05	< 0.05	0.94	< 0.05	1	10	10
Indendo (1 2 3-cd) Pyrene	0.05	< 0.05	< 0.05	1.3	< 0.05	1	10	10
Napthalene	0.05	2.6	< 0.05	< 0.05	< 0.05	0.6	22	22
Phenanthrene	0.05	1.6	< 0.05	3.5	< 0.05	5	50	50
Pyrene	0.05	< 0.05	< 0.05	3.5	0.05	10	100	100
Quinoline	0.05	< 0.05	< 0.05	< 0.05	< 0.05	n/v	n/v	n/v
Acridine	0.05	< 0.05	< 0.05	< 0.05	< 0.05	n/v	n/v	n/v

Notes: ⁽¹⁾ All concentrations are in mg/kg.
⁽²⁾ Canadian Council of Ministers of the Environment.
M.D.L. = Method Detection Limit as of November 2004.
n/v = no value.
Shaded area greater than criterion

P:\2004\Projects\217COW-General\02(Site_B-#2Point_Douglas-S)\Phase II\Tables\Table 2 PAH2.wpd

**TABLE 3
METALS IN SOIL
PHASE II ESA - #2 POINT DOUGLAS AVENUE (SOUTH)**

Type of Metal ⁽¹⁾	M.D.L.	ENG-TECH Test Hole No., Sample No., and Depth									CCME Criteria ⁽²⁾		
		TH 1 S1 0.10 m	TH 4 S1 0.10 m	TH 5 S1 0.10 m	TH 6 S1 0.10 m	TH 7 S1 0.10 m	TH 29 S1 0.30 m	TH 30 S1 0.10 m	TH 32 S1 0.10 m	TH 33 S1 0.10 m	Residential /Parkland	Commercial	Industrial
Aluminum	3	2650	1860	5910	1930	4430	5840	3800	4310	2100	N/V	N/V	N/V
Arsenic	0.03	4.43	2.0	4.13	3.46	6.77	5.49	4.95	4.58	2.81	12	12	12
Barium	0.04	84.5	22.2	116	23.4	100	127	131	108	61.8	500	2000	2000
Beryllium	0.06	0.15	0.09	0.27	0.11	0.21	0.41	0.25	0.24	0.14	4	8	8
Bismuth	0.02	0.07	0.03	0.08	0.03	0.28	0.19	0.09	0.08	0.08	N/V	N/V	N/V
Boron	0.6	13.2	8.6	8.5	9.1	12.3	9.0	11.9	11.0	10.4	N/V	N/V	N/V
Cadmium	0.02	0.71	0.07	0.53	0.07	7.78	0.87	1.41	0.50	0.99	10	22	22
Calcium	7	138000	168000	98600	166000	133000	46100	102000	117000	122000	N/V	N/V	N/V
Chromium	0.1	20.5	12.1	16.6	20.0	16.8	19.4	21.6	17.7	10.2	64	87	87
Cobalt	0.01	4.55	2.94	5.93	4.04	6.37	8.61	5.60	5.18	3.27	50	300	300
Copper	0.2	57.3	24.7	77.5	41.4	407	66.1	131	47.1	42.4	63	91	91
Iron	6	12900	10200	13500	19400	11100	17300	13800	13000	8570	N/V	N/V	N/V
Lead	0.05	196	7.35	69.0	6.45	95.0	23.4	104	41.0	25.8	140	260	600
Magnesium	2	68000	63900	39200	76900	74000	18800	46100	40100	52000	N/V	N/V	N/V
Manganese	0.03	252	196	453	261	257	426	361	324	265	N/V	N/V	N/V
Molybdenum	0.02	2.20	1.60	1.39	3.24	1.23	1.46	1.81	3.93	1.10	10	40	40
Nickel	0.2	34.4	17.2	26.3	28.4	40.2	33.3	36.9	29.3	16.6	50	50	50
Potassium	7	787	616	1240	581	1020	1690	1090	995	636	N/V	N/V	N/V
Selenium	0.1	0.3	0.2	0.2	0.3	3.4	0.5	0.4	0.3	0.4	3	10	10
Silver	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	20	40	40
Sodium	2	138	125	153	112	157	131	181	195	112	N/V	N/V	N/V
Strontium	0.02	65.7	57.7	64.7	54.0	38.3	45.6	68.7	84.5	49.3	N/V	N/V	N/V
Thallium	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	< 0.2	< 0.2	< 0.2	1	1	1
Tin	4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	50	300	300
Titanium	0.03	142	155	201	165	164	195	179	204	113	N/V	N/V	N/V
Uranium	0.006	0.373	0.378	0.651	0.431	0.400	1.12	0.508	0.606	0.340	N/V	N/V	N/V
Vanadium	0.06	12.1	7.51	16.6	9.64	13.6	18.7	17.5	15.6	8.43	130	130	130
Zinc	2	197	16	166	20	4820	190	229	133	275	200	360	360

Notes: ⁽¹⁾ All concentrations are in mg/kg, and are Total Concentrations.
All samples are from Area 7, with the exception of TH29 S1 which is from Area 5

⁽²⁾ Canadian Council of Ministers of the Environment

M.D.L. - Method Detection Limit

N/V - No value

Shaded area greater than criterion.
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TABLE 4
POLYCHLORINATED BIPHENYLS (PCBs) IN SOIL
PHASE II ESA - #2 POINT DOUGLAS AVENUE (SOUTH)

Parameters ⁽¹⁾	M.D.L	Sample Location, Depth, Area & Soil Type		CCME Criteria ⁽²⁾		
		TH2-S1	TH3-S1			
		0.5 m	0.5 m			
		Area 6	Area 6			
		Silty Clay	Silty Clay	Residential/ Parkland	Commercial	Industrial
Aroclor 1016	0.1	< 0.1	< 0.1	n/v	n/v	n/v
Aroclor 1221	0.1	< 0.1	< 0.1	n/v	n/v	n/v
Aroclor 1232	0.1	< 0.1	< 0.1	n/v	n/v	n/v
Aroclor 1242	0.1	< 0.1	< 0.1	n/v	n/v	n/v
Aroclor 1248	0.1	< 0.1	< 0.1	n/v	n/v	n/v
Aroclor 1254	0.1	< 0.1	< 0.1	n/v	n/v	n/v
Aroclor 1260	0.1	6.3	< 0.1	n/v	n/v	n/v
Aroclor 1262	0.1	< 0.1	< 0.1	n/v	n/v	n/v
Aroclor 1268	0.1	< 0.1	< 0.1	n/v	n/v	n/v
Total PCBs	0.1	6.3	< 0.1	1.3	33	33

Notes: ⁽¹⁾ All concentrations are in mg/kg.
⁽²⁾ Canadian Council of Ministers of the Environment.
M.D.L. = Method Detection Limit as of November 2004.
n/v = no value.
Shaded area greater than criterion

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**TABLE 5
BULK ASBESTOS CONTENT IN INSULATION AND TILE SAMPLES
PHASE II ESA - #2 POINT DOUGLAS AVENUE (SOUTH)**

Parameters ⁽¹⁾	M.D.L.	Sample Location and Type													
		AS-1 Tank Insulation	AS-2 Tank Insulation	AS-3 Floor Tile Office Building D	AS-4 Ceiling Tile Office Building D	AS-5 Floor Tile Cafeteria Building E	AS-6 Floor Tile Cafeteria Building E	AS-7 Ceiling Tile Cafeteria Building E	AS-8 Ceiling Tile Cafeteria Building E	AS-9 Ceiling Tile Cafeteria Building E	AS-10 Floor Tile Control Rm Building K	AS-11 Ceiling Tile Control Rm Building K	AS-12 Floor Tile Laboratory Building K	AS-13 Floor Tile Drafting Rm Building J	AS-14 Ceiling Tile Drafting Rm Building J
Asbestos: Chrysotile (Serpentine)	1	0	0	10-25	0	Trace	0	0	1	0	0	0	0	0	0
Other Fibres: Cellulose, Synthetic	1	100	1 - 10	1-10	75-99	1-10	0	75-99	75-99	75-99	1-10	100	0	0	75-99
Other Fibres: Glass	1	0	10 - 25	0	0	0	1-10	0	0	0	0	0	1-10	Trace	0
Other Non Fibrous: Filler	0.1	< 0.1	65 - 89	65-89	1-25	90-99	90-99	1-25	1-25	1-25	90-99	0	0	100	1-25

Notes: ⁽¹⁾ All values are in percent.
AS-1 and AS-2 are from Area 8
AS-3 to AS-14 are from Area 11
M.D.L. = Method Detection Limit as of November 2004.

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TABLE 6
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) IN LEACHATE FROM ASPHALT SHINGLES
PHASE II ESA - #2 POINT DOUGLAS AVENUE (SOUTH)

Parameters ⁽¹⁾	M.D.L	Sample Location, Depth Type & Area		CCME Criteria ⁽²⁾
		L1 Surface	L2 Surface	
		Asphaltic Shingle	Asphaltic Shingle	
		Area 9	Area 9	Freshwater Aquatic Life
TEH (C11-C30)	0.1	0.2	0.2	n/v
1-Methyl Naphthalene	0.00005	<0.00005	<0.00005	n/v
2-Methyl Naphthalene	0.00005	<0.00005	<0.00005	n/v
Acenaphthene	0.00005	<0.00005	<0.00005	0.0058
Acenaphthylene	0.00005	<0.00005	<0.00005	n/v
Anthracene	0.00001	<0.00001	<0.00001	0.000012
Benzo(a)anthracene	0.00001	<0.00001	<0.00001	0.000018
Benzo(a)pyrene	0.00001	<0.00001	<0.00001	0.000015
Benzo(b)fluoranthene	0.00001	<0.00001	<0.00001	n/v
Benzo(ghi)perylene	0.00001	<0.00001	<0.00001	n/v
Benzo(k)fluoranthene	0.00001	<0.00001	<0.00001	n/v
Chrysene	0.00005	<0.00005	<0.00005	n/v
Dibenzo(ab)anthracene	0.00001	<0.00001	<0.00001	n/v
Fluoranthene	0.00001	<0.00001	<0.00001	0.00004
Fluorene	0.00005	<0.00005	<0.00005	0.003
Indeno(1,2,3 cd)pyrene	0.00001	<0.00001	<0.00001	n/v
Naphthalene	0.00005	<0.00005	<0.00005	0.0011
Phenanthrene	0.00001	<0.00001	<0.00001	0.0004
Pyrene	0.00001	<0.00001	<0.00001	0.000025
Quinoline	0.00005	<0.00005	<0.00005	0.0034
Acridine	0.00001	<0.00001	<0.00001	0.0044
2-Fluorobiphenyl Surr	50-150	72	62	n/v
Terphenyl Surr	50-150	81	76	n/v

Notes: ⁽¹⁾ All concentrations are in mg/L with the exception of 2-Fluorobiphenyl Surr and Terphenyl Surr which are in percent.

⁽²⁾ Canadian Council of Ministers of the Environment.

M.D.L. = Method Detection Limit as of November 2004.

n/v = no value.

Shaded area greater than criterion

P:\2004\Projects\217COW-General\02(Site_B-#2Point_Douglas-S)\Phase I\Tables\Table 6 Leachate.wpd

TABLE 7
HYDROCARBONS IN WATER SAMPLES
PHASE II ESA - #2 POINT DOUGLAS AVENUE (SOUTH)

Parameters ⁽¹⁾	M.D.L	Sample Location, Type & Area		
		WS-1 Surface	MW-1	MW-4
		Surface Water	Ground Water	Ground Water
		Area 10	Area 13	Area 13
Total Extractable Hydrocarbons	0.1	3400	< 0.1	0.2

Notes: ⁽¹⁾All concentrations are in mg/L.
M.D.L. = Method Detection Limit as of November 2004.
Monitoring wells MW-2 and MW-3 could not be located.

P:\2004\Projects\217COW-General\02(Site_B-#2Point_Douglas-S)\Phase II\Tables\Table 7 BTEX Water Sample.wpd

TABLE 8
POLYCHLORINATED BIPHENYLS (PCBs) IN TRANSFORMER OILS
PHASE II ESA - #2 POINT DOUGLAS AVENUE (SOUTH)

Parameters ⁽¹⁾	M.D.L	Sample Location, Type & Area		
		T1	T2	T3
		Transformer Oil	Transformer Oil	Transformer Oil
		Area 12	Area 12	Area 12
Total PCBs	0.1	< 1	< 1	16

Notes: ⁽¹⁾ All concentrations are in mg/kg, also referred to as ppm..
M.D.L. = Method Detection Limit as of November 2004.

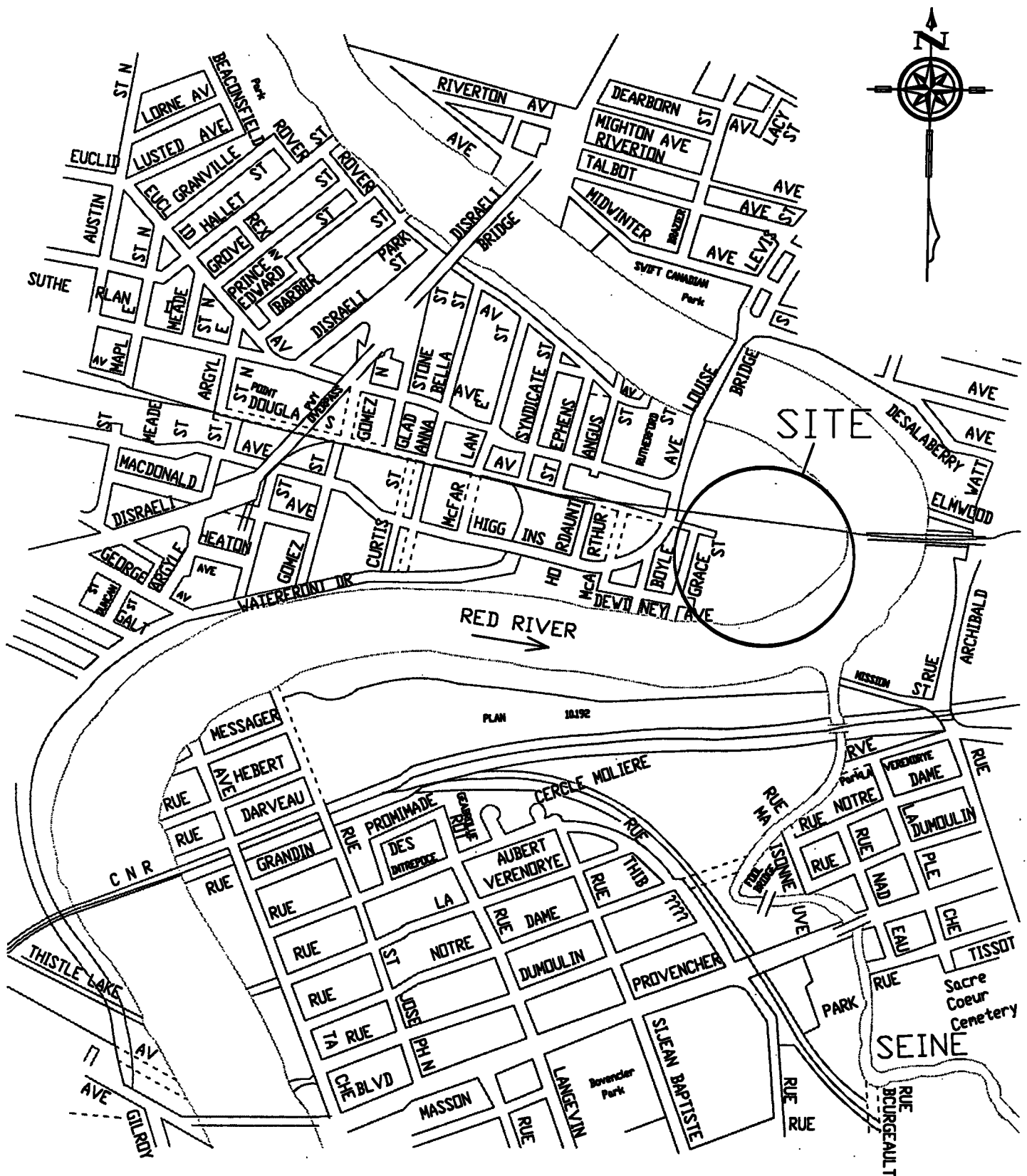
P:\2004\Projects\217COW-General\02(Site_B-#2Point_Douglas-S)\Phase II\Tables\Table 8 PCB Oil.wpd

LIST OF FIGURES

Site Location

Test Hole and Sample Location Plan

- Area 1 - Test Hole Locations**
- Area 2 - Test Hole Locations**
- Area 3 - Test Hole Locations**
- Area 4 - Test Hole Locations**
- Area 5 - Test Hole Locations**
- Area 6 - Test Hole Locations**
- Area 7 - Test Hole Locations**
- Area 8 - Sample Locations**
- Area 9 - Sample Locations**
- Area 10 - Sample Locations**
- Area 11 - Sample Locations**
- Area 12 - Sample Locations**
- Area 13 - Monitoring Well Locations**
- Area 14 - Tar Spill Location**



ENG-TECH CONSULTING LIMITED
 GEOTECHNICAL - ENVIRONMENTAL - MATERIALS TESTING

CLIENT:
 CITY OF WINNIPEG

SITE LOCATION
 PHASE II ESA
 #2 POINT DOUGLAS AVE
 SOUTH SITE
 WINNIPEG, MB

DRAWN BY:

SCALE:

DATE:

FILE No:

FIGURE No:

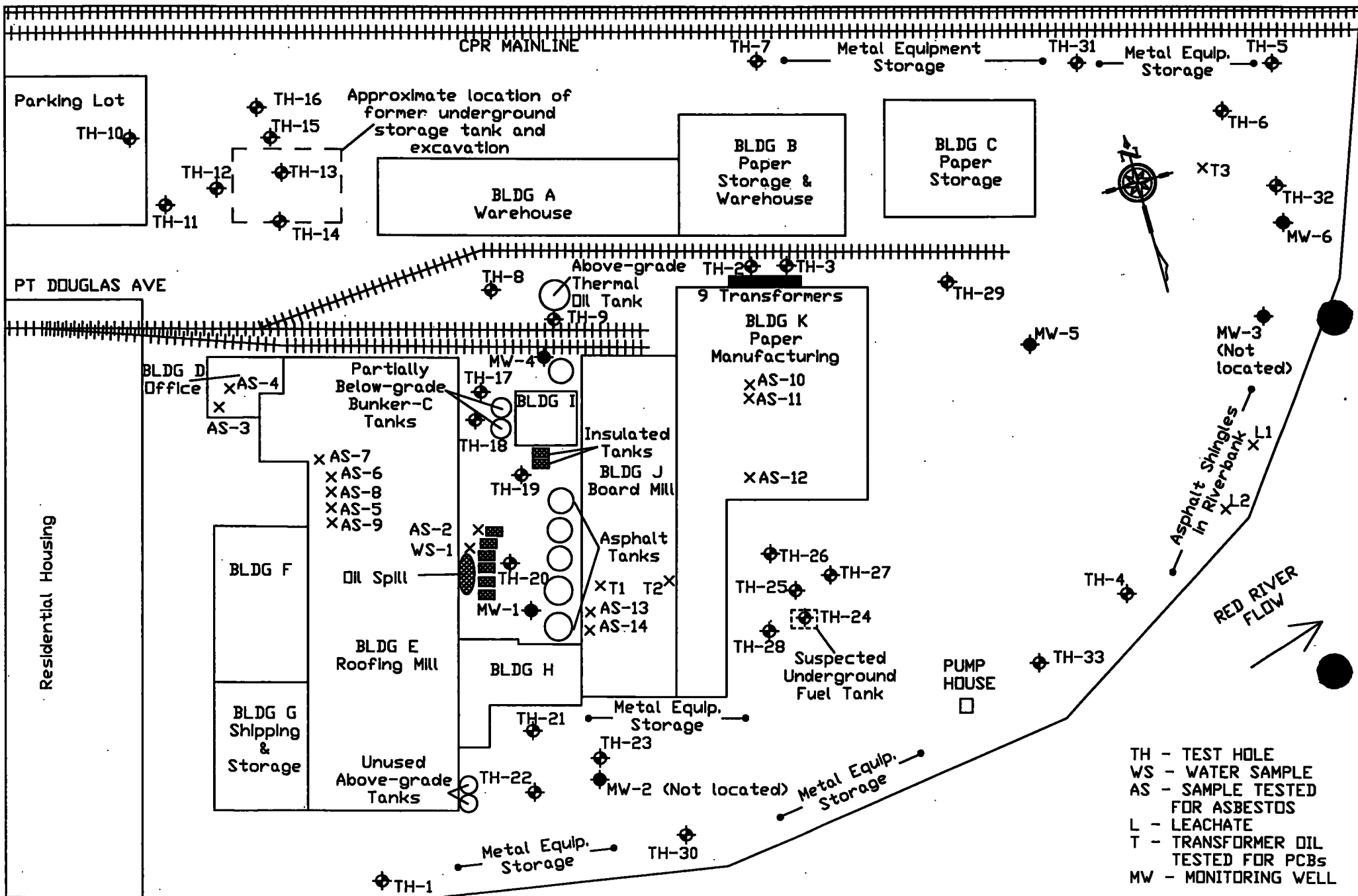
N/A

N/A

DEC 2004

04-217-02

1



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 GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

DRAWN BY:
JRD

SCALE:
NTS

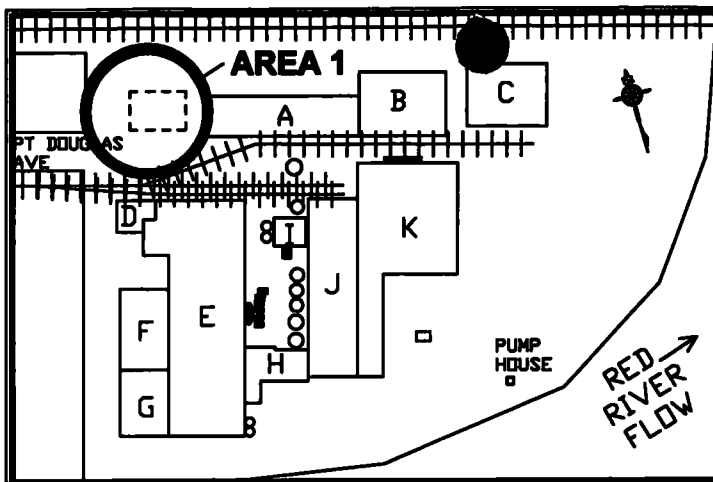
DATE:
DECEMBER 2004

CLIENT: CITY OF WINNIPEG

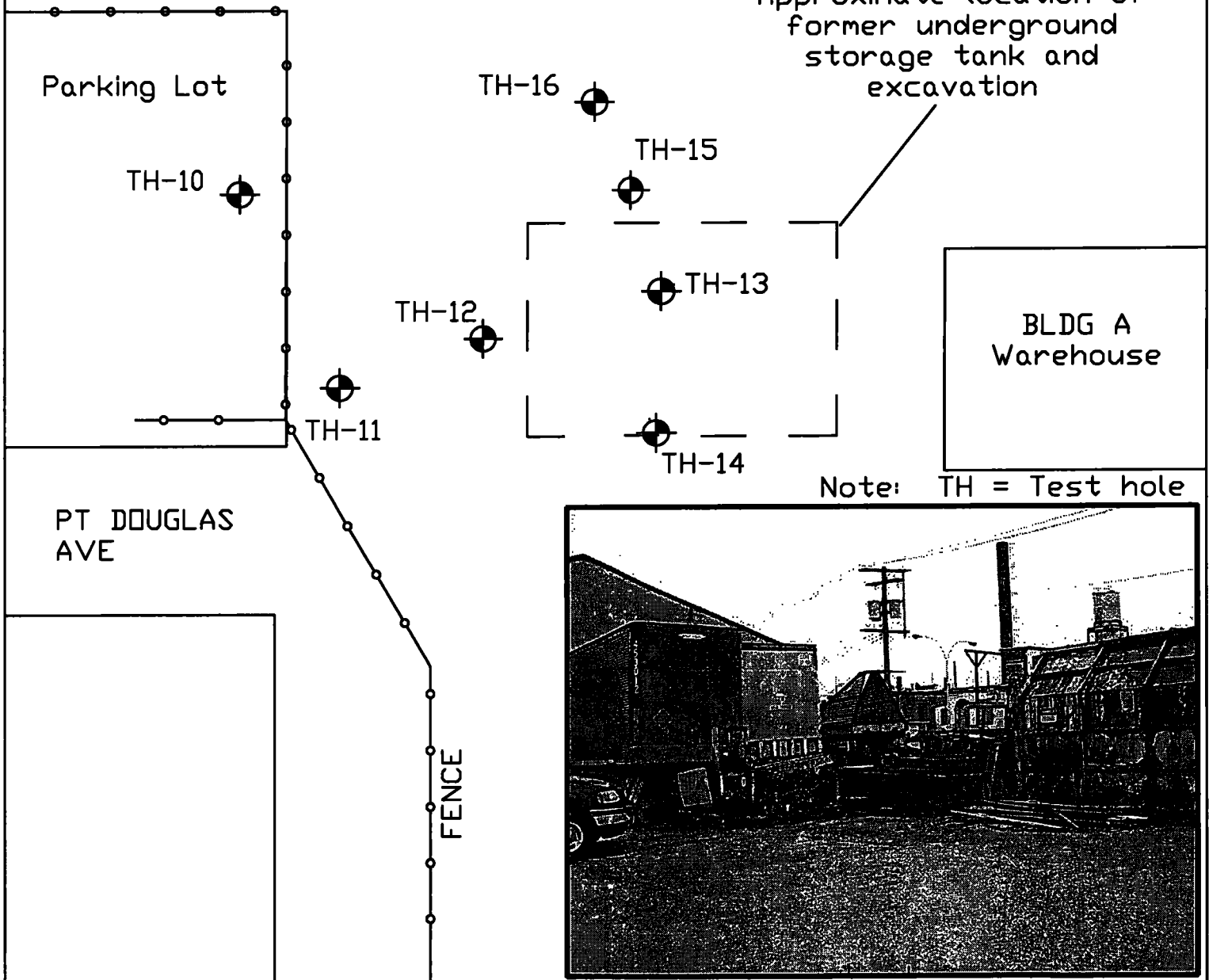
FILE NO: 04-217-02

FIGURE NO.: 2

TEST HOLE & SAMPLE
 LOCATION PLAN
 PHASE II ESA
 #2 POINT DOUGLAS AVE (SOUTH)
 WINNIPEG, MB



KEY MAP



ENG-TECH CONSULTING LIMITED
 GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

CLIENT:
 CITY OF WINNIPEG

AREA 1
 TEST HOLE LOCATIONS
 PHASE II ESA
 #2 POINT DOUGLAS AVE
 (SOUTH)
 WINNIPEG, MB

DRAWN BY:

SCALE:

DATE:

FILE No:

FIGURE No:

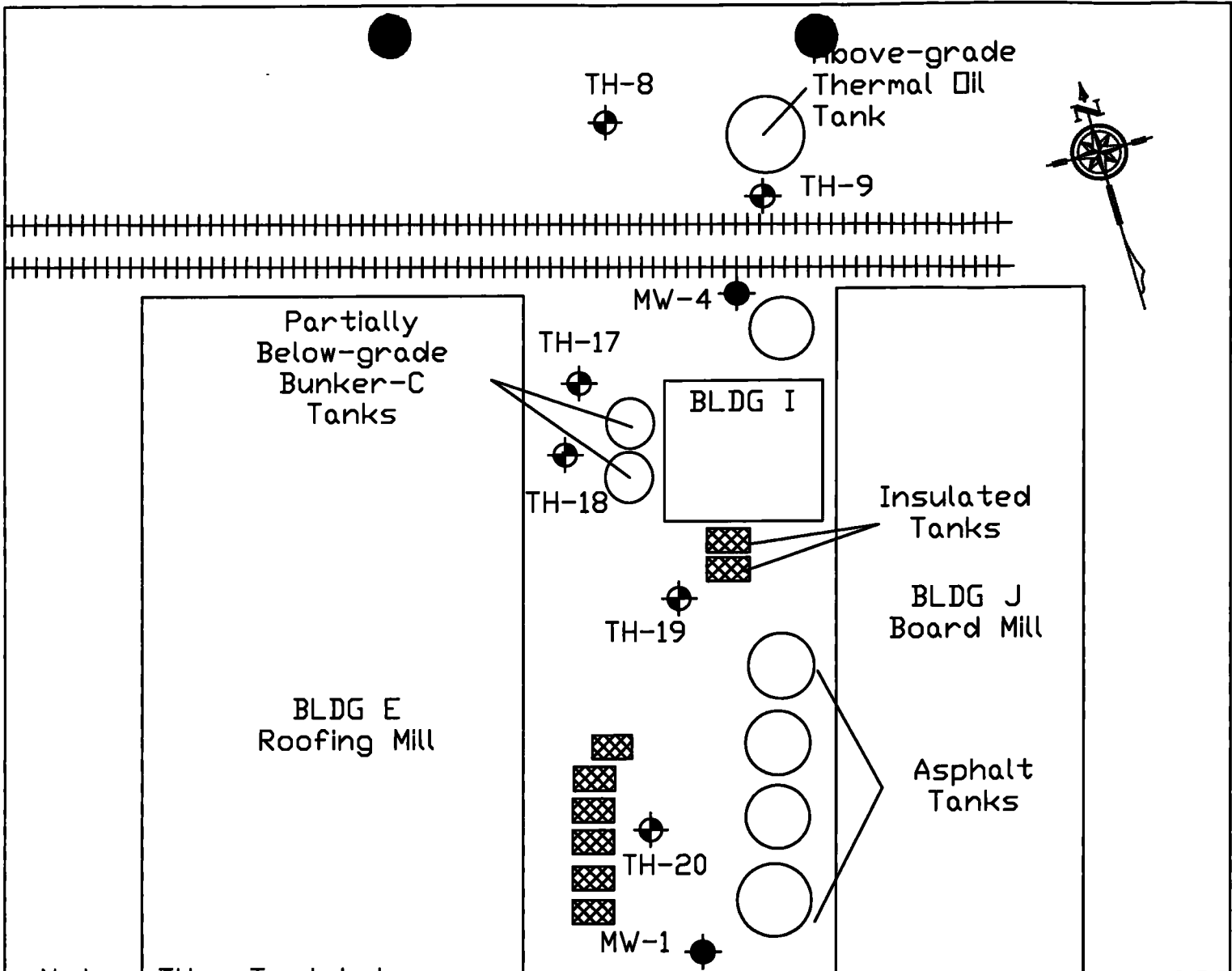
N/A

NTS

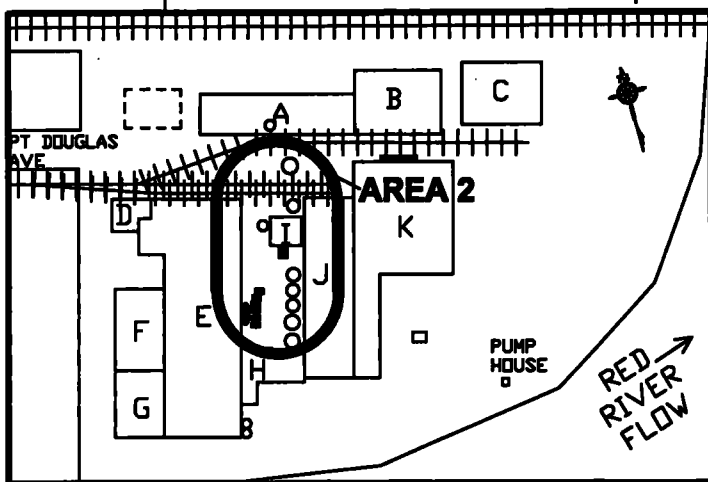
DEC 2004

04-217-02

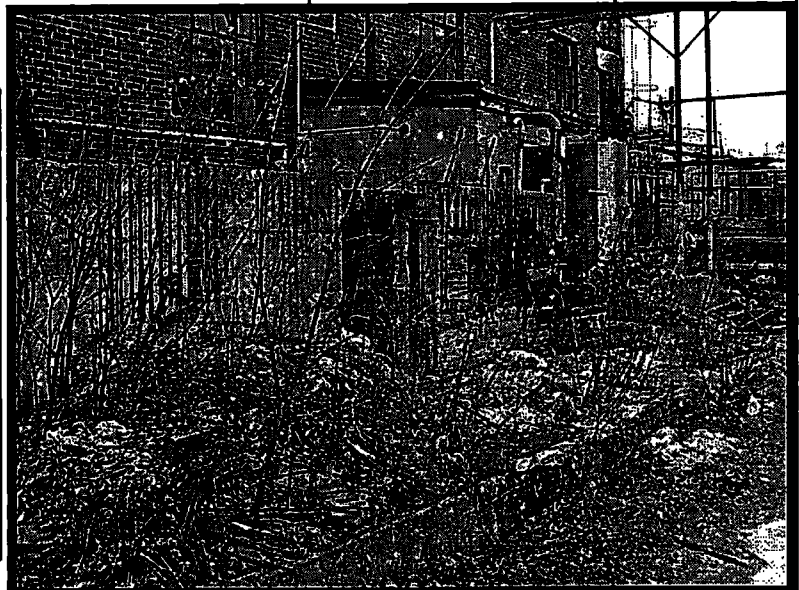
3



Note: TH = Test hole
MW = Monitoring Well



KEY MAP



ENG-TECH CONSULTING LIMITED
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

CLIENT:
CITY OF WINNIPEG

AREA 2
TEST HOLE LOCATIONS
PHASE II ESA
#2 POINT DOUGLAS AVE
(SOUTH)
WINNIPEG, MB

DRAWN BY:

SCALE:

DATE:

FILE No:

FIGURE No:

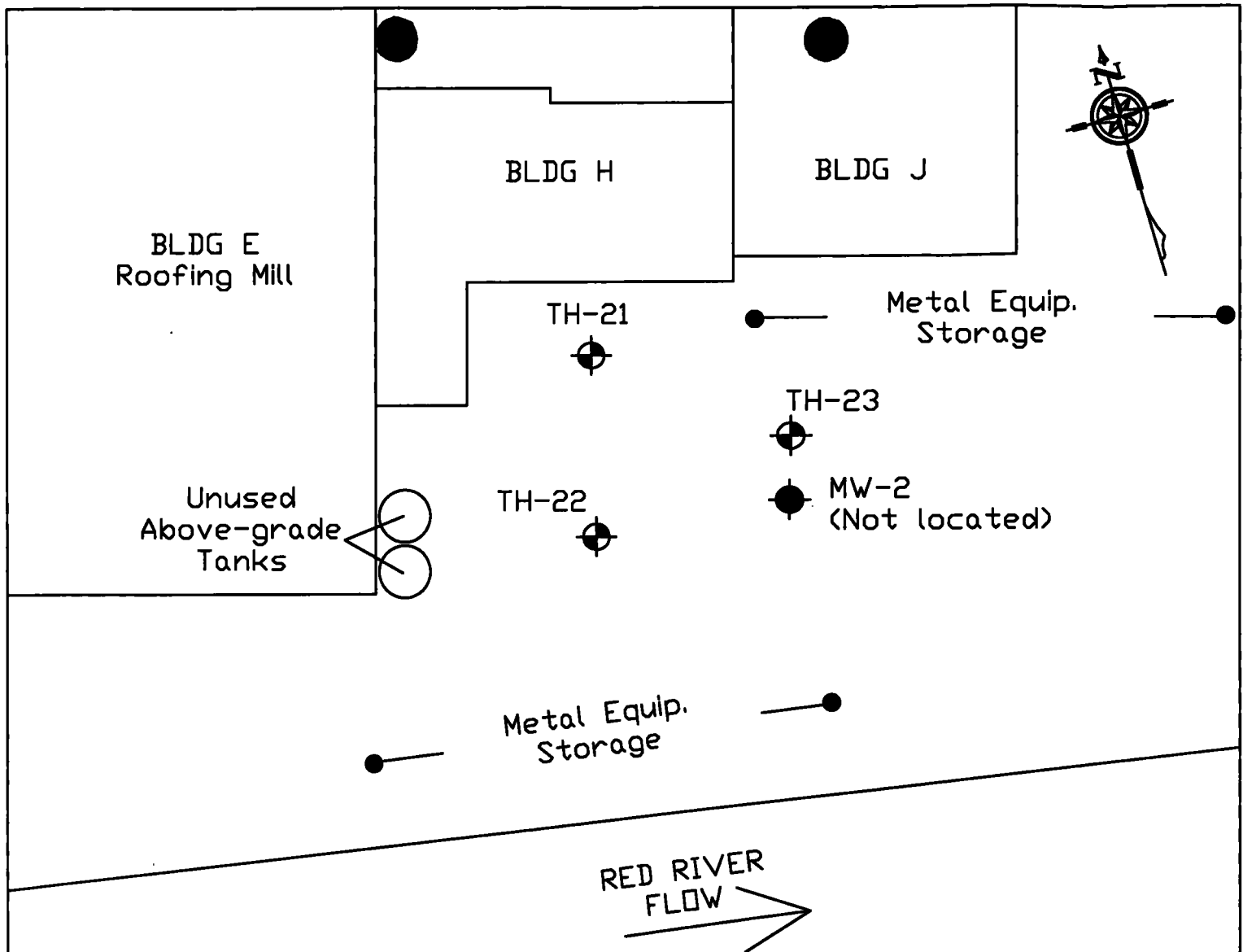
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NTS

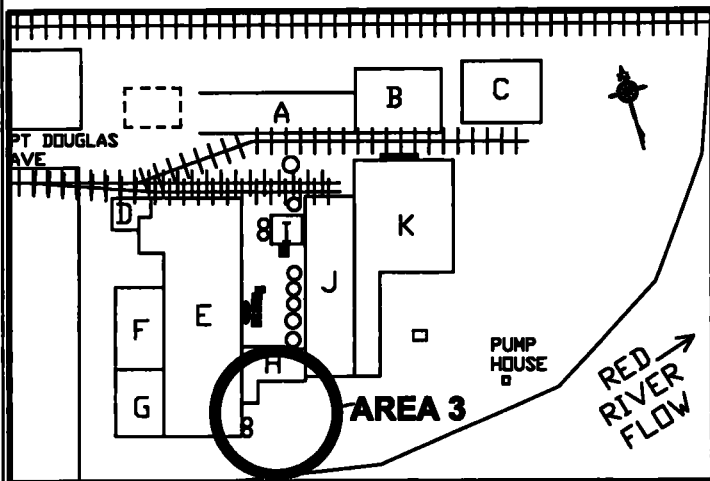
DEC 2004

04-217-02

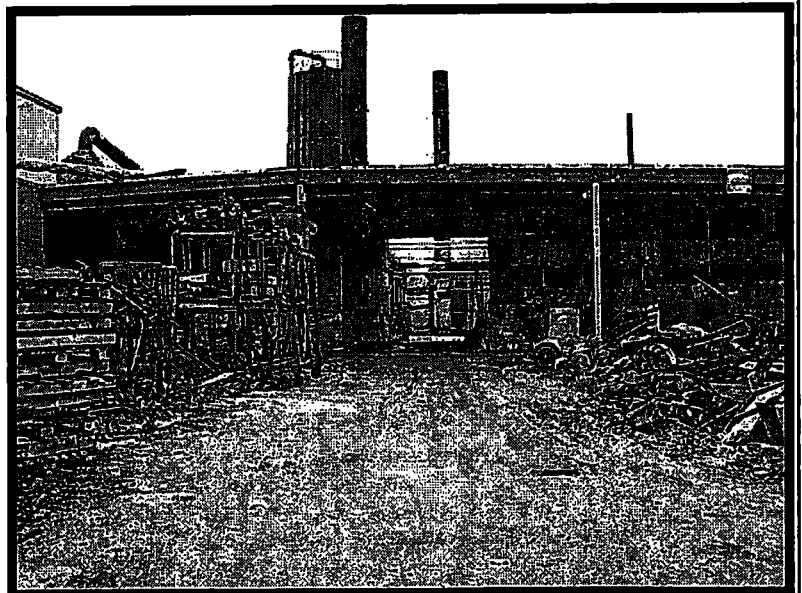
4



Note: TH = Test hole
MW = Monitoring Well



KEY MAP



ENG-TECH CONSULTING LIMITED
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

CLIENT:
CITY OF WINNIPEG

AREA 3
TEST HOLE LOCATIONS
PHASE II ESA
#2 POINT DOUGLAS AVE
(SOUTH)
WINNIPEG, MB

DRAWN BY:

N/A

SCALE:

NTS

DATE:

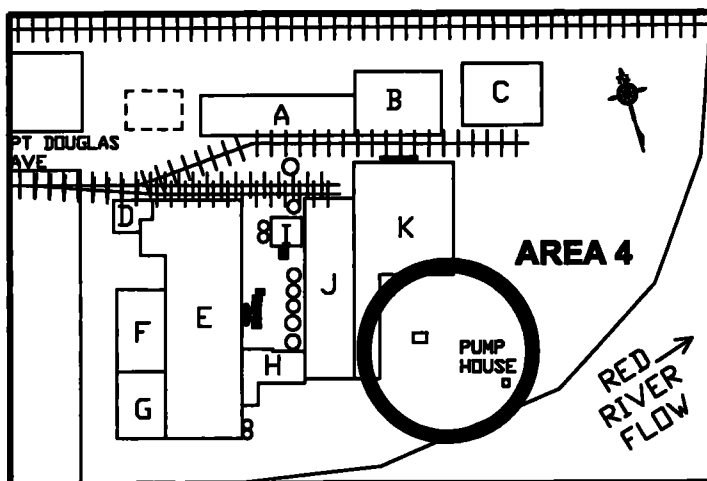
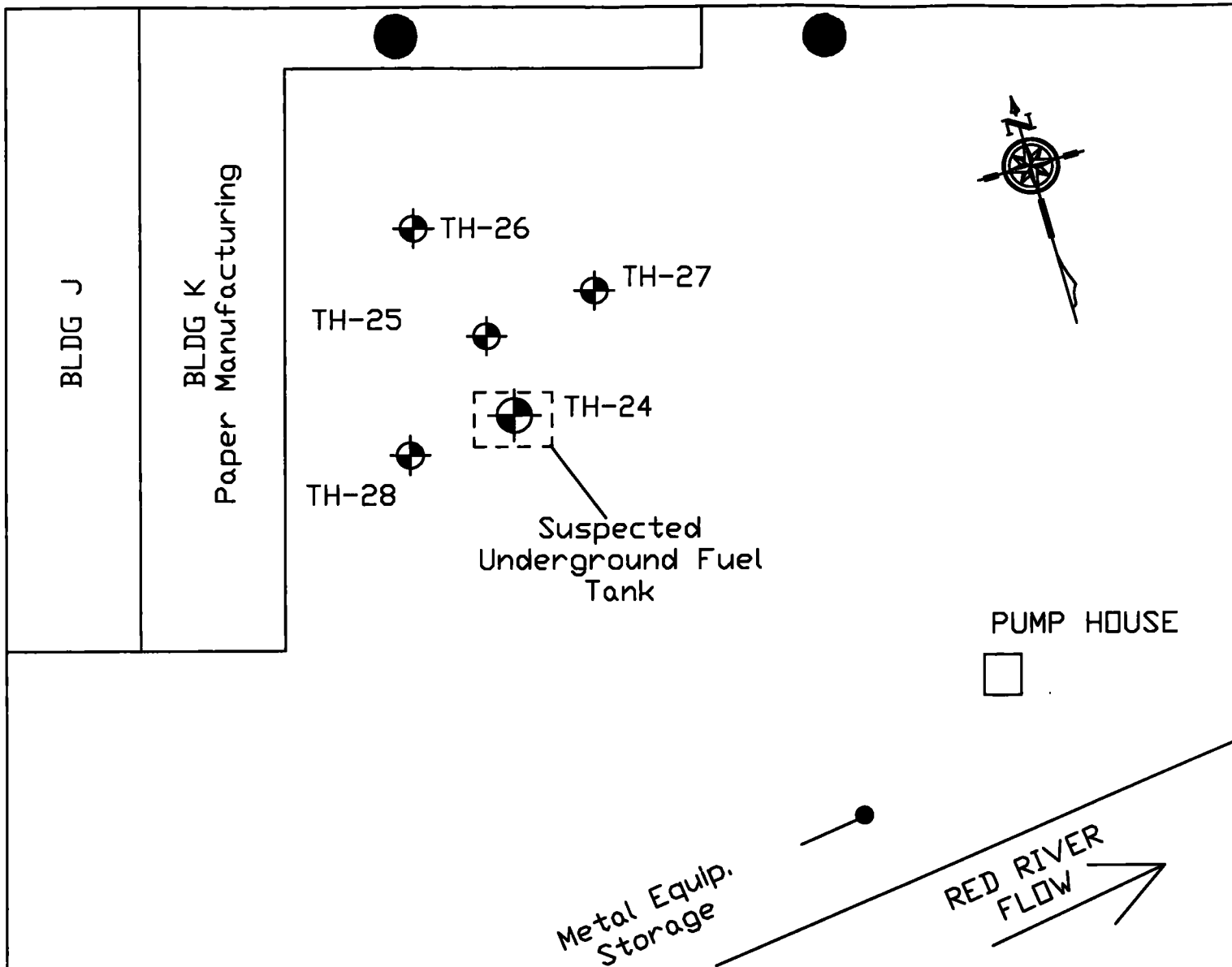
DEC 2004

FILE No:

04-217-02

FIGURE No:

5



KEY MAP



ENG-TECH CONSULTING LIMITED
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

CLIENT:
CITY OF WINNIPEG

AREA 4
TEST HOLE LOCATIONS
PHASE II ESA
#2 POINT DOUGLAS AVE
(SOUTH)
WINNIPEG, MB

DRAWN BY:

N/A

SCALE:

NTS

DATE:

DEC 2004

FILE No:

04-217-02

FIGURE No:

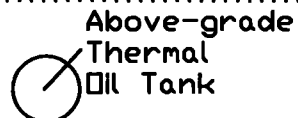
6



BLDG A
Warehouse

BLDG B
Paper Storage
& Warehouse

BLDG C
Paper Storage



TH-29

MW-5

MW-4



BLDG I

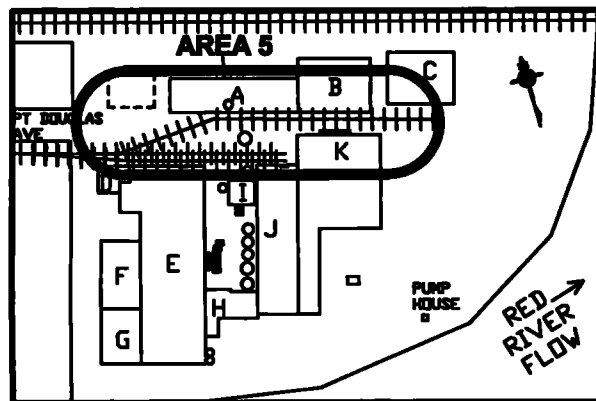
BLDG J
Board Mill

BLDG K
Paper
Manufacturing

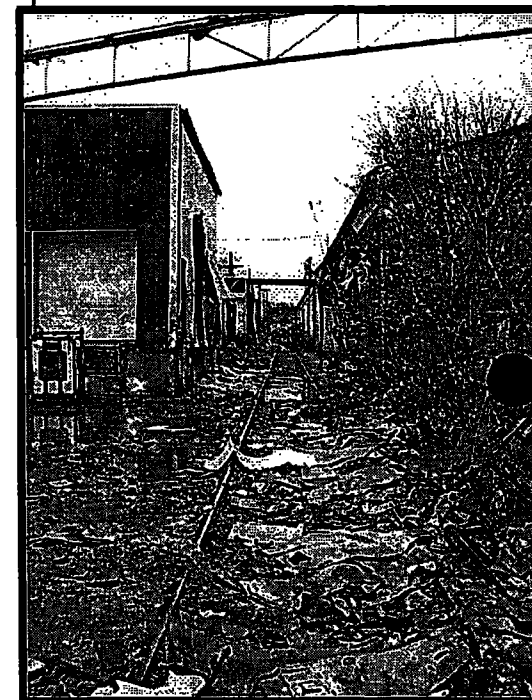
Note: TH = Test hole
MW = Monitoring well

BLDG D
Office

BLDG E
Roofing Mill



KEY MAP



ENG-TECH CONSULTING LIMITED
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

DRAWN BY:
JRD

SCALE:
NTS

DATE:
DECEMBER 2004

CLIENT: CITY OF WINNIPEG

FILE NO: 04-217-02

FIGURE NO.: 7

AREA 5
TEST HOLE LOCATIONS
PHASE II ESA
#2 POINT DOUGLAS AVE (SOUTH)
WINNIPEG, MB

BLDG A
Warehouse

BLDG B
Paper Storage &
Warehouse



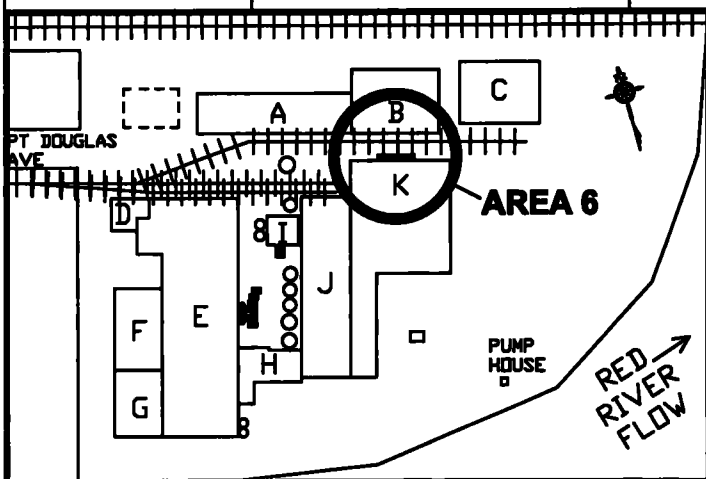
TH-2 TH-3

9 Transformers

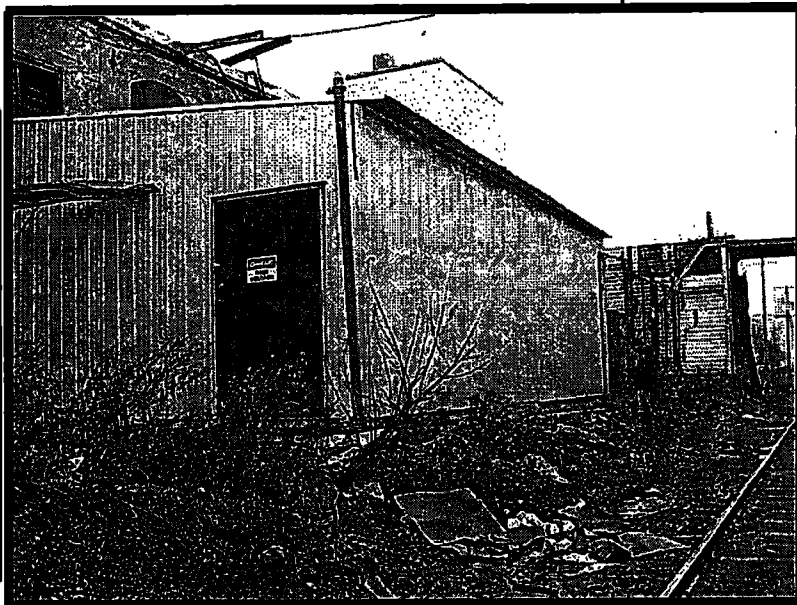
BLDG K
Paper
Manufacturing

BLDG J
Board Mill

Note: TH = Test hole



KEY MAP



ENG-TECH CONSULTING LIMITED
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

CLIENT:
CITY OF WINNIPEG

AREA 6
TEST HOLE LOCATIONS
PHASE II ESA
#2 POINT DOUGLAS AVE
(SOUTH)
WINNIPEG, MB

DRAWN BY:

N/A

SCALE:

NTS

DATE:

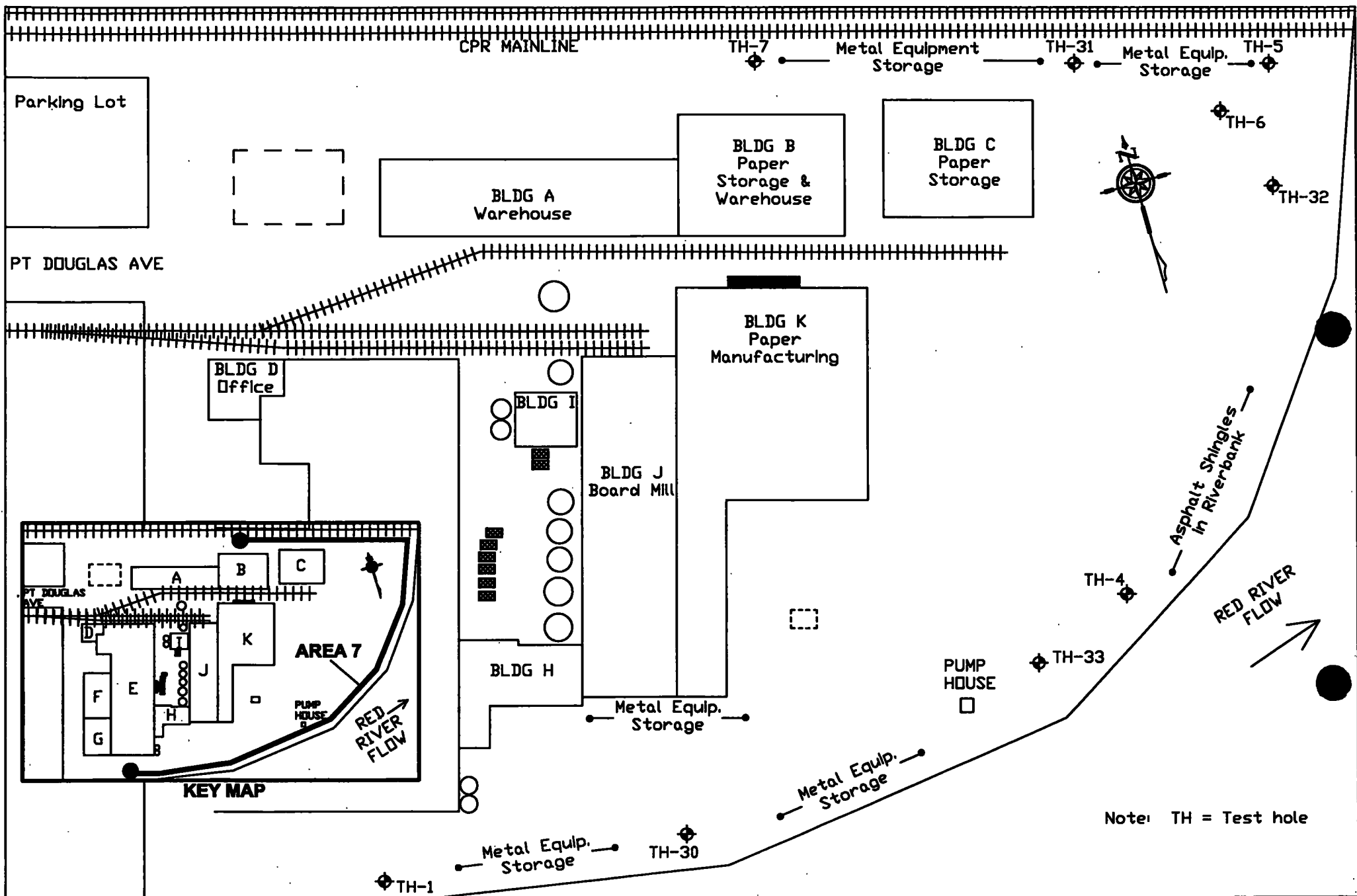
DEC 2004

FILE No:

04-217-02

FIGURE No:

8



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 GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

DRAWN BY:
 JRD

SCALE:
 NTS

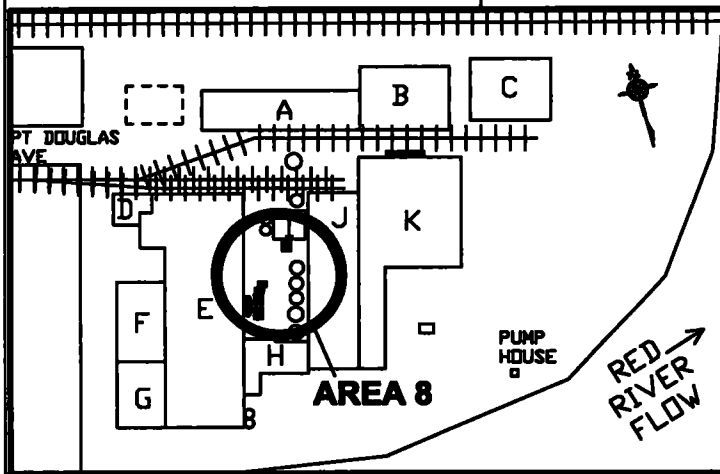
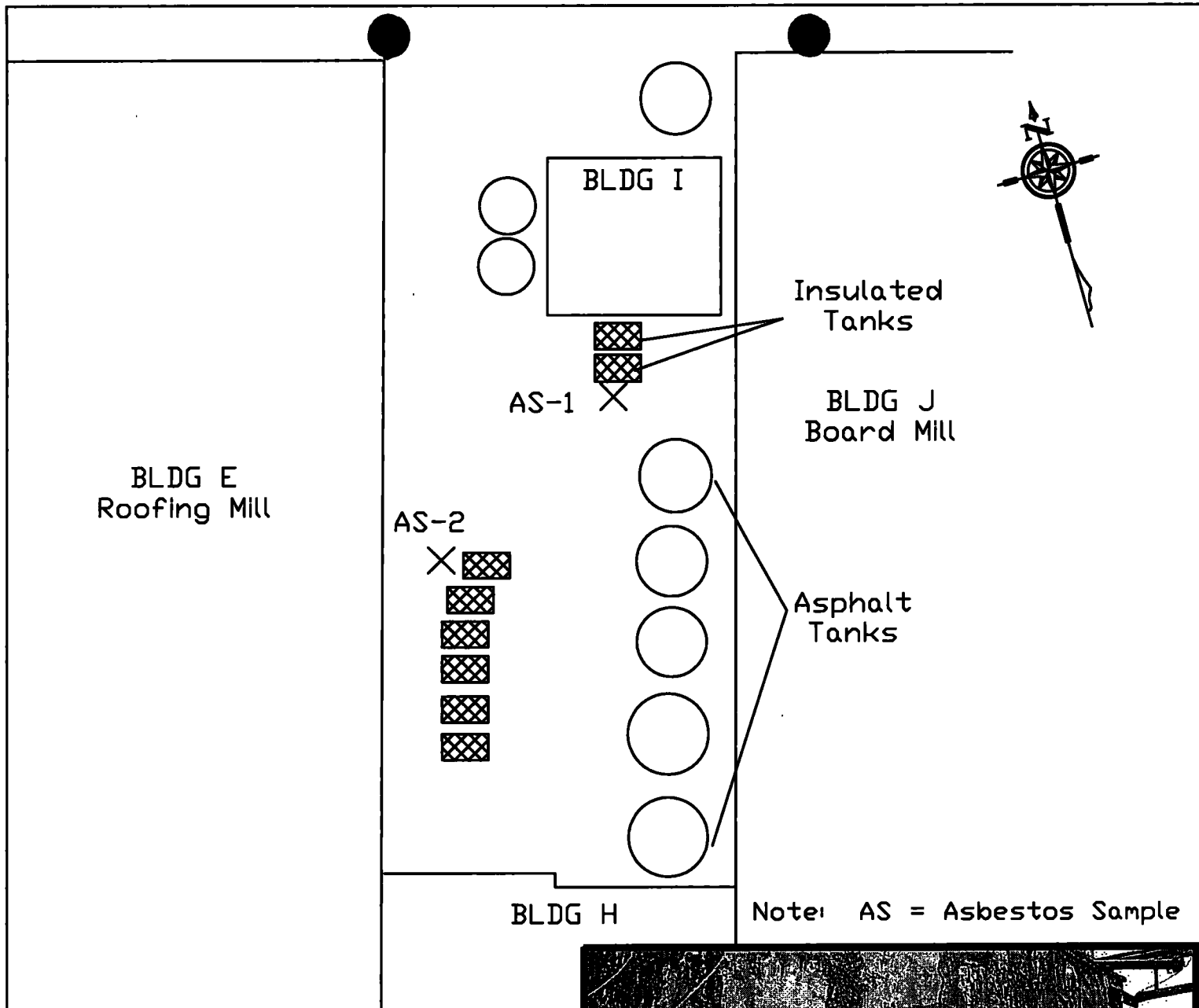
DATE:
 DECEMBER 2004

CLIENT: CITY OF WINNIPEG

FILE NO: 04-217-02

FIGURE NO.: 9

AREA 7
 TEST HOLE LOCATIONS
 PHASE II ESA
 #2 POINT DOUGLAS AVE (SOUTH)
 WINNIPEG, MB



KEY MAP



ENG-TECH CONSULTING LIMITED
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

CLIENT:
CITY OF WINNIPEG

AREA 8
SAMPLE LOCATIONS
PHASE II ESA
#2 POINT DOUGLAS AVE
(SOUTH)
WINNIPEG, MB

DRAWN BY:

N/A

SCALE:

NTS

DATE:

DEC 2004

FILE No:

04-217-02

FIGURE No:

10



MW-5

MW-3
(Not located)

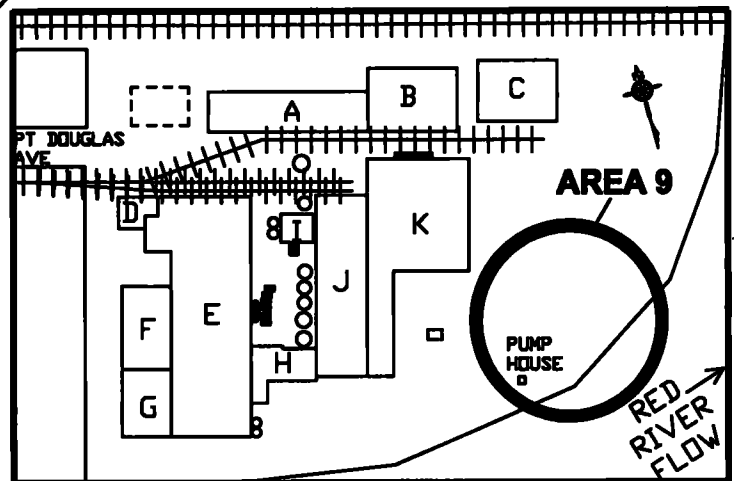


Asphalt Shingles
in Riverbank

RED RIVER
FLOW

Note: L = Leachate test
sample location
MW = Monitoring well

PUMP HOUSE



KEY MAP

ENG-TECH CONSULTING LIMITED
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

CLIENT:
CITY OF WINNIPEG

AREA 9
SAMPLE LOCATIONS
PHASE II ESA
#2 POINT DOUGLAS AVE
(SOUTH)
WINNIPEG, MB

DRAWN BY:

SCALE:

DATE:

FILE No:

FIGURE No:

N/A

NTS

DEC 2004

04-217-02

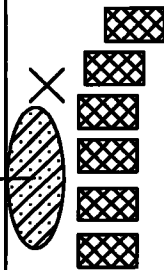
11



BLDG E
Roofing Mill

WS-1

Oil Spill



MW-4

BLDG I

Insulated
Tanks

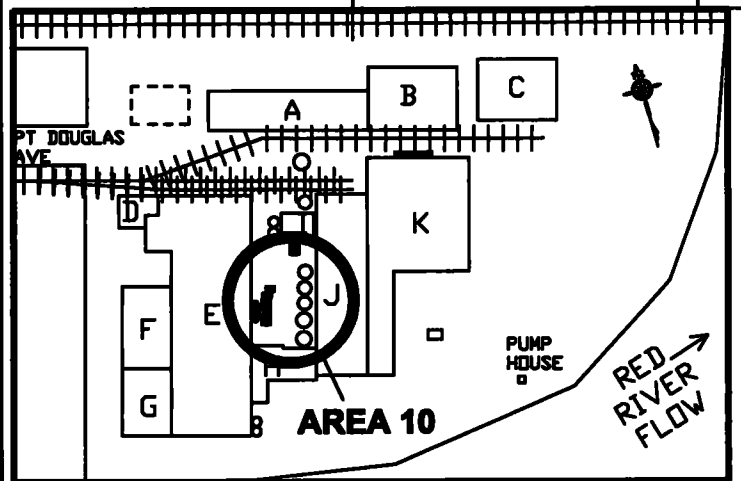
BLDG J
Board Mill

Asphalt
Tanks

MW-1

BLDG H

Note: WS = Water sample
MW = Monitoring well



KEY MAP

ENG-TECH CONSULTING LIMITED
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

CLIENT:
CITY OF WINNIPEG

AREA 10
SAMPLE LOCATION
PHASE II ESA
#2 POINT DOUGLAS AVE
(SOUTH)
WINNIPEG, MB

DRAWN BY:

SCALE:

DATE:

FILE No:

FIGURE No:

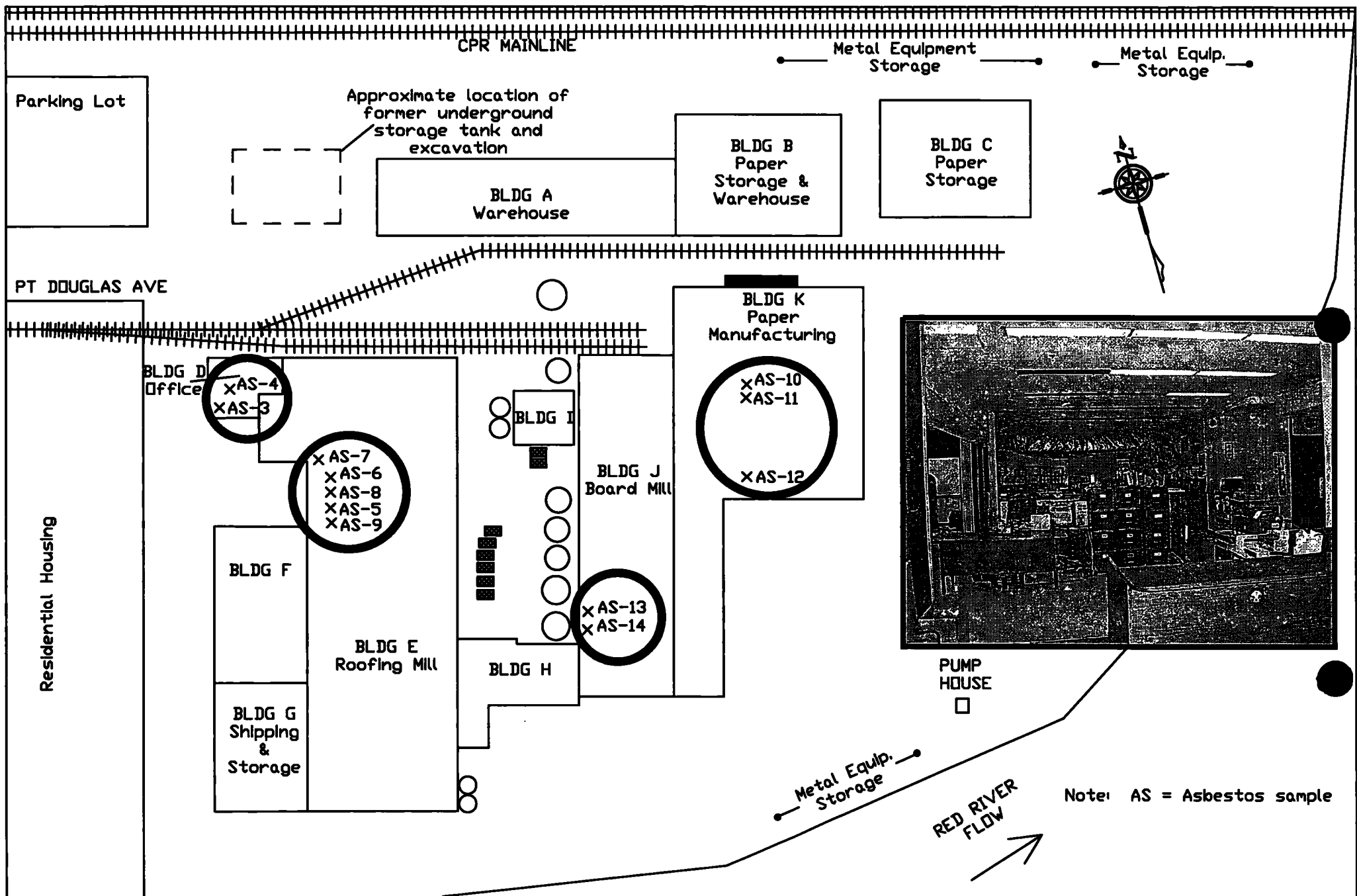
N/A

NTS

DEC 2004

04-217-02

12



ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

DRAWN BY:
JRD

SCALE:
NTS

DATE:
DECEMBER 2004

CLIENT: CITY OF WINNIPEG

FILE NO: 04-217-02

FIGURE NO.: 13

AREA 11

SAMPLE LOCATIONS

PHASE II ESA

#2 POINT DOUGLAS AVE (SOUTH)
WINNIPEG, MB

Note: AS = Asbestos sample

CPR MAINLINE

Parking Lot

BLDG A
Warehouse

BLDG B
Paper
Storage &
Warehouse

BLDG C
Paper
Storage



PT DOUGLAS AVE

BLDG K
Paper
Manufacturing

BLDG D
Office

BLDG I

BLDG J
Board Mill

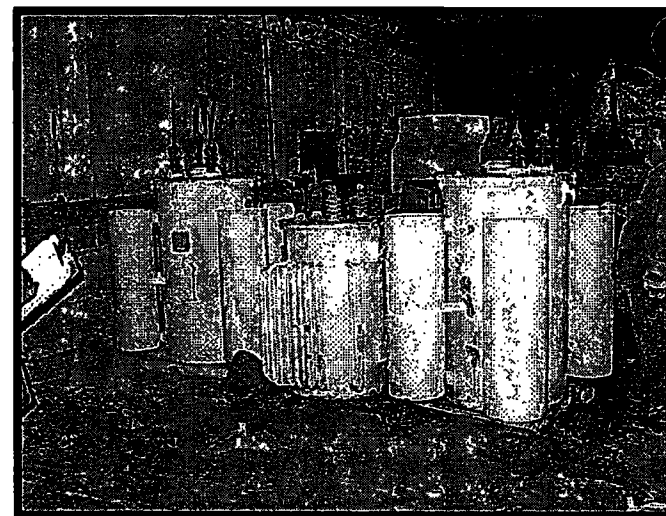
XT1 XT2

BLDG F

BLDG E
Roofing Mill

BLDG H

BLDG G
Shipping
&
Storage



PUMP
HOUSE

RED RIVER
FLOW

Note: T = Transformer oil
sample location

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

CLIENT: CITY OF WINNIPEG

FILE NO: 04-217-02

FIGURE NO.: 14

AREA 12

SAMPLE LOCATIONS

PHASE II ESA

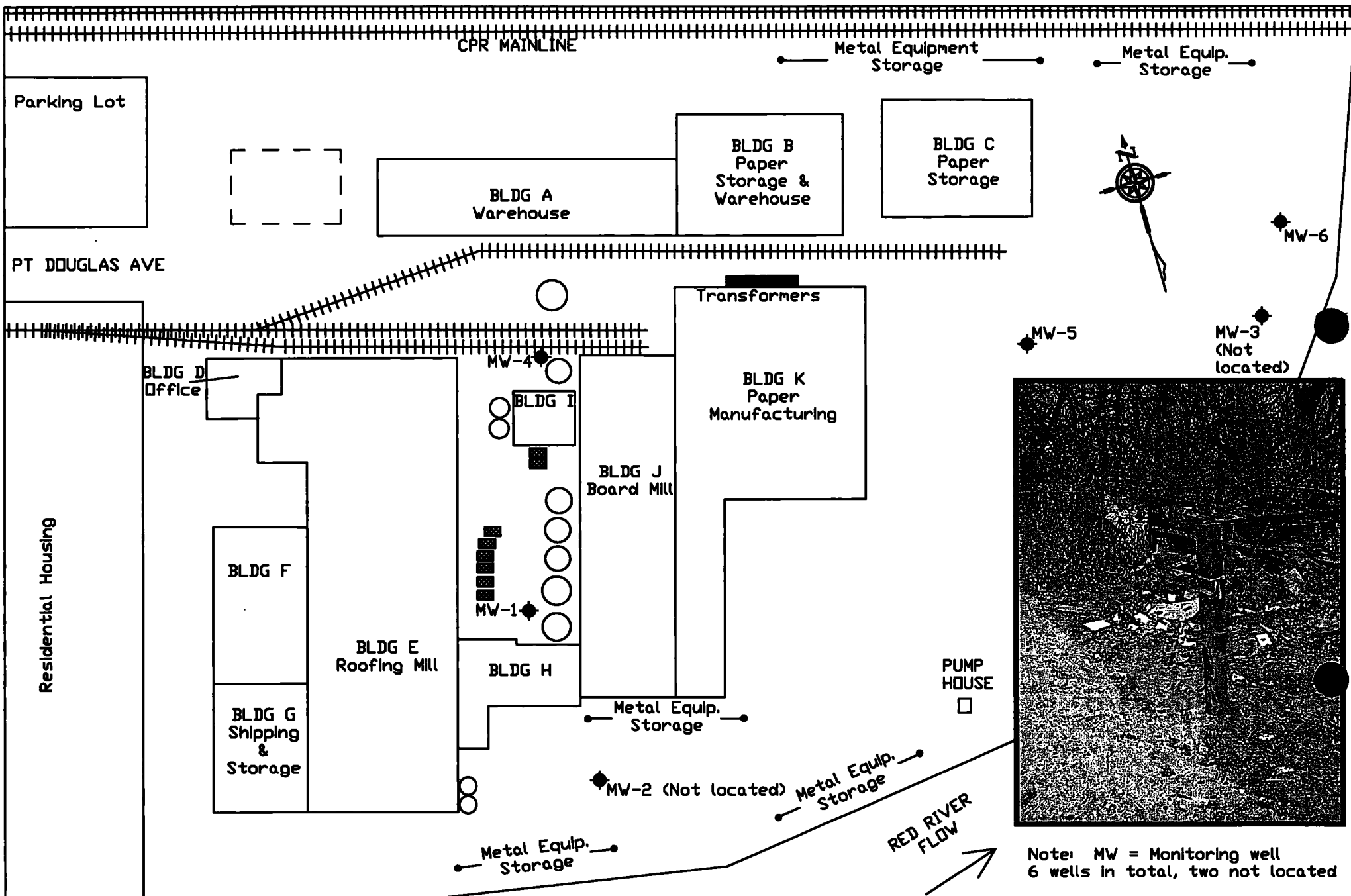
#2 POINT DOUGLAS AVE (SOUTH)
WINNIPEG, MB

DRAWN BY:
JRD

SCALE:
NTS

DATE:
DECEMBER 2004

Residential Housing



ENG-TECH CONSULTING LIMITED
 GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

DRAWN BY:
 JRD

SCALE:
 NTS

DATE:
 DECEMBER 2004

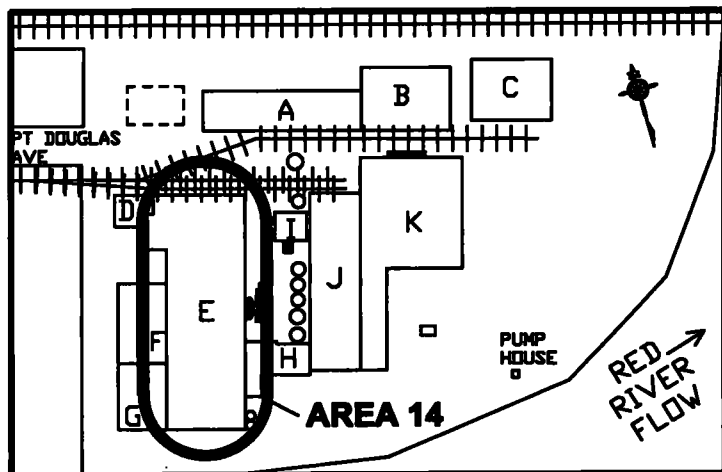
CLIENT: CITY OF WINNIPEG

FILE NO: 04-217-02

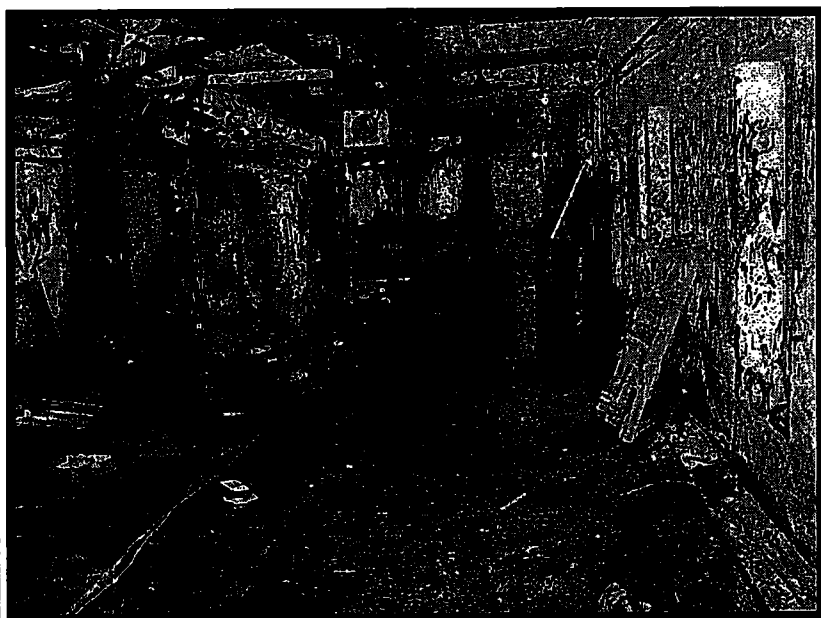
FIGURE NO.: 15

AREA 13
 MONITORING WELL LOCATIONS
 PHASE II ESA
 #2 POINT DOUGLAS AVE (SOUTH)
 WINNIPEG, MB

Note: MW = Monitoring well
 6 wells in total, two not located



KEY MAP



BLDG E
Roofing Mill

Tar Spill in Basement

BLDG G
Shipping &
Storage

BLDG H

ENG-TECH CONSULTING LIMITED
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

CLIENT:
CITY OF WINNIPEG

AREA 14
TAR SPILL LOCATION
PHASE II ESA
#2 POINT DOUGLAS AVE
(SOUTH)
WINNIPEG, MB

DRAWN BY:

SCALE:

DATE:

FILE No:

FIGURE No:

N/A

NTS

DEC 2004

04-217-02

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LIST OF APPENDICES

**Stratigraphic Test Hole Logs
Analytical Test Results**

APPENDIX A

Stratigraphic Test Hole Logs

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH1

Project No: 04-217-02

Date Drilled: October 22, 2004

Grade Elevation: 100 m (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		Granular Fill - brown, damp, some clay.											
		End of Test Hole - ended test hole at 0.2 m below grade. - test hole backfilled with auger cuttings upon completion of drilling.											
1			99										
2			98										

ENG-TECH Consulting Limited

Logged by: JSD & MRD

Reviewed by: 

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: ENG-TECH

Drill Rig: Hand Auger

Auger Size: 60 mm

Completion Depth: 0.2 m

Completion Elevation: 99.8 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH2

Project No: 04-217-02

Date Drilled: October 22, 2004

Grade Elevation: 100 m (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface Organic Clay (OH) - dark brown, moist, high plastic, firm, some silt, trace organics.	100										
		Silty Clay (CH/CI) - grey, moist, high to medium plastic, firm, some silt.		S1		100							
		End of Test Hole - ended test hole at 0.5 m below grade. - test hole backfilled with auger cuttings upon completion of drilling.											
1			99										
2			98										

ENG-TECH Consulting Limited

Logged by: JSD & MRD

Reviewed by: *CA*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: ENG-TECH

Drill Rig: Hand Auger

Auger Size: 60 mm

Completion Depth: 0.5 m

Completion Elevation: 99.5 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH3

Project No: 04-217-02

Date Drilled: October 22, 2004

Grade Elevation: 100 m (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface Organic Clay (OH) - dark brown, moist, high plastic, firm, some silt, trace organics.	100										
		Silty Clay (CH/CI) - grey, moist, high to medium plastic, firm, some silt.		S1		100							
		End of Test Hole - ended test hole at 0.5 m below grade. - test hole backfilled with auger cuttings upon completion of drilling.											
1			99										
2			98										

ENG-TECH Consulting Limited

Logged by: JSD & MRD

Reviewed by: CA

Drilled By: ENG-TECH

Drill Rig: Hand Auger

Auger Size: 60 mm

Completion Depth: 0.5 m

Completion Elevation: 99.5 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

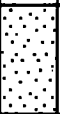
Test Hole #: TH4

Project No: 04-217-02

Date Drilled: October 22, 2004

Grade Elevation: 100 m (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		Sand Fill (SP) - brown, damp, medium grained, poorly graded, trace gravel sizes.			S1		100						
		End of Test Hole - ended test hole at 0.2 m below grade. - test hole backfilled with auger cuttings upon completion of drilling.											
1			99										
2			98										

ENG-TECH Consulting Limited

Logged by: JSD & MRD

Reviewed by: 

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: ENG-TECH

Drill Rig: Hand Auger

Auger Size: 60 mm

Completion Depth: 0.2 m

Completion Elevation: 99.8 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH5

Project No: 04-217-02

Date Drilled: October 22, 2004

Grade Elevation: 100 m (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface Sandy Clay Fill (CI) - brown, damp, medium plastic, firm, and sand sizes, some silt, trace gravel sizes & organics.	100										
		End of Test Hole - ended test hole at 0.2 m below grade. - test hole backfilled with auger cuttings upon completion of drilling.		S1		100							
1			99										
2			98										

ENG-TECH Consulting Limited

Logged by: JSD & MRD

Reviewed by: 

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: ENG-TECH

Drill Rig: Hand Auger

Auger Size: 60 mm

Completion Depth: 0.2 m

Completion Elevation: 99.8 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH6

Project No: 04-217-02

Date Drilled: October 22, 2004

Grade Elevation: 100 m (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		Sand Fill (SP) - brown, damp, medium grained, poorly graded, trace gravel sizes.		S1		100							
		End of Test Hole - ended test hole at 0.2 m below grade. - test hole backfilled with auger cuttings upon completion of drilling.											
1			99										
2			98										

ENG-TECH Consulting Limited

Logged by: JSD & MRD

Reviewed by:

Drilled By: ENG-TECH

Drill Rig: Hand Auger

Auger Size: 60 mm

Completion Depth: 0.2 m

Completion Elevation: 99.8 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH7

Project No: 04-217-02

Date Drilled: October 22, 2004

Grade Elevation: 100 m (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		Sandy Clay Fill (CI) - brown, damp, medium plastic, and sand sizes, some silt, trace gravel sizes & organics.			S1		100						
		End of Test Hole - ended test hole at 0.2 m below grade. - test hole backfilled with auger cuttings upon completion of drilling.											
1			99										
2			98										

ENG-TECH Consulting Limited

Logged by: JSD & MRD

Reviewed by: *CAA*

Drilled By: ENG-TECH

Drill Rig: Hand Auger

Auger Size: 60 mm

Completion Depth: 0.2 m

Completion Elevation: 99.8 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH8

Project No: 04-217-02

Date Drilled: October 29, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.7 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		100 mm Concrete											
		Granular Fill											
		- 350 mm thick.											
1		Silty Clay (CH/CI)	99	S1	Split Barrel	100							
		- brown, moist, high to medium plastic, firm, some silt.		S2	Split Barrel	100							
2			98										
		- below 2.4 m, with medium grained sand sizes.		S3	Split Barrel	100							
3			97	S4	Split Barrel	100							
4		Sandy Clay (CI)	96	S5	Split Barrel	100							
		- brown, moist, medium plastic, with sand sizes, some silt.		S6	Split Barrel	100							
		- below 4.3 m, wet.		S7	Split Barrel	100							
5			95	S8	Split Barrel	100							
6			94	S9	Split Barrel	100							
		End of Test Hole											
		- ended test hole at 6.1 m below grade.											
		- test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade.											
		- sloughing encountered at 4.3 m below grade.											
		- water in test hole at 4.3 m below grade.											
7			93										
8			92										

ENG-TECH Consulting Limited

Logged by: MRD & RRB

Reviewed by: CA

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 93.9 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH9

Project No: 04-217-02

Date Drilled: October 29, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.7 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments					
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)								
							50	150			250	350	450		
0		Ground Surface	100												
		Granular Fill - 100 mm thick.													
1		Clay Fill (CH) - black, moist, high plastic, stiff, some silt, trace sand sizes.	99	S1		100									
				S2		100									
		Silty Clay (CH/CI) - brown, moist, high to medium plastic, stiff, some silt.		S3		100									
2		- between 0.4 to 0.6 m, petroleum odours scented.	98	S4		100									
				S5		100									
3		- below 3.3 m, with sand sizes.	97	S6		100									
				S7		100									
4			96	S8		100									
				S9		100									
5		Sandy Clay (CI) - brown, wet, medium plastic, with sand sizes, some silt.	95												
6			94												
		End of Test Hole - ended test hole at 6.1 m below grade. - test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade. - sloughing encountered at 4.9 m below grade. - water in test hole at 4.3 m below grade.	93												
7															
8			92												

ENG-TECH Consulting Limited

Logged by: MRD & RRB

Reviewed by: CA

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 93.9 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH10

Project No: 04-217-02

Date Drilled: October 27, 2004

Grade Elevation: 100 m (local)

Water Elevation: 94.7 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: *CH*

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 93.9 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH11

Project No: 04-217-02

Date Drilled: October 27, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.4 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: *CA*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 93.9 m

Sheet: 1

Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH13

Project No: 04-217-02

Date Drilled: October 27, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.4 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		Granular Fill - 200 mm thick.											
1		Clay Fill (CH) - black, moist, high plastic, stiff, trace sand & gravel sizes, trace oxides. - below 0.4 m, some silt.	99										
				S1	CH	100							
2			98										
3			97	S2	CH	100							
4		Silty Clay (CH/CI) - dark grey, moist, high to medium plastic, firm, with silt.	96	S3	CH/CI	100							
5			95	S4	CH/CI	100							
6		Sandy Clay (CI) - brown, wet, medium plastic, soft, and sand sizes, with silt, petroleum odours scented. - below 6.7 m, 600 mm sand layer, medium grained, poorly graded.	94	S5	CI	100							
				S6	CI	100							
7		93	S7	CI	100								
			S8	CI	100								
8		End of Test Hole - ended test hole at 7.6 m below grade. - test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade. - sloughing encountered at 5.3 m below grade. - water in hole at 4.6 m below grade.	92										
9			91										

ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: *CTA*

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 7.6 m

Completion Elevation: 92.4 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH14

Project No: 04-217-02

Date Drilled: October 27, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.4 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		Granular Fill - 300 mm thick.											
1		Sand and Gravel Fill (SP) - brown, moist, medium to coarse grained, poorly graded, some gravel sizes.	99										
2			98										
3			97										
4		Clay Fill (CH) - black, moist, high plastic, firm, trace sand & gravel sizes.	96										
		Sand (SP) - brown, moist, medium to coarse grained, poorly graded.		S1		100							
5		Silty Clay (CI) - dark grey, moist, medium plastic, firm, visible staining, some silt & sand sizes.	95	S2		100							
6		- between 4.6 to 6.1 m, petroleum odours scented.	94	S3		100							
7		- below 6.4 m, 300 mm brown sand lense, medium to coarse grained, poorly graded.	93										
				S4		100							
8		End of Test Hole - ended test hole at 7.6 m below grade. - test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade. - sloughing encountered at 6.3 m below grade. - water in hole at 4.6 m below grade.	92										
9			91										

ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: *CA*

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 7.6 m

Completion Elevation: 92.4 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH15

Project No: 04-217-02

Date Drilled: October 27, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.1 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		250 mm Concrete											
		Granular Fill											
		- 500 mm thick, with sand sizes.											
1		Cinders	99										
		- black, damp, medium dense.											
		Silty Clay (CH/CI)		S1		100							
		- brown, moist, high to medium plastic, stiff, with silt.											
2			98	S2		100							
3			97	S3		100							
4			96	S4		100							
5			95	S5		100							
		- below 4.9 m, wet.											
		- below 5.2 m, firm, with sand sizes.		S6		100							
6			94	S7		100							
		End of Test Hole											
		- ended test hole at 6.1 m below grade.											
		- test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade.											
		- no sloughing encountered during drilling.											
		- water in test hole at 4.9 m below grade.											
7			93										

ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: 

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 93.9 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH16

Project No: 04-217-02

Date Drilled: October 27, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.4 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		Granular Fill - 100 mm thick.											
1		Clay Fill (CH) - grey, moist, high plastic, stiff, some silt, trace sand sizes.	99										
		Cinders - black, damp, medium dense.		S1		100							
2		Silty Clay (CH/CI) - brown, moist, high to medium plastic, stiff, with silt.	98	S2		100							
3			97	S3		100							
4		- between 3.8 to 4.1 m, grey, firm.	96	S4		100							
5			95	S5		100							
		- below 5.3 m, 150 mm brown sand lense, medium grained, poorly graded.		S6		100							
6		- below 5.5 m, and silt.	94	S7		100							
7		End of Test Hole - ended test hole at 6.1 m below grade. - test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade. - no sloughing encountered during drilling. - water in test hole at 4.6 m below grade.	93										

ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: CA

Drilled By: Subterranean (Manitoba) Ltd. Completion Depth: 6.1 m

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Elevation: 93.9 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue, Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH17

Project No: 04-217-02

Date Drilled: October 28, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.3 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments										
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)													
							50	150			250	350	450							
0		Ground Surface	100																	
		150 mm Concrete																		
		Granular Fill																		
		- 300 mm thick.																		
1		Clay Fill (CH)	99																	
		- black, moist, high plastic, stiff, some silt, trace sand sizes.		S1		100														
2		Silty Clay (CH/CI)	98																	
		- brown, moist to wet, high to medium plastic, firm, with silt.		S2		100														
3			97																	
				S3		100														
4			96																	
		- between 4.1 to 5.3 m, visible staining and petroleum odours scented.		S4		100														
5			95																	
				S5		100														
6		Sandy Clay (CI)	94																	
		- grey, wet, medium plastic, soft, and sand sizes, with silt, petroleum odours scented.		S6		100														
				S7		100														
7		- below 6.2 m, no visible staining.	93																	
				S8		100														
				S9		100														
8		End of Test Hole	92																	
		- ended test hole at 7.6 m below grade.																		
		- test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade.																		
9		- sloughing encountered at 5.0 m below grade.	91																	
		- water in hole at 4.7 m below grade.																		

> 500 ppm
10% LEL

ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: *CA*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 7.6 m

Completion Elevation: 92.4 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH18

Project No: 04-217-02

Date Drilled: October 28, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.1 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		150 mm Concrete											
		Granular Fill		S1		100							
		- 300 mm thick.											
1		Cinders	99										
		- black, damp, medium dense.											
		Clay Fill (CH)											
2		- black, moist, high plastic, stiff, some silt, trace sand sizes.	98	S2		100							
		Silty Clay (CH/CI)											
3		- brown, moist to wet, high to medium plastic, firm, and silt.	97	S3		100							
		- below 3.2 m, visible staining and petroleum odours scented.										> 500 ppm 7.5% LEL	
4		Sandy Clay (CI)	96	S4		100							
		- grey, moist to wet, medium plastic, soft, and sand sizes, with silt, petroleum odours scented.		S5		100						> 500 ppm 20% LEL > 500 ppm 10% LEL	
5			95										
6			94	S6		100							
				S7		100							
7		- below 7.2 m, no visible staining and no petroleum odours scented.	93	S8		100						> 500 ppm 6.5% LEL	
		End of Test Hole											
8		- ended test hole at 7.6 m below grade. - test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade. - sloughing encountered at 4.6 m below grade. - water in hole at 4.9 m below grade.	92										
9			91										

ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: *CA*

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 7.6 m

Completion Elevation: 92.4 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH19

Project No: 04-217-02

Date Drilled: October 28, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.3 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: *CA*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 92.4 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH20

Project No: 04-217-02

Date Drilled: October 28, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.1 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		75 mm Concrete											
		Granular Fill - 150 mm thick.											
1		Cinders - black, damp, medium dense.	99	S1		100							
		Silty Clay (CH/CI) - brown, moist, high to medium plastic, stiff, with silt.		S2		100							
2			98										
		Sandy Clay (CI) - brown, moist, medium plastic, firm, with sand sizes, some silt.		S3		100							
3			97										
		Sand (SP) - brown, damp, medium to coarse grained, poorly graded, no petroleum odours scented.		S4		100							
4			96	S5		100							
				S6		100							
5		- below 4.9 m, wet.	95										
				S7		100							
6			94										
		End of Test Hole - ended test hole at 6.1 m below grade. - test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade. - sloughing encountered at 4.1 m below grade. - water in hole at 4.9 m below grade.	93										
7													

ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: *CH*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 92.4 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH21

Project No: 04-217-02

Date Drilled: October 28, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.6 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments										
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)													
							50	150			250	350	450							
0		Ground Surface	100																	
		50 mm Concrete																		
		Granular Fill																		
		- 250 mm thick.																		
1		Clay Fill (CH)	99	S1	100															
		- black, moist, high plastic, stiff, some silt, trace sand & gravel sizes.																		
2			98	S2	100															
3			97	S3	100															
4		Silty Clay (CH/CI)	96	S4	100															
		- brown, moist, high to medium plastic, stiff, with silt.																		
		- below 4.4 m, wet.																		
5		Sandy Clay (CI)	95																	
		- brown, moist, medium plastic, firm, with sand sizes, some silt.																		
		Silty Clay (CI)																		
		- brown, wet, medium plastic, firm, some silt & sand sizes.																		
6		End of Test Hole	94	S5	100															
		- ended test hole at 6.1 m below grade.																		
		- test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade.																		
		- sloughing encountered at 4.7 m below grade.																		
		- water in hole at 4.4 m below grade.																		
7			93																	

ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: CH

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 92.4 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH22

Project No: 04-217-02

Date Drilled: October 28, 2004

Grade Elevation: 100 m (local)

Water Elevation: 94.5 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		50 mm Asphalt											
		Granular Fill											
		- 250 mm thick.											
1		Clay Fill (CH)	99	S1	CH	100							
		- black, moist, high plastic, stiff, some silt, trace sand & gravel sizes.											
2		Sandy Clay (CI)	98	S2	CI	100							
		- brown, damp, medium plastic, some silt & sand sizes.											
		Silty Clay (CH/CI)	97	S3	CH/CI	100							
		- brown, moist, high to medium plastic, stiff, with silt, some sand sizes.											
4			96	S4	CH/CI	100							
5		Sandy Clay (CI)	95	S5	CI	100							
		- brown, moist, medium plastic, firm, with sand sizes, some silt.											
		- below 5.5 m, wet.											
6			94	S6	CH/CI	100							
		End of Test Hole	93	S7	CH/CI	100							
7		- ended test hole at 6.1 m below grade.											
		- test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade.											
		- sloughing encountered at 5.0 m below grade.											
		- water in hole at 5.5 m below grade.											

ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: *CA*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 92.4 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH23

Project No: 04-217-02

Date Drilled: October 28, 2004.

Grade Elevation: 100 m (local)

Water Elevation: 95.1 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		50 mm Asphalt											
		Granular Fill											
		- 400 mm thick.											
1		Silty Clay (CH/CI)	99										
		- brown, moist, high to medium plastic, stiff, with silt, some sand sizes.		S1		100							
2			98										
				S2		100							
3			97										
				S3		100							
4		Sandy Clay (CI)	96										
		- brown, moist, medium plastic, firm, with sand sizes, some silt.		S4		100							
5			95										
				S5		100							
6		- below 4.9 m, wet.	94										
				S6		100							
7			93										
				S7		100							
		End of Test Hole											
		- ended test hole at 6.1 m below grade.											
		- test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade.											
		- sloughing encountered at 5.0 m below grade.											
		- water in hole at 4.9 m below grade.											

ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: *CA*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: Subterranean (Manitoba) Ltd. Completion Depth: 6.1 m

Drill Rig: Track Mounted CME 75

Completion Elevation: 92.4 m

Auger Size: 125 mm

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba.

Location: See Figure 2

Test Hole #: TH24

Project No: 04-217-02

Date Drilled: October 28, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.0 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by: *CH*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: Subterranean (Manitoba) Ltd. Completion Depth: 6.1 m

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Elevation: 92.4 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH25

Project No: 04-217-02

Date Drilled: October 28, 2004

Grade Elevation: 100 m (local)

Water Elevation: 94.8 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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ENG-TECH Consulting Limited

Logged by: JSD & RRB

Reviewed by:

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 92.4 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

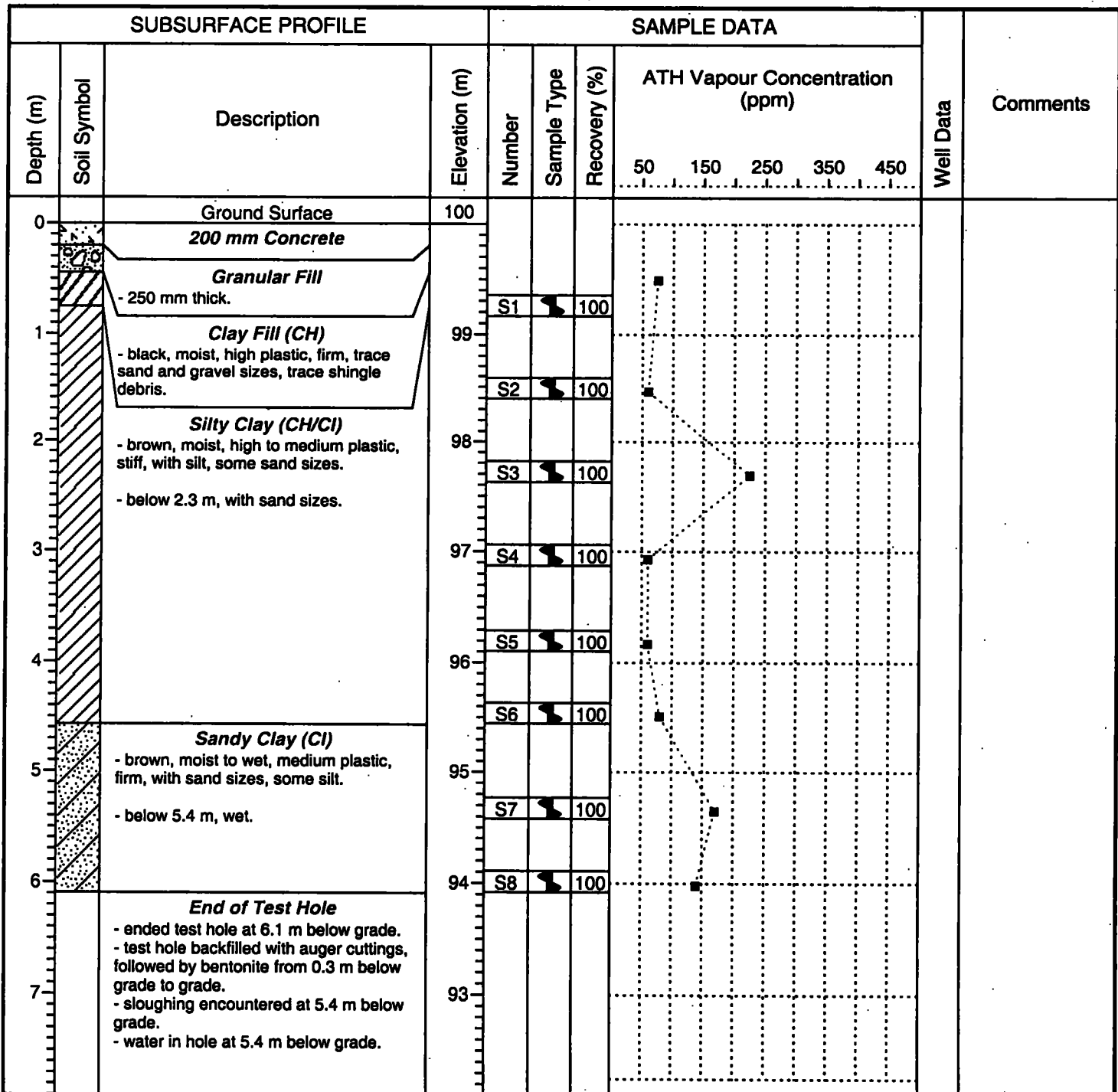
Test Hole #: TH26

Project No: 04-217-02

Date Drilled: October 29, 2004

Grade Elevation: 100 m (local)

Water Elevation: 94.6 m



ENG-TECH Consulting Limited

Logged by: MRD & RRB

Reviewed by: *CH*

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 92.4 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH27

Project No: 04-217-02

Date Drilled: October 29, 2004

Grade Elevation: 100 m (local)

Water Elevation: 94.4 m

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		150 mm Concrete											
		Sand and Gravel Fill (SP) - brown, damp, medium to coarse grained, poorly graded, some gravel sizes.											
1		Clay Fill (CH) - black, moist, high plastic, stiff, trace sand sizes, trace shingle debris.	99	S1	Split Barrel	100							
			99	S2	Split Barrel	100							
2		Silty Clay (CH/CI) - brown, moist, high to medium plastic, stiff, with silt, some sand sizes.	98	S3	Split Barrel	100							
		- below 2.7 m, light brown, firm, with sand sizes.											
3			97	S4	Split Barrel	100							
			97	S5	Split Barrel	100							
4			96	S6	Split Barrel	100							
		Sandy Clay (CI) - brown, moist to wet, medium plastic, firm, with sand sizes, some silt.	95	S7	Split Barrel	100							
5		- below 5.6 m, wet.											
6			94	S8	Split Barrel	100							
		End of Test Hole - ended test hole at 6.1 m below grade. - test hole backfilled with auger cuttings, followed by bentonite from 0.3 m below grade to grade. - sloughing encountered at 5.4 m below grade. - water in hole at 5.6 m below grade.	93										
7													

ENG-TECH Consulting Limited

Logged by: MRD & RRB

Reviewed by: *CA*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 92.4 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue, Winnipeg, Manitoba

Location: See Figure 2

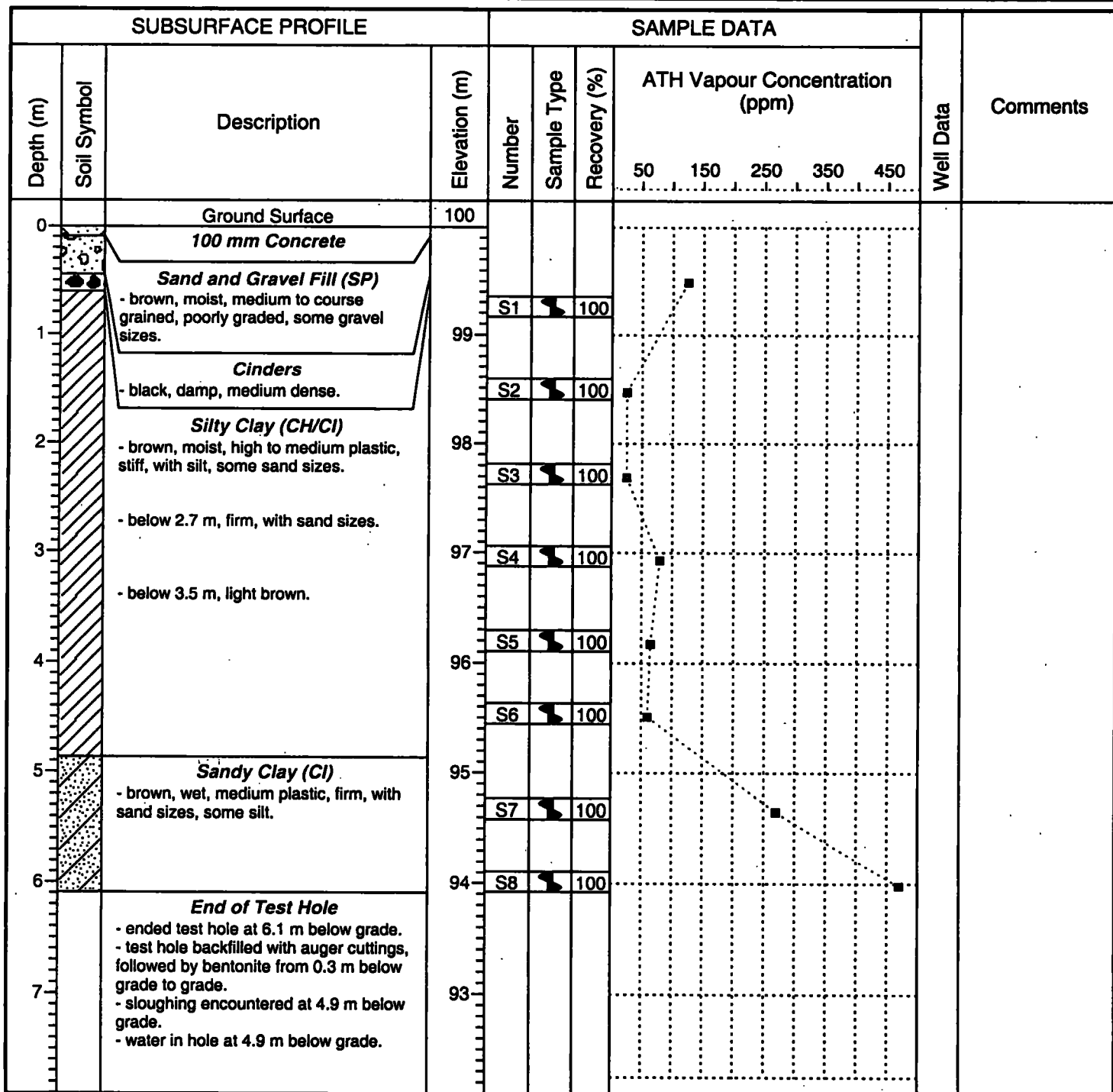
Test Hole #: TH28

Project No: 04-217-02

Date Drilled: October 29, 2004

Grade Elevation: 100 m (local)

Water Elevation: 95.1 m



ENG-TECH Consulting Limited

Logged by: MRD & RRB

Reviewed by: *CTA*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 6.1 m

Completion Elevation: 92.4 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH29

Project No: 04-217-02

Date Drilled: October 29, 2004

Grade Elevation: 100 m (local)

Water Elevation: - -

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		Granular Fill - 150 mm thick.											
		Clay Fill (CH) - black, moist, high plastic, firm, trace sand sizes.		S1		100							
				S2		100							
1		Silty Clay (CH/CI) - brown, moist, high to medium plastic, stiff, with silt, some sand sizes.	99										
				S3		100							
2		End of Test Hole - ended test hole at 1.5 m below grade. - test hole backfilled with auger cuttings. - no sloughing or water encountered during drilling.	98										
3			97										

ENG-TECH Consulting Limited

Logged by: MRD & RRB

Reviewed by: *CTA*

Drilled By: Subterranean (Manitoba) Ltd.

Drill Rig: Track Mounted CME 75

Auger Size: 125 mm

Completion Depth: 1.5 m

Completion Elevation: 98.5 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH30

Project No: 04-217-02

Date Drilled: October 29, 2004

Grade Elevation: 100 m (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		Organic Clay (OH) - dark brown, moist, high plastic, firm, some silt, trace organics & shingle debris.		S1		100							
				S2		100							
				S3		100							
		End of Test Hole - ended test hole at 0.6 m below grade. - test hole backfilled with auger cuttings upon completion of drilling.											
1			99										
2			98										

ENG-TECH Consulting Limited

Logged by: MRD & RRB

Reviewed by: *CA*

Drilled By: ENG-TECH

Drill Rig: Hand Auger

Auger Size: 60 mm

Completion Depth: 0.6 m

Completion Elevation: 99.4 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH31

Project No: 04-217-02

Date Drilled: October 29, 2004

Grade Elevation: 100 m (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		Organic Clay (OH) - dark brown, moist, high plastic, firm, some silt, trace gravel sizes, organics & shingle debris.											
		End of Test Hole - ended test hole at 0.5 m below grade. - test hole backfilled with auger cuttings upon completion of drilling.		S1		100							
1			99										
2			98										

ENG-TECH Consulting Limited

Logged by: MRD & RRB

Reviewed by: 

Drilled By: ENG-TECH

Drill Rig: Hand Auger

Auger Size: 60 mm

Completion Depth: 0.5 m

Completion Elevation: 99.5 m

Sheet: 1

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH32

Project No: 04-217-02

Date Drilled: October 29, 2004

Grade Elevation: 100 m (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		Organic Clay (OH) - dark brown, moist, high plastic, firm, some silt, trace sand sizes & organics.											
		End of Test Hole - ended test hole at 0.2 m below grade. - test hole backfilled with auger cuttings upon completion of drilling.			S1		100						
1			99										
2			98										

ENG-TECH Consulting Limited

Logged by: MRD & RRB

Reviewed by: *cts*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: ENG-TECH

Drill Rig: Hand Auger

Auger Size: 60 mm

Completion Depth: 0.2 m

Completion Elevation: 99.8 m

Sheet: 1

ENG-TECH CONSULTING LIMITED

GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING

Client: City of Winnipeg

Project: Phase II Environmental Site Assessment

Site: 2 Point Douglas Avenue (South), Winnipeg, Manitoba

Location: See Figure 2

Test Hole #: TH33

Project No: 04-217-02

Date Drilled: October 29, 2004

Grade Elevation: 100 m (local)

Water Elevation: --

SUBSURFACE PROFILE				SAMPLE DATA					Well Data	Comments			
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	ATH Vapour Concentration (ppm)						
							50	150			250	350	450
0		Ground Surface	100										
		Organic Clay (OH) - dark brown, moist, high plastic, firm, some silt, trace gravel sizes & organics.											
		End of Test Hole - ended test hole at 0.2 m below grade. - auger refusal on limestone layer. - test hole backfilled with auger cuttings upon completion of drilling.											
				S1		100							
1			99										
2			98										

ENG-TECH Consulting Limited

Logged by: MRD & RRB

Reviewed by: *CA*

Sample Type



Split Barrel



Shelby Tube



Auger Cuttings



Split Spoon

Drilled By: ENG-TECH

Drill Rig: Hand Auger

Auger Size: 60 mm

Completion Depth: 0.2 m

Completion Elevation: 99.8 m

Sheet: 1

APPENDIX B

Analytical Test Results

ENVIRO-TEST ANALYTICAL REPORT

Sample ID / Parameters	Result	Qualifier	DL	Units	Extracted	Analyzed	By	Batch
L219297-1 TH1 S1 Sample Date: 25-OCT-04 Matrix: SOIL								
Metals								
Silver (Ag)-Total	<1		1	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Aluminum (Al)-Total	2650		3	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Arsenic (As)-Total	4.43		0.03	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Boron (B)-Total	13.2		0.6	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Barium (Ba)-Total	84.5	RAMB	0.04	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Beryllium (Be)-Total	0.15		0.06	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Bismuth (Bi)-Total	0.07		0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Calcium (Ca)-Total	138000	RAMB	7	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Cadmium (Cd)-Total	0.71		0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Cobalt (Co)-Total	4.55		0.01	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Chromium (Cr)-Total	20.5		0.1	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Copper (Cu)-Total	57.3	RAMB	0.2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Iron (Fe)-Total	12900	RAMB	6	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Potassium (K)-Total	787		7	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Magnesium (Mg)-Total	68000	RAMB	2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Manganese (Mn)-Total	252	RAMB	0.03	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Molybdenum (Mo)-Total	2.20		0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Sodium (Na)-Total	138	RAMB	2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Nickel (Ni)-Total	34.4		0.2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Lead (Pb)-Total	198	RAMB	0.05	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Selenium (Se)-Total	0.3		0.1	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Tin (Sn)-Total	<4	RAMB	4	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Strontium (Sr)-Total	65.7	RAMB	0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Titanium (Ti)-Total	142	RAMB	0.03	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Thallium (Tl)-Total	<0.2		0.2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Uranium (U)-Total	0.373		0.006	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Vanadium (V)-Total	12.1		0.06	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Zinc (Zn)-Total	197	RAMB	2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
L219297-2 TH2 S1 Sample Date: 25-OCT-04 Matrix: SOIL								
% Moisture	31		0.1	%	26-OCT-04	27-OCT-04	JKH	R232052
PCB								
Aroclor 1016	<0.5	DLA	0.5	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1221	<0.5	DLA	0.5	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1232	<0.5	DLA	0.5	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1242	<0.5	DLA	0.5	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1248	<0.5	DLA	0.5	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1254	<0.5	DLA	0.5	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1260	6.3	DLA	0.5	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1262	<0.5	DLA	0.5	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1268	<0.5	DLA	0.5	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Total PCBs	6.3	DLA	0.5	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
L219297-3 TH3 S1 Sample Date: 25-OCT-04 Matrix: SOIL								
% Moisture	25		0.1	%	26-OCT-04	27-OCT-04	JKH	R232052

ENVIRO-TEST ANALYTICAL REPORT

Sample Detail/Parameters	Result	Qualifier	D.L.	Units	Extracted	Analyzed	By	Batch
L219297-3 TH3 S1								
Sample Date: 25-OCT-04								
Matrix: SOIL								
PCB								
Aroclor 1016	<0.1		0.1	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1221	<0.1		0.1	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1232	<0.1		0.1	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1242	<0.1		0.1	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1248	<0.1		0.1	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1254	<0.1		0.1	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1260	<0.1		0.1	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1262	<0.1		0.1	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Aroclor 1268	<0.1		0.1	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
Total PCBs	<0.1		0.1	mg/kg	26-OCT-04	29-OCT-04	THT	R233089
L219297-4 TH4 S1								
Sample Date: 25-OCT-04								
Matrix: SOIL								
Metals								
Silver (Ag)-Total	<1		1	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Aluminum (Al)-Total	1860		3	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Arsenic (As)-Total	2.00		0.03	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Boron (B)-Total	8.6		0.6	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Barium (Ba)-Total	22.2	RAMB	0.04	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Beryllium (Be)-Total	0.09		0.06	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Bismuth (Bi)-Total	0.03		0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Calcium (Ca)-Total	168000	RAMB	7	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Cadmium (Cd)-Total	0.07		0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Cobalt (Co)-Total	2.94		0.01	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Chromium (Cr)-Total	12.1		0.1	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Copper (Cu)-Total	24.7	RAMB	0.2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Iron (Fe)-Total	10200	RAMB	6	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Potassium (K)-Total	616		7	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Magnesium (Mg)-Total	63900	RAMB	2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Manganese (Mn)-Total	196	RAMB	0.03	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Molybdenum (Mo)-Total	1.60		0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Sodium (Na)-Total	125	RAMB	2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Nickel (Ni)-Total	17.2		0.2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Lead (Pb)-Total	7.35	RAMB	0.05	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Selenium (Se)-Total	0.2		0.1	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Tin (Sn)-Total	<4	RAMB	4	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Strontium (Sr)-Total	57.7	RAMB	0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Titanium (Ti)-Total	155	RAMB	0.03	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Thallium (Tl)-Total	<0.2		0.2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Uranium (U)-Total	0.378		0.006	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Vanadium (V)-Total	7.51		0.06	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Zinc (Zn)-Total	16	RAMB	2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
L219297-5 TH5 S1								
Sample Date: 25-OCT-04								
Matrix: SOIL								
Metals								
Silver (Ag)-Total	<1		1	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059

ENVIRO-TEST ANALYTICAL REPORT

Sample Detail/Parameters	Result	Qualifier	D.L.	Units	Extracted	Analyzed	By	Batch
L219297-5 TH5 S1								
Sample Date: 25-OCT-04								
Matrix: SOIL								
Metals								
Aluminum (Al)-Total	5910		3	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Arsenic (As)-Total	4.13		0.03	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Boron (B)-Total	8.5		0.6	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Barium (Ba)-Total	116	RAMB	0.04	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Beryllium (Be)-Total	0.27		0.06	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Bismuth (Bi)-Total	0.08		0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Calcium (Ca)-Total	98600	RAMB	7	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Cadmium (Cd)-Total	0.53		0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Cobalt (Co)-Total	5.93		0.01	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Chromium (Cr)-Total	16.6		0.1	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Copper (Cu)-Total	77.5	RAMB	0.2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Iron (Fe)-Total	13500	RAMB	6	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Potassium (K)-Total	1240		7	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Magnesium (Mg)-Total	39200	RAMB	2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Manganese (Mn)-Total	453	RAMB	0.03	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Molybdenum (Mo)-Total	1.39		0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Sodium (Na)-Total	153	RAMB	2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Nickel (Ni)-Total	26.3		0.2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Lead (Pb)-Total	69.0	RAMB	0.05	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Selenium (Se)-Total	0.2		0.1	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Tin (Sn)-Total	<4	RAMB	4	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Strontium (Sr)-Total	64.7	RAMB	0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Titanium (Ti)-Total	201	RAMB	0.03	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Thallium (Tl)-Total	<0.2		0.2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Uranium (U)-Total	0.651		0.006	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Vanadium (V)-Total	16.6		0.06	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Zinc (Zn)-Total	166	RAMB	2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
L219297-6 TH6 S1								
Sample Date: 25-OCT-04								
Matrix: SOIL								
Metals								
Silver (Ag)-Total	<1		1	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Aluminum (Al)-Total	1930		3	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Arsenic (As)-Total	3.46		0.03	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Boron (B)-Total	9.1		0.6	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Barium (Ba)-Total	23.4	RAMB	0.04	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Beryllium (Be)-Total	0.11		0.06	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Bismuth (Bi)-Total	0.03		0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Calcium (Ca)-Total	166000	RAMB	7	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Cadmium (Cd)-Total	0.07		0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Cobalt (Co)-Total	4.04		0.01	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Chromium (Cr)-Total	20.0		0.1	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Copper (Cu)-Total	41.4	RAMB	0.2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Iron (Fe)-Total	19400	RAMB	6	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Potassium (K)-Total	581		7	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Magnesium (Mg)-Total	76900	RAMB	2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Manganese (Mn)-Total	261	RAMB	0.03	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Molybdenum (Mo)-Total	3.24		0.02	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Sodium (Na)-Total	112	RAMB	2	mg/kg	29-OCT-04	03-NOV-04	DAG	R235059

ENVIRO-TEST ANALYTICAL REPORT

Sample ID/Parameters	Result	Qualifier	DL	Unit	Extracted	Analyzed	By	Batch
L219297-6 TH6 S1								
Sample Date: 25-OCT-04								
Matrix: SOIL								
Metals								
Nickel (Ni)-Total	28.4			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Lead (Pb)-Total	6.45	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Selenium (Se)-Total	0.3			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Tin (Sn)-Total	<4	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Strontium (Sr)-Total	54.0	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Titanium (Ti)-Total	165	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Thallium (Tl)-Total	<0.2			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Uranium (U)-Total	0.431			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Vanadium (V)-Total	9.64			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Zinc (Zn)-Total	20	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
L219297-7 TH7 S1								
Sample Date: 25-OCT-04								
Matrix: SOIL								
Metals								
Silver (Ag)-Total	<1			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Aluminum (Al)-Total	4430			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Arsenic (As)-Total	6.77			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Boron (B)-Total	12.3			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Barium (Ba)-Total	100	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Beryllium (Be)-Total	0.21			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Bismuth (Bi)-Total	0.28			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Calcium (Ca)-Total	133000	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Cadmium (Cd)-Total	7.78			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Cobalt (Co)-Total	6.37			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Chromium (Cr)-Total	16.8			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Copper (Cu)-Total	.407	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Iron (Fe)-Total	11100	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Potassium (K)-Total	1020			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Magnesium (Mg)-Total	74000	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Manganese (Mn)-Total	257	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Molybdenum (Mo)-Total	1.23			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Sodium (Na)-Total	157	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Nickel (Ni)-Total	40.2			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Lead (Pb)-Total	95.0	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Selenium (Se)-Total	3.4			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Tin (Sn)-Total	<4	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Strontium (Sr)-Total	38.3	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Titanium (Ti)-Total	164	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Thallium (Tl)-Total	<0.2			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Uranium (U)-Total	0.400			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Vanadium (V)-Total	13.6			mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
Zinc (Zn)-Total	4820	RAMB		mg/kg	29-OCT-04	03-NOV-04	DAG	R235059
L219297-8 TH8 S1								
Sample Date: 25-OCT-04								
Matrix: INSULATION								
Bulk Asbestos Content								
Asbestos	0			%		26-OCT-04	NAV	R231673

ENVIRO-TEST ANALYTICAL REPORT

Sample ID / Parameters	Result	Qualifier	DL	Unit	Extracted	Analyzed	By	Batch
L219297-8 TH8 S1 Sample Date: 25-OCT-04 Matrix: INSULATION Bulk Asbestos Content Other Fibres: Glass Other Non Fibrous: Filler Note: Yellow White fibrous material TH8 S1	100 0		1 1	% %		26-OCT-04 26-OCT-04	NAV NAV	R231673 R231673
L219297-9 TH9 S1 Sample Date: 25-OCT-04 Matrix: INSULATION Bulk Asbestos Content Asbestos Other Fibres: Cellulose Other Fibres: Glass Other Non Fibrous: Filler Note: Beige fibrous solid material TH9 S1	0 1-10 10-25 65-89		1 1 1 1	% % % %		26-OCT-04 26-OCT-04 26-OCT-04 26-OCT-04	NAV NAV NAV NAV	R231673 R231673 R231673 R231673
Refer to Referenced Information for Qualifiers (if any) and Methodology								

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLA	Detection Limit Adjusted For Dilution
RAMB	Result Adjusted For Method Blank

Methods Listed (If applicable):

ETL Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
ASBESTOS-WP	Bulk	Bulk Asbestos Content		NIOSH 9002-Polarized Light Microscopy
Bulk samples are examined under a stereoscopic microscope. Individual fibers or fibre bundles are mounted in refractive index liquids and are observed under a polarized light microscope with a special dispersion staining objective. The dispersion staining colours are compared to reference samples of known asbestiforms.				
Polarized microscopy is not a definitive technique for negative results for non-friable organically bound material (i.e. floor tiles).				
METAL-LOW-EXD-WP	Soil	Metals		EPA SW846 3050B Rev 2 1996
PCB-WP	Soil	PCB		EPA SW-846, 3550A, Sep 1994

A 10 gram aliquot of soil sample is extracted with 25 mLs of 50% acetone/hexane using a shaker followed by sonication. An aliquot of the extract is solvent exchanged into hexane, cleaned with sulphuric acid and analyzed by gas chromatography/electron capture detection. The sample is quantitated against commercial Arochlor standards.

**** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.**

Chain of Custody numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WP	Enviro-Test Laboratories - Winnipeg, Manitoba, Canada		

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency. The Laboratory warning units are determined under column heading D.L.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

< - Less than

D.L. - Detection Limit

N/A - Result not available. Refer to qualifier code and definition for explanation

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

UNLESS OTHERWISE STATED, SAMPLES ARE NOT CORRECTED FOR CLIENT FIELD BLANKS.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

Enviro-Test Laboratories has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, Enviro-Test Laboratories assumes no liability for the use or interpretation of the results.

ENVIRO-TEST ANALYTICAL REPORT

Sample Details/Parameter	Result	Criteria	DL	Units	Expected	Analysis	By	Batch
L221034-1 TH12-S2								
Sample Date: 27-OCT-04								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F1 (C6-C10)	<5		5	mg/kg		15-NOV-04		
F1-BTEX	<5		5	mg/kg		15-NOV-04		
F2 (C10-C16)	<5		5	mg/kg		15-NOV-04		
F3 (C16-C34)	37		5	mg/kg		15-NOV-04		
F4 (C34-C50)	<5		5	mg/kg		15-NOV-04		
Total Hydrocarbons (C6-C50)	37		5	mg/kg		15-NOV-04		
Chromatogram to baseline at nC50	YES					15-NOV-04		
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					12-NOV-04	15-NOV-04	HDT	R238015
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Toluene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Ethylbenzene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
o-Xylene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes, m+p	<0.02		0.02	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes	<0.03		0.03	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
% Moisture	20		0.1	%	02-NOV-04	03-NOV-04	JKH	R234476
L221034-2 TH12-S6								
Sample Date: 27-OCT-04								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F1 (C6-C10)	<5		5	mg/kg		15-NOV-04		
F1-BTEX	<5		5	mg/kg		15-NOV-04		
F2 (C10-C16)	<5		5	mg/kg		15-NOV-04		
F3 (C16-C34)	40		5	mg/kg		15-NOV-04		
F4 (C34-C50)	<5		5	mg/kg		15-NOV-04		
Total Hydrocarbons (C6-C50)	40		5	mg/kg		15-NOV-04		
Chromatogram to baseline at nC50	YES					15-NOV-04		
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					12-NOV-04	15-NOV-04	HDT	R238015
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Toluene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Ethylbenzene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
o-Xylene	0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes, m+p	<0.02		0.02	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes	0.03		0.03	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
% Moisture	25		0.1	%	02-NOV-04	03-NOV-04	JKH	R234476
L221034-3 TH13-S5								
Sample Date: 27-OCT-04								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F1 (C6-C10)	89		5	mg/kg		15-NOV-04		
F1-BTEX	78		5	mg/kg		15-NOV-04		
F2 (C10-C16)	9		5	mg/kg		15-NOV-04		

ENVIRO-TEST ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Extracted	Analyzed	By	Batch
L221034-3 TH13-S5 Sample Date: 27-OCT-04 Matrix: SOIL CCME BTEX + F1-F4 CCME Total Hydrocarbons F3 (C16-C34) 6 5 mg/kg 15-NOV-04 F4 (C34-C50) <5 5 mg/kg 15-NOV-04 Total Hydrocarbons (C6-C50) 100 5 mg/kg 15-NOV-04 Chromatogram to baseline at nC50 YES 15-NOV-04 CCME Total Extractable Hydrocarbons Prep/Analysis Dates 12-NOV-04 15-NOV-04 HDT R238015 CCME BTEX Benzene 1.3 0.005 mg/kg 02-NOV-04 02-NOV-04 DVH R237562 Toluene 0.05 0.01 mg/kg 02-NOV-04 02-NOV-04 DVH R237562 Ethylbenzene 4.4 0.01 mg/kg 02-NOV-04 02-NOV-04 DVH R237562 o-Xylene 0.05 0.01 mg/kg 02-NOV-04 02-NOV-04 DVH R237562 Xylenes, m+p 5.0 0.02 mg/kg 02-NOV-04 02-NOV-04 DVH R237562 Xylenes 5.0 0.03 mg/kg 02-NOV-04 02-NOV-04 DVH R237562 % Moisture 24 0.1 % 02-NOV-04 03-NOV-04 JKH R234476								
L221034-4 TH13-S7 Sample Date: 27-OCT-04 Matrix: SOIL CCME BTEX + F1-F4 CCME Total Hydrocarbons F1 (C6-C10) <5 5 mg/kg 15-NOV-04 F1-BTEX <5 5 mg/kg 15-NOV-04 F2 (C10-C16) <5 5 mg/kg 15-NOV-04 F3 (C16-C34) <5 5 mg/kg 15-NOV-04 F4 (C34-C50) <5 5 mg/kg 15-NOV-04 Total Hydrocarbons (C6-C50) <5 5 mg/kg 15-NOV-04 Chromatogram to baseline at nC50 YES 15-NOV-04 CCME Total Extractable Hydrocarbons Prep/Analysis Dates 12-NOV-04 15-NOV-04 HDT R238015 CCME BTEX Benzene 0.009 0.005 mg/kg 02-NOV-04 02-NOV-04 DVH R237562 Toluene <0.01 0.01 mg/kg 02-NOV-04 02-NOV-04 DVH R237562 Ethylbenzene 0.07 0.01 mg/kg 02-NOV-04 02-NOV-04 DVH R237562 o-Xylene <0.01 0.01 mg/kg 02-NOV-04 02-NOV-04 DVH R237562 Xylenes, m+p 0.07 0.02 mg/kg 02-NOV-04 02-NOV-04 DVH R237562 Xylenes 0.07 0.03 mg/kg 02-NOV-04 02-NOV-04 DVH R237562 % Moisture 20 0.1 % 02-NOV-04 03-NOV-04 JKH R234476								
L221034-5 TH15-S6 Sample Date: 27-OCT-04 Matrix: SOIL CCME BTEX + F1-F4 CCME Total Hydrocarbons F1 (C6-C10) <5 5 mg/kg 15-NOV-04 F1-BTEX <5 5 mg/kg 15-NOV-04 F2 (C10-C16) <5 5 mg/kg 15-NOV-04 F3 (C16-C34) 5 5 mg/kg 15-NOV-04 F4 (C34-C50) <5 5 mg/kg 15-NOV-04 Total Hydrocarbons (C6-C50) 5 5 mg/kg 15-NOV-04								

ENVIRO-TEST ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier	DIL	Units	Extracted	Analyzed	By	Batch
L221034-5 TH15-S6								
Sample Date: 27-OCT-04								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
Chromatogram to baseline at nC50	YES					15-NOV-04		
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					12-NOV-04	15-NOV-04	HDT	R238015
CCME BTEX								
Benzene	0.080		0.005	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Toluene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Ethylbenzene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
o-Xylene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes, m+p	<0.02		0.02	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes	<0.03		0.03	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
% Moisture	27		0.1	%	02-NOV-04	03-NOV-04	JKH	R234476
L221034-6 TH18-S3								
Sample Date: 28-OCT-04								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F1 (C6-C10)	31		5	mg/kg		15-NOV-04		
F1-BTEX	29		5	mg/kg		15-NOV-04		
F2 (C10-C16)	410		5	mg/kg		15-NOV-04		
F2-Naphth	410		5	mg/kg		15-NOV-04		
F3 (C16-C34)	140		5	mg/kg		15-NOV-04		
F3-PAH	140		5	mg/kg		15-NOV-04		
F4 (C34-C50)	14		5	mg/kg		15-NOV-04		
Total Hydrocarbons (C6-C50)	600		5	mg/kg		15-NOV-04		
Chromatogram to baseline at nC50	YES					15-NOV-04		
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					12-NOV-04	15-NOV-04	HDT	R238015
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Toluene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Ethylbenzene	0.44		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
o-Xylene	0.17		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes, m+p	1.2		0.02	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes	1.4		0.03	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
% Moisture	25		0.1	%	02-NOV-04	03-NOV-04	JKH	R234476
PAH CCME								
Acridine	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Benzo(a)anthracene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Benzo(b)fluoranthene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Benzo(k)fluoranthene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Benzo(a)pyrene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Phenanthrene	1.6		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Dibenzo(ah)anthracene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Indeno(1,2,3 cd)pyrene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Pyrene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Quinoline	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Naphthalene	2.6		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Surr: 2-Fluorobiphenyl Surr	94		50-150	%	04-NOV-04	04-NOV-04	JAP	R235700

ENVIRO-TEST ANALYTICAL REPORT

Sample Data / Parameters	Result	Qualifier	D.L.	Units	Extracted	Analyzed	By	Batch
L221034-6 TH18-S3 Sample Date: 28-OCT-04 Matrix: SOIL								
PAH CCME								
Surr: Terphenyl Surr	83		50-150	%	04-NOV-04	04-NOV-04	JAP	R235700
L221034-7 TH18-S7 Sample Date: 28-OCT-04 Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F1 (C6-C10)	<5		5	mg/kg		15-NOV-04		
F1-BTEX	<5		5	mg/kg		15-NOV-04		
F2 (C10-C16)	12		5	mg/kg		15-NOV-04		
F2-Naphth	12		5	mg/kg		15-NOV-04		
F3 (C16-C34)	<5		5	mg/kg		15-NOV-04		
F3-PAH	<5		5	mg/kg		15-NOV-04		
F4 (C34-C50)	<5		5	mg/kg		15-NOV-04		
Total Hydrocarbons (C6-C50)	12		5	mg/kg		15-NOV-04		
Chromatogram to baseline at nC50	YES					15-NOV-04		
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					12-NOV-04	15-NOV-04	HDT	R238015
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Toluene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Ethylbenzene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
o-Xylene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes, m+p	<0.02		0.02	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes	<0.03		0.03	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
% Moisture	17		0.1	%	02-NOV-04	03-NOV-04	JKH	R234476
PAH CCME								
Acridine	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Benzo(a)anthracene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Benzo(b)fluoranthene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Benzo(k)fluoranthene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Benzo(a)pyrene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Phenanthrene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Dibenzo(ah)anthracene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Indeno(1,2,3 cd)pyrene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Pyrene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Quinoline	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Naphthalene	<0.05		0.05	mg/kg	04-NOV-04	04-NOV-04	JAP	R235700
Surr: 2-Fluorobiphenyl Surr	75		50-150	%	04-NOV-04	04-NOV-04	JAP	R235700
Surr: Terphenyl Surr	86		50-150	%	04-NOV-04	04-NOV-04	JAP	R235700
L221034-8 TH19-S6 Sample Date: 28-OCT-04 Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F1 (C6-C10)	<5		5	mg/kg		15-NOV-04		
F1-BTEX	<5		5	mg/kg		15-NOV-04		
F2 (C10-C16)	9		5	mg/kg		15-NOV-04		
F3 (C16-C34)	260		5	mg/kg		15-NOV-04		

ENVIRO-TEST ANALYTICAL REPORT

Sample ID/Parameter	Result	Qualifier	DL	Units	Extracted	Analyzed	By	Batch
L221034-8 TH19-S6								
Sample Date: 28-OCT-04								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F4 (C34-C50)	8		5	mg/kg		15-NOV-04		
Total Hydrocarbons (C6-C50)	280		5	mg/kg		15-NOV-04		
Chromatogram to baseline at nC50	YES					15-NOV-04		
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					12-NOV-04	15-NOV-04	HDT	R238015
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Toluene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Ethylbenzene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
o-Xylene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes, m+p	<0.02		0.02	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes	<0.03		0.03	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
% Moisture	27		0.1	%	02-NOV-04	03-NOV-04	JKH	R234476
L221034-9 TH20-S6								
Sample Date: 28-OCT-04								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F1 (C6-C10)	<5		5	mg/kg		15-NOV-04		
F1-BTEX	<5		5	mg/kg		15-NOV-04		
F2 (C10-C16)	<5		5	mg/kg		15-NOV-04		
F3 (C16-C34)	16		5	mg/kg		15-NOV-04		
F4 (C34-C50)	<5		5	mg/kg		15-NOV-04		
Total Hydrocarbons (C6-C50)	16		5	mg/kg		15-NOV-04		
Chromatogram to baseline at nC50	YES					15-NOV-04		
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					12-NOV-04	15-NOV-04	HDT	R238015
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Toluene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Ethylbenzene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
o-Xylene	<0.01		0.01	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes, m+p	<0.02		0.02	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
Xylenes	<0.03		0.03	mg/kg	02-NOV-04	02-NOV-04	DVH	R237562
% Moisture	18		0.1	%	02-NOV-04	03-NOV-04	JKH	R234476
L221034-10 TH22-S1								
Sample Date: 28-OCT-04								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F1 (C6-C10)	<5		5	mg/kg		15-NOV-04		
F1-BTEX	<5		5	mg/kg		15-NOV-04		
F2 (C10-C16)	<5		5	mg/kg		15-NOV-04		
F3 (C16-C34)	22		5	mg/kg		15-NOV-04		
F4 (C34-C50)	6		5	mg/kg		15-NOV-04		
Total Hydrocarbons (C6-C50)	28		5	mg/kg		15-NOV-04		
Chromatogram to baseline at nC50	YES					15-NOV-04		

Sample ID(s)/Parameter	Result	Qualifier	D.L.	Units	Extracted	Analyzed	By	Batch
L221034-10 TH22-S1 Sample Date: 28-OCT-04 Matrix: SOIL CCME BTEX + F1-F4 CCME Total Extractable Hydrocarbons Prep/Analysis Dates CCME BTEX Benzene Toluene Ethylbenzene o-Xylene Xylenes, m+p Xylenes % Moisture	<0.005 24	 	0.005 0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg %	02-NOV-04 02-NOV-04 02-NOV-04 02-NOV-04 02-NOV-04 02-NOV-04 02-NOV-04	02-NOV-04 02-NOV-04 02-NOV-04 02-NOV-04 02-NOV-04 02-NOV-04 03-NOV-04	HDT JKH	R238015 R234476
Refer to Referenced Information for Qualifiers (if any) and Methodology.								

Reference Information

Methods Listed (if applicable):

ETL Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
ETL-BTX,TVH-CCME-WP	Soil	CCME BTEX		CCME CWS-PHC Dec-2000 - Pub# 1310
ETL-TEH-CCME-WP	Soil	CCME Total Extractable Hydrocarbons		CCME CWS-PHC Dec-2000 - Pub# 1310
ETL-TVH,TEH-CCME-WP	Soil	CCME Total Hydrocarbons		CCME CWS-PHC Dec-2000 - Pub# 1310

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

PAH-CCME-WP Soil PAH CCME

EPA SW846 8270B Sep 1994,3550A
Sep 1994

Samples are ground into sodium sulfate and extracted with acetone/dichloromethane using a combination of high frequency sonication and shake using a wrist-action shaker. After extract concentration, samples are analyzed by GC/MS.

** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.

Chain of Custody numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WP	Enviro-Test Laboratories - Winnipeg, Manitoba, Canada		

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency. The Laboratory warning units are determined under column heading D.L.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

< - Less than

D.L. - Detection Limit

N/A - Result not available. Refer to qualifier code and definition for explanation

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

UNLESS OTHERWISE STATED, SAMPLES ARE NOT CORRECTED FOR CLIENT FIELD BLANKS.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

Enviro-Test Laboratories has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, Enviro-Test Laboratories assumes no liability for the use or interpretation of the results.

ENVIRO-TEST ANALYTICAL REPORT

Sample ID	Sample Name	Result	Qualifier	Unit	Sample Date	Analyzed Date	By	Enter
L222483-1	L1							
Sample Date: 01-NOV-04								
Matrix: SHINGLE								
PAH	TEH (C11-C30)	0.2	0.1	mg/L	08-NOV-04	10-NOV-04	HDT	R236836
	1-Methyl Naphthalene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	2-Methyl Naphthalene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Acenaphthene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Acenaphthylene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Anthracene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Benzo(a)anthracene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Benzo(a)pyrene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Benzo(b)fluoranthene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Benzo(ghi)perylene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Benzo(k)fluoranthene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Chrysene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Dibenzo(ah)anthracene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Fluoranthene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Fluorene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Indeno(1,2,3 cd)pyrene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Naphthalene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Phenanthrene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Pyrene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Quinoline	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Acridine	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
Surr:	2-Fluorobiphenyl Surr	72	50-150	%	09-NOV-04	17-NOV-04	JAP	R239080
Surr:	Terphenyl Surr	81	50-150	%	09-NOV-04	17-NOV-04	JAP	R239080
L222483-2	L2							
Sample Date: 01-NOV-04								
Matrix: SHINGLE								
PAH	TEH (C11-C30)	0.2	0.1	mg/L	08-NOV-04	10-NOV-04	HDT	R236836
	1-Methyl Naphthalene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	2-Methyl Naphthalene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Acenaphthene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Acenaphthylene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Anthracene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Benzo(a)anthracene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Benzo(a)pyrene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Benzo(b)fluoranthene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Benzo(ghi)perylene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Benzo(k)fluoranthene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Chrysene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Dibenzo(ah)anthracene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Fluoranthene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Fluorene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Indeno(1,2,3 cd)pyrene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Naphthalene	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Phenanthrene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Pyrene	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Quinoline	<0.00005	0.00005	mg/L	09-NOV-04	17-NOV-04	JAP	R239080
	Acridine	<0.00001	0.00001	mg/L	09-NOV-04	17-NOV-04	JAP	R239080

ENVIRO-TEST ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Extracted	Analyzed	By	Batch
L222483-2 L2 Sample Date: 01-NOV-04 Matrix: SHINGLE PAH Surr: 2-Fluorobiphenyl Surr Surr: Terphenyl Surr	62 76		50-150 50-150	% %	09-NOV-04 09-NOV-04	17-NOV-04 17-NOV-04	JAP JAP	R239080 R239080
L222483-3 WS1 Sample Date: 29-OCT-04 Matrix: WATER TEH (C11-C30)	3400		0.1	mg/L	04-NOV-04	10-NOV-04	HDT	R236836
L222483-4 TH8-S7 Sample Date: 29-OCT-04 Matrix: SOIL CCME BTEX + F1-F4 CCME Total Hydrocarbons F1 (C6-C10) F1-BTEX F2 (C10-C16) F3 (C16-C34) F4 (C34-C50) Total Hydrocarbons (C6-C50) Chromatogram to baseline at nC50 CCME Total Extractable Hydrocarbons Prep/Analysis Dates CCME BTEX Benzene Toluene Ethylbenzene o-Xylene Xylenes, m+p Xylenes % Moisture	<5 <5 <5 16 <5 16 YES <0.005 <0.01 <0.01 <0.01 <0.02 <0.03 26		5 5 5 5 5 5 0.005 0.01 0.01 0.01 0.02 0.03 0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg %	 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04	09-NOV-04 09-NOV-04 09-NOV-04 09-NOV-04 09-NOV-04 09-NOV-04 09-NOV-04 08-NOV-04 05-NOV-04 05-NOV-04 05-NOV-04 05-NOV-04 05-NOV-04 05-NOV-04 05-NOV-04 05-NOV-04 05-NOV-04 05-NOV-04 05-NOV-04	 THT DVH DVH DVH DVH DVH JKH	 R236206 R236555 R236555 R236555 R236555 R236555 R235399
L222483-5 TH9-S1 Sample Date: 29-OCT-04 Matrix: SOIL CCME BTEX + F1-F4 CCME Total Hydrocarbons F1 (C6-C10) F1-BTEX F2 (C10-C16) F3 (C16-C34) F4 (C34-C50) Total Hydrocarbons (C6-C50) Chromatogram to baseline at nC50 CCME Total Extractable Hydrocarbons Prep/Analysis Dates CCME BTEX Benzene Toluene Ethylbenzene o-Xylene	<5 <5 6 39 9 54 YES <0.005 <0.01 <0.01 <0.01		5 5 5 5 5 5 0.005 0.01 0.01 0.01	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04 04-NOV-04	09-NOV-04 09-NOV-04 09-NOV-04 09-NOV-04 09-NOV-04 09-NOV-04 09-NOV-04 08-NOV-04 05-NOV-04 05-NOV-04 05-NOV-04	 THT DVH DVH DVH DVH	 R236206 R236555 R236555 R236555 R236555

ENVIRO-TEST ANALYTICAL REPORT

Sample ID/Parameter	Result	Qualifier	D.L.	Units	Extracted	Analyzed	By	Batch
L222483-5 TH9-S1 Sample Date: 29-OCT-04 Matrix: SOIL CCME BTEX + F1-F4 CCME BTEX Xylenes, m+p Xylenes % Moisture								
	<0.02		0.02	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	<0.03		0.03	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	18		0.1	%	04-NOV-04	05-NOV-04	JKH	R235399
L222483-6 TH26-S3 Sample Date: 29-OCT-04 Matrix: SOIL CCME BTEX + F1-F4 CCME Total Hydrocarbons F1 (C6-C10) F1-BTEX F2 (C10-C16) F3 (C16-C34) F4 (C34-C50) Total Hydrocarbons (C6-C50) Chromatogram to baseline at nC50 CCME Total Extractable Hydrocarbons Prep/Analysis Dates CCME BTEX Benzene Toluene Ethylbenzene o-Xylene Xylenes, m+p Xylenes % Moisture								
	<5		5	mg/kg		09-NOV-04		
	<5		5	mg/kg		09-NOV-04		
	<5		5	mg/kg		09-NOV-04		
	73		5	mg/kg		09-NOV-04		
	7		5	mg/kg		09-NOV-04		
	80		5	mg/kg		09-NOV-04		
	YES					09-NOV-04		
					04-NOV-04	08-NOV-04	THT	R236206
	<0.005		0.005	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	<0.01		0.01	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	<0.01		0.01	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	<0.01		0.01	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	<0.02		0.02	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	<0.03		0.03	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	16		0.1	%	04-NOV-04	05-NOV-04	JKH	R235399
L222483-7 TH28-S7 Sample Date: 29-OCT-04 Matrix: SOIL CCME BTEX + F1-F4 CCME Total Hydrocarbons F1 (C6-C10) F1-BTEX F2 (C10-C16) F3 (C16-C34) F4 (C34-C50) Total Hydrocarbons (C6-C50) Chromatogram to baseline at nC50 CCME Total Extractable Hydrocarbons Prep/Analysis Dates CCME BTEX Benzene Toluene Ethylbenzene o-Xylene Xylenes, m+p Xylenes								
	<5		5	mg/kg		09-NOV-04		
	<5		5	mg/kg		09-NOV-04		
	<5		5	mg/kg		09-NOV-04		
	9		5	mg/kg		09-NOV-04		
	<5		5	mg/kg		09-NOV-04		
	9		5	mg/kg		09-NOV-04		
	YES					09-NOV-04		
					04-NOV-04	08-NOV-04	THT	R236206
	<0.005		0.005	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	<0.01		0.01	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	<0.01		0.01	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	<0.01		0.01	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	<0.02		0.02	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555
	<0.03		0.03	mg/kg	04-NOV-04	05-NOV-04	DVH	R236555

ENVIRO-TEST ANALYTICAL REPORT

Sample ID/Parameter	Result	Qualifier	D.L.	Units	Extracted	Analyzed	By	Batch
L222483-7 TH28-S7								
Sample Date: 29-OCT-04								
Matrix: SOIL								
% Moisture	18		0.1	%	04-NOV-04	05-NOV-04	JKH	R235399
L222483-8 TH29-S1								
Sample Date: 29-OCT-04								
Matrix: SOIL								
Metals								
Silver (Ag)-Total	<1		1	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Aluminum (Al)-Total	5840		3	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Arsenic (As)-Total	5.49		0.03	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Boron (B)-Total	9.0		0.6	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Barium (Ba)-Total	127	RAMB	0.04	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Beryllium (Be)-Total	0.41		0.06	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Bismuth (Bi)-Total	0.19		0.02	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Calcium (Ca)-Total	46100	RAMB	7	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Cadmium (Cd)-Total	0.87		0.02	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Cobalt (Co)-Total	8.61		0.01	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Chromium (Cr)-Total	19.4		0.1	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Copper (Cu)-Total	66.1	RAMB	0.2	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Iron (Fe)-Total	17300		6	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Potassium (K)-Total	1690		7	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Magnesium (Mg)-Total	18800		2	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Manganese (Mn)-Total	426	RAMB	0.03	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Molybdenum (Mo)-Total	1.46		0.02	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Sodium (Na)-Total	131	RAMB	2	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Nickel (Ni)-Total	33.3		0.2	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Lead (Pb)-Total	23.4	RAMB	0.05	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Selenium (Se)-Total	0.5		0.1	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Tin (Sn)-Total	<4	RAMB	4	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Strontium (Sr)-Total	45.6	RAMB	0.02	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Titanium (Ti)-Total	195	RAMB	0.03	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Thallium (Tl)-Total	0.2		0.2	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Uranium (U)-Total	1.12		0.006	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Vanadium (V)-Total	18.7		0.06	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Zinc (Zn)-Total	190		2	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
L222483-9 TH29-S2								
Sample Date: 29-OCT-04								
Matrix: SOIL								
% Moisture	15		0.1	%	23-NOV-04	23-NOV-04	JAP	R240851
TEH (C11-C30)	<0.1		0.1	mg/L	08-NOV-04	10-NOV-04	HDT	R236836
PAH								
Acenaphthene	0.44		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Acenaphthylene	<0.05		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Anthracene	0.73		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Benzo(a)anthracene	2.3		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Benzo(a)pyrene	2.8		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Benzo(b)fluoranthene	2.0		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Benzo(ghi)perylene	1.8		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Benzo(k)fluoranthene	1.8		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Chrysene	3.4		0.1	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714

ENVIRO-TEST ANALYTICAL REPORT

Sample ID	Parameter	Result	Qualifier	D.L.	Units	Extracted	Analyzed	By	Batch
L222483-9	TH29-S2								
Sample Date: 29-OCT-04									
Matrix: SOIL									
PAH									
	Dibenzo(ah)anthracene	0.94		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
	Fluoranthene	6.2		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
	Fluorene	0.30		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
	Indeno(1,2,3 cd)pyrene	1.3		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
	Naphthalene	<0.05		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
	1-Methyl Naphthalene	<0.05		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
	2-Methyl Naphthalene	<0.05		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
	Phenanthrene	3.5		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
	Pyrene	3.5		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
	Quinoline	<0.05		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
	Acridine	<0.05		0.05	mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Surr:	2-Fluorobiphenyl Surr	101		50-150	%	22-NOV-04	23-NOV-04	JAP	R240714
Surr:	Terphenyl Surr	105		50-150	%	22-NOV-04	23-NOV-04	JAP	R240714
L222483-10	TH32-S1								
Sample Date: 29-OCT-04									
Matrix: SOIL									
Metals									
	Silver (Ag)-Total	<1		1	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Aluminum (Al)-Total	4310		3	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Arsenic (As)-Total	4.58		0.03	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Boron (B)-Total	11.0		0.6	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Barium (Ba)-Total	108	RAMB	0.04	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Beryllium (Be)-Total	0.24		0.06	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Bismuth (Bi)-Total	0.08		0.02	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Calcium (Ca)-Total	117000	RAMB	7	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Cadmium (Cd)-Total	0.50		0.02	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Cobalt (Co)-Total	5.18		0.01	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Chromium (Cr)-Total	17.7		0.1	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Copper (Cu)-Total	47.1	RAMB	0.2	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Iron (Fe)-Total	13000		6	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Potassium (K)-Total	995		7	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Magnesium (Mg)-Total	40100		2	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Manganese (Mn)-Total	324	RAMB	0.03	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Molybdenum (Mo)-Total	3.93		0.02	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Sodium (Na)-Total	195	RAMB	2	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Nickel (Ni)-Total	29.3		0.2	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Lead (Pb)-Total	41.0	RAMB	0.05	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Selenium (Se)-Total	0.3		0.1	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Tin (Sn)-Total	<4	RAMB	4	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Strontium (Sr)-Total	84.5	RAMB	0.02	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Titanium (Ti)-Total	204	RAMB	0.03	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Thallium (Tl)-Total	<0.2		0.2	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Uranium (U)-Total	0.606		0.006	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Vanadium (V)-Total	15.6		0.06	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
	Zinc (Zn)-Total	133		2	mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
L222483-11	TH30-S1								
Sample Date: 29-OCT-04									
Matrix: SOIL									

ENVIRO-TEST ANALYTICAL REPORT

Sample ID	Location	Result	Qualifier	DL	Unit	Extracted	Analyzed	By	Batch
L222483-11	TH30-S1								
Sample Date: 29-OCT-04									
Matrix: SOIL									
Metals									
Silver (Ag)-Total	<1	1			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Aluminum (Al)-Total	3800	3			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Arsenic (As)-Total	4.95	0.03			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Boron (B)-Total	11.9	0.6			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Barium (Ba)-Total	131	0.04	RAMB		mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Beryllium (Be)-Total	0.25	0.06			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Bismuth (Bi)-Total	0.09	0.02			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Calcium (Ca)-Total	102000	7	RAMB		mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Cadmium (Cd)-Total	1.41	0.02			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Cobalt (Co)-Total	5.60	0.01			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Chromium (Cr)-Total	21.6	0.1			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Copper (Cu)-Total	131	0.2	RAMB		mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Iron (Fe)-Total	13800	6			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Potassium (K)-Total	1090	7			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Magnesium (Mg)-Total	46100	2			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Manganese (Mn)-Total	381	0.03	RAMB		mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Molybdenum (Mo)-Total	1.81	0.02			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Sodium (Na)-Total	181	2	RAMB		mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Nickel (Ni)-Total	36.9	0.2			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Lead (Pb)-Total	104	0.05	RAMB		mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Selenium (Se)-Total	0.4	0.1			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Tin (Sn)-Total	<4	4	RAMB		mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Strontium (Sr)-Total	68.7	0.02	RAMB		mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Titanium (Ti)-Total	179	0.03	RAMB		mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Thallium (Tl)-Total	<0.2	0.2			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Uranium (U)-Total	0.508	0.006			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Vanadium (V)-Total	17.5	0.06			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
Zinc (Zn)-Total	229	2			mg/kg	08-NOV-04	09-NOV-04	DAG	R236835
L222483-12	TH31-S1								
Sample Date: 29-OCT-04									
Matrix: SOIL									
% Moisture		22	0.1		%	23-NOV-04	23-NOV-04	JAP	R240851
TEH (C11-C30)		<0.1	0.1		mg/L	08-NOV-04	10-NOV-04	HDT	R236836
PAH									
Acenaphthene	<0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Acenaphthylene	<0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Anthracene	<0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Benzo(a)anthracene	<0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Benzo(a)pyrene	<0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Benzo(b)fluoranthene	<0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Benzo(ghi)perylene	<0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Benzo(k)fluoranthene	<0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Chrysene	<0.1	0.1			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Dibenzo(ah)anthracene	<0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Fluoranthene	0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Fluorene	<0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Indeno(1,2,3 cd)pyrene	<0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714
Naphthalene	<0.05	0.05			mg/kg	22-NOV-04	23-NOV-04	JAP	R240714

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
RAMB	Result Adjusted For Method Blank

Methods Listed (If applicable):

ETL Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
ETL-BTX,TVH-CCME-WP	Soil	CCME BTEX		CCME CWS-PHC Dec-2000 - Pub# 1310
ETL-TEH-CCME-WP	Soil	CCME Total Extractable Hydrocarbons		CCME CWS-PHC Dec-2000 - Pub# 1310
ETL-TVH,TEH-CCME-WP	Soil	CCME Total Hydrocarbons		CCME CWS-PHC Dec-2000 - Pub# 1310

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

METAL-LOW-EXD-WP	Soil	Metals	EPA SW846 3050B Rev 2 1996
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PAH,PANH-WP	Water	PAH	EPA SW846 8270B Sep 1994,3510B Sep 1992
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Samples are stored in the dark at 4 degrees C until extraction. Samples are partitioned at basic and acidic pH with dichloromethane, concentrated and esterified (if run in conjunction with pentachlorophenol).

Extracts are analyzed by Gas Chromatography / Mass Spectrometry in the selected ion monitoring mode.

PAH,PANH-WP	Soil	PAH	EPA SW846 8270B Sep 1994,3550A Sep 1994
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Samples are ground into sodium sulfate and extracted with acetone/dichloromethane using a combination of high frequency sonication and shake using a wrist-action shaker. After extract concentration, samples are analyzed by GC/MS.

TEH-WP	Water	Tot. Extr. Hydrocarbons (C11-C30)	EPA SW846,8000A
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This is the semi-quantitative determination of total extractable hydrocarbons (TEH) C11-C30 in water, soil and sediment samples. A water sample volume of 240 mLs in a 250 mL glass amber bottle is shaken with 2-4 mL hexane for one hour on a wrist action shaker, then sonicated for 5 minutes. A soil/sediment sample of 25 grams is weighed out with sodium sulphate and extracted with 10 mLs hexane/acetone for one hour on a wrist action shaker then sonicated for 5 minutes. After extraction, the solvent layer is drawn off and analysed against a calibrated diesel standard on a gas chromatograph equipped with a flame ionization detector. All results are reported on a dry weight basis. By special request, the result can be calculated on C10-C24 to meet specific regulations.

** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.

Chain of Custody numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WP	Enviro-Test Laboratories - Winnipeg, Manitoba, Canada		

Reference Information

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency. The Laboratory warning units are determined under column heading D.L.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

< - Less than

D.L. - Detection Limit

N/A - Result not available. Refer to qualifier code and definition for explanation

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

UNLESS OTHERWISE STATED, SAMPLES ARE NOT CORRECTED FOR CLIENT FIELD BLANKS.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

Enviro-Test Laboratories has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, Enviro-Test Laboratories assumes no liability for the use or interpretation of the results.

ENVIRO-TEST ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier	DL	Units	Extracted	Analyzed	By	Batch
L226683-1 AS-3 FLOOR LINOLEUM Sample Date: 17-NOV-04 Matrix: BULK Bulk Asbestos Content Asbestos: Chrysotile (Serpentine) 10-25 Other Fibres: Cellulose and Synthetic 1-10 Other Non Fibrous: Filler 65-89 Note: Grey solid AS-3 Floor linoleum								
						19-NOV-04	NAV	R239808
						19-NOV-04	NAV	R239808
						19-NOV-04	NAV	R239808
L226683-2 AS-4 CEILING TILE Sample Date: 17-NOV-04 Matrix: BULK Bulk Asbestos Content Asbestos None observed Other Fibres: Cellulose 75-99 Other Non Fibrous: Filler 1-25 Note: Beige fibrous AS-4 Ceiling tile								
						19-NOV-04	NAV	R239808
						19-NOV-04	NAV	R239808
						19-NOV-04	NAV	R239808
L226683-3 AS-5 FLOOR TILE Sample Date: 17-NOV-04 Matrix: BULK Bulk Asbestos Content Asbestos: Chrysotile (Serpentine) Trace Other Fibres: Cellulose 1-10 Other Non Fibrous: Filler 90-99 Note: Grey solid AS-5 floor tile								
						19-NOV-04	NAV	R239808
						19-NOV-04	NAV	R239808
						19-NOV-04	NAV	R239808
L226683-4 AS-6 FLOOR TILE Sample Date: 17-NOV-04 Matrix: BULK Bulk Asbestos Content Asbestos None observed Other Fibres: Cellulose, Glass, Synthetic 1-10 Other Non Fibrous: Filler 90-99 Note: Grey solid AS-6 floor tile								
						19-NOV-04	NAV	R239808
						19-NOV-04	NAV	R239808
						19-NOV-04	NAV	R239808
L226683-5 AS-7 CEILING TILE Sample Date: 17-NOV-04 Matrix: BULK Bulk Asbestos Content Asbestos None observed Other Fibres: Cellulose 75-99 Other Non Fibrous: Filler 1-25 Note: Beige fibrous AS-7 Ceiling tile								
						19-NOV-04	NAV	R239808
						19-NOV-04	NAV	R239808
						19-NOV-04	NAV	R239808
L226683-6 AS-8 CEILING TILE Sample Date: 17-NOV-04 Matrix: BULK Bulk Asbestos Content Asbestos None observed Other Fibres: Cellulose 75-99 Other Non Fibrous: Filler 1-25 Note: Beige fibrous AS-8 Ceiling tile								
						19-NOV-04	NAV	R239808
						19-NOV-04	NAV	R239808
						19-NOV-04	NAV	R239808

ENVIRO-TEST ANALYTICAL REPORT

Sample ID/Parameter	Result	Qualifier	DIL	Units	Extracted	Analyzed	By	Batch
L226683-6 AS-8 CEILING TILE Sample Date: 17-NOV-04 Matrix: BULK								
L226683-7 AS-9 CEILING TILE Sample Date: 17-NOV-04 Matrix: BULK								
Bulk Asbestos Content								
Asbestos	None observed		1	%		19-NOV-04	NAV	R239808
Other Fibres: Cellulose	75-99		1	%		19-NOV-04	NAV	R239808
Other Non Fibrous: Filler	1-25		1	%		19-NOV-04	NAV	R239808
Note: Beige fibrous AS-9 Ceiling tile								
L226683-8 AS-10 FLOOR TILE Sample Date: 17-NOV-04 Matrix: BULK								
Bulk Asbestos Content								
Asbestos	None observed		1	%		19-NOV-04	NAV	R239808
Other Fibres: Cellulose	1-10		1	%		19-NOV-04	NAV	R239808
Other Non Fibrous: Filler	90-99		1	%		19-NOV-04	NAV	R239808
Note: Grey solid AS-10 floor tile								
L226683-9 AS-11 CEILING TILE Sample Date: 17-NOV-04 Matrix: BULK								
Bulk Asbestos Content								
Asbestos	None observed		1	%		19-NOV-04	NAV	R239808
Other Fibres: Cellulose	100		1	%		19-NOV-04	NAV	R239808
Other Non Fibrous: Filler	None observed		1	%		19-NOV-04	NAV	R239808
Note: Beige fibrous AS-11 Ceiling tile								
L226683-10 AS-12 FLOOR TILE Sample Date: 17-NOV-04 Matrix: BULK								
Bulk Asbestos Content								
Asbestos	None observed		1	%		19-NOV-04	NAV	R239808
Other Fibres: Cellulose and Glass	1-10		1	%		19-NOV-04	NAV	R239808
Other Non Fibrous: Filler	90-99		1	%		19-NOV-04	NAV	R239808
Note: Brown solid AS-12 floor tile								
L226683-11 AS-13 FLOOR TILE Sample Date: 17-NOV-04 Matrix: BULK								
Bulk Asbestos Content								
Asbestos	None observed		1	%		19-NOV-04	NAV	R239808
Other Fibres: Cellulose and Glass	Trace		1	%		19-NOV-04	NAV	R239808
Other Non Fibrous: Filler	100		1	%		19-NOV-04	NAV	R239808
Note: Grey solid AS-13 floor tile								
L226683-12 AS-14 CEILING TILE Sample Date: 17-NOV-04 Matrix: BULK								

Reference Information

Methods Listed (If applicable):

ETL Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
ASBESTOS-WP	Bulk	Bulk Asbestos Content		NIOSH 9002-Polarized Light

Bulk samples are examined under a stereoscopic microscope. Individual fibers or fibre bundles are mounted in refractive index liquids and are observed under a polarized light microscope with a special dispersion staining objective. The dispersion staining colours are compared to reference samples of known asbestiforms.

Polarized microscopy is not a definitive technique for negative results for non friable organically bound material (i.e. floor tiles).

**** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.**

Chain of Custody numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WP	Enviro-Test Laboratories - Winnipeg, Manitoba, Canada		

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency. The Laboratory warning units are determined under column heading D.L.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

< - Less than

D.L. - Detection Limit

N/A - Result not available. Refer to qualifier code and definition for explanation

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

UNLESS OTHERWISE STATED, SAMPLES ARE NOT CORRECTED FOR CLIENT FIELD BLANKS.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

Enviro-Test Laboratories has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, Enviro-Test Laboratories assumes no liability for the use or interpretation of the results.

ENVIRO-TEST ANALYTICAL REPORT

Sample ID	Parameter	Result	Qualifier	DL	Units	Entered	Analyzed	By	Batch
L228324-1	T1 Sample Date: 23-NOV-04 Matrix: OIL Total PCBs	<1		1	mg/kg	24-NOV-04	26-NOV-04	THT	R241901
L228324-2	T2 Sample Date: 23-NOV-04 Matrix: OIL Total PCBs	<1		1	mg/kg	24-NOV-04	26-NOV-04	THT	R241901
L228324-3	T3 Sample Date: 23-NOV-04 Matrix: OIL Total PCBs	16		1	mg/kg	24-NOV-04	26-NOV-04	THT	R241901
L228324-4	MW-1 Sample Date: 23-NOV-04 Matrix: WATER TEH (C11-C30)	<0.1		0.1	mg/L	26-NOV-04	26-NOV-04	HDT	R241842
L228324-5	MW-4 Sample Date: 23-NOV-04 Matrix: WATER TEH (C11-C30)	0.2		0.1	mg/L	26-NOV-04	26-NOV-04	HDT	R241842
Refer to Referenced Information for Qualifiers (If any) and Methodology.									

Reference Information

Methods Listed (If applicable):

ETL Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
PCB-TOT-WP	Product	PCB TOTAL		SW-846, 8082, Nov 1990
TEH-WP	Water	Tot. Extr. Hydrocarbons (C11-C30)		EPA SW846,8000A

This is the semi-quantitative determination of total extractable hydrocarbons (TEH) C11-C30 in water, soil and sediment samples. A water sample volume of 240 mLs in a 250 mL glass amber bottle is shaken with 2-4 mL hexane for one hour on a wrist action shaker, then sonicated for 5 minutes. A soil/sediment sample of 25 grams is weighed out with sodium sulphate and extracted with 10 mLs hexane/acetone for one hour on a wrist action shaker then sonicated for 5 minutes. After extraction, the solvent layer is drawn off and analysed against a calibrated diesel standard on a gas chromatograph equipped with a flame ionization detector. All results are reported on a dry weight basis. By special request, the result can be calculated on C10-C24 to meet specific regulations.

** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.

Chain of Custody numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WP	Enviro-Test Laboratories - Winnipeg, Manitoba, Canada		

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency. The Laboratory warning units are determined under column heading D.L.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

< - Less than

D.L. - Detection Limit

N/A - Result not available. Refer to qualifier code and definition for explanation

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

UNLESS OTHERWISE STATED, SAMPLES ARE NOT CORRECTED FOR CLIENT FIELD BLANKS.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

Enviro-Test Laboratories has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, Enviro-Test Laboratories assumes no liability for the use or interpretation of the results.

Sample ID	Parent Material	Result	Qualifier	Unit	Date Rec'd	Analyzed	By	Batch
L232605-1	TH17-S5							
Sample Date: 28-OCT-04								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F1 (C6-C10)	180		5	mg/kg		15-DEC-04		
F1-BTEX	170		5	mg/kg		15-DEC-04		
F2 (C10-C16)	3700		5	mg/kg		15-DEC-04		
F3 (C16-C34)	1200		5	mg/kg		15-DEC-04		
F4 (C34-C50)	27		5	mg/kg		15-DEC-04		
Total Hydrocarbons (C6-C50)	5100		5	mg/kg		15-DEC-04		
Chromatogram to baseline at nC50								
	YES					15-DEC-04		
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates								
					14-DEC-04	15-DEC-04	HDT	R247092
CCME BTEX								
Benzene	0.013		0.005	mg/kg	13-DEC-04	10-DEC-04	DVH	R247190
Toluene	0.04		0.01	mg/kg	13-DEC-04	10-DEC-04	DVH	R247190
Ethylbenzene	2.9		0.01	mg/kg	13-DEC-04	10-DEC-04	DVH	R247190
o-Xylene	0.44		0.01	mg/kg	13-DEC-04	10-DEC-04	DVH	R247190
Xylenes, m+p	12		0.02	mg/kg	13-DEC-04	10-DEC-04	DVH	R247190
Xylenes	12		0.03	mg/kg	13-DEC-04	10-DEC-04	DVH	R247190
% Moisture	19		0.1	%	13-DEC-04	13-DEC-04	HDT	R246487
L232605-2	TH18-S4							
Sample Date: 28-OCT-04								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F1 (C6-C10)	25		5	mg/kg		15-DEC-04		
F1-BTEX	25		5	mg/kg		15-DEC-04		
F2 (C10-C16)	240		5	mg/kg		15-DEC-04		
F3 (C16-C34)	100		5	mg/kg		15-DEC-04		
F4 (C34-C50)	<5		5	mg/kg		15-DEC-04		
Total Hydrocarbons (C6-C50)	370		5	mg/kg		15-DEC-04		
Chromatogram to baseline at nC50								
	YES					15-DEC-04		
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates								
					14-DEC-04	15-DEC-04	HDT	R247092
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	13-DEC-04	10-DEC-04	DVH	R247190
Toluene	<0.01		0.01	mg/kg	13-DEC-04	10-DEC-04	DVH	R247190
Ethylbenzene	0.10		0.01	mg/kg	13-DEC-04	10-DEC-04	DVH	R247190
o-Xylene	0.06		0.01	mg/kg	13-DEC-04	10-DEC-04	DVH	R247190
Xylenes, m+p	0.19		0.02	mg/kg	13-DEC-04	10-DEC-04	DVH	R247190
Xylenes	0.26		0.03	mg/kg	13-DEC-04	10-DEC-04	DVH	R247190
% Moisture	24		0.1	%	13-DEC-04	13-DEC-04	HDT	R246487
Refer to Referenced Information for Qualifiers (If any) and Methodology.								

Reference Information

Methods Listed (If applicable):

ETL Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
ETL-BTX,TVH-CCME-WP	Soil	CCME BTEX		CCME CWS-PHC Dec-2000 - Pub# 1310
ETL-TEH-CCME-WP	Soil	CCME Total Extractable Hydrocarbons		CCME CWS-PHC Dec-2000 - Pub# 1310
ETL-TVH,TEH-CCME-WP	Soil	CCME Total Hydrocarbons		CCME CWS-PHC Dec-2000 - Pub# 1310

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

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