2008 ANNUAL REPORT

ROUND LAKE WASTE DISPOSAL SITE
(A412303)

TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS
COUNTY OF RENFREW, ONTARIO

Prepared for

THE CORPORATION OF THE
TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS

March 20, 2009

Greenview File: 107.08.003

Greenview
ENVIRONMENTAL MANAGEMENT

Greenview Environmental Management Limited
69 Cleak Avenue, PO Box 100
Bancroft, Ontario K0L 1C0
tel: (613) 332-0057
fax: (613) 332-1767
email: solutions@greenview-environmental.ca

EXECUTIVE SUMMARY

This report has been prepared to document the results of the 2008 environmental monitoring program for the Township of Killaloe, Hagarty and Richards' Round Lake waste disposal site, located on Lot 27, Concession III, in the geographic Township of Richards, amalgamated Township of Killaloe, Hagarty and Richards. The site is located approximately fourteen (14) kilometres north of the Village of Killaloe, and is accessed by Sunrise Road which extends west from County Road 58.

The Round Lake waste disposal site operates in accordance with Provisional Certificate of Approval A412303, for the transfer of municipal solid waste generated within the Township of Killaloe, Hagarty and Richards. The site is currently licensed in accordance with the Provisional Certificate of Approval for a 1.62 hectare approved waste disposal area, within a total licensed area of 3.5 hectares, inclusive of an established contaminant attenuation zone area totalling 1.33 hectares.

Historically, the direction of groundwater flow within the shallow overburden at the Round Lake site has been to the north and northeast, generally trending towards the Sherwood River northeast of the site. In 2008, static groundwater level data obtained from the on-site groundwater monitoring wells correlated with the previous data sets and confirmed the north-northeast flow direction. Average horizontal gradients were calculated using monitoring well data obtained in the vicinity of the waste mound and to the north and northeast of the landfill, and were found to be 0.004 and 0.010 in magnitude, respectively. Upward vertical gradients were observed at monitoring wells BH-2S and BH-2D in May 2008 and October 2008 of 0.029 and 0.024, respectively. An upward vertical gradient of 0.103 was observed at monitoring wells BH01-13S and BH01-13D in May 2008; no vertical gradient was observed at monitoring wells BH01-13S and BH01-13D in October 2008, as BH01-13S was observed to be dry.

Groundwater quality results from the monitoring wells immediately downgradient of the waste mound, and monitors to the northeast are slightly impacted from landfill-related activities, with monitoring wells BH-2S and BH-2D exhibiting decreased water quality in comparison to wells in close proximity to the waste mound. Parameter concentrations did not change significantly with the inclusion of the 2008 results, indicating that the position and orientation of the leachate plume is consistent with historical results. There were no volatile organic compound Ontario Drinking Water Standards criteria exceedances during the 2008 groundwater monitoring program.

Additionally, there were no Reasonable Use Concept criteria exceedances of the compliance evaluation parameters in 2008 using the 75% Reasonable Use Concept values as specified in Schedule "C" of Provisional Certificate of Approval A412203, at downgradient monitors BH-8, BH95-9, BH01-13D, and

BH01-14. Based on the results, the trigger mechanism described in Schedule "C" of the Provisional Certificate of Approval was not activated, and the Round Lake site is interpreted to be conformance with Ontario Ministry of the Environment Guideline B-7 in 2008.

Based on Township records approximately 2,210 vehicles visited the Round Lake site in 2008, with approximately 4,081 bags of residential waste received during the period January to December 2008 for transfer to the Township's Killaloe site for disposal.

Additionally, based on Township records 35 bags of mixed glass (clear and coloured), 1,480 bags of containers (tin/aluminum/plastic), and 571 bags of fibres were received at the Round Lake site in 2008 and transferred to the Township's Killaloe site for pickup by Beaumen Waste Management/Recycling.

Recycling tonnage records provided by the Beaumen Waste Management and Township records indicate that a total of approximately 201.5 tonnes of recyclable material was received at the Killaloe waste disposal site in 2008. Recyclable quantities contributing to this total included approximately 42.4 tonnes of containers (tin/aluminum/plastic), 18.0 tonnes of mixed glass (clear and coloured), 77.0 tonnes of fibres, and 64.1 tonnes of old corrugated cardboard. Recycling tonnages noted above for the Killaloe waste disposal site include quantities of recycling received and transported from the Township's Round Lake and Red Rock sites in 2008.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

1.1 SITE INFORMATION

The Round Lake waste disposal site operates under Provisional Certificate of Approval (PC of A) A412303 as amended on April 8, 2003 (Appendix A) as a municipal solid waste transfer station with mobile waste and recycling facilities. The Round Lake site is located approximately 0.5 kilometres (km) west of County Road No. 58 on Part Lot 27, Concession III, in the geographic Township of Richards, amalgamated Township of Killaloe, Hagarty and Richards in Renfrew County. The site is accessed from Sunrise Road (Figure 1), and is situated on Township land.

1.2 BACKGROUND

The Round Lake waste disposal site has been in operation since 1967, and is approved to accept waste for transfer from the geographic Township of Killaloe, Hagarty and Richards.

The site PC of A A412303 (Appendix A) was amended on April 8, 2003, in which Condition 25 was added stating that further landfilling at the site cease, and interim cover be applied to all waste cells, until such time as sufficient property is acquired for a contaminant attenuation zone (CAZ). Since June 2003, the Round Lake waste disposal site has been in interim-closed status for landfilling operations as per Condition 25 of the amended PC of A (Appendix A); however, the site currently operates as a mobile solid waste transfer station. The site is currently licensed in accordance with the PC of A for a 1.62 hectare (ha) approved waste disposal area, within a total licensed area of 3.5 ha, inclusive of a 1.33 ha established CAZ area (Appendix A; Figure 2). Domestic waste and recyclables currently collected at the Round Lake site via mobile waste transfer operations are transferred to the Township's Killaloe site for final disposal/market.

Due to flooding in the vicinity of Round Lake in the spring of 2008, the Township of Killaloe-Hagarty-Richards was permitted by the Ontario Ministry of the Environment (MOE) to use the Round Lake site for staging and stockpiling of waste materials generated from the emergency clean-up operations. On May 18, 2008 and June 29, 2008 the township opened the Round Lake site to receive disaster waste between the hours of 8:00 am and 4:00 pm. The waste received was permitted by the MOE to be shredded at the Round Lake site and transported to the Killaloe waste disposal site for use as alternative daily cover or disposal.

Greenview Environmental Management Limited (Greenview) was retained by the Township to complete the 2008 environmental monitoring and reporting program at the Round Lake waste disposal site.

1.3 PURPOSE AND SCOPE

The purpose of this report is to provide an overview of the annual environmental monitoring, environmental compliance, and operations at the Round Lake waste disposal site, in accordance with Condition 21 of the PC of A A412303, including the following:

- Groundwater quality assessment and Reasonable Use Concept (RUC; MOE Guideline B-7) compliance (Section 4.1).
- Site operational overview and capacity assessment (Section 4.2).
- Conclusions and recommendations for future monitoring programs at the site (Section 5.0).

2.0 SITE DESCRIPTION

The following sections present a summary of the physical characteristics for the Round Lake waste disposal site.

2.1 TOPOGRAPHY AND DRAINAGE

The Round Lake waste disposal site is located approximately 400 metres (m) south of the Sherwood River, and 750 m west of Round Lake. Topography in the southern portion of waste mound slopes to the south; however, local topography in the vicinity of the site slopes gently to the northeast (Figure 2).

In the immediate vicinity of the waste mound, minimal surface water is observed under normal conditions due to the porous nature of the overburden (sands and gravels), and the relatively flat topography. In addition to the Sherwood River northeast of the site, a small creek tributary is located approximately 130 m south (upstream) of the site.

2.2 HYDROGEOLOGICAL CONDITIONS

Overburden geology at the Round Lake site is characterized by localized sand and gravel deposits typical of a glaciolacustrine delta. Bedrock immediately beneath the overburden consists of Precambrian igneous and metamorphic rock, specifically granite and gneiss (The Greer Galloway Group Inc. [GGG], 1998). Overburden geology to the west of the site (approximately two [2] km) is typified by sand and clay deposits, overlying the bedrock unit (County of Renfrew, 2007).

The predominant direction of groundwater flow at the Round Lake site is in a north-easterly direction, trending towards the Sherwood River and Round Lake.

2.3 OPERATIONAL SETTING

The Round Lake site is presently situated on Township-owned lands and currently consists of an approved waste disposal area of 1.62 ha within a total property area of 3.5 ha, inclusive of a 1.33 ha parcel of land designated for CAZ purposes (Figure 3).

The waste disposal site at Round Lake has been interim-closed to waste disposal operations since June 2003, and has since been operating as a mobile waste transfer station. The Township of Killaloe, Hagarty and Richards maintains a permanent attendant's office on-site, and during operational hours, a mobile compactor truck and recycling totes for acceptance of regular blue-box recyclables. Domestic waste

and blue-box recyclables received at the site are deposited in a mobile compactor truck and recycling totes for transfer, disposal, and marketing at the Killaloe waste disposal site, as applicable to the waste type.

3.0 2008 ENVIRONMENTAL MONITORING PROGRAM

The following sections present a methodology of the environmental monitoring program conducted at the Round Lake waste disposal site in 2008.

3.1 GROUNDWATER MONITORING

Groundwater monitoring and sampling was conducted at the Round Lake site on May 20, 2008 and October 9, 2008 by Greenview using the network of groundwater monitoring wells as part of the site's 2008 environmental monitoring program (Table 1). An electronic water level tape was used prior to sampling to determine the static groundwater level at each monitoring well involved in the monitoring program during both the spring and fall sampling events. Based on the groundwater elevation, a well purge volume equivalent to approximately three (3) borehole volumes was calculated in-situ using a standard conversion factor relevant to the respective well diameter. The calculated well purge volume was then removed using the dedicated polyethylene tube stored within the well column.

Following the purge, groundwater samples were collected from each monitoring well using the aforementioned polyethylene tubing and inertial lift foot valves, and were analysed on-site for pH, dissolved oxygen, conductivity, and temperature. Samples were collected in appropriate sample bottles as supplied by an accredited laboratory, and the designated sample bottles for metal parameters were filtered in the field using a dedicated High-Capacity 45 micron filter to reduce the potential for turbidity-induced bias in the analytical results.

As part of the fall sampling event at the Round Lake site for the 2008 monitoring program, and as specified in the PC of A for the site, a comprehensive sample set for volatile organic compounds (VOCs) was collected from monitoring wells BH-1, BH-2S, BH-2D, BH-5, BH-95-9, and BH01-14, with additional collected samples including a trip blank, a field blank, and a duplicate VOC sample for Quality Assurance and Quality Control (QA/QC) purposes.

Duplicate groundwater samples were obtained for QA/QC purposes from the background and surveillance parameter suites (Table 1) during both the May 20, 2008 and October 9, 2008 sampling events. Monitoring well BH01-12D was sampled during the spring 2008 event, and monitoring well BH-2D was sampled during the fall 2008 event. A duplicate sample was collected from monitoring well BH-6 during the October 9, 2008 sampling event for QA/QC purposes involving the routine parameter suite (Table 1).

Field sampling records completed during the 2008 monitoring program are included in Appendix D. The groundwater samples were recorded on a laboratory Chain of Custody Form, and the samples were placed in coolers packed with contained ice for preservation during transport to the analytical laboratory.

Available borehole logs are included in this report in Appendix C.

The results of the 2008 groundwater monitoring program are presented in Section 4.1.

3.2 SURFACE WATER MONITORING

In accordance with Schedule "B" of PC of A A412303 as amended April 8, 2003 (Appendix A), surface water sampling was removed from the environmental monitoring program at the site as the sampling locations were typically dry, and flowing conditions were only observed following spring run-off or during exceptionally wet periods. Additionally, there was no evidence of landfill-related impacts noted during the surface water sampling events (Golder Associates [Golder], March 2004).

3.3 ANALYTICAL LABORATORY ACCREDITATION

Collected groundwater samples were submitted for analysis to the SGS Environmental Laboratory, located in Lakefield, Ontario. The SGS Environmental Analytical Laboratory is accredited by the Standards Council of Canada (SCC) and the Canadian Association for Environmental Analytical Laboratories (CAEAL), for specific environmental testing procedures listed in the scope of accreditation. The SGS Environmental Analytical Laboratory is licensed by the MOE to perform analysis on Drinking Water in Ontario in accordance with the *Safe Drinking Water Act.*

3.4 LANDFILL GAS MONITORING

Landfill gas monitoring is not part of the environmental monitoring program for the site. The waste mound at the Round Lake site is fit with porous cover materials allowing natural gas flux to the atmosphere. Overburden geology at and adjacent to the site is characterized by shallow, sandy materials, overlying a dense igneous/metamorphic bedrock unit (GGG, 1998). These overburden and bedrock characteristics, coupled with the extended distance to the nearest residence, provide a minimal risk of landfill gases impinging off-site receivers.

3.5 OPERATIONAL MONITORING

Operational monitoring at the Round Lake site is minimal given that the site currently only functions as a waste transfer station (WTS) and the site status is presently interim-closed. A topographic survey of the site was completed by Greenview on October 24, 2008 in order to update site conditions and features.

Waste record keeping was conducted on a weekly basis at the Round Lake site, documenting waste quantities received and transported to the Township's Killaloe waste disposal site for final disposal.

The Township submits annual waste diversion reports in accordance with the Municipal Datacall, inclusive of the Round Lake site, to Waste Diversion Ontario (WDO).

4.0 ENVIRONMENTAL MONITORING RESULTS

The following sections present a summary of the environmental monitoring results obtained during the Round Lake waste disposal site 2008 environmental monitoring program.

4.1 GROUNDWATER QUALITY ASSESSMENT

The results of the 2008 groundwater monitoring program conducted at the site are presented as follows.

4.1.1 GROUNDWATER CONFIGURATION

The direction of groundwater flow within the shallow overburden unit at the Round Lake site is to the north and northeast (Figure 3), which is consistent with historical results (Greenview 2008, 2007). The groundwater elevation data obtained during the 2008 groundwater monitoring program at the site is provided in Table 2. Average horizontal gradients in the vicinity of the waste mound and to the north and northeast of the waste mound were calculated in April to be 0.004 and 0.010 in magnitude, respectively.

Similar to historical results (Greenview, 2008), upward vertical gradients were observed at monitoring wells BH-2S and BH-2D of 0.029 and 0.024 in May 2008 and October 2008, respectively. An upward vertical gradient of 0.103 was also observed at monitoring wells BH01-13S and BH01-13D in May 2008. No vertical gradient was obtained in October 2008 at monitoring wells BH01-13S and BH01-13D, as BH01-13S was observed to be dry.

4.1.2 GROUNDWATER QUALITY

Results of the 2008 groundwater monitoring program completed at Round Lake are presented in Table 3 and the accredited laboratory Certificates of Analysis (SGS) are attached in Appendix E. Analytical data obtained from respective groundwater wells has been compared to the Ontario Drinking Water Standards (ODWS; MOE, 2003), background water quality at the site, and MOE Guideline B-7-1 and the Reasonable Use Concept (RUC; MOE, 1994).

Background water quality at the Round Lake site has historically been interpreted from samples acquired at monitoring wells BH-1 and BH-5, located upgradient from the waste mound. Monitoring well BH-1 is located on the western property boundary of the Round Lake site, and well BH-5 is located near the south-western extent of the approved waste disposal area (Figure 3). Water quality results in 2008 are generally similar to historically observed parameter concentrations at these wells (Table 3). Exceedances of ODWS criteria at BH-1 during both the spring and fall sampling events include alkalinity (low), aluminum, dissolved organic

carbon (DOC) and iron, and are consistent with historical results (Greenview 2008, 2007). At monitoring well BH-5, ODWS exceedances include alkalinity (low; spring only), iron (fall only), aluminum, and manganese, and are consistent with levels found historically at the background wells (Greenview 2008, 2007). In 2008, monitoring well BH-1 presented an increasing trend with respect to pH. Similar to historical results, monitoring well BH-5 was observed to have increasing trends for alkalinity, aluminum, barium, calcium, and hardness. Water quality results at BH-1 and BH-5 continue to be representative of background groundwater quality in the vicinity of the Round Lake waste disposal site with the inclusion of the 2008 results.

Groundwater immediately downgradient of the waste mound is monitored for the routine parameter suite (Table 1) at groundwater wells BH-6 and BH01-15, and for the background and surveillance suite (Table 1) at monitors BH-2S and BH-2D. Groundwater quality at the downgradient CAZ boundary is monitored primarily using the background and surveillance parameter suite (Table 1) at monitors BH-8, BH95-9, BH01-12D, BH01-13D, BH01-13S, and BH01-14. Monitoring well BH95-10 is located approximately 100 m north of the northeast corner of the CAZ, and 210 m northeast of the existing limit of waste (Figure 2), and is sampled as part of the routine groundwater sampling program (Table 1).

Monitoring well BH-6 is located near the mid-point of the northern boundary of the approved waste disposal area, approximately 15 m north of the existing limit of waste, and monitoring well BH01-15 is located east and adjacent to the eastern property boundary (Figure 3). No samples were obtained for monitoring well BH01-15 in 2008 due to insufficient water available in the well. Groundwater results obtained in 2008 from monitoring well BH-6 were generally similar to background conditions, with the exception of alkalinity and nitrate which slightly exceed background, and chloride which is less than background (Table 3). The only exceedance of ODWS criteria found at monitoring well BH-6 was alkalinity (low). Similar to historical results, monitoring well BH-6 was observed to have a decreasing trend with respect to nitrate. Based on the groundwater configuration at the site, monitoring well BH01-15 appears to be located cross-gradient to the direction of groundwater flow (Figure 3), and as such, continues to exhibit only minimal influences from landfill-related activities in 2008. Monitoring well BH-6 does not appear to be significantly affected by landfill-derived leachate.

Leachate indicator parameters at the site, as identified in Schedule "C" of PC of A A412303, include alkalinity, barium, boron, calcium, chloride, chromium, conductivity, hardness, and total dissolved solids (TDS).

Characterization of leachate quality at the site has historically included water quality at monitoring wells BH-2S and BH-2D, which are located downgradient of the north-eastern extent of the limit of waste

(Figure 3). Similar to the 2007 results (Greenview, 2008), all parameter concentrations at BH-2S and BH-2D remain elevated above background levels in 2008 (Table 3). In 2008, ODWS exceedances were found for DOC (spring only), iron and manganese at monitoring well BH-2D, whereas at monitoring well BH-2S, ODWS exceedances included iron, manganese, and pH (fall only). The proximity of monitoring wells BH-2S and BH-2D to the limit of waste and their location in-line with the direction of groundwater flow, suggest that some impact related to leachate is probable. Similar to historical results, several parameter concentrations were found to have decreasing trends at monitoring well BH-2D including barium, calcium, chloride, DOC, hardness, magnesium, manganese, potassium, and strontium, while a slight increasing trend was noted for sulphate. Likewise, monitoring well BH-2S was noted to have a slight increasing trend for cobalt, and decreasing trends for chloride, DOC, hardness, and strontium following the inclusion of 2008 data.

Groundwater monitor BH01-12D is located approximately 10 m inside of the north-western CAZ boundary, approximately 60 m downgradient of the waste mound (Figure 3). With the inclusion of the 2008 results, some parameters were observed to be above background conditions, while concentrations of alkalinity (low), DOC, iron, manganese, and pH were found to exceed ODWS in May and October 2008 (Table 3). Aluminum and pH exceeded ODWS limits in the spring sample event only. These ODWS exceedances are not considered to be entirely landfill-leachate related as similar exceedances are found in the background water quality in 2008. Similar to historical results, increasing trends were noted for sulphate and TDS at monitoring well BH01-12D in 2008. Groundwater quality at BH01-12D may be slightly impacted by landfill-leachate derived from the site; however groundwater monitor BH01-12D is located somewhat cross-gradient to the direction of groundwater flow at the site (Figure 3).

Based on the direction of groundwater flow, monitoring well BH-8 is located downgradient of the groundwater flow, and is approximately 20 m inside of the eastern CAZ boundary (Figure 3). Consistent with historical results, several parameter concentrations from the 2008 groundwater monitoring program remain elevated above background water quality (Table 3). There were ODWS exceedances in 2008 at monitoring well BH-8 for parameters DOC (fall only), pH (spring only), iron, and manganese. Similar to historical results, decreasing trends were observed for alkalinity, calcium, chloride, hardness, iron, magnesium, manganese, strontium, and TDS, while increasing trends were noted for aluminum and ammonia at monitoring well BH-8. Since monitoring well BH-8 is located downgradient from the limit of waste and in the direction of groundwater flow, and given that some parameter concentrations remain above background levels, BH-8 appears to be impacted by leachate.

Monitoring well BH01-14 is located approximately 80 m northeast of the waste mound, and is used to assess water quality at the downgradient CAZ boundary (Figure 3). Similar to historical results at this monitoring well, many of the parameter concentrations remain elevated above background water quality (Greenview, 2008, 2007). There were ODWS exceedances at BH01-14 for aluminum (fall only), pH (spring only), iron, and manganese (Table 3); however, these exceedances are significantly less than comparable ODWS exceedances at other monitoring wells closer to the waste mound, and suggest that successful attenuation is occurring within the CAZ. Following the inclusion of 2008 data, an increasing parameter trend was noted for aluminum, and decreasing trends were observed for conductivity and TDS at monitoring well BH01-14.

Water quality at the downgradient CAZ boundary, northeast of the site is monitored by groundwater monitoring wells BH01-13S, and BH01-13D, which are located at the CAZ boundary approximately 85 m north of the north-eastern extent of the existing limit of waste (Figure 3). When groundwater quality results from 2008 are compared with historical background levels, several parameters for both BH01-13S and BH01-13D are noted to be elevated (Table 3). There were no ODWS exceedances for BH01-13S, and only iron and manganese exceed ODWS at BH01-13D in 2008; however, these exceedances are similar in magnitude to monitoring well BH01-14, and similarly are significantly lower than exceedances found at monitoring well BH-2D which is located adjacent to the limit of waste (Figure 3). Water quality at BH01-13S appears to be stable, the only notable trend being a decrease in nitrate. Similar to historical results, decreasing trends were observed for alkalinity, boron, calcium, chloride, conductivity, hardness, iron, magnesium, and manganese at monitoring well BH01-13D. Water quality at the shallow monitoring well BH01-13S does not appear to be significantly impacted by leachate, while BH01-13D may be slightly impacted by the landfill.

Monitoring well BH95-9 is located at the north-eastern extent of the CAZ, approximately 120 m northeast of the existing waste mound (Figure 3). Many parameters were observed to be above background conditions in 2008, though this observation is similar to historical results found at this monitoring well location (Greenview, 2008, 2007). Despite water quality parameters exceeding background levels at monitoring well BH95-9, the magnitude of these concentrations are significantly less than concentrations found at monitoring wells immediately adjacent to the landfill, indicating successful attenuation within the CAZ (Table 3). Monitoring well BH95-9 was observed to have decreasing trends for DOC and iron following the inclusion of 2008 data. Only iron and manganese exceeded ODWS at both spring and fall sampling events in 2008, and aluminum was exceeded during the spring event. Exceedances of iron and manganese were consistent with historical results at BH95-9, and close inspection of the water quality at this location

suggests that groundwater quality is stable over time, despite an apparent slight impact from landfill-derived leachate.

Groundwater monitoring well BH95-10 is located approximately 100 m north of the north-eastern corner of the CAZ boundary (Figure 3). Access to this groundwater monitoring well and permission for groundwater sampling is provided under easement by the current property owner, as approved in PC of A A412303. Monitoring well BH95-10 forms part of the routine (fall only) groundwater sampling program at the site (Table 1). Exceedances of background conditions at monitoring well BH95-10 are observed for alkalinity, boron, chloride, conductivity, nitrate, and sodium, however the concentrations are significantly less than those found for wells in close proximity to the waste mound (Table 3). No ODWS exceedances were noted during the 2008 monitoring program at monitoring well BH95-10, and water quality at this monitoring well has historically been stable; the only trend apparent is a slight decrease in conductivity. When parameters at monitoring well BH95-10 are compared with nearby monitoring well BH95-9, it is evident that there is little impact related to the landfill leachate at this distance from the limit of waste, since almost all parameters are either equal to or less than those shown at monitoring well BH95-9 and nearby wells BH01-13S, BH01-13D, and BH01-14. A nitrate concentration of 2.79 mg/L was observed during the fall sampling event, and is likely related to the proximity of monitoring well BH95-10 to adjacent agricultural land use.

As reported historically (Golder, 2004), the elevated concentrations of iron and manganese observed at the downgradient monitoring wells BH-2S, BH-2D, BH-8, BH95-9, BH01-12, BH01-13D, and BH01-14 should not fully be attributed to the waste disposal site. Parameter concentrations for iron and manganese are noted to be elevated in background conditions, and may be a result of geochemical changes associated with leachate impact creating favourable conditions for the mobilization of these parameters naturally present in the groundwater regime.

As part of the 2008 groundwater monitoring program at the site, monitoring wells BH-1, BH-2S, BH-2D, BH-5, BH95-9, and BH01-14 were analyzed for VOCs during the fall sampling event. All reported VOCs were below their respective ODWS limits.

In May and October 2008, groundwater samples were collected from residential groundwater sampling location R-1, located approximately 300 m east of the site, on the south side of Sunrise Road (Figure 3). The 2008 water quality results were similar to historical data (Greenview, 2008), and with the exception of alkalinity (low) in May and October, there were no reported ODWS criteria exceedances. Residential groundwater sampling location R-1 was observed to have a decreasing trend for sulphate following the inclusion of 2008 data. The groundwater quality at R-1 is not interpreted to be impacted from landfill-related activities.

Blind duplicate samples for QA/QC purposes were collected for the background and surveillance parameter suite (Table 1) from monitoring wells BH01-12D and BH-2D on May 20, 2008 and October 9, 2008, respectively. A blind duplicate sample was obtained for the routine parameter suite (Table 1) at monitoring well BH-6 during the fall sampling event only. The QA/QC sample results were similar to each of the identified samples, and thus the results of the 2008 groundwater monitoring program can be interpreted with confidence.

4.1.3 REASONABLE USE CONCEPT ASSESSMENT

In an effort to assess potential leachate impacts migrating beyond the CAZ boundary, the groundwater RUC was used as an assessment tool to monitor downgradient impacts from the waste disposal site. Downgradient impacts are typically observed at monitoring wells located at, or in close proximity to, the downgradient property boundary, and as such are compared to trigger concentrations for specific parameters as determined by leachate quality at the site using the MOE's RUC for groundwater (MOE *Procedure B-7-1*, 1994).

The MOE *Procedure B-7-1: Determination of Contaminant Limits and Attenuation Zones* iterates that in accordance with the appropriate criteria for particular uses, a change in groundwater quality on an adjacent property as a result of landfilling activities will only be accepted by the MOE as follows:

> *The quality cannot be degraded by an amount in excess of 50% of the difference between background and the Ontario Drinking Water Standards for non-health related parameters and in excess of 25% of the difference between background and the Ontario Drinking Water Standards for health related parameters. Background is considered to be the quality of the groundwater prior to any man made contamination.*
>
> *MOE Procedure B-7-1*

The RUC assessment was conducted using the concepts and procedures outlined in MOE *Procedure B-7-1* (MOE, 1994), specifically using the median value of individual background parameter concentrations from monitoring wells BH-1 and BH-5, to characterize natural groundwater quality at the site. Groundwater monitoring wells BH-8, BH95-9, BH01-13D, and BH01-14 were used for monitoring downgradient impacts at the CAZ boundary for assessing site conformance in accordance with Schedule "C" of PC of A A412303 (Appendix A).

The compliance evaluation parameters for RUC application as detailed in Schedule "C" of the PC of A include: barium, boron, chloride, chromium, and VOCs. The RUC trigger concentrations are defined as 75%

of the calculated RUC criteria for each of the respective compliance evaluation parameters. The compliance evaluation parameters and respective 75% value of the calculated RUC criteria was applied to the monitoring wells above, as specified in Schedule "C" of PC of A A412303.

There were no exceedances for the trigger concentrations of barium, boron, chloride, and chromium at the groundwater wells identified for evaluation (BH-8, BH95-9, BH01-13D, and BH01-14). All observed VOC concentrations in 2008 were below their respective method detection limits, and as such the trigger concentration for VOCs were not calculated. Based on this, there were no reported trigger exceedances in 2008, and the trigger mechanism as specified in Schedule "C" of the PC of A was not activated in 2008.

Based on the above, the Round Lake waste disposal site is in conformance with Guideline B-7 following the completion of the 2008 groundwater monitoring program at the site, as active landfilling operations have ceased at the site since June 20, 2003, and parameter concentrations are expected to remain stable and eventually decrease over time. Acquisition of additional lands for CAZ is not deemed necessary at this time given the compliance with Schedule "C" of the PC of A and MOE Guideline B-7, and current site operations.

4.2 OPERATIONS SUMMARY

A summary of 2008 waste management operations at the Round Lake waste disposal site is presented below.

4.2.1 SITE OPERATIONS

The site is currently operating as a mobile domestic waste and recycling transfer station, and is currently closed to active landfilling operations.

A sign is posted at the entrance to the waste disposal site that provides hours of operation, permitted users, applicable Township waste management by-laws, and emergency contact numbers. The entrance of the site is equipped with a lockable gate controlling access to the site, and area aesthetics of the site are maintained given the vegetated state of the waste mound and the interim-closed status of the site.

The site access road extending from Sunrise Road has sufficient width at the entrance and within the site to allow for unimpeded winter travel and access for emergency and snow removal equipment (Figure 2). The site access road was observed to be in serviceable condition during the routine site inspections conducted by Greenview during site visits in 2008.

Hours of operation at the Round Lake site, are as follows:

Operational Hours (Year Round)	
Thursday	8:30 a.m. – 12:00 p.m.
Sunday	8:30 a.m. – 12:00 p.m.

Due to flooding in the vicinity of Round Lake in the spring of 2008, the Township of Killaloe-Hagarty-Richards was permitted by the MOE to use the Round Lake site for staging and stockpiling of waste materials generated from the emergency clean-up operations. On May 18 and June 29, 2008 the township opened the Round Lake site to receive disaster waste between the hours of 8:00 am and 4:00 pm. The waste received was permitted by the MOE to be shredded at the Round Lake site and transported to the Killaloe waste disposal site for use as alternative daily cover or disposal.

4.2.2 WASTE DISPOSAL / TRANSFER SUMMARY

The Round Lake waste disposal site is currently closed to active landfilling operations; however, the site is presently operating as a mobile waste transfer station, with all domestic waste transferred to the Township's Killaloe site for final disposal.

Based on Township records approximately 2,210 vehicles visited the Round Lake site in 2008, with approximately 4,081 bags of residential waste received during the period January to December 2008 for transfer to the Township's Killaloe site for disposal.

Additionally, based on Township records 35 bags of mixed glass (clear and coloured), 1,480 bags of containers (tin/aluminum/plastic), and 571 bags of fibres were received at the Round Lake site in 2008 and transferred to the Township's Killaloe site for pickup by Beaumen Waste Management/Recycling.

Recycling tonnage records provided by the Beaumen Waste Management and Township records indicate that a total of approximately 201.5 tonnes of recyclable material was received at the Killaloe waste disposal site in 2008. Recyclable quantities contributing to this total included approximately 42.4 tonnes of containers (tin/aluminum/plastic), 18.0 tonnes of mixed glass (clear and coloured), 77.0 tonnes of fibres, and 64.1 tonnes of old corrugated cardboard. Recycling tonnages noted above for the Killaloe waste disposal site include quantities of recycling received and transported from the Township's Round Lake and Red Rock sites in 2008.

4.2.3 SITE INSPECTIONS AND MAINTENANCE

Site inspections of the waste disposal area and property at the Round Lake site were conducted by Greenview as part of visits to the site on May 20, 2008 and October 9, 2008 during the spring and fall sampling events. The Township also conducted periodic inspections to verify the compliance status of the site.

The site inspections included a cursory investigation of housekeeping/litter control aspects, monitoring well maintenance requirements in accordance with O. Reg. 903 (Wells), and a general site overview for MOE regulations and protocol compliance contraventions. There were no compliance action items requiring immediate action on the part of the Township observed during the routine site inspections completed in 2008. A topographic survey was completed by Greenview at the Round Lake site in October 2008 to update topography and site features.

4.2.4 COMPLAINTS

There were no reported complaints received by the Township with respect to operations at the Round Lake waste disposal site in 2008.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the 2008 environmental monitoring program completed for the Round Lake waste disposal site, the following conclusions are provided:

- The direction of groundwater flow within the shallow overburden at the Round Lake site is to the north and northeast, in the direction of the Sherwood River northeast of the site, which is consistent with historical results (Greenview 2008, 2007). Average horizontal gradients in the vicinity of the waste mound and to the north and northeast of the waste mound were calculated in May 2008 to be 0.004 and 0.010 in magnitude, respectively. Upward vertical gradients were observed at monitoring wells BH-2S and BH-2D in May 2008 and October 2008 of 0.029 and 0.024, respectively. An upward vertical gradient of 0.103 was observed at monitoring wells BH01-13S and BH01-13D in May 2008; no vertical gradient was observed at monitoring wells BH01-13S and BH01-13D in October 2008, as BH01-13S was observed to be dry.

- Groundwater quality results from the monitoring wells immediately downgradient of the waste mound, and monitors to the northeast are slightly impacted from landfill-related activities, with monitoring wells BH-2S and BH-2D exhibiting decreased water quality from the other wells in close proximity to the waste mound. Parameter concentrations did not change significantly with the inclusion of the 2008 results, indicating that the position and orientation of the leachate plume is consistent with historical results.

- There were no volatile organic compound ODWS criteria exceedances during the 2008 groundwater monitoring program, as all reported concentrations were below respective laboratory method detection limits.

- As part of the May and October 2008 sampling events, drinking water samples were collected from residential groundwater sampling location, R-1, located to the east of the site on Sunrise Road. With the exception of alkalinity (low) in both spring and fall, there were no ODWS criteria exceedances at R-1 for the 2008 groundwater monitoring program.

- There were no RUC exceedances of the compliance evaluation parameters in 2008 using the 75% RUC criteria values, as specified in Schedule "C" of PC of A A412303, at downgradient monitors BH-8, BH95-9, BH01-13D, and BH01-14. Based on the results, the trigger mechanism described in Schedule "C" of the PC of A was not activated, and the Round Lake site is in conformance with Guideline B-7 in 2008.

- Based on Township records approximately 2,210 vehicles visited the Round Lake site in 2008, with approximately 4,081 bags of residential waste received during the period January to December 2008 for transfer to the Township's Killaloe site for disposal.

- Additionally, based on Township records 35 bags of mixed glass (clear and coloured), 1,480 bags of containers (tin/aluminum/plastic), and 571 bags of fibres were received at the Round Lake site in 2008 and transferred to the Township's Killaloe site for pickup by Beaumen Waste Management/Recycling. Recycling tonnage records provided by the Beaumen Waste Management and Township records indicate that a total of approximately 201.5 tonnes of recyclable material was received at the Killaloe waste disposal site in 2008. Recyclable quantities contributing to this total included approximately 42.4 tonnes of containers (tin/aluminum/plastic), 18.0 tonnes of mixed glass (clear and coloured), 77.0 tonnes of fibres, and 64.1 tonnes of old corrugated cardboard. Recycling tonnages noted above for the Killaloe waste disposal site include quantities of recycling received and transported from the Township's Round Lake and Red Rock sites in 2008.

- Based on the results of the 2008 environmental monitoring program, the Round Lake site is in compliance with the terms and conditions of the PC of A (A412303) as amended on April 8, 2003.

The following recommendations are provided to the Township for consideration as part of the 2009 work program for the Round Lake waste disposal site:

- The 2009 groundwater monitoring program for the site should continue as in 2008 with two (2) annual sample events, in the spring and fall, for the parameter suite provided in Table 1. Groundwater elevations should continue to be recorded during each sampling event, at least twice annually.

6.0 CLOSING

Greenview has prepared this *2008 Annual Report* in accordance with Condition 21 of the PC of A A412303 and MOE guidelines to document the results of the 2008 environmental monitoring program for the Round Lake waste disposal site, for review by the MOE.

This report is governed by the attached statement of service conditions and limitations (Appendix F).

All respectfully submitted by,

GREENVIEW ENVIRONMENTAL MANAGEMENT LIMITED

Dan Hagan, B.Sc.
Project Technologist

Tyler H. Peters, P.Eng.
Project Manager

LICENSED PROFESSIONAL ENGINEER
T.H. PETERS
100035722
Mar 20/09
PROVINCE OF ONTARIO

Reviewed by:

Mar. 25/09

Robert M. Focht, M.Sc., P.Eng., P.Geo.
SAIC Canada

LICENSED PROFESSIONAL ENGINEER
R.M. FOCHT
PROVINCE OF ONTARIO

G:\PROJECTS\2008 PROJECTS\107.08 Killaloe, Hagarty and Richards\003 Round Lake WDS\COR\2008 AMR - FINAL\2008 AMR RL-FINAL-March_20_2008.doc

7.0 REFERENCES

County of Renfrew, 2007. "County of Renfrew WebGIS". http://www.renfrewcountygeosmart.ca. February 22, 2007.

Golder Associates Limited and Jp2g Consultants Inc., 2004. Round Lake Landfill Site, 2003 Annual Report. March 2004.

Greenview Environmental Management Limited, 2007. *2006 Annual Report, Round Lake Waste Disposal Site (A412303).* March 27, 2007.

Greenview Environmental Management Limited, 2008. *2007 Annual Report, Round Lake Waste Disposal Site (A412303).* March 26, 2008.

Ontario Ministry of the Environment, 1994. *MOE Procedure B-7-1: Determination of Contaminant Limits and Attenuation Zones.* 1994.

Ontario Ministry of the Environment, 2003. *Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines*. June, 2003.

The Greer Galloway Group, 1998. *Design and Operations Report for the Round Lake Landfill Site.* September 1998.

TABLES

Greenview
ENVIRONMENTAL MANAGEMENT

Table 1
2008 Groundwater Monitoring Program
Round Lake Waste Disposal Site

Location	Frequency	Parameters
<u>*Groundwater*</u> ***Background and Surveillance*** BH-1, BH-2S, BH-2D, BH-5, BH-8, BH95-9, BH01-12D, BH01-13S, BH01-13D, BH01-14 R1 1 QA/QC	Twice (Spring and Fall) Field Measurements (pH, Conductivity, Temperature)	Alkalinity, aluminum, ammonia, barium, boron, calcium, chloride, chromium, cobalt, COD, copper, DOC, hardness, iron, magnesium, manganese, nitrate, nitrite, potassium, silicon, sodium, strontium, sulphate, TDS, TKN, total phosphorus, zinc
Routine BH-6, BH95-10, BH01-15 1 QA/QC	Once (Fall) Field Measurements (pH, Conductivity, Temperature)	Alkalinity, barium, boron, chloride, chromium, DOC, hardness, iron, manganese, nitrate, nitrite, sodium, sulphate, TDS
BH-1, BH-2S, BH-2D, BH-5, BH95-9, BH01-14 Trip Blank Field Blank 1 QA/QC	Once (Fall)	EPA 624 VOC's

Greenview
ENVIRONMENTAL MANAGEMENT

Table 2
Groundwater Elevations
Round Lake Waste Disposal Site

Monitor	Original Ground Elevations* (m)	Top Of Pipe Elevations* (m)	Revised Top of Pipe Elevations** (m)	Groundwater Elevations (m)							
				11-May-05	25-Oct-05	8-May-06	12-Oct-06	30-Apr-07	15-Oct-07	20-May-08	9-Oct-08
BH-1	98.05	98.52	98.70	97.33	96.30	97.49	97.11	97.51	96.83	97.58	96.87
BH-2S	99.25	99.44	100.08	96.66	95.62	97.15	96.77	97.23	96.55	97.34	96.57
BH-2D	99.25	99.85	99.85	97.35	96.30	97.20	96.82	97.28	96.61	97.40	96.62
BH3	100.24	100.69	100.69	97.30	96.25	97.17	96.78	97.24	96.55	97.35	96.56
BH4	98.39	98.52	98.52	97.47	-	97.31	96.91	97.42	96.69	97.53	96.70
BH-5	97.95	98.42	98.42	97.41	96.31	97.26	96.89	97.37	96.61	97.48	96.64
BH6	99.09	99.79	99.79	97.31	95.66	97.18	96.80	97.27	96.57	97.39	96.58
BH7	100.48	100.89	100.89	97.32	96.27	97.18	96.81	97.26	96.58	97.37	96.59
BH-8	97.84	98.43	98.43	96.47	95.49	96.31	95.85	96.35	95.70	96.53	95.71
BH95-9	97.31	97.75	97.75	95.63	94.79	95.49	95.11	95.57	94.99	95.75	95.02
BH95-10	96.42	96.88	96.88	93.44	92.12	93.19	92.59	93.07	92.51	93.81	92.54
BH95-11	99.70	100.10	100.10	97.83	96.80	97.75	97.71	97.88	97.44	97.84	97.60
BH01-12D	98.76	99.45	99.19	97.28	96.18	96.88	96.52	97.00	96.29	97.10	96.30
BH01-13S	97.15	97.85	97.85	95.68	-	95.54	-	95.62	-	95.81	-
BH01-13D	97.15	97.92	97.92	95.85	94.98	95.73	95.30	95.73	95.17	95.99	95.20
BH01-14	97.17	97.61	97.61	95.83	94.91	95.70	95.27	95.78	95.13	95.96	95.16
BH01-15	101.79	102.55	102.55	97.34	-	97.21	96.81	97.28	96.60	97.39	96.60

Note:
* Values as surveyed in 2003, by Jp2g Consultants Inc.
** Corrected values based on above-ground PVC casing measurements in 2006.
All elevations are meters above sea level (masl), relative to a site specific benchmark elevation of 100.00 m.
"-" denotes no water level information available.

Greenview
ENVIRONMENTAL MANAGEMENT

Table 3
Groundwater Quality
Round Lake Waste Disposal Site

Parameter	RUC [1]	ODWS [2]	BH-1										BH-2S							
			12-May-04	19-Oct-04	11-May-05	25-Oct-05	08-May-06	12-Oct-06	30-Apr-07	15-Oct-07	20-May-08	09-Oct-08	12-May-04	11-May-05	08-May-06	12-Oct-06	30-Apr-07	15-Oct-07	20-May-08	09-Oct-08
Alkalinity (as $CaCO_3$)	258	30 - 500	11	21	5	8	9	23	12	11	13	12	163	173	181	169	124	150	169	121
Aluminum	0.2	0.1	0.177	0.30	0.232	0.314	0.290	0.190	0.251	0.207	0.399	0.354	0.016	0.010	< 0.01	< 0.01	0.012	0.008	0.009	0.018
Ammonia, Total (as N)	N/L	N/L	< 0.1	< 0.1	0.2	< 0.1	< 0.04	0.2	0.2	0.1	0.7	< 0.1	4.6	4.3	3.5	4.6	2.5	3.3	3.0	3.2
Arsenic	0.006	0.025	---	---	---	---	---	---	---	0.0003	---	---	---	---	---	---	---	0.0007	---	---
Barium	0.3	1.0	0.016	0.015	0.012	0.015	0.016	0.014	0.012	0.012	0.012	0.011	0.151	0.152	0.156	0.117	0.118	0.103	0.123	0.096
Boron	1.3	5.0	< 0.05	< 0.01	< 0.01	< 0.01	< 0.002	0.015	0.003	0.002	0.003	0.002	0.110	0.110	0.145	0.130	0.094	0.096	0.112	0.084
Cadmium	0.001	0.005	---	---	---	---	---	---	---	0.0004	---	---	---	---	---	---	---	0.0001	---	---
Calcium	N/L	N/L	5.65	5.08	4.35	5.83	5.25	3.99	5.38	3.23	5.25	3.68	39.4	45.4	49.4	42.3	33.2	31.6	36.3	30.6
Chloride	126.0	250	1.5	1.9	1.6	1.8	1.7	1.5	1.9	2.1	2.1	1.6	15	13	8.9	6.8	4.0	5.4	4.7	3.8
Chromium	0.01	0.05	< 0.001	< 0.02	0.001	< 0.001	< 0.003	< 0.001	0.001	0.001	0.002	0.001	0.003	0.004	< 0.003	< 0.001	0.0006	0.003	0.001	0.001
Chemical Oxygen Demand	N/L	N/L	24	26	23	21	26	15	39	27	35	33	14	18	17	32	12	32	18	31
Cobalt	N/L	N/L	0.0048	< 0.01	0.0036	0.0029	< 0.003	< 0.003	0.004	0.004	0.003	0.007	0.0029	0.0018	< 0.003	< 0.003	0.003	0.003	0.008	0.019
Conductivity (µS/cm) [3]	N/L	N/L	48	43	48	84	49	31	28	41	37	35	300	306	340	284	231	228	231	235
Copper	0.5	1	< 0.005	< 0.005	< 0.005	< 0.005	0.008	0.003	0.006	0.010	0.008	0.005	< 0.005	< 0.005	0.007	0.004	0.005	0.007	0.005	0.003
Dissolved Organic Carbon	7.6	5	8.3	10.9	7.6	10.3	8.6	7.1	8.2	9.7	13.2	11.3	5.7	4.8	6.3	5.9	5.0	5.0	4.1	3.8
Hardness (as $CaCO_3$)	262	500	23.7	22	18.1	22.9	20.5	15.7	21.1	13.7	21.3	14.8	137	160	170	146	112	112	123	106
Iron	0.5	0.3	0.83	0.52	0.46	0.72	0.53	0.44	0.36	0.44	0.52	0.57	1.81	0.19	0.61	1.06	0.72	0.71	1.03	1.98
Lead	0.003	0.01	---	---	---	---	---	---	---	0.0003	---	---	---	---	---	---	---	0.0002	---	---
Magnesium	N/L	N/L	2.33	2.26	1.77	2.02	1.80	1.38	1.85	1.36	1.99	1.38	9.39	11.4	11.3	9.76	7.00	7.96	7.92	7.28
Manganese	0.06	0.05	0.057	0.052	0.034	0.05	0.031	0.026	0.024	0.024	0.024	0.031	5.41	1.26	1.06	2.32	2.71	2.48	2.71	2.37
Mercury	0.0003	0.001	---	---	---	---	---	---	---	< 0.0001	---	---	---	---	---	---	---	< 0.0001	---	---
Nitrite (as N)	0.3	1	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate (as N)	2.5	10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.29	0.38	0.58	0.35	0.17	1.73	0.28	0.72
pH (units) [3]	6.5 - 8.5	6.5 - 8.5	6.1	6.15	6.4	5.88	6.21	6.38	6.43	6.66	6.53	6.71	6.8	6.7	6.29	6.29	6.46	6.62	6.50	6.45
Phosphorus, Total	N/L	N/L	0.48	0.08	< 0.02	< 0.02	0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01	0.06	0.02	< 0.01	0.03	0.03	< 0.01	0.02	< 0.01
Potassium	N/L	N/L	0.62	0.64	0.52	1.13	0.94	0.84	0.77	0.86	1.00	0.52	16.9	17.6	19.8	18.1	13.9	14.0	12.6	14.1
Silicon	N/L	N/L	7.16	7.03	7.88	8.78	7.21	7.70	7.00	8.82	8.31	8.50	11.20	9.49	10.00	12.80	10.60	13.60	8.51	12.40
Sodium	101.9	200	2.51	2.56	3.79	4.47	5.67	4.02	4.08	3.90	3.84	2.08	8.46	12.9	12.80	12.70	10.1	10.9	8.51	9.04
Strontium	N/L	N/L	0.032	0.032	0.024	0.034	0.03	0.02	0.03	0.02	0.03	0.02	0.27	0.27	0.30	0.27	0.21	0.22	0.22	0.20
Sulphate	255	500	15.0	8.8	16.0	14.0	16.0	10.0	7.9	7.8	11.0	9.2	20	18	19	18	16	15	18	12
Total Kjeldahl Nitrogen	N/L	N/L	< 0.5	< 0.5	< 0.5	< 0.5	0.27	0.25	< 0.5	< 0.5	1.7	< 0.5	4.70	4.40	3.75	4.33	3.40	3.50	3.30	3.40
Total Dissolved Solids	285	500	69	97	91	91	111	83	63	100	103	69	214	269	*289*	271	177	266	240	169
Zinc	2.5	5	0.01	< 0.01	0.005	0.01	< 0.01	0.01	0.01	0.03	0.02	0.004	0.01	0.003	< 0.01	0.01	0.01	0.02	0.01	0.004

Notes:
1. Reasonable Use Concept (RUC) criteria.
2. Ontario Drinking Water Standards (ODWS).
3. Results obtained from field analysis, as of May 11, 2005.

All results expressed in mg/L unless otherwise noted.
Bold and shaded values exceed the ODWS.
Bold and Italic values exceed RUC limits.
N/L indicates no limit specified.
"---" means parameter not analyzed.

Greenview
ENVIRONMENTAL MANAGEMENT

Table 3
Groundwater Quality
Round Lake Waste Disposal Site

Parameter	RUC [1]	ODWS [2]	BH-2D										BH-5							
			12-May-04	19-Oct-04	11-May-05	25-Oct-05	08-May-06	12-Oct-06	30-Apr-07	15-Oct-07	20-May-08	09-Oct-08	12-May-04	11-May-05	08-May-06	12-Oct-06	30-Apr-07	15-Oct-07	20-May-08	09-Oct-08
Alkalinity (as $CaCO_3$)	258	30 - 500	221	215	240	169	205	159	171	154	190	148	26	15	15	30	27	49	29	46
Aluminum	0.2	0.1	0.020	0.010	0.018	0.023	0.010	0.020	0.025	0.021	0.022	0.091	0.022	0.015	0.020	0.020	0.011	0.027	0.177	0.309
Ammonia, Total (as N)	N/L	N/L	4.0	4.0	4.1	3.1	2.9	2.9	2.1	2.0	2.5	2.4	< 0.1	0.1	0.1	0.6	< 0.1	0.2	0.2	0.3
Arsenic	0.006	0.025	---	---	---	---	---	---	---	0.001	---	---	---	---	---	---	---	< 0.0002	---	---
Barium	0.3	1.0	0.217	0.236	0.226	0.184	0.205	0.153	0.153	0.145	0.157	0.111	0.025	0.020	0.027	0.032	0.032	0.031	0.034	0.042
Boron	1.3	5.0	0.1	0.1	0.09	0.12	0.10	0.12	0.07	0.07	0.10	0.07	< 0.05	< 0.01	0.004	0.010	0.006	0.006	0.014	0.007
Cadmium	0.001	0.005	---	---	---	---	---	---	---	0.000005	---	---	---	---	---	---	---	0.0001	---	---
Calcium	N/L	N/L	52.5	55.3	59.1	39.9	48.1	37.9	39.7	36.1	41.1	29.6	5.8	5.1	7.2	10.1	8.8	15.5	21.4	12.3
Chloride	126.0	250	21	20	19.0	11.0	12.0	9.8	10.0	7.7	8.9	6.3	2.4	3.1	3.9	8.5	8.3	4.5	2.2	3.9
Chromium	0.01	0.05	0.004	< 0.02	0.007	0.004	< 0.003	0.001	0.002	0.004	0.003	0.003	< 0.001	< 0.001	< 0.003	< 0.001	< 0.0003	< 0.0005	0.0006	0.0009
Chemical Oxygen Demand	N/L	N/L	35	36	22	40	42	42	38	32	38	44	11	< 8	< 8	< 8	< 8	< 8	16	9
Cobalt	N/L	N/L	0.0019	0.02	0.003	0.002	< 0.003	< 0.003	0.002	0.002	0.004	0.005	< 0.0003	< 0.0003	< 0.003	< 0.003	< 0.000007	0.0003	0.0001	0.017
Conductivity (µS/cm) [3]	N/L	N/L	423	305	412	384	361	313	335	323	387	271	52	42	61	73	52	50	50	84
Copper	0.5	1	< 0.005	< 0.005	< 0.005	< 0.005	0.001	< 0.001	0.001	0.003	0.002	0.002	< 0.005	< 0.005	0.001	< 0.001	0.002	0.004	0.003	0.002
Dissolved Organic Carbon	7.6	5	6.7	6.3	6.7	6.2	7.5	7.0	7.5	5.7	5.2	4.6	< 1	< 1	2.2	0.6	< 1	< 1	< 1	< 1
Hardness (as $CaCO_3$)	262	500	189	190	212	139	168	132	137	125	143	103	23.9	21.7	28.9	43.1	36.6	66.6	64.2	51.0
Iron	0.5	0.3	37	34.6	41.0	27.0	33.6	28.0	30.1	29.4	32.3	26.4	0.20	0.08	0.06	0.11	0.05	0.21	0.19	1.51
Lead	0.003	0.01	---	---	---	---	---	---	---	0.0001	---	---	---	---	---	---	---	0.0001	---	---
Magnesium	N/L	N/L	14	12.6	15.6	9.62	11.6	9.00	9.27	8.58	9.72	7.07	2.31	2.16	2.67	4.33	3.55	6.81	2.65	4.93
Manganese	0.06	0.05	5.58	5.01	6.1	4.11	5.10	3.70	3.40	3.31	4.09	2.47	0.09	0.01	0.03	0.61	0.19	3.46	0.08	2.88
Mercury	0.0003	0.001	---	---	---	---	---	---	---	< 0.0001	---	---	---	---	---	---	---	< 0.0001	---	---
Nitrite (as N)	0.3	1	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate (as N)	2.5	10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	< 0.05	0.08	< 0.05	0.05	< 0.05	0.08
pH (units) [3]	6.5 - 8.5	6.5 - 8.5	6.8	6.42	7.10	6.50	6.22	6.18	6.71	6.75	6.59	6.62	8.00	6.90	6.29	6.79	6.40	6.55	6.92	6.63
Phosphorus, Total	N/L	N/L	1.29	2.15	0.03	< 0.02	< 0.01	0.02	0.03	0.01	0.03	0.02	1.82	< 0.02	< 0.01	0.02	< 0.01	0.01	0.09	0.03
Potassium	N/L	N/L	18.5	16.8	18.4	15.3	16.2	13.9	13.3	13.5	12.7	11.3	1.33	1.32	1.96	2.51	1.86	4.17	2.06	2.94
Silicon	N/L	N/L	15.20	12.60	18.4	15.9	16.2	14.3	14.6	15.5	15.3	15.5	4.83	4.71	4.55	6.31	5.06	7.47	4.84	6.81
Sodium	101.9	200	8.71	9.03	14.1	10.9	12.7	12.5	14.2	15.7	13.3	12.1	3.04	2.73	3.89	4.37	4.73	5.14	4.23	3.42
Strontium	N/L	N/L	0.439	0.409	0.416	0.313	0.365	0.279	0.294	0.265	0.291	0.211	0.037	0.029	0.045	0.064	0.059	0.090	0.062	0.078
Sulphate	255	500	5.0	5.0	1.7	3.5	2.3	5.8	8.0	11.0	9.0	7.4	9.0	8.5	10.0	11.0	8.6	12.0	8.9	11.0
Total Kjeldahl Nitrogen	N/L	N/L	4.2	3.8	4.0	3.7	3.0	2.8	2.9	2.1	2.5	2.7	< 0.5	< 0.5	0.09	7.6	< 0.5	< 0.5	1.1	< 0.5
Total Dissolved Solids	285	500	260	277	***334***	251	***306***	234	246	263	251	220	77	109	123	94	131	143	126	91
Zinc	2.5	5	0.01	< 0.01	0.002	0.01	< 0.01	< 0.01	0.01	0.02	0.01	0.004	0.01	0.004	< 0.01	< 0.01	0.01	0.02	0.02	0.01

Notes:
1. Reasonable Use Concept (RUC) criteria.
2. Ontario Drinking Water Standards (ODWS).
3. Results obtained from field analysis, as of May 11, 2005.

All results expressed in mg/L unless otherwise noted.
Bold and shaded values exceed the ODWS.
Bold and italic values exceed RUC limits.
N/L indicates no limit specified.
"---" means parameter not analyzed.

Greenview
ENVIRONMENTAL MANAGEMENT

Table 3
Groundwater Quality
Round Lake Waste Disposal Site

Parameter	RUC [1]	ODWS [2]	BH-6					BH-8									
			19-Oct-04	25-Oct-05	12-Oct-06	15-Oct-07	09-Oct-08	12-May-04	19-Oct-04	11-May-05	25-Oct-05	08-May-06	12-Oct-06	30-Apr-07	15-Oct-07	20-May-08	09-Oct-08
Alkalinity (as $CaCO_3$)	258	30 - 500	23	26	31	28	28	260	249	250	253	249	227	183	187	199	208
Aluminum	0.2	0.1	---	---	---	---	---	0.018	< 0.01	0.017	0.021	< 0.01	< 0.01	0.019	0.018	0.029	0.035
Ammonia, Total (as N)	N/L	N/L	---	---	---	---	---	1.5	1.5	2.5	2.7	2.9	4.2	3.0	3.2	4.4	3.5
Arsenic	0.006	0.025	---	---	---	0.0002	---	---	---	---	---	---	---	---	0.0002	---	---
Barium	0.3	1.0	0.01	0.009	0.007	0.007	0.008	0.168	0.178	0.167	0.198	0.212	0.215	0.175	0.185	0.179	0.185
Boron	1.3	5.0	0.01	< 0.01	0.012	0.013	0.012	0.12	0.13	0.09	0.16	0.11	0.16	0.09	0.09	0.10	0.08
Cadmium	0.001	0.005	---	---	---	0.00001	---	---	---	---	---	---	---	---	0.00002	---	---
Calcium	N/L	N/L	---	---	6.18	---	---	61.3	68.6	61.9	58.4	56.4	53.5	44.9	42.2	40.5	43.3
Chloride	126.0	250	0.7	0.7	0.6	0.4	0.4	17.0	20.0	17.0	17.0	13.0	12.0	9.7	9.8	8.0	9.4
Chromium	0.01	0.05	< 0.02	< 0.001	< 0.001	0.0005	< 0.0005	0.005	< 0.02	0.006	0.004	< 0.003	0.002	0.003	0.005	0.003	0.003
Chemical Oxygen Demand	N/L	N/L	---	---	< 8	---	---	38	33	42	36	40	45	20	29	27	30
Cobalt	N/L	N/L	---	---	---	---	---	0.006	0.02	0.005	0.005	< 0.003	< 0.003	0.004	0.004	0.004	0.012
Conductivity (µS/cm) [3]	N/L	N/L	57	74	43	45	38	430	339	431	568	423	383	322	347	340	366
Copper	0.5	1	---	---	---	---	---	< 0.005	< 0.005	< 0.005	< 0.005	0.003	< 0.001	0.002	0.004	0.003	0.002
Dissolved Organic Carbon	7.6	5	< 1	< 1	0.6	< 1	< 1	7.4	6.5	6.4	6.7	8.4	6.2	4.8	5.7	4.6	10.2
Hardness (as $CaCO_3$)	262	500	29.2	28.4	24.3	25.1	18.3	229	246	230	211	203	190	161	152	144	153
Iron	0.5	0.3	0.03	< 0.02	< 0.01	0.02	0.09	31.3	28.7	29.5	27.3	28.6	26.9	23.5	22.5	21.6	24.1
Lead	0.003	0.01	---	---	---	0.0001	---	---	---	---	---	---	---	---	0.0001	---	---
Magnesium	N/L	N/L	2.77	---	2.15	---	---	18.4	18.0	18.4	15.9	15.2	13.7	11.8	11.2	10.5	11.0
Manganese	0.06	0.05	---	< 0.002	0.005	0.003	0.042	6.48	6.74	7.04	7.46	7.40	6.85	4.87	4.96	5.10	5.23
Mercury	0.0003	0.001	---	---	---	< 0.0001		---	---	---	---	---	---	---	< 0.0001	---	---
Nitrite (as N)	0.3	1	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate (as N)	2.5	10	1.43	1.22	0.96	0.91	0.51	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07
pH (units) [3]	6.5 - 8.5	6.5 - 8.5	6.49	6.06	6.77	6.68	6.55	7.2	6.46	7.10	6.55	6.34	6.38	6.54	6.52	6.45	6.57
Phosphorus, Total	N/L	N/L	---	---	---	---	---	0.1	0.31	< 0.02	< 0.02	< 0.01	0.02	< 0.01	< 0.01	0.02	0.01
Potassium	N/L	N/L	---	---	---	---	---	13	12.5	15.3	16.9	17.7	19.6	17.1	19.5	17.7	19.1
Silicon	N/L	N/L	---	---	---	---	---	14.9	13.5	16.0	16.2	15.0	15.9	14.8	17.2	14.8	16.5
Sodium	101.9	200	3.06	5.05	4.83	5.11	2.98	12.6	10.7	14.5	13.0	13.5	13.9	12.5	13.3	12.5	12.6
Strontium	N/L	N/L	---	---	---	---	---	0.425	0.420	0.387	0.449	0.416	0.388	0.331	0.319	0.299	0.325
Sulphate	255	500	9.3	10	12	9.5	7.1	7.3	5.9	8.3	5.1	8.6	7.0	14.0	9.9	11	10
Total Kjeldahl Nitrogen	N/L	N/L	---	---	---	---	---	2.0	1.9	3.0	2.6	3.0	6.4	3.0	3.3	4.8	3.6
Total Dissolved Solids	285	500	66	91	97	94	69	***303***	***334***	***354***	***323***	***351***	***323***	269	***286***	271	266
Zinc	2.5	5	---	---	---	---	---	0.004	< 0.01	0.005	0.01	0.03	< 0.01	0.01	0.02	0.01	0.003

Notes:
1. Reasonable Use Concept (RUC) criteria.
2. Ontario Drinking Water Standards (ODWS).
3. Results obtained from field analysis, as of May 11, 2005.

All results expressed in mg/L unless otherwise noted.
Bold and shaded values exceed the ODWS.
Bold and italic values exceed RUC limits.
N/L indicates no limit specified.
"---" means parameter not analyzed.

Greenview
ENVIRONMENTAL MANAGEMENT

Table 3
Groundwater Quality
Round Lake Waste Disposal Site

Parameter	RUC [1]	ODWS [2]	BH95-9										BH95-10				
			12-May-04	19-Oct-04	11-May-05	25-Oct-05	08-May-06	12-Oct-06	30-Apr-07	15-Oct-07	20-May-08	09-Oct-08	19-Oct-04	25-Oct-05	12-Oct-06	15-Oct-07	09-Oct-08
Alkalinity (as $CaCO_3$)	258	30 - 500	89	100	90	118	83	103	89	101	83	89	48	46	50	41	34
Aluminum	0.2	0.1	0.005	< 0.01	< 0.004	< 0.004	< 0.01	< 0.01	0.003	0.003	0.213	0.009	---	---	---	---	---
Ammonia, Total (as N)	N/L	N/L	< 0.1	< 0.1	0.2	0.2	0.1	0.2	0.1	< 0.1	0.3	0.1	---	---	---	---	---
Arsenic	0.006	0.025	---	---	---	---	---	---	---	0.0002	---	---	---	---	---	0.0002	---
Barium	0.3	1.0	0.041	0.048	0.038	0.056	0.043	0.054	0.041	0.047	0.043	0.043	0.014	0.015	0.019	0.016	0.014
Boron	1.3	5.0	0.07	0.08	0.06	0.07	0.05	0.08	0.06	0.07	0.07	0.05	0.04	0.03	0.04	0.03	0.02
Cadmium	0.001	0.005	---	---	---	---	---	---	---	0.00003	---	---	---	---	---	0.00001	---
Calcium	N/L	N/L	24	25.1	23.2	28.7	23.1	28.1	24.8	26.6	42.2	23.9	---	---	17.4	---	---
Chloride	126.0	250	5.7	7	7.8	11	10	9.4	13	11	12	10	5.4	7.5	11	10	8
Chromium	0.01	0.05	0.002	< 0.02	0.002	< 0.001	< 0.003	< 0.001	< 0.0003	0.001	0.001	0.001	< 0.02	< 0.001	< 0.001	< 0.0005	< 0.0005
Chemical Oxygen Demand	N/L	N/L	< 8	< 8	10	< 8	8	< 8	< 8	< 8	12	< 8	---	---	< 8	---	---
Cobalt	N/L	N/L	0.001	< 0.01	0.001	0.002	< 0.003	< 0.003	0.001	0.001	0.001	0.010	---	---	---	---	---
Conductivity (µS/cm) [3]	N/L	N/L	175	150	178	311	202	204	183	204	181	188	93	165	125	109	94
Copper	0.5	1	< 0.005	< 0.005	< 0.005	< 0.005	0.003	< 0.001	0.001	0.004	0.002	0.001	---	---	---	---	---
Dissolved Organic Carbon	7.6	5	1.5	1.5	1.8	2.0	3.5	2.2	2.0	1.9	1.4	1.0	1	< 1	0.7	1.1	< 1
Hardness (as $CaCO_3$)	262	500	109	109	108	131	104	126	112	120	153	109	59.6	57.0	72.9	58.8	48.7
Iron	0.5	0.3	10.5	9.59	9.98	11.90	9.77	10.90	8.34	7.78	6.84	6.87	< 0.02	< 0.02	< 0.01	< 0.01	0.05
Lead	0.003	0.01	---	---	---	---	---	---	---	0.00005	---	---	---	---	---	0.0002	---
Magnesium	N/L	N/L	11.9	11.3	12.3	14.4	11.2	13.7	12.2	13.1	11.6	11.9	5.68	---	7.19	---	---
Manganese	0.06	0.05	0.28	0.28	0.29	0.34	0.26	0.31	0.21	0.20	0.19	0.23	---	< 0.002	< 0.001	0.0006	0.027
Mercury	0.0003	0.001	---	---	---	---	---	---	---	< 0.0001	---	---	---	---	---	< 0.0001	---
Nitrite (as N)	0.3	1	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate (as N)	2.5	10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.11	0.84	0.80	1.06	0.81	***2.79***
pH (units) [3]	6.5 - 8.5	6.5 - 8.5	6.9	6.49	6.9	6.5	6.69	6.82	7.11	6.71	6.58	6.61	6.71	6.72	6.33	6.96	7.26
Phosphorus, Total	N/L	N/L	0.08	0.29	< 0.02	< 0.02	< 0.01	0.01	< 0.01	< 0.01	0.07	0.01	---	---	---	---	---
Potassium	N/L	N/L	2.47	2.46	2.26	3.42	2.93	3.25	2.83	3.03	2.82	2.53	---	---	---	---	---
Silicon	N/L	N/L	8.12	6.93	9.37	9.57	9.28	9.36	8.61	9.55	8.90	9.15	---	---	---	---	---
Sodium	101.9	200	6.13	8.42	6.96	9.82	7.77	9.10	8.39	8.99	7.10	5.94	4.39	6.40	7.21	6.05	4.17
Strontium	N/L	N/L	0.129	0.133	0.113	0.157	0.123	0.150	0.136	0.142	0.137	0.132	---	---	---	---	---
Sulphate	255	500	16	18	17	21	16	19	15	20	19	16	12	12	14	11	10
Total Kjeldahl Nitrogen	N/L	N/L	< 0.5	< 0.5	< 0.5	0.7	0.2	0.6	< 0.5	< 0.5	2.8	< 0.5	---	---	---	---	---
Total Dissolved Solids	285	500	114	166	626	177	169	180	154	206	154	149	100	91	126	120	89
Zinc	2.5	5	0.01	< 0.01	0.003	0.01	< 0.01	< 0.01	0.01	0.02	0.01	0.003	---	---	---	---	---

Notes:
1. Reasonable Use Concept (RUC) criteria.
2. Ontario Drinking Water Standards (ODWS).
3. Results obtained from field analysis, as of May 11, 2005.

All results expressed in mg/L unless otherwise noted.
Bold and shaded values exceed the ODWS.
Bold and Italic values exceed RUC limits.
N/L indicates no limit specified.
"—" means parameter not analyzed.

Greenview
ENVIRONMENTAL MANAGEMENT

Table 3
Groundwater Quality
Round Lake Waste Disposal Site

Parameter	RUC [1]	ODWS [2]	BH01-12D										BH01-13S				
			12-May-04	19-Oct-04	11-May-05	25-Oct-05	08-May-06	12-Oct-06	30-Apr-07	15-Oct-07	20-May-08	09-Oct-08	12-May-04	11-May-05	08-May-06	30-Apr-07	20-May-08
Alkalinity (as $CaCO_3$)	258	30 - 500	17	29	10	8	12	14	16	17	15	26	71	34	43	78	45
Aluminum	0.2	0.1	0.060	0.050	0.042	0.036	0.050	0.060	0.065	0.064	0.180	0.099	0.007	0.017	0.020	0.007	0.025
Ammonia, Total (as N)	N/L	N/L	0.1	< 0.1	< 0.1	< 0.1	0.2	0.6	0.1	0.1	0.3	< 0.1	< 0.1	0.3	0.1	< 0.1	0.6
Arsenic	0.006	0.025	---	---	---	---	---	---	---	0.0006	---	---	---	---	---	---	---
Barium	0.3	1.0	0.013	0.012	0.011	0.013	0.014	0.015	0.014	0.015	0.025	0.016	0.018	0.011	0.017	0.028	0.016
Boron	1.3	5.0	< 0.05	0.01	< 0.01	0.01	0.004	0.016	0.007	0.004	0.018	0.006	< 0.05	< 0.01	0.018	0.039	0.018
Cadmium	0.001	0.005	---	---	---	---	---	---	---	0.00001	---	---	---	---	---	---	---
Calcium	N/L	N/L	4.17	3.17	3.91	5.20	5.10	5.01	5.85	5.20	14.20	5.11	14.00	6.70	9.64	16.8	9.28
Chloride	126.0	250	1.4	1.5	2.4	1.5	1.2	1.1	2.1	1.3	1.5	2.2	1.8	2.4	2.6	1.6	1.0
Chromium	0.01	0.05	0.002	< 0.02	0.002	0.001	< 0.003	0.001	0.002	0.002	0.002	0.002	0.001	< 0.001	< 0.003	< 0.0003	< 0.0005
Chemical Oxygen Demand	N/L	N/L	31	10	16	< 8	19	19	22	20	30	24	< 8	< 8	< 8	9	< 8
Cobalt	N/L	N/L	0.002	< 0.01	0.002	0.001	< 0.003	< 0.003	0.002	0.002	0.002	0.003	< 0.0003	< 0.0003	< 0.003	0.00003	0.0001
Conductivity (µS/cm) [3]	N/L	N/L	56	32	46	67	52	50	54	58	53	63	104	68	104	120	64
Copper	0.5	1	< 0.005	< 0.005	< 0.005	< 0.005	0.003	< 0.001	0.003	0.005	0.005	0.002	< 0.005	< 0.005	0.006	0.002	0.002
Dissolved Organic Carbon	7.6	5	5.5	2.1	2.2	2.2	5.2	4.3	6.3	5.9	6.5	5.1	1.1	1.4	2.7	1.3	< 1
Hardness (as $CaCO_3$)	262	500	17.5	13.7	16.6	19.4	21.0	21.0	24.7	22.6	45.8	21.8	59.1	28.4	39.4	69.1	37.6
Iron	0.5	0.3	8.39	6.78	6.86	6.83	7.71	8.21	9.67	9.62	9.97	9.57	0.24	0.2	0.27	0.08	0.10
Lead	0.003	0.01	---	---	---	---	---	---	---	0.0001	---	---	---	---	---	---	---
Magnesium	N/L	N/L	1.71	1.40	1.65	1.56	2.00	2.07	2.45	2.34	2.48	2.20	5.9	2.84	3.72	6.61	3.51
Manganese	0.06	0.05	0.08	0.05	0.07	0.05	0.07	0.06	0.07	0.07	0.11	0.09	0.02	0.004	0.005	0.005	0.002
Mercury	0.0003	0.001	---	---	---	---	---	---	---	< 0.0001	---	---	---	---	---	---	---
Nitrite (as N)	0.3	1	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate (as N)	2.5	10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.65	0.56	1.48	1.65	0.88	0.27
pH (units) [3]	6.5 - 8.5	6.5 - 8.5	7.0	6.66	6.30	6.65	6.07	6.46	6.29	6.61	6.33	6.58	7.30	7.40	6.69	6.84	6.75
Phosphorus, Total	N/L	N/L	1.87	1.19	< 0.02	< 0.02	0.03	0.01	< 0.01	0.02	0.07	0.02	0.68	< 0.02	0.01	< 0.01	0.01
Potassium	N/L	N/L	1.16	1.09	1.19	1.81	1.63	1.69	1.64	1.69	1.62	1.44	1.78	1.45	2.25	2.73	2.52
Silicon	N/L	N/L	7.91	6.29	8.42	8.32	8.19	8.72	8.57	9.53	8.74	9.35	3.95	4.23	4.29	4.85	4.58
Sodium	101.9	200	2.10	2.14	2.48	4.27	3.83	4.09	4.02	3.90	3.82	2.46	9.20	7.15	14.80	14.50	5.77
Strontium	N/L	N/L	0.026	0.023	0.021	0.028	0.031	0.032	0.037	0.033	0.044	0.032	0.095	0.039	0.062	0.109	0.057
Sulphate	255	500	6.3	6.2	6.4	8.5	8.5	9.4	9.5	9.4	11	10	9.0	5.8	7.0	8.6	4.0
Total Kjeldahl Nitrogen	N/L	N/L	< 0.5	< 0.5	< 0.5	< 0.5	0.21	0.64	< 0.5	< 0.5	1.1	< 0.5	< 0.5	< 0.5	0.23	< 0.5	0.8
Total Dissolved Solids	285	500	74	69	< 30	74	77	89	77	106	106	91	100	97	100	103	60
Zinc	2.5	5	0.01	< 0.01	0.004	0.005	< 0.01	< 0.01	0.01	0.02	0.01	0.002	0.01	0.004	0.01	0.03	0.01

Notes:
1. Reasonable Use Concept (RUC) criteria.
2. Ontario Drinking Water Standards (ODWS).
3. Results obtained from field analysis, as of May 11, 2005.

All results expressed in mg/L unless otherwise noted.
Bold and shaded values exceed the ODWS.
Bold and italic values exceed RUC limits.
N/L indicates no limit specified.
"---" means parameter not analyzed.

Greenview
ENVIRONMENTAL MANAGEMENT

Table 3
Groundwater Quality
Round Lake Waste Disposal Site

Parameter	RUC [1]	ODWS [2]	BH01-13D										BH01-14									
			12-May-04	19-Oct-04	11-May-05	25-Oct-05	08-May-06	12-Oct-06	30-Apr-07	15-Oct-07	20-May-08	09-Oct-08	12-May-04	19-Oct-04	11-May-05	25-Oct-05	08-May-06	12-Oct-06	30-Apr-07	15-Oct-07	20-May-08	09-Oct-08
Alkalinity (as $CaCO_3$)	258	30 - 500	140	150	128	126	127	118	132	107	118	101	103	115	92	90	84	79	91	83	92	83
Aluminum	0.2	0.1	0.012	< 0.01	0.008	0.014	< 0.01	0.020	0.010	0.011	0.017	0.028	0.019	0.01	0.008	0.016	< 0.01	0.020	0.009	0.015	0.033	0.118
Ammonia, Total (as N)	N/L	N/L	0.2	0.3	0.3	0.2	0.2	0.7	0.2	0.3	0.6	0.3	< 0.1	0.2	0.1	< 0.1	0.1	0.3	0.1	0.2	0.2	< 0.1
Arsenic	0.006	0.025	---	---	---	---	---	---	---	0.001	---	---	---	---	---	---	---	---	---	< 0.0002	---	---
Barium	0.3	1.0	0.070	0.086	0.067	0.064	0.067	0.066	0.067	0.062	0.064	0.059	0.044	0.055	0.047	0.048	0.050	0.052	0.054	0.050	0.053	0.047
Boron	1.3	5.0	0.070	0.080	0.070	0.080	0.058	0.071	0.064	0.052	0.060	0.045	< 0.05	0.050	0.040	0.050	0.046	0.054	0.046	0.042	0.044	0.035
Cadmium	0.001	0.005	---	---	---	---	---	---	---	0.00002	---	---	---	---	---	---	---	---	---	0.00001	---	---
Calcium	N/L	N/L	33.9	41.5	35.7	33.3	34.7	32.8	34.3	28.0	28.1	24.4	24.6	32.5	27.8	23.9	24.3	23.7	25.9	21.9	23.2	18.7
Chloride	126.0	250	8.4	13.0	11.0	11.0	10.0	9.1	8.2	6.5	6.1	6.7	3.8	8.4	7.2	5.9	6.8	6.5	7.1	5.7	5.1	5.4
Chromium	0.01	0.05	0.002	< 0.02	0.003	0.001	< 0.003	< 0.001	0.001	0.002	0.001	0.001	0.001	< 0.02	0.002	< 0.001	< 0.003	< 0.001	< 0.0003	0.001	< 0.0005	0.0008
Chemical Oxygen Demand	N/L	N/L	24	17	11	20	19	16	12	17	20	12	< 8	11	< 8	< 8	20	< 8	9	16	11	20
Cobalt	N/L	N/L	0.004	< 0.01	0.003	0.003	< 0.003	< 0.003	0.003	0.003	0.003	0.008	0.001	< 0.01	0.001	0.001	< 0.003	< 0.003	0.001	0.001	0.001	0.014
Conductivity (µS/cm) [3]	N/L	N/L	240	221	243	316	264	212	208	196	175	188	200	175	190	250	196	169	181	169	171	155
Copper	0.5	1	< 0.005	< 0.005	< 0.005	< 0.005	0.002	< 0.001	0.002	0.004	0.002	0.001	< 0.005	< 0.005	< 0.005	< 0.005	0.001	< 0.001	0.001	0.004	0.002	0.003
Dissolved Organic Carbon	7.6	5	3.4	3.0	3.0	2.7	4.7	3.2	3.7	3.8	3.0	2.0	1.8	2.8	1.5	2.3	4.2	1.7	2.3	2.3	2.5	1.4
Hardness (as $CaCO_3$)	262	500	148	170	157	142	145	138	143	119	117	102	106	135	125	105	107	106	116	101	105	86
Iron	0.5	0.3	13.70	14.60	13.20	10.10	10.10	8.04	9.93	7.83	8.28	7.15	6.12	6.32	7.19	6.31	7.24	6.14	9.73	8.73	9.37	7.62
Lead	0.003	0.01	---	---	---	---	---	---	---	0.00008	---	---	---	---	---	---	---	---	---	0.00005	---	---
Magnesium	N/L	N/L	15.3	16.2	16.4	14.4	14.3	13.7	13.9	11.9	11.4	10.1	10.8	13.1	13.5	11.1	11.1	11.3	12.5	11.3	11.5	9.5
Manganese	0.06	0.05	1.18	1.39	1.42	1.24	1.42	1.31	1.26	1.01	1.26	1.01	0.26	0.29	0.36	0.29	0.32	0.32	0.29	0.26	0.28	0.27
Mercury	0.0003	0.001	---	---	---	---	---	---	---	< 0.0001	---	---	---	---	---	---	---	---	---	< 0.0001	---	---
Nitrite (as N)	0.3	1	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate (as N)	2.5	10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.16	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
pH (units) [3]	6.5 - 8.5	6.5 - 8.5	6.80	6.48	7.00	6.49	6.34	6.55	6.51	6.55	6.51	6.92	7.30	6.45	6.80	6.54	6.28	6.41	6.44	6.58	6.46	6.52
Phosphorus, Total	N/L	N/L	2.64	0.84	< 0.02	< 0.02	< 0.01	0.03	0.01	< 0.01	0.02	< 0.01	4.78	4.3	0.02	< 0.02	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.01
Potassium	N/L	N/L	2.53	2.67	2.52	3.55	3.72	3.77	3.91	3.97	4.22	3.79	2.34	2.31	2.36	3.01	3.21	3.07	3.21	3.15	3.27	2.54
Silicon	N/L	N/L	9.83	8.89	11.40	11.10	10.40	10.60	10.30	11.70	10.90	11.20	8.64	7.27	9.34	10.00	8.72	9.04	8.86	9.61	9.09	9.22
Sodium	101.9	200	7.85	8.61	8.34	9.07	8.94	9.23	9.69	8.67	8.58	6.75	4.43	6.71	5.32	7.86	5.95	6.26	6.46	6.21	5.79	4.00
Strontium	N/L	N/L	0.171	0.194	0.167	0.173	0.181	0.178	0.190	0.159	0.160	0.144	0.124	0.146	0.131	0.123	0.129	0.134	0.146	0.130	0.131	0.115
Sulphate	255	500	17	19	22	19	16	24	16	18	17	15	18	20	27	20	19	25	22	21	22	15
Total Kjeldahl Nitrogen	N/L	N/L	< 0.5	< 0.5	< 0.5	< 0.5	0.4	0.7	< 0.5	< 0.5	2.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.2	0.4	< 0.5	< 0.5	1.6	< 0.5
Total Dissolved Solids	285	500	189	214	214	206	220	211	189	200	191	151	180	183	200	203	200	189	169	186	151	154
Zinc	2.5	5	0.01	< 0.01	0.003	0.01	< 0.01	< 0.01	0.02	0.02	0.01	0.003	0.02	< 0.01	0.01	0.01	< 0.01	< 0.01	0.01	0.02	0.01	0.01

Notes:
1. Reasonable Use Concept (RUC) criteria.
2. Ontario Drinking Water Standards (ODWS).
3. Results obtained from field analysis, as of May 11, 2005.

All results expressed in mg/L unless otherwise noted.
Bold and shaded values exceed the ODWS.
Bold and italic values exceed RUC limits.
N/L indicates no limit specified.
"---" means parameter not analyzed.

Greenview
ENVIRONMENTAL MANAGEMENT

Table 3
Groundwater Quality
Round Lake Waste Disposal Site

Parameter	RUC [1]	ODWS [2]	BH01-15		R-1									
			12-Oct-06	15-Oct-07	12-May-04	19-Oct-04	11-May-05	25-Oct-05	08-May-06	12-Oct-06	30-Apr-07	15-Oct-07	20-May-08	09-Oct-08
Alkalinity (as $CaCO_3$)	258	30 - 500	10	14	25	33	23	27	21	34	25	36	23	29
Aluminum	0.2	0.1	---	---	< 0.004	0.01	< 0.004	< 0.004	< 0.01	< 0.01	0.002	0.002	0.010	0.003
Ammonia, Total (as N)	N/L	N/L	---	---	< 0.1	0.3	0.1	< 0.1	< 0.04	< 0.04	< 0.1	0.1	< 0.1	0.1
Arsenic	0.006	0.025	---	0.0002	---	---	---	---	---	---	---	< 0.0002	---	---
Barium	0.3	1.0	0.004	0.005	0.013	0.016	0.012	0.013	0.013	0.015	0.012	0.014	0.012	0.011
Boron	1.3	5.0	0.004	0.002	< 0.05	< 0.01	< 0.01	< 0.01	0.002	0.005	0.006	0.004	0.007	0.005
Cadmium	0.001	0.005	---	0.00007	---	---	---	---	---	---	---	0.000005	---	---
Calcium	N/L	N/L	3.02	---	5.94	8.07	7.21	7.64	6.25	10.30	6.17	10.30	5.18	7.06
Chloride	126.0	250	2.0	2.4	0.5	0.6	0.6	0.6	0.5	0.4	0.6	0.4	0.4	0.3
Chromium	0.01	0.05	< 0.001	< 0.0005	< 0.001	< 0.02	< 0.001	< 0.001	< 0.003	< 0.001	< 0.0003	< 0.0005	< 0.0005	< 0.0005
Chemical Oxygen Demand	N/L	N/L	< 8	---	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8
Cobalt	N/L	N/L	---	---	< 0.0003	< 0.01	< 0.0003	< 0.0003	< 0.003	< 0.003	< 0.000007	0.00003	0.00003	0.00015
Conductivity (µS/cm) [3]	N/L	N/L	25	54	55	47	47	79	132	128	128	125	41	53
Copper	0.5	1	---	---	0.056	0.045	0.051	0.027	0.029	0.061	0.058	0.025	0.060	0.040
Dissolved Organic Carbon	7.6	5	0.5	< 1	1.2	1.6	1.1	< 1	2.7	0.7	< 1	< 1	< 1	< 1
Hardness (as $CaCO_3$)	262	500	13.4	17.8	24.4	29.1	28.3	27.0	24.4	34.9	25.4	34.5	20.9	24.6
Iron	0.5	0.3	< 0.01	0.01	0.12	0.02	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Lead	0.003	0.01	---	0.00004	---	---	---	---	---	---	---	0.0006	---	---
Magnesium	N/L	N/L	1.43	---	2.34	2.18	2.49	1.94	2.14	2.22	2.42	2.15	1.94	1.70
Manganese	0.06	0.05	0.01	0.02	0.003	< 0.002	< 0.002	0.002	< 0.001	0.002	0.002	0.002	0.005	0.007
Mercury	0.0003	0.001	---	< 0.0001	---	---	---	---	---	---	---	< 0.0001	---	---
Nitrite (as N)	0.3	1	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate (as N)	2.5	10	0.46	0.82	0.19	0.20	0.21	0.26	0.16	0.26	0.14	0.23	0.16	0.12
pH (units) [3]	6.5 - 8.5	6.5 - 8.5	6.34	7.19	7.00	6.91	6.60	6.97	7.22	7.14	7.20	7.09	6.60	6.91
Phosphorus, Total	N/L	N/L	---	---	0.05	0.04	< 0.02	< 0.02	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Potassium	N/L	N/L	---	---	1.10	1.29	1.25	1.37	1.12	1.55	1.12	1.53	0.99	1.17
Silicon	N/L	N/L	---	---	5.71	4.78	6.20	6.18	5.91	6.71	6.27	7.43	6.20	6.53
Sodium	101.9	200	3.48	3.21	1.60	1.70	1.91	1.65	1.57	1.91	1.61	1.73	1.34	1.31
Strontium	N/L	N/L	---	---	0.039	0.056	0.040	0.044	0.039	0.059	0.041	0.060	0.034	0.045
Sulphate	255	500	2.5	4.7	7.4	5.5	7.9	5.8	7.8	5.4	5.9	4.1	4.3	3.6
Total Kjeldahl Nitrogen	N/L	N/L	---	---	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	0.47	< 0.5	< 0.5	< 0.5	< 0.5
Total Dissolved Solids	285	500	54	77	34	63	60	60	49	60	66	83	97	49
Zinc	2.5	5	---	---	0.01	< 0.01	0.004	0.002	< 0.01	< 0.01	0.006	0.004	0.003	0.002

Notes:
1. Reasonable Use Concept (RUC) criteria.
2. Ontario Drinking Water Standards (ODWS).
3. Results obtained from field analysis, as of May 11, 2005.

All results expressed in mg/L unless otherwise noted.
Bold and shaded values exceed the ODWS.
Bold and italic values exceed RUC limits.
N/L indicates no limit specified.
"---" means parameter not analyzed.

Greenview
ENVIRONMENTAL MANAGEMENT

Table 3
Groundwater Quality
Round Lake Waste Disposal Site

Parameter	ODWS [1]	BH1					BH-2S			BH-2D				
		19-Oct-04	25-Oct-05	12-Oct-06	15-Oct-07	09-Oct-08	12-Oct-06	15-Oct-07	09-Oct-08	19-Oct-04	25-Oct-05	12-Oct-06	15-Oct-07	09-Oct-08
Benzene	0.005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Bromoform	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	N/L	< 0.005	--	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.001	< 0.005	--	< 0.005	< 0.005	< 0.001
Carbon tetrachloride	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001
Chlorobenzene	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chloroethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chloroform	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Chloromethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Dibromochloromethane	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,2-Dichlorobenzene	0.2	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,3-Dichlorobenzene	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,4-Dichlorobenzene	0.005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.0012	< 0.001	< 0.001	< 0.001	< 0.001
1,1-Dichloroethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
1,2-Dichloroethane	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
1,1-Dichloroethylene	0.014	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001
1,2-Dichloropropane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001
trans-1,2-Dichloroethylene	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
cis-1,2-Dichloroethene	N/L	--	--	< 0.005	< 0.005	< 0.005	0.0058	< 0.005	< 0.005	--	--	< 0.005	< 0.005	< 0.005
cis-1,3-Dichloropropene	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001
trans-1,3-Dichloropropene	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001
Ethylbenzene	0.0024	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylenedibromide	N/L	< 0.002	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.001	< 0.002	< 0.005	< 0.005	< 0.005	< 0.001
Dichloromethane	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Styrene	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.004	< 0.005	< 0.005	< 0.004	< 0.005	< 0.005	< 0.005	< 0.005	< 0.004
1,1,1,2-Tetrachloroethane	N/L	--	--	< 0.005	< 0.005	< 0.002	< 0.005	< 0.005	< 0.002	--	--	< 0.005	< 0.005	< 0.002
1,1,2,2-Tetrachloroethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001
Tetrachloroethene	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Toluene	0.024	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethylene	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Vinyl Chloride	0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.001	< 0.002	< 0.002	< 0.001	< 0.002	< 0.002	< 0.002	< 0.002	< 0.001
Trichlorofluoromethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
1,1,1-Trichloroethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
1,1,2-Trichloroethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Xylene; total	0.3	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.0011	< 0.001	< 0.001	< 0.001
o-Xylene	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
m-p-Xylene	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.0011	< 0.001	< 0.001	< 0.001
2-Chloroethylvinylether	N/L	--	--	< 0.005	< 0.005	--	< 0.005	< 0.005	--	--	--	< 0.005	< 0.005	--

Notes:
1. Ontario Drinking Water Standards (ODWS).

Results expressed in mg/L unless otherwise noted.
Shaded area with bold text indicates ODWS exceedance.
N/L indicates no limit specified.
"--" parameter not analyzed.

Greenview
ENVIRONMENTAL MANAGEMENT

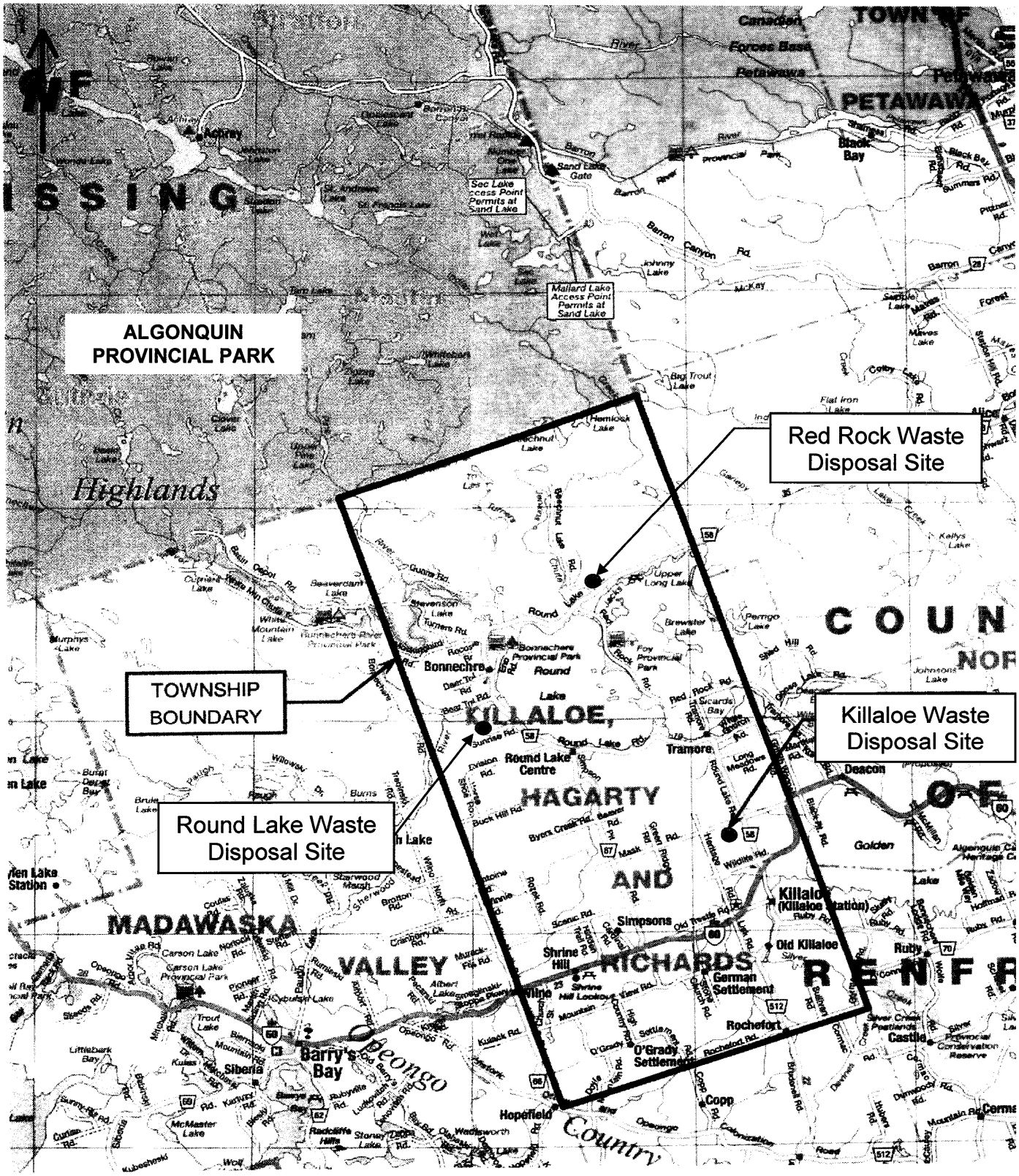
Table 3
Groundwater Quality
Round Lake Waste Disposal Site

Parameter	ODWS [1]	BH-5			BH95-9					BH01-14				
		12-Oct-06	15-Oct-07	09-Oct-08	19-Oct-04	25-Oct-05	12-Oct-06	15-Oct-07	09-Oct-08	19-Oct-04	25-Oct-05	12-Oct-06	15-Oct-07	09-Oct-08
Benzene	0.005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Bromoform	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	N/L	< 0.005	< 0.005	< 0.001	< 0.005	--	< 0.005	< 0.005	< 0.001	< 0.005	--	< 0.005	< 0.005	< 0.001
Carbon tetrachloride	N/L	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001
Chlorobenzene	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chloroethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chloroform	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Chloromethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Dibromochloromethane	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,2-Dichlorobenzene	0.2	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,3-Dichlorobenzene	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,4-Dichlorobenzene	0.005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,1-Dichloroethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
1,2-Dichloroethane	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
1,1-Dichloroethylene	0.014	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001
1,2-Dichloropropane	N/L	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001
trans-1,2-Dichloroethylene	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
cis-1,2-Dichloroethene	N/L	< 0.005	< 0.005	< 0.005	--	--	< 0.005	< 0.005	< 0.005	--	--	< 0.005	< 0.005	< 0.005
cis-1,3-Dichloropropene	N/L	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001
trans-1,3-Dichloropropene	N/L	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001
Ethylbenzene	0.0024	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylenedibromide	N/L	< 0.005	< 0.005	< 0.001	< 0.002	< 0.005	< 0.005	< 0.005	< 0.001	< 0.002	< 0.005	< 0.005	< 0.005	< 0.001
Dichloromethane	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Styrene	N/L	< 0.005	< 0.005	< 0.004	< 0.005	< 0.005	< 0.005	< 0.005	< 0.004	< 0.005	< 0.005	< 0.005	< 0.005	< 0.004
1,1,1,2-Tetrachloroethane	N/L	< 0.005	< 0.005	< 0.002	--	--	< 0.005	< 0.005	< 0.002	--	--	< 0.005	< 0.005	< 0.002
1,1,2,2-Tetrachloroethane	N/L	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.001
Tetrachloroethene	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Toluene	0.024	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethylene	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Vinyl Chloride	0.002	< 0.002	< 0.002	< 0.001	< 0.002	< 0.002	< 0.002	< 0.002	< 0.001	< 0.002	< 0.002	< 0.002	< 0.002	< 0.001
Trichlorofluoromethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
1,1,1-Trichloroethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
1,1,2-Trichloroethane	N/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Xylene; total	0.3	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
o-Xylene	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
m-p-Xylene	N/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
2-Chloroethylvinylether	N/L	< 0.005	< 0.005	--	--	--	< 0.005	< 0.005	--	--	--	< 0.005	< 0.005	--

Notes:
1. Ontario Drinking Water Standards (ODWS).

Results expressed in mg/L unless otherwise noted.
Shaded area with bold text indicates ODWS exceedance.
N/L indicates no limit specified.
"--" parameter not analyzed.

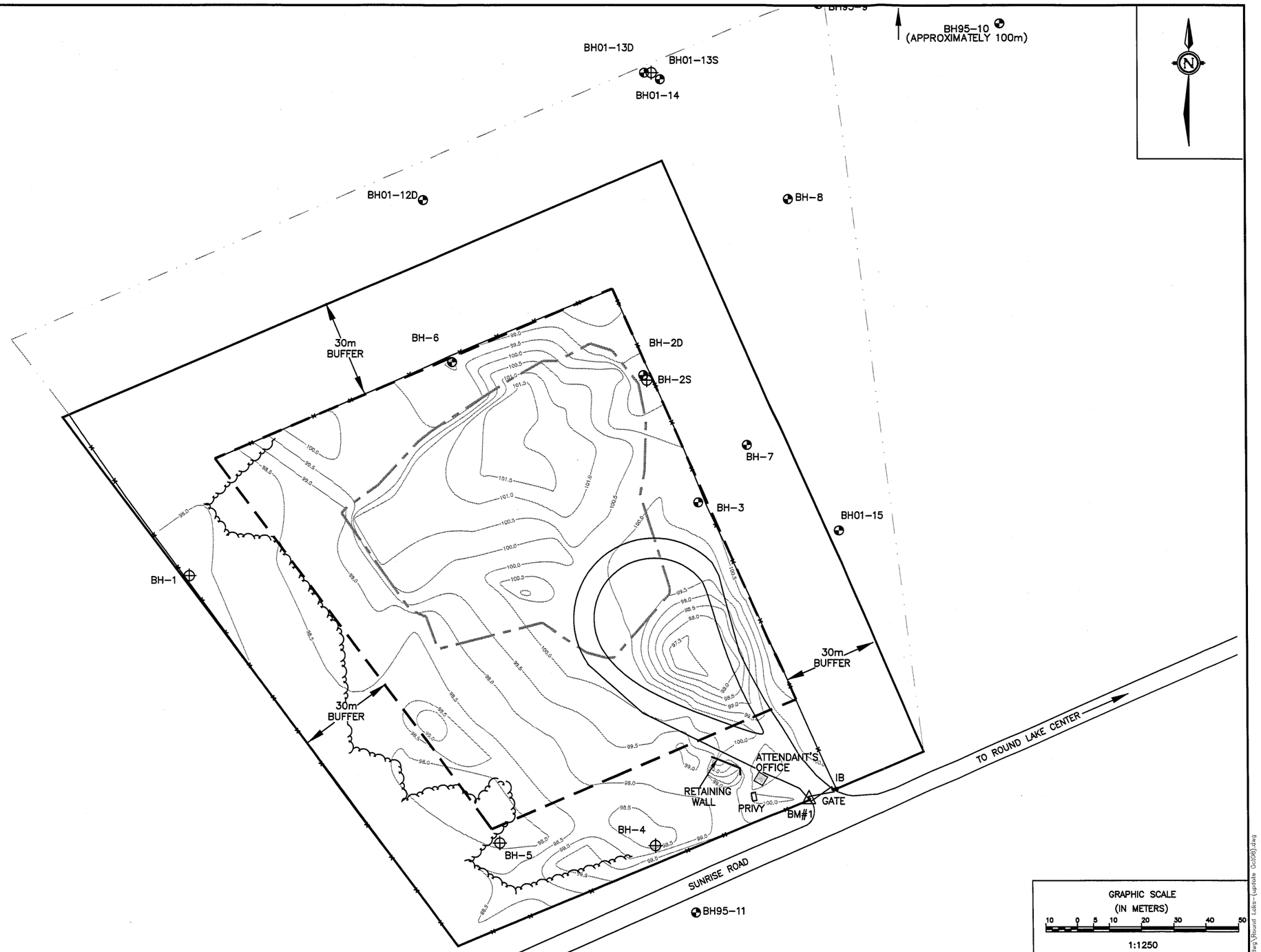
FIGURES



Greenview ENVIRONMENTAL MANAGEMENT **Greenview Environmental Management Limited** 69 Cleak Avenue, P.O. Box 100 Bancroft, Ontario K0L 1C0 tel: (613) 332-0057 fax: (613) 332-1767 email: solutions@greenview-environmental.ca	CREATED BY: JSB CHECKED BY: THP	CLIENT: TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS	PROJECT NO.: 107.08.003
	DATE: MARCH 2009 SCALE: NTS	SITE/TITLE: REGIONAL LOCATION PLAN	FIGURE: 1

LEGEND

- PROPERTY BOUNDARY
- APPROVED WASTE DISPOSAL AREA
- EXISTING LIMIT OF WASTE
- CONTAMINANT ATTENUATION ZONE
- 98.0 TOPOGRAPHIC CONTOUR LINE
- ON-SITE ROAD
- FENCE
- APPROXIMATE TREE LINE
- BH-2S SHALLOW GROUNDWATER MONITORING WELL
- BH-2D DEEP GROUNDWATER MONITORING WELL
- BM#1 BENCHMARK



NOTES

1. BENCHMARKS
   BM#1
   NAIL ON WEST GATE POST
   ELEVATION = 100.000m
2. BASE SURVEY DATA PROVIDED BY SGS LAKEFIELD RESEARCH LIMITED AND Jp2g CONSULTANTS INC.
3. UPDATED TOPOGRAPHIC SURVEY COMPLETED BY GREENVIEW ON OCTOBER 24, 2008.

GRAPHIC SCALE
(IN METERS)
10 0 5 10 20 30 40 50
1:1250

No.	DATE	BY	REVISIONS

Greenview
ENVIRONMENTAL MANAGEMENT
Greenview Environmental Management Limited
69 Cleak Avenue, PO Box 100
Bancroft, Ontario K0L 1C0
tel: (613) 332-0057
fax: (613) 332-1767
email: solutions@greenview-environmental.ca

DRAWN BY:	CHECKED BY:
HLM	THP
DESIGNED BY:	APPROVED BY:
	THP
SCALE:	DATE:
1:1250	MARCH 2009

CLIENT:
TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS

PROJECT:
ROUND LAKE WASTE DISPOSAL SITE

PROJECT No:
107.08.003

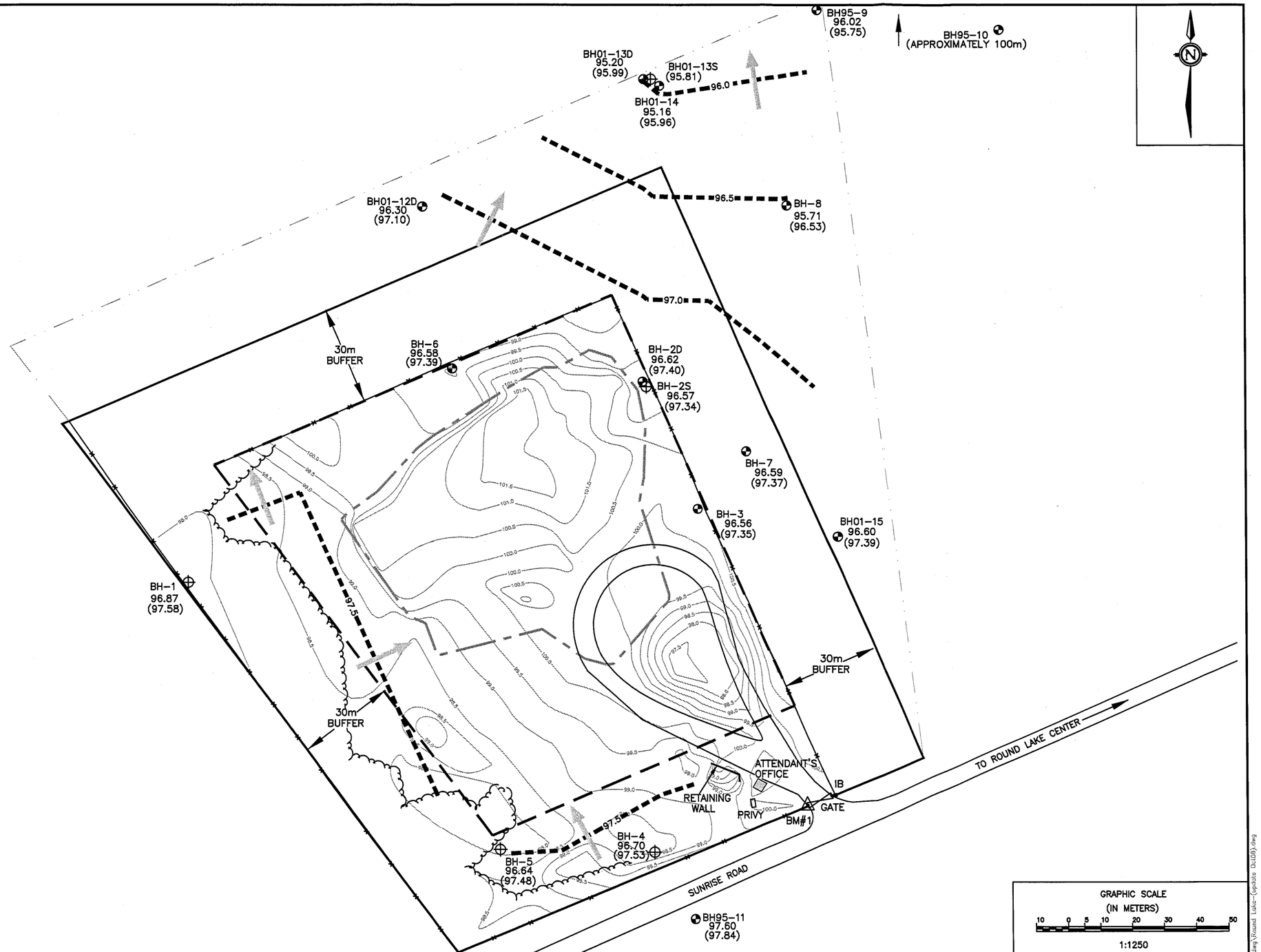
FIGURE:
EXISTING SITE CONDITIONS PLAN

FIGURE:
2

G:\AutoCAD\107 RSWT\063 Round Lakes\dwg\Round Lakes-(update Oct08).dwg

LEGEND

- PROPERTY BOUNDARY
- APPROVED WASTE DISPOSAL AREA
- EXISTING LIMIT OF WASTE
- CONTAMINANT ATTENUATION ZONE
- 98.0 — TOPOGRAPHIC CONTOUR LINE
- ON-SITE ROAD
- FENCE
- APPROXIMATE TREE LINE
- BH-2S — SHALLOW GROUNDWATER MONITORING WELL
- BH-2D — DEEP GROUNDWATER MONITORING WELL
- 96.5 — EQUIPOTENTIAL CONTOUR (MAY 20, 2008)
- 96.62 (97.40) — GROUNDWATER ELEVATIONS OCTOBER 9, 2008 (MAY 20, 2008)
- GROUNDWATER FLOW DIRECTION
- C&D — CONSTRUCTION AND DEMOLITION WASTE
- BM#1 — BENCHMARK



NOTES

1. BENCHMARKS
   BM#1
   NAIL ON WEST GATE POST
   ELEVATION = 100.000m
2. BASE SURVEY DATA PROVIDED BY SGS LAKEFIELD RESEARCH LIMITED AND Jp2g CONSULTANTS INC.
3. UPDATED TOPOGRAPHIC SURVEY COMPLETED BY GREENVIEW ON OCTOBER 24, 2008.

No.	DATE	BY	REVISIONS

Greenview ENVIRONMENTAL MANAGEMENT

Greenview Environmental Management Limited
69 Cleak Avenue, PO Box 100
Bancroft, Ontario K0L 1C0
tel: (613) 332-0057
fax: (613) 332-1767
email: solutions@greenview-environmental.ca

DRAWN BY:	CHECKED BY:
HLM	THP
DESIGNED BY:	**APPROVED BY:**
	THP
SCALE:	**DATE:**
1:1250	MARCH 2009

CLIENT: TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS

PROJECT: ROUND LAKE WASTE DISPOSAL SITE

PROJECT No: 107.08.003

FIGURE: ENVIRONMENTAL MONITORING LOCATION PLAN

FIGURE: 3

G:\AutoCAD\107 MRR\2013 Round Lake\dwg\Round Lake-(update Oct.09).dwg

APPENDIX A

Provisional Certificate of Approval A412303

Ontario

Ministry of the Environment | Ministère de l'Environnement

AMENDMENT TO PROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE
NUMBER A412303

The Corporation of the Township of Killaloe, Hagarty and Richards
PO Box 39
Killaloe, Ontario K0J 2A0

Site Location: Round Lake Landfill
Lot 27, Concession 3
Richards Township, County Of Renfrew

You are hereby notified that I have amended Provisional Certificate of Approval No. A412303 issued on May 8, 2000, as amended on November 6, 2000 and November 7, 2000 for a waste disposal site (landfill), as follows:

The preamble is hereby changed to:

for the use and operation of a 1.62 hectare landfill and a transfer station within a 3.5 hectare total Site area, including a 1.33 hectare attenuation zone and an easement to access BH-10:

The following Conditions are revoked:

Conditions 19 is revoked.

Condition 20 is revoked.

The following Conditions are hereby revoked and replaced:

15. (a) Pursuant to Section 197 of the EPA, neither the Applicant nor any person having an interest in the Site shall deal with the Site in any way without first giving a copy of the Provisional Certificate of Approval to each person acquiring an interest in the Site as a result of the dealing;
    (b) By June 30, 2003, the Owner shall submit to the Director for the Director's signature, two (2) copies of a completed Certificate of Prohibition containing a registerable description of the Site, in accordance with Form 1 of O. Reg. 14/92; and
    (c) Within ten (10) calendar days of receiving the Certificate of Prohibition with the Director's signature, the Owner shall register the Certificate of Prohibition in the appropriate Land Registry Office on title and immediately following registration, submit to the Director the duplicate registered copy.

The following Conditions are hereby added:

25. The Owner shall refrain from further landfilling of waste on the Site, and shall apply intermediate interim cover to all cells where waste has been deposited, until such time as the Owner acquires sufficient property for a contaminant attenuation zone that will meet the long term needs of the Site, or an alternative contingency plan to remediate off-site leachate impacts.

26. In the event of an exceedance of a leachate indicator parameter trigger level, the Owner shall conduct an investigation into the cause and the need for implementation of remedial or contingency actions in accordance with Schedule "C".

27. The Owner shall limit transfer activities to the receiving and transferring of solid, non-hazardous, residential and commercial waste, generated within the Township of Killaloe, Hagarty and Richards, as described in Item 11 of Schedule "A".

28. The Owner shall ensure that all waste accepted for transfer shall be segregated either into bins with lids or doors, or in designated areas as defined by barriers. All bins and designated waste storage areas shall be clearly labelled.

29. The Owner shall ensure that each day on which the Site is open to accept waste for transfer, the Site is inspected and litter is picked up in the waste transfer area.

30. The Owner shall maintain records on transfer activities including:
    (a) date of record;
    (b) number of deliveries and types of materials received;
    (c) quantities and destination of waste transferred from the Site; and
    (d) any accidents, injuries, spills, leaks, other upsets or complaints received.

    The Owner shall summarize the above information for inclusion in the annual report submitted to the District Manager.

The following are hereby added to Schedule "A":

7. Application to amend a Certificate of Approval for a Waste Disposal Site, dated May 2, 2002 and signed by Janice Bush, Reeve, Township of Killaloe, Hagarty and Richards.

8. Letter from K. Mooder, Jp2g Consultants Inc. to EAAB dated June 6, 2002 summarizing amendment requests.

9. Plan 49R-14688 and Transfer/Deed of Land for the purchase of Part Lot 27, Concession 3, being Part 1 on Reference Plan 49R-14688 and for the grant of easement of Part Lot 27, Concession 3 being Parts 2 & 3 on Reference Plan 49R-14688.

10. Letter from K. Mooder, Jp2g Consultants Inc. to EAAB dated June 26, 2002 including Drawing No. 1 "Round Lake Landfill Site - Buffer Zone Plan".

11. Letter from D. Bohart, Chair, Killaloe, Hagarty and Richards Waste Management Committee, to EAAB, dated February 24, 2003 providing details of the waste transfer activities which take place at Round Lake waste disposal site.

12. Letter from B.J. Velderman, Golder Associates Ltd. to EAAB, dated February 27, 2003 providing clarification of Schedule "B" monitoring program and details of the trigger mechanisms for Round Lake.

13. Fax from K. Mooder to EAAB, dated April 2003 providing a final version of Schedule "B" sampling program and Schedule "C" trigger mechanism and remedial action plan.

Schedule B is hereby revoked and replaced with:

SCHEDULE "B"

This Schedule "B" forms part of Provisional Certificate of Approval No. A412303.

	Sampling Location	**Parameters**	**Sampling Frequency**
Background and Surveillance	BH-1, BH-2S, BH-2D, BH-5, BH-8, BH95-9, BH01-12D, BH01-13S, BH01-13D, BH01-14, duplicate	pH, temperature, conductivity, chloride, hardness, sodium, iron, manganese, alkalinity, nitrate, total dissolved solids, barium, boron, chromium, ammonia, calcium, magnesium, potassium, aluminium, cobalt, copper, total phosphorous, silicon, strontium, sulphate, zinc, TKN, COD, DOC	biannually in the spring (May/June) and fall (September/October)
Routine	BH-6, BH95-10, BH01-15, duplicate	pH, temperature, conductivity, chloride, hardness, sodium, iron, manganese, alkalinity, barium, boron, chromium, sulphate, nitrate, DOC, TDS	annually in the fall (September/October)
Volatile Organic Compounds	BH-1, BH-2S, BH-2D, BH-5, BH95-9, BH01-14, trip blank, field blank, duplicate	parameters included in US Environmental Protection Agency 624 list	annually in the fall (September/October)

Water Levels	BH-1, BH-2S, BH-2D, BH-3, BH-4, BH-5, BH-6, BH-7, BH-8, BH95-9, BH95-10, BH95-11, BH01-12D, BH01-13S, BH01-13D, BH01-14, BH01-15	water levels	biannually in the spring (May/June) and fall (September/October)

SCHEDULE "C"

This Schedule "C" forms part of the Certificate of Approval No. A413103.

Section A: Trigger Mechanism for Round Lake Landfill

The objective of the groundwater trigger mechanism at the Round Lake Landfill Site is to utilize the results of the ongoing groundwater monitoring program to assess site compliance and to trigger implementation of contingency plans, when and if necessary. The purpose of the trigger mechanism is to prevent leachate-impacted groundwater exceeding MOE Guideline B-7 from migrating beyond the site boundaries. For the purpose of the trigger mechanism, the following shall apply:

The *Leachate Indicator Parameters* for the Round Lake Landfill include: alkalinity, barium, boron, calcium, chloride, chromium, conductivity, hardness and total dissolved solids (TDS).

The *Compliance Evaluation Parameters* for Round Lake Landfill are barium, boron, chloride, chromium and volatile organic compounds.

The *Reasonable Use Performance Objective (RUPO)* refers to the maximum allowable concentration for a *Compliance Evaluation Parameter* in groundwater at the point of compliance under MOE Guideline B-7.

The *Trigger Concentration* for Round Lake Landfill shall be over 75 percent of the *Reasonable Use Performance Objective* for the *Compliance Evaluation Parameters* at monitors BH-8, BH-95-9, BH01-13D and BH01-14.

Any observed exceedance of the *Trigger Concentration(s)* will be verified by re-sampling for the parameter(s) of concern within one month of the original sampling session at which non-compliance with the trigger was initially measured. If the exceedance is not confirmed by the follow-up sample (Special Monitoring Session), then the initial exceedance will be considered anomalous and will be discounted. The historical trends in the groundwater quality at the trigger location shall also be used in concluding that monitoring results are anomalous.

Concurrent with the Special Monitoring Session will be the initiation of a three-step process for the purpose of determining whether implementation of an additional investigation program and/or the remedial action plan is warranted. The three-step process would be as follows:

Step 1 assess whether or not non-compliance with the applicable *Trigger Concentrations* is likely due to migration of the landfill leachate plume as a whole, or whether it is partially or wholly explicable by other factors. This will be achieved by considering trends in parameter concentrations at all relevant monitoring locations;

Step 2 discussion of the results of Step 1 among the Township, consultants and the MOE to decide whether implementation of an additional investigation program and/or the

remedial action plan is warranted; and

Step 3 if the conclusion of Step 2 is affirmative, then the additional investigation program and/or remedial action plan would be formulated and would be implemented.

Remedial action, as presented in Section B, shall be implemented when the *Trigger Concentration* at one monitoring location for two (2) parameters has been met or exceeded during two (2) consecutive monitoring sessions.

Section B: Remedial Action Plan

Under MOE Guideline B-7, the Owner of a waste disposal site is responsible for preventing unacceptable off-property groundwater impacts. Should the ongoing groundwater monitoring program define the existence of, or potential for, unacceptable impacts, the Owner shall prepare and present a Remedial Action Plan for the approval of the Director or the District Manager. Actions taken by the Township to prevent or remediate the off-property impacts shall consist of:

(a) acquisition of additional land to obtain compliance with MOE Guideline B-7; or
(b) gaining control over the migration of the contaminated groundwater; or
(c) gaining control over the migration of the contaminants.

The reason(s) for this amendment to the Certificate of Approval is (are) as follows:

1. *Conditions 19 and 20 are revoked to reflect the Owner's acquisition of additional property.*

2. *Condition 15 is amended to ensure that the additional property acquired by the Owner as part of this Certificate is registered on title.*

3. *Conditions 25 and 26 are added to prevent additional contamination of the natural environment and to protect the health and safety of area groundwater users.*

4. *Conditions 27, 28 and 29 are included to ensure that the transfer activities are conducted in a manner which does not negatively impact the public health and safety or the environment.*

5. *Condition 30 is included to ensure that the Site is operated as stated in the application and not in a manner which the Director has not been asked to consider.*

This Notice shall constitute part of the approval issued under Provisional Certificate of Approval No. A412303 dated May 8, 2000, as amended on November 6, 2000 and November 7, 2000.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to <u>each</u> portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

<u>AND</u>

The Director
Section 39, *Environmental Protection Act*
Ministry of Environment and Energy
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted waste disposal site is approved under Section 39 of the Environmental Protection Act.

DATED AT TORONTO this 8th day of April, 2003

THIS CERTIFICATE WAS MAILED
ON April 16, 2003
9c
(Signed)

Ian Parrott, P.Eng.
Director
Section 39, *Environmental Protection Act*

VP/
c: District Manager, MOE Ottawa
Kevin Mooder, Jp2g Consultants Inc. ✓

Ontario

Ministry of the Environment | Ministère de l'Environnement

AMENDMENT TO PROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE
NUMBER A412303
Notice No. 1

Corporation of the Township of Killaloe, Hagarty and Richards
1 John Street, P.O. Box 39
Killaloe, Ontario
K0J 2A0

Site Location: Round Lake Landfill
Lot 27, Concession 3
Killaloe Village, County Of Renfrew

You are hereby notified that I have amended Provisional Certificate of Approval No. A412303 issued on May 18, 2000 for a waste disposal site (landfill), as follows:

Condition 19 is hereby revoked and replaced by:

19. By February 1, 2001, the Owner shall do one of the following:

(a) acquire ownership of a sufficient amount of land adjacent to the Site, that will bring the Site into compliance with the RUPO;
(b) acquire the property rights, as defined in O.Reg. 232, for a sufficient amount of land adjacent to the Site, that will bring the Site into compliance with the RUPO;
(c) submit to the Director, for approval, an application for Site remediation technologies or measures designed to bring the Site into compliance with the RUPO; or
(d) cease receiving any waste at the Site and submit a Closure Plan, for approval of the Director.

The reason(s) for this amendment to the Certificate of Approval is (are) as follows:

The reason for this amendment is to approve a request to extend the compliance date in this condition to February 1, 2001.

This Notice shall constitute part of the approval issued under Provisional Certificate of Approval No. A412303 dated May 18, 2000.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Appeal Board
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 39, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

Further information on the Environmental Appeal Board's requirements for an appeal can be obtained directly from the Board at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca

The above noted waste disposal site is approved under Section 39 of the Environmental Protection Act.

DATED AT TORONTO this 7th day of November, 2000

THIS IS A TRUE COPY OF THE
ORIGINAL CERTIFICATE MAILED

ON ..... NOV 10 2000 .....

(Signed)

Andrzej Dominski, P.Eng.
Director
Section 39, *Environmental Protection Act*

IP/

c: District Manager, MOE Ottawa
Kevin Mooder, Jp2g Consultants Inc.

Ontario

Ministry of the Environment | Ministère de l'Environnement

AMENDMENT TO PROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE
NUMBER A412303
Notice No. 1

Corporation of the Township of Killaloe, Hagarty and Richards
1 John Street, P.O. Box 39
Killaloe, Ontario
K0J 2A0

Site Location: Round Lake Landfill
Lot 27, Concession 3
Killaloe Village, County Of Renfrew

You are hereby notified that I have amended Provisional Certificate of Approval No. A412303 issued on May 18, 2000 for a landfill site, as follows:

the address of the owner has changed

FROM: Corporation of the Township of Hagerty and Richards
Regional Road #2
Killaloe, Ontario
K0J 2W0

TO: Corporation of the Township of Killaloe, Hagarty and Richards
1 John Street, P.O. Box 39
Killaloe, Ontario
K0J 2A0

This Notice shall constitute part of the approval issued under Provisional Certificate of Approval No. A412303 dated May 18, 2000.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;

2. The grounds on which you intend to rely at the hearing in relation to <u>each</u> portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Appeal Board
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

<u>AND</u>

The Director
Section 39, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Appeal Board's requirements for an appeal can be obtained directly from the Board at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted waste disposal site is approved under Section 39 of the Environmental Protection Act.

DATED AT TORONTO this 6th day of November, 2000

THIS IS A TRUE COPY OF THE ORIGINAL NOTICE MAILED

On Nov-7, 2000

BK

SIGNED

Yvonne Hall, P.Eng.
Director
Section 39, *Environmental Protection Act*

BK/
c: District Manager, MOE Ottawa
Kevin J. Mooder, Greer Galloway Group Inc.

120 JND LAKE

Ontario

Ministry of the Environment / *Minis...e de l'Environnement*

PROVISI... A... CERTIFICATE OF APPROVAL
... OR A WASTE DISPOSAL SITE
NO. A 412303

Under the Environmental Protection Act and the regulations and subject to the limitations thereof, this Provisional Certificate of Approval is issued to:

The Corporation of the Township of Hagarty and Richards
...R. #2
...illaloe, Ontario
K0J 2A0

for the use and operation of a 1.62 hectare landfill within a 2.4 hectare total Site area;

all in accordance with the following plans and specifications:

...he application and supporting information as listed in Schedule "A", which is attached to this Provisional Certificate of Approval and forms part of this Certificate;

Located: Part Lot 27, Concession 3 (Richards Township)
Township of Hagarty and Richards
County of Renfrew

...hich includes the use of the site only for the disposal of the following categories of waste (Note: Use of the site for additional categories of wastes requires a new application and amendments to th... Provisional ...ertificate of Approval) Municipal Waste

...nd subject to the following conditions:

A. DEFINITIONS

...or the purpose of this Provisional Certificate of Approval:

1) "Act" and "EPA" mean the **Environmental Protection Act**, R.S.O. 1990, C. E-19 as amended;

2) "Applicant", "Owner" and "Operator" mean the Township of Hagarty and Richards, including its officers, employees, agents or contractors;

3) "Certificate" means this entire Provisional Certificate of Approval including its schedules, if any, issued in accordance with Section 27, Part V of the **Environmental Protection Act;**

4) "Director" means a Director, Environmental Assessment and Approvals Branch of the Ministry of the Environment;

"District Manager" means the District Manager of the Ottawa District Office, Eastern Region of the Ministry;

"Ministry" means the Ontario Ministry of the Environment (MOE);

"Municipal Waste" is as defined in Ontario Regulation 347, R.R.O. 1990;

"O.Reg. 232" means Ontario Regulation 232/98 (Landfilling Sites), R.R.O. 1990;

"RUPO" means the Ministry of the Environment Reasonable Use Policy Objectives (Guideline B-7);

"Site" means the landfill site as described in this Certificate; and

"Waste fill area" means the area on the surface of the site beneath which or above which waste is disposed by landfilling.

1. GENERAL

The Provisional Certificate of Approval No. A 412303, dated April 2, 1980 is hereby revoked and replaced by this Certificate.

Except as otherwise provided by these Conditions, the Site shall be operated and maintained, in accordance with the Applications for a Certificate of Approval for a Waste Disposal Site, dated September 21, 1998, and its supporting documents as listed in Schedule "A".

The requirements specified in this Certificate are the requirements under the **Environmental Protection Act**, R.S.O. 1990. The issuance of this Certificate in no way abrogates the Applicant's legal obligations to take all reasonable steps to avoid violating other applicable provisions of this legislation and other legislation and regulations.

The requirements of the Certificate are severable. If any requirement of this Provisional Certificate of Approval, or the application of any requirement of the Provisional Certificate of Approval to any circumstance, is held invalid, the application of such requirement to other circumstances and the remainder of the Provisional Certificate of Approval shall not be affected in any way.

The Applicant shall ensure compliance with all the terms and conditions of this Certificate. Any non-compliance constitutes a violation of the **Environmental Protection Act**, R.S.O. 1990 and its grounds for enforcement.

(a) The Applicant shall, forthwith upon request of the Director, District Manager, or Provincial Officer (as defined in the Act), furnish any information requested by such persons with respect to [illegible] including but not limited to, any records required to be kept

(b) In the event, the Applicant provides the Ministry with information, records, documentation or notification in accordance with this Certificate (for the purposes of this condition referred to as "Information"),

i. the receipt of Information by the Ministry;

ii. the acceptance by the Ministry of the Information's completeness or accuracy; or

iii. the failure of the Ministry to prosecute the Applicant, or to require the Applicant to take any action, under this Certificate or any statute or regulation in relation to the Information;

shall not be construed as an approval, excuse or justification by the Ministry of any act or omission of the Applicant relating to the Information, amounting to non-compliance with this Certificate or any statute or regulation.

7. The Applicant shall allow Ministry personnel, or a Ministry authorized representative(s), upon presentation of credentials, to:

(a) carry out any and all inspections authorized by Section 156, 157 or 158 of the **Environmental Protection Act**, R.S.O. 1990, Section 15, 16 or 17 of the **Ontario Water Resources Act**, R.S.O. 1990, or Section 19 or 20 of the **Pesticides Act**, R.S.O. 1990, as amended from time to time, of any place to which this Certificate relates; and

without restricting the generality of the foregoing, to:

(b) i. enter upon the premises where the records required by the conditions of this Certificate are kept;

ii. have access to and copy, at reasonable times, any records required by the conditions of this Certificate;

iii. inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations required by the conditions of this Certificate; and

iv. sample and monitor at reasonable times for the purposes of assuring compliance with the conditions of this Certificate.

8. (a) Where there is a conflict between a provision of any document referred to in Schedule "A" and the conditions of this Certificate, the conditions in this Certificate shall take precedence; and

(b) Where there is a conflict between documents listed in Schedule "A", the document bearing the most recent date shall prevail.

The Applicant shall ensure that all communications/correspondence made pursuant to this Certificate includes reference to the Certificate approval number A 412303.

The Applicant shall notify the Director in writing of any of the following changes within thirty (30) days of the change occurring:

(a) change of Applicant or Operator of the Site or both;

(b) change of address or address of the new Applicant;

(c) change of partners where the Applicant or Operator is or at any time becomes a partnership, and a copy of the most recent declaration filed under the **Business Names Act**, 1991 shall be included in the notification to the Director;

(d) any change of name of the corporation where the Applicant or Operator is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" (form 1 or 2 of O. Reg. 182, Chapter C-39, R.R.O. 1990 as amended from time to time), filed under the **Corporations Information Act** shall be included in the notification to the Director; and

(e) change in directors or officers of the corporation where the Applicant or Operator is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" as referred to in 10(d), supra.

11. In the event of any change in ownership of the Site, the Applicant shall notify, in writing, the succeeding owner of the existence of this Certificate, and a copy of such notice shall be forwarded to the Director.

12. Any information relating to this Certificate and contained in Ministry files may be made available to the public in accordance with the provisions of the **Freedom of Information and Protection of Privacy Act**, R.S.O. 1990, C. F-31.

13. All records and monitoring data required by the conditions of this Certificate shall be kept on the Owners's premises for a minimum period of two (2) years from the date of their creation.

14. The obligations imposed by the terms and conditions of this Certificate are obligations of due diligence.

PROHIBITION AND REGISTRATION ON TITLE

15. (a) Pursuant to Section 197 of the EPA, neither the Applicant nor any person having an interest in the Site shall deal with the Site in any way without first giving a copy of the Provisional Certificate of Approval to each person acquiring an interest in the Site as a result of the dealing;

(b) By October 31, 2000, the Applicant shall submit to the Director for the Director's signature two

(c) Within ten (10) calendar days of receiving the Certificate of Prohibition, the Applicant shall register the Certificate of Prohibition in the appropriate Land Registry Office on title and immediately following registration, submit to the Director the duplicate registered copy.

SITE OPERATIONS

16. This Site shall only receive Municipal Waste that is generated from within the Township of Hagarty & Richards.

17. The final volumetric capacity of this Site, excluding final cover, is 94,974 cubic metres.

18. Waste shall be managed and landfilled at the Site in accordance with the items listed in Schedule "A".

19. By October 1, 2000,the Owner shall do one of the following:

(a) acquire ownership of a sufficient amount of land adjacent to the Site, that will bring the Site into compliance with the RUPO;
(b) acquire the property rights, as defined in O.Reg. 232, for a sufficient amount of land adjacent to the Site, that will bring the Site into compliance with the RUPO;
(c) submit to the Director, for approval, an application for Site remediation technologies or measures designed to bring the Site into compliance with the RUPO; or
(d) cease receiving any waste at the Site and submit a Closure Plan, for approval of the Director.

20. (a) If the Owner acquires of ownership or control of additional land, as specified in Conditions 19(a) or 19(b), then the Owner shall construct three additional groundwater monitoring wells by May 30, 2001, as specified in Item (4) of Schedule "A"; or

(b) If the Owner submits an application or a Closure Plan as specified in Conditions 19(c) or 19(d), a revised groundwater monitoring program, including a schedule for installing monitoring wells, shall be submitted to the Director, for approval.

MONITORING AND REPORTING

21. The Owner shall conduct surface and ground water sampling at the frequencies and for the parameters specified in Schedule "B", as modified by the District Manager. By March 31, 2001 and on an annual basis thereafter, the Owner shall submit to the District Manager, an Annual Report that contains the following, for the previous calendar year:

(a) the analytical results of the sampling program;
(b) an analysis of the results of the monitoring programs conducted at the Site to date;
(c) recommendations for any alterations to the monitoring or operation of the Site;

(e) an estimate of the total amount of waste landfilled and an estimate of the Site's remaining capacity;

(f) a statement as to compliance with the terms and conditions of the Certificate;

(g) a summary of complaints regarding the operation the Site and the Owner's response to those complaints; and

(h) an assessment of the need to develop and implement contingency plans for leachate control.

SITE CLOSURE

One (1) year prior to the Site reaching the capacity specified in Condition (17), the Owner shall submit to the Director, for approval, a plan for the closure, monitoring and long term maintenance of the Site.

G. EMERGENCIES

In case of an emergency or a spill at this Site, the Applicant shall forthwith call the Ministry of the Environment Spills Action Centre (1-800-268-6060) or the District Office.

H. RECORD KEEPING

The Company shall maintain records of the results of all inspections and monitoring and a summary of all activities associated with the Site (e.g. spills, maintenance work) in a record book located at the Site.

SCHEDULE "A"

This Schedule "A" forms part of Provisional Certificate of Approval No. A 412303:

Application to amend a Certificate of Approval for a Waste Disposal Site, dated September 21, 1998 and signed by Janice Bush, Reeve, Township of Hagarty & Richards.

Document entitled "Design and Operations Report for the Round Lake Landfill Site, Provisional Certificate of Approval A412303", dated September 1998 and prepared by The Greer Galloway Group Inc.

3. Document entitled "Revised Report on Round Lake Landfill, Hydrogeology", dated September 1998 and prepared by Golder Associates.

4. Letter from I. Parrott, MOE to K. Mooder, The Greer Galloway Group Inc. dated July 8, 1999 re: Ministry Review Comments.

5. Letter from K. Mooder, The Greer Galloway Group Inc. to I. Parrott, MOE, dated November 9, 1999 re: Response to Ministry Review Comments dated July 8, 1999.

6. Letter from B.J. Velderman, Golder Associates Ltd. to I. Parrott, MOE, dated March 15, 2000 re: Modified Surface Water Monitoring.

SCHEDULE "B"

This Schedule "B" forms part of Provisional Certificate of Approval No. A 412303:

GROUNDWATER MONITORING

On a semi-annual basis every spring (May/June) and fall (September/October), samples shall be taken and analysed in the following manner:

Routine Groundwater Monitors, BH-1, BH-5, BH-6, BH95-10, shall be sampled and analyzed for the following parameters:

water level, temperature, conductivity, pH, chloride, hardness, sodium, iron, manganese, alkalinity, sulphate, nitrate, DOC and TDS.

Surveillance Groundwater Monitors, BH-2-D, BH-2-S, BH-8, BH95-9 and three additional wells to be constructed, shall be sampled and analysed for the following parameters:

water level, temperature, conductivity, pH, ammonia, calcium, magnesium, sodium, potassium, aluminum, barium, boron, chromium, cobalt, copper, iron, manganese, nitrate, total phosphorus, silicon, strontium, sulphate, zinc, alkalinity, TDS, chloride, TKN, COD, DOC and hardness.

SURFACE WATER MONITORING

On a semi-annual basis every spring (May/June) and fall (September/October), samples shall be taken from Surface Water Stations SW-A, SW-C, SW-D and SW-F and analysed in the following manner:

flow rate, DO, pH, conductivity, temperature, ammonia, chloride, calcium, magnesium, sodium, iron, manganese, phenols, alkalinity, sulphate, nitrite, nitrate, DOC and TDS.

The reasons for the imposition of these conditions are as follows:

1. Conditions 1, 3, 4, 5, 6, 8, 9, 10, 11, 12 and 13 are to clarify the legal rights and obligations of this Certificate.

2. Condition 7 is to ensure that the appropriate Ministry staff have ready access to the waste Site to inspect the operations that are approved under this Certificate. The condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the **Environmental Protection Act**, as amended.

3. Conditions 2, 21 and 24 are to ensure that the waste disposal Site is operated in accordance with the application for this Certificate and supporting information and not in any way or under any name which the Director has not been asked to consider.

4. Condition 14 is required to clarify that the terms and conditions of this Certificate impose a standard of due diligence and not absolute liability.

5. The reason for Condition 15, which requires registration of the Certificate, is that Section 46 of the Environmental Protection Act prohibits any use being made of the lands after they cease to be used for waste disposal purposes within a period of twenty-five years from the year in which such land ceased to be used, unless the approval of the Minister for the proposed use has been given. The purpose of this prohibition is to protect future occupants of the site and the environment from any hazards which might occur as a result of waste being disposed of on the site. This prohibition and potential hazard should be drawn to the attention of future owners and occupants by the Certificate being registered on title.

6. The reason for Conditions 16, 17, 18, 19, 20, 22 and 23 is to ensure that the Site is operated and maintained in a manner that protects the health and safety of people and the environment.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990 c. E-19, you may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, as amended provides that the Notice requiring a hearing shall state:

1. *The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;*
2. *The grounds on which you intend to rely at the hearing in relation to <u>each</u> portion appealed.*

In addition to these legal requirements, the Notice should also include:

3. *The name of the appellant;*
4. *The address of the appellant;*
5. *The Certificate of Approval number;*
6. *The date of the Certificate of Approval;*
7. *The name of the Director;*
8. *The municipality within which the waste disposal site is located;*

Ontario

This Notice must be served upon:

The Secretary,
Environmental Appeal Board,
800 Yonge St., 12th Floor,
P.O. Box 2382
Toronto, Ontario.
M4P 1E4

AND

The Director,
Section 39, Environmental Protection Act,
Ministry of the Environment,
2 St. Clair Ave. W., 12A Floor,
Toronto, Ontario.
M4V 1L5

Further information on the Environmental Appeal Board's requirements for an appeal can be obtained directly from the Board by: Tel: (416) 314-4600, Fax: (416) 314-4506 or e-mail: www.ert.gov.on.ca.

DATED AT TORONTO this 18th day of May, 2000.

A. Dominski, P. Eng.,
Director,
Section 39,
Environmental Protection Act

/kb

c: District Manager, Ottawa District Office, MOE
K. Mooder, The Greer Galloway Group Inc.

THIS IS A TRUE COPY OF THE
ORIGINAL CERTIFICATE MAILED

ON 24-5-2000

RA
(Signed)

APPENDIX B

Correspondence

Tyler Peters (Greenview)

167-08.001/003

From: Lesieur, Marc-Etienne (ENE) [Marc.Lesieur@ontario.ca]
Sent: Friday, April 25, 2008 10:45 AM
To: Tyler Peters (Greenview)
Cc: Lorna Hudder; Scott Reynolds (Greenview)
Subject: RE: Twp of Killaloe, Hagarty and Richards - State of Emergency (Flooding)

Good day,

I confirm that the procedures presented below are satisfactory to the Ministry to deal with the current emergency waste management due to flooding in the vicinity of Round Lake.

Please keep me apprised of future development.

Sincerely,

Marc-Etienne LeSieur
Senior Environmental Officer
Ontario Ministry of the Environment
Ottawa District Office
2430 Don Reid Drive
Ottawa, ON, K1H 1E1
tel: 613-521-3450 ext. 229
fax: 613-521-5437
Toll free: 1-800-860-2195

From: Tyler Peters (Greenview) [mailto:tyler.peters@greenview-environmental.ca]
Sent: April 25, 2008 9:45 AM
To: Lesieur, Marc-Etienne (ENE)
Cc: 'Lorna Hudder'; Scott Reynolds (Greenview)
Subject: RE: Twp of Killaloe, Hagarty and Richards - State of Emergency (Flooding)
Importance: High

Good morning, Marc-Etienne;

Further to our telephone discussion this morning, this email is to summarize the permissible emergency waste management measures agreed to my the MOE, related to the Township's emergency situation.

1. The Township is permitted to use the Round Lake WDS (A412303) for staging and stockpiling of waste materials generated from the emergency clean-up operations. The stockpiled materials may be shredded (per EPA Section 9) for size reduction purposes at the Round Lake site, but must be transported to the Township's Killaloe WDS (A412306) for alternative daily cover or disposal. No materials are to be landfilled at the Round Lake site unless approved under a PC of A amendment.
2. The permitted volume of stockpiled material at the Township's Killaloe WDS is 500 m3. If additional volume is required, we will address approval for additional capacity if deemed necessary.

As more information is available regarding waste volumes and materials, we will update you accordingly.

Please find attached several pictures of the Round Lake WDS for your reference and information.

We appreciate your cooperation in this matter, and will keep you apprised of pertinent information as available.

Please confirm the above, thank you.

Cheers,

Tyler Peters, P.Eng.

Greenview Environmental Management
tel: (613) 332-0057
fax: (613) 332-1767
email: tyler.peters@greenview-environmental.ca

From: Tyler Peters (Greenview) [mailto:tyler.peters@greenview-environmental.ca]
Sent: April 24, 2008 3:19 PM
To: 'Lesieur, Marc-Etienne (ENE)'
Cc: 'Lorna Hudder'
Subject: Twp of Killaloe, Hagarty and Richards - State of Emergency (Flooding)
Importance: High

Good afternoon, Marc-Etienne;

We have been requested by the Township of Killaloe, Hagarty and Richards (Township) to contact you with regard to emergency waste management planning and operations for the Township in its current state of emergency due to flooding.

At this time, we are seeking your approval for the use of the Township's Round Lake WDS (A412303) for C&D, and bulky waste stockpiling, as well as increased volumes for the Killaloe WDS (A412306), which is currently approved to accept these materials up to 1,200 m3 annually.

The flooding of Round Lake and associated tributaries continues into this weekend. We currently have a minimal understanding of waste quantities, but anticipate more detail for early next week.

Please advise on how you wish to proceed in this regard for our action.

If you have any questions regarding this message, please contact me.

Cheers,

Tyler Peters, P.Eng.

Greenview Environmental Management
69 Cleak Avenue, PO Box 100
Bancroft, Ontario K0L 1C0
tel: (613) 332 - 0057
fax: (613) 332 - 1767
mobile: (613) 334 - 6330
email: tyler.peters@greenview-environmental.ca

Tyler Peters (Greenview)

107-08-001/003

From: Lorna Hudder [khr@on.aibn.com]
Sent: Friday, May 16, 2008 12:00 PM
To: Tyler Peters (Greenview)
Subject: RE: Information Pls

Hi Tyler: May 18th and June 29th, both days from 8:00 AM to 4:00 PM.

Lorna

From: Tyler Peters (Greenview) [mailto:tyler.peters@greenview-environmental.ca]
Sent: Friday, May 16, 2008 9:01 AM
To: Lorna Hudder
Cc: Sue Sheridan
Subject: Information Pls

Good morning, Lorna;

Could you please confirm the dates and times for the Round Lake WDS to receive disaster waste?

I'm preparing an update for the MOE, thanks.

If you have any questions regarding this message, please contact me.

Cheers,

Tyler Peters, P.Eng.

Greenview Environmental Management
69 Cleak Avenue, PO Box 100
Bancroft, Ontario K0L 1C0
tel: (613) 332 - 0057
fax: (613) 332 - 1767
mobile: (613) 334 - 6330
email: tyler.peters@greenview-environmental.ca

APPENDIX C

Borehole Logs

STRATIGRAPHIC AND INSTRUMENTATION LOG

Project No.:	95-210	Borehole No.:	BH-1
Client:	Tp. Hagarty & Richards	Date Completed:	DECEMBER 14, 1994
Location:	Round Lake Center	Drilling Method:	Hollow Stem Auger
Ground Surface Elevation:	98.047 m	Drill Supervisor:	B.J.V.

DEPTH (mBG)	SAMPLE	LOG	STRATIGRAPHIC DESCRIPTION	INSTALLATION
0			topsoil and sand	above ground casing with locking cap; bentonite clay
2			yellow brown coarse sand, bedded	38 mm dia. PVC riser; silica sand
4			brown gravel, pebbles and coarse sand	38 mm dia. PVC screen; silica sand and native sand
6			end borehole - inferred refusal on bedrock	
8				
10				
12				

STRATIGRAPHIC AND INSTRUMENTATION LOG

Project No.: 95-210	Borehole No.: BH-2-1 (bi-level)
Client: Tp. Hagarty & Richards	Date Completed: DECEMBER 14, 1994
Location: Round Lake Center	Drilling Method: Hollow Stem Auger
Ground Surface Elevation: 99.246 m	Drill Supervisor: B.J.V.

DEPTH (mBG)	SAMPLE	LOG	STRATIGRAPHIC DESCRIPTION	INSTALLATION
0				above ground casing with locking cap
2			yellow brown fine sand, bedded	bentonite clay; silica sand and native sand; 38 mm dia. PVC riser; bentonite clay
4			red brown gravel and coarse sand	38 mm dia. PVC screen; silica sand
6				
8				silica sand and native sand
10			end borehole - inferred refusal on bedrock	
12				

STRATIGRAPHIC AND INSTRUMENTATION LOG

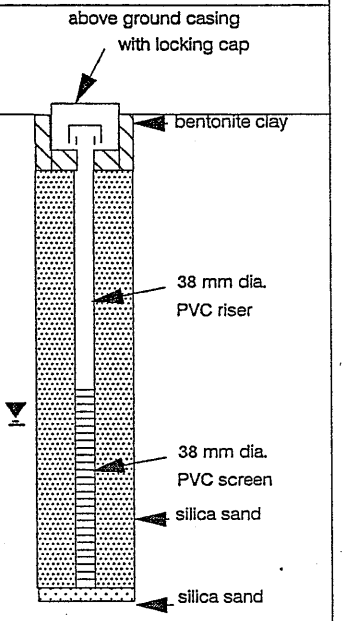
Project No.:	95-210	Borehole No.:	BH-2-2 (bi-level)
Client:	Tp. Hagarty & Richards	Date Completed:	DECEMBER 14, 1994
Location:	Round Lake Center	Drilling Method:	Hollow Stem Auger
Ground Surface Elevation:	99.246 m	Drill Supervisor:	B.J.V.

DEPTH (mBG)	SAMPLE	LOG	STRATIGRAPHIC DESCRIPTION	INSTALLATION
0				above ground casing with locking cap
2			yellow brown fine sand, bedded	bentonite clay; 38 mm dia. PVC riser; silica sand and native sand
4			red brown gravel and coarse sand	38 mm dia. PVC screen; bentonite clay
6				
8				silica sand and native sand
10			end borehole - inferred refusal on bedrock	
12				

STRATIGRAPHIC AND INSTRUMENTATION LOG

Project No.:	95-210	Borehole No.:	BH-3
Client:	Tp. Hagarty & Richards	Date Completed:	DECEMBER 14, 1994
Location:	Round Lake Center	Drilling Method:	Hollow Stem Auger
Ground Surface Elevation:	100.235 m	Drill Supervisor:	B.J.V.

DEPTH (mBG)	SAMPLE	LOG	STRATIGRAPHIC DESCRIPTION	INSTALLATION
0				above ground casing with locking cap
2			yellow brown medium sand, bedded	bentonite clay
4			yellow brown gravel and medium sand	38 mm dia. PVC riser
6			end borehole - quick sand	38 mm dia. PVC screen; silica sand; silica sand and native sand
8				
10				
12				



STRATIGRAPHIC AND INSTRUMENTATION LOG

Project No.:	95-210	Borehole No.:	BH-4
Client:	Tp. Hagarty & Richards	Date Completed:	DECEMBER 15, 1994
Location:	Round Lake Center	Drilling Method:	Hollow Stem Auger
Ground Surface Elevation:	98.387 m	Drill Supervisor:	B.J.V.

DEPTH (mBG)	SAMPLE	LOG	STRATIGRAPHIC DESCRIPTION	INSTALLATION
0			yellow brown medium to coarse sand with gravel	above ground casing with locking cap; bentonite clay; 38 mm dia. PVC riser; silica sand; 38 mm dia. PVC screen; silica sand and native sand
2				
4			brown dense silty sand with stones Till	
6			end borehole - refusal on bedrock	
8				
10				
12				

STRATIGRAPHIC AND INSTRUMENTATION LOG

Project No.:	95-210	Borehole No.:	BH-5
Client:	Tp. Hagarty & Richards	Date Completed:	DECEMBER 15, 1994
Location:	Round Lake Center	Drilling Method:	Hollow Stem Auger
Ground Surface Elevation:	97.953 m	Drill Supervisor:	B.J.V.

DEPTH (mBG)	SAMPLE	LOG	STRATIGRAPHIC DESCRIPTION	INSTALLATION
0				above ground casing with locking cap
			brown dense silty sand with stones	bentonite clay
			Till	38 mm dia. PVC riser
2				38 mm dia. PVC screen
			end borehole - inferred refusal on bedrock	silica sand and native sand
4				
6				
8				
10				
12				

STRATIGRAPHIC AND INSTRUMENTATION LOG

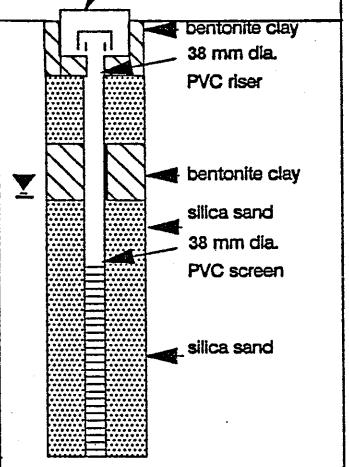
Project No.:	95-210	Borehole No.:	BH-6
Client:	Tp. Hagarty & Richards	Date Completed:	DECEMBER 15, 1994
Location:	Round Lake Center	Drilling Method:	Hollow Stem Auger
Ground Surface Elevation:	99.087 m	Drill Supervisor:	B.J.V.

DEPTH (mBG)	SAMPLE	LOG	STRATIGRAPHIC DESCRIPTION	INSTALLATION
0				above ground casing with locking cap
2			yellow brown medium sand, bedded	bentonite clay; 38 mm dia. PVC riser; silica sand; 38 mm dia. PVC screen; silica sand
4			end borehole- no refusal	
6				
8				
10				
12				

STRATIGRAPHIC AND INSTRUMENTATION LOG

Project No.:	95-210	Borehole No.:	BH-7
Client:	Tp. Hagarty & Richards	Date Completed:	February 23, 1995
Location:	Round Lake Center	Drilling Method:	Hollow Stem Auger
Ground Surface Elevation:	95.453m	Drill Supervisor:	A.W.

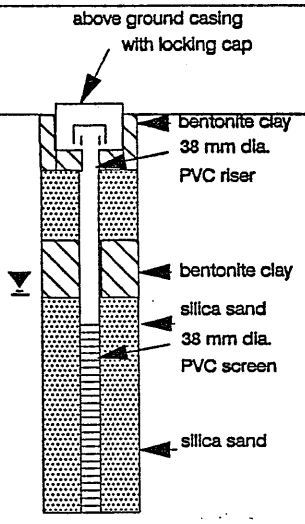
DEPTH (mBG)	SAMPLE	LOG	STRATIGRAPHIC DESCRIPTION	INSTALLATION
0				above ground casing with locking cap
2			yellow brown medium sand, bedded	bentonite clay 38 mm dia. PVC riser bentonite clay silica sand 38 mm dia. PVC screen silica sand
4				
6			end borehole- no refusal	
8				
10				
12				



STRATIGRAPHIC AND INSTRUMENTATION LOG

Project No.:	95-210	Borehole No.:	BH-8
Client:	Tp. Hagarty & Richards	Date Completed:	February 23, 1995
Location:	Round Lake Center	Drilling Method:	Hollow Stem Auger
Ground Surface Elevation:	94.713 m	Drill Supervisor:	A.W.

DEPTH (mBG)	SAMPLE	LOG	STRATIGRAPHIC DESCRIPTION	INSTALLATION
0				above ground casing with locking cap
2			yellow brown medium sand, bedded	bentonite clay; 38 mm dia. PVC riser; bentonite clay; silica sand; 38 mm dia. PVC screen; silica sand
4				
6			end borehole- no refusal	
8				
10				
12				



APPENDIX D

Field Sampling Records

Greenview
ENVIRONMENTAL MANAGEMENT

FIELD SAMPLING RECORD - GROUND WATER

LOCATION: Round Lake Waste Disposal Site **DATE:** May 20, 2008 **SAMPLED BY:** J.Bailey,S.Reynolds

PROJECT NO.: 107.08.003 **WEATHER (SAMPLE DAY):** Sun with cloud, 16°C **WEATHER (PREVIOUS DAY):** Sunny, 15°C

Monitoring Location	Static Water Level	Borehole Depth (m)	Stick - Up (m)	Borehole Diameter (mm)	Purge Volumes (L)		Temperature (°C)	pH (units)	Conductivity (µS)	Dissolved Oxygen (mg/L)	Observations				Comments
					Needed	Obtained					Colour	Clarity	Odour	Sheen	
BH-1	1.12	2.85	0.65	38.1	5	5	6.34	6.53	37	6.38	yellow	clear	none	none	
BH-2S	2.74	3.81	0.83	50.8	6	6	9.51	6.50	231	5.08	pale yellow	clear	none	none	
BH-2D	2.45	5.87	0.49	38.1	12	12	9.64	6.59	387	3.72	grey	milky	none	none	
BH-3	3.34	6.33	0.39	38.1	-	-	-	-	-	-	-	-	-	-	
BH-4	0.99	2.39	0.20	38.1	-	-	-	-	-	-	-	-	-	-	
BH-5	0.94	2.39	0.52	38.1	5	5	11.28	6.92	50	6.84	brown	milky	none	none	
BH-6	2.40	5.00	0.71	38.1	-	-	-	-	-	-	-	-	-	-	
BH-7	3.52	5.95	0.29	38.1	-	-	-	-	-	-	-	-	-	-	
BH-8	1.90	5.76	0.57	38.1	15	15	7.42	6.45	340	3.44	pale brown	cloudy	none	none	
BH95-9	2.00	5.05	0.45	38.1	9	9	6.96	6.58	181	3.85	none	clear	none	none	
BH95-10	3.07	6.05	0.52	38.1	-	-	-	-	-	-	-	-	-	-	
BH95-11	2.26	4.89	0.33	38.1	-	-	-	-	-	-	-	-	-	-	
BH01-12D	2.09	5.60	0.38	38.1	10	10	6.84	6.33	53	2.86	brown	milky	none	none	GW QA/QC
BH01-13S	2.04	2.66	0.72	38.1	2	2	6.73	6.75	64	9.09	brown	cloudy	none	none	
BH01-13D	1.93	4.40	0.63	50.8	15	15	6.16	6.51	175	2.86	brown	milky	none	none	
BH01-14	1.65	7.50	0.32	50.8	36	36	7.26	6.46	171	2.51	grey	milky	none	none	
BH01-15	5.16	6.10	0.69	50.8	-	-	-	-	-	-	-	-	-	-	
R1	-	-	-	-	-	-	13.66	6.60	41	4.18	none	clear	none	none	

Greenview
ENVIRONMENTAL MANAGEMENT

FIELD SAMPLING RECORD - GROUND WATER

LOCATION: Round Lake Waste Disposal Site **DATE:** Oct. 9, 2008 **SAMPLED BY:** J.Bailey,D. Hagan

PROJECT NO.: 107.08.003 **WEATHER (SAMPLE DAY):** sunny 15 °C **WEATHER (PREVIOUS DAY):** overcast, sun 10 °C

Monitoring Location	Static Water Level	Borehole Depth (m)	Stick - Up (m)	Borehole Diameter (mm)	Purge Volumes (L)		Temperature (°C)	pH (units)	Conductivity (µS)	Dissolved Oxygen (mg/L)	Observations				Comments
					Needed	Obtained					Colour	Clarity	Odour	Sheen	
BH-1	1.83	2.85	0.65	38.1	3	2	11.45	6.71	35	3.84	pale brown	cldy	N	N	
BH-2S	3.51	3.81	0.83	50.8	2	1	12.81	6.45	235	3.60	pale brown	cldy	N	N	
BH-2D	3.23	5.87	0.49	38.1	8	8	10.78	6.62	271	3.12	brown	opaque	N	N	QAQC #1
BH-3	4.13	6.33	0.39	38.1	-	-	-	-	-	-	-	-	-	-	
BH-4	1.82	2.39	0.20	38.1	-	-	-	-	-	-	-	-	-	-	
BH-5	1.78	2.39	0.52	38.1	1	1	12.63	6.63	84	3.08	brown	milky	N	N	
BH-6	3.21	5.00	0.71	38.1	5	5	12.08	6.55	38	6.40	brown	cldy	N	N	QAQC #2
BH-7	4.30	5.95	0.29	38.1	-	-	-	-	-	-	-	-	-	-	
BH-8	2.72	5.76	0.57	38.1	9	9	10.44	6.57	366	4.16	yellow	clear	N	N	
BH95-9	2.73	5.05	0.45	38.1	8	8	9.66	6.61	188	2.95	pale brown	cldy	N	N	
BH95-10	4.34	6.05	0.52	38.1	7	7	9.46	7.26	94	4.54	pale brown	cldy	N	N	
BH95-11	2.50	4.89	0.33	38.1	-	-	-	-	-	-	-	-	-	-	
BH01-12D	2.89	5.60	0.38	38.1	8	8	10.35	6.58	63	3.10	brown	cldy	N	N	
BH01-13S	-	2.66	0.72	38.1	-	-	-	-	-	-	-	-	-	-	Dry
BH01-13D	2.72	4.40	0.63	50.8	10	10	10.00	6.92	188	4.17	pale brown	cldy	N	N	
BH01-14	2.45	7.50	0.32	50.8	30	30	8.82	6.52	155	2.60	grey	milky	N	N	
BH01-15	5.95	6.10	0.69	50.8	-	-	-	-	-	-	-	-	-	-	insufficient H20 for Sample
R1	-	-	-	-	-	-	14.83	6.91	53	4.25	clear	clear	N	N	

APPENDIX E

Laboratory Certificates of Analysis

SGS Lakefield Research Limited
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

Greenview Environmental Management
Attn : Tyler Peters tyler.peters@greenview-environmental.ca

PO Box 100, 69 Cleak Ave.
Bancroft, ON
K0L 1C0,

Phone: 613-332-0057
Fax:613-332-1767, pdf, excel

Friday, June 06, 2008

Date Rec. : 21 May 2008
LR Report: **CA10019-MAY08**
Reference: 107.08.003 Round Lake GW

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	7: BH-1	8: BH-2S	9: BH-2D	10: BH-5	11: BH-8	12: BH95-9	13: BH01-12D	14: BH01-13S	15: BH01-13D	16: BH01-14	17: R1	18: GW QA/QC
Sample Date & Time			20-May-08	20-May-08	20-May-08	20-May-08	20-May-08	20-May-08	20-May-08	20-May-08	20-May-08	20-May-08	20-May-08	20-May-08
Temperature Upon Receipt [°C]	—	—	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
Alkalinity [mg/L as CaCO3]	29-May-08	11:26	13	169	190	29	199	83	15	45	118	92	23	17
Solids (Total Dissolved) [mg/L]	05-Jun-08	09:18	103	240	251	126	271	154	106	60	191	151	97	77
COD [mg/L]	29-May-08	16:28	35	18	38	16	27	12	30	< 8	20	11	< 8	28
Nitrogen-Kjeldahl (N) [mg/L]	23-May-08	11:04	1.7	3.3	2.5	1.1	4.8	2.8	1.1	0.8	2.1	1.6	< 0.5	1.0
Ammonia+Ammonium (as N) [mg/L]	02-Jun-08	14:32	0.7	3.0	2.5	0.2	4.4	0.3	0.3	0.6	0.6	0.2	< 0.1	0.7
Sulphate [mg/L]	04-Jun-08	15:42	11	18	9.0	8.9	11	19	11	4.0	17	22	4.3	11
Chloride [mg/L]	04-Jun-08	15:42	2.1	4.7	8.9	2.2	8.0	12	1.5	1.0	6.1	5.1	0.4	1.5
Nitrite (as nitrogen) [mg/L]	30-May-08	09:47	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate (as nitrogen) [mg/L]	30-May-08	09:47	< 0.05	0.28	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.27	< 0.05	< 0.05	0.16	< 0.05
Dissolved Organic Carbon [mg/L]	01-Jun-08	12:30	13.2	4.1	5.2	< 1	4.6	1.4	6.5	< 1	3.0	2.5	< 1	6.4
Hardness [mg/L as CaCO3]	26-May-08	12:38	21.3	123	143	64.2	144	153	45.8	37.6	117	105	20.9	22.8
Aluminum [mg/L]	27-May-08	14:38	0.399	0.0087	0.0219	0.177	0.0288	0.213	0.180	0.0250	0.0172	0.0329	0.0099	0.0885
Barium [mg/L]	27-May-08	14:38	0.0118	0.123	0.157	0.0335	0.179	0.0428	0.0246	0.0160	0.0641	0.0529	0.0116	0.0147
Boron [mg/L]	27-May-08	14:38	0.0026	0.112	0.103	0.0139	0.0983	0.0655	0.0176	0.0177	0.0602	0.0443	0.0066	0.0049
Calcium [mg/L]	26-May-08	12:38	5.25	36.3	41.1	21.4	40.5	42.2	14.2	9.28	28.1	23.2	5.18	5.38
Cobalt [mg/L]	27-May-08	14:38	0.00267	0.00755	0.00400	0.000141	0.00380	0.000937	0.00213	0.000114	0.00258	0.00106	0.000026	0.00198
Chromium [mg/L]	27-May-08	14:38	0.0018	0.0009	0.0027	0.0006	0.0029	0.0007	0.0023	< 0.0005	0.0008	< 0.0005	< 0.0005	0.0021
Copper [mg/L]	27-May-08	14:38	0.0077	0.0053	0.0015	0.0026	0.0034	0.0022	0.0051	0.0023	0.0023	0.0023	0.0602	0.0017
Iron [mg/L]	26-May-08	12:38	0.52	1.03	32.3	0.19	21.6	6.84	9.97	0.10	8.28	9.37	< 0.01	10.4
Potassium [mg/L]	26-May-08	12:38	1.00	12.6	12.7	2.06	17.7	2.82	1.62	2.52	4.22	3.27	0.99	1.23
Magnesium [mg/L]	26-May-08	12:38	1.99	7.92	9.72	2.65	10.5	11.6	2.48	3.51	11.4	11.5	1.94	2.27
Manganese [mg/L]	27-May-08	14:39	0.0238	2.71	4.09	0.0832	5.10	0.185	0.111	0.00208	1.26	0.281	0.00475	0.0765

OnLine LIMS

SGS Lakefield Research Limited
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA10019-MAY08**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	7: BH-1	8: BH-2S	9: BH-2D	10: BH-5	11: BH-8	12: BH95-9	13: BH01-12D	14: BH01-13S	15: BH01-13D	16: BH01-14	17: R1	18: GW QA/QC
Sodium [mg/L]	26-May-08	12:38	3.84	8.51	13.3	4.23	12.5	7.10	3.82	5.77	8.58	5.79	1.34	2.19
Phosphorus [mg/L]	26-May-08	12:38	< 0.01	0.02	0.03	0.09	0.02	0.07	0.07	0.01	0.02	< 0.01	< 0.01	0.02
Silica [mg/L]	26-May-08	12:38	8.31	8.51	15.3	4.84	14.8	8.90	8.74	4.58	10.9	9.09	6.20	8.78
Strontium [mg/L]	26-May-08	12:38	0.0269	0.220	0.291	0.0616	0.299	0.137	0.0439	0.0567	0.160	0.131	0.0338	0.0340
Zinc [mg/L]	27-May-08	14:39	0.015	0.014	0.014	0.015	0.014	0.014	0.014	0.013	0.013	0.013	0.003	0.001

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

SGS Lakefield Research Limited
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

Greenview Environmental Management
Attn : Tyler Peters tyler.peters@greenview-environmental.ca; jamie.bailey@greenview-environmental.ca

PO Box 100, 69 Cleak Ave.
Bancroft, ON
K0L 1C0,

Phone: 613-332-0057
Fax:613-332-1767, pdf, excel

Monday, October 27, 2008

Date Rec. : 10 October 2008
LR Report: **CA10042-OCT08**
Reference: 107.08.003 Round Lake GW

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	7: BH-1	8: BH-2S	9: BH-2D	10: BH-5	11: BH-8	12: BH95-9	13: BH01-12D
Sample Date & Time			09-Oct-08	09-Oct-08	09-Oct-08	09-Oct-08	09-Oct-08	09-Oct-08	09-Oct-08
Temperature Upon Receipt [°C]	--	---	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Alkalinity [mg/L as CaCO3]	24-Oct-08	09:29	12	121	148	46	208	89	28
Solids (Total Dissolved) [mg/L]	16-Oct-08	12:06	69	169	220	91	266	149	91
COD [mg/L]	24-Oct-08	09:09	33	31	44	9	30	< 8	24
Nitrogen-Kjeldahl (N) [mg/L]	20-Oct-08	13:41	< 0.5	3.4	2.7	< 0.5	3.6	< 0.5	< 0.5
Ammonia+Ammonium (N) [mg/L]	17-Oct-08	11:38	< 0.1	3.2	2.4	0.3	3.5	0.1	< 0.1
Sulphate [mg/L]	24-Oct-08	16:57	9.2	12	7.4	11	9.8	16	10
Chloride [mg/L]	24-Oct-08	16:57	1.6	3.8	6.3	3.9	9.4	9.6	2.2
Nitrite (as nitrogen) [mg/L]	21-Oct-08	11:31	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate (as nitrogen) [mg/L]	21-Oct-08	11:31	< 0.05	0.72	< 0.05	0.08	0.07	0.11	0.65
Dissolved Organic Carbon [mg/L]	17-Oct-08	08:49	11.3	3.8	4.6	< 1	10.2	1.0	5.1
Hardness [mg/L as CaCO3]	20-Oct-08	16:34	14.8	106	103	51.0	153	109	21.8
Aluminum [mg/L]	17-Oct-08	17:26	0.354	0.0177	0.0912	0.309	0.0349	0.0088	0.0986
Barium [mg/L]	17-Oct-08	17:26	0.0113	0.0956	0.111	0.0415	0.185	0.0434	0.0159
Boron [mg/L]	17-Oct-08	17:26	0.0024	0.0841	0.0687	0.0072	0.0845	0.0547	0.0060
Calcium [mg/L]	20-Oct-08	16:34	3.68	30.6	29.6	12.3	43.3	23.9	5.11
Cobalt [mg/L]	17-Oct-08	17:26	0.00712	0.0191	0.00485	0.0165	0.0116	0.0103	0.00278
Chromium [mg/L]	17-Oct-08	17:26	0.0013	0.0013	0.0028	0.0009	0.0029	0.0005	0.0020
Copper [mg/L]	17-Oct-08	17:26	0.0054	0.0033	0.0015	0.0018	0.0017	0.0008	0.0022

OnLine LIMS

SGS Lakefield Research Limited
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA10042-OCT08**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	7: BH-1	8: BH-2S	9: BH-2D	10: BH-5	11: BH-8	12: BH95-9	13: BH01-12D
Iron [mg/L]	20-Oct-08	16:33	0.57	1.98	26.4	1.51	24.1	6.87	9.57
Potassium [mg/L]	20-Oct-08	16:33	0.52	14.1	11.3	2.94	19.1	2.53	1.44
Magnesium [mg/L]	20-Oct-08	16:33	1.38	7.28	7.07	4.93	11.0	11.9	2.20
Manganese [mg/L]	17-Oct-08	17:26	0.0312	2.37	2.47	2.88	5.23	0.232	0.0917
Sodium [mg/L]	20-Oct-08	16:33	2.08	9.04	12.1	3.42	12.6	5.94	2.46
Phosphorus [mg/L]	20-Oct-08	16:33	< 0.01	< 0.01	0.02	0.03	0.01	0.01	0.02
Silica [mg/L]	20-Oct-08	16:33	8.50	12.4	15.5	6.81	16.5	9.15	9.35
Strontium [mg/L]	20-Oct-08	16:33	0.0204	0.196	0.211	0.0782	0.325	0.132	0.0323
Zinc [mg/L]	17-Oct-08	17:26	0.004	0.004	0.004	0.005	0.003	0.003	0.002
Benzene [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	—	< 1	—
Bromodichloromethane [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	—	< 1	—
Bromoform [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	—	< 1	—
Bromomethane [ug/L]	20-Oct-08	14:25	< 0.9	< 0.9	< 0.9	< 0.9	—	< 0.9	—
Carbon tetrachloride [ug/L]	20-Oct-08	14:25	< 0.5	< 0.5	< 0.5	< 0.5	—	< 0.5	—
Chlorobenzene [ug/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	—	< 5	—
Chloroethane [ug/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	—	< 5	—
Chloroform [ug/L]	20-Oct-08	14:25	< 0.5	< 0.5	< 0.5	< 0.5	—	< 0.5	—
Chloromethane [ug/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	—	< 5	—
Dibromochloromethane [ug/L]	20-Oct-08	14:25	< 0.5	< 0.5	< 0.5	< 0.5	—	< 0.5	—
1,2-Dichlorobenzene [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	—	< 1	—
1,3-Dichlorobenzene [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	—	< 1	—
1,4-Dichlorobenzene [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	—	< 1	—
1,1-Dichloroethane [ug/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	—	< 5	—
1,2-Dichloroethane [ug/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	—	< 5	—
1,1-Dichloroethylene (vinylidene chloride) [ug/L]	20-Oct-08	14:25	< 0.66	< 0.66	< 0.66	< 0.66	—	< 0.66	—
1,2-Dichloropropane [ug/L]	20-Oct-08	14:25	< 0.7	< 0.7	< 0.7	< 0.7	—	< 0.7	—
trans-1,2-Dichloroethene [ug/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	—	< 5	—
cis-1,2-Dichloroethene [ug/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	—	< 5	—
cis-1,3-Dichloropropene [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	—	< 1	—
trans-1,3-Dichloropropene [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	—	< 1	—
Ethylbenzene [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	—	< 1	—
Ethylenedibromide [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	—	< 1	—
Dichloromethane [ug/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	—	< 5	—
Styrene [ug/L]	20-Oct-08	14:25	< 4	< 4	< 4	< 4	—	< 4	—

OnLine LIMS

SGS Lakefield Research Limited
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA10042-OCT08**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	7: BH-1	8: BH-2S	9: BH-2D	10: BH-5	11: BH-8	12: BH95-9	13: BH01-12D
1,1,2,2-Tetrachloroethane [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	---	< 1	---
Tetrachloroethene [µg/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	---	< 5	---
Toluene [ug/L]	20-Oct-08	14:25	< 0.8	< 0.8	< 0.8	< 0.8	---	< 0.8	---
Trichloroethylene [ug/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	---	< 5	---
Vinyl Chloride [ug/L]	20-Oct-08	14:25	< 0.5	< 0.5	< 0.5	< 0.5	---	< 0.5	---
Trichlorofluoromethane [ug/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	---	< 5	---
1,1,1-Trichloroethane [ug/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	---	< 5	---
1,1,2-Trichloroethane [ug/L]	20-Oct-08	14:25	< 5	< 5	< 5	< 5	---	< 5	---
Xylene (Total) [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	---	< 1	---
o-xylene [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	---	< 1	---
m/p-xylene [ug/L]	20-Oct-08	14:25	< 1	< 1	< 1	< 1	---	< 1	---
1,1,1,2-Tetrachloroethane [ug/L]	20-Oct-08	14:25	< 2	< 2	< 2	< 2	---	< 2	---

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

SGS Lakefield Research Limited
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

Greenview Environmental Management

Monday, October 27, 2008

Attn : Tyler Peters tyler.peters@greenview-environmental.ca; jamie.bailey@greenview-environmental.ca

PO Box 100, 69 Cleak Ave.
Bancroft, ON
K0L 1C0,

Phone: 613-332-0057
Fax:613-332-1767, pdf, excel

Date Rec. : 10 October 2008
LR Report: **CA10042-OCT08**
Reference: 107.08.003 Round Lake GW

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	15: BH01-13D	16: BH01-14	17: R1	18: GW QA/QC 1	19: BH-6	20: BH-95-10	22: GW QAQC 2	23: Trip Blank	24: Field Blank
Sample Date & Time	09-Oct-08	09-Oct-08	09-Oct-08	09-Oct-08	09-Oct-08	09-Oct-08	09-Oct-08	09-Oct-08	09-Oct-08
Temperature Upon Receipt [°C]	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Alkalinity [mg/L as CaCO3]	101	83	29	132	28	34	23	---	---
Solids (Total Dissolved) [mg/L]	151	154	49	214	69	89	< 30	---	---
COD [mg/L]	12	20	< 8	41	---	---	---	---	---
Nitrogen-Kjeldahl (N) [mg/L]	< 0.5	< 0.5	< 0.5	2.5	---	---	---	---	---
Ammonia+Ammonium (N) [mg/L]	0.3	< 0.1	0.1	2.3	---	---	---	---	---
Sulphate [mg/L]	15	15	3.6	8.3	7.1	10	5.5	---	---
Chloride [mg/L]	6.7	5.4	0.3	6.3	0.4	7.7	0.3	---	---
Nitrite (as nitrogen) [mg/L]	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	---	---
Nitrate (as nitrogen) [mg/L]	0.05	0.05	0.12	0.06	0.51	2.79	0.52	---	---
Dissolved Organic Carbon [mg/L]	2.0	1.4	< 1	4.5	< 1	< 1	< 1	---	---
Hardness [mg/L as CaCO3]	102	85.8	24.6	94.8	18.3	48.7	31.6	---	---
Aluminum [mg/L]	0.0280	0.118	0.0031	0.152	---	---	---	---	---
Barium [mg/L]	0.0588	0.0468	0.0114	0.113	0.00766	0.0140	0.0119	---	---
Boron [mg/L]	0.0453	0.0345	0.0052	0.0644	0.0115	0.0240	0.0140	---	---
Calcium [mg/L]	24.4	18.7	7.06	27.2	---	---	---	---	---
Cobalt [mg/L]	0.00754	0.0137	0.000145	0.00148	---	---	---	---	---
Chromium [mg/L]	0.0010	0.0008	< 0.0005	0.0028	< 0.0005	< 0.0005	< 0.0005	---	---
Copper [mg/L]	0.0013	0.0029	0.0402	0.0020	---	---	---	---	---

OnLine LIMS

SGS Lakefield Research Limited
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA10042-OCT08**

Analysis	15: BH01-13D	16: BH01-14	17: R1	18: GW QA/QC 1	19: BH-6	20: BH-95-10	22: GW QAQC 2	23: Trip Blank	24: Field Blank
Iron [mg/L]	7.15	7.92	0.02	24.7	0.09	0.05	0.07	---	---
Potassium [mg/L]	3.79	2.54	1.17	10.9	---	---	---	---	---
Magnesium [mg/L]	10.1	9.50	1.70	6.54	---	---	---	---	---
Manganese [mg/L]	1.01	0.271	0.00718	2.34	0.0415	0.0267	0.00570	---	---
Sodium [mg/L]	6.75	4.00	1.31	11.1	2.98	4.17	3.06	---	---
Phosphorus [mg/L]	< 0.01	0.01	< 0.01	0.02	---	---	---	---	---
Silica [mg/L]	11.2	9.22	6.53	14.3	---	---	---	---	---
Strontium [mg/L]	0.144	0.115	0.0450	0.196	---	---	---	---	---
Zinc [mg/L]	0.003	0.005	0.002	0.004	---	---	---	---	---
Benzene [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
Bromodichloromethane [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
Bromoform [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
Bromomethane [ug/L]	---	< 0.9	---	< 0.9	---	---	---	< 0.9	< 0.9
Carbon tetrachloride [ug/L]	---	< 0.5	---	< 0.5	---	---	---	< 0.5	< 0.5
Chlorobenzene [ug/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
Chloroethane [ug/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
Chloroform [ug/L]	---	< 0.5	---	< 0.5	---	---	---	< 0.5	< 0.5
Chloromethane [ug/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
Dibromochloromethane [ug/L]	---	< 0.5	---	< 0.5	---	---	---	< 0.5	< 0.5
1,2-Dichlorobenzene [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
1,3-Dichlorobenzene [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
1,4-Dichlorobenzene [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
1,1-Dichloroethane [ug/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
1,2-Dichloroethane [ug/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
1,1-Dichloroethylene (vinylidene chloride) [ug/L]	---	< 0.66	---	< 0.66	---	---	---	< 0.66	< 0.66
1,2-Dichloropropane [ug/L]	---	< 0.7	---	< 0.7	---	---	---	< 0.7	< 0.7
trans-1,2-Dichloroethene [ug/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
cis-1,2-Dichloroethene [ug/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
cis-1,3-Dichloropropene [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
trans-1,3-Dichloropropene [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
Ethylbenzene [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
Ethylenedibromide [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
Dichloromethane [ug/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
Styrene [ug/L]	---	< 4	---	< 4	---	---	---	< 4	< 4

OnLine LIMS

SGS Lakefield Research Limited
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA10042-OCT08**

Analysis	15: BH01-13D	16: BH01-14	17: R1	18: GW QA/QC 1	19: BH-6	20: BH-95-10	22: GW QAQC 2	23: Trip Blank	24: Field Blank
1,1,2,2-Tetrachloroethane [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
Tetrachloroethene [µg/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
Toluene [ug/L]	---	< 0.8	---	< 0.8	---	---	---	< 0.8	< 0.8
Trichloroethylene [ug/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
Vinyl Chloride [ug/L]	---	< 0.5	---	< 0.5	---	---	---	< 0.5	< 0.5
Trichlorofluoromethane [ug/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
1,1,1-Trichloroethane [ug/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
1,1,2-Trichloroethane [ug/L]	---	< 5	---	< 5	---	---	---	< 5	< 5
Xylene (Total) [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
o-xylene [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
m/p-xylene [ug/L]	---	< 1	---	< 1	---	---	---	< 1	< 1
1,1,1,2-Tetrachloroethane [ug/L]	---	< 2	---	< 2	---	---	---	< 2	< 2

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

APPENDIX F

Statement of Service Conditions and Limitations

Greenview
ENVIRONMENTAL MANAGEMENT

GREENVIEW ENVIRONMENTAL MANAGEMENT LIMITED - STATEMENT OF SERVICE CONDITIONS AND LIMITATIONS

Provision of Services and Payment

Upon documented acceptance of Greenview's proposed services, costs and associated terms by the client, Greenview may commence work on the proposed services directly. Upon retention of Greenview's services related to this project, the client agrees to remit payment for the services rendered for the specified period within (30) days of receipt as invoiced by Greenview on a typical monthly basis, unless otherwise arranged between the client and Greenview. In the event of non-payment by the client, Greenview reserves the right, without external influence or expense, to discontinue services and retain any documentation, data, reports, or other project information until such time as payment is received by Greenview.

Warranty, Limitations, and Reliance

Greenview relies on background and historical information from the client to determine the appropriate scope of services to meet the client's objectives, in accordance with applicable legislation, guidelines, industry practices, and accepted methodologies.

Greenview provides its services under the specific terms and conditions of a specific proposal (and where necessary formal contract), in accordance with the above requirements and the *Limitations Act 2002,* only.

The hypotheses, results, conclusions, and recommendations presented in documentation authored by Greenview are founded on the information provided by the client to Greenview in preparation for the work. Facts, conditions, and circumstances discovered by Greenview during the performance of the work requested by the client are assumed by Greenview to be part of preparatory information provided by the client as part of the proposal stage of the project. Greenview assumes that, until notified or discovered otherwise, that the information provided by, or obtained by Greenview from, the client is factual, accurate, and represents a true depiction of the circumstances that exist related to the time of the work.

Greenview relies on its clients to inform Greenview if there are changes to any related information to the work. Greenview does not review, analyze or attempt to verify the accuracy or completeness of the information or materials provided, or circumstances encountered, other than in accordance with applicable accepted industry practice. Greenview will not be responsible for matters arising from incomplete, incorrect or misleading information or from facts or circumstances that are not fully disclosed to or that are concealed from Greenview during the period that services, work, or documentation preparation was performed by Greenview.

Facts, conditions, information and circumstances may vary with time and locations and Greenview's work is based on a review of such matters as they existed at the particular time and location indicated in its documentation. No assurance is made by Greenview that the facts, conditions, information, circumstances or any underlying assumptions made by Greenview in connection with the work performed will not change after the work is completed and documentation is submitted. If any such changes occur or additional information is obtained, Greenview should be advised and requested to consider if the changes or additional information affect its findings or results.

When preparing documentation, Greenview considers applicable legislation, regulations, governmental guidelines and policies to the extent they are within its knowledge, but Greenview is not qualified to advise with respect to legal matters. The presentation of information regarding applicable legislation, regulations, governmental guidelines, and policies is for information only and is not intended to and should not be interpreted as constituting a legal opinion concerning the work completed or conditions outlined in a report. All legal matters should be reviewed and considered by an appropriately qualified legal practitioner.

Greenview's services, work and reports are provided solely for the exclusive use of the client which has retained the services of Greenview and to which its reports are addressed. Greenview is not responsible for the use of its services, work or reports by any other party, or for the reliance on, or for any decision which is made by any party using the services or work performed by or a report prepared by Greenview without Greenview's express written consent. Any party that uses, relies on, or makes a decision based on services or work performed by Greenview or a report prepared by Greenview without Greenview's express written consent, does so at its own risk. Except as set out herein, Greenview specifically disclaims any liability or responsibility to any third party for any loss, damage, expense, fine, penalty or other such thing which may arise or result from the use of, reliance on or decision based on any information, recommendation or other matter arising from the services, work or reports provided by Greenview.

Site Assessments

A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that Greenview's work or report considers any locations or times other than those from which information, sample results and data were specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those based on extrapolations.

Only conditions, and substances, at the site and locations chosen for study by the client are evaluated; no adjacent or other properties are evaluated unless specifically requested by the client. Any physical or other aspects of the site that were not chosen for study by the client, or any other matter not specifically addressed in a report prepared by Greenview, are beyond the scope of the work performed by Greenview and such matters have not been investigated or addressed.

Confidentiality

Greenview provides proposals, reports, assessments, designs, and any other work for the sole party identified as the client or potential client in the case of proposals.

For proposals specifically, the information contained therein is confidential, proprietary information, and shall not be reproduced or disclosed to any other party than to that of the addressee of the original proposal submission, without prior written permission of Greenview.