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ENVIRONMENTAL INVESTIGATION

former Arctic Gardens Property

11 Mill Street, Deseronto, Ontario

prepared for:
Town of Deseronto

October, 2003
File: 321/171

Distribution:
2 copies - Town of Deseronto
1 copy - Malroz Engineering Inc.

Notice to Reader

Malroz Engineering Inc. (*Malroz*) was retained by the Town of Deseronto to undertake an environmental investigation at the former Arctic Gardens property at 11 Mills Street in Deseronto, Ontario. The objective of the work was to better define the extent of contamination in areas outlined in the Phase 2 Environmental Site Assessment completed by Malroz in January, 2001. The scope of work for the current investigation included the following: soils investigation, soil and groundwater sampling and analyses, and documentation of the work in a written report.

The findings reported in this document are based on the tasks completed by *Malroz* under the mutually agreed scope of work. Professional judgement, experience with similar investigations, and available data collected within the scope of work form the basis for this report. *Malroz* has prepared this report using information understood to be factual and correct, and shall not be responsible for conditions arising from information or facts that were inaccurate, concealed, or not fully disclosed at the time of investigation.

The assessment of environmental conditions is based on a review of data collected at specific locations within the study area. Conditions between data locations have been inferred and actual conditions may vary from those reported. Environmental conditions can be expected to change over time.

The findings and conclusions of this report are valid only at the time at which this work was conducted. If future work is undertaken, or additional information becomes available, *Malroz* should be requested to re-evaluate the conclusions of this report and make amendments as required.

This document has been prepared by *Malroz* for the sole use of the *Town of Deseronto*, in assessing areas of contamination on the subject site. Unauthorized reuse of this document for any other purpose, or by any other party, without the express written consent of *Malroz* shall be at such party's sole risk and without liability to *Malroz*.

This page is an integral part of this document and must remain with it at all times.

Respectfully Submitted,
MALROZ ENGINEERING INC.

per: Jeff Reid, C.E.T.
Environmental Technologist

reviewed: David Malcolm, P.Eng.
Project Manager

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1.0 Introduction

1.1 Property Description

The former Arctic Gardens property is located on Mill Street in Deseronto, between Main Street and the Bay of Quinte (refer to Figure 1).

At present the property is vacant with scrub grass, shrubs and a copse of immature deciduous trees in the northwest and southeast corners of the property. All structures from the former canning factory have been demolished, leaving the concrete foundation slabs remaining. Asphalt pavement, used as former roadways and parking areas, are still present at some locations on the east portion of the property.

Adjacent land use consists of a flee market immediately to the north of the subject property, and a municipal water treatment facility to the east. The Bay of Quinte wraps around the south and west sides of the property. The peninsula to the southwest of the property is used as a park and boat moorage.

1.2 Background

The following environmental work has been previously undertaken at the subject property:

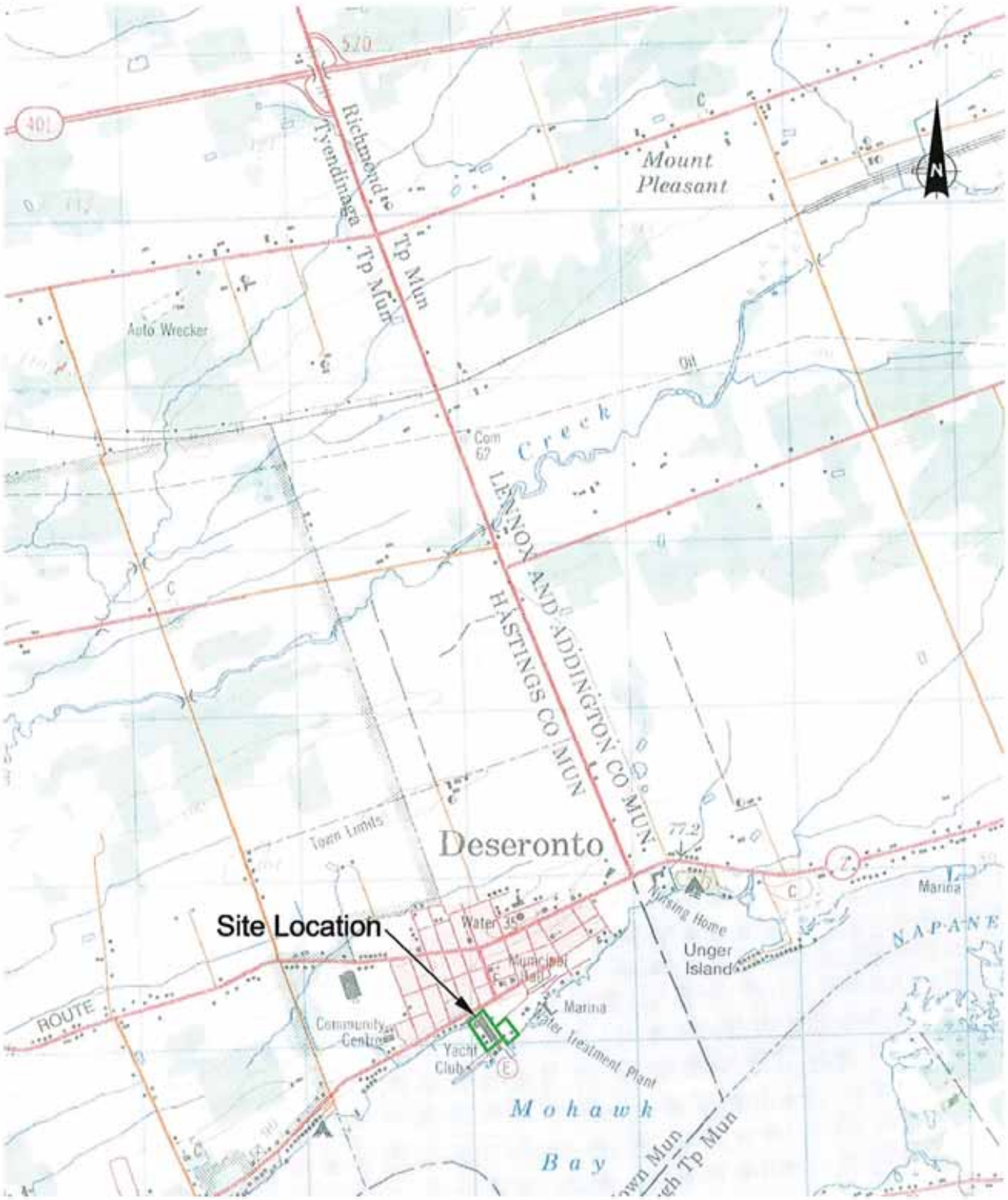
- A Phase 1 Environmental Site Assessment was conducted by Malroz on the subject property in May, 1999 (file ref. 321/102). The Phase 1 ESA report identified a potential for contamination from past fill placement and waste disposal, and on-site chemical storage in drums and USTs/ASTs. In addition, the potential for contamination from past lumber mill operations on the site was identified.

- Demolition of buildings and the clarifier was conducted in the fall/winter of 1999/2000 by Westendorp Demolition.

- Removal of fifty seven (57) 45-gallon chemical storage drums from the site was undertaken on various dates during the demolition by Drain-All.

- A Phase 2 Environmental Site Assessment was conducted by Malroz on the subject property between July, 2000 and January, 2001 (file ref. 321/139). The Phase 2 ESA report identified areas with existing soil and groundwater contamination from past site use.

- A Site Specific Risk Assessment (SSRA) was completed by Malroz on the subject property in September, 2001 (file ref. 321/145). The SSRA was conducted to evaluate whether the site supports the use of MOE Generic Criteria as soil clean-up objectives. Table B Generic Criteria has been excepted by the MOE for use as clean-up criteria on this property.



Based on Ministry of Energy, Mines and Resources Canada Map, Belleville, edition 7, 1991

Approximate Scale 1:50 000

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Site Location Plan

Environmental Investigation
Arctic Gardens, 11 Mill Street, Deseronto, Ontario

Figure
1
File: 0310-321/171

1.3 Local Groundwater Use

The Town of Deseronto is serviced by municipal water and sewer. A review of available MOE water well records identified wells within the town limit, however the location of the wells and whether they are still in service is not well documented.

The nearest sensitive receptor is the Bay of Quinte which borders the site to the west and south.

1.4 Initiation and Scope of Work

Malroz was retained by *the Town of Deseronto* to undertake further investigation areas of concern outlined in the Phase 2 ESA. The following environmental work was completed in 2003:

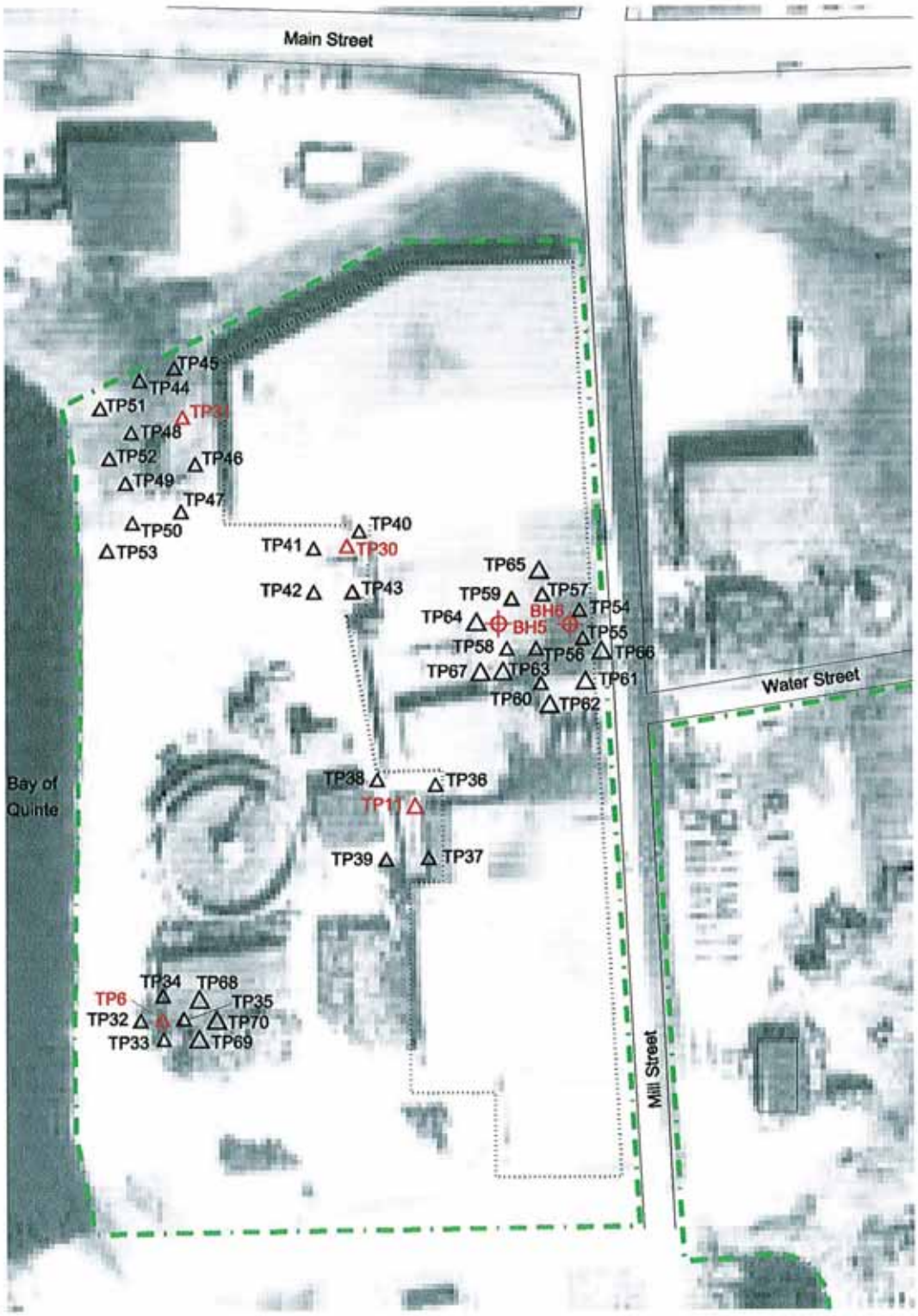
i. In June 2003, a test pit program was conducted to better delineate the extent of soil contamination in areas identified in the Phase 2 ESA as exceeding Table B clean-up criteria. Soil investigations were undertaken at: TP6 for copper; TP11 and TP30 for petroleum hydrocarbons; TP31 for petroleum hydrocarbons, zinc and PAHs; and BH5/6 for petroleum hydrocarbons, copper, lead, zinc and PAHs. Refer to Figure 2 for locations.

ii. In June 2003, groundwater samples were collected from monitoring wells MW2, MW6, MW8 and MW13, and analyzed for PAHs to confirm detects reported in September 2000.

iii. In August 2003, additional test pits in the areas of TP6 and BH5/6 were completed to better define the extent of contamination in these areas.

iv. In August, 2003, groundwater samples were collected from monitoring wells MW2, MW6, MW8 and MW13 and analyzed for PAH parameters as further confirmation of previous results.

This report presents the methodology and analytical results, and discusses site remediation options.



Legend:

TP33 △/△TP69 — test hole location and ID. (June/August, 2003)

△TP31 — Phase 2 ESA test hole location and ID. (referenced areas in report)

— — — approximate property boundary

Approx. Scale 0 25 m

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Testpit Location Plan

Arctic Gardens, 11 Mill Street, Deseronto, Ontario

Figure 2

File: 321/171

2.0 Field Methodology

2.1 Soil Investigation

The soils delineation program was conducted in two stages. Stage 1 was conducted on June 17 and 18, 2003 and consisted of excavating twenty-nine (29) test pits in areas which exceeded clean-up criteria in the Phase 2 ESA report; namely TP6, BH5/6, TP11, TP30 and TP31. Stage 2 was conducted on August 7, 2003, and consisted of excavating ten (10) test pits in areas not fully delineated during Stage 1 (TP6 and BH5/6). Given conditions in TP31 area, it was agreed no further work was warranted in this area during the August field investigation.

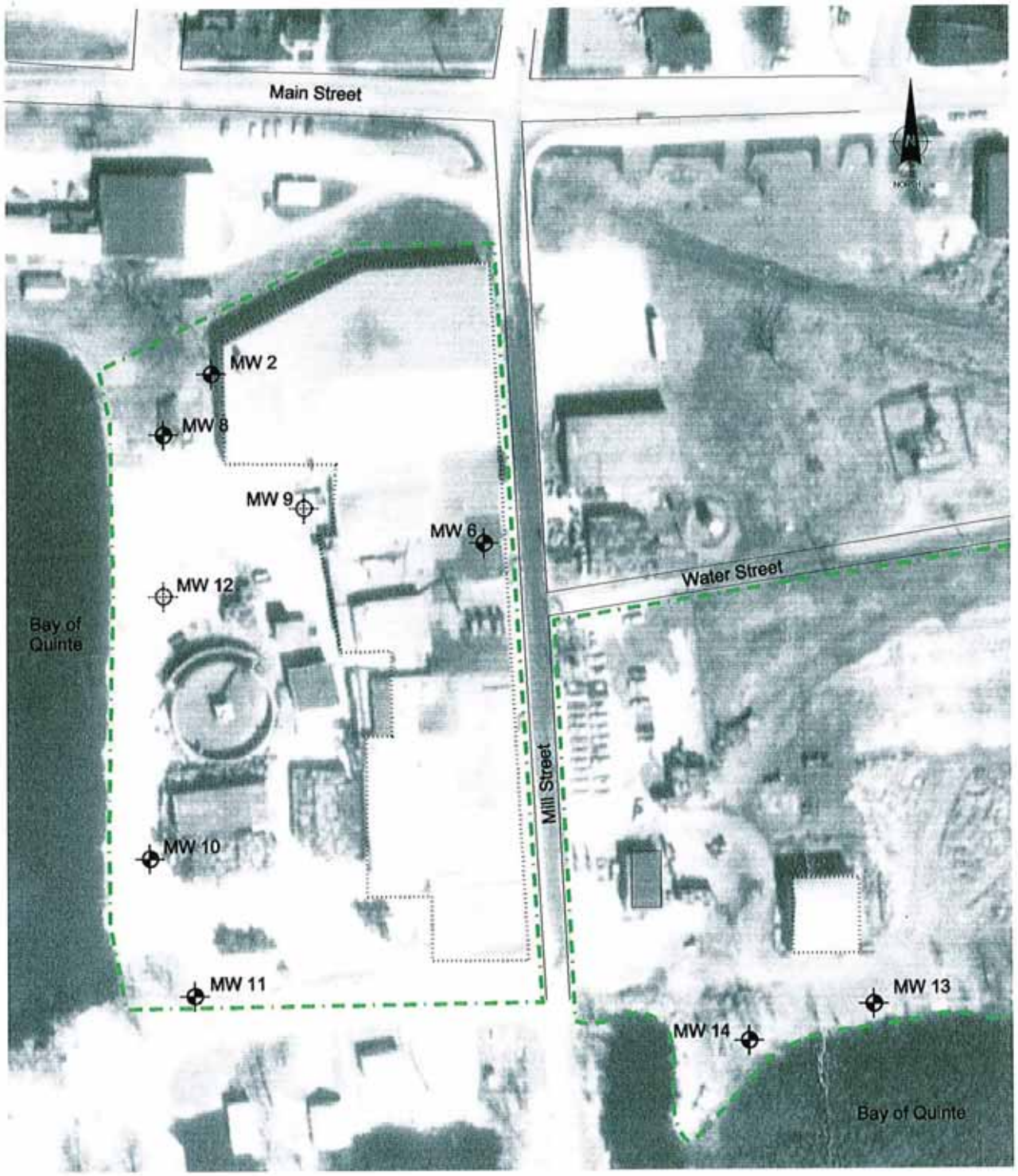
Test pits were excavated using a rubber tired backhoe, except in the area of BH5/6 which required a specialized drill rig equipped with a 9 inch (23 cm) core barrel to bore through the remains of the concrete building foundation and into the soils below. Test pits and borings were advanced to depths correlating with previously reported exceedences. Samples were logged for soil type, anthropogenic features, visual evidence of contamination, and presence of combustible vapours. Samples were placed in laboratory supplied bottles and packed with ice in a cooler before transferring them to the laboratory with the chain of custody form. Analyses varied between areas and depended upon field observations and suspected contaminants.

Figure 2 shows the test pit locations. Test pit logs are presented in Appendix A.

2.2 Groundwater Investigation

Malroz staff monitored groundwater conditions and checked for the presence of free phase product in the 7 existing monitoring wells on June 18 and August 7, 2003. Groundwater samples were collected on both occasions from four wells (MW2, MW8, MW6, and MW13) to determine current concentrations of the chemicals of concern. Locations of groundwater monitors are shown on Figure 3.

Groundwater monitors were opened and combustible vapour concentrations of headspace vapours were monitored in each well using an RKI Eagle combustible gas indicator set in full gas mode. Depth to water measurements were recorded to estimate shallow groundwater flow directions using an electronic sounding probe. Following depth measurements, monitors selected for sampling were purged of either three well volumes of water or until dry using dedicated waterra tubing equipped with a foot valve. Water samples were collected from groundwater which recharged into the monitor. Samples were placed in laboratory supplied bottles and packed with ice in a cooler before transferring them to the laboratory along with the chain of custody form. Samples were submitted for analyses of Polynuclear Aromatic Hydrocarbon (PAH) compounds.



Legend:

- MW2 — monitoring well location and ID.
- MW 12 — destroyed monitoring well
- approximate property boundary

Approx. Scale
0 50 m

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Monitoring Well Location Plan

Arctic Gardens, 11 Mill Street, Deseronto, Ontario

Figure
3
File: 321/171

3.0 Results of Analyses

3.1 Soils

A total of forty (40) soil samples from the June and August, 2003 investigations, were submitted to an independent CAEAL certified laboratory for analyses. The samples were analyzed for those parameters reported as exceeding clean-up criteria in the Phase 2 ESA investigation (January, 2001). Samples were selected to provide representation of current soil conditions and to assist in better delineating the areas of impact.

Results of laboratory analyses have been summarized in Table 1 and compared to the clean-up criteria[1]. The area of contamination around TP6, TP11 and TP30 appears to have been delineated. The probable volume of contaminated soil at 3 of the areas is presented in Table 2. The limit of impacted soil was not delineated at TP31 or BH5/6 areas.

Table 2
Estimate of Probable Contaminated Soil Volume

Location	Probable Thickness of Contamination (m)	Estimated Area of Contamination (m^2)	Probable Volume of Contaminated Soil (m^3)
TP6	1.5	65	100
TP11	0.8	55	50
TP30	1.6	55	90
TP31	3.6	>1200	unknown
BH5/6	2.7	>550	unknown

The results and inferred area of contamination is presented visually on Figure 4. The laboratory certificates are presented in Appendix B.

It must be emphasized that the estimated thicknesses, areas and volumes are based on a review of data collected at specific locations within the study area. Conditions between data locations have been inferred and actual conditions may vary from those reported. Also, environmental conditions can be expected to change over time. Therefore these estimates can only be used as a guideline.

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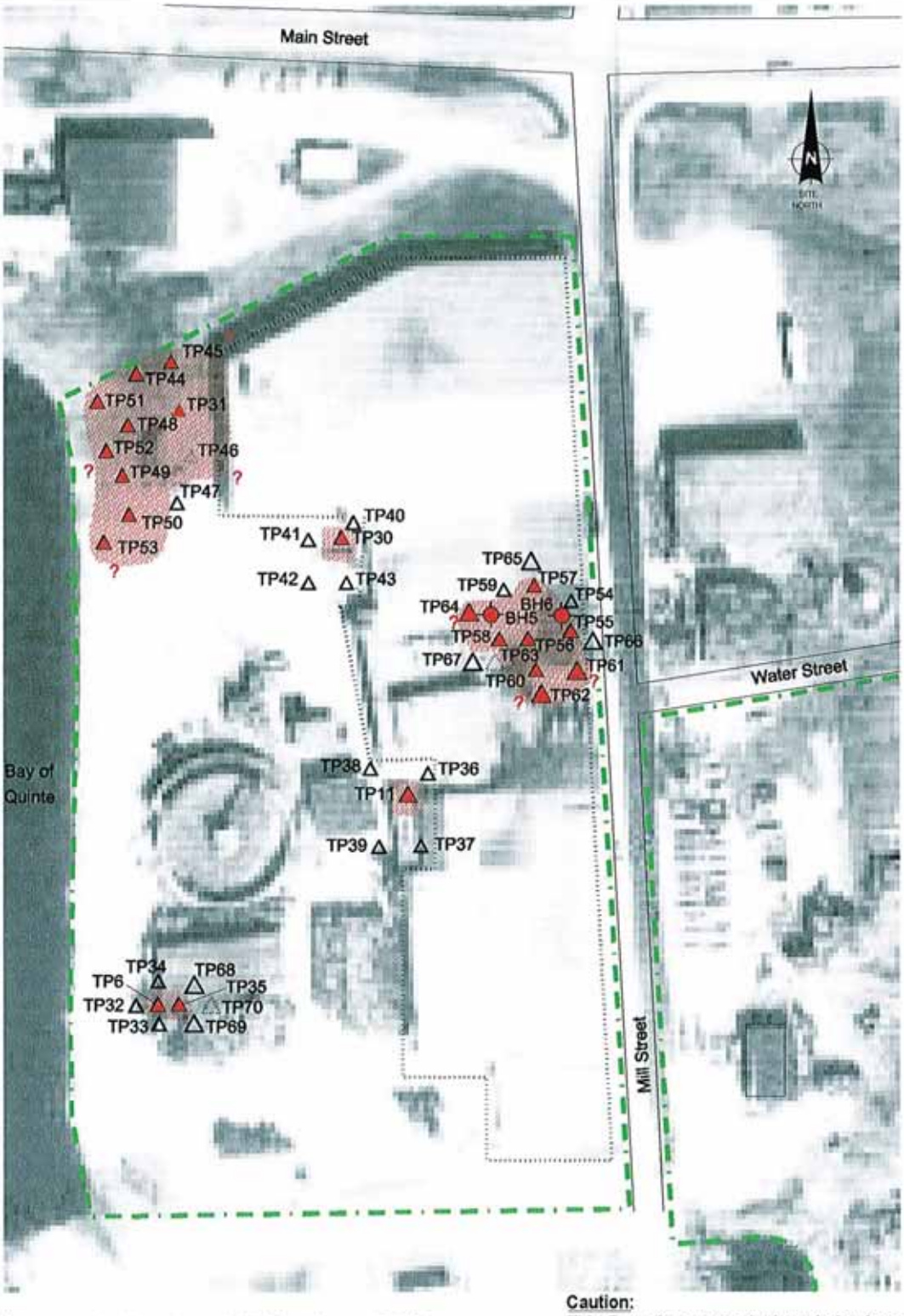
1 MOE *Guideline for Use at Contaminated Sites in Ontario* criteria (Table B - residential/parkland use in a nonpotable groundwater condition)

Table 1
Summary of Soil Analyses, June and August, 2003

PARAMETER	UNITS	MDL	TP32-01	TP33-01	TP34-01	TP35-01	TP36-01	TP37-01	TP38-01	TP39-01	TP40-01	TP41-01	TP42-01	TP43-01	TP44-01	TP45-01	TP47-01	TP48-01	TP49-02	TP50-01	TP51-01	TP52-02	Clean up Criteria Table B (residential/parkland)
sample depth (metres)			0.1 - 1.0	0.1 - 1.0	0.1 - 1.0	0.1 - 1.0	1.8 - 1.8	1.0 - 1.5	1.8 - 1.8	1.0 - 1.5	1.5 - 2.3	1.5 - 2.2	1.0 - 2.3	1.5 - 2.2	1.5 - 2.6	1.5 - 2.5	1.6 - 2.2	1.5 - 2.3	2.3 - 2.4	1.8 - 2.4	1.6 - 2.2	1.8 - 2.4	
date			Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	
Metals																							
Copper	ug/g	1	118	79	74	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	225
Lead	ug/g	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200
Zinc	ug/g	1	185	102	310	219	101	-	-	-	-	-	-	-	443	394	280	969	190	93	251	109	600
Total Petroleum Hydrocarbons																							
GRO (>C10)	ug/g	20	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
DRO (C10-C24)	ug/g	20	<	<	<	<	<	<	43	79	36	571	170	128	1200	1060	<	838	24000	1920	1750	1100	
GRO + DRO	ug/g	20	<	<	<	<	<	<	43	79	36	571	170	128	1200	1060	<	838	24000	1920	1750	1100	1000
Oil & Grease - Mineral	ug/g	100	-	-	-	-	-	-	-	-	-	-	-	-	809	251	228	272	2760	945	149	1730	1000
Polynuclear Aromatic Hydrocarbons																							
Acenaphthene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<	-	-	-	-	<	-	-	1000
Acenaphthylene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<	-	-	-	-	<	-	-	100
Anthracene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	<	-	-	28
Benzo(a)anthracene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<	-	-	-	-	2.9	-	-	40
Benzo(a)pyrene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	0.6	-	-	-	-	<	-	-	1.3
Benzo(b)fluoranthene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	<	-	-	12
Benzo(g,h,i)perylene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<	-	-	-	-	<	-	-	40
Benzo(k)fluoranthene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<	-	-	-	-	<	-	-	12
Chrysene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	1.1	-	-	-	-	<	-	-	12
Dibenz(a,h)anthracene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<	-	-	-	-	<	-	-	1.2
Fluoranthene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	<	-	-	40
Fluorene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<	-	-	-	-	<	-	-	200
Indeno(1,2,3-c,d)pyrene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<	-	-	-	-	<	-	-	12
Naphthalene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<	-	-	-	-	<	-	-	40
Phenanthrene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	0.9	-	-	-	-	<	-	-	40
Pyrene	ug/g	0.1	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	-	<	-	-	200

PARAMETER	UNITS	MDL	TP53-02	TP54-01	TP55-01	TP56-01	TP57-01	TP58-01	TP59-01	TP60-01	TP61-02	TP61-03	TP62-01	TP62-02	TP64-02	TP64-03	TP65-01	TP65-02	TP66-02	TP67-02	TP68-01	TP69-01	Guideline Criteria Table B (residential/parkland)
sample depth (metres)			1.8 - 2.2	1.0 - 1.5	1.0 - 1.5	1.3 - 1.8	1.3 - 1.8	1.2 - 1.8	0.8 - 1.5	1.0 - 1.8	1.0 - 1.8	1.8 - 2.0	0.25 - 1.0	1.0 - 1.3	1.0 - 1.8	1.8 - 2.5	0.1 - 0.6	0.8 - 1.2	1.0 - 2.0	1.0 - 1.8	0.3 - 1.0	0.2 - 1.0	
date			Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Jun-03	Aug-03	Aug-03	Aug-03	Aug-03	Aug-03	Aug-03	Aug-03	Aug-03	Aug-03	Aug-03	Aug-03	Aug-03	
Metals																							
Copper	ug/g	1	-	42	141	544	68	56	16	57	11	26	142	39	824	779	49	20	19	97	46	32	225
Lead	ug/g	1	-	332	180	1180	1200	92	13	74	9	52	309	50	598	465	21	18	19	141	-	-	200
Zinc	ug/g	1	109	260	1700	942	450	761	88	169	25	41	72	30	731	546	61	57	57	89	-	-	600
Total Petroleum Hydrocarbons																							
GRO (>C10)	ug/g	20	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	-	-	
DRO (C10-C24)	ug/g	20	2000	59	586	132	345	142	<	1420	<	1040	86	36	362	186	<	60	104	92	-	-	
GRO + DRO	ug/g	20	2000	59	586	132	345	142	<	1420	<	1040	86	96	362	186	<	60	104	92	-	-	1000
Oil & Grease - Mineral	ug/g	100	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Polynuclear Aromatic Hydrocarbons																							
Acenaphthene	ug/g	0.1	-	-	-	<	<	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Acenaphthylene	ug/g	0.1	-	-	-	<	<	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100
Anthracene	ug/g	0.1	-	-	-	<	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28
Benzo(a)anthracene	ug/g	0.1	-	-	-	<	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
Benzo(a)pyrene	ug/g	0.1	-	-	-	<	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3
Benzo(b)fluoranthene	ug/g	0.1	-	-	-	<	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Benzo(g,h,i)perylene	ug/g	0.1	-	-	-	<	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
Benzo(k)fluoranthene	ug/g	0.1	-	-	-	<	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Chrysene	ug/g	0.1	-	-	-	<	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Dibenz(a,h)anthracene	ug/g	0.1	-	-	-	<	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2
Fluoranthene	ug/g	0.1	-	-	-	<	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
Fluorene	ug/g	0.1	-	-	-	<	<	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200
Indeno(1,2,3-c,d)pyrene	ug/g	0.1	-	-	-	<	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Naphthalene	ug/g	0.1	-	-	-	<	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
Phenanthrene	ug/g	0.1	-	-	-	<	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
Pyrene	ug/g	0.1	-	-	-	<	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200

Notes: 1 '-' denotes not analyzed
2 MDL denotes method detection limits
3 '<' denotes results below method detection limit
4 shading indicates parameters exceeding guideline criteria
5 Guideline criteria refers to MOE "Guidelines for Use of Contaminated Sites in Ontario", (Table B- residential/parkland land use in a nonpotable groundwater condition) Revised February, 1997



Legend:

TP33 △/△TP69 — test hole location and ID. (June/August, 2003)

△TP46 — test hole (no samples submitted for analyses)

▲/⊕ — results exceeds clean-up criteria (see table 1 for full list of parameters analyzed)

▨ — inferred area exceeding clean-up criteria

Caution:
This figure is a conceptual rendering based on limited information. Actual conditions may vary from those shown. Refer to report text for discussion.

Approx. Scale
0 25 m

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Soil Results and Inferred Area of Impact

Arctic Gardens, 11 Mill Street, Deseronto, Ontario

Figure
4

File: 321/171

3.2 Groundwater

Groundwater elevations were measured on June 18 and August 7, 2003, in the monitoring wells. In general, the shallow groundwater flow direction appears to radiate to the south and west towards the Bay of Quinte. Groundwater elevations and monitoring results are summarized in Table 3. Groundwater elevation contours are presented on Figure 5.

No evidence of phase separated liquid (i.e. free product) was observed during the groundwater sampling and monitoring visit.

Table 3
Summary of Groundwater Measurements

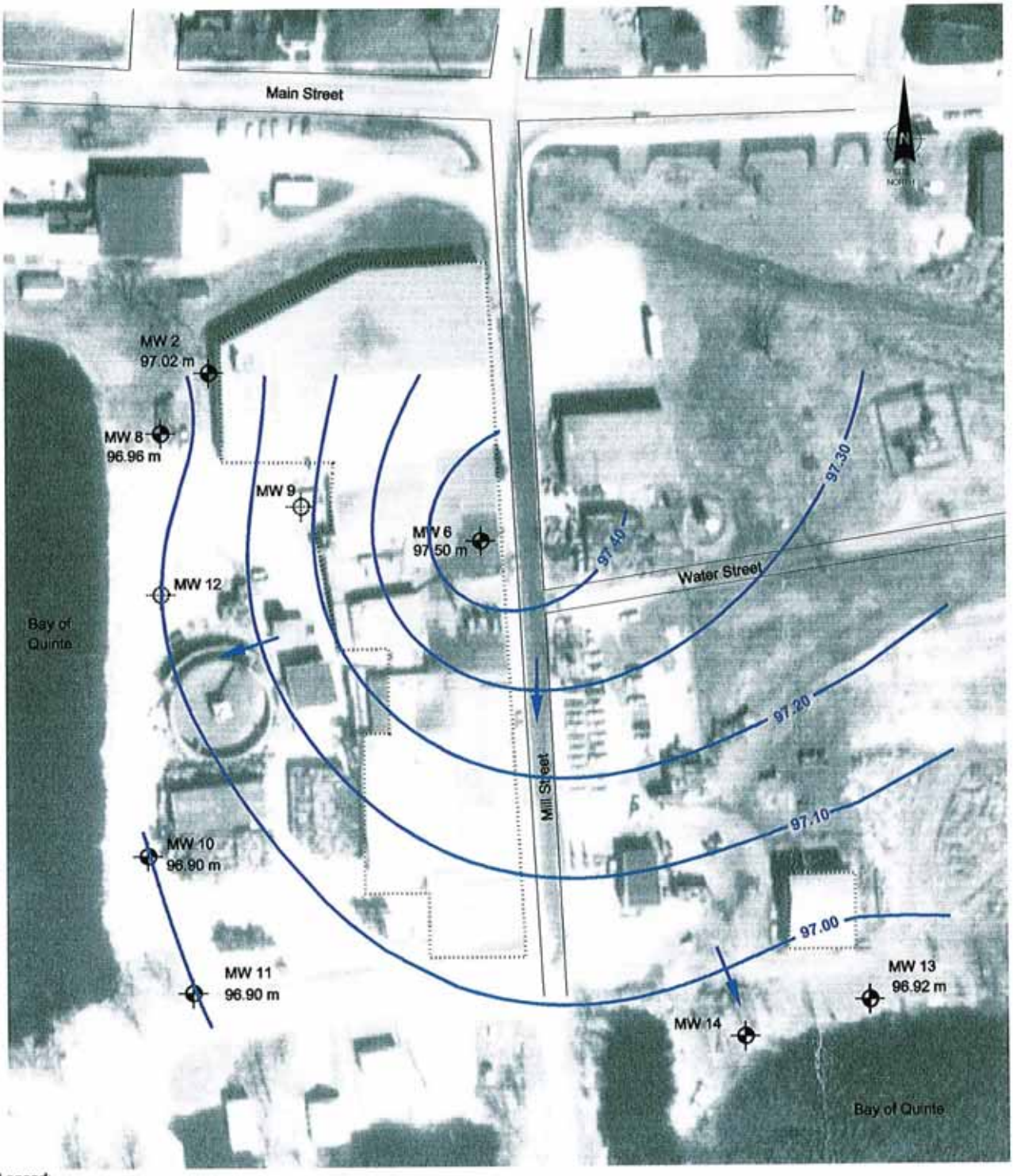
Monitoring Well	Depth to Groundwater (from Top of Pipe) (m)		Groundwater Elevation[(2)] (m)		Phase Separated Liquids	Comments
	June	August	June	August	June/August	
MW2	1.21	1.44	97.25	97.02	no	-
MW6	1.05	1.31	97.76	97.50	Slight oily film	-
MW8	0.8	1	97.16	96.96	no	-
MW9	-	-	-	-	-	well destroyed
MW10	1.19	1.3	97.01	96.90	no	-
MW11	1.47	1.58	97.01	96.90	no	-
MW12	-	-	-	-	-	well destroyed
MW13	0.67	0.78	97.03	96.92	no	-
MW14	0.45	NR	97.04	-	no	-

Notes: 1. Groundwater levels are subject to seasonal fluctuations and variations.
2. Groundwater elevations are referenced to an assumed elevation of 100.0 m (top nut on fire hydrant at Mill and Water Street intersection).
NR denotes no reading recorded.

A total of eight groundwater samples were submitted to an independent CAEAL certified laboratory for analyses of PAHs. Samples were collected from monitoring wells which reported exceedences of non potable guideline criteria in the Phase 2 ESA report (MW2, MW6, MW8, MW13), and analyzed for those same parameters, namely, PAHs.

Results of laboratory analyses have been summarized in Table 3 and compared to MOE Guideline Criteria[1]. Results show two wells (MW2 and MW8) with concentrations above Guideline Criteria. MW2 exceeded on both occasions for various PAHs and MW8 exceeded only in August for benzo(g,h,i)perylene.

Groundwater results are presented visually on Figure 6. Laboratory certificates are presented in Appendix B.



Legend:

MW2	monitoring well location and ID.
MW 12	destroyed monitoring well
97.02 m	groundwater elevation (in metres)
97.00	groundwater contour (0.1 m interval)
	inferred groundwater flow direction

Note: contours generated using Surfer version 6.03

Approx. Scale

0 50 m

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Groundwater Contours, August 2003

Arctic Gardens, 11 Mill Street, Deseronto, Ontario

Figure

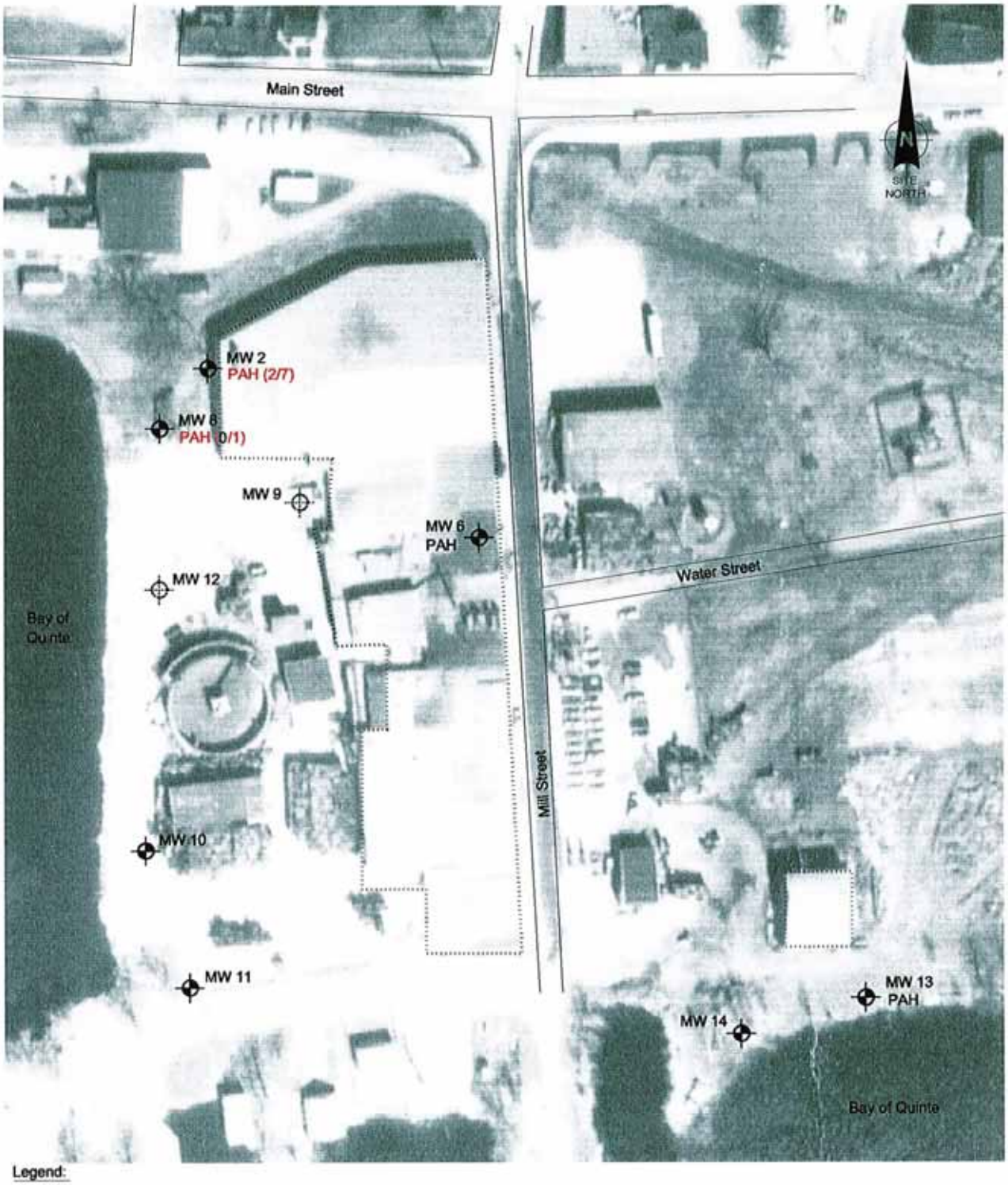
5

File: 321/171

Table 4
Summary of Groundwater Analyses, June and August, 2003

PARAMETER	UNITS	MDL	MW2		MW6		MW8		MW13		Guideline Criteria (Table B non potable)
			03-W04 Jun 03	03-W08 Aug 03	03-W01 Jun 03	03-W05 Aug 03	03-W03 Jun 03	03-W07 Aug 03	03-W02 Jun 03	03-W06 Aug 03	
Acenaphthene	ug/L	0.1	<	<	<	<	<	<	<	<	1700
Acenaphthylene	ug/L	0.1	<	<	<	<	<	<	<	<	2000
Anthracene	ug/L	0.1	<	<	<	<	<	0.2	<	<	12
Benzo(a)anthracene	ug/L	0.1	<	7	<	0.1	2	0.9	<	<	5
Benzo(a)pyrene	ug/L	0.1	<	2	<	<	<	0.5	<	<	1.9
Benzo(b)fluoranthene	ug/L	0.1	11	5	0.1	<	2	0.8	<	<	7
Benzo(g,h,i)perylene	ug/L	0.2	<20	3	<	<	<	0.4	<	<	0.2
Benzo(k)fluoranthene	ug/L	0.1	16	3	<	<	<	0.4	<	<	0.4
Chrysene	ug/L	0.2	<20	4	<	<	2	0.7	<	<	3
Dibenzo(a,h)anthracene	ug/L	0.1	<10	4	<	<	<	0.7	<	<	0.25
Fluoranthene	ug/L	0.1	31	14	0.1	0.2	4	2.5	<	<	130
Fluorene	ug/L	0.1	<10	<	<	<	<	0.1	<	<	290
Indeno(1,2,3-c,d)pyrene	ug/L	0.1	<10	2	<	<	<	0.4	<	<	0.27
Naphthalene	ug/L	0.1	<10	<	<	<	<	<	<	0.1	5900
Phenanthrene	ug/L	0.1	13	4	<	<	1	1.1	<	<	63
Pyrene	ug/L	0.2	27	10	<	<	3	1.7	<	<	40

Notes: 1. MDL denotes method detection limits
2. '<' denotes results below method detection limit, <10 indicates elevated detection limit
3. shading indicates parameters exceeding guideline criteria
4. Guideline criteria refers to MOE "Guidelines for Use at Contaminated Sites in Ontario",
(Table B- residential/parkland landuse in a non potable groundwater situation). Revised February, 1997.



Legend:

MW2	monitoring well location and ID.
MW 12	destroyed monitoring well
PAH	analyses performed red indicates results exceed Table B (non potable criteria)
(2/7)	number of PAH parameters exceeding referenced criteria (June/August, 2003)

Approx. Scale

0 50 m

MALROZ

June/August 2003 Groundwater Analyses

Arctic Gardens, 11 Mill Street, Deseronto, Ontario

Figure 6

File: 321/171

4.0 Conclusions & Recommendations

Based on the results of our work to date we offer the following conclusions and recommendations.

(i) The soil investigation has defined the probable area and thickness of impacted soil in the vicinity of TP6, TP11 and TP30. We estimate that approximately 240 cubic metres of contaminated soil is present in these 3 areas. We recommend excavating to remove the contaminated soils and disposing of these soils at a facility licenced to receive the waste material.

(ii) The soil investigation at BH5/6 did not fully delineate the extent of contamination in this area. Due to the size and expense involved with excavating and disposing of contaminated soil in this area, we recommend exploring alternative options. These alternatives may include, but not limited to, an SSRA and engineered solutions, application of the draft 'Brownfields' legislation, or retaining liability in the event of a sale.

(iii) The groundwater investigation confirmed that concentrations of PAHs were below non potable criteria in monitoring wells MW6 and MW13. No further sampling of these wells is recommended at this time.

(iv) The soil and groundwater investigation confirmed that concentrations of PAHs are still a problem in the northwest corner of the site (TP31 area including monitoring wells MW2 and MW8). We recommend developing a strategy to remediate this area. This work should be initiated as early as practical.

Appendix A

Test pit Logs

Test Pit Logs

TP6 Area (typical)

Test Pit ID. / Sample interval (m)	Vapours (maximum) Field	Vapours (maximum) Headspace	Description	Remarks/Exceptions
TP32 - 35 TP68 - 70			**Overburden/Fill (0 - 1.4 m)**	
0 - 1.0	80 ppm	80 ppm	Sandy, Silty Clay, grey/brown, gravel, dry	brick rubble at TP33, 35, and 68; wood debris at TP35 and 70, ashes TP68, orange discolouration on soil at TP69; boulders in TP68, 69, and 70.
1.0	-	-	End of Testhole at target depth	

Note: TP69 and TP70 advanced to 1.3 - 1.4 metres below grade.

TP11 Area (typical)

TP36 - 39			**Overburden/Fill (0 - 1.8 m)**	
0 - 1.6	-	-	Sandy, Silty Clay, gravel, grey/brown, brick/concrete rubble, organics	no odour
1.6 - 1.8	65 ppm	95 ppm	Sandy, Silty Clay, grey, wood cuttings, organics, wet	steel culvert encountered in TP38, 39
1.8	-	-	End of Testhole on bedrock	bedrock at 1.5 m at TP37, 39

Appendix B

Laboratory Certificates

TP30 Area (typical)

TP40 - 43			**Overburden/Fill (0 - 2.4 m)**	
0 - 1.2	-	-	Sandy, Silty Clay, grey, gravel, brick and concrete	
1.2 - 2.0	3% LEL	10% LEL	wood debris/cuttings, broken rock, organics, steel piping	**black staining, faint petroleum odour at TP42**
2.4	-	-	End of Testhole at target depth	

TP31 Area (typical)

TP 44 - 53			**Overburden/Fill (0 - 2.5 m)**	
0 - 1.5	80 ppm	-	Fill- Sandy, Silty Clay, grey/brown, building materials (brick, concrete, metal)	becoming wet at approximately 1.5 m
1.5 - 2.5	>100% LEL	12% LEL	Fill- Sandy, Silty Clay, dark, organics, wood debris/cuttings, wet	black staining, oil globules at TP44, 45, 49
2.5	-	-	End of Testhole at target depth	

BH5/6 Area (typical)

TP 54 - 67			**Overburden/Fill (0 - 2.7 m)**	
0 - 0.4		-	concrete foundation (15 - 40 cm thickness)	
0.4 - 1.8	1% LEL	90 ppm	Sandy, Silty Clay, gravel, broken rock, organics, wood debris	black staining at TP54, 55, 57, 64 slight oily film at TP56, 57
1.8	-	-	End of Testhole at target depth	

Note: TP64, TP66 and TP67 advanced to 2.5 - 2.7 metres below grade.

REPORT OF ANALYSIS

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

Kingston Report: K3-1855
Report Number: 2309590
Date: 2003-07-03
Date Submitted: 2003-06-20

Project: 321.03

P.O. Number:
Matrix: Soil

	LAB ID:	257104	257105	257106	257107	257108	GUIDELINE		
	Sample Date:	2003-06-17	2003-06-17	2003-06-17	2003-06-17	2003-06-17			
	Sample ID:	TP32-01	TP33-01	TP34-01	TP35-01	TP36-01			
PARAMETER	UNITS	MDL					TYPE	LIMIT	UNITS
Total Petroleum Hydrocarbons									
GRO (<C10)	ug/g	20	<20	<20	<20	<20	<20		
DRO (C10-C24)	ug/g	20	<20	<20	<20	<20	<20		
GRO + DRO	ug/g	20	<20	<20	<20	<20	<20		
Oil & Grease									
Oil & Grease - Mineral	ug/g	100							

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL:
Steven Blais
Organic Lab Coordinator

REPORT OF ANALYSIS

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

Kingston Report: K3-1855
Report Number: 2309590
Date: 2003-07-03
Date Submitted: 2003-06-20

Project: 321.03

P.O. Number:
Matrix: Soil

	LAB ID:	257109	257110	257111	257112	257113	GUIDELINE		
	Sample Date:	2003-06-17	2003-06-17	2003-06-17	2003-06-17	2003-06-17			
	Sample ID:	TP37-01	TP38-01	TP39-01	TP40-01	TP41-01			
PARAMETER	UNITS	MDL					TYPE	LIMIT	UNITS
Total Petroleum Hydrocarbons									
GRO (<C10)	ug/g	20	<20	<20	<20	<20	<20		
DRO (C10-C24)	ug/g	20	<20	43	79	38	571		
GRO + DRO	ug/g	20	<20	43	79	38	571		
Oil & Grease									
Oil & Grease - Mineral	ug/g	100							

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:
Steven Blais
Organic Lab Coordinator

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

Kingston Report: K3-1855
Report Number: 2309590
Date: 2003-10-10
Date Submitted: 2003-06-20

Project: 321.03

P.O. Number:
Matrix: Soil

			LAB ID:	257119	257120	257121	257122	257123	GUIDELINE		
			Sample Date:	2003-06-17	2003-06-17	2003-06-17	2003-06-17	2003-06-17			
			Sample ID:	TP48-01	TP49-02	TP50-01	TP51-01	TP52-02			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Total Petroleum Hydrocarbons											
GRO (<C10)	ug/g	20		<20	<20	<20	<20	<20			
DRO (C10-C24)	ug/g	20		838	24000	1920	1750	1320			
GRO + DRO	ug/g	20		838	24000	1920	1750	1320			
Oil & Grease											
Oil & Grease - Mineral	ug/g	100		272	2760	945	149	1730			

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment: This is a correction certificate and supercedes all other reports. TP49-02 renamed from TP49-01

APPROVAL:
for
Steven Blais
Organic Lab Coordinator

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

Kingston Report: K3-1855
Report Number: 2309590
Date: 2003-07-03
Date Submitted: 2003-06-20

Project: 321.03

P.O. Number:
Matrix: Soil

			LAB ID:	257114	257115	257116	257117	257118	GUIDELINE		
			Sample Date:	2003-06-24	2003-06-24	2003-06-17	2003-06-17	2003-06-17			
			Sample ID:	TP42-01	TP43-01	TP44-01	TP45-01	TP47-01			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Total Petroleum Hydrocarbons											
GRO (<C10)	ug/g	20		<20	<20	<20	<20	<20			
DRO (C10-C24)	ug/g	20		170	128	1200	1060	<20			
GRO + DRO	ug/g	20		170	128	1200	1060	<20			
Oil & Grease											
Oil & Grease - Mineral	ug/g	100				659	251	226			

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:

Steven Blais
Organic Lab Coordinator

A[illegible]UT[illegible]T LA[illegible]RAT[illegible]S L[illegible]

REPORT OF ANALYSIS

Client: **Malroz Engineering**
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: **Jeff Reid**

Kingston Report: K3-1855
Report Number: 2309590
Date: 2003-07-03
Date Submitted: 2003-06-20

Project: 321.03

P.O. Number:
Matrix: Soil

			LAB ID:	257104	257105	257106	257107	257108	GUIDELINE		
			Sample Date:	2003-06-17	2003-06-17	2003-06-17	2003-06-17	2003-06-17			
			Sample ID:	TP32-01	TP33-01	TP34-01	TP35-01	TP36-01			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Copper	ug/g	1		118	79	74	350				
Zinc	ug/g	1		185	102	310	219	101			

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL:
Lorna Wilson
Agriculture Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

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OCT 6 2003

Kingston Report: K3-1855
Report Number: 2309590
Date: 2003-10-10
Date Submitted: 2003-06-20

Project: 321.03

P.O. Number:
Matrix: Soil

			LAB ID:	257116	257117	257118	257119	257120	GUIDELINE		
			Sample Date:	2003-06-17	2003-06-17	2003-06-17	2003-06-17	2003-06-17			
			Sample ID:	TP44-01	TP45-01	TP47-01	TP48-01	TP49-02			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Copper	ug/g	1									
Zinc	ug/g	1	443	994	280	969	190				

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment: This is a correction certificate and supercedes all other reports. TP49-02 renamed from TP49-01

APPROVAL:
for
Lorna Wilson
Agriculture Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

Kingston Report: K3-1855
Report Number: 2309590
Date: 2003-07-21
Date Submitted: 2003-06-20

Project: 321.03

P.O. Number:
Matrix: Soil

	LAB ID:	257116	257121				GUIDELINE		
	Sample Date:	2003-06-17	2003-06-17						
	Sample ID:	TP44-01	TP50-01						
PARAMETER	UNITS	MDL					TYPE	LIMIT	UNITS
POLYNUCLEAR AROMATIC HYDROCARBONS - PAHs									
Acenaphthene	ug/g	0.1	<0.1	<1					
Acenaphthylene	ug/g	0.1	<0.1	<1					
Anthracene	ug/g	0.1	0.2	<1					
Benzo(a)anthracene	ug/g	0.1	<0.1	2					
Benzo(a)pyrene	ug/g	0.1	0.6	<1					
Benzo(b)fluoranthene	ug/g	0.1	0.5	<1					
Benzo(g,h,i)perylene	ug/g	0.1	<0.1	<1					
Benzo(k)fluoranthene	ug/g	0.1	<0.1	<1					
Chrysene	ug/g	0.1	1.1	<1					
Dibenzo(a,h)anthracene	ug/g	0.1	<0.1	<1					
Fluoranthene	ug/g	0.1	0.5	<1					
Fluorene	ug/g	0.1	<0.1	<1					
Indeno(1,2,3-c,d)pyrene	ug/g	0.1	<0.1	<1					
Naphthalene	ug/g	0.1	<0.1	<1					
Phenanthrene	ug/g	0.1	0.3	<1					
Pyrene	ug/g	0.1	1.0	<1					

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

257121: Due to sample matrix interferences, 10X dilution was required.

APPROVAL:
Mina Nasirai
Organic Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

Kingston Report: K3-1855
Report Number: 2309591
Date: 2003-07-03
Date Submitted: 2003-06-20

Project: 321.03

P.O. Number:
Matrix: Soil

			LAB ID:	257124	257125	257126	257127	257128	GUIDELINE		
			Sample Date:	2003-06-17	2003-06-17	2003-06-17	2003-06-17	2003-06-17			
			Sample ID:	TP53-02	TP54-01	TP55-01	TP56-01	TP57-01			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Total Petroleum Hydrocarbons											
GRO (<C10)	ug/g	20		<20	<20	<20	<20	<20			
DRO (C10-C24)	ug/g	20		2000	59	586	132	345			
GRO + DRO	ug/g	20		2000	59	586	132	345			
Oil & Grease											
Oil & Grease - Mineral	ug/g	100		1000							

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:

Steven Blais
Organic Lab Coordinator

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Malroz Engineering**
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: **Jeff Reid**

Kingston Report: K3-1855
Report Number: 2309591
Date: 2003-07-03
Date Submitted: 2003-06-20

Project: 321.03

P.O. Number:
Matrix: Soil

								GUIDELINE		
LAB ID:			257129	257130	257131					
Sample Date:			2003-06-17	2003-06-17	2003-06-17					
Sample ID:			TP58-01	TP59-01	TP60-01					
PARAMETER	**UNITS**	**MDL**						**TYPE**	**LIMIT**	**UNITS**
Total Petroleum Hydrocarbons										
GRO (<C10)	ug/g	20	<20	<20	<20					
DRO (C10-C24)	ug/g	20	142	<20	1420					
GRO + DRO	ug/g	20	142	<20	1420					
Oil & Grease										
Oil & Grease - Mineral	ug/g	100								

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:

Steven Blais
Organic Lab Coordinator

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Malroz Engineering**
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: **Jeff Reid**

Kingston Report: K3-1855
Report Number: 2309591
Date: 2003-07-02
Date Submitted: 2003-06-20

Project: 321.03

P.O. Number:
Matrix: Soil

			LAB ID:	257124	257125	257126	257127	257128	GUIDELINE		
			Sample Date:	2003-06-17	2003-06-17	2003-06-17	2003-06-17	2003-06-17			
			Sample ID:	TP53-02	TP54-01	TP55-01	TP56-01	TP57-01			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Copper	ug/g	1		42	141	544	68				
Lead	ug/g	1		332	180	1180	1250				
Zinc	ug/g	1	103	260	1700	942	450				

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:

Lorna Wilson
Agriculture Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Malroz Engineering**
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: **Jeff Reid**

Kingston Report: K3-1855
Report Number: 2309591
Date: 2003-07-02
Date Submitted: 2003-06-20

Project: 321.03

P.O. Number:
Matrix: Soil

			LAB ID:	257129	257130	257131			GUIDELINE		
			Sample Date:	2003-06-17	2003-06-17	2003-06-17					
			Sample ID:	TP58-01	TP59-01	TP60-01					
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Copper	ug/g	1		56	16	57					
Lead	ug/g	1		92	13	74					
Zinc	ug/g	1		761	88	169					

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:

Lorna Wilson
Agriculture Lab Supervisor

AGUTECH LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Malroz Engineering**
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: **Jeff Reid**

Kingston Report: K3-1855
Report Number: 2309591
Date: 2003-07-21
Date Submitted: 2003-06-20

Project: 321.03

P.O. Number:
Matrix: Soil

			LAB ID:	257127	257128				GUIDELINE		
			Sample Date:	2003-06-17	2003-06-17						
			Sample ID:	TP56-01	TP57-01						
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
POLYNUCLEAR AROMATIC HYDROCARBONS - PAHs											
Acenaphthene	ug/g	0.1		<1	<0.1						
Acenaphthylene	ug/g	0.1		<1	<0.1						
Anthracene	ug/g	0.1		<1	0.1						
Benzo(a)anthracene	ug/g	0.1		<1	0.5						
Benzo(a)pyrene	ug/g	0.1		<1	0.5						
Benzo(b)fluoranthene	ug/g	0.1		<1	0.4						
Benzo(g,h,i)perylene	ug/g	0.1		<1	0.3						
Benzo(k)fluoranthene	ug/g	0.1		<1	0.4						
Chrysene	ug/g	0.1		<1	0.4						
Dibenzo(a,h)anthracene	ug/g	0.1		<1	0.3						
Fluoranthene	ug/g	0.1		<1	0.8						
Fluorene	ug/g	0.1		<1	<0.1						
Indeno(1,2,3-c,d)pyrene	ug/g	0.1		<1	0.2						
Naphthalene	ug/g	0.1		<1	0.2						
Phenanthrene	ug/g	0.1		<1	0.6						
Pyrene	ug/g	0.1		<1	0.7						

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

257127: Due to sample matrix interferences, 10X dilution was required.

APPROVAL:

Mina Nasirai
Organic Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

Kingston Report: K3-2479
Report Number: 2312247
Date: 2003-08-22
Date Submitted: 2003-08-08

Project: 321.03

P.O. Number:
Matrix: Soil

			LAB ID:	265035	265036	265037	265038	265039	GUIDELINE		
			Sample Date:	2003-08-07	2003-08-07	2003-08-07	2003-08-07	2003-08-07			
			Sample ID:	TP61-02	TP61-03	TP62-01	TP62-02	TP64-02			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Total Petroleum Hydrocarbons											
GRO (<C10)	ug/g	20		<20	<20	<20	<20	<20			
DRO (C10-C24)	ug/g	20		<20	1540	86	96	362			
GRO + DRO	ug/g	20		<20	1540	86	96	362			

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:

Mina Nasirai
Organic Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

Kingston Report: K3-2479
Report Number: 2312247
Date: 2003-08-22
Date Submitted: 2003-08-08

Project: 321.03

P.O. Number:
Matrix: Soil

	LAB ID:	265040	265041	265042	265043	265044	GUIDELINE		
	Sample Date:	2003-08-07	2003-08-07	2003-08-07	2003-08-07	2003-08-07			
	Sample ID:	TP64-03	TP65-01	TP65-02	TP66-02	TP67-02			
PARAMETER	UNITS	MDL					TYPE	LIMIT	UNITS
Total Petroleum Hydrocarbons									
GRO (<C10)	ug/g	20	<20	<20	<20	<20	<20		
DRO (C10-C24)	ug/g	20	186	<20	60	154	92		
GRO + DRO	ug/g	20	186	<20	60	154	92		

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:
Mina Nasirai
Organic Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Malroz Engineering**
168 Montreal St.
Kingston, ON
K7K 3G4

Attention: **Jeff Reid**

Kingston Report: K3-2479
Report Number: 2312247
Date: 2003-08-22
Date Submitted: 2003-08-08

Project: 321.03

P.O. Number:
Matrix: Soil

PARAMETER	UNITS	MDL	265033	265034	265035	265036	265037	GUIDELINE TYPE	GUIDELINE LIMIT	GUIDELINE UNITS
Sample Date:			2003-08-07	2003-08-07	2003-08-07	2003-08-07	2003-08-07			
Sample ID:			TP68-01	TP69-01	TP61-02	TP61-03	TP62-01			
Copper	ug/g	1	46	32	11	26	142			
Lead	ug/g	1			8	52	309			
Zinc	ug/g	1			25	41	72			

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL: [signature]
Lorna Wilson
Agriculture Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

Kingston Report: K3-2479
Report Number: 2312247
Date: 2003-08-22
Date Submitted: 2003-08-08

Project: 321.03

P.O. Number:
Matrix: Soil

			LAB ID:	265038	265039	265040	265041	265042	GUIDELINE		
			Sample Date:	2003-08-07	2003-08-07	2003-08-07	2003-08-07	2003-08-07			
			Sample ID:	TP62-02	TP64-02	TP64-03	TP65-01	TP65-02			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Copper	ug/g	1		39	824	779	49	20			
Lead	ug/g	1		50	598	465	31	18			
Zinc	ug/g	1		30	731	546	61	57			

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Comment:

APPROVAL:

Lorna Wilson
Agriculture Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

Kingston Report: K3-2479
Report Number: 2312247
Date: 2003-08-22
Date Submitted: 2003-08-08

Project: 321.03

P.O. Number:
Matrix: Soil

			LAB ID:	265043	265044				GUIDELINE		
			Sample Date:	2003-08-07	2003-08-07						
			Sample ID:	TP66-02	TP67-02						
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Copper	ug/g	1		19	97						
Lead	ug/g	1		19	141						
Zinc	ug/g	1		57	89						

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Comment:

APPROVAL:
Lorna Wilson
Agriculture Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

Kingston Report: K3-1814
Report Number: 2309213
Date: 2003-06-27
Date Submitted: 2003-06-18

Project: 321.03

P.O. Number:
Matrix: Water

	LAB ID:	255778	255779	255780	255781		GUIDELINE		
	Sample Date:	2003-06-18	2003-06-18	2003-06-18	2003-06-18				
	Sample ID:	03-W01	03-W02	03-W03	03-W04				
PARAMETER	UNITS	MDL					TYPE	LIMIT	UNITS
POLYNUCLEAR AROMATIC HYDROCARBONS - PAHs									
Acenaphthene	ug/L	0.1	<0.1	<0.1	<1	<10			
Acenaphthylene	ug/L	0.1	<0.1	<0.1	<1	<10			
Anthracene	ug/L	0.1	<0.1	<0.1	<1	<10			
Benzo(a)anthracene	ug/L	0.1	<0.1	<0.1	2	<10			
Benzo(a)pyrene	ug/L	0.1	<0.1	<0.1	<1	<10			
Benzo(b)fluoranthene	ug/L	0.1	0.1	<0.1	2	11			
Benzo(g,h,i)perylene	ug/L	0.2	<0.2	<0.2	<2	<20			
Benzo(k)fluoranthene	ug/L	0.1	<0.1	<0.1	<1	16			
Chrysene	ug/L	0.2	<0.2	<0.2	2	<20			
Dibenzo(a,h)anthracene	ug/L	0.1	<0.1	<0.1	<1	<10			
Fluoranthene	ug/L	0.1	0.1	<0.1	4	31			
Fluorene	ug/L	0.1	<0.1	<0.1	<1	<10			
Indeno(1,2,3-c,d)pyrene	ug/L	0.1	<0.1	<0.1	<1	<10			
Naphthalene	ug/L	0.1	<0.1	<0.1	<1	<10			
Phenanthrene	ug/L	0.1	<0.1	<0.1	1	13			
Pyrene	ug/L	0.2	<0.2	<0.2	3	27			

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Comment:

APPROVAL:
Mina Nasirai
Organic Lab Supervisor

Client: Malroz Engineering
168 Montreal St.
Kingston, ON
K7K 3G4
Attention: Jeff Reid

Kingston Report: K3-2480
Report Number: 2312249
Date: 2003-08-11
Date Submitted: 2003-08-08

Project: 321.03

P.O. Number:
Matrix: Water

			LAB ID:	265047	265048	265049	265050		GUIDELINE		
			Sample Date:	2003-08-07	2003-08-07	2003-08-07	2003-08-07				
			Sample ID:	03-W05	03-W06	03-W07	03-W08				
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
POLYNUCLEAR AROMATIC HYDROCARBONS - PAHs											
Acenaphthene	ug/L	0.1		<0.1	<0.1	<0.1	<1				
Acenaphthylene	ug/L	0.1		<0.1	<0.1	<0.1	<1				
Anthracene	ug/L	0.1		<0.1	<0.1	0.2	<1				
Benzo(a)anthracene	ug/L	0.1		0.1	<0.1	0.9	7				
Benzo(a)pyrene	ug/L	0.1		<0.1	<0.1	0.5	2				
Benzo(b)fluoranthene	ug/L	0.1		<0.1	<0.1	0.8	5				
Benzo(g,h,i)perylene	ug/L	0.2		<0.2	<0.2	0.4	3				
Benzo(k)fluoranthene	ug/L	0.1		<0.1	<0.1	0.4	3				
Chrysene	ug/L	0.2		<0.2	<0.2	0.7	4				
Dibenzo(a,h)anthracene	ug/L	0.1		<0.1	<0.1	0.7	4				
Fluoranthene	ug/L	0.1		0.2	<0.1	2.5	14				
Fluorene	ug/L	0.1		<0.1	<0.1	0.1	<1				
Indeno(1,2,3-c,d)pyrene	ug/L	0.1		<0.1	<0.1	0.4	2				
Naphthalene	ug/L	0.1		<0.1	0.1	<0.1	<1				
Phenanthrene	ug/L	0.1		<0.1	<0.1	1.1	4				
Pyrene	ug/L	0.2		<0.2	<0.2	1.7	10				

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Comment:

APPROVAL:

Steven Blais
Organic Lab Coordinator