

## WASTE MANAGEMENT OF CANADA CORPORATION

WATFORD, ONTARIO

TWIN CREEKS ENVIRONMENTAL CENTRE: 2024 FOURTH  
QUARTER & ANNUAL MONITORING REPORT VOLUME 2C OF 5  
– COMPLIANCE MONITORING

RWDI #2402553.01

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### SUBMITTED TO

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## APPENDIX J:

### Gas Monitoring Results



## APPENDIX J:

### Table J-1 - Methane Monitoring Results

A large decorative graphic on the right side of the page. It features a blue triangular shape in the top-left corner, separated from a large, light beige circular shape by a white curved line. The beige shape covers most of the right half of the page.

**Table J-1**  
**Methane Monitoring Results - Compliance Monitoring**  
**Twin Creeks Environmental Centre**

Gas Probe Location	% LEL Methane						
	Date						
	24-Jan-24	7-Feb-24	6-Mar-24	1-Apr-24	4-Jul-24	25-Nov-24	9-Dec-24
<b>GP1A</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>GP2</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>GP3</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>GP4</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>GP5</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>GP6</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>GP7</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>GP8</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>GP9</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>GP10</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**NOTES:** 1) LEL denotes the lower explosive limit for methane.



## APPENDIX K:

### Automobile Shredder Residue Chemical Results



## APPENDIX K:

Table K-1 - ASR Chemical Results



Table K-1  
Automobile Shredder Residue - General Chemical Results - Compliance Monitoring  
Twin Creeks Environmental Centre

Parameter	Units	O. Reg. 558	Automobile Shredder Residue (ASR)																			
Date			15-Sep-11	6-Dec-11	7-Sep-12	21-Nov-12	7-Mar-12	8-Jun-12	5-Apr-13	7-Jun-16	17-Oct-16	27-Apr-17	11-Oct-17	5-Apr-18	28-Sep-18	4-Apr-19	26-Sep-19	1-Apr-20	22-Sep-20	6-Apr-21	1-Oct-21	2-Feb-22
Laboratory			EXOVA	EXOVA	EXOVA	EXOVA	EXOVA	EXOVA	EXOVA	EXOVA	EXOVA	EXOVA	EXOVA	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	BV Labs
Metals and Inorganics																						
Cyanide (free)	mg/L	20.0	<0.02	<0.02	<0.005	<0.02	<0.05	<0.005	<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	<0.010
Fluoride	mg/L	150.0	0.46	0.51	0.54	1.07		0.59	0.82	0.52	0.30	0.35	0.24	0.72	0.44	0.34	0.43	0.51	<0.10	0.3	0.49	0.22
NO2 + NO3 as N	mg/L	1000	4.08	0.20	<0.10	0.15	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<1.0
Arsenic	mg/L	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	0.001	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2
Barium	mg/L	100.0	0.7	0.5	0.7	0.6	0.4	0.9	0.5	0.52	<1	<1	0.95	0.57	0.477	0.68	0.68	0.56	0.8	1.05	0.91	0.8
Boron	mg/L	500.0	0.6	0.6	1.4	0.8	1.5	0.6	<1	1.10	1.6	1.2	2.3	0.9	1.14	1.2	1.6	1.2	0.5	1.2	2.5	1.3
Cadmium	mg/L	0.5	0.08	<0.005	0.463	<0.1	0.09	0.13	<0.1	0.09	0.187	0.088	0.088	0.079	0.135	0.145	0.128	0.089	0.230	0.131	0.124	0.16
Chromium	mg/L	5.0	<0.05	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	0.0008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1
Lead	mg/L	5.0	<0.1	0.07	0.13	0.01	0.16	0.070	<0.05	0.04	0.08	0.03	0.04	0.04	0.253	0.06	0.04	0.03	1.06	0.46	0.06	0.2
Mercury	mg/L	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.00008	0.00007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	mg/L	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	0.0004	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1
Silver	mg/L	5.0	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	mg/L	10.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Volatile Organic Compounds (VOCs)																						
Methyl Ethyl Ketone (MEK)	ug/L	200000	<20		40	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	30	<10	<10	<10	<10	<1000
1,1-dichloroethylene	ug/L	1400	<1		<0.5	<1	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20
1,2-dichlorobenzene	ug/L	20000	<0.8	<2	<0.4	<0.8	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<50
1,2-dichloroethane	ug/L	500	<0.4	<1	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.6	<0.2	<0.2	<50
1,4-dichlorobenzene	ug/L	500	<0.8	<2	<0.4	<0.8	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<50
Benzene	ug/L	500	<1	<5	<0.05	<1	<1	<0.05	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<20
Carbon Tetrachloride	ug/L	500	<1	<5	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20
Dichloromethane	ug/L	5000	<8.0		<4.0	<8.0		<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<200
Monochlorobenzene	ug/L	8000	<4.0		<0.2	<0.4		<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20
Tetrachloroethylene	ug/L	3000	<0.6	2	<0.3	<0.6	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20
Trichloroethylene	ug/L	5000	<0.6	2	<0.3	<0.6	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20
Vinyl Chloride	ug/L	200	<0.4	1	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20
Chloroform	ug/L	10000	<1	2	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20
Semi-Volatile Organic Compounds (SVOC's)																						
1-methylnaphthalene	ug/L			0.50	0.20	1.29	1.21	0.15	0.20	0.5	<0.1	0.2	0.4	<1	<0.1	0.2	<0.1	0.3	0.2	<0.1	0.2	<0.20
2-methylnaphthalene	ug/L			0.60	0.20	1.83	1.78	0.26	0.20	0.7	<0.1	0.3	0.6	<1	<0.1	0.2	<0.1	0.3	0.6	<0.1	0.2	0.32
Acenaphthene	ug/L			<0.2	0.2	0.21	0.1	<0.05	<0.1	0.2	<0.1	0.2	0.2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	0.6	<0.1	<0.20
Acenaphthylene	ug/L			<0.2	0.2	0.06	0.02	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.20
Anthracene	ug/L			<0.2	0.2	0.38	0.05	<0.05	<0.1	<0.1	0.1	0.4	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.20
Benzo(a)anthracene	ug/L			<0.2	0.2	<0.01	<0.01	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.20
Benzo(a)pyrene	ug/L	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	0.14	<0.01	<0.01	<0.10
Benzo(b)fluoranthene	ug/L			<0.2	0.2	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10
Benzo(g,h,i)perylene	ug/L			<0.2	0.2	<0.02	<0.02	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.20
Benzo(k)fluoranthene	ug/L			<0.2	0.2	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.20
Chrysene	ug/L			<0.2	0.2	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	0.06	<0.05	0.09	<0.05	<0.20
Dibenzo(a,h)anthracene	ug/L			<0.2	0.2	<0.02	<0.02	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.20
Fluoranthene	ug/L			0.3	0.2	0.21	0.08	0.13	0.3	0.3	0.1	<0.1	0.3	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.20
Fluorene	ug/L			<0.2	0.2	0.45	0.12	<0.05	<0.1	0.2	0.1	0.2	0.1	<1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.20
Indeno(1,2,3-c,d)pyrene	ug/L			<0.2	0.2	<0.02	<0.02	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.20
Naphthalene	ug/L			0.8	0.2	3.19	0.6	0.11	<0.1	0.6	0.1	0.2	0.4	<1	0.2	0.3	<0.1	0.5	0.4	<0.1	0.5	<0.20
Phenanthrene	ug/L			1	0.2	0.81	0.17	0.21	0.6	0.3	0.2	0.1	0.2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.20
Pyrene	ug/L			0.2	0.2	0.17	0.05	0.10	0.2	<0.1	<0.1	<0.1	0.2	<1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.20

NOTE: 1) mg/L denotes milligrams per litre; ug/L denotes microgram per litre.  
2) < denotes parameter concentration is some concentration less than the laboratory reportable detection limit (RDL).  
3) BV Labs denotes chemical analytical testing was completed by Bureau Veritas.

Table K-1  
Automobile Shredder Residue - General Chemical Results - Compliance Monitoring  
Twin Creeks Environmental Centre

Parameter	Units	O. Reg. 558	Automobile Shredder Residue (ASR)													
Date Laboratory			6-Apr-22 BV Labs	5-Oct-22 BV Labs	10-Apr-23 BV Labs	3-Oct-23 BV Labs	9-Apr-24 BV Labs	3-Oct-24 BV Labs								
Metals and Inorganics																
Cyanide (free)	mg/L	20.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010								
Fluoride	mg/L	150.0	1.1	0.62	0.17	0.11	0.37	0.65								
NO2 + NO3 as N	mg/L	1000	<1.0	1.5	<1.0	1.7	<1.0	<1.0								
Arsenic	mg/L	2.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2								
Barium	mg/L	100.0	0.4	0.5	1.0	0.6	0.9	0.7								
Boron	mg/L	500.0	2.8	6.4	4.1	4.3	1.6	0.9								
Cadmium	mg/L	0.5	<0.05	<0.05	0.27	0.43	0.19	0.32								
Chromium	mg/L	5.0	<0.1	<0.1	0.1	0.4	0.1	<0.1								
Lead	mg/L	5.0	<0.1	<0.1	0.9	1.0	0.9	<0.1								
Mercury	mg/L	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001								
Selenium	mg/L	1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1								
Silver	mg/L	5.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01								
Uranium	mg/L	10.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01								
Volatile Organic Compounds (VOCs)																
Methyl Ethyl Ketone (MEK)	ug/L	200000	<1000	<1000	<1000	<1000	<1000	<1000								
1,1-dichloroethylene	ug/L	1400	<20	<20	<20	<20	<20	<20								
1,2-dichlorobenzene	ug/L	20000	<50	<50	<50	<50	<50	<50								
1,2-dichloroethane	ug/L	500	<50	<50	<50	<50	<50	<50								
1,4-dichlorobenzene	ug/L	500	<50	<50	<50	<50	<50	<50								
Benzene	ug/L	500	<20	<20	<20	<20	<20	<20								
Carbon Tetrachloride	ug/L	500	<20	<20	<20	<20	<20	<20								
Dichloromethane	ug/L	5000	<200	<200	<200	<200	<200	<200								
Monochlorobenzene	ug/L	8000	<20	<20	<20	<20	<20	<20								
Tetrachloroethylene	ug/L	3000	<20	<20	<20	<20	<20	<20								
Trichloroethylene	ug/L	5000	<20	<20	<20	<20	<20	<20								
Vinyl Chloride	ug/L	200	<20	<20	<20	<20	<20	<20								
Chloroform	ug/L	10000	<20	<20	<20	<20	<20	<20								
Semi-Volatile Organic Compounds (SVOC's)																
1-methylnaphthalene	ug/L		1.3	0.88	1.2	0.36	0.94	0.67								
2-methylnaphthalene	ug/L		1.8	1.2	1.6	0.47	1.5	0.90								
Acenaphthene	ug/L		0.23	<0.20	<0.20	<0.20	0.24	<0.20								
Acenaphthylene	ug/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20								
Anthracene	ug/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20								
Benzo(a)anthracene	ug/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20								
Benzo(a)pyrene	ug/L	1.0	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10								
Benzo(b)fluoranthene	ug/L		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10								
Benzo(g,h,i)perylene	ug/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20								
Benzo(k)fluoranthene	ug/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20								
Chrysene	ug/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20								
Dibenzo(a,h)anthracene	ug/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20								
Fluoranthene	ug/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20								
Fluorene	ug/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20								
Indeno(1,2,3-c,d)pyrene	ug/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20								
Naphthalene	ug/L		4.0	2.3	2.3	1.3	3.9	1.8								
Phenanthrene	ug/L		0.36	<0.20	0.24	0.30	0.34	<0.20								
Pyrene	ug/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20								

NOTE: 1) mg/L denotes milligrams per litre; ug/L denotes microgram per litre.  
2) '<' denotes parameter concentration is some concentration less than the laboratory reportable detection limit (RDL).  
3) BV Labs denotes chemical analytical testing was completed by Bureau Veritas.

## APPENDIX K2:

### Laboratory Reports





**Attention: Khalid Hussein - Twin Creeks**

RWDI Inc.  
600 Southgate Drive  
Guelph, ON  
Canada N1G 4P6

Your P.O. #: 13384122  
Your Project #: 2402553.01  
Site#: 500  
Site Location: ON07  
Your C.O.C. #: 878552

**Report Date: 2024/04/19**  
Report #: R8114626  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C4A7386**

**Received: 2024/04/11, 10:08**

Sample Matrix: Solid  
# Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Cyanide (WAD) in Leachates	1	N/A	2024/04/16	CAM SOP-00457	OMOE 3015 m
Fluoride by ISE in Leachates	1	2024/04/15	2024/04/16	CAM SOP-00449	SM 24 4500-F- C m
Total Metals in TCLP Leachate by ICPMS	1	2024/04/15	2024/04/15	CAM SOP-00447	EPA 6020B m
Nitrate& Nitrite as Nitrogen in Leachate	1	N/A	2024/04/16	CAM SOP-00440	SM 24 4500-NO3I/NO2B
PAH Compounds in Leachate by GC/MS (SIM)	1	2024/04/15	2024/04/16	CAM SOP-00318	EPA 8270E
TCLP - % Solids	1	2024/04/12	2024/04/13	CAM SOP-00401	EPA 1311 Update I m
TCLP - Extraction Fluid	1	N/A	2024/04/13	CAM SOP-00401	EPA 1311 Update I m
TCLP - Initial and final pH	1	N/A	2024/04/13	CAM SOP-00401	EPA 1311 Update I m
TCLP Zero Headspace Extraction	1	2024/04/17	2024/04/18	CAM SOP-00430	EPA 1311 m
VOCs in ZHE Leachates	1	2024/04/18	2024/04/19	CAM SOP-00228	EPA 8260D

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



**Attention: Khalid Hussein - Twin Creeks**

RWDI Inc.  
600 Southgate Drive  
Guelph, ON  
Canada N1G 4P6

Your P.O. #: 13384122  
Your Project #: 2402553.01  
Site#: 500  
Site Location: ON07  
Your C.O.C. #: 878552

**Report Date: 2024/04/19**  
Report #: R8114626  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C4A7386**

**Received: 2024/04/11, 10:08**

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to:

Patricia Legette, Project Manager

Email: Patricia.Legette@bureauveritas.com

Phone# (905)817-5799

=====

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BUREAU  
VERITAS

Bureau Veritas Job #: C4A7386

Report Date: 2024/04/19

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### RESULTS OF ANALYSES OF SOLID

Bureau Veritas ID		YWG970		
Sampling Date		2024/04/09 14:30		
COC Number		878552		
	UNITS	ASR	RDL	QC Batch
Charge/Prep Analysis				
Amount Extracted (Wet Weight) (g)	N/A	25	N/A	9339065
Inorganics				
Final pH	pH	5.38		9332474
Leachable Fluoride (F-)	mg/L	0.37	0.10	9333643
Initial pH	pH	9.16		9332474
TCLP - % Solids	%	100	0.2	9330796
TCLP Extraction Fluid	N/A	FLUID 2		9332473
Leachable WAD Cyanide (Free)	mg/L	<0.010	0.010	9333665
Leachable Nitrite (N)	mg/L	0.66	0.10	9333664
Leachable Nitrate (N)	mg/L	<1.0	1.0	9333664
Leachable Nitrate + Nitrite (N)	mg/L	<1.0	1.0	9333664
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable				





BUREAU  
VERITAS

Bureau Veritas Job #: C4A7386

Report Date: 2024/04/19

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### ELEMENTS BY ATOMIC SPECTROSCOPY (SOLID)

<b>Bureau Veritas ID</b>		YWG970		
<b>Sampling Date</b>		2024/04/09 14:30		
<b>COC Number</b>		878552		
	<b>UNITS</b>	<b>ASR</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Metals</b>				
Leachable Arsenic (As)	mg/L	<0.2	0.2	9333447
Leachable Barium (Ba)	mg/L	0.9	0.2	9333447
Leachable Boron (B)	mg/L	1.6	0.1	9333447
Leachable Cadmium (Cd)	mg/L	0.19	0.05	9333447
Leachable Chromium (Cr)	mg/L	0.1	0.1	9333447
Leachable Lead (Pb)	mg/L	0.9	0.1	9333447
Leachable Mercury (Hg)	mg/L	<0.001	0.001	9333447
Leachable Selenium (Se)	mg/L	<0.1	0.1	9333447
Leachable Silver (Ag)	mg/L	<0.01	0.01	9333447
Leachable Uranium (U)	mg/L	<0.01	0.01	9333447
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

Bureau Veritas Job #: C4A7386

Report Date: 2024/04/19

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### SEMI-VOLATILE ORGANICS BY GC-MS (SOLID)

<b>Bureau Veritas ID</b>		YWG970		
<b>Sampling Date</b>		2024/04/09 14:30		
<b>COC Number</b>		878552		
	<b>UNITS</b>	<b>ASR</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Polyaromatic Hydrocarbons</b>				
Leachable Benzo(b)fluoranthene	ug/L	<0.10	0.10	9335147
Leachable Naphthalene	ug/L	3.9	0.20	9335147
Leachable Acenaphthylene	ug/L	<0.20	0.20	9335147
Leachable Acenaphthene	ug/L	0.24	0.20	9335147
Leachable Fluorene	ug/L	<0.20	0.20	9335147
Leachable Phenanthrene	ug/L	0.34	0.20	9335147
Leachable Anthracene	ug/L	<0.20	0.20	9335147
Leachable Fluoranthene	ug/L	<0.20	0.20	9335147
Leachable Pyrene	ug/L	<0.20	0.20	9335147
Leachable Benzo(a)anthracene	ug/L	<0.20	0.20	9335147
Leachable Chrysene	ug/L	<0.20	0.20	9335147
Leachable Benzo(k)fluoranthene	ug/L	<0.20	0.20	9335147
Leachable Benzo(a)pyrene	ug/L	<0.10	0.10	9335147
Leachable Indeno(1,2,3-cd)pyrene	ug/L	<0.20	0.20	9335147
Leachable Dibenzo(a,h)anthracene	ug/L	<0.20	0.20	9335147
Leachable Benzo(g,h,i)perylene	ug/L	<0.20	0.20	9335147
Leachable 1-Methylnaphthalene	ug/L	0.94	0.20	9335147
Leachable 2-Methylnaphthalene	ug/L	1.5	0.20	9335147
<b>Surrogate Recovery (%)</b>				
Leachable D10-Anthracene	%	113		9335147
Leachable D14-Terphenyl (FS)	%	103		9335147
Leachable D8-Acenaphthylene	%	107		9335147
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



### VOLATILE ORGANICS BY GC/MS (SOLID)

Bureau Veritas ID		YWG970		
Sampling Date		2024/04/09 14:30		
COC Number		878552		
	UNITS	ASR	RDL	QC Batch
<b>Volatile Organics</b>				
Leachable Benzene	mg/L	<0.020	0.020	9341840
Leachable Carbon Tetrachloride	mg/L	<0.020	0.020	9341840
Leachable Chlorobenzene	mg/L	<0.020	0.020	9341840
Leachable Chloroform	mg/L	<0.020	0.020	9341840
Leachable 1,2-Dichlorobenzene	mg/L	<0.050	0.050	9341840
Leachable 1,4-Dichlorobenzene	mg/L	<0.050	0.050	9341840
Leachable 1,2-Dichloroethane	mg/L	<0.050	0.050	9341840
Leachable 1,1-Dichloroethylene	mg/L	<0.020	0.020	9341840
Leachable Methylene Chloride(Dichloromethane)	mg/L	<0.20	0.20	9341840
Leachable Methyl Ethyl Ketone (2-Butanone)	mg/L	<1.0	1.0	9341840
Leachable Tetrachloroethylene	mg/L	<0.020	0.020	9341840
Leachable Trichloroethylene	mg/L	<0.020	0.020	9341840
Leachable Vinyl Chloride	mg/L	<0.020	0.020	9341840
<b>Surrogate Recovery (%)</b>				
Leachable 4-Bromofluorobenzene	%	101		9341840
Leachable D4-1,2-Dichloroethane	%	104		9341840
Leachable D8-Toluene	%	91		9341840
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



### GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	14.3°C
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Results relate only to the items tested.



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Bureau Veritas Job #: C4A7386

Report Date: 2024/04/19

## QUALITY ASSURANCE REPORT

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9335147	Leachable D10-Anthracene	2024/04/15	111	50 - 130	108	50 - 130	108	%				
9335147	Leachable D14-Terphenyl (FS)	2024/04/15	99	50 - 130	99	50 - 130	104	%				
9335147	Leachable D8-Acenaphthylene	2024/04/15	104	50 - 130	104	50 - 130	104	%				
9341840	Leachable 4-Bromofluorobenzene	2024/04/19	103	70 - 130	102	70 - 130	102	%				
9341840	Leachable D4-1,2-Dichloroethane	2024/04/19	99	70 - 130	99	70 - 130	103	%				
9341840	Leachable D8-Toluene	2024/04/19	103	70 - 130	103	70 - 130	91	%				
9333447	Leachable Arsenic (As)	2024/04/15	102	80 - 120	100	80 - 120	<0.2	mg/L	NC (1)	35	<0.2	mg/L
9333447	Leachable Barium (Ba)	2024/04/15	100	80 - 120	101	80 - 120	<0.2	mg/L	NC (1)	35	<0.2	mg/L
9333447	Leachable Boron (B)	2024/04/15	NC	80 - 120	97	80 - 120	<0.1	mg/L	2.8 (1)	35	<0.1	mg/L
9333447	Leachable Cadmium (Cd)	2024/04/15	NC	80 - 120	98	80 - 120	<0.05	mg/L	3.0 (1)	35	<0.05	mg/L
9333447	Leachable Chromium (Cr)	2024/04/15	93	80 - 120	95	80 - 120	<0.1	mg/L	NC (1)	35	<0.1	mg/L
9333447	Leachable Lead (Pb)	2024/04/15	NC	80 - 120	95	80 - 120	<0.1	mg/L	3.4 (1)	35	<0.1	mg/L
9333447	Leachable Mercury (Hg)	2024/04/15	100	80 - 120	103	80 - 120	<0.001	mg/L	NC (1)	35	<0.001	mg/L
9333447	Leachable Selenium (Se)	2024/04/15	97	80 - 120	101	80 - 120	<0.1	mg/L	NC (1)	35	<0.1	mg/L
9333447	Leachable Silver (Ag)	2024/04/15	90	80 - 120	96	80 - 120	<0.01	mg/L	NC (1)	35	<0.01	mg/L
9333447	Leachable Uranium (U)	2024/04/15	90	80 - 120	92	80 - 120	<0.01	mg/L	NC (1)	35	<0.01	mg/L
9333643	Leachable Fluoride (F-)	2024/04/16	79 (2,3)	80 - 120	98	80 - 120	<0.10	mg/L	9.7 (4)	25	<0.10	mg/L
9333664	Leachable Nitrate (N)	2024/04/16	50 (2,3)	80 - 120	98	80 - 120	<1.0	mg/L	NC (4)	20	<1.0	mg/L
9333664	Leachable Nitrate + Nitrite (N)	2024/04/16	59 (2,3)	80 - 120	99	80 - 120	<1.0	mg/L	NC (4)	20	<1.0	mg/L
9333664	Leachable Nitrite (N)	2024/04/16	95 (3)	80 - 120	104	80 - 120	<0.10	mg/L	0.92 (4)	20	<0.10	mg/L
9333665	Leachable WAD Cyanide (Free)	2024/04/16	66 (5,3)	80 - 120	105	80 - 120	<0.0020	mg/L	NC (4)	20	<0.010	mg/L
9335147	Leachable 1-Methylnaphthalene	2024/04/15	100	50 - 130	97	50 - 130	<0.20	ug/L				
9335147	Leachable 2-Methylnaphthalene	2024/04/15	97	50 - 130	93	50 - 130	<0.20	ug/L				
9335147	Leachable Acenaphthene	2024/04/15	109	50 - 130	106	50 - 130	<0.20	ug/L				
9335147	Leachable Acenaphthylene	2024/04/15	108	50 - 130	104	50 - 130	<0.20	ug/L				
9335147	Leachable Anthracene	2024/04/15	117	50 - 130	109	50 - 130	<0.20	ug/L				
9335147	Leachable Benzo(a)anthracene	2024/04/15	111	50 - 130	109	50 - 130	<0.20	ug/L				
9335147	Leachable Benzo(a)pyrene	2024/04/16	108	50 - 130	106	50 - 130	<0.10	ug/L	NC (1)	40		
9335147	Leachable Benzo(b)fluoranthene	2024/04/15	108	50 - 130	106	50 - 130	<0.10	ug/L				
9335147	Leachable Benzo(g,h,i)perylene	2024/04/15	102	50 - 130	102	50 - 130	<0.20	ug/L				



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Bureau Veritas Job #: C4A7386

Report Date: 2024/04/19

## QUALITY ASSURANCE REPORT(CONT'D)

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9335147	Leachable Benzo(k)fluoranthene	2024/04/15	105	50 - 130	104	50 - 130	<0.20	ug/L				
9335147	Leachable Chrysene	2024/04/15	97	50 - 130	96	50 - 130	<0.20	ug/L				
9335147	Leachable Dibenzo(a,h)anthracene	2024/04/15	85	50 - 130	89	50 - 130	<0.20	ug/L				
9335147	Leachable Fluoranthene	2024/04/15	119	50 - 130	114	50 - 130	<0.20	ug/L				
9335147	Leachable Fluorene	2024/04/15	112	50 - 130	109	50 - 130	<0.20	ug/L				
9335147	Leachable Indeno(1,2,3-cd)pyrene	2024/04/15	106	50 - 130	107	50 - 130	<0.20	ug/L				
9335147	Leachable Naphthalene	2024/04/15	98	50 - 130	95	50 - 130	<0.20	ug/L				
9335147	Leachable Phenanthrene	2024/04/15	118	50 - 130	114	50 - 130	<0.20	ug/L				
9335147	Leachable Pyrene	2024/04/15	116	50 - 130	113	50 - 130	<0.20	ug/L				
9341840	Leachable 1,1-Dichloroethylene	2024/04/19	102	70 - 130	96	70 - 130	<0.020	mg/L				
9341840	Leachable 1,2-Dichlorobenzene	2024/04/19	94	70 - 130	90	70 - 130	<0.050	mg/L				
9341840	Leachable 1,2-Dichloroethane	2024/04/19	97	70 - 130	93	70 - 130	<0.050	mg/L				
9341840	Leachable 1,4-Dichlorobenzene	2024/04/19	111	70 - 130	106	70 - 130	<0.050	mg/L				
9341840	Leachable Benzene	2024/04/19	95	70 - 130	91	70 - 130	<0.020	mg/L	NC (1)	30		
9341840	Leachable Carbon Tetrachloride	2024/04/19	95	70 - 130	90	70 - 130	<0.020	mg/L				
9341840	Leachable Chlorobenzene	2024/04/19	103	70 - 130	98	70 - 130	<0.020	mg/L				
9341840	Leachable Chloroform	2024/04/19	105	70 - 130	99	70 - 130	<0.020	mg/L				
9341840	Leachable Methyl Ethyl Ketone (2-Butanone)	2024/04/19	113	60 - 140	110	60 - 140	<1.0	mg/L				
9341840	Leachable Methylene Chloride (Dichloromethane)	2024/04/19	104	70 - 130	99	70 - 130	<0.20	mg/L				
9341840	Leachable Tetrachloroethylene	2024/04/19	97	70 - 130	91	70 - 130	<0.020	mg/L				
9341840	Leachable Trichloroethylene	2024/04/19	100	70 - 130	95	70 - 130	<0.020	mg/L				

BUREAU  
VERITAS

Bureau Veritas Job #: C4A7386

Report Date: 2024/04/19

## QUALITY ASSURANCE REPORT(CONT'D)

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9341840	Leachable Vinyl Chloride	2024/04/19	94	70 - 130	88	70 - 130	<0.020	mg/L				

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference  $\leq 2 \times \text{RDL}$ ).

(1) Duplicate Parent ID

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(3) Matrix Spike Parent ID [YWG970-01]

(4) Duplicate Parent ID [YWG970-01]

(5) The recovery was below the lower control limit. This may represent a low bias in some results for this specific analyte.



BUREAU  
VERITAS

Bureau Veritas Job #: C4A7386

Report Date: 2024/04/19

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

---

Cristina Carriere, Senior Scientific Specialist

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**Attention: Khalid Hussein - Twin Creeks**

RWDI Inc.  
600 Southgate Drive  
Guelph, ON  
Canada N1G 4P6

Your P.O. #: 13384122  
Your Project #: 2402553.01  
Site#: 500  
Site Location: ON07  
Your C.O.C. #: 975902

**Report Date: 2024/10/18**  
Report #: R8366362  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C4V7234**

**Received: 2024/10/08, 11:57**

Sample Matrix: Solid  
# Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Cyanide (WAD) in Leachates	1	N/A	2024/10/15	CAM SOP-00457	OMOE 3015 m
Fluoride by ISE in Leachates	1	2024/10/15	2024/10/15	CAM SOP-00449	SM 24 4500-F- C m
Total Metals in TCLP Leachate by ICPMS	1	2024/10/16	2024/10/16	CAM SOP-00447	EPA 6020B m
Nitrate& Nitrite as Nitrogen in Leachate	1	N/A	2024/10/15	CAM SOP-00440	SM 24 4500-NO3I/NO2B
PAH Compounds in Leachate by GC/MS (SIM)	1	2024/10/16	2024/10/16	CAM SOP-00318	EPA 8270E
TCLP - % Solids	1	2024/10/11	2024/10/12	CAM SOP-00401	EPA 1311 Update I m
TCLP - Extraction Fluid	1	N/A	2024/10/12	CAM SOP-00401	EPA 1311 Update I m
TCLP - Initial and final pH	1	N/A	2024/10/12	CAM SOP-00401	EPA 1311 Update I m
TCLP Zero Headspace Extraction	1	2024/10/15	2024/10/16	CAM SOP-00430	EPA 1311 m
VOCs in ZHE Leachates	1	2024/10/16	2024/10/16	CAM SOP-00228	EPA 8260D

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



**Attention: Khalid Hussein - Twin Creeks**

RWDI Inc.  
600 Southgate Drive  
Guelph, ON  
Canada N1G 4P6

Your P.O. #: 13384122  
Your Project #: 2402553.01  
Site#: 500  
Site Location: ON07  
Your C.O.C. #: 975902

**Report Date: 2024/10/18**  
Report #: R8366362  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C4V7234**

**Received: 2024/10/08, 11:57**

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to:

Patricia Legette, Project Manager

Email: Patricia.Legette@bureauveritas.com

Phone# (905)817-5799

=====

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU  
VERITAS

Bureau Veritas Job #: C4V7234

Report Date: 2024/10/18

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### RESULTS OF ANALYSES OF SOLID

<b>Bureau Veritas ID</b>		AFHX77		
<b>Sampling Date</b>		2024/10/03 13:30		
<b>COC Number</b>		975902		
	<b>UNITS</b>	<b>ASR</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Charge/Prep Analysis</b>				
Amount Extracted (Wet Weight) (g)	N/A	25	N/A	9701113
<b>Inorganics</b>				
Final pH	pH	6.28		9699383
Leachable Fluoride (F-)	mg/L	0.65	0.10	9700686
Initial pH	pH	9.05		9699383
TCLP - % Solids	%	100	0.2	9697526
TCLP Extraction Fluid	N/A	FLUID 1		9699382
Leachable WAD Cyanide (Free)	mg/L	<0.010	0.010	9700691
Leachable Nitrite (N)	mg/L	<0.10	0.10	9700690
Leachable Nitrate (N)	mg/L	<1.0	1.0	9700690
Leachable Nitrate + Nitrite (N)	mg/L	<1.0	1.0	9700690
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable				



### ELEMENTS BY ATOMIC SPECTROSCOPY (SOLID)

<b>Bureau Veritas ID</b>		AFHX77		
<b>Sampling Date</b>		2024/10/03 13:30		
<b>COC Number</b>		975902		
	<b>UNITS</b>	<b>ASR</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Metals</b>				
Leachable Arsenic (As)	mg/L	<0.2	0.2	9703488
Leachable Barium (Ba)	mg/L	0.7	0.2	9703488
Leachable Boron (B)	mg/L	0.9	0.1	9703488
Leachable Cadmium (Cd)	mg/L	0.32	0.05	9703488
Leachable Chromium (Cr)	mg/L	<0.1	0.1	9703488
Leachable Lead (Pb)	mg/L	<0.1	0.1	9703488
Leachable Mercury (Hg)	mg/L	<0.001	0.001	9703488
Leachable Selenium (Se)	mg/L	<0.1	0.1	9703488
Leachable Silver (Ag)	mg/L	<0.01	0.01	9703488
Leachable Uranium (U)	mg/L	<0.01	0.01	9703488
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

Bureau Veritas Job #: C4V7234

Report Date: 2024/10/18

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### SEMI-VOLATILE ORGANICS BY GC-MS (SOLID)

<b>Bureau Veritas ID</b>		AFHX77		
<b>Sampling Date</b>		2024/10/03 13:30		
<b>COC Number</b>		975902		
	<b>UNITS</b>	<b>ASR</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Polyaromatic Hydrocarbons</b>				
Leachable Benzo(b)fluoranthene	ug/L	<0.10	0.10	9703032
Leachable Naphthalene	ug/L	1.8	0.20	9703032
Leachable Acenaphthylene	ug/L	<0.20	0.20	9703032
Leachable Acenaphthene	ug/L	<0.20	0.20	9703032
Leachable Fluorene	ug/L	<0.20	0.20	9703032
Leachable Phenanthrene	ug/L	<0.20	0.20	9703032
Leachable Anthracene	ug/L	<0.20	0.20	9703032
Leachable Fluoranthene	ug/L	<0.20	0.20	9703032
Leachable Pyrene	ug/L	<0.20	0.20	9703032
Leachable Benzo(a)anthracene	ug/L	<0.20	0.20	9703032
Leachable Chrysene	ug/L	<0.20	0.20	9703032
Leachable Benzo(k)fluoranthene	ug/L	<0.20	0.20	9703032
Leachable Benzo(a)pyrene	ug/L	<0.10	0.10	9703032
Leachable Indeno(1,2,3-cd)pyrene	ug/L	<0.20	0.20	9703032
Leachable Dibenzo(a,h)anthracene	ug/L	<0.20	0.20	9703032
Leachable Benzo(g,h,i)perylene	ug/L	<0.20	0.20	9703032
Leachable 1-Methylnaphthalene	ug/L	0.67	0.20	9703032
Leachable 2-Methylnaphthalene	ug/L	0.90	0.20	9703032
<b>Surrogate Recovery (%)</b>				
Leachable D10-Anthracene	%	125		9703032
Leachable D14-Terphenyl (FS)	%	118		9703032
Leachable D8-Acenaphthylene	%	108		9703032
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



**BUREAU  
VERITAS**

Bureau Veritas Job #: C4V7234

Report Date: 2024/10/18

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### VOLATILE ORGANICS BY GC/MS (SOLID)

<b>Bureau Veritas ID</b>		AFHX77		
<b>Sampling Date</b>		2024/10/03 13:30		
<b>COC Number</b>		975902		
	<b>UNITS</b>	<b>ASR</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Volatile Organics</b>				
Leachable Benzene	mg/L	<0.020	0.020	9703413
Leachable Carbon Tetrachloride	mg/L	<0.020	0.020	9703413
Leachable Chlorobenzene	mg/L	<0.020	0.020	9703413
Leachable Chloroform	mg/L	<0.020	0.020	9703413
Leachable 1,2-Dichlorobenzene	mg/L	<0.050	0.050	9703413
Leachable 1,4-Dichlorobenzene	mg/L	<0.050	0.050	9703413
Leachable 1,2-Dichloroethane	mg/L	<0.050	0.050	9703413
Leachable 1,1-Dichloroethylene	mg/L	<0.020	0.020	9703413
Leachable Methylene Chloride(Dichloromethane)	mg/L	<0.20	0.20	9703413
Leachable Methyl Ethyl Ketone (2-Butanone)	mg/L	<1.0	1.0	9703413
Leachable Tetrachloroethylene	mg/L	<0.020	0.020	9703413
Leachable Trichloroethylene	mg/L	<0.020	0.020	9703413
Leachable Vinyl Chloride	mg/L	<0.020	0.020	9703413
<b>Surrogate Recovery (%)</b>				
Leachable 4-Bromofluorobenzene	%	99		9703413
Leachable D4-1,2-Dichloroethane	%	103		9703413
Leachable D8-Toluene	%	103		9703413
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

Bureau Veritas Job #: C4V7234

Report Date: 2024/10/18

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	12.7°C
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**Results relate only to the items tested.**



BUREAU  
VERITAS

Bureau Veritas Job #: C4V7234

Report Date: 2024/10/18

## QUALITY ASSURANCE REPORT

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9703032	Leachable D10-Anthracene	2024/10/16	122	50 - 130	119	50 - 130	116	%				
9703032	Leachable D14-Terphenyl (FS)	2024/10/16	124	50 - 130	128	50 - 130	129	%				
9703032	Leachable D8-Acenaphthylene	2024/10/16	107	50 - 130	100	50 - 130	98	%				
9703413	Leachable 4-Bromofluorobenzene	2024/10/16	99	70 - 130	99	70 - 130	100	%				
9703413	Leachable D4-1,2-Dichloroethane	2024/10/16	102	70 - 130	104	70 - 130	100	%				
9703413	Leachable D8-Toluene	2024/10/16	107	70 - 130	106	70 - 130	103	%				
9700686	Leachable Fluoride (F-)	2024/10/15	51 (1)	80 - 120	102	80 - 120	<0.10	mg/L	2.8 (2)	25	<0.10	mg/L
9700690	Leachable Nitrate (N)	2024/10/15	89	80 - 120	95	80 - 120	<1.0	mg/L	NC (2)	20	<1.0	mg/L
9700690	Leachable Nitrate + Nitrite (N)	2024/10/15	92	80 - 120	90	80 - 120	<1.0	mg/L	NC (2)	20	<1.0	mg/L
9700690	Leachable Nitrite (N)	2024/10/15	104	80 - 120	96	80 - 120	<0.10	mg/L	NC (2)	20	<0.10	mg/L
9700691	Leachable WAD Cyanide (Free)	2024/10/15	94	80 - 120	104	80 - 120	<0.0020	mg/L	NC (2)	20	<0.010	mg/L
9703032	Leachable 1-Methylnaphthalene	2024/10/16	108	50 - 130	109	50 - 130	<0.20	ug/L	0.88 (2)	40		
9703032	Leachable 2-Methylnaphthalene	2024/10/16	107	50 - 130	108	50 - 130	<0.20	ug/L	1.9 (2)	40		
9703032	Leachable Acenaphthene	2024/10/16	106	50 - 130	108	50 - 130	<0.20	ug/L	NC (2)	40		
9703032	Leachable Acenaphthylene	2024/10/16	103	50 - 130	100	50 - 130	<0.20	ug/L	NC (2)	40		
9703032	Leachable Anthracene	2024/10/16	110	50 - 130	108	50 - 130	<0.20	ug/L	NC (2)	40		
9703032	Leachable Benzo(a)anthracene	2024/10/16	104	50 - 130	103	50 - 130	<0.20	ug/L	NC (2)	40		
9703032	Leachable Benzo(a)pyrene	2024/10/16	112	50 - 130	109	50 - 130	<0.10	ug/L	NC (2)	40		
9703032	Leachable Benzo(b)fluoranthene	2024/10/16	111	50 - 130	113	50 - 130	<0.10	ug/L				
9703032	Leachable Benzo(g,h,i)perylene	2024/10/16	107	50 - 130	107	50 - 130	<0.20	ug/L	NC (2)	40		
9703032	Leachable Benzo(k)fluoranthene	2024/10/16	112	50 - 130	113	50 - 130	<0.20	ug/L	NC (2)	40		
9703032	Leachable Chrysene	2024/10/16	98	50 - 130	99	50 - 130	<0.20	ug/L	NC (2)	40		
9703032	Leachable Dibenzo(a,h)anthracene	2024/10/16	95	50 - 130	97	50 - 130	<0.20	ug/L	NC (2)	40		
9703032	Leachable Fluoranthene	2024/10/16	122	50 - 130	121	50 - 130	<0.20	ug/L	NC (2)	40		
9703032	Leachable Fluorene	2024/10/16	107	50 - 130	106	50 - 130	<0.20	ug/L	0.42 (2)	40		
9703032	Leachable Indeno(1,2,3-cd)pyrene	2024/10/16	116	50 - 130	114	50 - 130	<0.20	ug/L	NC (2)	40		
9703032	Leachable Naphthalene	2024/10/16	106	50 - 130	109	50 - 130	<0.20	ug/L	1.8 (2)	40		
9703032	Leachable Phenanthrene	2024/10/16	110	50 - 130	111	50 - 130	<0.20	ug/L	NC (2)	40		
9703032	Leachable Pyrene	2024/10/16	120	50 - 130	119	50 - 130	<0.20	ug/L	NC (2)	40		
9703413	Leachable 1,1-Dichloroethylene	2024/10/16	102	70 - 130	98	70 - 130	<0.020	mg/L	NC (2)	30		



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VERITAS

Bureau Veritas Job #: C4V7234

Report Date: 2024/10/18

## QUALITY ASSURANCE REPORT(CONT'D)

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9703413	Leachable 1,2-Dichlorobenzene	2024/10/16	106	70 - 130	102	70 - 130	<0.050	mg/L	NC (2)	30		
9703413	Leachable 1,2-Dichloroethane	2024/10/16	107	70 - 130	107	70 - 130	<0.050	mg/L	NC (2)	30		
9703413	Leachable 1,4-Dichlorobenzene	2024/10/16	106	70 - 130	103	70 - 130	<0.050	mg/L	NC (2)	30		
9703413	Leachable Benzene	2024/10/16	107	70 - 130	104	70 - 130	<0.020	mg/L				
9703413	Leachable Carbon Tetrachloride	2024/10/16	108	70 - 130	104	70 - 130	<0.020	mg/L	NC (2)	30		
9703413	Leachable Chlorobenzene	2024/10/16	96	70 - 130	94	70 - 130	<0.020	mg/L	NC (2)	30		
9703413	Leachable Chloroform	2024/10/16	103	70 - 130	100	70 - 130	<0.020	mg/L	NC (2)	30		
9703413	Leachable Methyl Ethyl Ketone (2-Butanone)	2024/10/16	113	60 - 140	115	60 - 140	<1.0	mg/L	NC (2)	30		
9703413	Leachable Methylene Chloride (Dichloromethane)	2024/10/16	96	70 - 130	95	70 - 130	<0.20	mg/L	NC (2)	30		
9703413	Leachable Tetrachloroethylene	2024/10/16	104	70 - 130	99	70 - 130	<0.020	mg/L	NC (2)	30		
9703413	Leachable Trichloroethylene	2024/10/16	105	70 - 130	101	70 - 130	<0.020	mg/L	NC (2)	30		
9703413	Leachable Vinyl Chloride	2024/10/16	94	70 - 130	90	70 - 130	<0.020	mg/L	NC (2)	30		
9703488	Leachable Arsenic (As)	2024/10/16	101	80 - 120	99	80 - 120	<0.2	mg/L	NC (2)	35	<0.2	mg/L
9703488	Leachable Barium (Ba)	2024/10/16	102	80 - 120	94	80 - 120	<0.2	mg/L	2.9 (2)	35	<0.2	mg/L
9703488	Leachable Boron (B)	2024/10/16	99	80 - 120	87	80 - 120	<0.1	mg/L	NC (2)	35	<0.1	mg/L
9703488	Leachable Cadmium (Cd)	2024/10/16	95	80 - 120	95	80 - 120	<0.05	mg/L	NC (2)	35	<0.05	mg/L
9703488	Leachable Chromium (Cr)	2024/10/16	98	80 - 120	98	80 - 120	<0.1	mg/L	NC (2)	35	<0.1	mg/L
9703488	Leachable Lead (Pb)	2024/10/16	93	80 - 120	95	80 - 120	<0.1	mg/L	NC (2)	35	<0.1	mg/L
9703488	Leachable Mercury (Hg)	2024/10/16	88	80 - 120	89	80 - 120	<0.001	mg/L	NC (2)	35	<0.001	mg/L
9703488	Leachable Selenium (Se)	2024/10/16	100	80 - 120	101	80 - 120	<0.1	mg/L	NC (2)	35	<0.1	mg/L
9703488	Leachable Silver (Ag)	2024/10/16	96	80 - 120	94	80 - 120	<0.01	mg/L	NC (2)	35	<0.01	mg/L



BUREAU  
VERITAS

Bureau Veritas Job #: C4V7234

Report Date: 2024/10/18

## QUALITY ASSURANCE REPORT(CONT'D)

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9703488	Leachable Uranium (U)	2024/10/16	97	80 - 120	96	80 - 120	<0.01	mg/L	NC (2)	35	<0.01	mg/L

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference  $\leq 2 \times$  RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) Duplicate Parent ID



BUREAU  
VERITAS

Bureau Veritas Job #: C4V7234

Report Date: 2024/10/18

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

---

Cristina Carriere, Senior Scientific Specialist

---

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



## Custody Tracking Form



T975902-H

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: ASR

Last Sample: ASR

Sample Count: 1

Relinquished By				Received By			
J. A. L. Kelly		Date	24/10/21	M. F. B. A.		Date	01/11/21
		Time (24 HR)	10:00			Time (24 HR)	11:57
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at [www.bvna.com](http://www.bvna.com).

### Triage Information

Sampled By (Print)

J. A. L. Kelly

# of Coolers/Pkgs:

1

Rush ☐

Immediate Test ☐

Food Residue ☐

Micro ☐

Food Chemistry ☐

### \*\*\* LABORATORY USE ONLY \*\*\*

Received At Mississauga Lat

08-Oct-24 11:57

Labeled By

Patricia Legette



C4V7234

Verified By

A8K ENV-1734

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	13	12	12
Drinking Water Metals Preservation Check Done (Circle) YES NO					

COR FCD-00383/4

Page 1 of 1

# APPENDIX L:

Construction Details



# APPENDIX L:

TABLE L1: Warwick D&O - October 1997 - Drawings





WASTE SYSTEMS (WARWICK) LIMITED

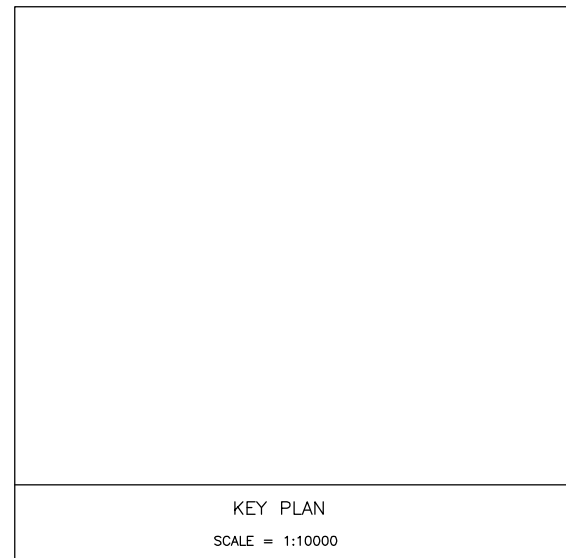
WARWICK TOWNSHIP LANDFILL SITE

LOCATED IN  
WARWICK TOWNSHIP  
COUNTY OF LAMBTON

DEVELOPMENT AND OPERATION PLANS

DRAWING INDEX

917300-300	TITLE SHEET
917300-301	EXISTING CONDITIONS - PROPERTY
917300-302	EXISTING CONDITIONS - SITE - SEPTEMBER 1995
917300-303	EXISTING CONDITIONS - NORTH
917300-304	EXISTING CONDITIONS - SOUTH
917300-305	EXISTING LEACHATE COLLECTORS AND CUT-OFF WALL
917300-306	FINAL CONTOURS - NORTH
917300-306A	LANDSCAPE & PLANTING PLAN - NORTH (100% COMPLETE)
917300-306B	LANDSCAPE & PLANTING PLAN - NORTH (75% COMPLETE)
917300-307	FINAL CONTOURS - SOUTH
917300-307A	LANDSCAPE & PLANTING PLAN - SOUTH (100% COMPLETE)
917300-307B	LANDSCAPE & PLANTING PLAN - SOUTH (25% COMPLETE)
917300-307C	LANDSCAPE & PLANTING PLAN - SOUTH (50% COMPLETE)
917300-308	BASE CONTOURS - NORTH
917300-309	BASE CONTOURS - SOUTH
917300-310	STORMWATER MANAGEMENT - NORTH
917300-311	STORMWATER MANAGEMENT - SOUTH
917300-312	SEDIMENTATION POND DETAILS
917300-313	PHASING PLAN
917300-314	SECTION A-A AND SECTION B-B
917300-315	SECTION C-C AND SECTION D-D
917300-316	SECTION E-E
917300-317	SECTION F-F, G-G, AND H-H
917300-318	DETAILS



REVISIONS		
Date	Description	By
JAN 97	DRAWING INDEX REVISED TO INCLUDE 306B, 307B & 307C	T.C.G.
DEC 95	GENERAL REVISIONS	J.E.A.
APRIL 94	REVISED PLANS TO MOEE COMMENTS	J.E.A.

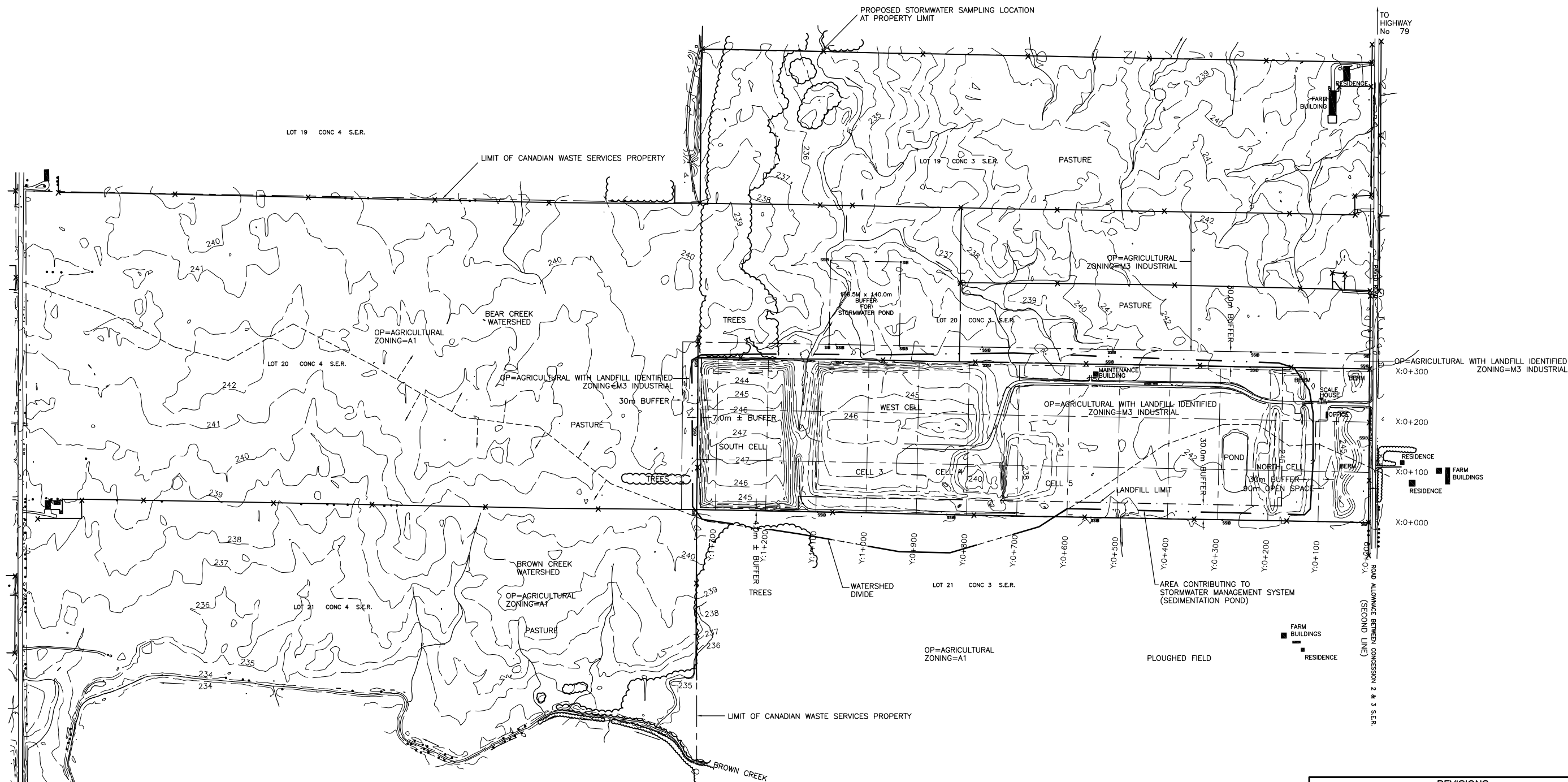


HENDERSON, PADDON ENVIRONMENTAL INC.  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

WARWICK TOWNSHIP LANDFILL  
TITLE SHEET

CLIENT: LAIDLAW WASTE SYSTEMS (WARWICK) LTD	
Design: J.E.A.	Scale: N/A
Drawn: J.E.A.	Date: FEBRUARY 1993
Traced:	Approved:
Checked: F.C.F.	Design Engineer
DRAWING No.	91730D - 300



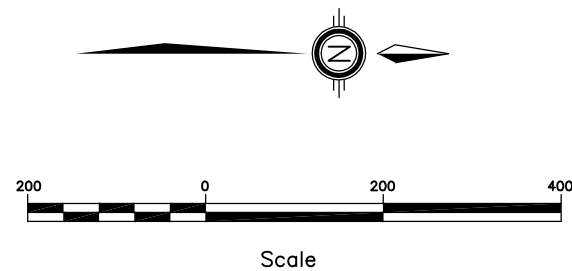
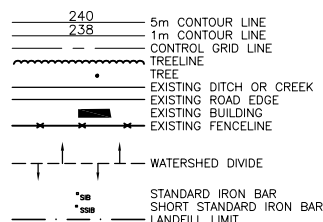


COUNTY ROAD NUMBER 39

**NOTES:**

- 1) EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1 1992, AND WAS SUPPLIED BY MARSHALL MACKLIN MONAGHAN CONSULTING LIMITED.
- 2) CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
- 3) CONTOUR INTERVAL SHOWN ON THIS PLAN IS 1.0m

**LEGEND:**



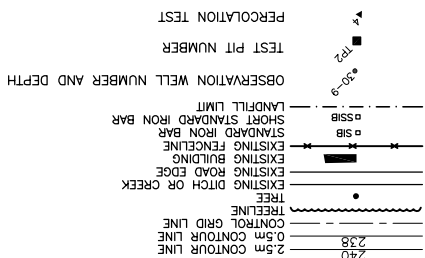
REVISIONS		
Date	Description	By
JAN 02/97	ADDED BUFFER FOR STORMWATER POND	T.C.G.
DEC 95	GENERAL REVISIONS	J E A
APRIL 94	REVISED PLANS TO MOEE COMMENTS	J E A



HENDERSON, PADDON ENVIRONMENTAL INC.  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

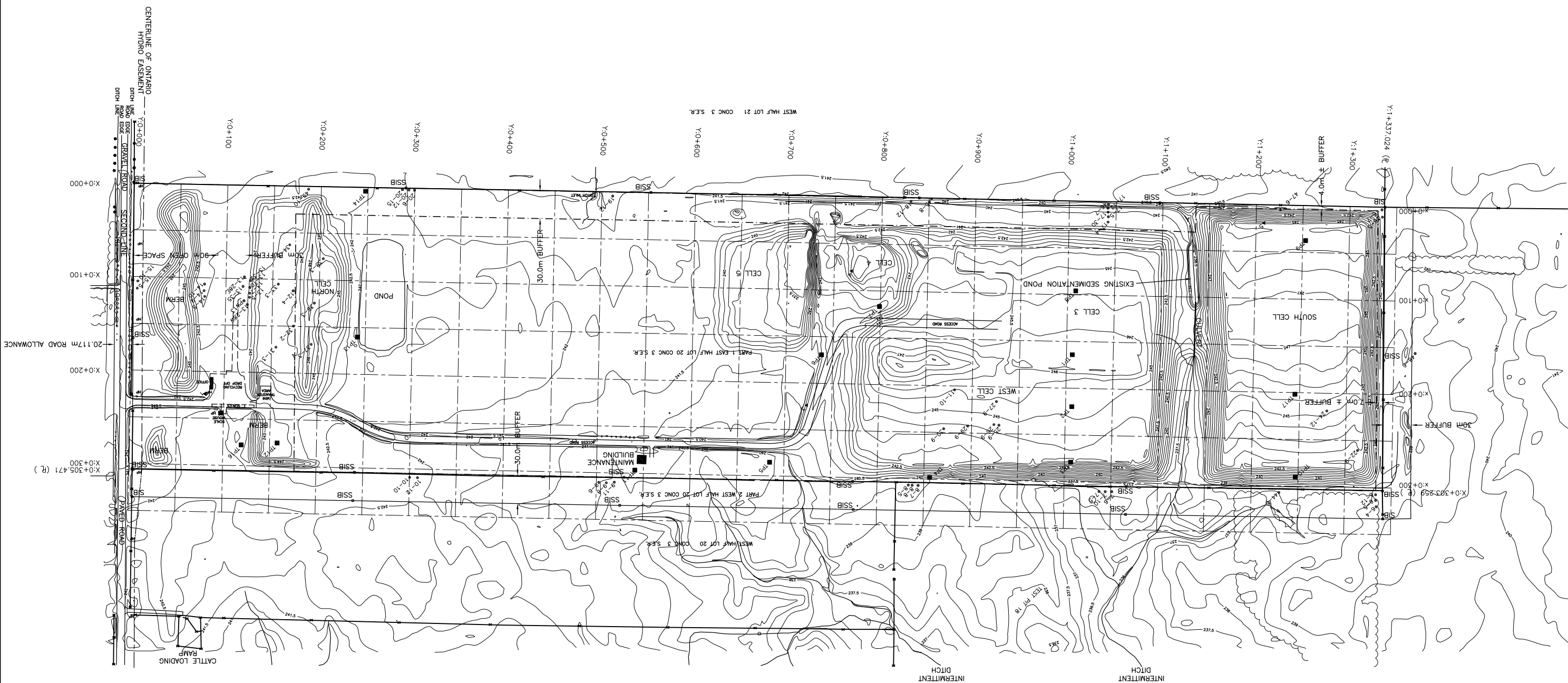
**WARWICK LANDFILL  
EXISTING CONDITIONS – PROPERTY**

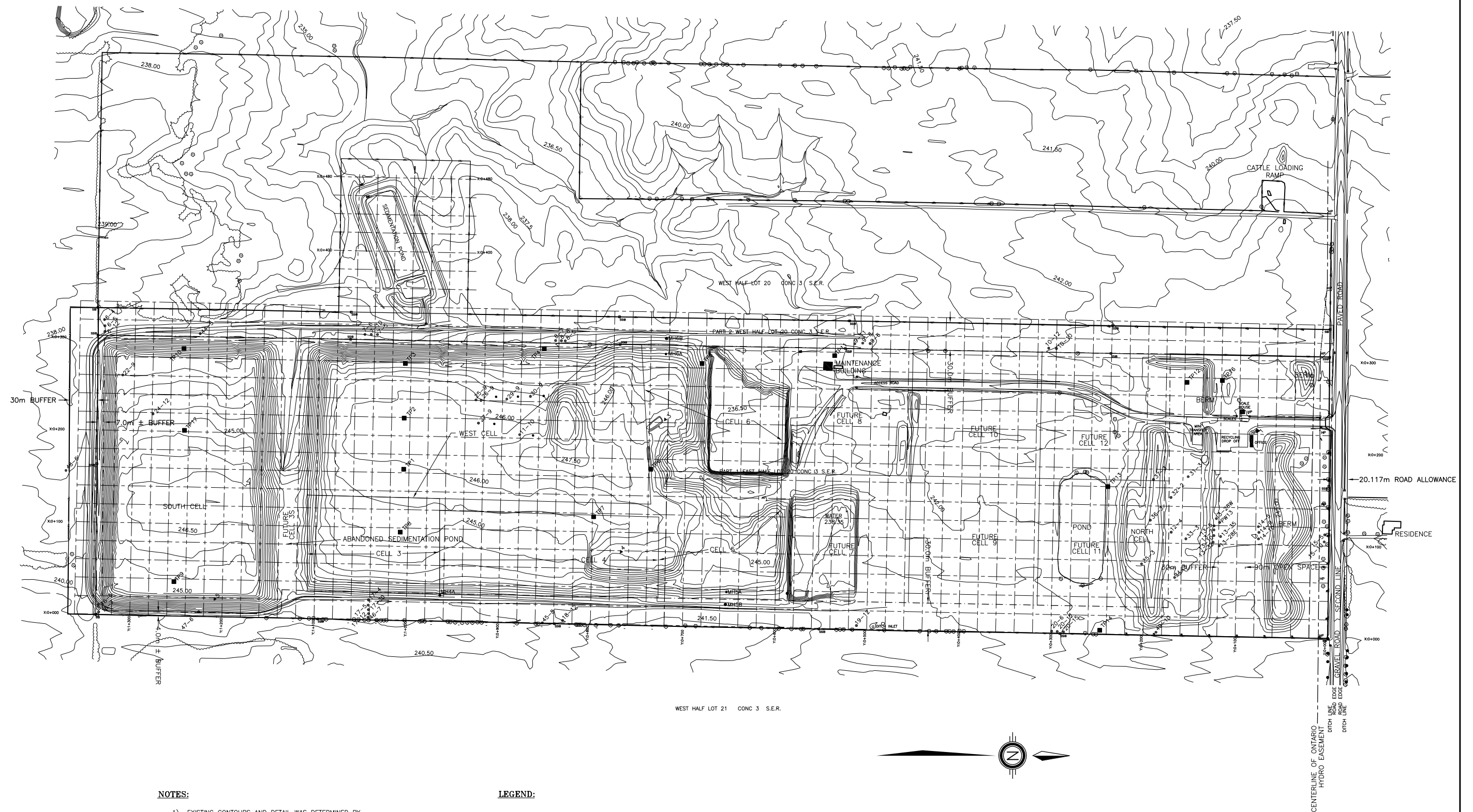
CLIENT:	
CANADIAN WASTE SERVICES INC.	
Design: J E A	Scale: AS SHOWN
Drawn: J E A	Date: SEPTEMBER 1994
Traced:	Approved:
Checked: F C F	Design Engineer
DRAWING No.	91730D – 301



- 1) EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1 1992, AND WAS SUPPLIED BY MARSHALL MACKILIN MONAGHAN CONSULTING LIMITED.
- 2) CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE 1 GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
- 3) CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5M

## NOTES:

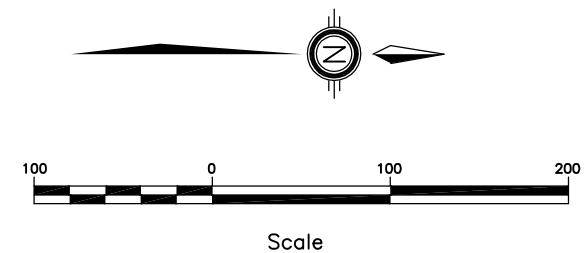
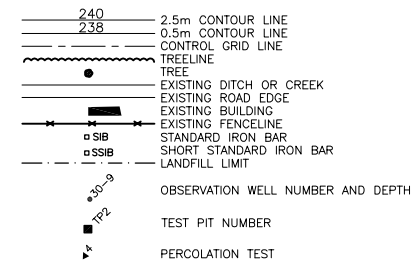





NOTES:

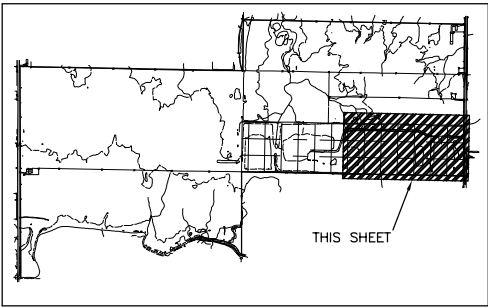
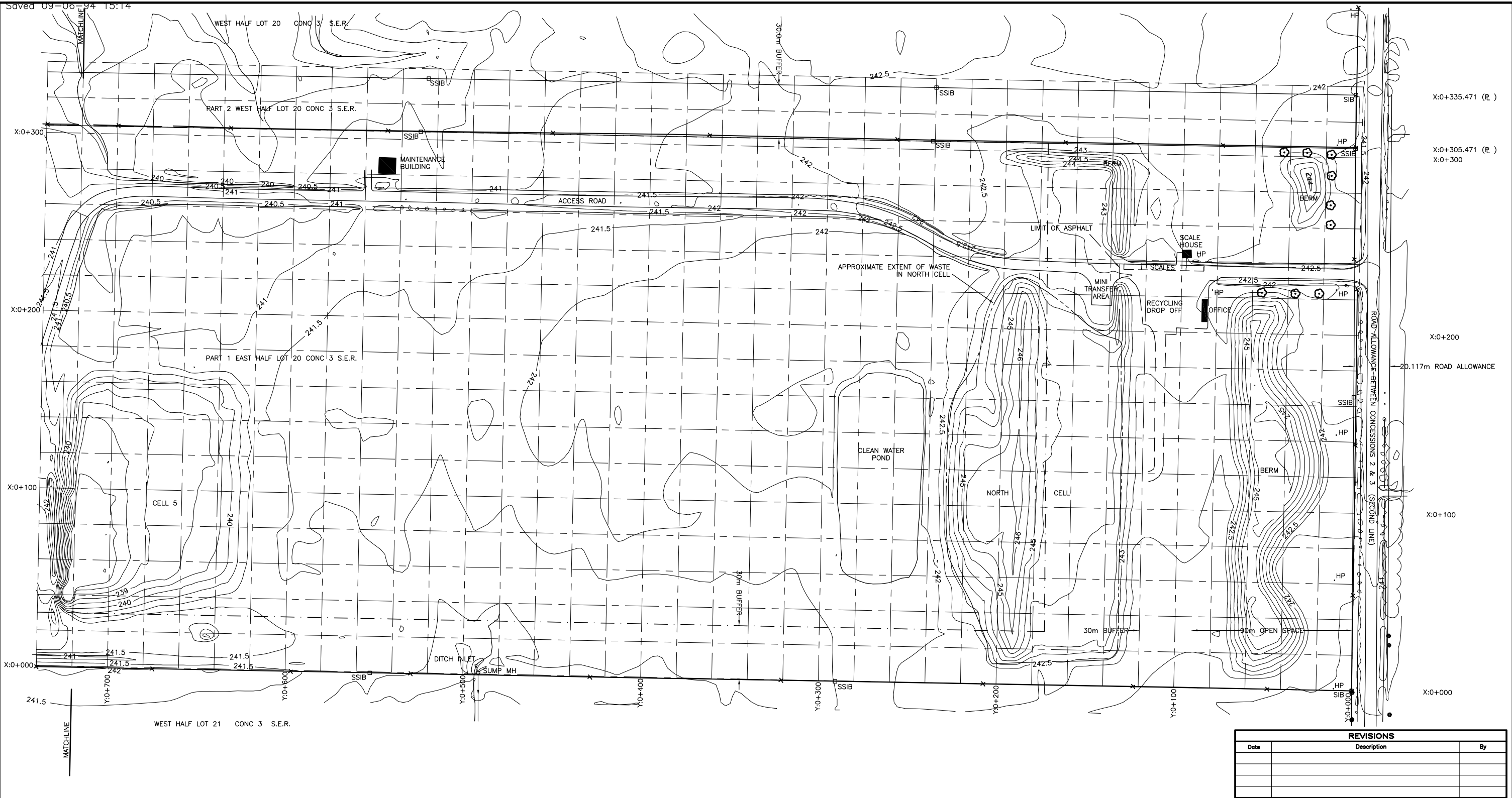
- 1) EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON SEPT. 9, 1995, AND WAS SUPPLIED BY INTERA INFORMATION TECHNOLOGIES
- 2) CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
- 3) CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5m

**LEGEND:**



REVISIONS		
Date	Description	By

	HENDERSON, PADDON ENVIRONMENTAL INC. ENVIRONMENTAL ENGINEERS & SCIENTISTS OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN	
	WARWICK LANDFILL EXISTING CONDITIONS — SITE SEPTEMBER 1995	
	CLIENT:	
	CANADIAN WASTE SERVICES INC.	
	Design: J E A	Scale: SEE BAR SCALE
	Drawn: J E A	Date: DECEMBER 19, 1995
	Traced:	Approved:
	Checked: F C F	Design Engineer
DRAWING No.		91730D — 302A



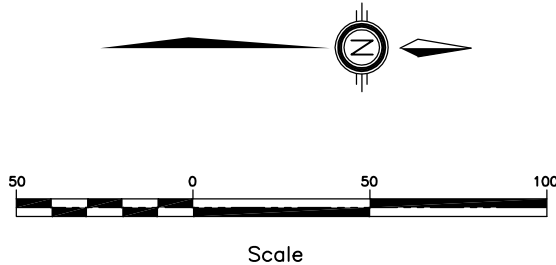
KEY PLAN

NOTES:


- 1) EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1 1992, AND WAS SUPPLIED BY MARSHALL MACKLIN MONAGHAN CONSULTING LIMITED.
- 2) CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID, THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
- 3) CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5m

LEGEND:

- 240 2.5m CONTOUR LINE
- 238 0.5m CONTOUR LINE
- CONTROL GRID LINE
- TREELINE
- EXISTING DITCH OR CREEK
- EXISTING ROAD EDGE
- EXISTING BUILDING
- EXISTING FENCELINE
- SIB STANDARD IRON BAR
- SSIB SHORT STANDARD IRON BAR
- LANDFILL LIMIT



REVISIONS		
Date	Description	By



**HENDERSON, PADDON ENVIRONMENTAL INC.**  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

**WARWICK LANDFILL**  
EXISTING CONDITIONS – NORTH

CLIENT:  
**CANADIAN WASTE SERVICES INC.**

Design: **J E A**

Scale: **AS SHOWN**

Drawn: **J E A**

Date: **SEPTEMBER 1994**

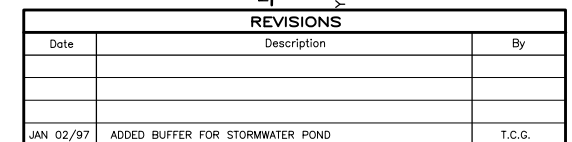
Traced: **J E A**

Approved: **J E A**

Checked: **F C F**

Design Engineer

DRAWING No. **91730D – 303**



REGISTERED PROFESSIONAL ENGINEER  
F.C. FORD  
PROVINCE OF ONTARIO

<div style="writing-mode: vertical-rl; transform: rotate(180deg);">             14787         </div>	CLIENT:		CANADIAN WASTE SERVICES INC.	
	Design: J E A		Scale: AS SHOWN	
	Drawn: J E A		Date: SEPTEMBER 1994	
	Traced:		Approved:	
	Checked: F C F		Design Engineer	
	DRAWING No.		91730D - 304	

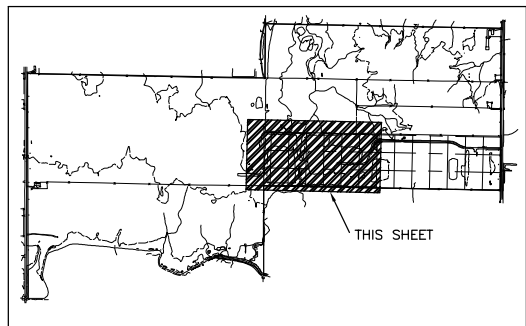
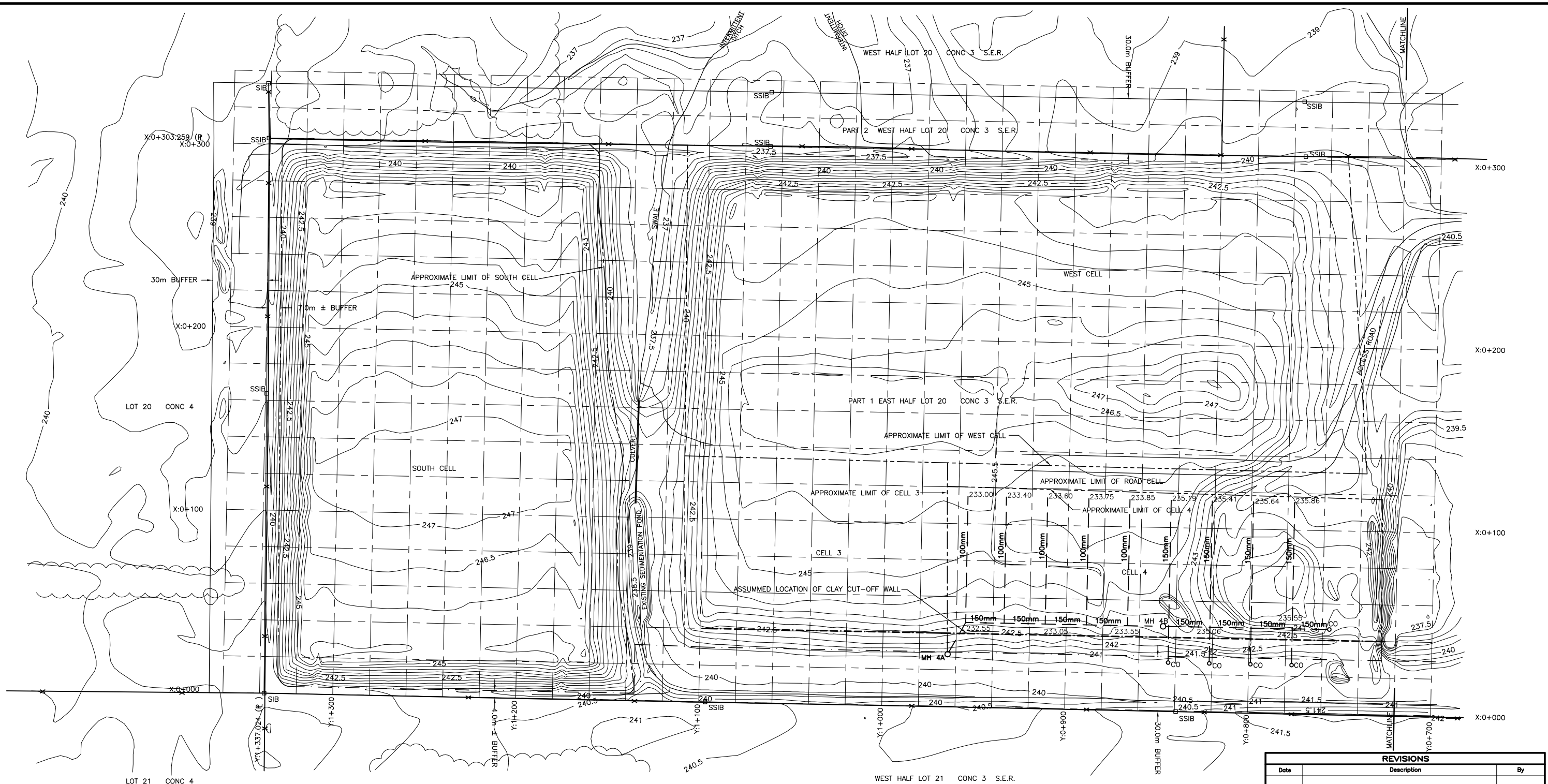
- 1) EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1 1992, AND WAS SUPPLIED BY MARSHALL MACKLIN MONAGHAN CONSULTING LIMITED.
- 2) CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
- 3) CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5m

240 \_\_\_\_\_ 2.5m CONTOUR LINE  
 238 \_\_\_\_\_ 0.5m CONTOUR LINE  
 \_\_\_\_\_ CONTROL GRID LINE  
 \_\_\_\_\_ TREELINE  
 • TREE  
 \_\_\_\_\_ EXISTING DITCH OR CREEK  
 \_\_\_\_\_ EXISTING ROAD EDGE  
 \_\_\_\_\_ EXISTING BUILDING  
 \_\_\_\_\_ EXISTING FENCELINE  
 □ STANDARD IRON BAR  
 □ SSB SHORT STANDARD IRON BAR  
 . . . LANDFILL LIMIT  
 - - - APPROXIMATE CELL LIMITS



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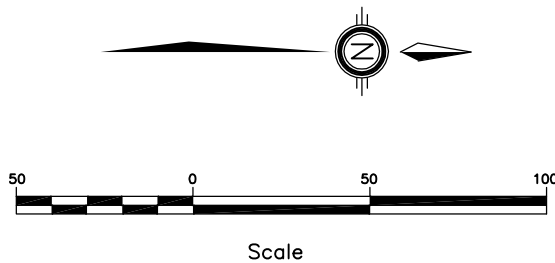
KEY PLAN

NOTES:

- 1) EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1 1992, AND WAS SUPPLIED BY MARSHALL MACKLIN MONAGHAN CONSULTING LIMITED.
- 2) CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
- 3) CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5m
- 4) LOCATION OF EXISTING LEACHATE COLLECTORS AND CUT-OFF WALL IN SOUTH HALF OF CELL 4 IS "AS DESIGNED" BY WATER AND EARTH SCIENCE ASSOCIATES LIMITED.
- 5) LOCATION OF EXISTING LEACHATE COLLECTORS AND CUT-OFF WALL IN NORTH HALF OF CELL 4 IS "AS DESIGNED" BY HENDERSON PADDON ENVIRONMENTAL INC.

LEGEND:

- 240 2.5m CONTOUR LINE
- 238 0.5m CONTOUR LINE
- CONTROL GRID LINE
- TREELINE
- EXISTING DITCH OR CREEK
- EXISTING ROAD EDGE
- EXISTING BUILDING
- EXISTING FENCELINE
- SIB STANDARD IRON BAR
- SSIB SHORT STANDARD IRON BAR
- LANDFILL LIMIT
- ASSUMED LIMIT OF CELLS
- 150mm EXISTING LEACHATE COLLECTOR AND SIZE
- 232.55 PROPOSED LEACHATE COLLECTOR INVERTS
- CLAY CUT-OFF WALL
- CO LEACHATE COLLECTOR CLEAN OUT
- MH LEACHATE COLLECTOR MANHOLE



REVISIONS		
Date	Description	By
APRIL 94	REVISED PLANS TO MOEE COMMENTS	J E A



HENDERSON, PADDON ENVIRONMENTAL INC.  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

WARWICK LANDFILL  
EXISTING LEACHATE COLLECTOR AND  
CUT-OFF WALL

CLIENT:

CANADIAN WASTE SERVICES INC.

Design: J E A

Scale: AS SHOWN

Drawn: J E A

Date: SEPTEMBER 1994

Traced:

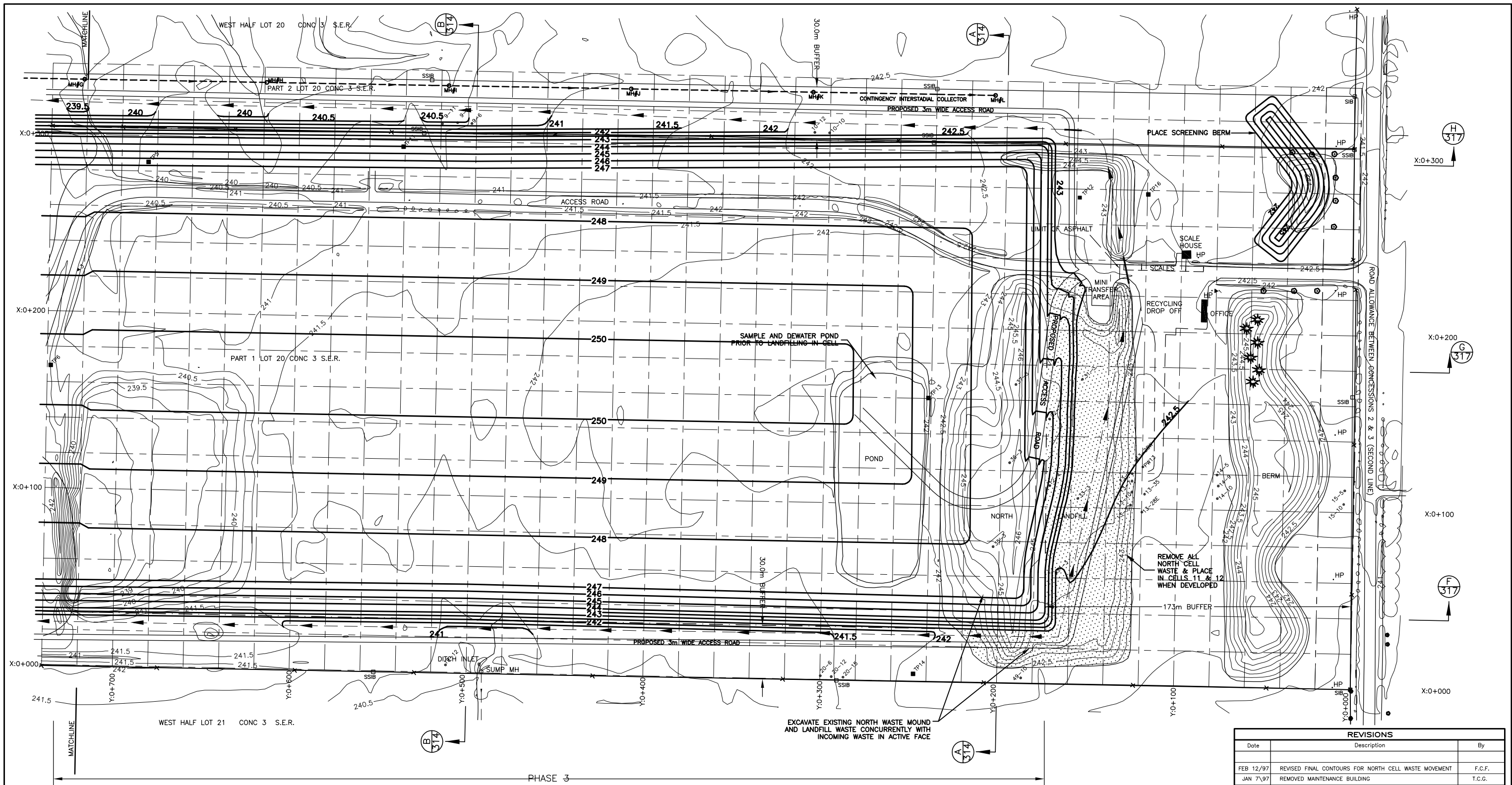
Approved:

Checked: F C F

Design Engineer

Drawing No.

91730D - 305

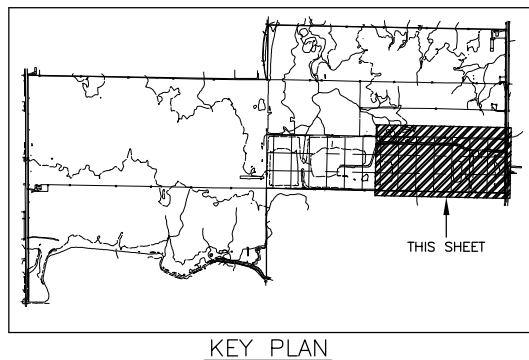


**NOTES:**

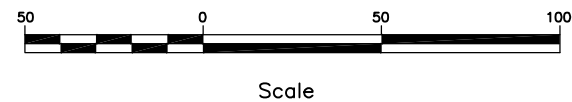
- 1) EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1 1992, AND WAS SUPPLIED BY MARSHALL MACKLIN MONACHAN CONSULTING LIMITED.
- 2) CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
- 3) CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5m

**LEGEND:**

- 240 2.5m CONTOUR LINE
- 238 0.5m CONTOUR LINE
- CONTROL GRID LINE
- TREELINE
- EXISTING DITCH OR CREEK
- EXISTING ROAD EDGE
- EXISTING BUILDING
- EXISTING FENCELINE
- STANDARD IRON BAR
- SHORT STANDARD IRON BAR
- LANDFILL LIMIT
- PROPOSED FINAL CONTOURS
- PROPOSED ACCESS ROADS
- PROPOSED PERIMETER DITCHING
- TEST PIT NUMBER
- OBSERVATION WELL NUMBER AND DEPTH
- PERCOLATION TEST NUMBER
- CROSS SECTION LOCATION AND DRAWING NUMBER
- CONTINGENCY INTERSTADIAL DRAIN




KEY PLAN



Scale

REVISIONS		
Date	Description	By
FEB 12/97	REVISED FINAL CONTOURS FOR NORTH CELL WASTE MOVEMENT	F.C.F.
JAN 7/97	REMOVED MAINTENANCE BUILDING	T.C.G.
DEC 95	GENERAL REVISIONS	J.E.A.



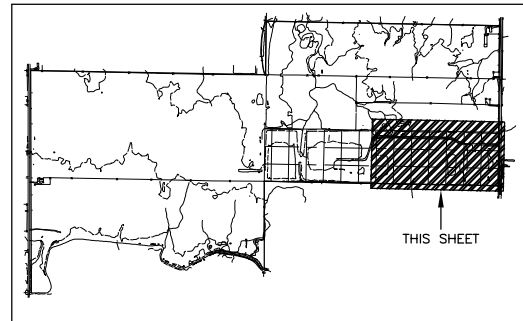
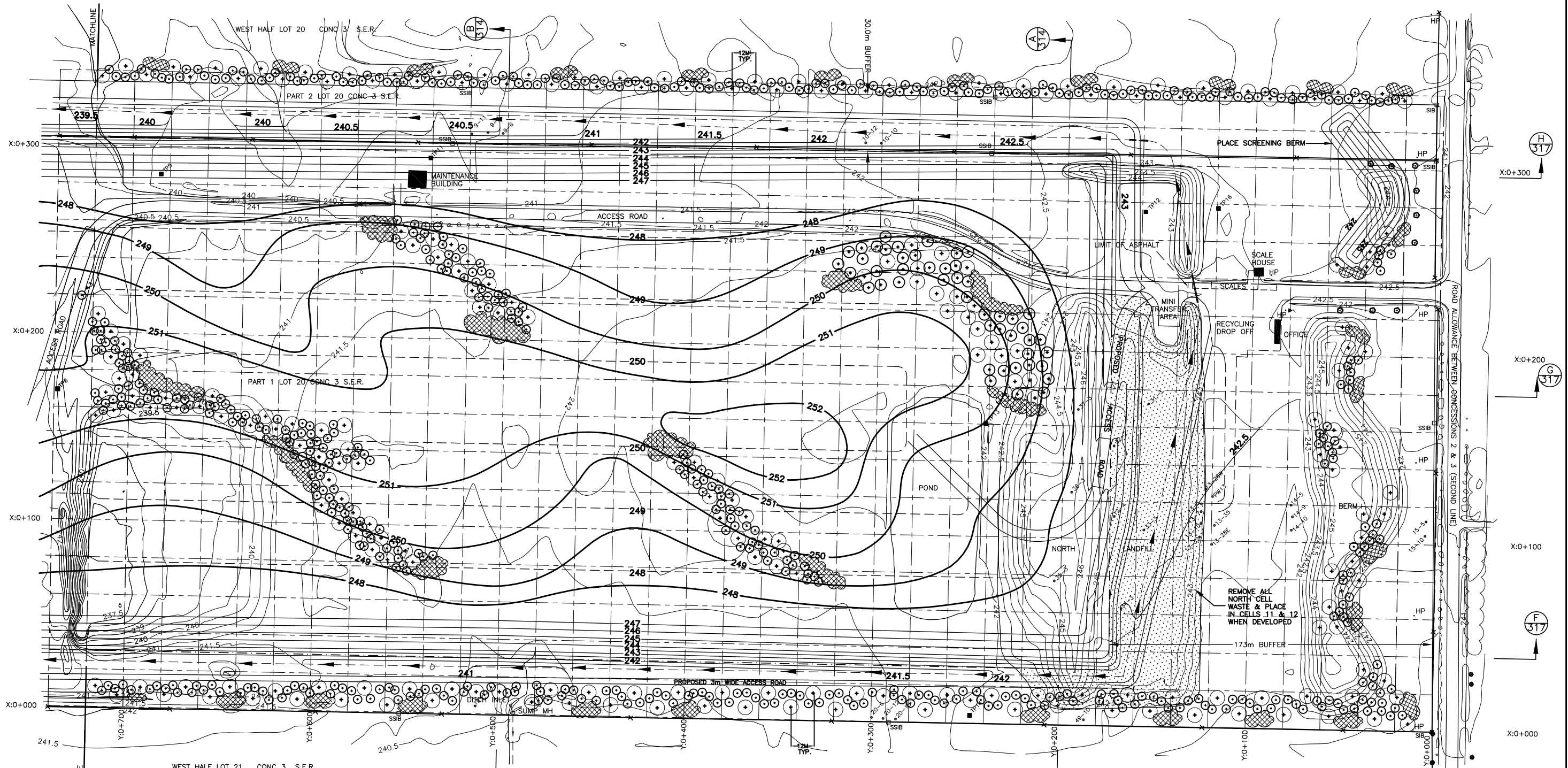
HENDERSON, PADDON ENVIRONMENTAL INC.  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

**WARWICK LANDFILL  
FINAL CONTOURS – NORTH**

CLIENT: CANADIAN WASTE SERVICES INC.

Design: J E A	Scale: AS SHOWN
Drawn: J E A	Date: SEPTEMBER 1994
Traced:	Approved:
Checked: F C F	Design Engineer

DRAWING No. 91730D – 306

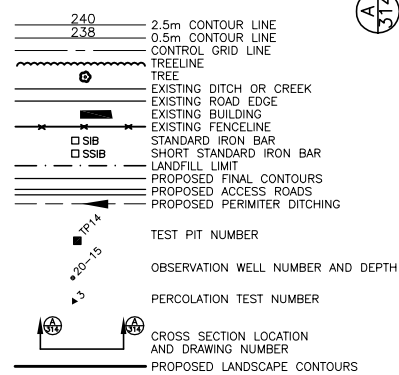


KEY PLAN

PLANT LIST

SYMBOL	QUANT.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	REMARKS
+	415	<b>LARGE HARDWOOD DECIDUOUS TREES</b>				
		FRAXINUS AMERICANA	WHITE ASH	45mm cal.	B.R.	
		FRAXINUS NIGRA	BLACK ASH	45mm cal.	B.R.	
		ACER SACCHARUM	SUGAR MAPLE	45mm cal.	B.R.	
		ACER RUBRUM	RED MAPLE	45mm cal.	B.R.	
		ACER SACCHARINUM	SILVER MAPLE	45mm cal.	B.R.	
		QUERCUS MACROCARPA MICHX.	BUR OAK	45mm cal.	B.R.	
		QUERCUS RUBRA	RED OAK	45mm cal.	B.R.	
●	179	<b>MEDIUM SOFTWOOD DECIDUOUS TREES</b>				
		TILLIA AMERICANA	BASSWOOD	45mm cal.	B.R.	
		POPULUS TREMULOIDES MICHX.	TREMBLING ASPEN	45mm cal.	B.R.	
		POPULUS BALSAMIFERA	BALSAM POPLAR	45mm cal.	B.R.	
⊙	880	<b>LARGE SHRUBS</b>				
		CRATAEGUS	HAWTHORN	1m ht.	B.R.	MULTI STEM
		RHUS TYPHINA	STAGHORN SUMAC	1m ht.	B.R.	MULTI STEM
		RHAMNUS ALNIFOLIA	BUCKTHORN	1m ht.	B.R.	MULTI STEM
⊗	4800	<b>SHRUBS</b>				
		RHUS AROMATICA	FRAGRANT SUMAC	0.6m ht.	B.R.	
		CORNUS	DOGWOOD	0.6m ht.	B.R.	

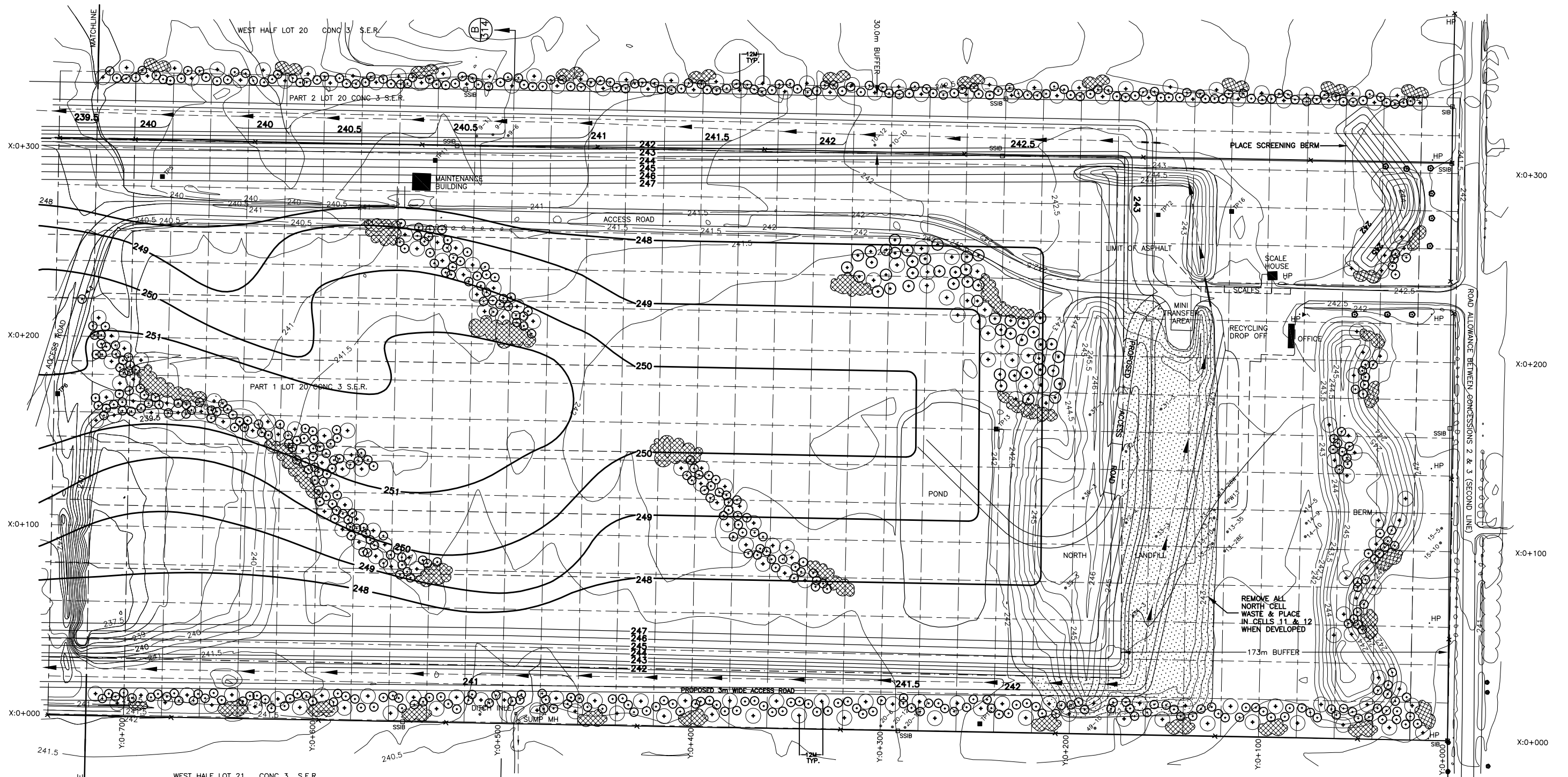
LEGEND:



Scale

FEB 12/97	REVISED FINAL CONTOURS FOR NORTH CELL WASTE MOVEMENT	F.C.F.
DEC 20/96	REVISED FINAL CONTOURS TO INDICATE PERCENTAGE LANDSCAPED	F.C.F.
DATE	DESCRIPTION	BY
REVISIONS		
<b>Salmona Partnership</b> INC.		
• Site Planners • Consultants in Urban Design • Recreation Planners • Landscape Architects • Environmental Planners		
Suite 800 10 Kingsbridge Garden Circle Mississauga, Ontario Canada L5L 3K8 Tel: (905) 568-4375 Fax: (905) 568-4376		
<b>NOTE:</b> Contractor is to check and verify all dimensions and conditions on the project, and is immediately report any discrepancies to the landscape architect before proceeding with the work.		
Project Title	WARWICK LANDFILL	
Sheet Description	LANDSCAPE AND PLANTING PLAN NORTH	
100% LANDSCAPING COMPLETED	91730D-306A	
DATE	DEC. 8, 1995	ISSUED
JOB NUMBER	1796	Drawn By SF
SCALE	1 : 1000	CHECKED By DT
SHEET NUMBER	91730D-306A	

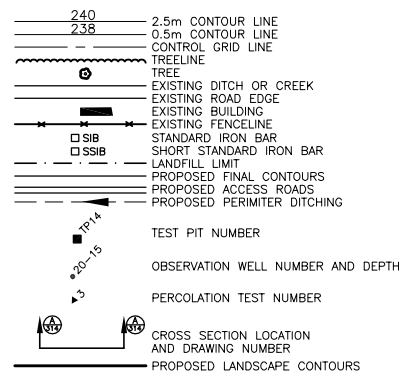




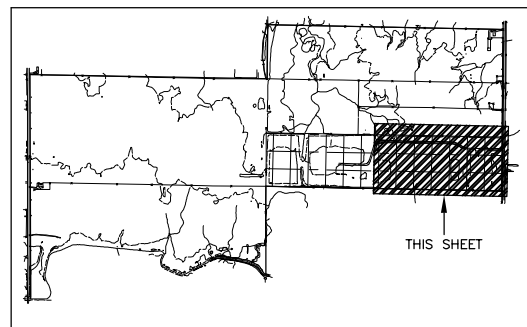
PLANT LIST

SYMBOL	QUANT.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	REMARKS
+	415	LARGE HARDWOOD DECIDUOUS TREES				
		FRAXINUS AMERICANA	WHITE ASH	45mm cal.	B.R.	
		FRAXINUS NIGRA	BLACK ASH	45mm cal.	B.R.	
		ACER SACCHARUM	SUGAR MAPLE	45mm cal.	B.R.	
		ACER RUBRUM	RED MAPLE	45mm cal.	B.R.	
		ACER SACCHARINUM	SILVER MAPLE	45mm cal.	B.R.	
		QUERCUS MACROCARPA MICHX.	BUR OAK	45mm cal.	B.R.	
o	179	QUERCUS RUBRA	RED OAK	45mm cal.	B.R.	
		MEDIUM SOFTWOOD DECIDUOUS TREES				
		TILIA AMERICANA	BASSWOOD	45mm cal.	B.R.	
		POPULUS TREMULOIDES MICHX.	TREMBLING ASPEN	45mm cal.	B.R.	
o	880	POPULUS BALSAMIFERA	BALSAM POPLAR	45mm cal.	B.R.	
		LARGE SHRUBS				
		CRATAEGUS	HAWTHORN	1m ht.	B.R.	MULTI STEM
		RHUS TYPHINA	STAGHORN SUMAC	1m ht.	B.R.	MULTI STEM
o	4800	RHAMNUS ALNIFOLIA	BUCKTHORN	1m ht.	B.R.	MULTI STEM
		SHRUBS				
		RHUS AROMATICA	FRAGRANT SUMAC	0.6m ht.	B.R.	
		CORNUS	DOGWOOD	0.6m ht.	B.R.	

LEGEND:



Scale



KEY PLAN

DATE	DESCRIPTION	BY
FEB 12/97	REVISED FINAL CONTOURS FOR NORTH CELL WASTE MOVEMENT	F.C.F.
DEC 20/96	REVISED FINAL CONTOURS TO INDICATE PERCENTAGE LANDSCAPED	F.C.F.
REVISIONS		

**Salmona Partnership**  
INC.

- Site Planners
- Consultants in Urban Design
- Recreation Planners
- Landscape Architects
- Environmental Planners

Suite 800  
10 Kingsbridge Garden Circle  
Mississauga, Ontario  
Canada L5R 3K6  
Tel.: (905) 568-4375  
Fax: (905) 568-4376

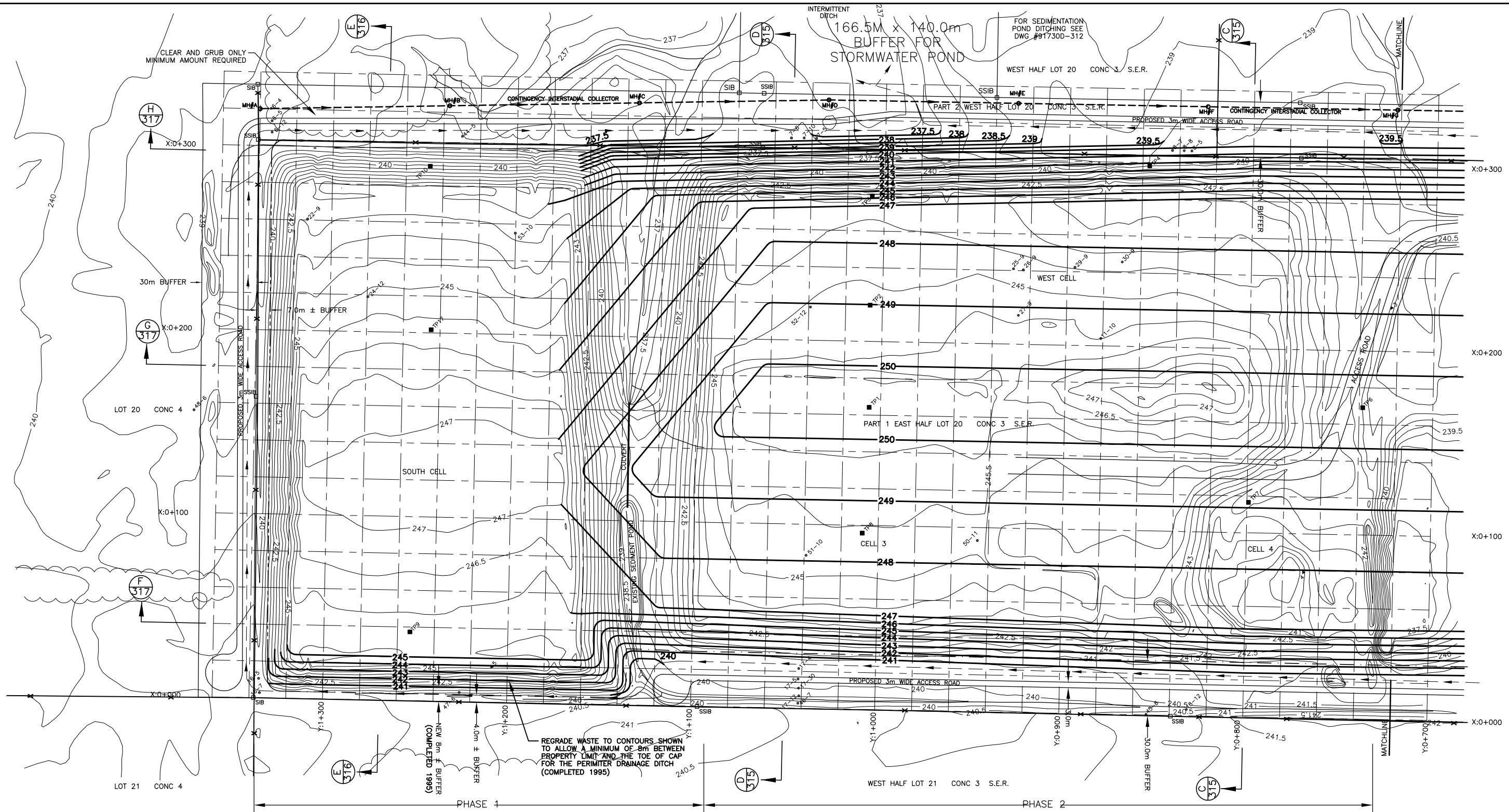
Project Title  
**WARWICK LANDFILL**

Sheet Description  
**LANDSCAPE AND PLANTING PLAN NORTH**

75% LANDSCAPING COMPLETED

DATE DEC. 8, 1995	ISSUED
JOB NUMBER 1796	DRAWN BY SF
SCALE 1 : 1000	CHECKED BY DT
SHEET NUMBER	91730D-306B

**NOTE:** Contractor is to check and verify all dimensions and conditions on the project, and is immediately report any discrepancies to the landscape architect before proceeding with the work.

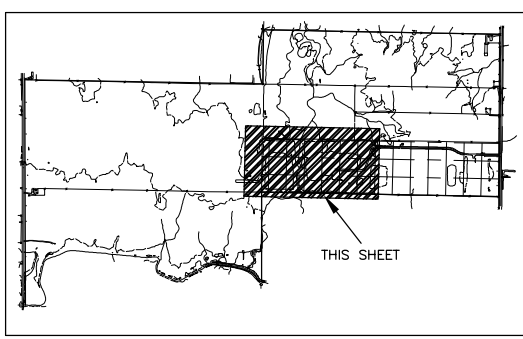


LEGEND:

- 240 2.5m CONTOUR LINE
- 238 0.5m CONTOUR LINE
- CONTROL GRID LINE
- TREELINE
- EXISTING DITCH OR CREEK
- EXISTING ROAD EDGE
- EXISTING BUILDING
- EXISTING FENCELINE
- STANDARD IRON BAR
- SHORT STANDARD IRON BAR
- LANDFILL LIMIT
- PROPOSED FINAL CONTOURS
- PROPOSED PERIMETER DITCHING
- PROPOSED ACCESS ROAD
- LOCATION OF CROSS SECTION
- TEST PIT NUMBER
- OBSERVATION WELL NUMBER AND DEPTH
- PERCOLATION TEST NUMBER
- CONTINGENCY INTERSTADIAL DRAIN

NOTES:

- EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1 1992, AND WAS SUPPLIED BY MARSHALL MACKLIN MONAGHAN CONSULTING LIMITED.
- CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
- CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5m




KEY PLAN



Scale

REVISIONS		
Date	Description	By
JAN 2/97	ADDED O.W.S 50-11, 51-10, 52-12 & 53-10 & BUFFER FOR STORMWATER POND	T.C.G.
DEC 95	GENERAL REVISIONS	J.E.A.



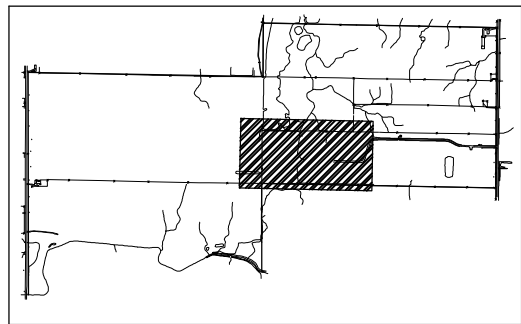
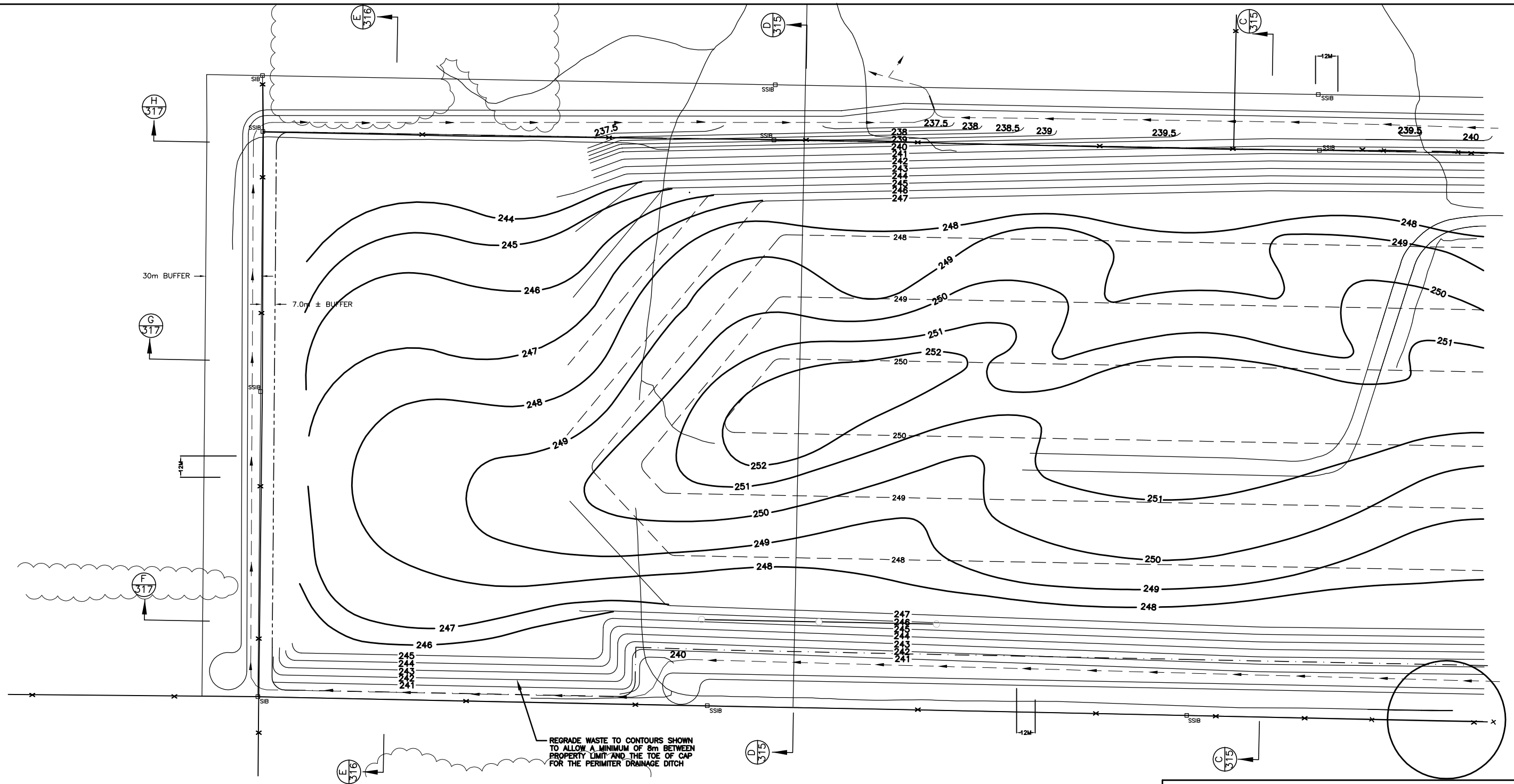
HENDERSON, PADDON ENVIRONMENTAL INC.  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

**WARWICK LANDFILL**  
**FINAL CONTOURS – SOUTH**

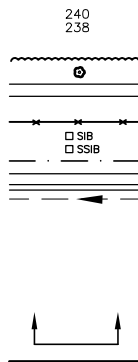
CLIENT:  
**CANADIAN WASTE SERVICES INC.**

Design: J E A	Scale: AS SHOWN
Drawn: J E A	Date: SEPTEMBER 1994
Traced:	Approved:
Checked: F C F	Design Engineer

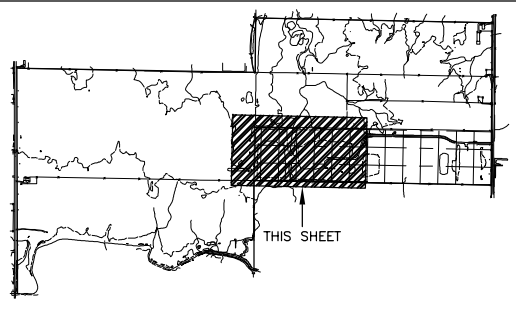
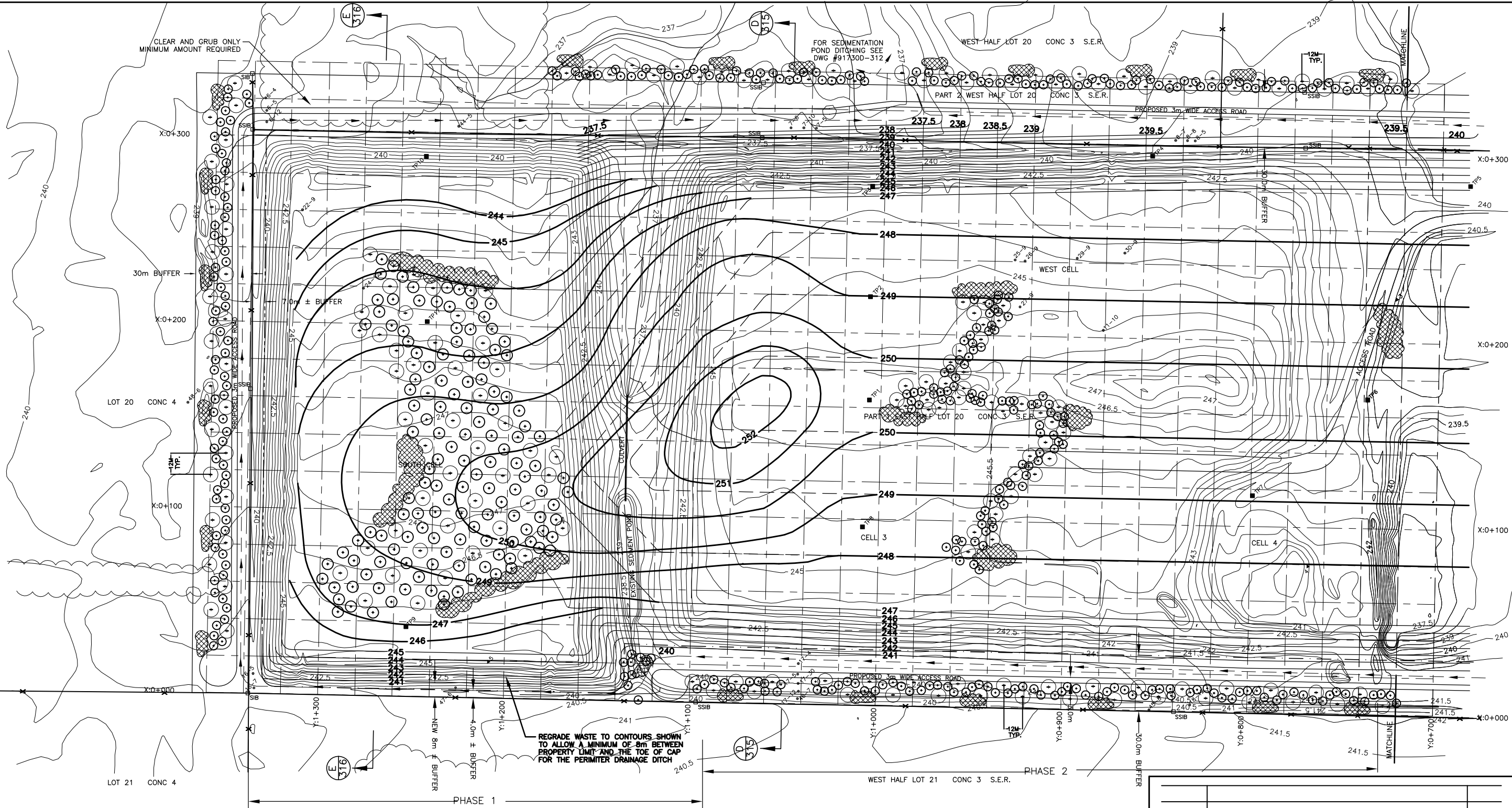
DRAWING No. **91730D – 307**



KEY PLAN



DEC 20/96		REVISED FINAL CONTOURS TO INDICATE PERCENTAGE LANDSCAPED		F.C.F.
DATE		DESCRIPTION		BY
REVISIONS				
<b>Salmona Partnership</b> I N C .				
• Site Planners • Consultants in Urban Design • Recreation Planners • Landscape Architects • Environmental Planners		Suite 800 10 Kingsbridge Garden Circle Mississauga, Ontario Canada L5R 3K6 Tel.: (905) 568-4375 Fax: (905) 568-4376		
<b>NOTE:</b> Contractor is to check and verify all dimensions and conditions on the project, and is immediately report any discrepancies to the landscape architect before proceeding with the work.				
Project File		DATE		ISSUED
WARWICK LANDFILL		DEC. 8, 1995		
Sheet	Description	Job Number	Drawn By	
	LANDSCAPE AND PLANTING PLAN SOUTH	1796	SF	
100% LANDSCAPING COMPLETED		SCALE	CHECKED By	
		1 : 1000	DT	
		SHEET NUMBER	91730D-307A	



KEY PLAN

- NOTES:**
- EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1 1992, AND WAS SUPPLIED BY MARSHALL MACKLIN MONAGHAN CONSULTING LIMITED.
  - CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
  - CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5m

- LEGEND:**
- 240 2.5m CONTOUR LINE
  - 238 0.5m CONTOUR LINE
  - CONTROL GRID LINE
  - TREELINE
  - EXISTING DITCH OR CREEK
  - EXISTING ROAD EDGE
  - EXISTING BUILDING
  - EXISTING FENCELINE
  - STANDARD IRON BAR
  - SHORT STANDARD IRON BAR
  - LANDFILL LIMIT
  - PROPOSED FINAL CONTOURS
  - PROPOSED ACCESS ROADS
  - PROPOSED PERIMETER DITCHING
  - TEST PIT NUMBER
  - OBSERVATION WELL NUMBER AND DEPTH
  - PERCOLATION TEST NUMBER
  - CROSS SECTION LOCATION AND DRAWING NUMBER
  - PROPOSED LANDSCAPE CONTOURS

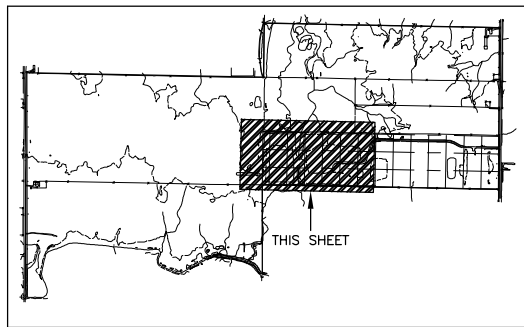
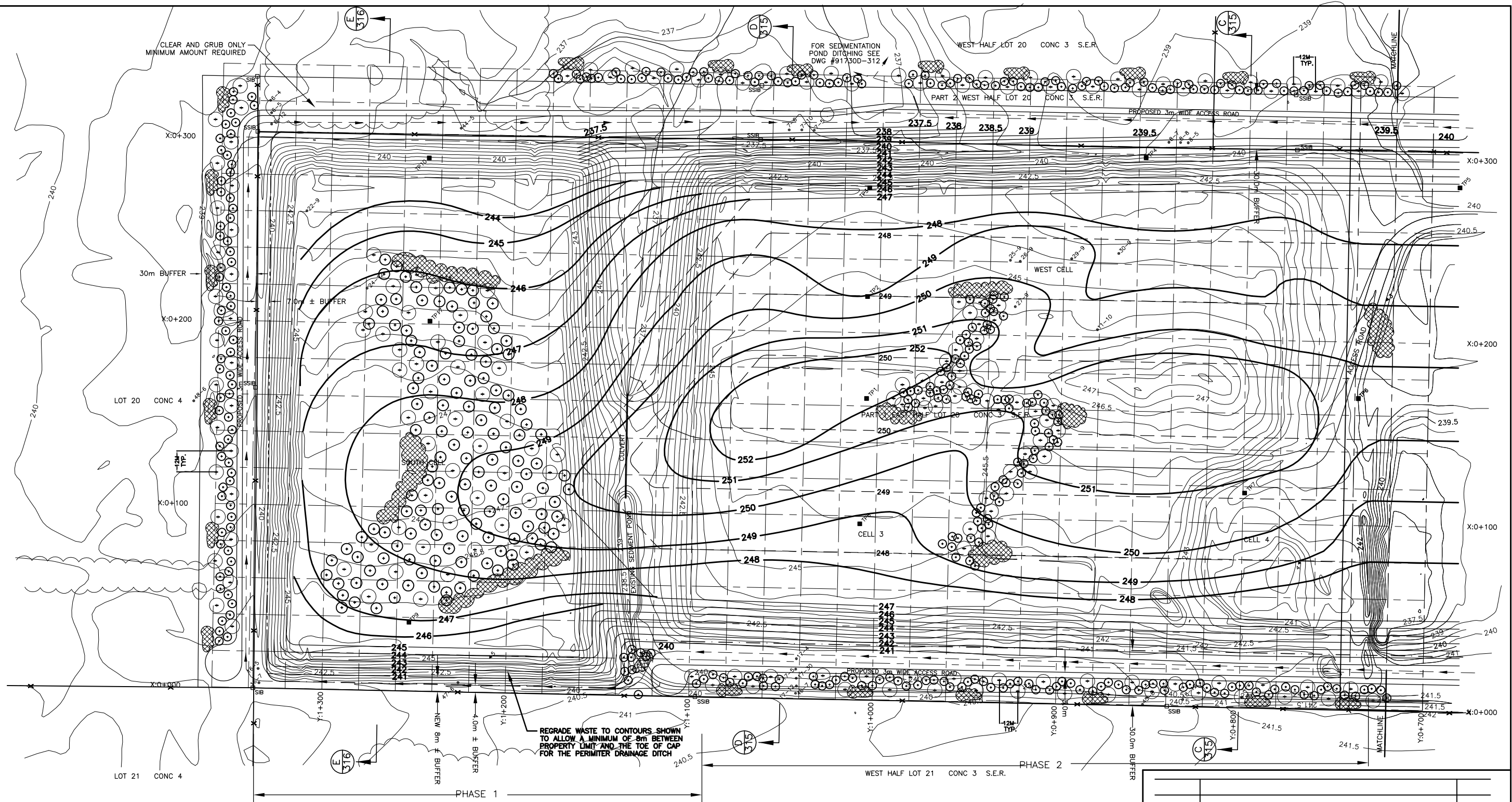
- LARGE HARDWOOD DECIDUOUS TREES
  - MEDIUM SOFTWOOD DECIDUOUS TREES
  - LARGE SHRUBS
  - SHRUBS
- SEE 91730D-306A FOR PLANT LIST



Scale

DEC 20/96	REVISED FINAL CONTOURS TO INDICATE PERCENTAGE LANDSCAPED	F.C.F.
DATE	DESCRIPTION	BY
REVISIONS		
<b>Salmona Partnership</b> I N C .		
• Site Planners • Consultants in Urban Design • Recreation Planners • Landscape Architects • Environmental Planners		
Suite 800 10 Kingsbridge Garden Circle Mississauga, Ontario Canada L5R 3K6 Tel: (905) 568-4375 Fax: (905) 568-4376		
<b>NOTE:</b> Contractor is to check and verify all dimensions and conditions on the project, and is immediately report any discrepancies to the landscape architect before proceeding with the work.		
Project Title	WARWICK LANDFILL	DATE DEC. 8, 1995
Sheet Description	LANDSCAPE AND PLANTING PLAN SOUTH	ISSUED
25% LANDSCAPING COMPLETED		Job Number 1796
		Drawn By SF
		Scale 1 : 1000
		Checked By DT
		Sheet Number 91730D-307B





KEY PLAN

NOTES:

- 1) EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1, 1992, AND WAS SUPPLIED BY MARSHALL, MACKLIN MONAGHAN CONSULTING LIMITED.
- 2) CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
- 3) CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5m

LEGEND:

- 240 2.5m CONTOUR LINE
- 238 0.5m CONTOUR LINE
- CONTROL GRID LINE
- TREELINE
- EXISTING DITCH OR CREEK
- EXISTING ROAD EDGE
- EXISTING BUILDING
- EXISTING FENCELINE
- STANDARD IRON BAR
- SHORT STANDARD IRON BAR
- LANDFILL LIMIT
- PROPOSED FINAL CONTOURS
- PROPOSED ACCESS ROADS
- PROPOSED PERIMETER DITCHING
- TEST PIT NUMBER
- OBSERVATION WELL NUMBER AND DEPTH
- PERCOLATION TEST NUMBER
- CROSS SECTION LOCATION AND DRAWING NUMBER
- PROPOSED LANDSCAPE CONTOURS

- LARGE HARDWOOD DECIDUOUS TREES
- MEDIUM SOFTWOOD DECIDUOUS TREES
- LARGE SHRUBS
- SHRUBS
- SEE 91730D-306A FOR PLANT LIST



Scale

DEC 20/96	REVISED FINAL CONTOURS TO INDICATE PERCENTAGE LANDSCAPED	F.C.F.
DATE	DESCRIPTION	BY
REVISIONS		
<b>Salmona Partnership</b> I N C .		
• Site Planners • Consultants in Urban Design • Recreation Planners • Landscape Architects • Environmental Planners		
Suite 800 10 Kingsbridge Garden Circle Mississauga, Ontario Canada L5R 3K6 Tel: (905) 568-4375 Fax: (905) 568-4376		
<b>NOTE:</b> Contractor is to check and verify all dimensions and conditions on the project, and is immediately report any discrepancies to the landscape architect before proceeding with the work.		
Project Title	WARWICK LANDFILL	DATE DEC. 8, 1995
Sheet Description	LANDSCAPE AND PLANTING PLAN SOUTH	ISSUED
50% LANDSCAPING COMPLETED		JOB NUMBER 1796
		SCALE 1 : 1000
		CHECKED BY DT
		SHEET NUMBER 91730D-307C

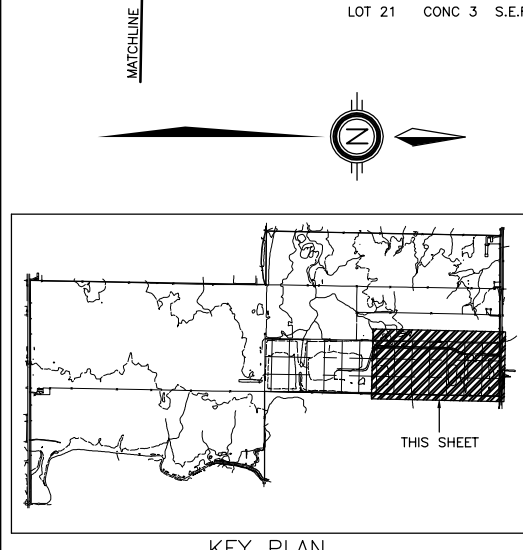
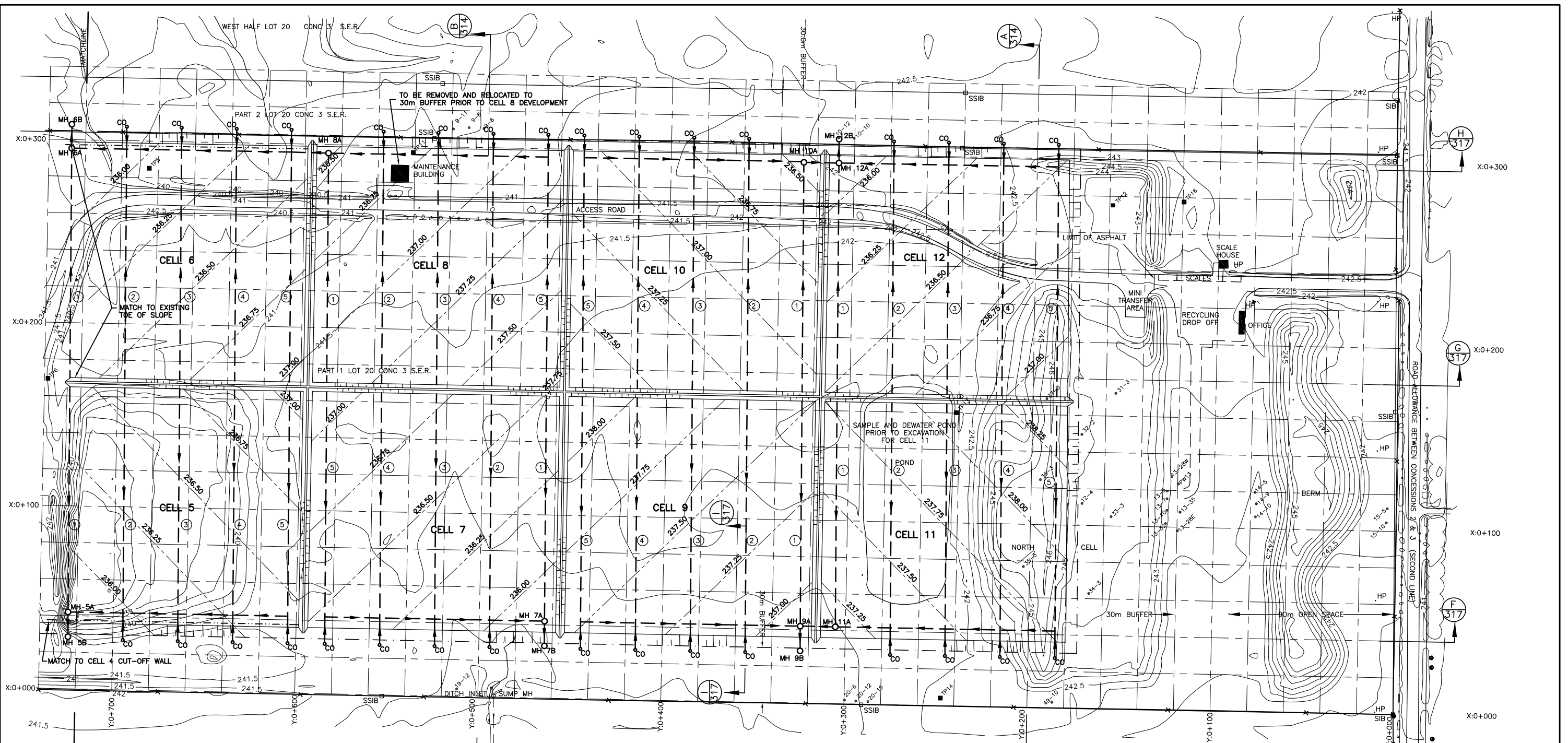
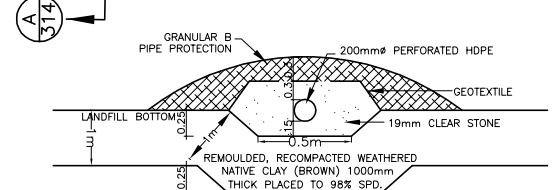


TABLE OF LEACHATE COLLECTOR INVERTS							
CELL	RUN	EAST INVERT	WEST INVERT	HEADER INVERT	CELL	RUN	EAST INVERT
5	1	235.37	235.98	235.37	9	1	236.82
	2	235.52	236.13	235.52		2	236.97
	3	235.67	236.28	235.67		3	237.12
	4	235.82	236.43	235.82		4	237.27
	5	235.95	236.56	235.95		5	237.42
6	1	235.92	235.29	235.29	10	1	236.99
	2	236.07	235.44	235.44		2	237.14
	3	236.22	235.59	235.59		3	237.29
	4	236.37	235.74	235.74		4	237.44
	5	236.52	235.89	235.89		5	237.59
7	1	235.82	236.44	235.82	11	1	237.06
	2	235.97	236.59	235.97		2	237.21
	3	236.12	236.74	236.12		3	237.36
	4	236.27	236.89	236.27		4	237.51
	5	236.42	237.04	236.42		5	237.66
8	1	237.03	236.40	236.40	12	1	236.43
	2	237.18	236.55	236.55		2	236.58
	3	237.33	236.70	236.70		3	236.73
	4	237.48	236.85	236.85		4	236.88
	5	237.63	237.00	237.00		5	237.03

NOTE: LEACHATE COLLECTOR RUNS NUMBER 1 AND 2 IN CELL 5 WERE NOT INSTALLED DURING CONSTRUCTION AND MANHOLES 5A AND 5B WERE RELOCATED TO RUN NUMBER 3

- LEGEND:**
- 240 2.5m CONTOUR LINE
  - 238 0.5m CONTOUR LINE
  - CONTROL GRID LINE
  - TREELINE
  - EXISTING DITCH OR CREEK
  - EXISTING ROAD EDGE
  - EXISTING BUILDING
  - EXISTING FENCELINE
  - STANDARD IRON BAR
  - SHORT STANDARD IRON BAR
  - LANDFILL LIMIT
  - PROPOSED BOTTOM CONTOURS
  - TOP OF REMOULDED CLAY
  - PROPOSED CLAY BERMS
  - PROPOSED LEACHATE COLLECTOR
  - COLLECTOR RUN NUMBER IN TABLE
  - EXISTING CLAY CUT-OFF WALL
  - TEST PIT NUMBER
  - OBSERVATION WELL NUMBER AND DEPTH
  - PERCOLATION TEST NUMBER
  - CROSS SECTION LOCATION AND DRAWING REFERENCE
  - CO LEACHATE COLLECTOR CLEAN OUT
  - MH LEACHATE COLLECTOR MANHOLE



- NOTES:**
- EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1 1992 AND WAS SUPPLIED BY MARSHALL MACKLIN MONAGHAN CONSULTING LIMITED.
  - CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
  - CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5m
  - LEACHATE COLLECTOR SLOPE = 0.5%

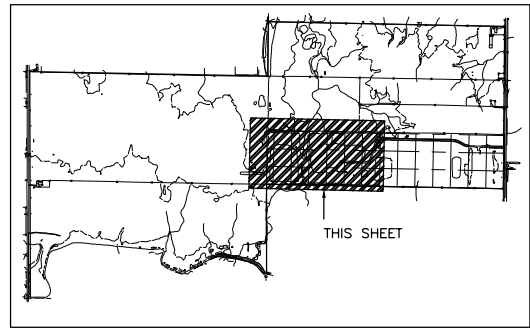
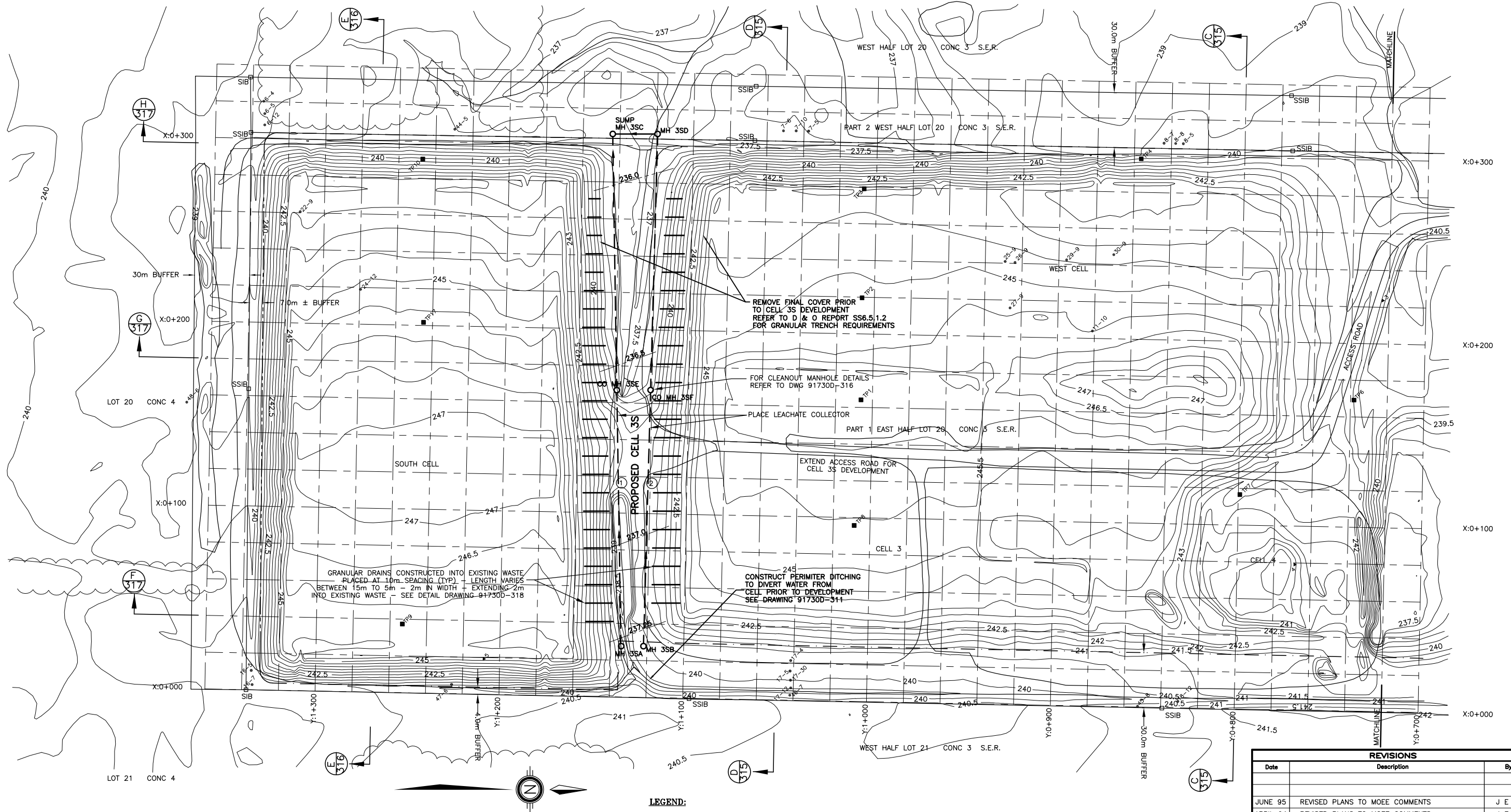
**REVISIONS**

Date	Description	By
JAN 2/97	REVISED LEGEND	T C G
DEC 95	GENERAL REVISIONS	J E A
JUNE 95	REVISED PLANS TO MOEE COMMENTS	J E A
APRIL 94	REVISED PLANS TO MOEE COMMENTS	J E A

**HENDERSON, PADDON ENVIRONMENTAL INC.**  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

**WARWICK LANDFILL**  
BASE CONTOURS – NORTH

CLIENT: <b>CANADIAN WASTE SERVICES INC.</b>	
Design: J E A	Scale: AS SHOWN
Drawn: J E A	Date: SEPTEMBER 1994
Traced:	Approved:
Checked: F C F	Design Engineer
DRAWING No. 91730D – 308	



KEY PLAN

TABLE OF LEACHATE COLLECTOR INVERTS

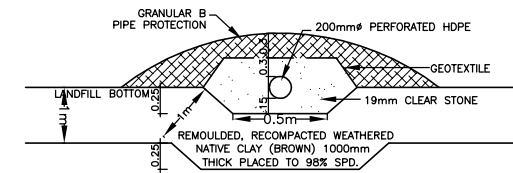
CELL	RUN	EAST INVERT	WEST INVERT
3S	1	237.15	235.75
	2	237.20	235.80
MH 3SD		SOUTH INVERT 235.75	
MH 3SC		NORTH INVERT 235.67	
MH 3SE		BOTTOM OF SUMP 234.37	
CO MH 3SE		CENTERLINE INVERT 236.45	
CO MH 3SF		CENTERLINE INVERT 236.50	

NOTES:

- EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1 1992, AND WAS SUPPLIED BY MARSHALL MACKLIN MONAGHAN CONSULTING LIMITED.
- CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
- CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5m
- LEACHATE COLLECTOR SLOPE = 0.5%

LEGEND:

- 240 2.5m CONTOUR LINE
- 238 0.5m CONTOUR LINE
- CONTROL GRID LINE
- TREELINE
- EXISTING DITCH OR CREEK
- EXISTING ROAD OR CREEK
- EXISTING BUILDING
- EXISTING FENCELINE
- STANDARD IRON BAR
- SHORT STANDARD IRON BAR
- LANDFILL LIMIT
- PROPOSED BASE CONTOURS
- CROSS SECTION LOCATION AND DRAWING REFERENCE
- PROPOSED LEACHATE COLLECTOR
- COLLECTOR RUN NUMBER IN TABLE
- TEST PIT NUMBER
- OBSERVATION WELL NUMBER AND DEPTH
- PERCOLATION TEST NUMBER



LEACHATE COLLECTOR DETAIL  
N.T.S.



Scale

REVISIONS		
Date	Description	By
JUNE 95	REVISED PLANS TO MOEE COMMENTS	J E A
APRIL 94	REVISED PLANS TO MOEE COMMENTS	J E A



HENDERSON, PADDON ENVIRONMENTAL INC.  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

WARWICK LANDFILL  
BASE CONTOURS - SOUTH

CLIENT:  
CANADIAN WASTE SERVICES INC.

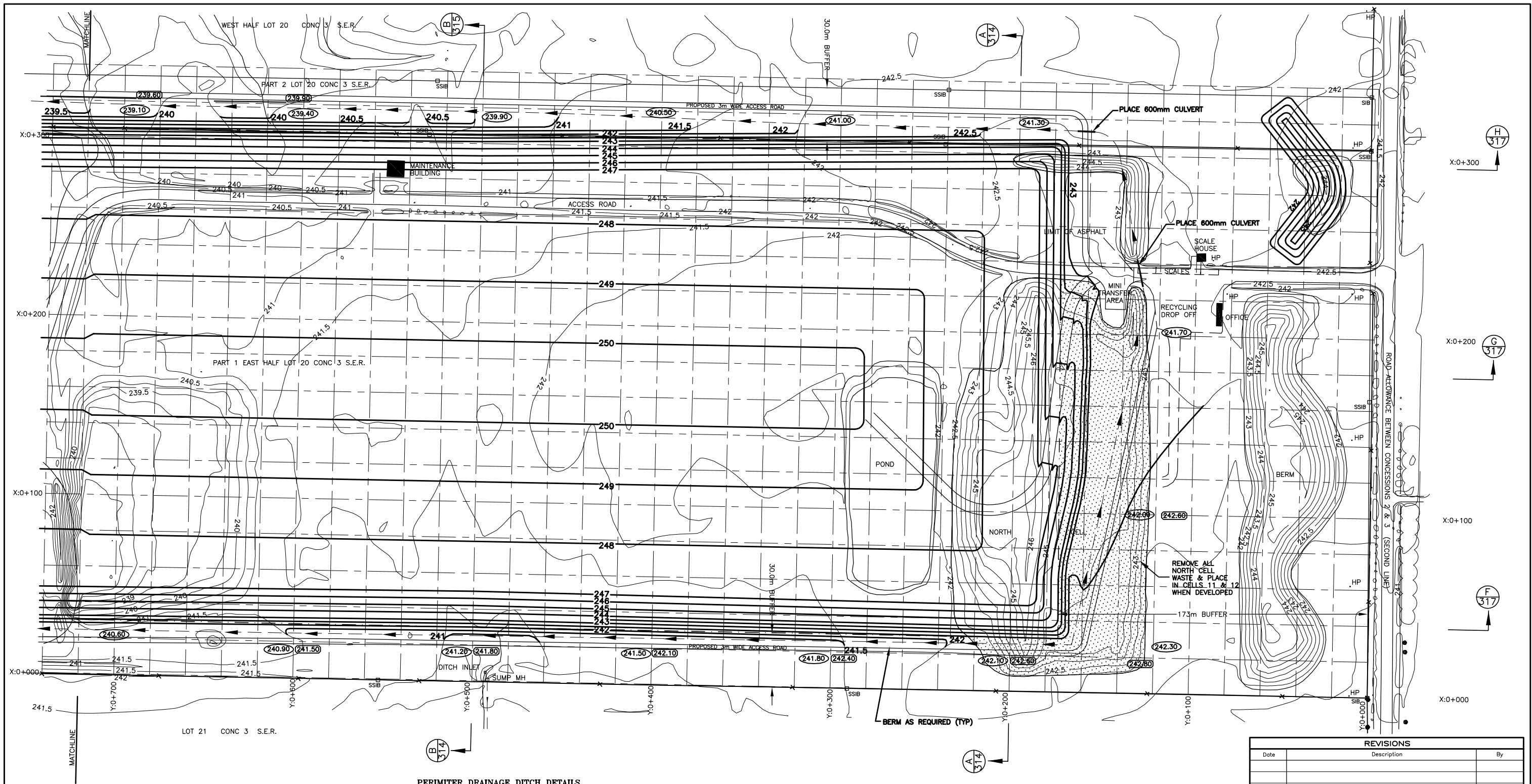
Design: J.E.A. Scale: AS SHOWN

Drawn: J.E.A. Date: SEPTEMBER 1994

Traced: Approved:

Checked: F.C.F. Design Engineer

DRAWING No. 91730D - 309



PERIMETER DRAINAGE DITCH DETAILS

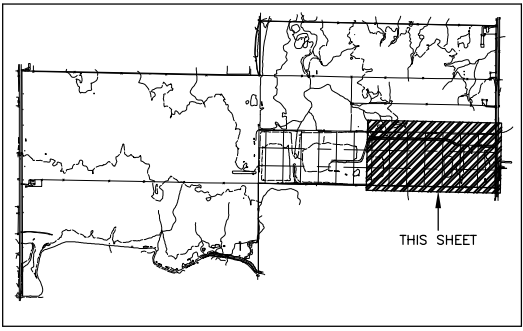
STATION	BOTTOM WIDTH	SIDE SLOPES	MINIMUM DEPTH
Y:0+125 X:0+027	0.60m	2:1 *	0.50m
Y:0+500 X:0+025	0.60m	2:1 *	0.50m
Y:0+700 X:0+025	0.60m	2:1 *	0.50m
Y:0+123 X:0+200	0.60m	2:1 *	0.50m
Y:0+200 X:0+314	0.60m	2:1 *	0.50m
Y:0+500 X:0+318	0.60m	2:1 *	0.50m
Y:0+700 X:0+318	0.60m	2:1 *	0.50m

LEGEND:

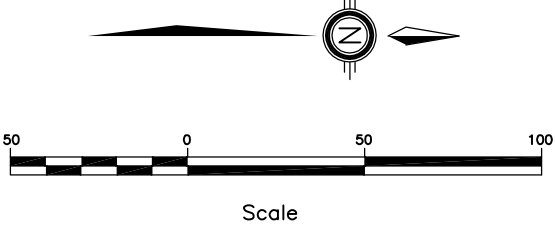
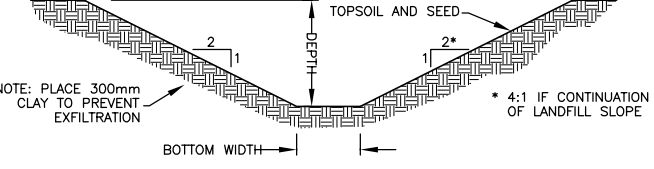
- 240 2.5m CONTOUR LINE
- 238 0.5m CONTOUR LINE
- CONTROL GRID LINE
- TREELINE
- EXISTING DITCH OR CREEK
- EXISTING ROAD EDGE
- EXISTING BUILDING
- EXISTING FENCELINE
- STANDARD IRON BAR
- SHORT STANDARD IRON BAR
- LANDFILL LIMIT
- PERIMETER DITCH INVERT
- TOP OF BERM ELEVATION
- CROSS SECTION LOCATION AND DRAWING REFERENCE
- PERIMETER DRAINAGE DITCH

NOTES:

- EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1, 1992, AND WAS SUPPLIED BY MARSHALL, MACKLIN, MONAGHAN CONSULTING LIMITED.
- CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
- CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5m



KEY PLAN



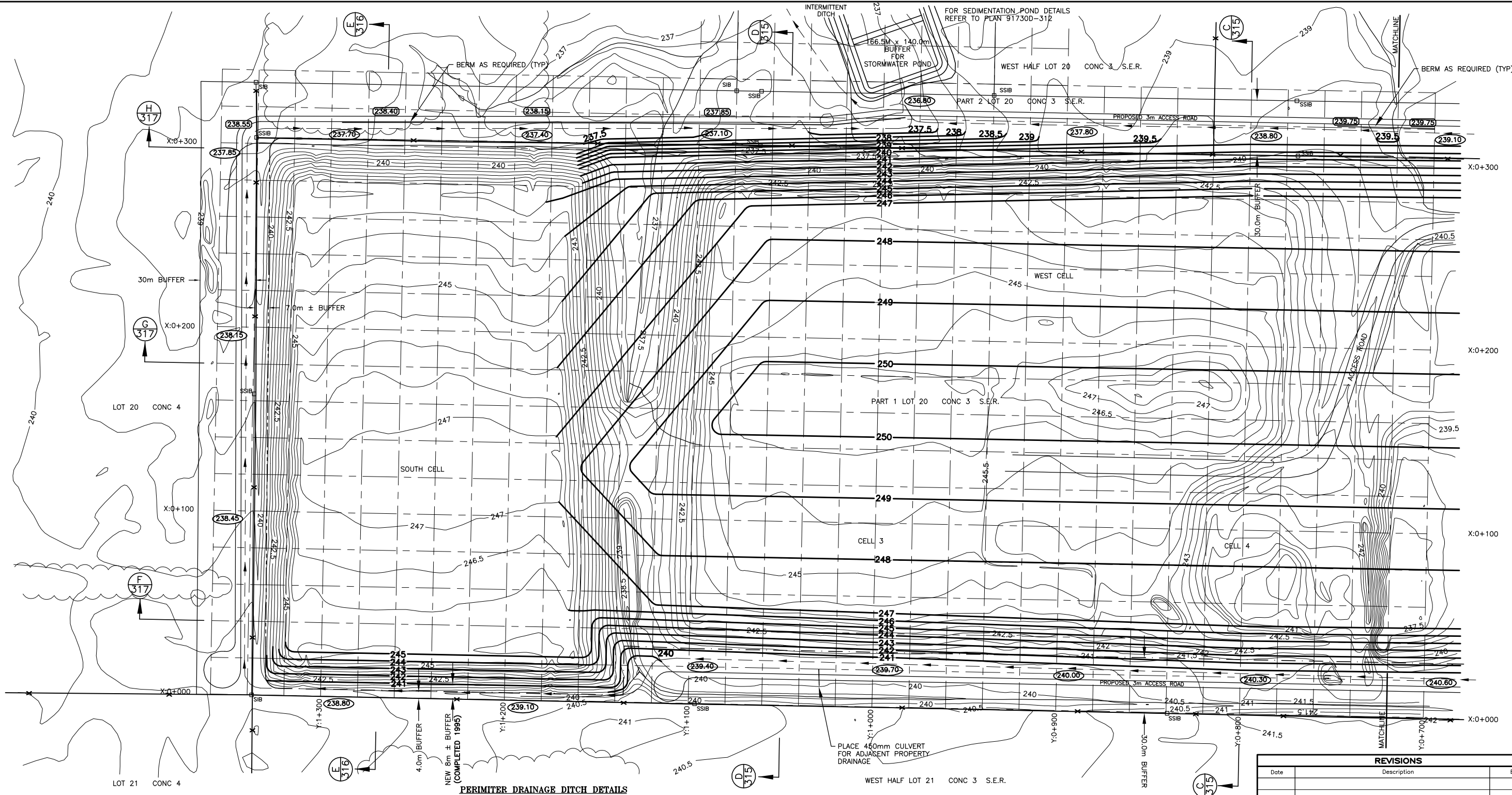
REVISIONS		
Date	Description	By
FEB 12/97	REVISED FINAL CONTOURS FOR NORTH CELL WASTE MOVEMENT	F.C.F.
JUNE 95	REVISED DITCH GRADES	J E A

**HENDERSON, PADDON ENVIRONMENTAL INC.**  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ BLIND RIVER

**WARWICK LANDFILL**  
**STORMWATER MANAGEMENT – NORTH**

CLIENT: <b>CANADIAN WASTE SERVICES INC.</b>	
Design: J E A	Scale: AS SHOWN
Drawn: J E A	Date: SEPTEMBER 1994
Traced:	Approved:
Checked: F C F	Design Engineer
DRAWING No.	91730D – 310





PERIMETER DRAINAGE DITCH DETAILS

STATION	BOTTOM WIDTH	SIDE SLOPES	MINIMUM DEPTH
Y:0+800 X:0+022	0.60m	2:1 *	0.60m
Y:1+100 X:0+024	0.60m	2:1 *	0.70m
Y:1+343 X:0+110	0.60m	2:1	0.70m
Y:1+150 X:0+312	0.60m	2:1	0.75m
Y:1+000 X:0+315	0.60m	2:1	0.90m
Y:0+800 X:0+319	0.60m	2:1	0.60m
Y:0+980 X:0+319	0.60m	2:1	0.60m


LEGEND:

- 240 2.5m CONTOUR LINE
- 236 0.5m CONTOUR LINE
- CONTROL GRID LINE
- TREELINE
- EXISTING DITCH OR CREEK
- EXISTING ROAD EDGE
- EXISTING BUILDING
- EXISTING FENCELINE
- STANDARD IRON BAR
- SHORT STANDARD IRON BAR
- LANDFILL LIMIT
- PROPOSED FINAL CONTOURS
- PROPOSED EXTERNAL DITCHING
- PROPOSED EXTERNAL DITCHING INVERT
- PROPOSED TOP OF BERM ELEVATION
- CROSS SECTION LOCATION AND DRAWING REFERENCE

NOTES:

- EXISTING CONTOURS AND DETAIL WAS DETERMINED BY AERIAL MAPPING ON JUNE 1 1992, AND WAS SUPPLIED BY MARSHALL MACKLIN MONAGHAN CONSULTING LIMITED.
- CONTROL GRID IS BASED UPON THE NORTHEAST LIMIT OF THE PROPERTY AS THE BASELINE OF THE GRID. THE Y GRID RUNS PARALLEL TO THE EAST PROPERTY LINE.
- CONTOUR INTERVAL SHOWN ON THIS PLAN IS 0.5m

REVISIONS		
Date	Description	By
JAN 02/97	ADDED BUFFER FOR STORMWATER POND	T.C.G.
JUNE 95	REVISED DITCH DEPTHS	J E A



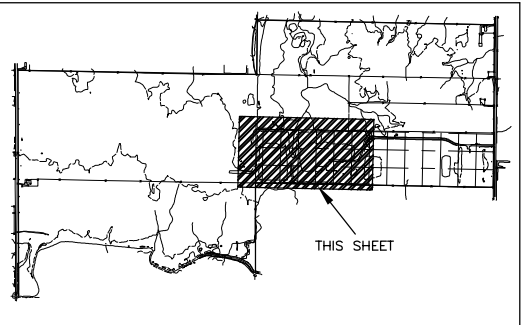
HENDERSON, PADDON ENVIRONMENTAL INC.  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

WARWICK LANDFILL  
STORMWATER MANAGEMENT – SOUTH

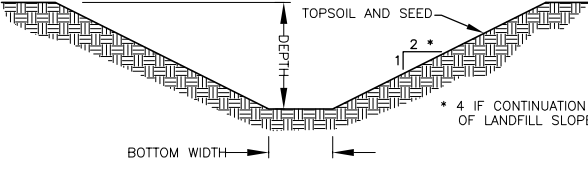
CLIENT: CANADIAN WASTE SERVICES INC.

Design: J E A	Scale: AS SHOWN
Drawn: J E A	Date: SEPTEMBER 1994
Traced: F C F	Approved:
Checked: F C F	Design Engineer:

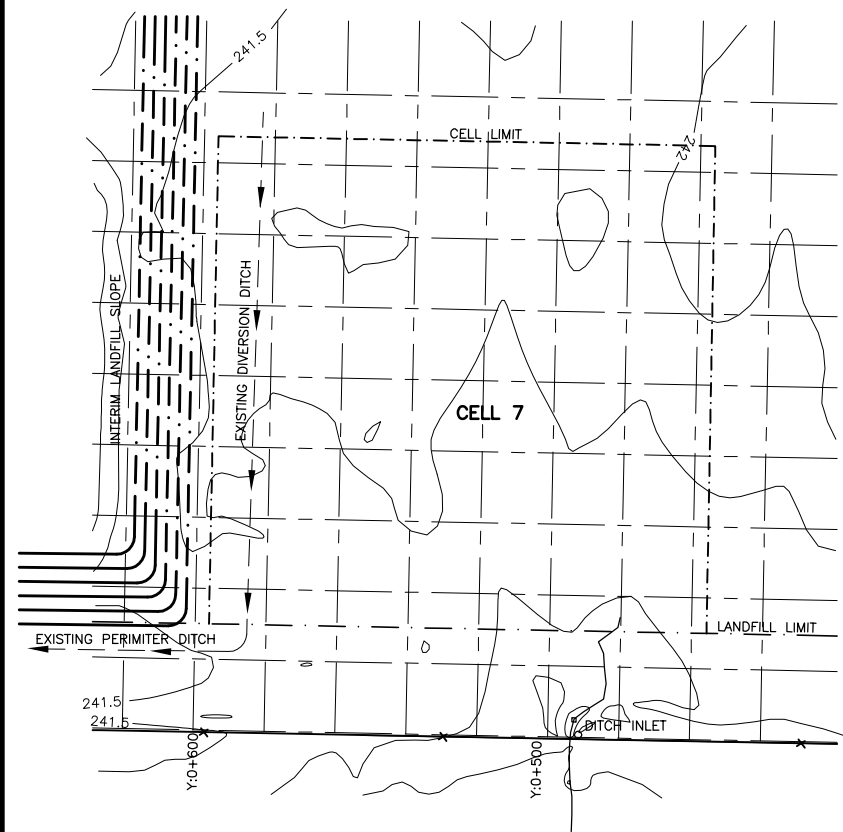
DRAWING No. 91730D – 311



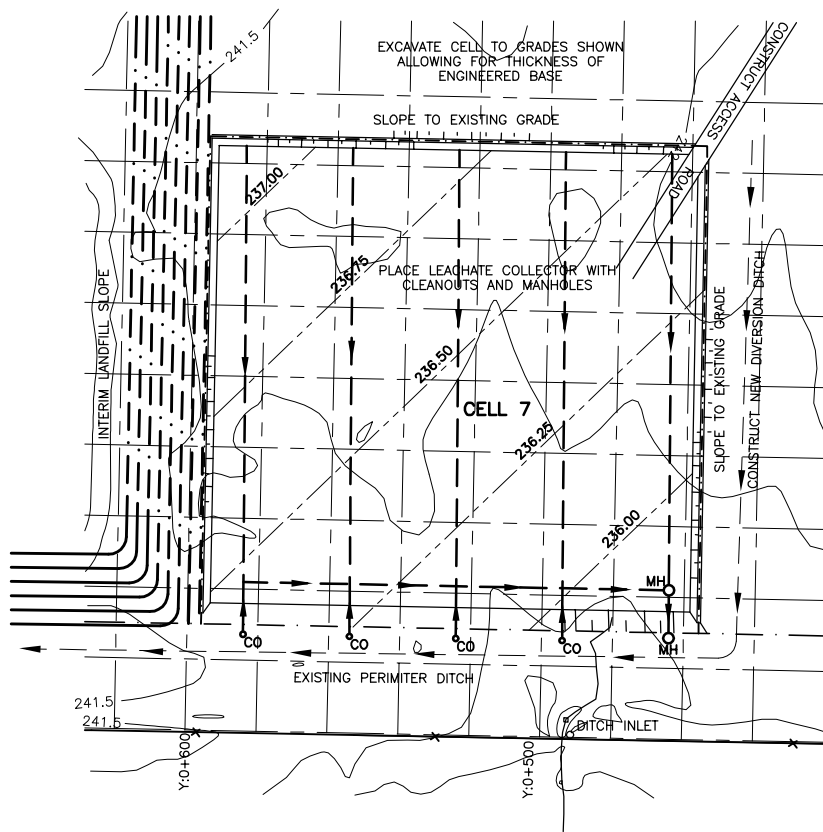
KEY PLAN



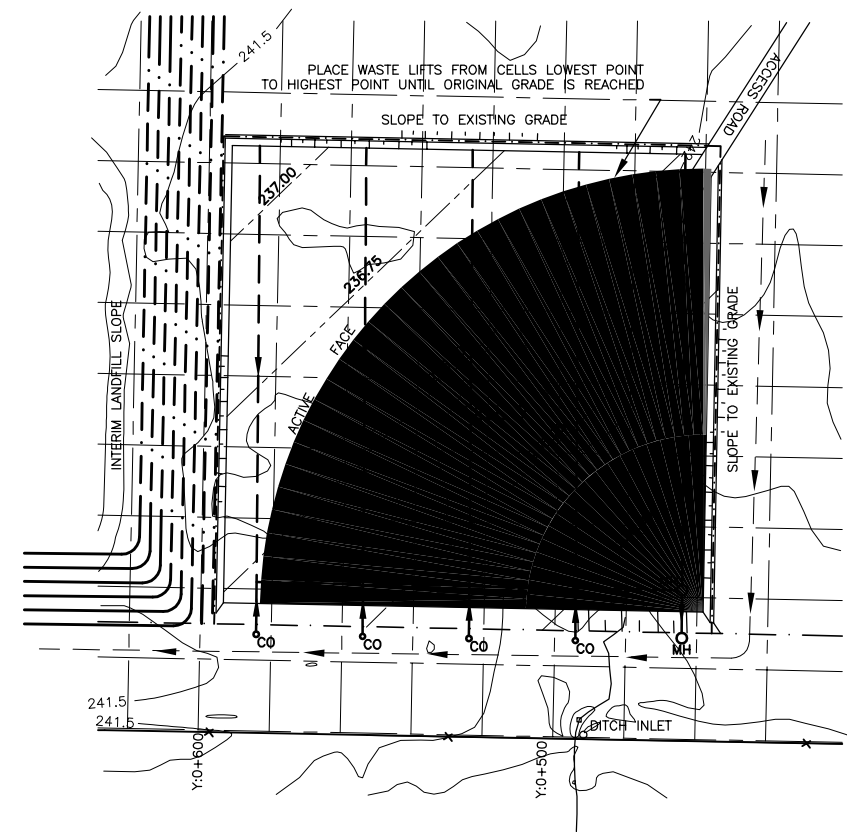




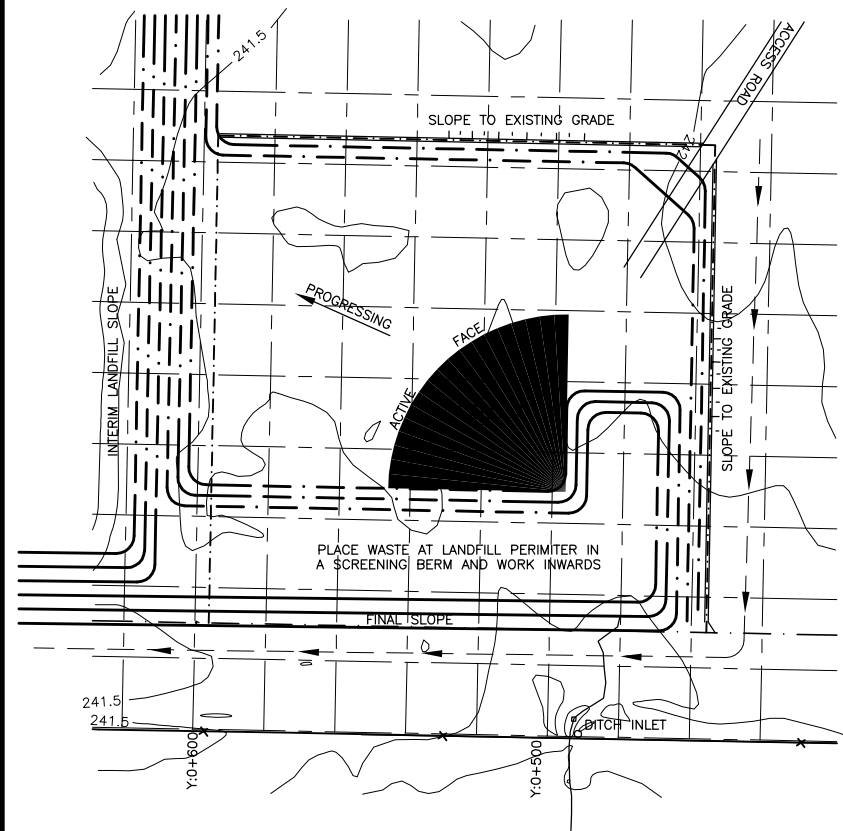
1) TYPICAL CELL CONDITIONS PRIOR TO DEVELOPMENT



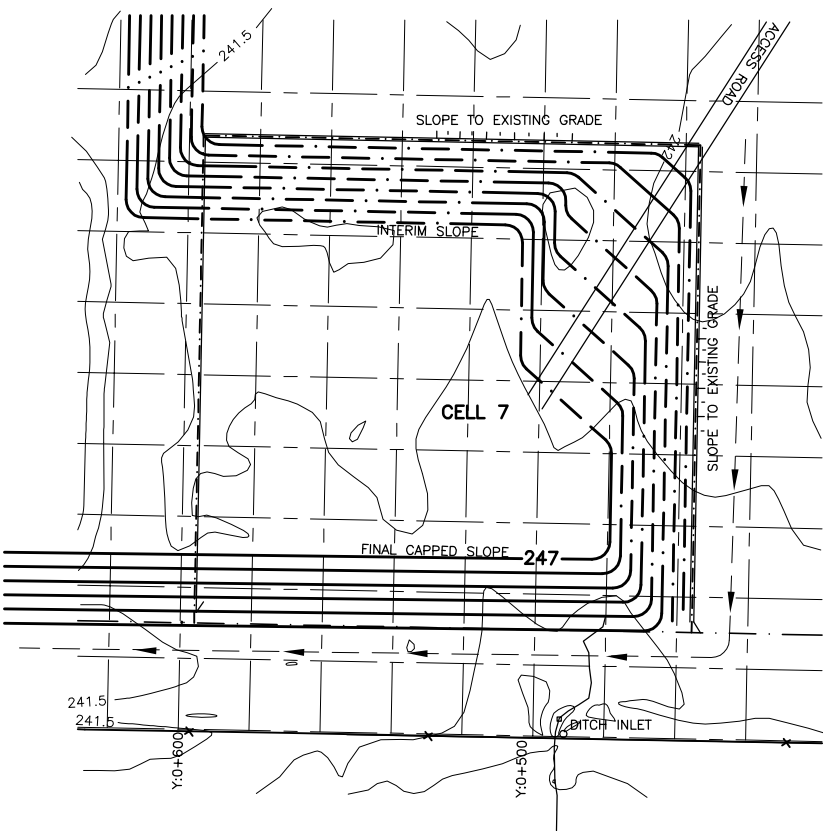
2) CELL CONSTRUCTION



3) PLACING FIRST WASTE LIFT IN NEW CELL



4) PLACING WASTE ABOVE GRADE



5) NEARING CELL CLOSURE

**LEGEND:**

- 240 5m CONTOUR LINE
- 238 1m CONTOUR LINE
- CONTROL GRID LINE
- EXISTING DITCH OR CREEK
- EXISTING FENCELINE
- LANDFILL LIMIT
- PROPOSED BOTTOM CONTOURS
- PROPOSED CLAY BERMS
- PROPOSED LEACHATE COLLECTOR
- PROPOSED CLAY CUT-OFF WALL
- PROPOSED INTERIM CONTOURS
- CO PROPOSED LEACHATE COLLECTOR CLEANOUT
- MH PROPOSED LEACHATE MANHOLE



Scale

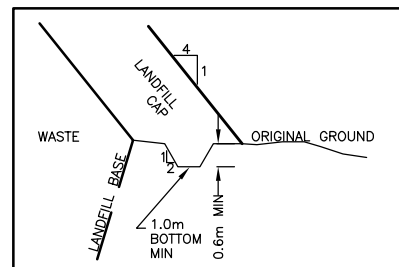
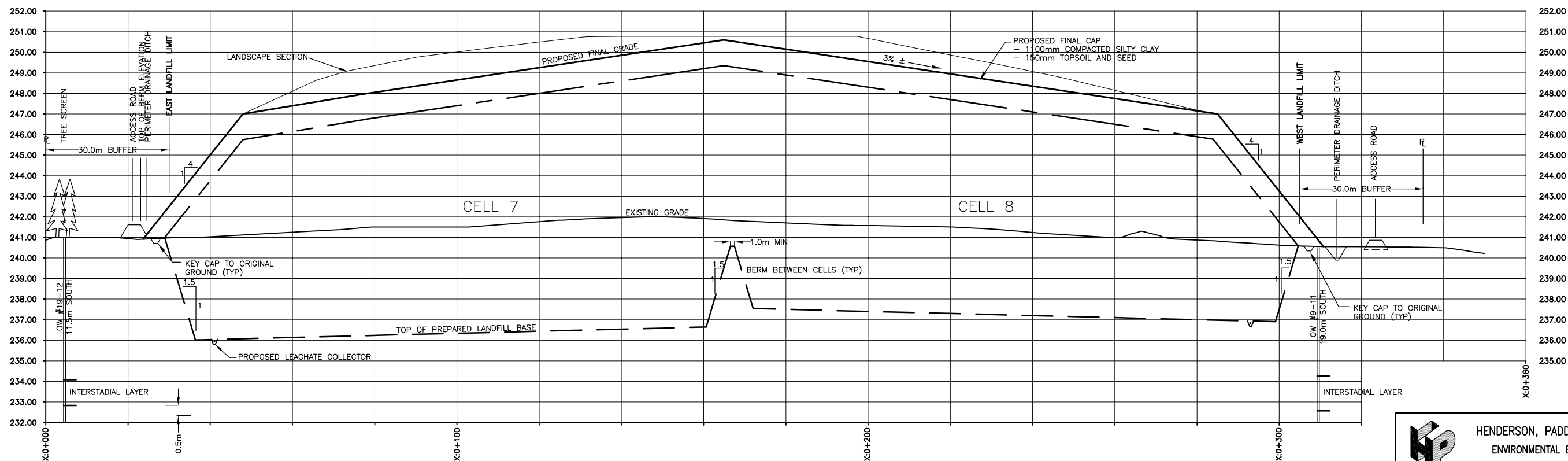
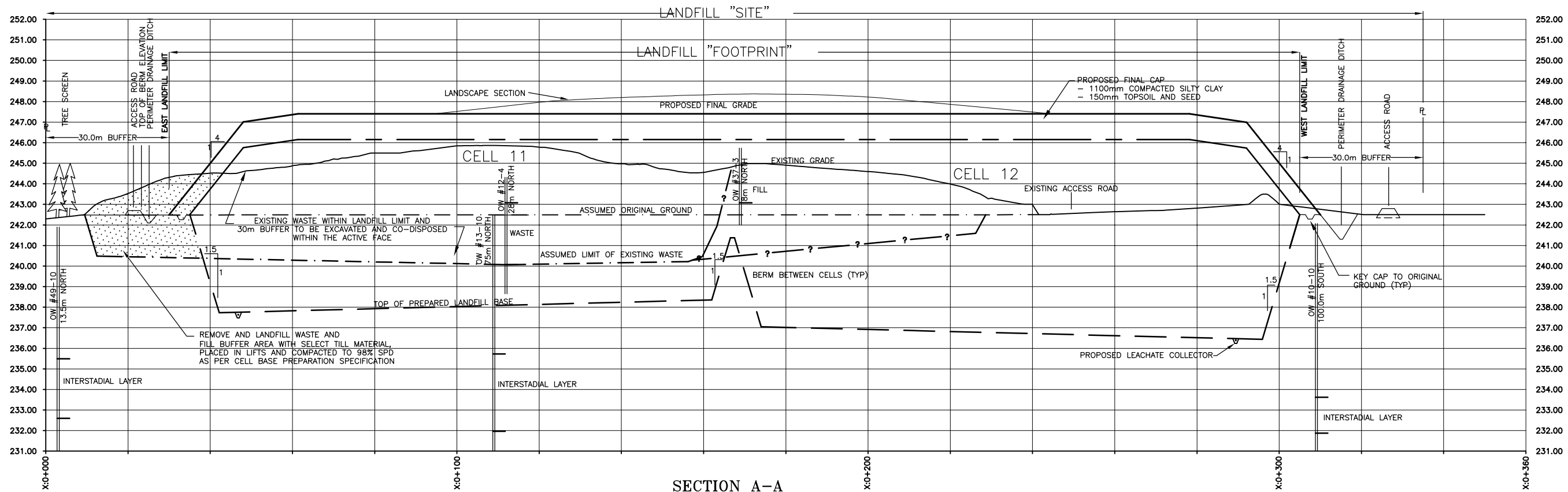
REVISIONS		
Date	Description	By
JAN 2/97	REVISED LEGEND	T C G
DEC 95	GENERAL REVISIONS	J E A



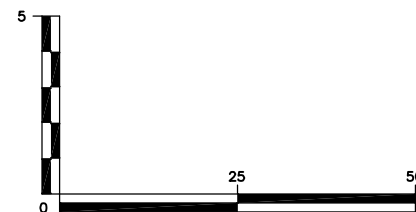
**HENDERSON, PADDON ENVIRONMENTAL INC.**  
**ENVIRONMENTAL ENGINEERS & SCIENTISTS**  
 OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

**WARWICK TOWNSHIP LANDFILL  
 PHASING PLAN**

CLIENT: <b>CANADIAN WASTE SERVICES INC.</b>	
Design: <b>J.E.A.</b>	Scale: <b>AS SHOWN</b>
Drawn: <b>J.E.A.</b>	Date: <b>FEBRUARY 1993</b>
Traced:	Approved:
Checked: <b>F.C.F.</b>	Design Engineer
DRAWING No.	<b>91730D - 313</b>



**SECTION B-B**

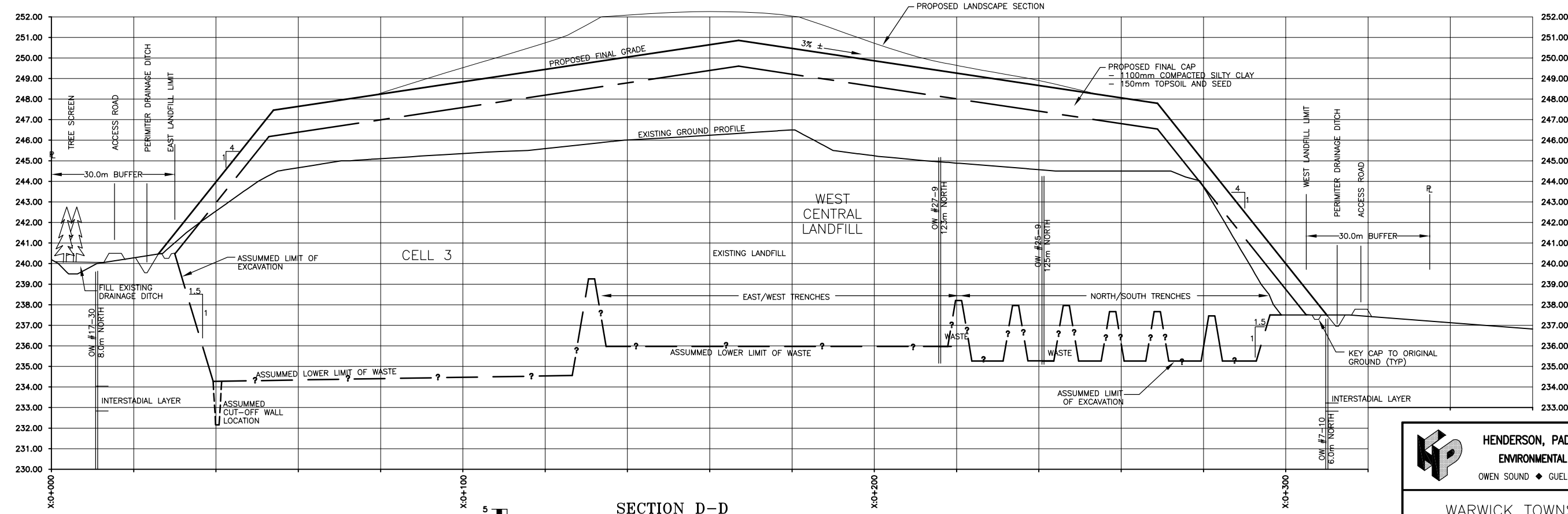
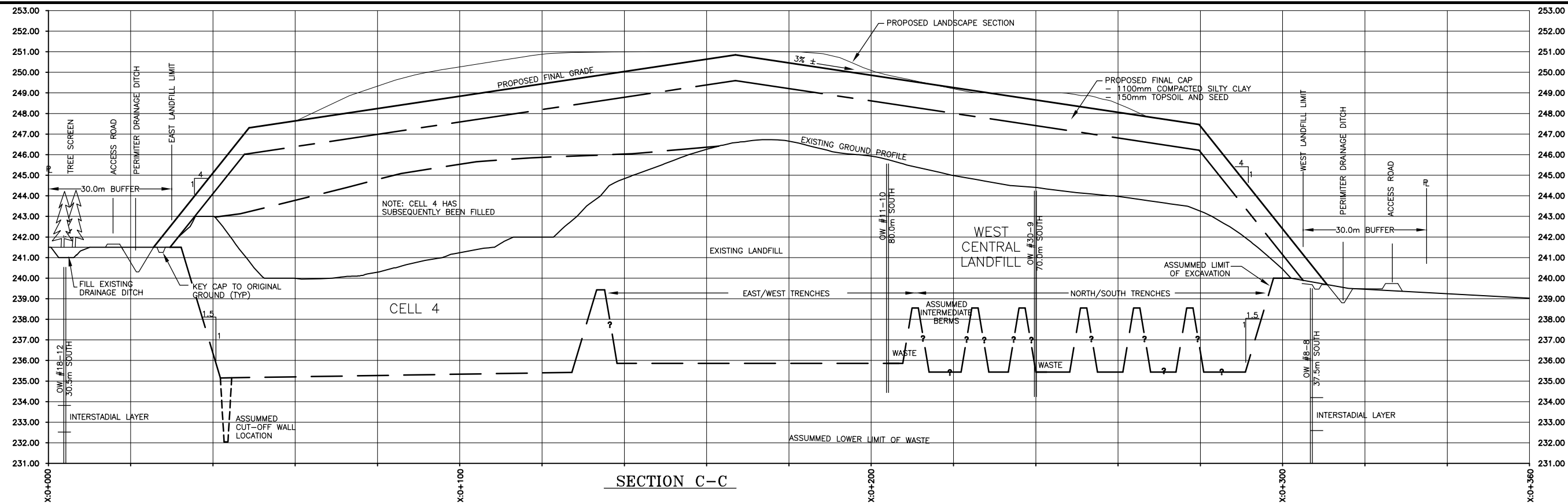


REVISIONS		
Date	Description	By
FEB 12/97	REVISED FINAL CONTOURS FOR NORTH CELL WASTE MOVEMENT	F C F
DEC 95	GENERAL REVISIONS	J E A
JUNE 95	REVISED TO MOEE COMMENTS	J E A
APRIL 94	REVISED TO MOEE COMMENTS	J E A

**HP** HENDERSON, PADDON ENVIRONMENTAL INC.  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ BLIND RIVER

**WARWICK LANDFILL  
SECTION A-A AND SECTION B-B**

CLIENT: CANADIAN WASTE SERVICES INC.	
Design: J E A	Scale: AS SHOWN
Drawn: J E A	Date: SEPTEMBER 1994
Traced:	Approved:
Checked: F C F	Design Engineer:
DRAWING No. 91730D - 314	



**HENDERSON, PADDON ENVIRONMENTAL INC.**  
**ENVIRONMENTAL ENGINEERS & SCIENTISTS**  
 OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

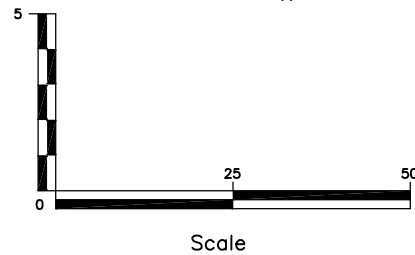
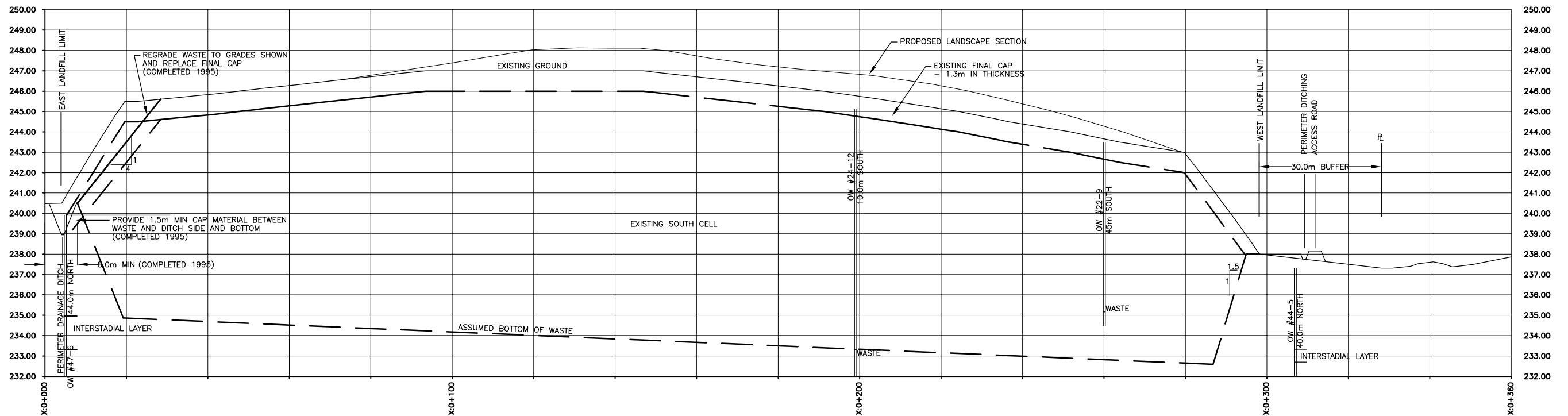
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WARWICK TOWNSHIP LANDFILL  
 SECTION C-C AND SECTION D-D

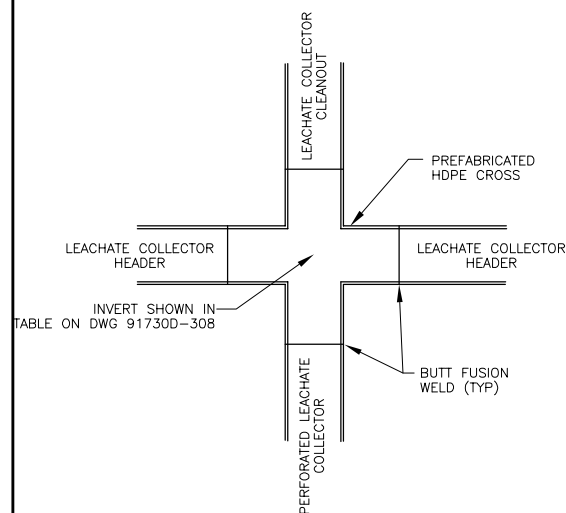
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CLIENT: <b>CANADIAN WASTE SERVICES INC.</b>	
Design: <b>J.E.A.</b>	Scale: <b>AS SHOWN</b>
Drawn: <b>J.E.A.</b>	Date: <b>FEBRUARY 1993</b>
Traced:	Approved:
Checked: <b>F.C.F.</b>	Design Engineer:
DRAWING No. <b>91730D - 315</b>	

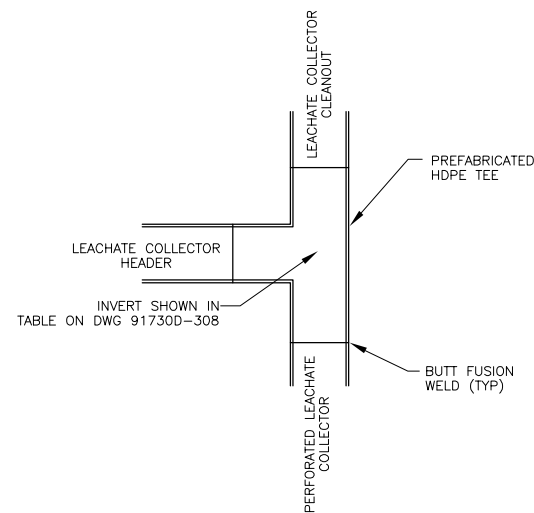
REVISIONS		
Date	Description	By
DEC 95	GENERAL REVISIONS	J E A



### SECTION E-E

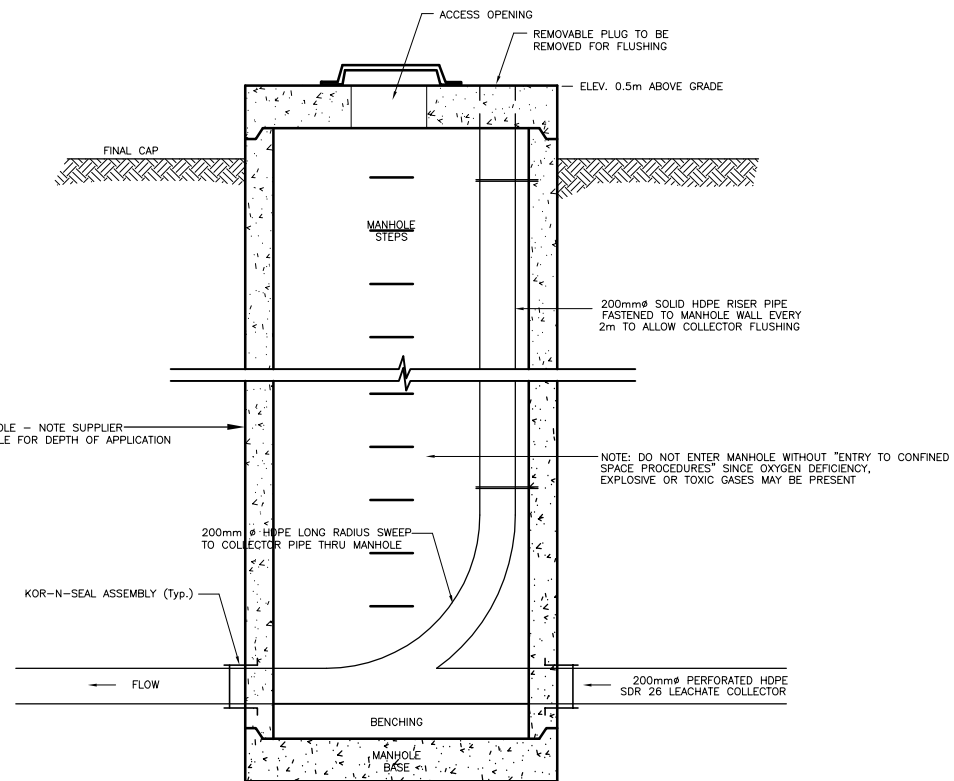


**LEACHATE COLLECTOR CROSS DETAIL**  
TYPICAL FOR COLLECTOR RUNS 2 TO 4



**LEACHATE COLLECTOR TEE DETAIL**  
TYPICAL FOR COLLECTOR RUN 5

1800mm $\phi$  PRECAST MANHOLE - NOTE SUPPLIER - TO ENSURE REBAR SUITABLE FOR DEPTH OF APPLICATION



**CLEANOUT MANHOLE - CELL 3S - DETAIL**  
SCALE : 1 : 25

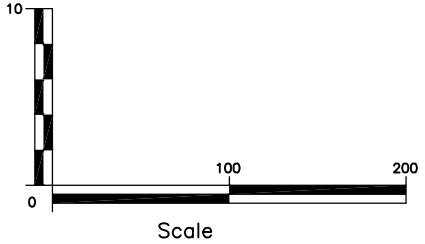
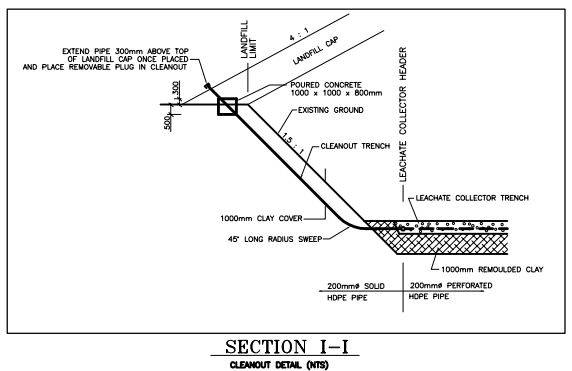
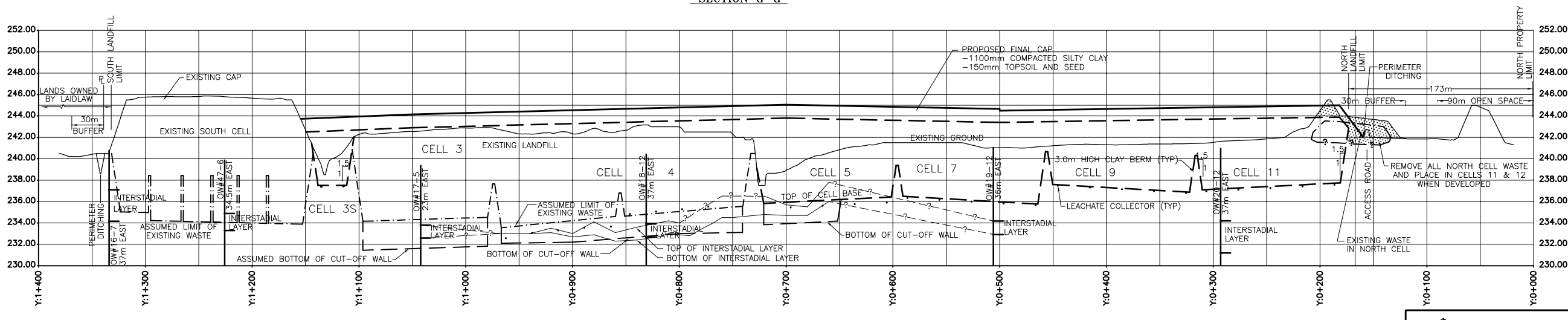
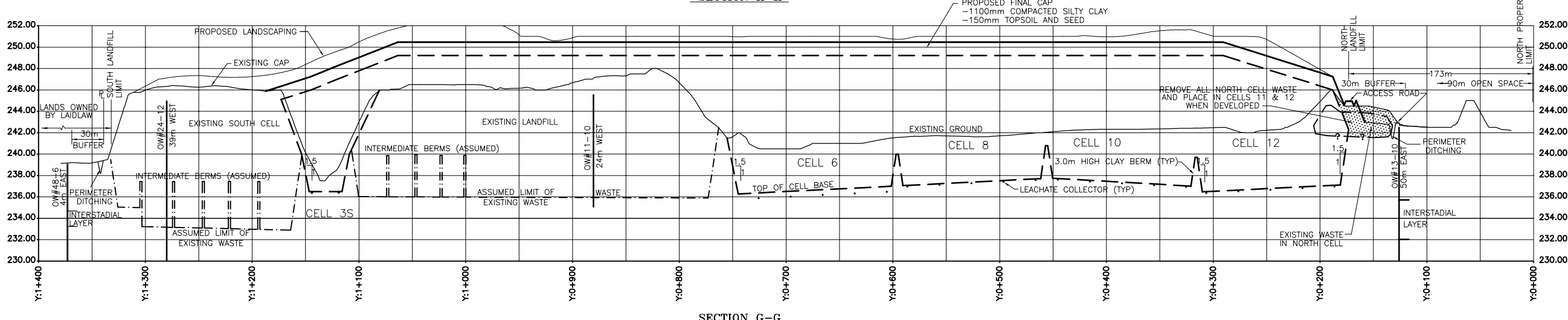
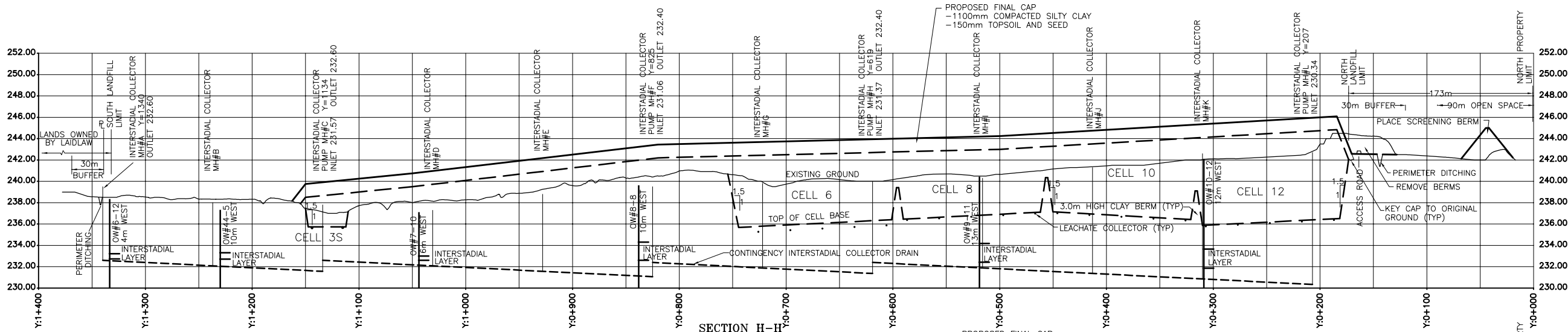
REVISIONS		
Date	Description	By
JAN2/97	NOTATION RE: EAST BUFFER & DITCHING	T C G
DEC 95	GENERAL REVISIONS	J E A
JUNE 95	ADDED DETAILS	J E A




**HENDERSON, PADDON ENVIRONMENTAL INC.**  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

### WARWICK LANDFILL SECTION E-E AND DETAILS

CLIENT: <b>CANADIAN WASTE SERVICES INC.</b>	
Design: J E A	Scale: AS SHOWN
Drawn: J E A	Date: SEPTEMBER 1994
Traced:	Approved:
Checked: F C F	Design Engineer
DRAWING No.	91730D - 316



REVISIONS		
Date	Description	By
FEB 12/97	REVISED FINAL CONTOURS FOR NORTH CELL WASTE MOVEMENT	F C F
DEC 95	GENERAL REVISIONS	J E A
JUNE 95	REVISED TO MOEE COMMENTS	J E A
APRIL 94	REVISED TO MOEE COMMENTS	J E A



**HENDERSON, PADDON ENVIRONMENTAL INC.**  
ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ BLIND RIVER

**WARWICK TOWNSHIP LANDFILL**  
SECTIONS F-F, G-G, H-H AND I-I

CLIENT:  
**CANADIAN WASTE SERVICES INC.**

Design: J E A

Scale: AS SHOWN

Drawn: J E A

Date: SEPTEMBER 1994

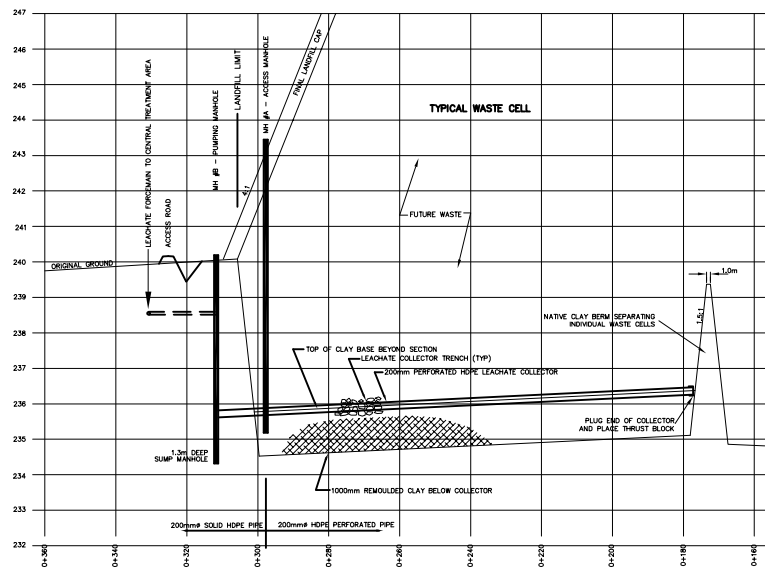
Traced:

Approved:

Checked: F C F

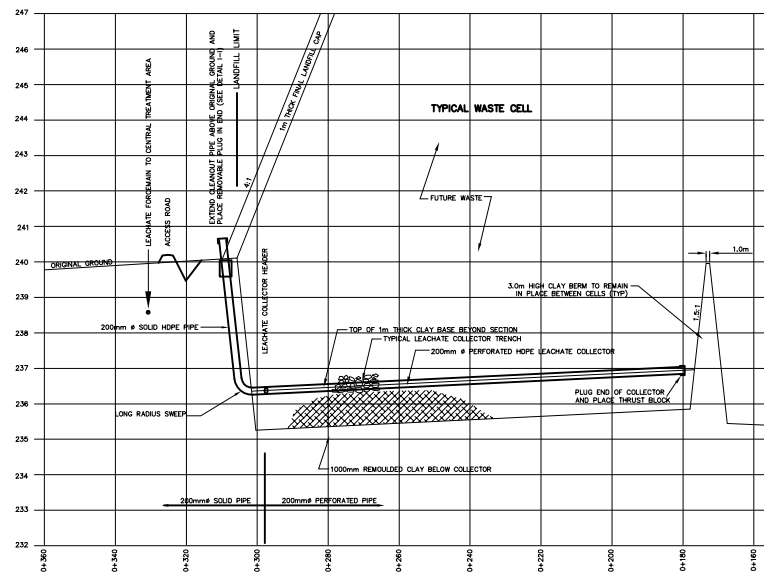
Design Engineer

DRAWING No. **917300 - 317**



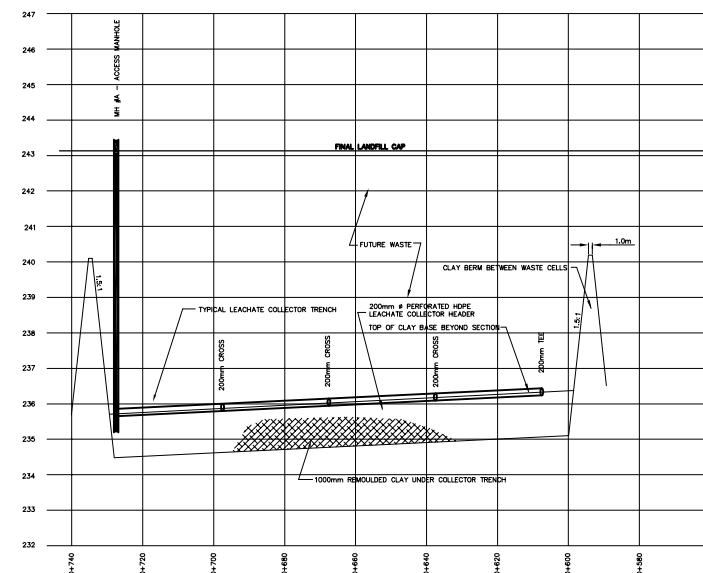
**TYPICAL SECTION THRU COLLECTOR AND MANHOLES**

SCALE: HORIZ 1:1000  
VERT 1:100



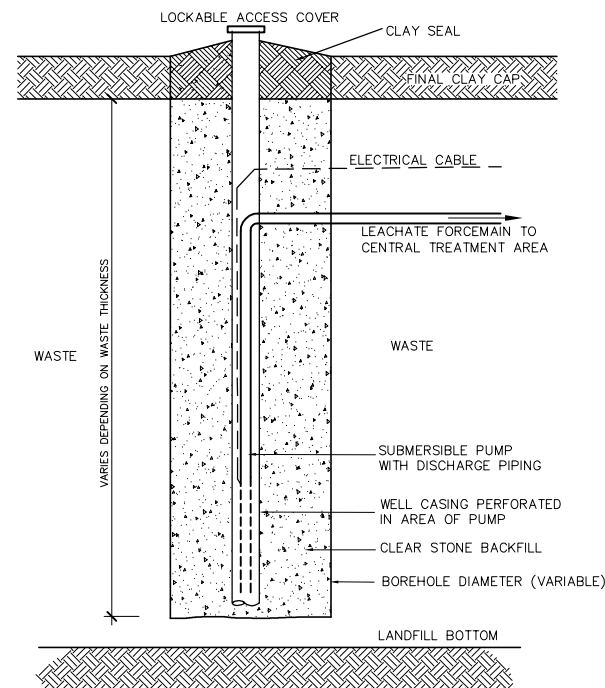
**TYPICAL SECTION THRU LEACHATE COLLECTOR AND CLEANOUT**

SCALE: HORIZ 1:1000  
VERT 1:100



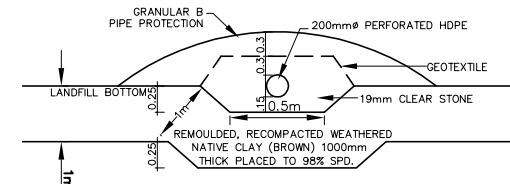
**SECTION ALONG LEACHATE COLLECTOR HEADER**

SCALE: HORIZ 1:1000  
VERT 1:100



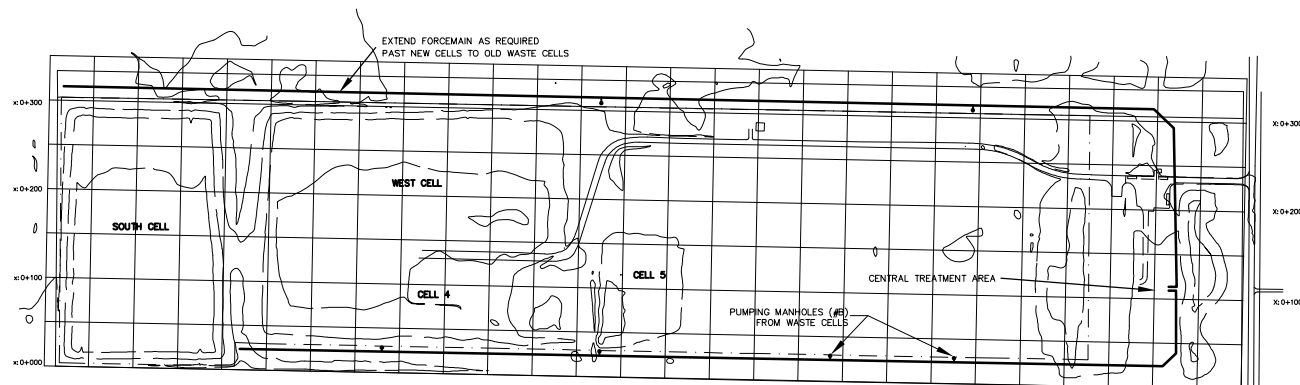
**GRAVEL FILLED PURGE WELL SCHEMATIC**  
LEACHATE EXTRACTION CONTINGENCY (SECTION 6.6.1.3)

N.T.S.



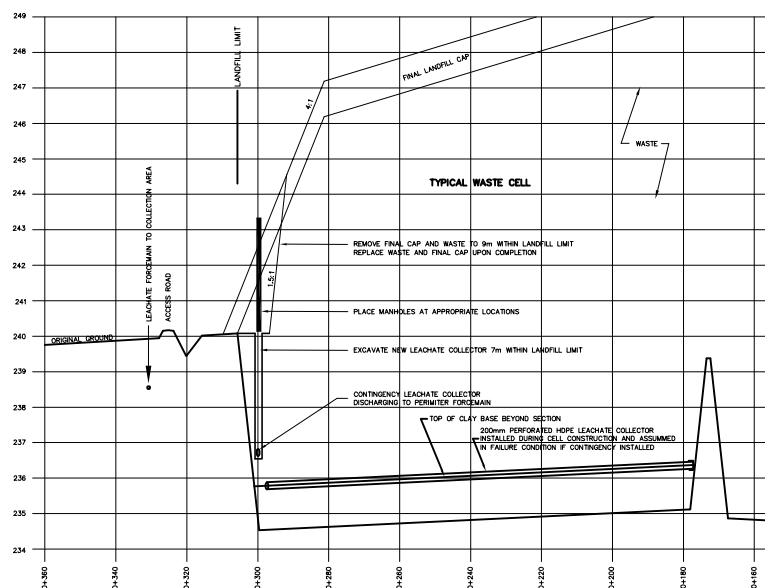
**LEACHATE COLLECTOR DETAIL**

N.T.S.



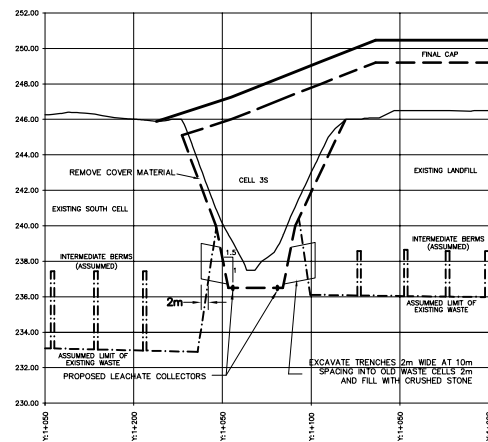
**LOCATION OF PERIMETER LEACHATE FORCEMAIN**

SCALE: 1:4000



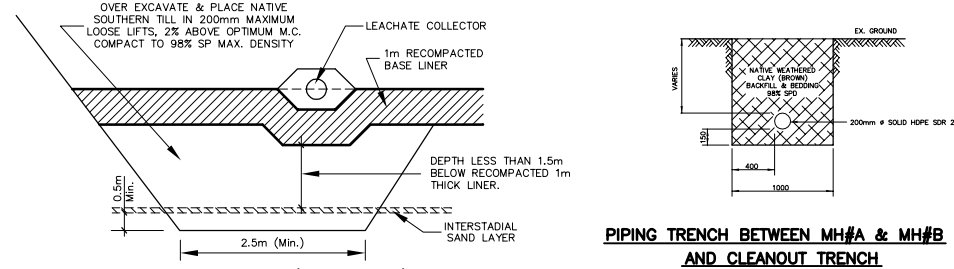
**CONTINGENCY PERIPHERAL LEACHATE COLLECTOR**

SCALE: HORIZ 1:1000  
VERT 1:200



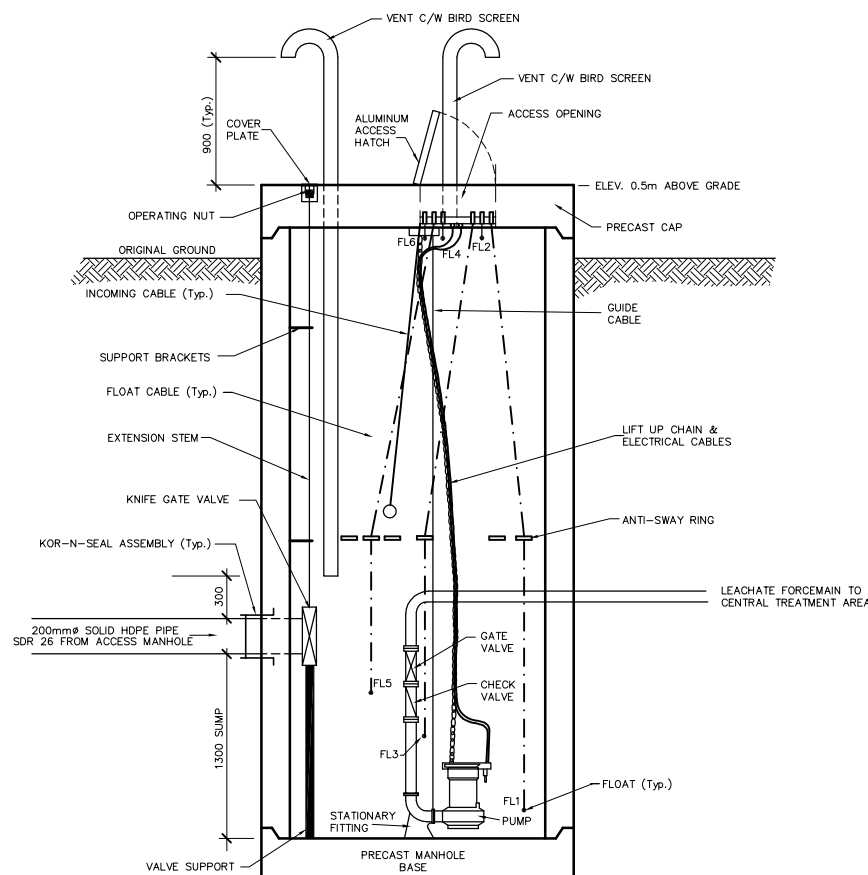
**TYPICAL SECTION THRU CELL 3S AND GRAVEL TRENCH**

SCALE: HORIZ 1:1000  
VERT 1:200



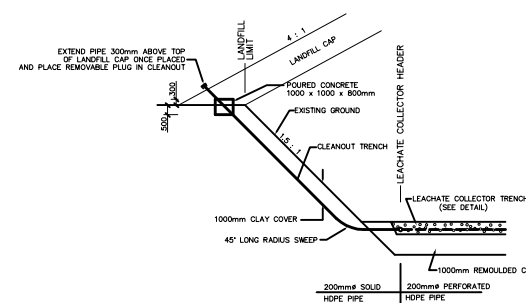
**PIPING TRENCH BETWEEN MH#A & MH#B AND CLEANOUT TRENCH**

N.T.S.



**PUMPING MANHOLE #B SCHEMATIC**

SCALE: 1:25



**CLEANOUT DETAIL - SECTION I-I**

(N.T.S.)

REVISIONS		
Date	Description	By
JAN 2/97	ADDED CUTOFF TRENCH DETAIL	T C G
DEC 95	GENERAL REVISIONS	J E A
JUNE 95	REVISED PLANS TO MOEE COMMENTS	J E A
APRIL 94	REVISED PLANS TO MOEE COMMENTS	J E A



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ENVIRONMENTAL ENGINEERS & SCIENTISTS  
OWEN SOUND ♦ GUELPH ♦ BLIND RIVER ♦ PORT ELGIN

## WARWICK LANDFILL DETAILS

CLIENT:  
**CANADIAN WASTE SERVICES INC.**

Design: J.E.A.	Scale: N/A
Drawn: J.E.A.	Date: SEPTEMBER 1994
Traced:	Approved:
Checked: F.C.F.	Design Engineer
Drawing No. 91730D - 318	



## APPENDIX L:

TABLE L2: 2008 D&O Drawings

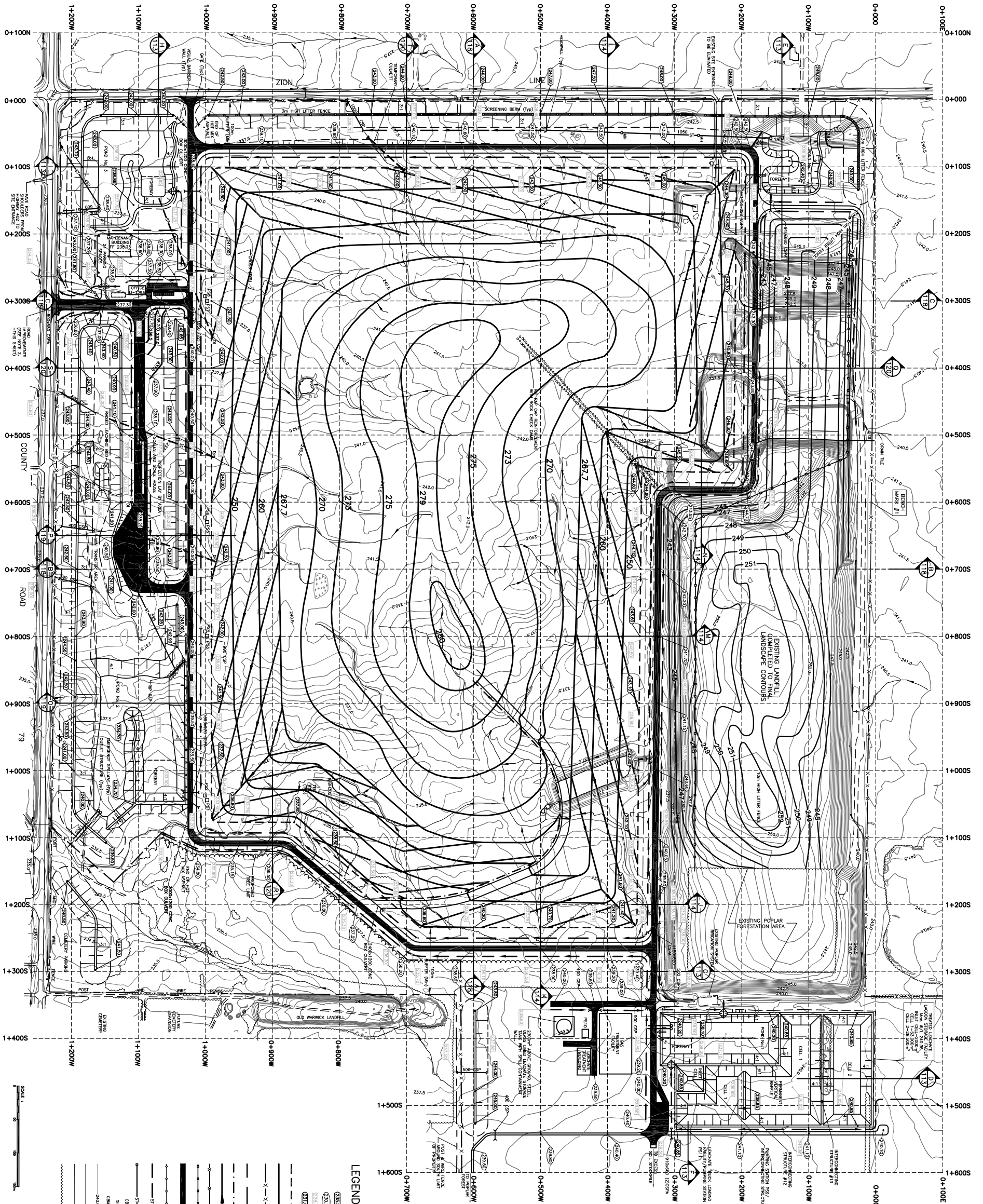


## **LIST OF DRAWINGS**

Drawing 111	Proposed Final Contours and Stormwater Management Plan
Drawing 112	Landfill Bottom Contours (Top of Primary Gravel Layer)
Drawing 113	Landfill Perimeter Sections
Drawing 114	Landfill Perimeter Sections
Drawing 115	Leachate Collection Sump Details
Drawing 116	Primary Leachate Collection System
Drawing 117	Secondary Leachate Collection System
Drawing 118	Landfill Sections
Drawing 119	Landfill Perimeter Sections
Drawing 120	Landfill Perimeter Sections
Drawing 125	Leachate Collection Sump Details\
Drawing 25R-9125	Plan of Survey of: Lot 20, Part of Lot 19, Concession 3, S.E.R., Lot 20, Part of Lots 19 and 21, Concession 4, S.E.R., Geographic Township of Warwick, Township of Warwick, County of Lambton, Deposited May 1, 2006, Prepared by Monteith and Sutherland Ltd., Sarnia, File No. 440, Plan File No. D-897
106716-127	Plan Poplar Irrigation Area

## **GAS MANAGEMENT DRAWINGS PREPARED BY COMCOR ENVIRONMENTAL LIMITED**

G101	Existing Site Conditions
G102	Vertical Well Gas Collection System Layout
G103	Horizontal Gas Collectors System Layout
G104	Vertical & Horizontal Well Schedules
G105	Compressed Air Piping Layout
G111	Plan & Profile – North Header Sta 0+000 to 0+820
G112	Plan & Profile – North Header Sta 0+820 to 1+640
G113	Plan & Profile – North Header Sta 1+640 to 2+460
G114	Plan & Profile – North Header Sta 2+460 to 3+280
G115	Plan & Profile – North Header Sta 3+280 to 4+082.49
G131	LFG Plant Area – Plan & Details
G132	LFG Plant – Plan & Details
G133	LFG Plant – Exterior Elevations
G134	LFG Plant – Part Plan & Sections
G161	Trench Details
G162	System Details
G163	System Details
G164	System Details



NOTES :

1. STORMWATER FEATURES SHOWN ON THIS PLAN ARE BASED ON FIELD SURVEY DATA AND 1997 Aerial Photographs. ANY CHANGES TO THE WARWICK LANDFILL DATED DECEMBER 1997.
2. EXISTING ROAD TO INTERSECT WITH SITE ACCESS : - NORTHBOUND PORT TOWN EXCELSION LANE - ALLIANCE SITE ACCESS AREA

B.M.#1 ELEV. 241.643 (GEODETIC)  
POINT 1012.20M, 0+558.875 (ON BAR LOCATED AT GRID POINT 1012.20M, 0+558.875)

LEGEND :

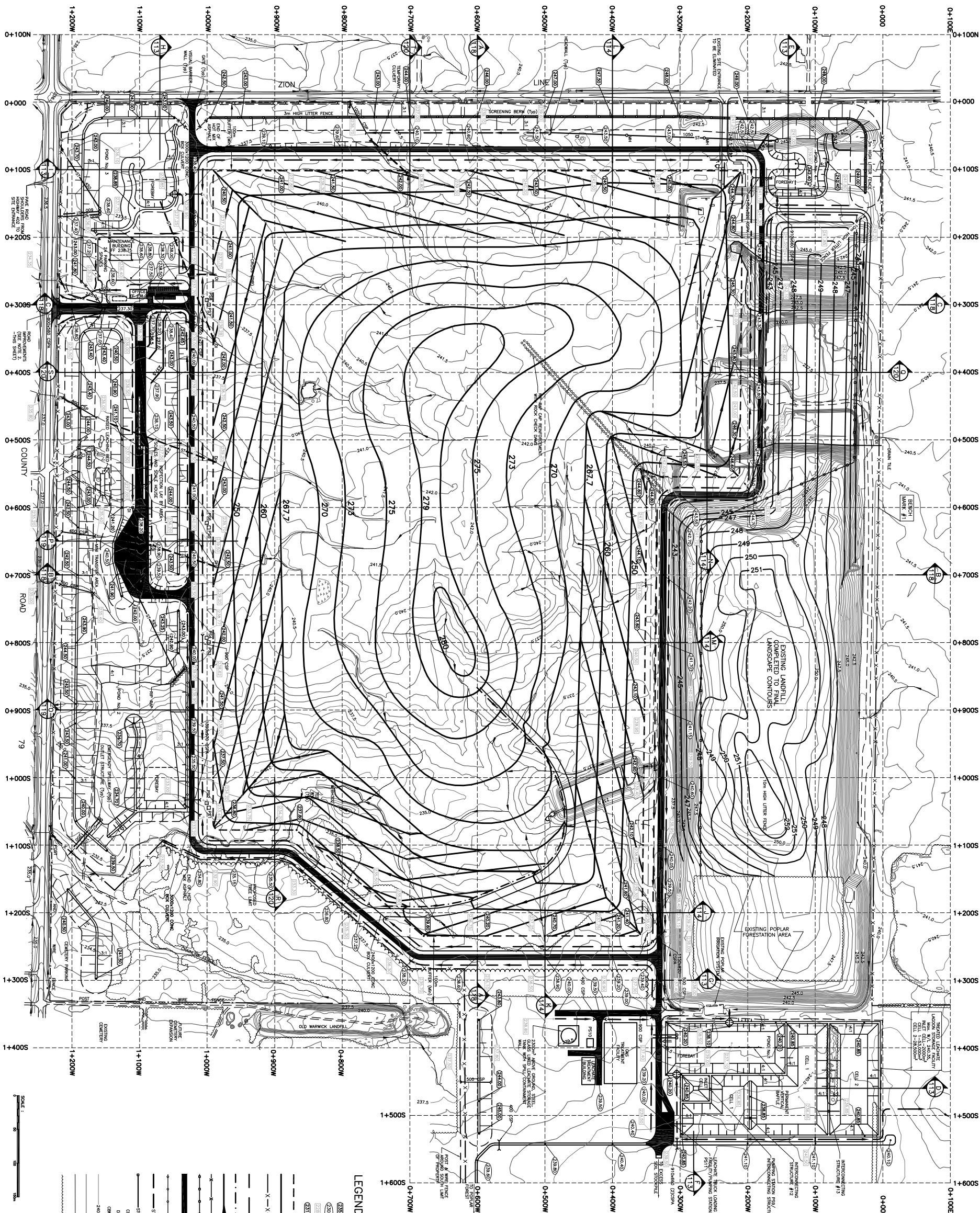
- TOP OF BERM ELEVATION
- O/A DITCH ELEVATION
- TOP OF CAP AT WASTE LIMIT ELEVATIONS
- PROPOSED LIMIT OF WASTE
- PROPOSED FINAL CONTOURS (TOP OF FINAL COVER)
- WASTE MANAGEMENT PROPERTY LIMIT WITH PROPOSED 1.5m HIGH WOVEN WIRE FENCE
- PROPOSED DITCHING
- PROPOSED RIP RAP LINED DITCHING
- C/P UNDERGROUND SYSTEM
- PROPOSED VISUAL SCREENING BARRIER
- PROPOSED LITTER FENCE
- PROPOSED PAVED ROAD (NOT MIX ASPHALT OR PRIME DOUBLE SURFACE TREATMENT)
- PROPOSED GUIDE RAIL
- PROPOSED STORM SEWER (TEMPORARY)
- CATCH BASIN
- DITCH INLET
- EXISTING GROUND CONTOURS 2.5m INTERVAL
- EXISTING GROUND CONTOURS 0.5m INTERVAL
- EXISTING DITCH/SWALE
- EXISTING TREELINE

DWN BY: T C G  
CHK BY: F C F  
DATE: DEC 21 07  
SCALE: SEE BAR SCALE  
WASTE MANAGEMENT OF CANADA CORP.  
DRAWING NO. 105716-111

PROPOSED FINAL CONTOURS AND  
STORMWATER MANAGEMENT PLAN  
WARWICK LANDFILL  
WATFORD ONTARIO



HENDERSON PADDON  
& ASSOCIATES LIMITED  
CIVIL & ENVIRONMENTAL ENGINEERING CONSULTANTS  
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Tel: (519)376-7812 Fax: (519)376-8008  
HPA JOB # 105716



LEGEND :

- TOP OF BERM ELEVATION (235.30)
- O/A DITCH ELEVATION (232.70)
- TOP OF CAP AT WASTE LIMIT ELEVATIONS (231.00)
- PROPOSED LIMIT OF WASTE
- PROPOSED FINAL CONTOURS (TOP OF FINAL COVER)
- WASTE MANAGEMENT PROPERTY LIMIT WITH PROPOSED 1.5m HIGH WOVEN WIRE FENCE
- PROPOSED DITCHING
- PROPOSED RIP RAP LINED DITCHING
- CAP UNDERDRAIN SYSTEM
- PROPOSED VISUAL SCREENING BARRIER
- PROPOSED LITTER FENCE
- PROPOSED PAVED ROAD (NOT MIX ASPHALT OR PRIME DOUBLE SURFACE TREATMENT)
- PROPOSED GUIDE PILE
- PROPOSED STORM SEWER (TEMPORARY)
- PROPOSED STORM SEWER
- CATCH BASIN
- DITCH INLET
- EXISTING GROUND CONTOURS 2.5m INTERVAL
- EXISTING GROUND CONTOURS 0.5m INTERVAL
- EXISTING DITCH/SWALE
- EXISTING TREELINE

B.M.#1 ELEV. 241.643 (GEODETIC)  
POINT 10+12.50M, 0+558.875  
NON MARK LOCATED AT GRID

- NOTES :
1. STORMWATER FEATURES SHOWN ON THIS PLAN ARE BASED ON FIELD SURVEY DATA AND 1997 Aerial Photographs. ANY CHANGES TO THE PLAN SHALL BE THE RESPONSIBILITY OF THE CLIENT.
  2. EXISTING ROAD TO BE IMPROVED AT SITE ACCESS :  
- NORTHBOUND PORT TOWN EXCELSION LANE  
- ALLIANCE SITE ACCESS AREA

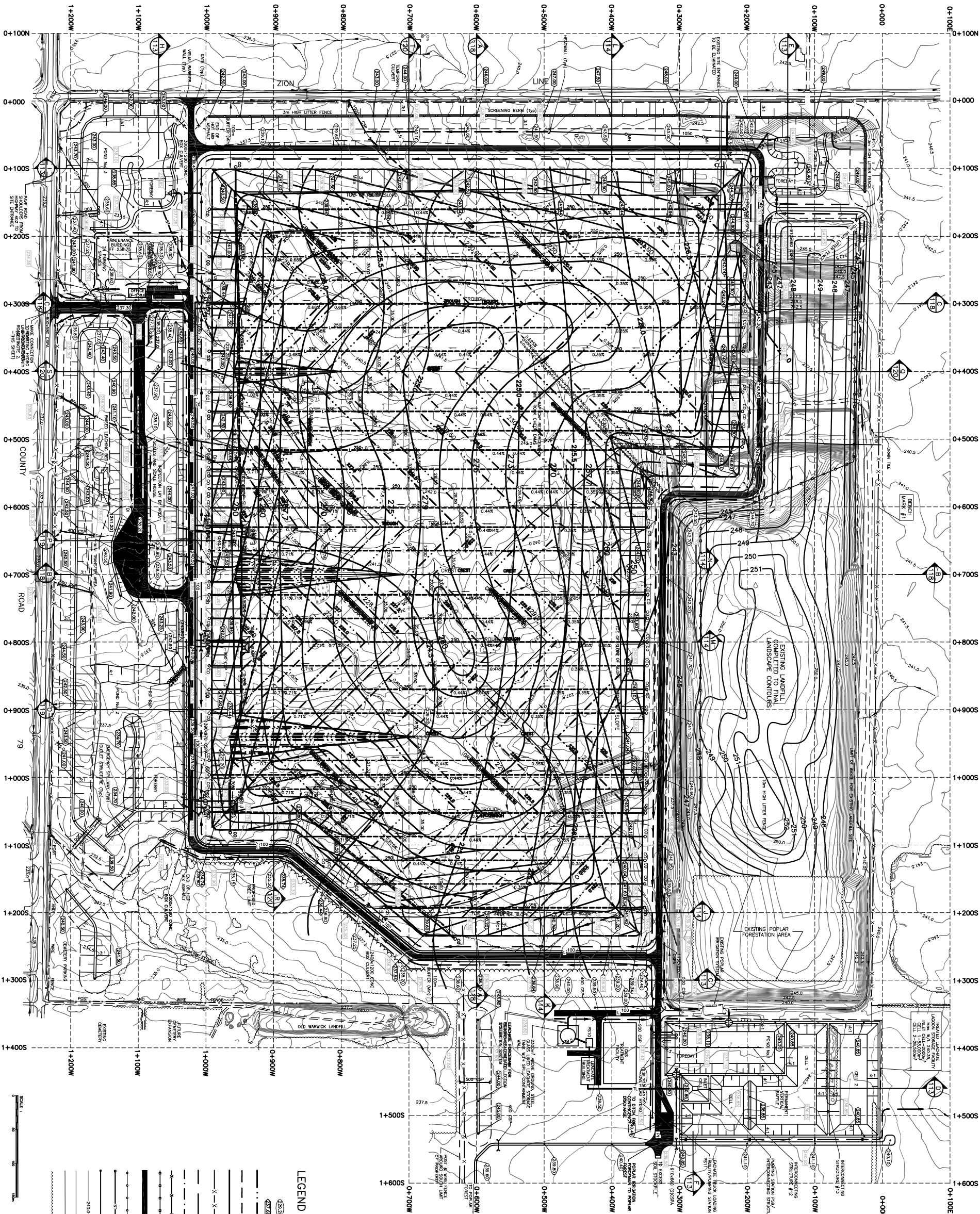
DWN BY: T C G  
CHK BY: F C F  
DATE: DEC 21 07  
SCALE: SEE BAR SCALE  
WASTE MANAGEMENT OF CANADA CORP.  
DRAWING NO. 105716-111

PROPOSED FINAL CONTOURS AND  
STORMWATER MANAGEMENT PLAN  
WARWICK LANDFILL  
WATFORD ONTARIO



HENDERSON PADDON  
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CIVIL & ENVIRONMENTAL ENGINEERING CONSULTANTS  
OWEN SOUND • THE BLUE MOUNTAINS • GRIMSBY • HAWKESBURY  
Tel: (519) 376-7812 Fax: (519) 376-8008  
HPA JOB # 105716

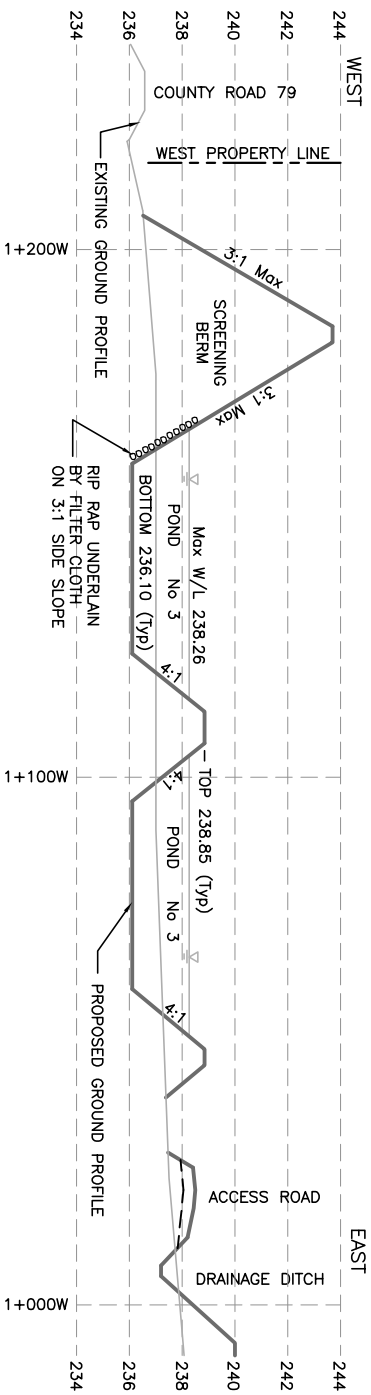
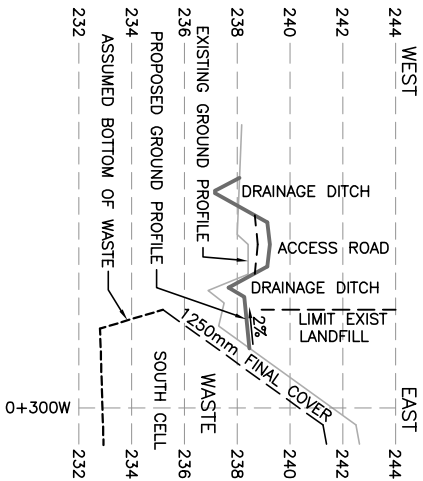
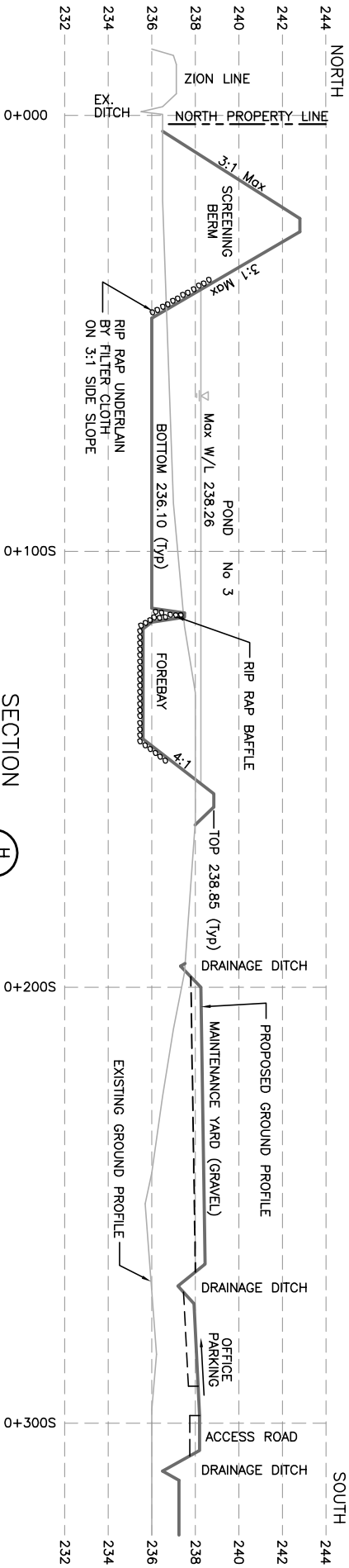
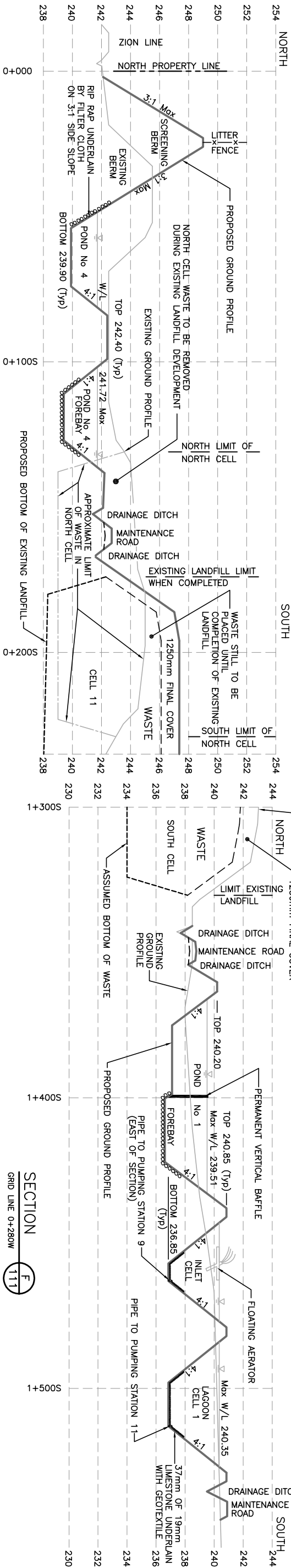
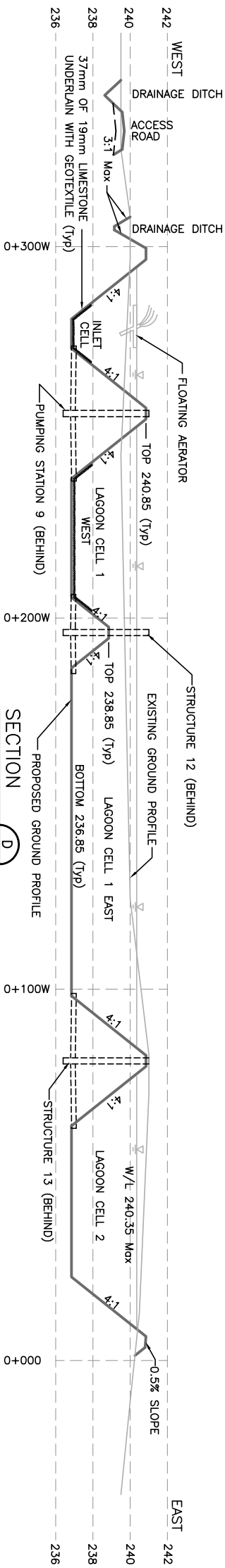




LEGEND :

- SPOT ELEVATIONS TOP OF PRIMARY GRAVEL
- TOP OF SLOPE ELEVATION (TOP OF PRIMARY GRAVEL)
- PROPOSED TOP OF PRIMARY GRAVEL CONTOURS
- PROPOSED LIMIT OF WASTE
- INFERRED CONTOURS FOR MAXIMUM DEPTH OF EXCAVATION TO PREVENT BRUL HEAVE
- WASTE MANAGEMENT PROPERTY LIMIT WITH PROPOSED 1.8m HIGH WOODEN WIRE FENCE
- PROPOSED DITCHING
- PROPOSED RPP RPP LINED DITCHING
- PROPOSED VISUAL SCREENING BARRIER
- PROPOSED LITTER FENCE
- PROPOSED GRAVED ROAD (WORK ASPHALT OR PRIME DOUBLE SURFACE TREATMENT)
- PROPOSED GUIDE RAIL
- PROPOSED OVERHEAD HDRO
- EXISTING GROUND CONTOURS 2.5m INTERVAL
- EXISTING GROUND CONTOURS 0.5m INTERVAL
- EXISTING DITCH/SWALE
- EXISTING TREELINE

- NOTES :
- LOCAL THROGGING OF GRAVEL ABOVE LEACHATE COLLECTOR PIPES IS NOT REFLECTED ON TOP OF PRIMARY GRAVEL CONTOURS SHOWN ON THIS PLAN.
  - CONTOURS FOR MAXIMUM DEPTH OF EXCAVATION AGAINST BASE BLOWOUT ARE BASED ON FIGURE 1 "BASE STABILITY ASSESSMENT" DATED JUNE 17, 2005 BY JACGER HAMS ASSOCIATES. SUBMITTAL DATED 01/02/06 OF BASE CONTOURS TO DEFINE BOTTOM OF BASE EXCAVATION.



SECTION G  
GRID LINE 1+300S

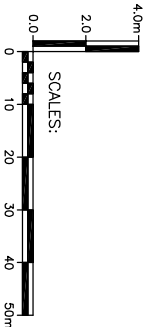
SECTION E  
GRID LINE 0+140W

SECTION D  
GRID LINE 1+460S

SECTION F  
GRID LINE 0+280W

SECTION H  
GRID LINE 1+070W

SECTION I  
GRID LINE 0+100S



LANDFILL PERIMETER SECTIONS

WARWICK LANDFILL  
WATFORD ONTARIO

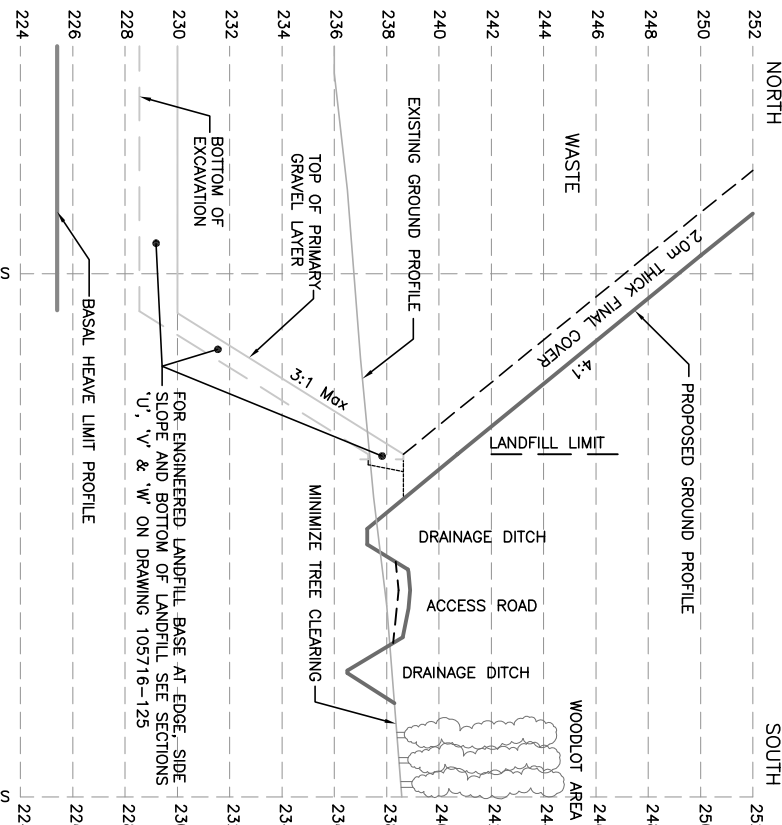
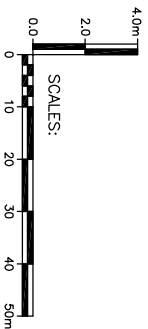
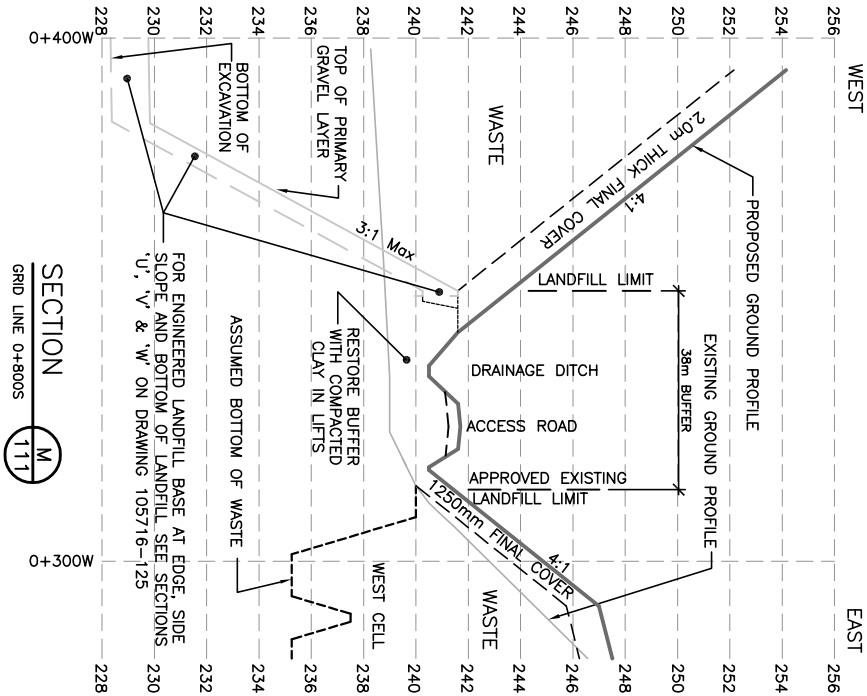
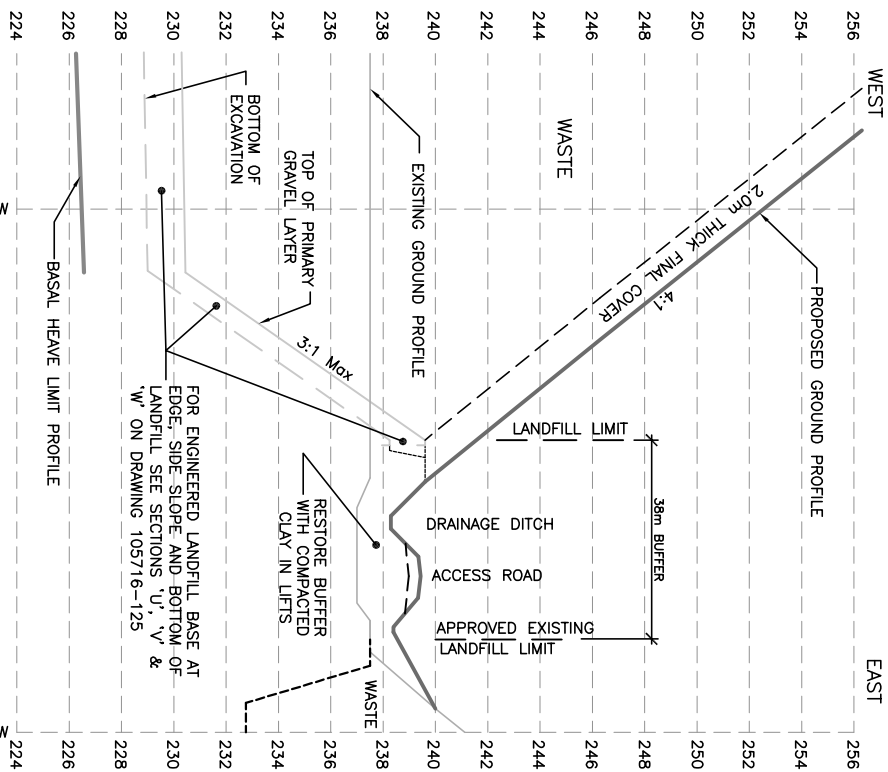


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Tele (519)376-7612 Fax (519)376-8008  
HPA JOB # 105716

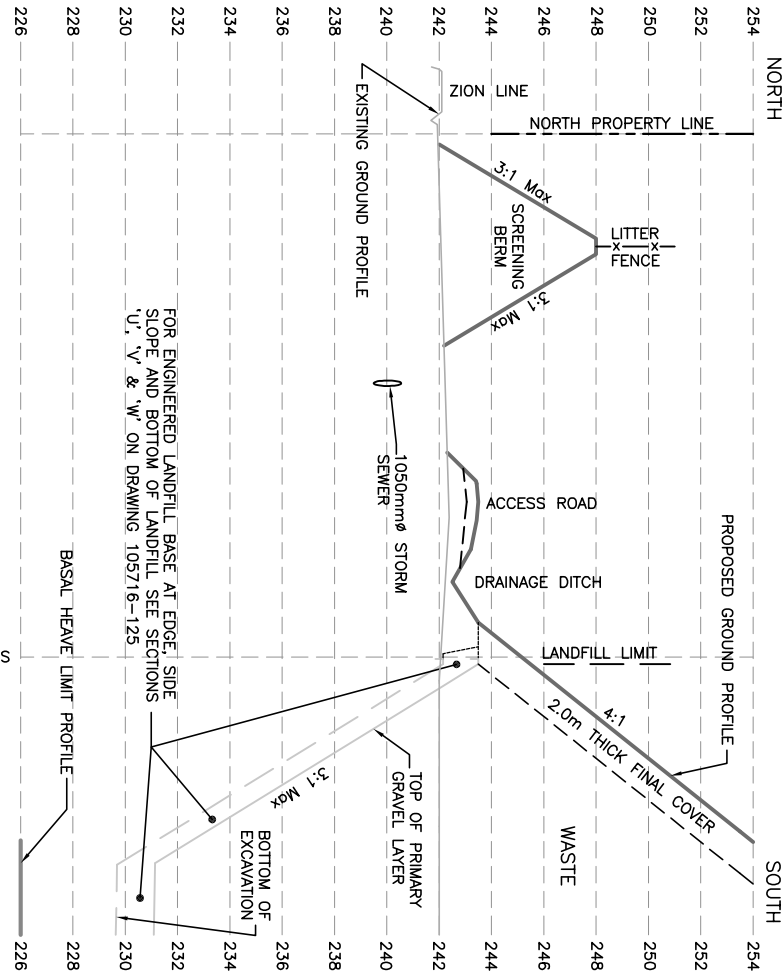
DWN BY: T C G DATE: DEC 21 07  
CHK BY: F C F SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

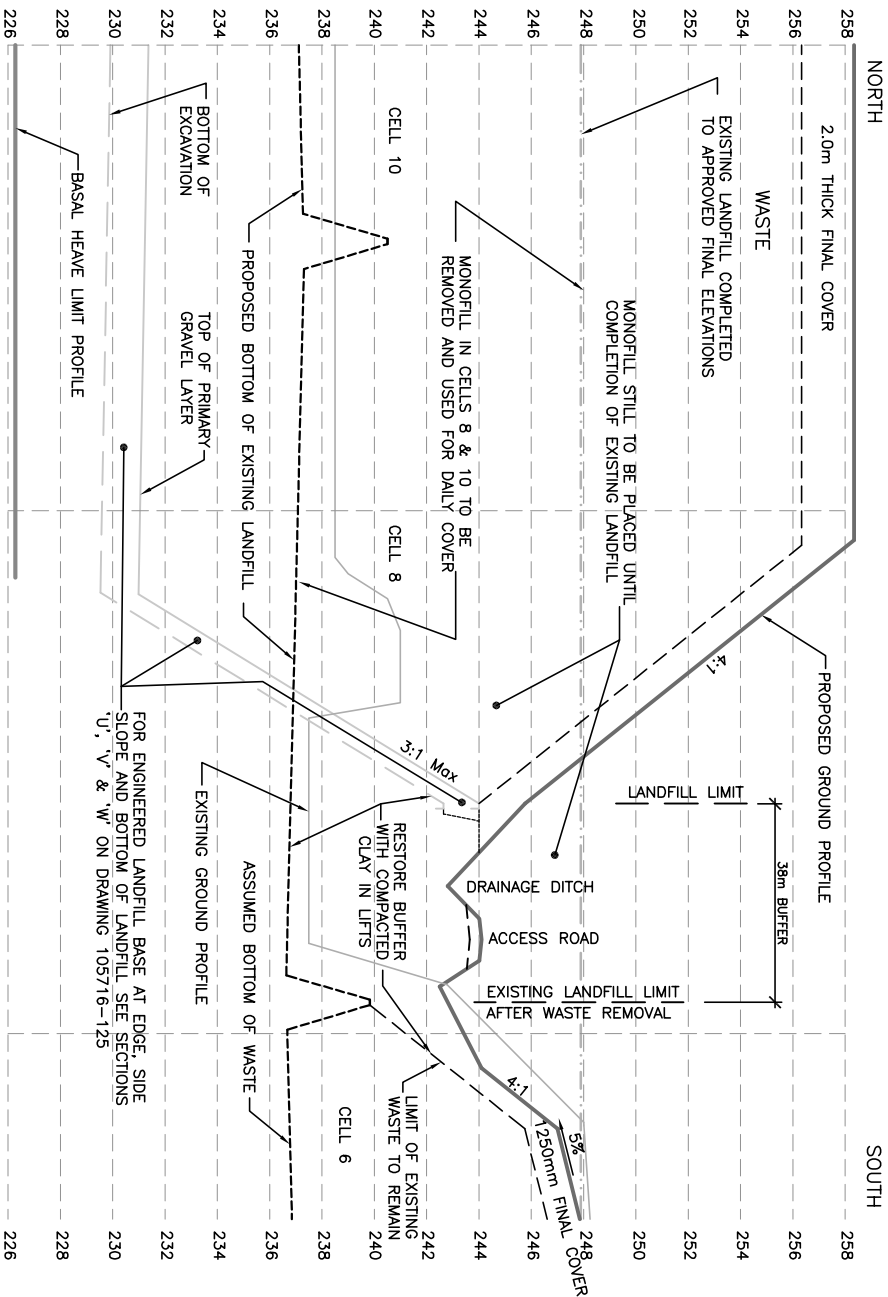
DRAWING NO. 105716 - 113



SECTION K  
GRID LINE 1+500W  
111



SECTION L  
GRID LINE 0+400W  
111

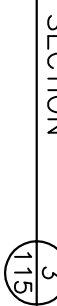


SECTION N  
GRID LINE 0+260W  
111

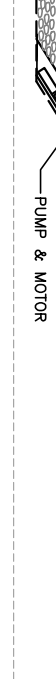


## SECONDARY LEACHATE COLLECTION SYSTEM SUMP 2 PLAN

PRIMARY LEACHATE COLLECTION SYSTEM  
SUMP 2 PLAN



## SECTION



SECTION

SECTION

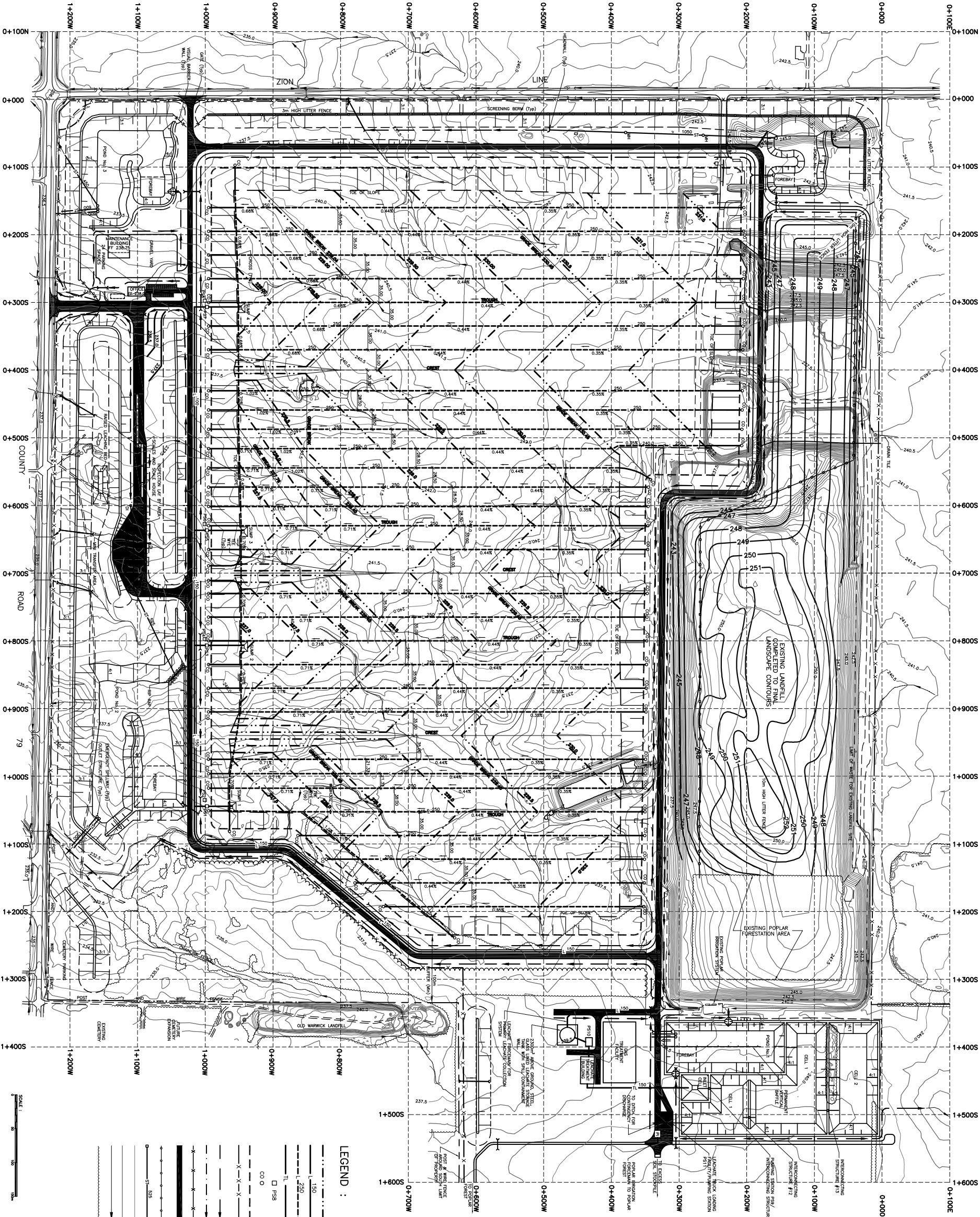


SECTION

DATE	DESCRIPTION	
	REVISION / ISSUE	

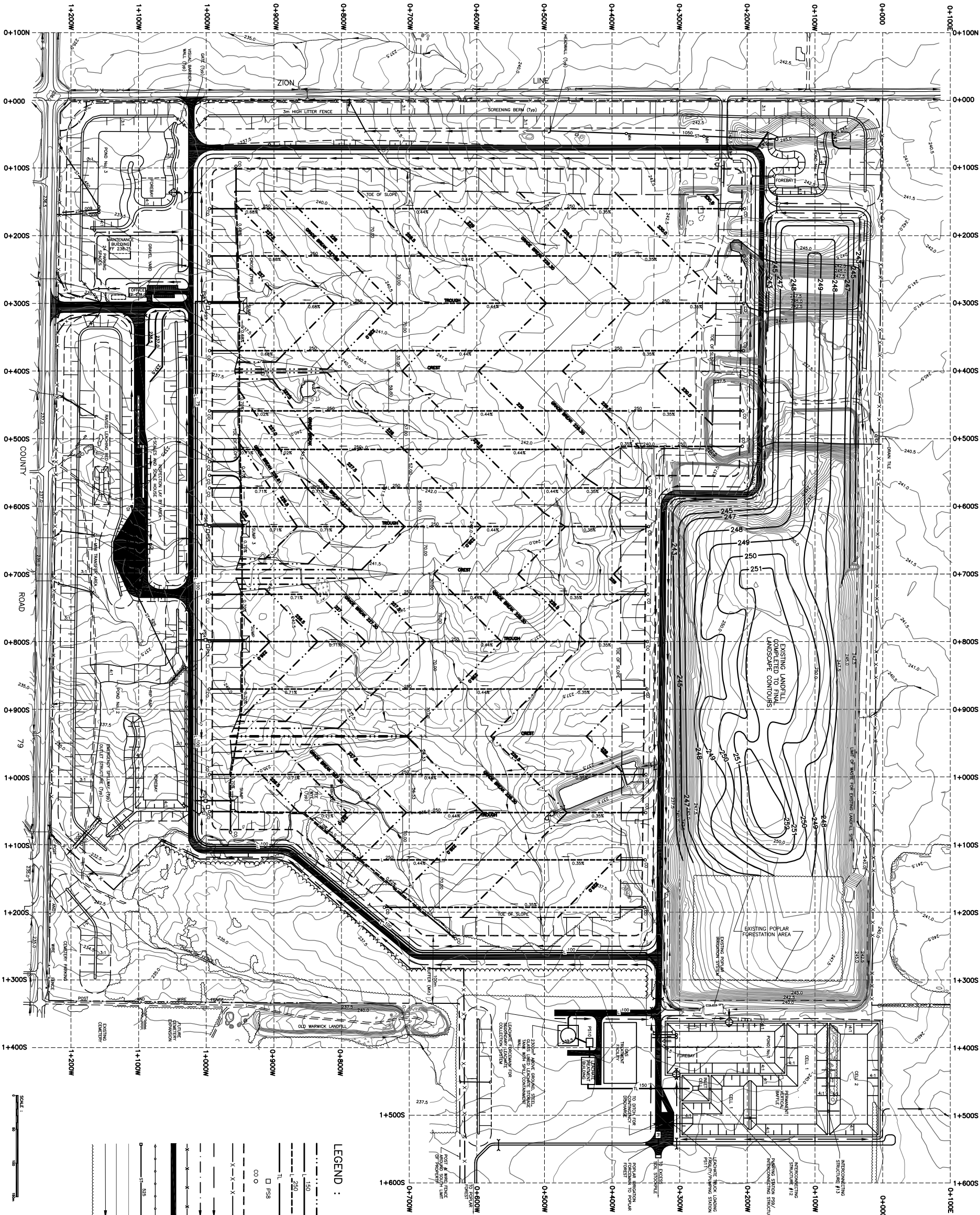
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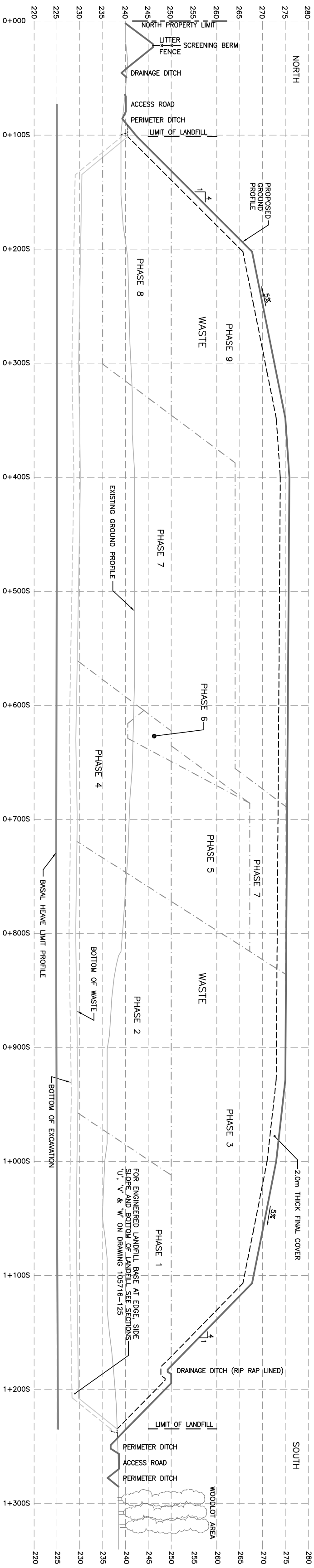


- LEGEND :
- PROPOSED PRIMARY GRAVEL CONTOURS
  - PROPOSED HOPE LEACHATE COLLECTION PIPE (SOLID)/FOREMAIN
  - PROPOSED HOPE LEACHATE COLLECTION PIPE (PERF.)
  - PROPOSED TREATED LEACHATE FOREMAIN
  - PROPOSED LEACHATE PUMP STATION
  - PROPOSED LEACHATE COLLECTION SYSTEM CLEANOUT
  - PROPOSED LIMIT OF WASTE
  - WASTE MANAGEMENT PROPERTY LIMIT WITH PROPOSED 1.8m HIGH WOVEN WIRE FENCE
  - PROPOSED DITCHING
  - PROPOSED RIP RAP LINED DITCHING
  - PROPOSED VISUAL SCREENING BARRIER
  - PROPOSED PAVED ROAD (HOT MIX ASPHALT OR PRIME DOUBLE SURFACE TREATMENT)
  - PROPOSED GUIDE RAIL
  - PROPOSED STORM SEWER
  - EXISTING GROUND CONTOURS 2.5m INTERVAL
  - EXISTING GROUND CONTOURS 0.5m INTERVAL
  - EXISTING DITCH/STREAM
  - EXISTING TREELINE

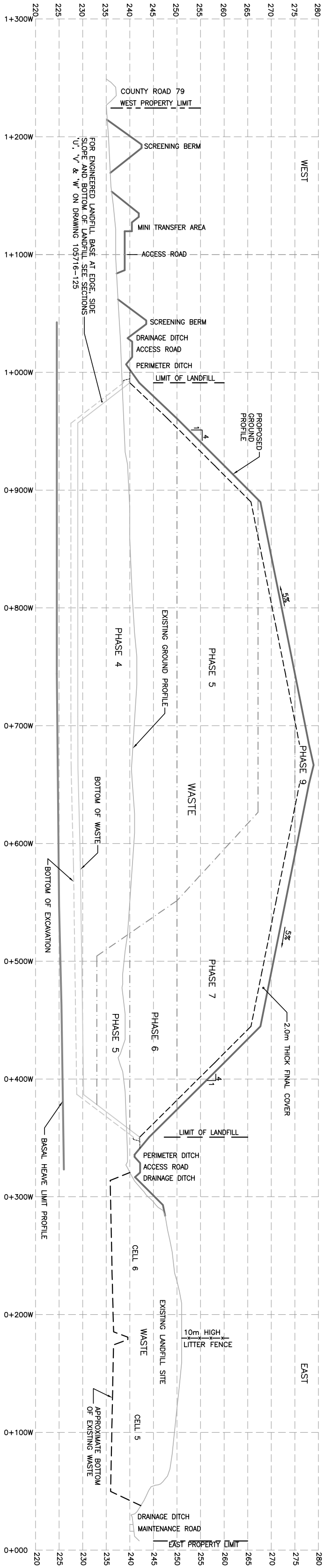
- NOTES :
1. LOCAL THICKENING OF PRIMARY GRAVEL ABOVE LEACHATE ON THIS PLAN.



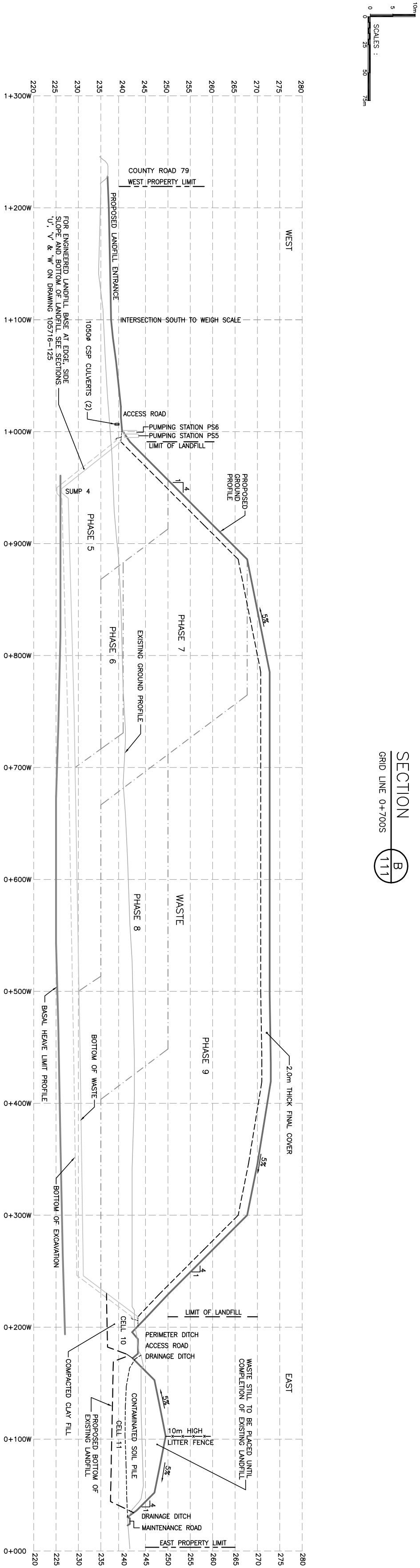
- LEGEND :
- PROPOSED SECONDARY GRAVEL CONTOURS
  - PROPOSED HOPE LEACHATE COLLECTION PIPE (SOLID)/FORCREAM
  - PROPOSED HOPE LEACHATE COLLECTION PIPE (PERF.)
  - PROPOSED TREATED LEACHATE FORCREAM
  - PROPOSED LEACHATE COLLECTION SYSTEM CLEANOUT
  - PROPOSED LIMIT OF WASTE
  - WASTE MANAGEMENT PROPERTY LIMIT WITH PROPOSED 1.8m HIGH WOVEN WIRE FENCE
  - PROPOSED DITCHING
  - PROPOSED RIP RAP LINED DITCHING
  - PROPOSED VISUAL SCREENING BARRIER
  - PROPOSED PAVED ROAD (HOT MIX ASPHALT) OR PRIME DOUBLE SURFACE TREATMENT
  - PROPOSED GUIDE RAIL
  - PROPOSED STORM SEWER
  - EXISTING GROUND CONTOURS 2.5m INTERVAL
  - EXISTING GROUND CONTOURS 0.5m INTERVAL
  - EXISTING DITCH/SWALE
  - EXISTING TREELINE



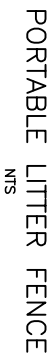
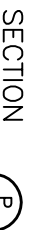
SECTION A  
GRID LINE 0+600W



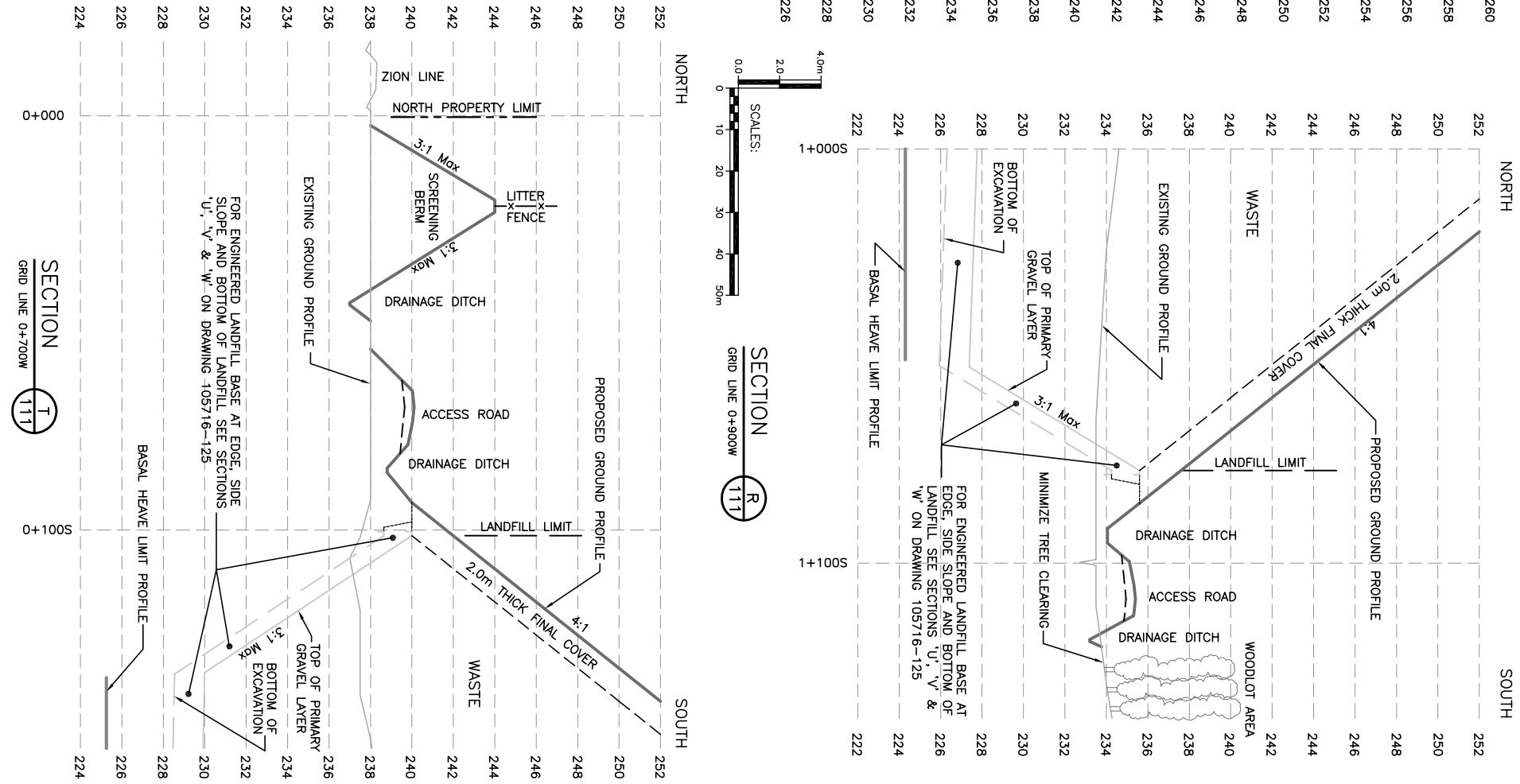
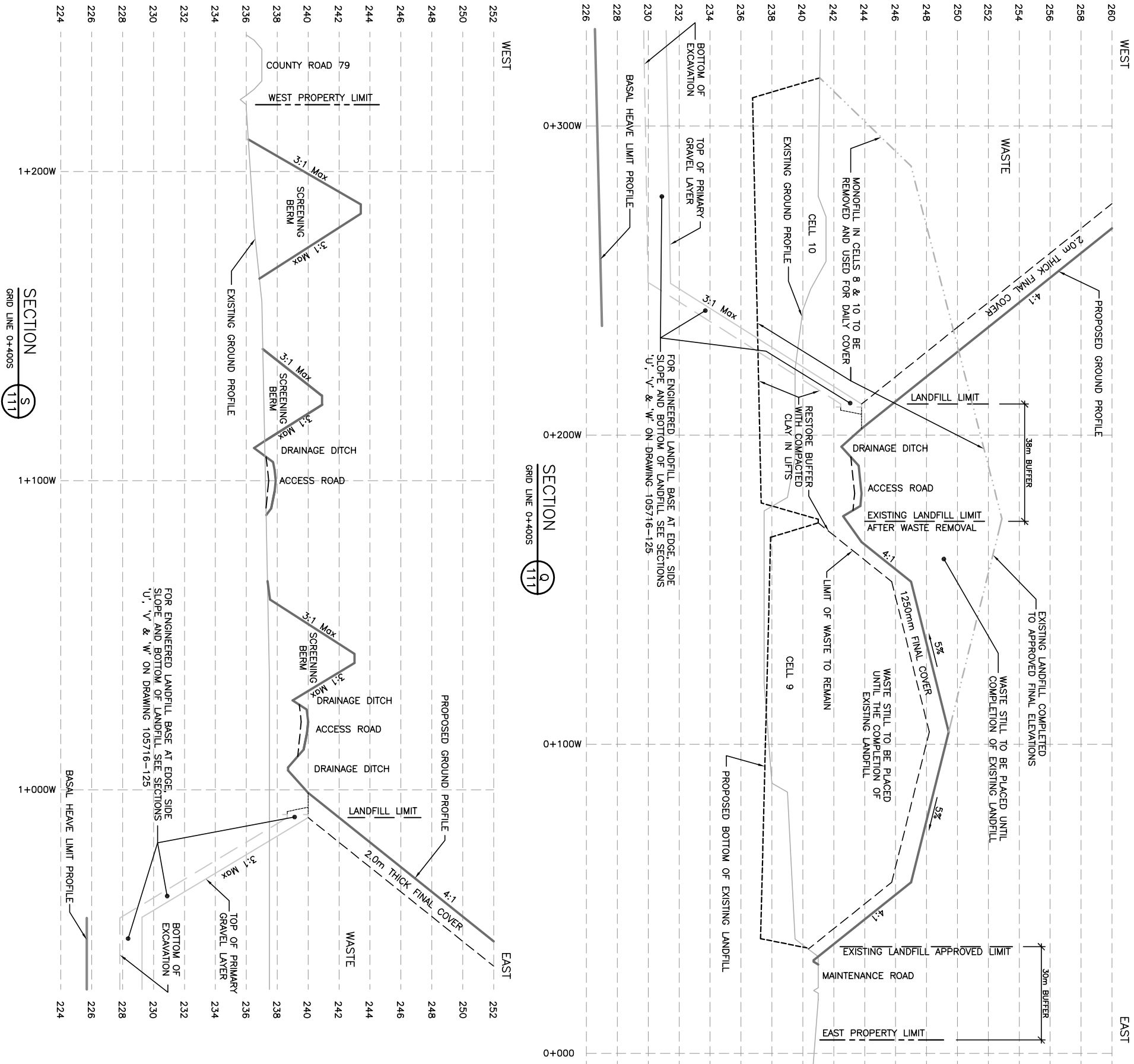
SECTION B  
GRID LINE 0+700S



SECTION C  
GRID LINE 0+300S





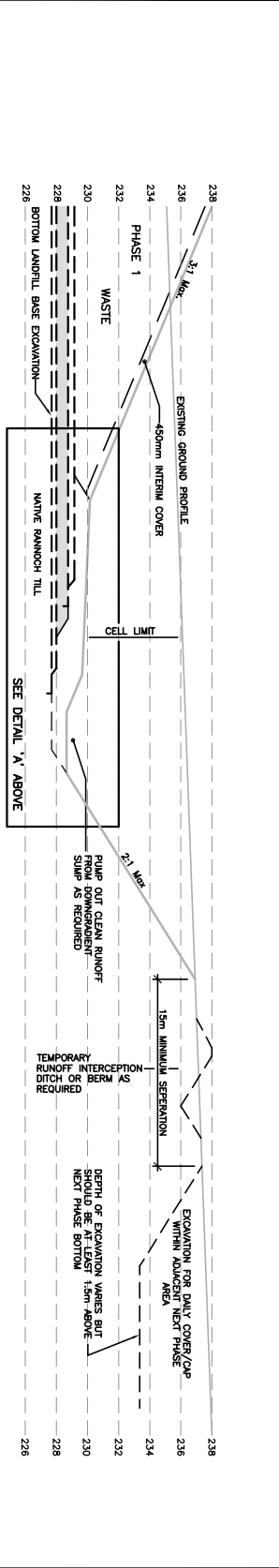
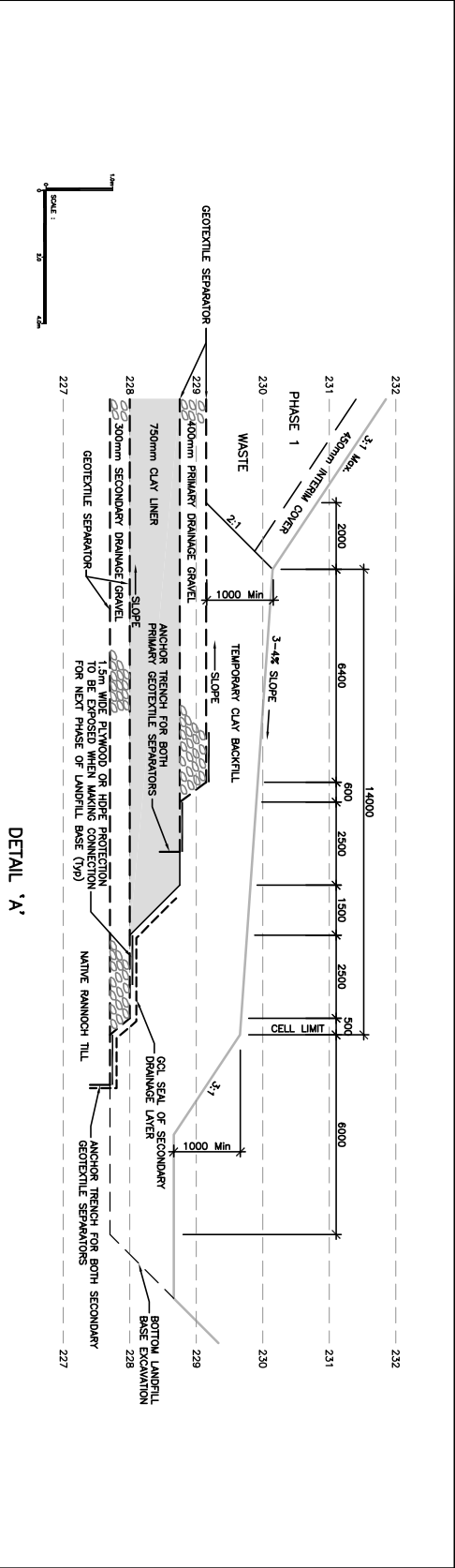
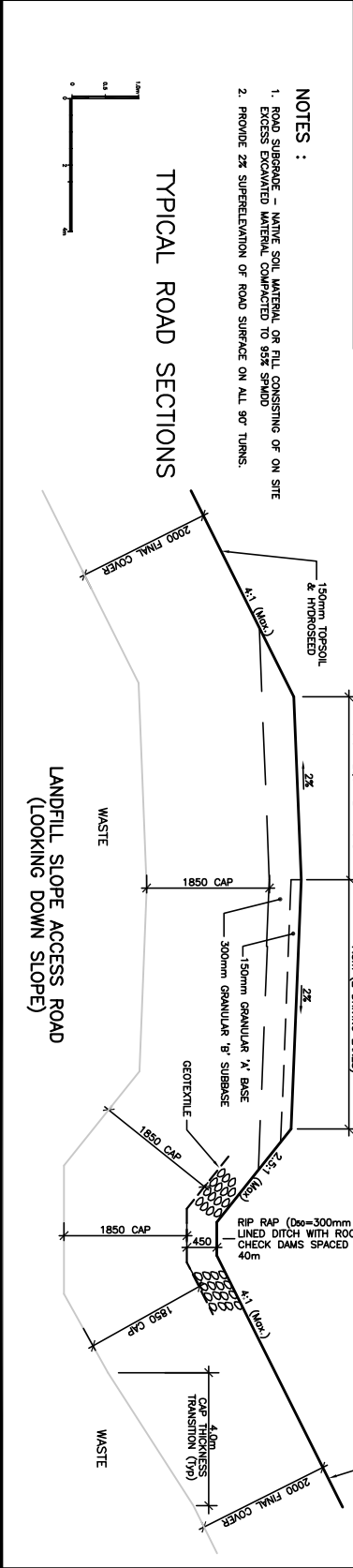
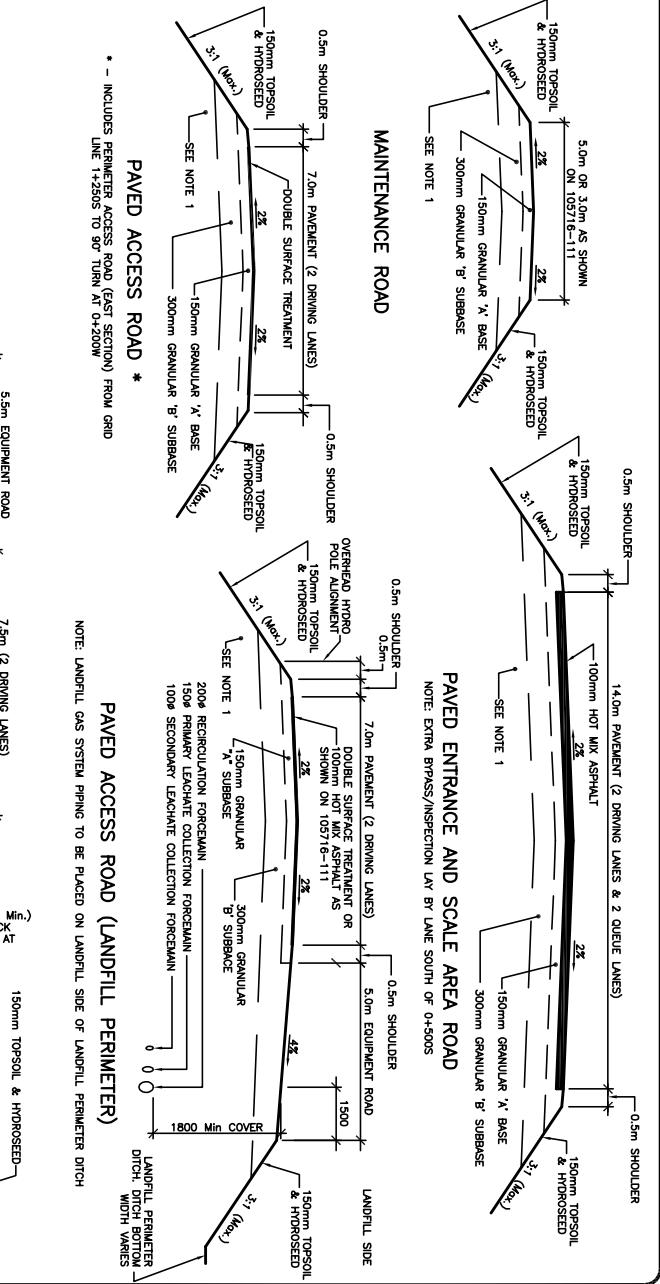
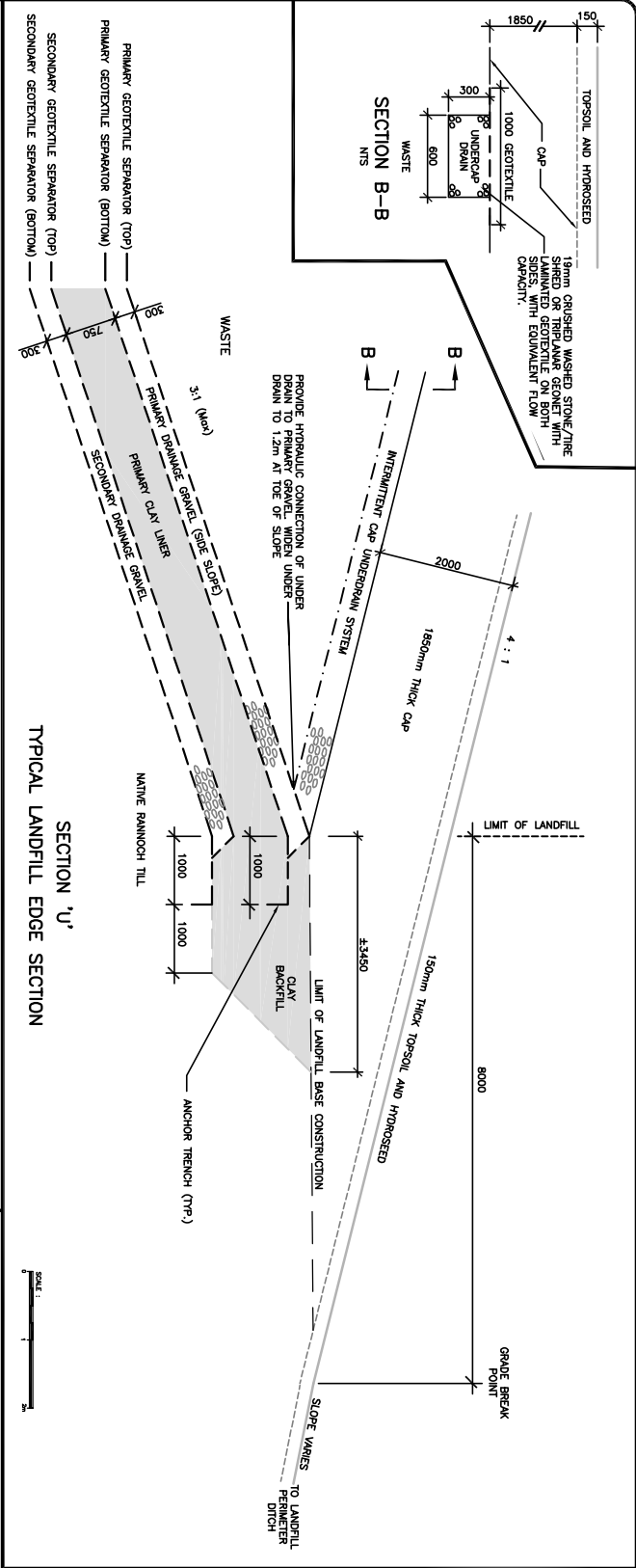


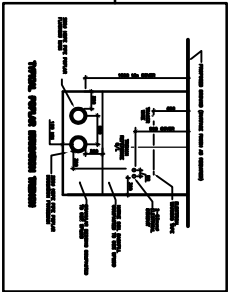
DWN BY: T C G	DATE: DEC 21 07
CHK BY: F C F	SCALE: SEE BAR SCALE
WASTE MANAGEMENT OF CANADA CORP.	
DRAWING NO.	105716 - 120

LANDFILL PERIMETER SECTIONS
WARWICK LANDFILL
WATFORD ONTARIO

WASTE MANAGEMENT

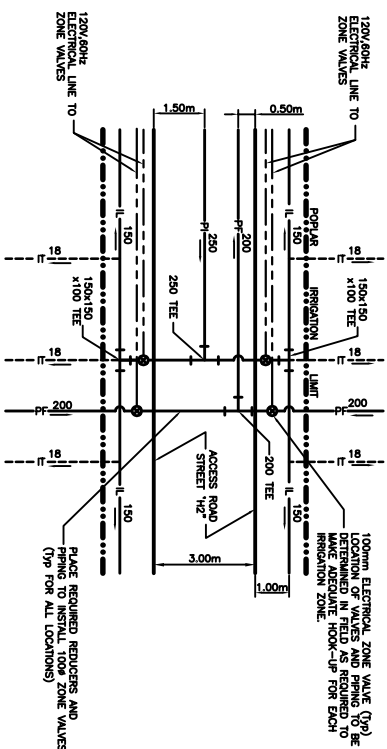
<b>HENDERSON PADDON</b>	
& ASSOCIATES LIMITED	
CIVIL & ENVIRONMENTAL ENGINEERING CONSULTANTS	
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HPA JOB # 105716	





**LEGEND :**

- |              |  |
|--------------|--|
|              | EXTING ROUND CONTIGUOUS 2.5m INTERVALS           |
|              | EXTING ROUND CONTIGUOUS 0.5m INTERVALS           |
|              | EXTING SLIMT                                     |
|              | PROPOSED SLIMT POPULAR IRRIGATION AREAS          |
|              | PROPOSED POPULAR TREES                           |
|              | PROPOSED ACCESS ROADS                            |
|              | PROPOSED DRCH OR SLIMT                           |
|              | PROPOSED CSP COLLECTR                            |
|              | PROPOSED C/L ACCESS ROAD ELEVATION               |
|              | PROPOSED COLLECTR INERT ELEVATION                |
| <b>BS-19</b> |  |
| ▼ SS17       | WATER SAMPLING LOCATION                          |
| PI           | POPULAR IRRIGATION FORECOURSE FROM PS11 - BURIED |
| PF           | FLUSHING RETURN WASH TO PS11 - BURIED            |
| IR           | IRRIGATION TUBING (SPE GRASS) - BURIED           |
| IL           | IRRIGATION LATERAL (SPE GRASS) - BURIED          |



### PIPE ENDING DETAIL

**SCALE : 1:10**

PLAN  
POPLAR IRRIGATION AREA  
WARWICK LANDFILL

**WM.**  
**WASTE MANAGEMENT**

**HENDERSON, PADDON**  
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 HPA JOB # 106716

DWN BY:	T C G	DATE:	MAY 2007
CHK BY:	F C F	SCALE:	SEE BAR SCALE

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WASTE MANAGEMENT OF CANADA CORP.

DRAWING NO. 106716 - 127

# APPENDIX L:

TABLE L3: TCEC 2024 CQA CQC Liner System Summary - Final







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E-mail: [solutions@rwdi.com](mailto:solutions@rwdi.com)

October 23, 2024

Mr. Wayne Jenken  
Waste Management of Canada Corporation  
5768 Nauvoo Road  
Watford, ON N0M2S0

**Re: CQA/CQC Liner System Summary Report (Cell 6B)  
2023 Twin Creeks Environmental Centre Expansion Contract 106716U  
Twin Creeks Environmental Centre  
RWDI Reference No. 2303907.01**

**Email:** [wjenken@wm.com](mailto:wjenken@wm.com)

Dear Mr. Jenken,

**RWDI AIR Inc. (RWDI)** is pleased to provide this Construction Quality Assurance and Construction Quality Control (CQA/CQC) Cell 6B Liner System Summary Report to Waste Management of Canada Corporation (WM) for the 2023 Twin Creek Environmental Centre Expansion Contract 106716U. This letter report is written in conformance with Conditions 4.6 and 4.11 of the Amended Environmental Compliance Approval (ECA) No. A032203, dated December 16, 2023 (Waste ECA).

## 1. INTRODUCTION

The Twin Creeks Environmental Centre (Site) is owned and operated by WM, and is located in Part Lots 19 and 20, Concession 2, south of Egremont Road (SER) and Part Lots 20 to 22, Concession 4 SER, in the Township of Warwick, Lambton County, Ontario (Site). The Site is operated and being expanded in conformance with the Ministry of Environment, Conservation and Parks (MECP) approved landfill design in the Development and Operations Plan Volumes 1 through 3 (Henderson Paddon & Associates, March 2008).

The Liner System was constructed and CQA/CQC inspected for conformance with design details from May 1, 2023 to October 22, 2024. It is noted that Cell 6B, is the second stage (sub-cell) of Cell 6, with the full Cell 6 being comprised of full stages 6A through 6C. The CQA/CQC program for the Cell 6B Liner System was completed in conformance with the following documents.

- Twin Creeks Environmental Centre Expansion Contract 106716U, Landfill Base Preparation, Cell 6B (WSP, February 2023) (2023 Tender).
- Amended ECA for Waste No. A032203, dated December 16, 2023 (Waste ECA).
- Permit-To-Take-Water (PTTW) No. 4682-BLJRYJ, dated November 8, 2021, for the removal of surface water from four (4) Sedimentation Ponds and the dewatering of the Secondary Drainage Layer (SDL) for the Expansion Site (PTTW).
- Amended ECA for Air No. 6318-CX4NFX, dated December 13, 2023 (Air ECA).
- Amended ECA for Industrial Sewage Works No. 8117-CUSNXX, dated April 29, 2024 (Sewage ECA).



- Evaluation of Liner Test Pad – Geotechnical CQA/CQC Program letter (Jagger Hims, a Division of GENIVAR Consultants LP, July 2009): Required per Geotechnical CQA/CQC Program noted below.
- Waste Management of Canada Corporation Twin Creeks Landfill Use of Geonet for Secondary Drainage Layer (Henderson Paddon & Associates, January 2009: Item 55 of Schedule A of the Waste ECA.
- Development & Operations Plan – Warwick Landfill Volumes 1 through 3 (Henderson Padden & Associates, March 2008): Items 66, 67, and 68 of Schedule A of the Waste ECA.
- Geotechnical CQA/CQC Program for Landfill Liner System letter (Jagger Hims Limited, March 2007): Part of Items 30 and 31 of Schedule A of the Waste ECA.

## 2. LINER SYSTEM

### 2.1 Liner System Conceptual Layout

The Liner System for Cell 6B comprised an area of approximately 5.51 hectares and consisted of the following layers.

➤ **First (Bottom) Layer:**

- Secondary Liner (SL), which is the native clayey silt to silty clay soil at the Site (unsuitable material, such as silty sand and/or cobbles, where was encountered, was removed and replaced with select liner grade soil per remoulded and compacted clayey silt to silty clay soil per the requirements for the Primary Liner).

➤ **Second Layer:**

- Secondary Drainage Layer (SDL), which consists of geonet (geosynthetic grid that has a boxed tri-planer structure with geotextile attached to the top and bottom) across the top of the SL that gravity drains to drainage trenches that are backfilled over the geonet with high density polyethylene (HDPE) pipe embedded in drainage stone overlain with non-woven geotextile fabric.

➤ **Third Layer:**

- Primary Liner (PL), which is constructed on top of the SDL and consists of remoulded and compacted clayey silt to silty clay soil with a minimum design thickness of 0.8 metre (it is noted that the Site is approved with a 0.75 m thick PL, the additional 0.05 m is added for PL protection purposes from drying effects during construction).

➤ **Fourth (Top) Layer:**

- Primary Drainage Layer (PDL), which overlays the PL and consists of drainage stone that directs leachate by gravity to HDPE pipes within the drainage stone. Non-woven geotextile fabric is below and above the PDL.



## 2.2 Location and Slope Details

Cell 6B has a western limit at Site survey-control gridline 0+767.2W, and is north of Cell 4B, with a southern limit at an approximate connection of the two cells along the Site survey-control gridline 0+401S. The northern extent of Cell 6B is along Site survey-control gridline 0+101S. The east limit of Cell 6B is at Site survey-control gridline 0+584.8W. Actual north, east, south, and west limits for each layer of the Liner System are different due to the connection methodology of cell to cell (i.e. Cell 4 to Cell 6) or from cell stage to cell stage (i.e. Cell 6A to Cell 6B). The aforementioned coordinates are the boundary limits for the PL. Cross-sectional details for cell to cell connection are presented in Section C on Drawing 806 of the 2023 Tender, while cross-sectional details for cell stage to cell stage connection are presented in Section F on Drawing 807 of the 2023 Tender. The SL and PL generally slope upward in a saw-tooth pattern from the low point at approximately Site survey-control gridline 0+300S and approximately Site survey-control gridline 0+767W at approximately 0.6% with a slope trend 45° to the Site survey-control gridline system.

A temporary clayey soil seal was placed over each layer of the eastern limits approximately between gridlines 0+101S and 0+403.2S. In the future, this temporary clayey soil seal will be progressively removed for the connection of each layer to the Cell 6C Liner System. A similar clayey soil seal was previously placed over the northern limit of Cell 4B, which was partially removed to expose the PL for connection of the PL of Cell 4B to Cell 6B.

The SL is naturally connected between Cell 4B to Cell 6B. The SDL and PDL for Cell 4B to Cell 6B were not connected, in accordance with Items 75 to 77 of Schedule A of the Waste ECA. As-built temporary clay seal grades are detailed on Drawing 1106.

## 3. CQA/CQC INSPECTIONS

### 3.1 General Considerations

Similar to previous CQA/CQC Programs for the Cell 1A Stages 1 and 2, Cell 1B Stages 1 and 2, Cell 2A, Cell 2B, Cell 2C, Cell 2D, Cell 2E, Cell 4A Stages 1 and 2, Cell 4B Stages 1 and 2, Cell 4C, and Cell 6A the CQA/CQC Program for Cell 6B accounted for failing material inspection results in accordance with USEPA recommendations for maximum allowable percentages of outliers due to the variable nature of liner material, as well as part of Items 30 and 31 of Schedule A of the Waste ECA. The USEPA notes that typical deviations range from 5% to 10% depending on the assessment parameter. It is noted that there were no failed inspection results for the compacted clay liner for Cell 6B.



## 3.2 Secondary Liner

### 3.2.1 Basal Uplift Assessment

After excavation of large areas of soil to the top of SL elevation grades along the footprint of Cell 6B, Basal Uplift Assessments were initiated on May 17, May 29, June 2, and June 5, 2023. The survey points were re-measured for vertical and lateral location on May 18, May 30, June 5, and June 6, 2023, respectively. Each timeframe was equal to or greater than the required minimum of 24 hours between surveys.

Survey assessment shots were completed at a frequency of approximately 19 shots per hectare, which is greater than the minimum 5 shots per hectare, per the requirements of the QA/QC Program of Special Provision 22.0, Item 1.0 of Division 4 of the Contract No. 106716U. The frequency of shots taken amounted to approximately 19 shots per hectare, based on a cell floor area of approximately 5.51 hectares.

Each of the 106 survey points showed no indication of Basal Uplift (>30 mm uplift) from initial to the follow-up assessments. The data for each of the survey points for the initial to the follow-up assessments were essentially the same and are representative of minor variances attributed to the instrument and site survey control accuracy. Therefore, the results do not represent an upheaval or subsidence of soil but represent instrument/site control accuracy limitations.

In summary, the Basal Uplift Assessment for the base excavation of Cell 6B was completed as required and there was no indication of Basal Uplift.

Vertical elevations of the top of the SL were of acceptable tolerances (within 30 mm). Survey results are maintained on file. As-built SL surface grades are detailed on Drawing 1102.

### 3.2.2 Unsuitable Material Removal

The floor and the slopes of the SL of Cell 6B were inspected for sand lenses, as well as cobbles in excess of 100 mm in diameter. Unsuitable material (sand) was encountered on the north slope of Cell 6B within the SL. As such this material was removed per the requirements of the QA/QC Program of Special Provision 31.0, item 11.0 of Division 4 of Contract 106716U. Protruding cobbles greater than 100 mm in diameter were removed from the surface of the SL as required. Finish grade of the SL was successfully achieved by grading and smooth drum roller finishing.

## 3.3 Drainage Layers

As detailed in **Section 2.1**, the SDL and the PDL are generally constructed as detailed below.

- Secondary Drainage Layer (SDL), which consists of geonet (geosynthetic grid that has a boxed tri-planer structure with geotextile attached to the top and bottom) across the top of the SL that gravity drains to drainage trenches that are backfilled over the geonet with high density polyethylene (HDPE) pipe embedded in drainage stone overlain with non-woven geotextile fabric.



- Primary Drainage Layer (PDL), which overlays the PL and consists of drainage stone that directs leachate by gravity to HDPE pipes within the drainage stone. Non-woven geotextile fabric is below and above the PDL.

### 3.3.1 Geonet Results

The geonet placed on the top of the SL was manufactured and supplied by GSE Environmental LLC of Houston, Texas, USA. GSE Environmental completed the QA/QC testing on the geonet product, with findings verified by the design engineer (WSP) that indicated that material satisfied or was better than the minimum specifications detailed in the following summary. Laboratory test reports are maintained on file.

#### Geonet Characteristics:

Property	Test Method	Units	Specification
Thickness (Min)	ASTM D 5199	mils (mm)	330 (8.4) $\pm$ 10%
Tensile Strength Ratio (Min)	ASTM D 7179	lbs./in (kN/m)	80 (14)
Density (Range)	ASTM D 792	g/cm <sup>3</sup>	0.94-0.96
Melt Flow Index (Max)	ASTM D 1238	g/10 min	1.0
Carbon Black Content (Range)	ASTM D 4218	%	2-3

#### Geonet Composite Characteristics:

Property	Test Method	Units	Specification
Ply Adhesion (Min)	ASTM D 7005	lbs./in (g/in)	1.0 (454)
Transmissivity (Min)	ASTM D 4716	m <sup>2</sup> /sec	2.0 X 10 <sup>-3</sup> @ 0.1 Gradient

#### Geotextile Characteristics:

Property	Test Method	Units	Specification
CBR Puncture Strength (Min)	ASTM D 6241	N (lbs.)	3,225 (725)
Grab Tensile Strength (Min)	ASTM D 4632	N (lbs.)	900 (202)
Puncture Resistance (Min)	ASTM D 4833	N (lbs.)	500 (112)
Apparent Opening Size (Max)	ASTM D 4751	mm (U.S. Sieve)	0.21 (70)
Trapezoid Tear Strength (Min)	ASTM D 4533	N (lbs.)	350 (79)
UV Resistance (500 hrs.)	ASTM D 4355	%	70%
Mass (Min)	ASTM D 5261	g/m <sup>2</sup> (oz/yd <sup>2</sup> )	350 (10.2)



### 3.3.2 Geonet Placement

The geonet was installed under the direction of Murphy Contracting Ltd. of London, ON (RMC). The geonet rolls were placed on the northern sideslope portion of the SL in a north to south trend. The geonet extended from the top of slope to approximately Site survey-control gridline 0+155S. On the floor of the SL in Cell 6B, the geonet was placed in a south to north trend from approximately Site survey-control gridline 0+398S to 0+101S and between approximately Site survey-control gridline 0+766W to 0+583.6W.

In Cell 6B, the geonet core was zip-tied together as required at 1.5 m (roll length) 0.6 m (roll width) spacing or less with the geonet overlapped approximately 75 to 100 mm along the roll length and approximately 300 mm along the roll width (ends). The geotextile of the geonet was sewn with a two-thread, double-lock stitch typically with a 75 to 100 mm overlap. Areas of geonet that were patched were repaired in general accordance with manufacturer's recommendations. The southern and eastern limit of the geonet were enveloped (0.3 m underside and 0.6 m topside) with geotextile or sewn shut to prevent inward movement of fine soil. As required, the northern limit of geonet was anchored at the top of the northern sideslope to prevent slippage.

The degree of wrinkling was assessed and approved by CQA/CQC personnel prior to coverage of the SDL with the clayey soil of the PL.

In summary, the geonet was placed as required with proper orientation of the length of the rolls being at 45° to the slope trend of the SL (excavation base) floor and the side slope with seams properly overlapped, zip-tied, and sewn.

### 3.3.3 Geotextile Results

The geotextile was manufactured by GSE Environmental LLC of Houston, Texas, USA. Internal QA/QC of the material was completed by GSE Environmental LLC with results that were verified by the design engineer (WSP) to have met or be of superior quality than design specifications, which are detailed below. Laboratory test reports are maintained on file.

#### Geotextile Characteristics:

Property	Test method	Units	Specification
CBR Puncture Strength (Min)	ASTM D 6241	N	3,225
Grab Tensile Strength (Min)	ASTM D 4632	N	900
Puncture Resistance (Min)	ASTM D 4833	N	500
Apparent Opening Size (Max)	ASTM D 4751	mm	0.21
Trapezoid Tear Strength (Min)	ASTM D 4533	N	350
UV Resistance (500 hrs.)	ASTM D 4355	%	70%
Permittivity (Min)	ASTM D 4491	sec <sup>-1</sup>	0.2
Mass Per Unit Area (Min)	ASTM D 5261	g/m <sup>2</sup>	350



### 3.3.4 Geotextile Placement

The geotextile was installed under the direction of RMC. The geotextile was placed above the SDL collection/drainage trenches, below and above the remolded and recompact clayey soil as it was completed as well as above the PDL beginning approximately along the south Site survey-control gridline 0+401S of Cell 6B working toward the approximate north Site survey-control gridline of 0+101S. The geotextile above the SDL collection/drainage trenches was placed in a continuous length beginning at the west limit of Cell 6B to the east limit of Cell 6B, with a west to east trend. In addition, for the SDL collection line trenches, the geotextile was placed over the drainage stone parallel to the trenches for two roll widths to cover the trench top. The geotextile was not placed with an apparent directional trend throughout the base of Cell 6B. The geotextile was sewn with a two-thread, double-lock stitch typically with a 75 mm overlap.

In summary, the geotextile was placed as required with proper orientation of the length of the rolls being at 45° to the slope trend of the SL (excavation base) floor, as well as seams properly overlapped and sewn. The degree of wrinkling was assessed and approved by CQA/CQC personnel prior to coverage of the SDL with the clayey soil of the PL, and coverage of the PL with the drainage stone of the PDL.

The sewn seam strength was completed by CTT Group of Quebec, CAN for each of the geotextile layers (top of SDL, as well as bottom and top of PDL). Test results indicated that sewn seam strength is notably stronger than the required minimum of 90% of the tear strength of the geotextile. Laboratory test reports are maintained on file.

### 3.3.5 Drainage Stone Gradation Results

The drainage stone was supplied by Blythe Dale Sand and Gravel, Embro, ON, CAN (approximately 12,480 m<sup>3</sup>, was on-Site remaining from the 2022 purchase). The QA/QC service for the drainage stone gradation was completed by WSP Golder Associates Ltd. of London, ON, CAN and results were verified to meet or be of superior quality than the design specifications. Laboratory test reports are maintained on file. The gradation results for the drainage stone were better than the minimum project specifications, which in-turn is better than the requirements noted in Condition 7.15 of the Waste ECA. Samples were collected and tested at a frequency of every 2,000 cubic metres, for 13 samples total to date for the stone in the SDL and PDL. Project specifications are noted below.

- D<sub>75</sub> of 37 mm min.
- D<sub>8</sub> of 19 mm min.
- Uniformity coefficient ( $C_u = D_{60}/D_{10}$ ) of 1.8 max.
- 0.8% of the material was finer than the 0.075 mm particle size (i.e. passing the #200 sieve).



### **3.3.6 Drainage Stone Placement**

The drainage stone was placed by RMC in accordance to design requirements, which satisfy and were better than noted in Conditions 7.16 and 7.17 of the Waste ECA. Continuous supervision by CQA/CQC personnel noted that approximately 50 mm of drainage stone was placed below, and 300 mm of drainage stone was placed above, the HDPE collection pipes in the SDL and PDL.

The drainage stone was protected from clay contamination from vehicle tracking during placement. As the drainage stone was being placed, the drainage stone was visually inspected for particle crushing/cracking that could be attributed to construction practice. No evidence of significant crushing/cracking of concern was observed.

In summary, the drainage stone was placed as required. As-built drawings for the SDL and PDL are appended as Drawings 1103 and 1105, respectively.

### **3.3.7 HDPE Collector Pipe Characteristics**

The HDPE collector pipes were installed by RMC as required for both the SDL and PDL. The HDPE pipe was 250 mm diameter dimension ratio 6 (DR6) product. The collector pipe across the base of the SDL and PDL was factory perforated. Perforations were orientated in accordance to Condition 7.14 of the Waste ECA and have the following characteristics.

- 19 mm diameter perforations.
- Perforations at 45°, 135°, 225°, and 315°; with minor deviations due to pipe rotation during manufacturing.
- Perforations spaced at 300 mm intervals.

### **3.3.8 HDPE Collector Pipe Placement**

The HDPE collector pipes were heat-fusion welded and dragged into place. The connection of the pipes between Cell 6A and Cell 6B were completed with the existing sleeve-fit connection after removal of the Leachate Collector Temporary Cleanouts installed in 2022. The connection of the pipes between Cell 6B and Cell 6C will be completed with a sleeve-fit connection, as presented in the Leachate Collector Temporary Cleanout Detail on Drawing 807 of the 2023 Tender. Temporary Cleanouts were installed during construction of the temporary clayey soil seal along the eastern limit of the Cell 6B Liner System and will be removed during the future Cell 6C construction where the Cell 6B and Cell 6C connection will be completed. Pipes were placed with the required drainage stone below/above them as noted in the Landfill Base with Geonet Detail on Drawing 807 of the 2023 Tender. The slope of the pipes, along the floor component of the SDL and PDL, was verified to be approximately 0.6%.

The stainless-steel pull cable, to facilitate closed-circuit television (CCTV) access, was installed in each HDPE pipe for each the SDL and PDL, as required.





### 3.4 Clayey Soil Borrow Material

Clayey silt to silty clay that was used to construct the PL of Cell 6B was excavated from the borrow area of Cell 6A during 2022 construction activities. Laboratory test reports are maintained on file.

#### 2022 (Stockpile 8):

Parameter	Average Test Result	Test Result Range
Atterberg Limits	$W_L$ : 40%, $W_P$ : 20%; $I_P$ : 20%	$W_L$ : 34 to 47%, $W_P$ : 15 to 23%, $I_P$ : 15 to 27%
Particle Size Distribution	Clay: 40%, Silt: 56%, Sand: 4%, Gravel: 0%	Clay: 26 to 46%, Silt: 48 to 66%, Sand: 1 to 8%, Gravel: 0 to 1%
Hydraulic Conductivity	$2.9 \times 10^{-8}$ cm/s	$1.4$ to $4.3 \times 10^{-8}$ cm/s
Compaction Curve	SPMDD: 1,652 kg/m <sup>3</sup> Optimum Moisture: 19%	SPMDD: 1,607 to 1,681 kg/m <sup>3</sup> Optimum Moisture: 17 to 21%
Water Content	20%	17 to 23%

The aforementioned listed information is based on the 2022 borrow area sampling programs, which were carried out at the frequencies as noted below.

Description	Frequency
Atterberg Limits, Particle Size Distribution and Compaction Curve	1 test per 5,000 m <sup>3</sup>
Hydraulic Conductivity	1 test per 10,000 m <sup>3</sup>
Water Content	1 test per 2,000 m <sup>3</sup>

### 3.5 Remoulded & Compacted Clayey Soil Liner

The PL was continuously inspected by CQA/CQC personnel during placement. Key inspection activities included the following tasks.

- Pre-processing activities of the liner soil in the borrow material pile.
- Oversight of loose lift placement.
- Liner soil quality.
- Compaction methodology and testing.

#### 3.5.1 Pre-processing Activities of the Liner Soil

The select clayey liner soil in the borrow material pile required the addition of water to meet the required 1 to 3% greater than optimum moisture content range (see moisture and compaction details in Section 3.4).



Water was added as part of liner soil conditioning to the liner borrow material pile through water truck hauling from either the four sedimentation ponds around Site, the temporary stormwater storage area located north of Cell 4C, as well as the SDL of Cell 4 (Pumping Station 6) and Cell 6 (Pumping Station 8). This addition of water facilitated hydration and created an overall uniform product within the liner borrow material pile. Prior to loading and trucking clayey liner soil material to be placed in loose lifts for Cell 6B construction, the clayey liner soil material was then marginally hydrated to adjust for factors such as weather and any inconsistent pockets of clayey liner soil material that were encountered.

When encountered, cobbles greater than 100 mm in diameter were removed from the liner soil before the liner soil was transferred for PL construction.

### **3.5.2 Loose Lift Placement**

Loose lifts were inspected during placement to verify that cobbles greater than 100 mm in diameter were not present in the soil. Where encountered, cobbles greater than 100 mm were removed prior to soil compaction. Also, inspections were completed to make sure that dry soil clods greater than 100 mm were not present. Lifts were also surveyed to make sure they were not placed too thick to inhibit proper lift to lift kneading during compaction.

Loose lifts were placed by dozers. Off-road trucks end-dumped the liner soil at the edge of the cell at select locations and then the dozers spread the soil at the required thickness for each lift. Loose lifts were placed from the north, east, and west boundaries of Cell 6B. The underlying geonet and geotextile were observed during placement activities and were noted to not slip or roll (wave) unacceptably along the floor.

Loose lifts were placed at approximately 150 mm thick and compacted to 100 mm thick. One exception was for the first loose lift, which was placed at 300 mm thick and compacted to approximately 200 mm. The thicker first lift is placed to prevent damage to the underlying SDL from the feet of the sheepsfoot compactor. It is noted the first and last lift of soil liners are classified as sacrificial lifts to serve as protection lifts to the inner lifts of the constructed liner.

Subsequent lifts were not placed until the underlying lift was approved by CQA/CQC personnel such that an adequate lift was constructed and that proper lift to lift kneading would occur. Where a leading edge of a completed section of liner was connected to a new section of liner, the connection was completed in a stair-step fashion, with each step length approximately 3-times the compacted lift height.

At the connection of Cell 4B to Cell 6B, the liner of Cell 6B was stair stepped/extended up and into the northern limit of the liner of Cell 4B. See Section C on Drawing 806 of the 2023 Tender for cross-section details for this connection.



### 3.5.3 Liner Soil Quality

The clayey soil liner material was also assessed during loose lift placement for select geotechnical quality components to verify the findings from the borrow material sampling program detailed in **Section 3.4**. Sample parameter and frequencies are noted below.

Parameter (ASTM Reference Method)	Test Frequency
<b>Atterberg Limits (ASTM D-4318)</b>	1 test per 800 m <sup>3</sup>
<b>Particle Size Distribution (ASTM D-422)</b>	1 test per 800 m <sup>3</sup>
<b>Water Content (ASTM D-2216, D-4643)</b>	1 test per 800 m <sup>3</sup>
<b>Compaction Curve (ASTM D-698)</b>	1 test per 5,000 m <sup>3</sup>

Considering the aforementioned sampling program, summarized below are the select geotechnical quality results for the clayey soil material used to construct the PL for Cell 6B.

Parameter	Average Test Result	Test Result Range
<b>Atterberg Limits</b>	$W_L$ : 44%, $W_p$ : 21%, $I_p$ : 24%	$W_L$ : 40 to 50%, $W_p$ : 19 to 23%, $I_p$ : 19 to 29%
<b>Particle Size Distribution</b>	Clay 42%, Silt 54%, Sand 4%, Gravel: 0%	Clay: 34 to 46%, Silt: 50 to 62%, Sand: 1 to 6%, Gravel: 0 to 3%
<b>Water Content</b>	24.2%	19.4 to 26.4%
<b>Compaction Curve</b>	SPMDD: 1,673 kg/m <sup>3</sup> Optimum Moisture: 19.7 %	SPMDD: 1,647 to 1,696 kg/m <sup>3</sup> Optimum Moisture: 18.2 to 20.8%

In summary, the soil quality sampling program for the PL for Cell 6B noted that the material was suitable for use in construction of a liner. Furthermore, the results were generally consistent with the borrow material sampling findings for 2022. The average standard Proctor value for the 2023 Cell 6B samples was slightly greater than the 2022 Stockpile 7 borrow material value. A target Proctor value of 1660 kg/m<sup>3</sup> and associated moisture of 19% were used as the targets for the 2023 compacted liner. The target value of 1660 kg/m<sup>3</sup> was selected as it was consistent with the target value used in 2022 for Cell 6A construction, and slightly greater than the average of 1652 kg/m<sup>3</sup> from the laboratory determined Proctor values from Stockpile 8. The average value for the 2023 Cell 6B samples was slightly higher than the 2023 target value of 1660 kg/m<sup>3</sup>. The 2022 and 2023 standard Proctor and moisture values are well within the historical range for the liner material for the Expansion Site (2009 to 2023). Laboratory test reports are maintained on file.



### 3.5.4 Compaction Methodology & Results

As discussed in **Section 3.5.2**, the liner is constructed in loose lifts, and then compacted. Compaction typically kneads the full loose lift thickness, as well as compresses the loose lift by 33% in thickness. The PL is a minimum of 800 mm thick, therefore, with a first compacted lift of 200 mm thick and subsequent lifts compacted to 100 mm thick, for a total of 7 lifts. Each lift was surveyed for thickness control, with less than 5% of the elevations deviating by more than the 30 mm tolerance. Loose lifts were compacted with a sheepsfoot compactor with 100 mm long feet. Each lift was assessed for the required number of compactor passes (six passes) over a given location at a minimum frequency of three times per lift per hectare. Full sheepsfoot penetration was noted, as well as the drum roll depressed into the lift by another approximately 10 to 20 mm. Through these two observations it was concluded that each lift was kneaded into the underlying lift.

The PL was constructed in a continuous fashion to prevent desiccation to underlying lifts. The final lift was left slightly high (thicker), such that if desiccation were to occur it would be confined in this additional material and the upper sacrificial lift (lift 7) of the liner. Where a lift would be left overnight, the lift was inspected for proper moisture before the subsequent lift was added over top. If a lift was left exposed for longer than 24 hours (over weekends) the material was hydrated at a frequency such that the lift did not desiccate (more frequent during dry hot days, less frequent during cool cloudy days). Where a lift, or lifts, were unsuitable (too dry or too wet) this material was removed and replaced with new properly conditioned liner material per the above-noted methodology and in a stair-step fashion as detailed in **Section 3.5.2** for each leading face.

No areas of ponded water were present on the surface of a lift prior to subsequent lift placement. Where ponded water occurred, the undesirable material was pushed to the edge of the liner limit until it dried sufficiently to be used in construction.

Infield CQA/CQC testing of the PL was generally performed in a spatially representative manner across each lift of the liner floor and side wall, as determined by the field personnel.

Parameter (ASTM reference method)	Test Frequency
<b>Rapid Density and Water Content Tests (ASTM D-2922)</b>	13 tests per hectare per lift
<b>Water Content Test (ASTM D-2216)</b>	2 tests per hectare per lift
<b>Density Test (ASTM D-2167)</b>	1 test per hectare per lift

As discussed, the clayey soil liner material was compacted to a minimum of 98% of the standard Proctor maximum dry density (SPMDD) at 1 to 3% above optimum moisture content. As discussed, the target standard Proctor density of 1660 kg/m<sup>3</sup> was used during clay compaction for Cell 6B, as this was consistent with the target Proctor for the 2022 Cell 6A liner, and slightly higher than the 2022 average of 1652 kg/m<sup>3</sup> for the Stockpile 8 borrow stockpile. The 2023 target optimum moisture value of 19% was used for the target moisture based on the 2022 target value for Cell 6A. In situ testing of compaction was completed using a nuclear densitometer, and the density and water content results, as measured in the field, are summarized below for the 525 compaction tests taken for Cell 6B. It is noted that this is 23 more tests than the required quantity for Cell 6B (502 tests required).



Parameter	Measured Dry Density (kg/m <sup>3</sup> )	Measured Moisture (%)	Compaction (%)
Average	1,652	21	99
Maximum	1,720	22	100+
Minimum	1,627	20	98

Water content tests (ASTM D-2216) and density tests (ASTM D-2167) were completed as required for both the as-placed liner material and for the borrow piles. Laboratory results for 2023 were consistent and within the historical range for the 2022 laboratory results for the borrow area.

The rapid field density and water content tests obtained with the nuclear densiometer were relatively reflective of the 2022 laboratory results for the borrow area and are therefore, accurate as collected and are representative of actual conditions. The 2022 and 2023 standard Proctor and moisture values are well within the historical range for the liner material for the Expansion Site (2009 to 2023). As discussed in **Section 3.1**, where the target field compaction and/or moisture readings indicated rework of the liner was required, the rework was verified to meet the desired specifications.

In summary, the above field testing indicated that the liner soil was constructed at the acceptable compaction and moisture content for optimum placement. As-built PL surface grades are detailed on Drawing 1104.

### 3.6 Hydraulic Conductivity

The fundamental evaluation of the overall effectiveness of a clayey soil liner to contain liquid is to complete hydraulic conductivity testing. The hydraulic conductivity testing results of the Cell 6B clayey soil liner verified that the compaction and moisture of the soil during placement were at the ideal relationship to prevent micro-scale features (fractures and void spaces), which would facilitate liquid movement. Therefore, the liner of Cell 6B will effectively contain liquid.

The required design hydraulic conductivity for the liner is a maximum of  $5.0 \times 10^{-8}$  cm/sec. This is to be assessed via collecting undisturbed samples using Shelby tube samples inserted into the constructed clayey liner and performing laboratory hydraulic conductivity testing (ASTM D1857 and D-5084) at a rate of two times per hectare of finished liner.

A total of twelve (12) Shelby tube samples were collected from Cell 6B, which satisfied the required testing frequency. Laboratory hydraulic conductivity results ranged from  $1.2 \times 10^{-8}$  to  $3.3 \times 10^{-8}$  cm/sec, with an average of  $1.9 \times 10^{-8}$  cm/sec.

In summary, each of the hydraulic conductivity tests of the PL of Cell 6B satisfied and were below the design requirement of a maximum of  $5.0 \times 10^{-8}$  cm/sec.



Mr. Wayne Jenken  
Waste Management of Canada Corporation  
RWDI#2303907.01  
October 23, 2024

## 4. CLOSURE

In closure we note that Liner System for Cell 6B was constructed in conformance with relevant documents with acceptable CQA/CQC results. Therefore, Cell 6B is acceptable for receipt of waste.

We trust that this CQA/CQC Cell 6B Liner System Summary Report is sufficient for your needs. Please contact is with any questions that you may have.

Yours very truly,

Prepared By:

**RWDI AIR Inc.**

Brent J. Langille, B.Sc., P.Geo.  
Senior Technical Director | Principal  
T: 519-567-0205

Reviewed By:

**GHD Limited**

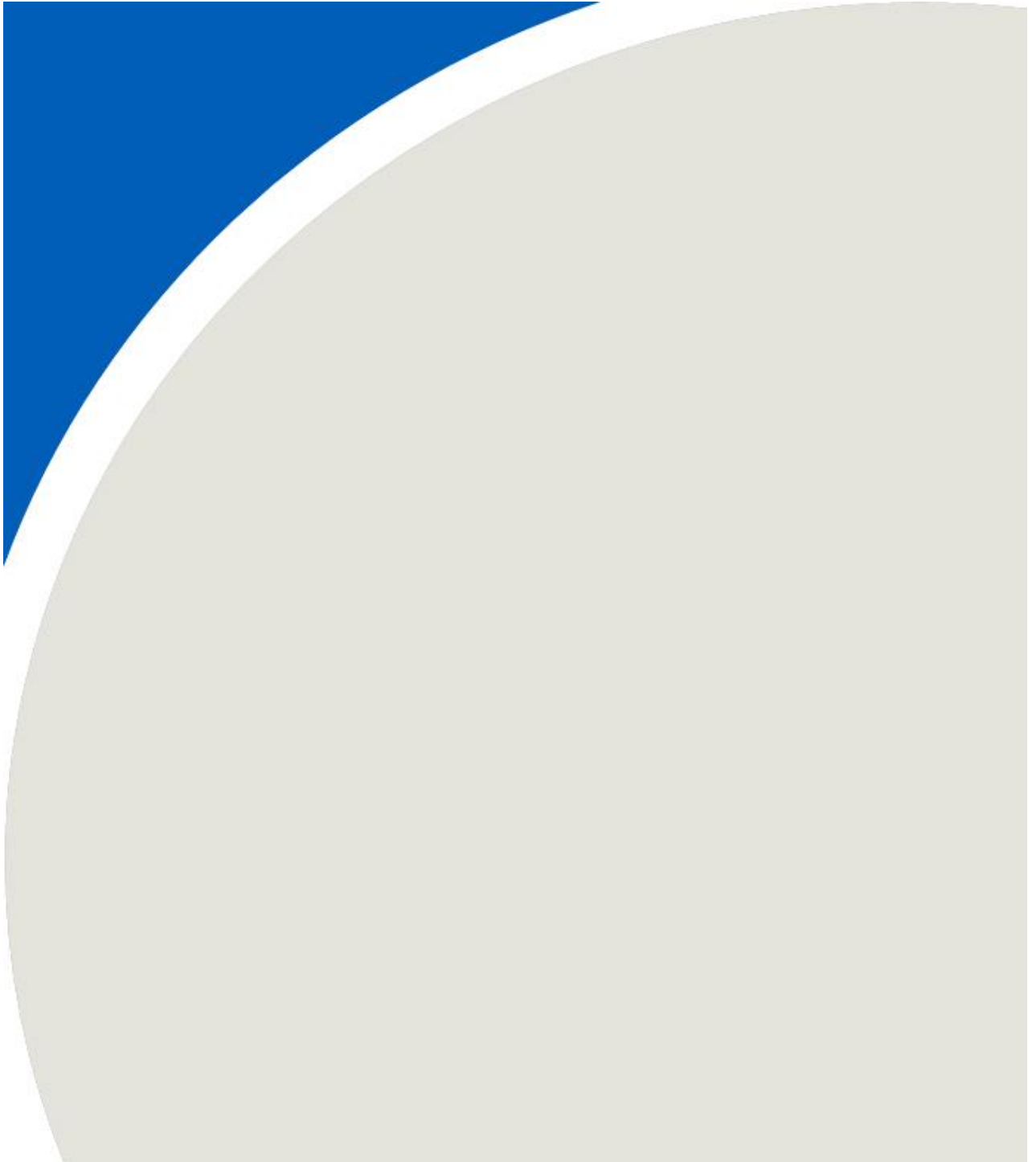
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Environmental Engineer | Geoscience  
T: 226-962-6139

**Attachments:** Drawings 1102 to 1106

**CC:** John McDonald – WM  
Angela McLachlan – WM  
Isabel Rodriguez – WM  
Cristina Olarte – WSP  
Bahar Aminvaziri – MECP  
Marcelina Wilson – MECP  
Mohsen Keyvani – MECP  
Amanda Seaman – MECP

## ATTACHMENTS



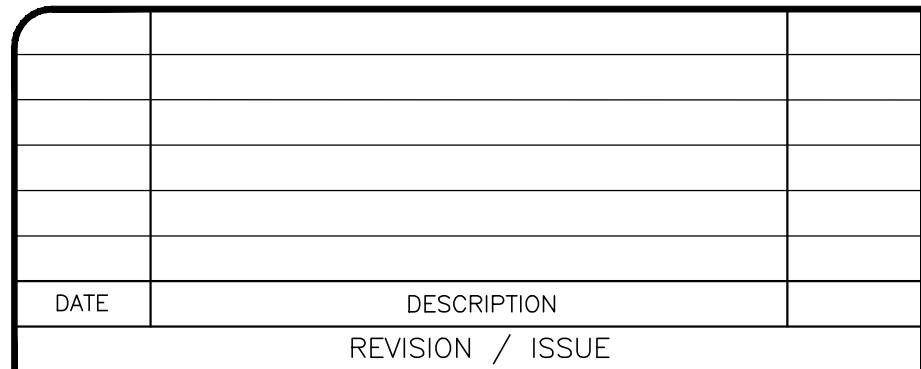












Seal not valid unless signed &amp; dated











## APPENDIX M:

Monitoring Well and Gas Probe Status



Groundwater monitoring well OW40D-4 was decommissioned and replacement groundwater monitoring well OW40E-4 was installed at the Site in 2024.

## APPENDIX N:

MECP Field Inspection Reports & Response Letters



## APPENDIX N:

MECP Semi-Annual Inspection Report (October 2023 - Feb 2024) -  
No. 1-283095313







TWIN CREEKS ENVIRONMENTAL CENTRE  
Physical Address: 5768 NAUVOO RD, , WARWICK,  
ON N0M 2S0

## INSPECTION REPORT

Entity: WASTE MANAGEMENT OF  
CANADA CORPORATION  
Inspection Start Date: October 01, 2023  
Site Inspection Date: February 28, 2024  
Inspection End Date: February 29, 2024  
Inspected By: Amanda Seaman  
Badge #: 2129

*Amanda Seaman*

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(signature)

## INTRODUCTION

### Purpose

Ontario has a comprehensive legislative and regulatory framework to ensure that wastes are managed in an environmentally safe manner. Through the Environmental Protection Act (EPA) and accompanying regulations, the Ministry of the Environment, Conservation and Parks (the Ministry) has established a cradle to grave management system, which governs the collection, storage, transportation, and disposal of waste.

The Ministry issues Environmental Compliance Approvals (ECA) under the EPA for landfill sites that dispose of solid non-hazardous wastes. The ECA imposes conditions related to development and operation of the site, and includes monitoring requirements, etc. To confirm whether the regulated community is complying with the requirements related to the waste disposal activities, the Ministry is committed to conducting proactive inspections of waste sites. With that aim in mind, Ministry staff conducted an inspection of the Twin Creeks Environmental Centre (Site) in Warwick Township as part of the Sarnia District Office's 2023/24 inspection program.

The Site is approved to accept municipal, industrial, commercial, and institutional solid nonhazardous waste generated within the Province of Ontario, including non-hazardous contaminated soils under ECA Number A032203, dated February 4, 2023. The Site is owned and operated by Waste Management of Canada Corporation (Company).

## NON-COMPLIANCE

The following item(s) have been identified as non-compliance, based on a "No" response captured for a legislative question(s). For additional information on each question see the Inspection Details section of the report.

**Ministry Program:** WASTE | **Regulated Activity:** Landfills

Item	Question	Compliance Response/Corrective Action(s)
NC-1	<p><b>Question ID:</b> 949100</p> <p>Were the inspection questions sufficient to address other identified non-compliance items?</p>	<p>The following instance of non-compliance was noted during the inspection:</p> <ul style="list-style-type: none"> <li>- Condition 6.47 of ECA A032203 states that at the end of each working day, the entire working face shall be covered with a minimum thickness of 150mm of soil or an approved alternative cover material.</li> <li>- During the inspection the Ministry found the active face on Cell 4 not properly covered. There were several areas near the tippers that were not adequately covered, and the truck clean out area was left uncovered. Cover materials were observed to be stockpiled nearby, but had not been applied the to this area at the end of the working day on February 28, 2024.</li> </ul> <p>Please also find attached a NOTICE OF VIOLATION for failure to comply with a Condition of the ECA. Specifically, failure to apply daily cover as outlined in the ECA.</p>

## **RECOMMENDATIONS**

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program:** WASTE | **Regulated Activity:** Landfills

Question ID	NOL 1	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the Open landfill site have an Environmental Compliance Approval (ECA)?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Landfill sites require an Environmental Compliance Approval (ECA) issued by the Ministry under the Environmental Protection Act in order to dispose of waste in Ontario. An ECA imposes conditions related to development, operation, and closure of the site. In order to assess compliance with these requirements, the Ministry is committed to conducting proactive inspections of waste disposal sites.  As part of the Sarnia District Office's 2023/24 inspection program, an inspection was conducted at the Twin Creeks Environmental Centre (the Site/Facility) in Warwick Township, which is owned and operated by Waste Management of Canada Corporation (the Company).  The focus of this inspection was to assess the Company's operation of the Site against the terms and conditions of its Ministry approvals and with the requirements of applicable environmental legislation, regulations, and guidelines.  This inspection report includes a summary of the weekly inspections that took place between October 1, 2023, and February 29, 2024. All weekly reports during this time were sent to the Company. For specific details on each inspection, see the weekly reports.  The Site has the following Ministry approvals:  WASTE DISPOSAL SITE: ECA No. A032203, dated December 16, 2023 - For the use and operation of a 101.8-hectare landfilling area with a total site area of 301 hectares, accepting only municipal, industrial, commercial, institutional solid non-hazardous waste generated within Ontario, including non-haz contaminated soil. The site is approved to receive 1,400,000 tonnes per year.  AIR ECA No. 6318-CX4NFX, dated December 13, 2023 Approved to install and operate:			

- six enclosed flare systems;
- emergency diesel generators to provide back-up power as needed;
- a 50kW diesel generator to provide regular power to the south fill area leachate pumping system; and- exhaust fans, exhaust louvres, and aeration tanks exhausting to the atmosphere from the leachate treatment facility and one leachate treatment facility laboratory.
- infrastructure for the Renewable Natural Gas Plant including one pre-treatment thermal oxidizer, one main thermal oxide, one amine reboiler and two RNG (Renewable Natural Gas) plant condensate tanks with carbon drum filters.

INDUSTRIAL SEWAGE ECA No. 2403-BE6LZ4, dated August 21, 2019

- Issued for the establishment of a leachate collection, treatment, and disposal facility as well as a stormwater management facility to service the Site.

PERMIT TO TAKE WATER (PTTW) No. 4682-BLJRYJ, dated November 8, 2021

Issued for dewatering at the Site and industrial activities such as road watering to reduce dust. On- Site water taking locations include:

- stormwater management ponds 1, 2, 3, and 4
- secondary drainage layer (SDL)
- four pumping stations, PS2, PS4, PS6, PS8.

Question ID	NOL 2	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is this landfill on Crown land?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 3	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   3;			
<b>Question:</b> Does the holder of the landfill ECA own the entire site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 4	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill have a Contaminant Attenuation Zone (CAZ)?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 12	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a large enough Buffer Area as specified in the ECA or Regulation 232/98?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 13	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are access roads and on-site roads provided so that vehicles hauling waste to and on the site may travel readily on any day under all normal weather conditions?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Access to and exit from the Site for the transportation of waste is permitted from Country Road 79 (Nauvoo Road).  There are both paved and unpaved access roads on site. Typically, unpaved roads are made of material that would allow for vehicles hauling waste on site to readily travel unhindered in normal weather conditions as per ECA condition 6.31a&b.			



Question ID	NOL 14	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access limited to times when an attendant is on duty?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  An attendant is always on duty at the Site during operating hours.  During non-operating hours, the Site entrance and exit gates are locked. Site access is secured against access by unauthorized persons as per Condition 6.28 of the ECA.			

Question ID	NOL 15	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the site only receive waste from within its approved service area?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Facility only receives waste generated in the Province of Ontario as per Condition 6.4 and 6.7 of the ECA.  The Site is approved for the use and operation of a 101.8-hectare landfilling area with a total Site area of 301 hectares. During the inspection period the Company deposited waste in Cells 6A, 4A, 4B & 4C of the Expansion Site. All waste is being deposited within the approved landfill footprint, Condition 6.6 of ECA No. A032203 authorizes the Company to receive up to a maximum of 1,400,000 tonnes of waste per year (including contaminated soil) for disposal at the Site.  According to the tonnage reports provided by the Company, monthly totals since October 2023 are as follows:  October 2023 – 93,345.95 tonnes November 2023 – 91,507.15 tonnes December 2023 – 90,327.15 tonnes January 2024 – 99,106.16 tonnes			

February 2024 – 92,907.72 tonnes

The total tonnage for 2023 was 1,399,049.86 tonnes. From the beginning of 2024 to the end of February the Company has received 192,013.88 tonnes.

Question ID	NOL 16	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a ground water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The following Site-specific approvals outline the requirements for groundwater monitoring:  - Industrial Sewage ECA No. 2403-BE6LZ4: Specifies operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, and treated effluent storage pond monitoring programs.  - Waste Disposal Site ECA No. A032203: Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A".  Groundwater monitoring is completed semi-annually in the spring and fall as per the EMP.  No alterations can be made to the program unless prior approval has been given by the District Manager.			

Question ID	NOL 17	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the groundwater monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company documents the results of the required monitoring programs in quarterly and annual monitoring reports which are routinely reviewed by the Ministry for compliance			

purposes.

The 2023 Third Quarter ("Q3") Monitoring Report and the 2023 Fourth Quarter/Annual ("Q4") Monitoring Report have been submitted to the Ministry. The Q3 and Q4 reporting periods reflect all monitoring completed by the Facility between July 1, 2023 and December 31, 2023. The Annual Monitoring report includes all of the monitoring for 2023.

According to the report, the Company is implementing the monitoring program as required by the ECA

Question ID	NOL 18	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   25;			
<b>Question:</b> Are monitoring well samples taken and tested to determine the quality of the ground water?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  According to the Annual Report, the fall semi-annual monitoring event, groundwater sampling was completed from November 1 to 3, and November 13, 2023. The analytical results of the groundwater monitoring wells generally satisfied the relevant trigger concentrations with exception of nitrate at both OW67-4 and OW84-31.  For the groundwater sample collected at monitoring station OW67-4, the concentration of nitrate (<5.0 mg/L) was greater than the trigger concentration of 2.3 mg/L. For the groundwater sample collected at monitoring station OW84-31, the concentration of nitrate (6.22 mg/L) was greater than the trigger concentration of 2.3 mg/L. Verification monitoring took place at groundwater monitoring stations OW67-4 and OW84-31 and confirmed the results of the first samples taken.  According to the Annual Report, groundwater monitoring station OW84-31 collects background samples as it is positioned upgradient of the Site so the elevated nitrate levels are not attributed to landfilling activities.  The Ministry's Technical Support Section will be reviewing the Annual Report as it relates to the OW67-4 groundwater monitoring results.			

Question ID	NOL 19	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with the results of the samples that have been tested?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

No

Question ID	NOL 21	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage leachate by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
<p>The Site is required to manage leachate in accordance with the Industrial Sewage ECA No. 2403- BE6LZ4 and Waste ECA No. A032203.</p> <p>Leachate Collection - Existing Site: This consists of:</p> <ul style="list-style-type: none"> <li>- Three finger drains in the South Fill Area;</li> <li>- Pumping sump in the West Central Cell near monitoring station OW-29;</li> <li>- Two parallel waste underdrains in Cell 3S (north of the South Fill Area); and</li> <li>- Waste underdrains in the Northern part of Cell 5 and in Cells 4, 6, 7, 8, 9, 10 and 11. The waste under-drains direct leachate to a perimeter collection system which is then automatically pumped to the leachate equalization tank.</li> </ul> <p>Leachate Collection - Expansion Site: A leachate collection system has been installed in Cell 1, Cell 2, Cell 4, and Cell 6A. The leachate level in the primary drainage layer of these cells is currently controlled by automated Pump Station 1 (PS1), Pump Station 3 (PS3), Pump Station 5 (PS5) , and Pump Station 7 (PS7). Leachate is transferred from the Primary Drainage Layer (PDL) to the leachate equalization tank. The Secondary Drainage Layer (SDL) is controlled by PS2, PS4, and PS6. The trigger for implementation of groundwater contingency measures for the Expansion Site is the loss of hydraulic containment. This occurs when leachate levels within the PDL are higher than the surrounding groundwater elevations.</p> <p>Poplar Tree Leachate Irrigation System: The Company has established a drip irrigation system which supplies leachate to a stand of poplar trees, known as the Poplar System ("PS"). The poplars are located on top of a portion of the existing landfill and have been operable since September 27, 2017. The PS is only utilized on a seasonal basis when the trees can actively uptake the leachate. There are a number of monitoring requirements under Condition 8.7 of ECA No. A032203 related to the PS including soil monitoring, visual assessments, leachate monitoring, tree tissue monitoring and surface water monitoring.</p>			

**Off-Site Leachate Disposal:**

The remaining leachate produced from both the existing and expansion site is hauled off-Site for treatment and disposal at the Chatham Water Pollution Control Plant in Ontario.

According to reports provided by the Company, the following was shipped offsite since October 2023:

October 2023 – 5,282.06 mt

November 2023 – 5,6210.01 mt

December 2023 – 4,719.10 mt

January 2024 – 5,094.56 mt

February 2024 – 5,134.17 mt

Question ID	NOL 22	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill implementing the procedures required by the ECA to manage leachate?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Existing Site:  Leachate liquid levels are monitored semi-annually in May and November for the Existing Site.  Overall, hydraulic containment of the leachate in the Existing Site was generally maintained, with some exceptions as described in the annual report. Acceptable groundwater and surface water quality were noted around the existing site during this reporting period. No leachate seeps were reported during this reporting period in the existing site.  Over the long term, leachate levels are expected to decrease in the Existing Site since it is capped, and leachate is extracted for poplar system irrigation and off-Site disposal. In the annual report, it is concluded that continued leachate level monitoring is required to ensure leachate is managed effectively in consideration of the destination target (onsite vs off site treatments).  Expansion Site:  For the Expansion Site ECA No. A032203 condition 7.18 requires that a hydraulic trap be developed and maintained beneath the expansion area and that the leachate head on the landfill liner does not exceed 300 mm. Condition 14.1 also requires additional groundwater level monitoring if the leachate level elevation in any of the following pumping station well rise			

above their respective trigger level:

PS1 - 232.7 mASL

PS3 - 232.6 mASL

PS5 - 232.8 mASL

PS7 - 233.4 mASL

According to the Company's Annual Report the leachate levels in PS1, PS3, and PS5 and PS7 generally remained below their respective trigger leachate elevations with the exception of PS3 during a few time periods between November and December 2023, where the leachate elevation slightly exceeded the 0.3 m of head by values ranging from 0.02 m to 0.26 m. PS7 was above its respective trigger level between July and December 2023, where the leachate elevation exceed the 0.3 m of head by values ranging from 0.08 m to 1.24 m. This has been attributed to the significant amount of precipitation received in 2023 and PS7 can also be attributed to the infiltration potential of Cell 6A.

RWDI reported during 2023 leachate elevations within Cell 1, 2, 4 & 6A of the expansion site were below the historical groundwater elevation confirming the hydraulic trap was maintained as per condition 14.1.

The Company reported one leachate seep during this reporting period in the expansion site. The Company observed a small leachate seep on the morning of February 13, 2024 and informed the Ministry during the February 13, 2024 inspection. The seep was located on Cell 2, the Company removed the soil where the seep occurred and cleaned the area. The Ministry observed the seep being re-capped it with clay during the inspection and did not observed any additional seeping. All seeps were repaired by the Company and there were no offsite impacts reported.

During this reporting period the leachate levels in the storage tank were higher than normal but this was attributed to the large amount of precipitation received during 2023. The Ministry continues to monitor the leachate levels on-site and is working with the Company through ongoing discussions to ensure proper leachate management. The Company is encouraged to continue to explore options to bring the leachate levels down at the Site.

Question ID	NOL 24	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with the leachate quality?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 26	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage landfill gas by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Gas produced by the landfill is managed by the on-Site gas collection and flaring system. A portion of this gas is conveyed from the landfill to a neighboring property, where it is converted and used for building heat for a large greenhouse on an as-needed basis during the colder seasons. The remaining gas is sent to one of the two existing flares on-site. The Company is currently constructing a Renewable Natural Gas Plant which will convert the captured landfill gas from the Site into pipeline quality gas for injection to the commercial gas transmission and distribution network.  Waste ECA No. A032203: - Condition 7.10 and 13.6 requires the gas control system to be managed and monitored as specified in the D&O Report and the EMP. - Condition 14.8 states that if landfill gas concentrations exceed 10% LEL (Lower Explosive Limit) during monitoring, the Company is to undertake additional monitoring to determine if the elevated levels are landfill related. - The Company must report all landfill gas monitoring to the Ministry on a quarterly and annual basis.  Air ECA No. 6318-CX4NFX: - Describes the notifications, operation, maintenance, performance, and record keeping requirements for the flaring system and the RNG plant.			

Question ID	NOL 27	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the landfill gas management requirements in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Landfill gas monitoring is completed monthly from November to April and in July at gas monitoring probes GP1A to GP10. Gas probes GP9 and GP10, were installed in late June 2022 in accordance with their respective stages of landfill construction as presented in Table 2 of the landfill EMP.  According to the 2023 Annual Report submitted by RWDI methane gas was not detected at			



the established gas probes GP1A to GP10 during 2023.

Total Hydrocarbon (THC) capped surface monitoring is conducted in the spring and fall in accordance with the Ambient Air Quality Monitoring Plan (AAQMP), required by Condition 13.8 of ECA No. A032203. It consists of a walk-over survey of the final capped landfill area using a handheld THC analyzer. Elevated THC concentrations are indicators of the escape of possible landfill gas in certain areas. There were no detected exceedances in 2023, meaning there were no THC concentrations measured at 500 ppm or greater.

The temperatures of the flares are checked during the unannounced weekly inspections to ensure they are operating above 875 degrees Celsius. During this reporting period when in operation, Flare 1 and Flare 2 were observed operating above 875 degrees Celsius according to the SCADA system on all occasions except for Flare 1 during the January 30, 2024 inspection. During the inspection the Company stated that an operator hit a landfill gas well and the vacuum line popped off which introduced an oxygen bubble into the collection system causing the decrease in temperature. The temperature was below the compliance limit for approximately 45 minutes, no off-site odours were observed and no complaints were received by the Company or the Ministry during this time.

During the January 15, 2023 inspection, the Ministry observed a landfill gas collection system well head with significant ice build up, which according to the Company, signifies that the well head is leaking. The Company had identified the problem which was that it was leaking from the Fernco and the condensate was running down the casing. The Company had the well head re-sealed by the end of January 15, 2023. No off-site odours were observed, and no complaints were received by the Company or the Ministry during this time.

Question ID	NOL 29	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with landfill gas at this site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 31	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a surface water monitoring program by the ECA?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The following Site-specific approvals outline the requirements for surface water monitoring:

- Industrial Sewage ECA No. 2403-BE6LZ4:

Specifies operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, and treated effluent storage pond monitoring programs.

- Waste Disposal Site ECA No. A032203:

Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A". Surface water will also be evaluated as per Item 91 of Schedule "A".

The Company conducts quarterly surface water monitoring following precipitation events of greater than 10 mm in a 24-hour period.

Question ID	NOL 32	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the surface water monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Following precipitation events of greater than 10 mm in a 24-hour period, routine surface water samples were collected during Q3 at monitoring stations SS1, SP1, SP2, SP3 and SP4 and SS10. Samples were not collected at SS16 due to there not being flowing conditions. Routine surface water samples were collected during Q4 at monitoring stations SS1, SS10, SS16, SP1 SP2, SP3, and SP4. Monitoring station SS19 was not monitored since the compost facility is not yet constructed.  The routine quarterly surface water monitoring results satisfied the relevant trigger concentrations in Q3 and Q4, with two (2) exceptions in Q3 at monitoring stations SS1 and SP2. For the surface water sample collected at compliance monitoring station SS1, the concentrations of total boron (0.3 mg/L), total nickel (0.25mg/L), total chromium (0.17 mg/L), and total zinc (0.4 mg/L), were greater than their respective trigger concentrations of 0.20 mg/L, 0.027 mg/L, 0.024 mg/L, and 0.06 mg/L. For the surface water sample collected at compliance monitoring station SP2, the concentration of total boron (0.26 mg/L) was greater than its trigger concentration (0.20 mg/L). It is important to note that verification results indicated acceptable chemical and biological results for each trigger level			

exceedance therefore no further verification monitoring was required.

According to the Annual Report the overall surface water quality did not show an unacceptable landfill leachate or operations effect in 2023.

The annual spring biomonitoring showed that there was not a potential for detrimental effects to aquatic life in the discharge water and was acceptable for continued discharge.

Question ID	NOL 34	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Are there water quality concerns with the results of the samples that have been tested?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  In April 2022 the Company, RWDI and the Ministry had a discussion surrounding the Ministry's objective to see a reduction in Total Suspended Solids (TSS) loading to discharging surface water from large industrial facilities, including landfilling sites within the province of Ontario. The Ministry is looking for best efforts by WM (Waste Management) to address TSS loading to discharging surface water from the Twin Creeks Environmental Centre.  As a result, a letter was provided to the Ministry from RWDI outlining that a TSS Action Plan would be developed and received by the Ministry in October 2022. It should be noted that the majority of this work took place during 2021 & 2022 including the removal of sediment build up within the sedimentation ponds, seeding of inactive waste areas and installation of sedimentation structures (straw bales). According to plan the removal of sediment should restore the design optimal effectiveness of the ponds to capture sediment and therefore reduce TSS offsite.  In December 2023, RWDI submitted an TSS Evaluation Letter on behalf of the Company as a follow-up to the TSS Action plan from October 2022. The TSS Evaluation Letter outlined the tasks that were completed along with their associated timelines. After review of the TSS Evaluation Letter, it was determined that the Ministry requires more data before reasonable conclusions can be made about whether TSS is being appropriately controlled before surface water discharges. The Ministry has requested additional updates in the 2024/25 quarterly reports that detail the effectiveness of the TSS management efforts taken to address TSS loading to the surface water.			

Question ID	NOL 36	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			

**Question:**

Is proper equipment available for the compaction of waste and applying cover material?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The proper equipment for waste compaction and daily cover application was observed during the Ministry's weekly on-Site inspections.

Question ID	NOL 37	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill able to accurately determine the amount of waste received?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has an entrance and exit scale and records all incoming waste volumes. Tonnage tracking reports are also sent to the Ministry on a monthly basis and yearly waste quantities are summarized in the annual reports.			

Question ID	NOL 38	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are all disposal operations at the site adequately and continually supervised?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  There is always a Supervisor on-Site during the weekly inspections.			

Question ID	NOL 39	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill operator have a site inspection program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Conditions 9.1 - 9.13 of ECA # A032203 contains daily, weekly and monthly inspection and record keeping requirements for the general operation and maintenance of the Site. These			

records are periodically requested by the Ministry during weekly inspections and are assessed for compliance. The Ministry requested the daily inspection logs January 29 – February 2, 2024 to review to ensure compliance with Condition's 9.3 and 9.4 of Environmental Compliance Approval No. A032203. Review of the daily inspection logs confirmed compliance with Condition's 9.3 and 9.4 of Environmental Compliance Approval No. A032203.

In addition, RWDI conducts inspections to ensure the Company is operating within the conditions of the ECA.

No issues or concerns have been identified with the frequency or details of the site inspections.

Question ID	NOL 40	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill operator have a procedure in place to address issues identified by staff during the site inspection?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  These procedures are documented in the D&O Report and BMP Plan. Some examples of issues that may arise may be related to odour, litter, dust or leachate seeps.  No issues were identified as part of this inspection.			

Question ID	NOL 41	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste being compacted adequately?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.			

Question ID	NOL 42	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   7;			

**Question:**

Is Daily cover applied to the waste at the end of each working day or as otherwise specified in the ECA?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Condition 6.47 of ECA No. A032203 outlines the requirements for daily, intermediate, and final cover.

**Daily Cover:**

The working face must be covered with at least 15cm of soil or approved alternative cover material.

**Intermittent Cover:**

In areas where landfilling is temporarily stopped for six months or more, at least 30 cm of soil cover or approved alternative cover material is required.

**Final Cover:**

In completed landfill areas, at least 1.85 m of cover soil and then at least 15cm of topsoil is required.

The Company reports that daily cover is adequately applied at the end of each working day. Stockpiles of daily cover were regularly observed on-Site near the active working face during operating hours while conducting the weekly inspections. The following cover material was observed and/or reported to be used by the Company:

- Automobile Shredder Residue (ASR)
- Soil
- Contaminated Soil
- Woodchips
- Tarps

According to condition 6.52 of ECA No. A032203, samples of the ASR are to be taken semi-annually (spring and fall) and are to meet the specifications of non-hazardous waste under O. Reg. 347. The results of both samples taken (spring and fall) in 2023 indicated that it met the specifications and was classified as non-hazardous.

ASR was becoming an issue in March 2023. The Company has submitted an ASR Abatement plan in July 2023 and continues to work with the Ministry to reduce off site track out. The ASR Abatement plan included actions to clean up the roadside ditches and Nauvoo Road is continually ongoing. Final clean-up was completed in October 2023. Since the final clean-up took place, during the weekly inspections there has been no observations of ASR off-site and the Company continues to accept ASR as a waste on the site and it is used on non-drivable surfaces as daily cover. Continued monitoring by the Company and the Ministry will ensure ASR drag out does not become a problem again.

Since October 2023 two (2) Ministry inspections took place before/after landfilling operations were taking place to assess the daily cover requirements, on November 16, 2023 and February 28, 2024. Of these two instances, one showed signs that Daily Cover had not been properly applied and a Notice of Violation will be issued to the Company for failure to comply with this condition of the ECA with this inspection report.

As a result of the February 28, 2024, inspection, the Company told the Ministry that staff re-training has occurred regarding the daily cover requirements outlined in the ECA as well as Company procedures related to daily cover. The Company has also had internal meetings to discuss the current practices and determine what changes can be made to ensure the Site is able to meet the daily cover requirements at the end of every working day as outlined in their ECA.

Question ID	NOL 43	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are procedures implemented to control rodents or other animals and insects at the site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.32 of ECA No. A032203 states that the Site shall be operated and maintained such that vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance. Procedures for pest control are listed in the Company's D&O Report. Predator Bird Services Inc. is on-Site from Monday to Friday during regular operating hours. They use a combination of noise makers, whistlers and a bird of prey (a falcon or hawk) to deter non native species from populating the landfill and surrounding area. Orkin is also on-Site monthly to maintain the prescribed plan for traps and baiting.  No concerns or issues with pest control were identified during this reporting period.			

Question ID	NOL 44	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access restricted by use of a gate, fence, or physical barrier when the site is not operating?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  ECA No. A032203 requires the following to be in place at the Site: - The entire Site enclosed with a 6 foot high wire woven fence.			



- The Site entrance and exit gates must be locked and secured against access by unauthorized persons during non-operational hours.
- Access to and exit from the Site for the transportation of waste must (under normal circumstances) be only permitted from Country Road 79 (Nauvoo Road).
- A sign must be displayed at the main entrance/exit to the Site, detailing:
  - Name of the Site and Owner
  - ECA number
  - Name of the Operator
  - Hours of operation
  - Approved and prohibited waste types
  - Warning against unauthorized access
  - Telephone number for complaints
  - 24/7 emergency telephone number (if different from above)
  - Warning against dumping outside the Site.

No concerns or issues with access control were identified during the weekly inspections or brought to the attention of the Ministry during this reporting period.

Question ID	NOL 45	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste disposal area adequately screened from public view?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In accordance with Condition 5.4 of ECA No. A032203, there are 7-meter-high perimeter berms vegetated with trees along Zion Ln. and Nauvoo Rd. in order to block the public's view of the landfill.  No complaints of public view were received.			

Question ID	NOL 46	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   21;			
<b>Question:</b> Are daily records of site operations available at the site for at least the past 2 years or as otherwise required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 1.22 and 9.8 of ECA No. A032203 state that all records required by the ECA are to			

be retained at the Site for a minimum of two years.

Question ID	NOL 47	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the annual operations report been submitted to MECP or available on site as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The 2023 Annual Report was submitted to the Ministry on February 28, 2024 in accordance with Conditions 15.6 and 15.7 of ECA No. A032203. The Company is also required to submit quarterly reports in accordance with Conditions 15.4 and 15.5 of ECA No. A032203. These were also submitted on time.  No issues were found regarding the submission or retention of annual or quarterly reports.			

Question ID	NOL 48	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   23;			
<b>Question:</b> Is scavenging being prevented?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.33 of ECA No. A032203 states that the Company shall ensure that there is no scavenging as defined by O. Reg. 347 at the Site. "Scavenging" is defined by the uncontrolled removal of reusable material from waste at a waste disposal site.  The Site is secure during non-operating hours and there have been no reported incidents or evidence of scavenging during the Ministry's on-Site weekly inspections. According to the Company Waste Management staff are trained extensively preventing scavenging in the landfill.			

Question ID	NOL 49	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Has a closure plan been submitted to the MECP?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

No

Condition 16.1 states that a closure plan is required to be submitted at least two years prior to closure (or when 90% of capacity is reached, whatever comes first). The site is not yet required to submit a closure plan.

Question ID	NOL 51	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill only accepting the types of waste that they are approved to receive?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is approved to accept municipal, industrial, commercial, and institutional solid nonhazardous waste, including non-hazardous contaminated soils, generated within the Province of Ontario as per Condition 6.4 and 6.7 of ECA No. A032203.  No issues were identified with this condition during the review period.			

Question ID	NOL 52	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill have a waste refusal procedure in place to manage waste that arrives at the site that the site is not approved the accept?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 9.5 of ECA No. A032203 states that the Company must keep records in a daily logbook of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known. The Company has their own Waste Verification, Acceptance and Rejection Procedure and records rejection events by filling out a 'Waste Discrepancy Form'.			

Question ID	NOL 53	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> is the waste refusal procedure being followed?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Company confirmed there were no refusals of waste shipments between October 2023 and February 2024.

Question ID	NOL 54	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address and document spills and fires?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Procedures for spills, fires and other emergencies are outlined in the D&O Report. Condition 12 of ECA No. A032203 also lists requirements regarding emergency situations: - in the event of a fire or discharge of a contaminant to the environment, the Company shall contact the Spills Action Centre (SAC) and the Sarnia District Office forthwith. - a written report shall be submitted to the District Manager within 3 days of the incident, outlining the nature of the incident, remedial measures taken and measures taken to prevent future occurrences. - the Company shall ensure that adequate firefighting and contingency spill clean-up equipment is available as per Item 66 of Schedule A and that emergency response personnel are familiar with its use and location.  The Company confirmed that emergency response personnel are familiar with the use and location of the emergency equipment. A variety of heavy equipment is available including a backhoe, rock truck, excavator, sweepers, water truck, as well as a spill kit which is located at the scale. The Company says this information is reviewed annually at a minimum.			

Question ID	NOL 55	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have emergency contingency plan as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Emergency Response Plan is included in the D&O Report.			

Question ID	NOL 56	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is there an ECA condition requiring financial assurance?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Financial Assurance (FA) is required for private sector landfill sites under Ontario Regulation 232/98, in order to ensure that funds are available for site closure, post-closure care, and contingencies in the event that the site owner cannot or does not carry out their obligations under the ECA.  Condition 2.1 of ECA No. A032203 addresses FA requirements for the Site. The Company is required to submit a re-evaluation of the FA amount every four years. The next re-evaluation is required to be submitted on March 31, 2024.			

Question ID	NOL 57	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the financial assurance been submitted, as specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 58	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the company provided financial assurance re-evaluation estimates in compliance with the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 59	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			

**Question:**

Does the landfill have a procedure in place to address complaints?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Company's complaint procedure is listed in the D&O Report. Responses to complaints related to dust, odour, and litter are also described in the Best Management Practices (BMP) Plans for the Site.

The following complaint procedure is required by Condition 11 of ECA No. A032203: "If at any time, the Owner receives complaints regarding the operation of the Site , the Owner shall respond to these complaints according to the following procedure:

- a. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information, the time and date of the complaint, specific details of operations that were occurring, any changers from normal operations, types of waste loads (including source) and other on Site activities;
- b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and
- c. The Owner shall complete and retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

11.2 The Owner shall designate a person to receive any complaints and to respond with a written notice of action as soon as possible. The Owner shall post the Site complaints procedure at the Site entrance. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.

11.3 The Company shall notify the District Manager, Township of Warwick and WIFN, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:

1. this Approval number;
2. a description of the nature of the complaint;
3. the time and date of the incident to which the complaint relates.

11.4 The Company shall report all environmental complaints to the WPLC at the next WPLC meeting."

Question ID	NOL 60	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator addressed the complaints to the satisfaction of the ministry?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  According to the Company a total of seven (7) complaints were reported from September 2023 to February 2024. All of the complaints were about odour from the site. Odour from the Site can originate from a variety of sources. Odours were attributed to the one of the flares being down causing the landfill gas collection system, some odours were also attributed to the fill area and weather conditions.  Ongoing discussions between the Ministry and WM occur on the notifications of complaints and follow up actions taken by the Company. The Company reported these complaints in the WPLC meetings that took place in this reporting period. The Company is also required to review and summarize the complaints and response in the annual report. All complaints were reported to the Ministry within two (2) business days and were responded to by the Company in accordance with Condition 11 of ECA No. A032203.			

Question ID	NOL 61	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator developed a Design and Operations Manual?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  A Design and Operations (D&O) Report was prepared by Henderson Paddon & Associates Limited, dated March 2008, and is listed as Items 66-68 of Schedule A under ECA No. A032203.			

Question ID	NOL 63	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill operator have training procedures for site personnel?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			



The Company has their own training procedure. Training requirements for employees are described under condition 10.1 of ECA No. A032203.

Question ID	NOL 64	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill operator following the established training procedures?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company provided copies of training records to the Ministry for their employees demonstrating that the Company is following the established training procedures as described under condition 10.1 of ECA No. A032203. The training included ECA site specific training, BMP training, SOP training, Ontario ECA Employee Training, Incident reporting, ECAP: E-waste, HECP, Emergency Response, training on relevant waste management legislation including the EPA, O. Reg. 347 and O. Reg. 232/98, as well as training on proper handling of waste, use and operation of equipment, environmental and occupational health and safety concerns.			

Question ID	NOL 65	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the Certificate of Requirement been registered on Title?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	949100	Question Type	Legislative
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Were the inspection questions sufficient to address other identified non-compliance items?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> The following instances of non-compliance were also noted during the inspection:  AMBIENT AIR QUALITY MONITORING			

Condition 13.8 of ECA No. A032203 requires that Air Quality, Dust, Hydrocarbon, and Volatile Organic Carbon (VOC) monitoring be undertaken in accordance with the Ambient Air Quality Monitoring Plan.

Total Suspended Particulate (TSP) is sampled at 3 fixed locations around the landfill footprint. TSP samples are taken on a 6-day interval from October - May and taken on a 3- day interval from June – September.

A total of nine (9) TSP exceedance events were reported in 2023. According to the exceedance notifications submitted by RWDI on behalf of the Company, all the exceedances can be attributed to On-site construction-related activities consisting of hauling clay material from Cell 6B to Cell 6A and Cell 4 for daily/interim cover, to the excess soil stockpile, hauling select clay liner material to the top of the Existing Landfill, the delivery and stockpiling of drainage layer gravel, in combination with offsite sources. As described in the Dust BMP continuous TSP analyzers are required at the Site when two or more exceedances in any given year are attributed to landfilling activities. The Ministry's Technical Support Section will be reviewing the Quarterly Reports relating to TSP concentrations on Site.

Metals are analyzed on the highest filter TSP concentration out of every four samples per location. All 2023 samples collected for metals were below their air quality standards as outlined in O. Reg. 419.

Fenceline VOC sampling takes place between June - September during operating hours. Five sets of upwind and downwind samples are collected, with no more than two samples collected within the same calendar month. Five samples were collected in 2023 and all concentrations measured were less than their respective air quality standards.

Please see Appendix 2 for a summary of the weekly inspections for this reporting period.

The following instance of non-compliance was noted during the February 28, 2024 inspection:

-Condition 6.47 of ECA A032203 states that at the end of each working day, the entire working face shall be covered with a minimum thickness of 150mm of soil or an approved alternative cover material.

-During the inspection the Ministry found the primary active face on Cell 4 was not properly covered. There were several areas near the tippers that were not adequately covered, and the truck clean out area was left uncovered. Cover materials were observed to be stockpiled nearby, but had not been applied to this area at the end of the working day on February 28, 2024.

Please also find attached a NOTICE OF VIOLATION for failure to comply with a Condition of the ECA. Specifically, failure to apply daily cover as outlined in the ECA.

## SCOPE

Table 1 and Appendix 1 documents the findings of an unannounced perimeter and site inspection conducted by Environmental Officer Amanda Seaman on February 28, 2024, to assess for potential impacts related to odour, dust, noise or litter from the Site. The focus of this inspection was to assess the Company's compliance with daily cover requirements.

Meteorological conditions at the time of the inspection: Cloudy

Temperature: 13 degrees Celsius

Wind: 28 km/hr SSW

Humidity: 93%

### OFF-SITE OBSERVATIONS:

- See Table 1 for a summary of the off-Site observations made during this inspection.

### ON-SITE OBSERVATIONS:

- See Appendix 1 for a summary of the on-Site observations made during this inspection

## TABLES

**Table 1:**

Outlines the locations, times and observations made by Environmental Officer Amanda Seaman on February 28, 2024, to assess for potential impacts related to odour, dust, noise or litter from the Site. The focus of this inspection was to assess the Company's compliance with daily cover requirements.

Location	Time of Observation	Odour, Dust, Noise or Litter?
1. TCEC Employee Entrance – Zion Line	6:20 AM	<ul style="list-style-type: none"> <li>No offsite impacts</li> </ul>
2. Zion Line – driving from the TCEC Employee Entrance to 8039 Zion Line	*****	<ul style="list-style-type: none"> <li>Landfill odour (4/10)</li> <li>Litter was observed in the ditch</li> </ul>
3. NE Corner of TCEC (Zion Line)	6:24 AM	<ul style="list-style-type: none"> <li>No offsite impacts</li> </ul>
4. Arkona Road @ Zion Line	6:27 AM	<ul style="list-style-type: none"> <li>No offsite impacts</li> </ul>
5. Arkona Road @ Confederation Line	6:30 AM	<ul style="list-style-type: none"> <li>No offsite impacts</li> </ul>
6. Confederation Park	6:34 AM	<ul style="list-style-type: none"> <li>No offsite impacts</li> </ul>
7. Nauvoo Park	6:37 AM	<ul style="list-style-type: none"> <li>No offsite impacts</li> </ul>

## **APPENDIX 1**

### ON-SITE OBSERVATIONS:

- Officer A. Seaman arrived on-Site at 5:47 AM. At the time of the inspection the landfill was not in operation. The main purpose of this inspection was to assess the site's compliance with daily cover requirements.
- During the Inspection, Company personnel were in the shop and maintenance area, no personnel were observed on Cell 4 or operating any machinery within the Site before 6AM.
- The primary active face was located on Cell 4. During the inspection the Ministry found several portions of the primary working face on Cell 4 near the tippers that were not adequately covered, and the truck clean out area was left uncovered. Cover material was readily available; however, it had not been placed on the active face. Six photos were taken to document the insufficient cover. A Notice of Violation will be provided to the Company with this inspection report.
- As a reminder Condition 6.47 of ECA A032203 states that at the end of each working day, the entire working face shall be covered with a minimum thickness of 150mm of soil or an approved alternative cover material.
- During the time of the inspection, it was noted Flare 1 was operating at 913 degrees Celsius and Flare 2 was operating at 900 degrees Celsius. Both Flare's were operating within the compliance limit.
- No irrigation was occurring in the Poplar Plantation System during the time of the inspection and has been winterized for the season.
- Leachate levels the storage tank was at 6.56m. The level in PS-03 was at 3.27m, PS-05 was at 2.10, and PS-07 was at 3.12m.
- No leachate seeps were identified in the expanded landfill. No leachate observed outside of the Leachate Equalization Tank. A Harold-Marcus truck was observed at 7:38 AM loading leachate from the Leachate Equalization Tank.
- Litter was observed in the ditch on Zion Line. A. Seaman followed-up with John McDonald regarding the litter observed and he stated that litter pickers would be on site during the day, and they would have the litter picked up on Zion Line by noon.

## **APPENDIX 2**

### WEEKLY INSPECTION SUMMARY:

Since the last summary report, twenty-one (21) inspections took place. Ministry on-site inspections continue to take place weekly at the Site. On-site inspections took place on the following dates:

October 5, 11, 18, 25

November 2, 8, 16, 22, 29

December 4, 13, 20, 28

January 2, 10, 15, 24, 30

February 9, 13, 23

One purpose of these weekly inspections is to assess the Company efforts towards preventing, minimizing and mitigating off-site impacts resulting from their operations such as odours, litter, noise and dust. The following is a brief summary of those reports. Further details can be found in each of the weekly inspection reports submitted to the Company.

Odours were observed from strong to faint ratings downwind of the landfill during 16 of the 21 inspections since the last summary report. Odours were mixed from landfill gas to refuse odours. Odours were attributed to insufficient cover, the fill area as well as when the Flare went down. During the inspection on November 8<sup>th</sup>, odours were noticeably stronger when Flare 1 was down. The Company received two complaints between November 4<sup>th</sup> and November 9<sup>th</sup> when the Flare was back online. During this time the Company was following the Odour BMP. The odours were noticeably stronger during the January 24<sup>th</sup> inspection, but they can be attributed to the fill area, the wind direction and the weather conditions during the time of the inspection. No complaints were received, and the company was following the Odour Control BMP. Many agricultural related odours have also been noted during the weekly inspections.

Litter was present on site in many of the inspections. The installation of the northern litter fence has helped to reduce the offsite impacts typically observed in the late winter. Litter has been identified offsite during two inspections and was addressed by the Company in a timely manner. Litter picking has improved at the site, and no issues with the response of the Company was observed during this review period.

ASR was becoming an issue in March 2023. The Company has submitted an ASR Abatement plan in July 2023 and continues to work with the Ministry to reduce off site track out. The ASR Abatement plan included actions to clean up the roadside ditches and Nauvoo Road is continually ongoing. In October 2023, the Company successfully completed their ASR Abatement Plan and cleaned up the ditch and shoulder on Nauvoo Road. Continued monitoring by the Company & inspector will ensure drag out does not become a problem

again. ASR continues to be accepted as a waste on the site and is used on non-drivable surfaces.

Dust track out has been observed at site on multiple occasions, but the sweeper and water truck has been observed operating. Mud and dust on the road has also been observed from other sources around the site.

The Site's Leachate generation has been higher than normal. The Company is exploring secondary disposal options to dispose of leachate offsite in order to reduce the volumes observed onsite. The Ministry continues to watch the leachate levels and is working with the Company through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

During the January 30 inspection, the Ministry observed a hydraulic fluid spill in an on-site ditch adjacent to the Flares. The Company was notified and immediately placed clay berms on either side of the spill to prevent the material from migrating and had absorbent pads placed on the material. Through follow up, the spill was cleaned up and no offsite impacts were observed. The Company is reminded that any spill to surface water should be reported to the Spills Action Centre (SAC).

There have been no other significant environmental concerns at the site since the last detailed inspection report. The Company continues to show general compliance with SOPs, BMPs and the ECA.

## APPENDIX N:

MECP March 2024 Inspection Report - No. 1-323116192







TWIN CREEKS ENVIRONMENTAL CENTRE  
Physical Address: 5768 NAUVOO RD, WARWICK,  
ON N0M 2S0

## INSPECTION REPORT

Entity: WASTE MANAGEMENT OF  
CANADA CORPORATION  
Inspection Start Date: March 01, 2024  
Inspection End Date: March 31, 2024  
Inspected By: Amanda Seaman  
Badge #: 2129

*Amanda Seaman*

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(signature)

## INTRODUCTION

### Purpose

Ontario has a comprehensive legislative and regulatory framework to ensure that wastes are managed in an environmentally safe manner. Through the Environmental Protection Act (EPA) and accompanying regulations, the Ministry of the Environment, Conservation and Parks (the Ministry) has established a cradle to grave management system, which governs the collection, storage, transportation, and disposal of waste.

The Ministry issues Environmental Compliance Approvals (ECA) under the EPA for landfill sites that dispose of solid non-hazardous wastes. The ECA imposes conditions related to development and operation of the site, and includes monitoring requirements, etc. To confirm whether the regulated community is complying with the requirements related to the waste disposal activities, the Ministry is committed to conducting proactive inspections of waste sites. With that aim in mind, Ministry staff conducted weekly inspections of Twin Creeks Environmental Centre (Site) in Warwick Township as part of the Sarnia District Office's 2024/25 inspection program.

The Site is approved to accept municipal, industrial, commercial, and institutional solid non-hazardous waste generated within the Province of Ontario, including non-hazardous contaminated soils under ECA Number A032203, dated December 16, 2023. The Site is owned and operated by Waste Management of Canada Corporation (Company).

### Scope

This inspection report summarizes the findings of the weekly inspections conducted at the Twin Creeks Environmental Centre during the month of March 2024. The focus of each inspection is to assess the Company's operation and construction of the site against the terms and conditions of its Environmental Compliance Approvals and with the requirements of applicable environmental legislation, regulations, and guidelines.

A total of four inspections were conducted by the Ministry during the month of March 2024. Inspections took place on the following dates:

- Thursday March 7, 2024
- Tuesday March 12, 2024
- Wednesday March 20, 2024
- Tuesday March 26, 2024



## **NON-COMPLIANCE**

This should not be construed as a confirmation of full compliance with all potential applicable legal requirements. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## **RECOMMENDATIONS**

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program:** WASTE | **Regulated Activity:** Landfills

Question ID	NOL 1	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the Open landfill site have an Environmental Compliance Approval (ECA)?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has the following Ministry approvals:  WASTE DISPOSAL SITE: ECA No. A032203, dated December 16, 2023 - For the use and operation of a 101.8-hectare landfilling area with a total site area of 301 hectares, accepting only municipal, industrial, commercial, institutional solid non-hazardous waste generated within Ontario, including non-haz contaminated soil. The site is approved to receive 1,400,000 tonnes per year.  AIR ECA No. 6318-CX4NFX, dated December 13, 2023 Approved to install and operate: - six enclosed flare systems; - emergency diesel generators to provide back-up power as needed; - a 50kW diesel generator to provide regular power to the south fill area leachate pumping system; and- exhaust fans, exhaust louvres, and aeration tanks exhausting to the atmosphere from the leachate treatment facility and one leachate treatment facility laboratory. - infrastructure for the Renewable Natural Gas Plant including one pre-treatment thermal oxidizer, one main thermal oxide, one amine reboiler and two RNG (Renewable Natural Gas) plant condensate tanks with carbon drum filters.  INDUSTRIAL SEWAGE ECA No. 2403-BE6LZ4, dated August 21, 2019 - - Issued for the establishment of a leachate collection, treatment, and disposal facility as well as a stormwater management facility to service the Site.  PERMIT TO TAKE WATER (PTTW) No. 4682-BLJRYJ, dated November 8, 2021 Issued for dewatering at the Site and industrial activities such as road watering to reduce dust. On- Site water taking locations include: - stormwater management ponds 1, 2, 3, and 4 - secondary drainage layer (SDL)			

- four pumping stations, PS2, PS4, PS6, PS8.

Question ID	NOL 13	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are access roads and on-site roads provided so that vehicles hauling waste to and on the site may travel readily on any day under all normal weather conditions?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Access to and exit from the Site for the transportation of waste is permitted from Country Road 79 (Nauvoo Road).  There are both paved and unpaved access roads on site. Typically, unpaved roads are made of material that would allow for vehicles hauling waste on site to readily travel unhindered in normal weather conditions as per ECA condition 6.31a&b.			

Question ID	NOL 14	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access limited to times when an attendant is on duty?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  An attendant is always on duty at the Site during operating hours.  During non-operating hours, the Site entrance and exit gates are locked. Site access is secured against access by unauthorized persons as per Condition 6.28 of the ECA.			

Question ID	NOL 15	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the site only receive waste from within its approved service area?			



**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Facility only receives waste generated in the Province of Ontario as per Condition 6.4 and 6.7 of the ECA.

The Site is approved for the use and operation of a 101.8-hectare landfilling area with a total Site area of 301 hectares. During the inspection period the Company deposited waste in Cells 4 and 6A of the Expansion Site. All waste is being deposited within the approved landfill footprint, Condition 6.6 of ECA No. A032203 authorizes the Company to receive up to a maximum of 1,400,000 tonnes of waste per year (including contaminated soil) for disposal at the Site.

According to the tonnage report provided by the Company, March's monthly total is:

March 2024 – 95,131.83 tonnes

From the beginning of 2024 to the end of March, the Company has received 287,145.71 tonnes or approximately 20% of the yearly total.

Question ID	NOL 16	Question Type	Information
<b>Legislative Requirement(s):</b>			
Not Applicable			
<b>Question:</b>			
Is the site required to have a ground water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b>			
Yes			
The following Site-specific approvals outline the requirements for groundwater monitoring:			
<ul style="list-style-type: none"> <li>- Industrial Sewage ECA No. 2403-BE6LZ4: Specifies operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, and treated effluent storage pond monitoring programs.</li> <li>- Waste Disposal Site ECA No. A032203: Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A".</li> </ul>			
Groundwater monitoring is completed semi-annually in the spring and fall as per the EMP.			

No alterations can be made to the program unless prior approval has been given by the District Manager.

Question ID	NOL 17	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the groundwater monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company documents the results of the required monitoring programs in quarterly and annual monitoring reports which are routinely reviewed by the Ministry for compliance purposes. The Ministry's Technical Support Section will be reviewing the 2023 Fourth Quarter/Annual ("Q4") Monitoring Report that was submitted to the Ministry which includes all of the monitoring for 2023.			

Question ID	NOL 21	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage leachate by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is required to manage leachate in accordance with the Industrial Sewage ECA No. 2403- BE6LZ4 and Waste ECA No. A032203.  Leachate Collection - Existing Site: This consists of: - Three finger drains in the South Fill Area; - Pumping sump in the West Central Cell near monitoring station OW-29; - Two parallel waste underdrains in Cell 3S (north of the South Fill Area); and - Waste underdrains in the Northern part of Cell 5 and in Cells 4, 6, 7, 8, 9, 10 and 11. The waste under-drains direct leachate to a perimeter collection system which is then automatically pumped to the leachate equalization tank.  Leachate Collection - Expansion Site: A leachate collection system has been installed in Cell 1, Cell 2, Cell 4, and Cell 6A. The leachate level in the primary drainage layer of these cells is currently controlled by automated Pump Station 1 (PS1), Pump Station 3 (PS3), Pump Station 5 (PS5), and Pump Station 7			

(PS7). Leachate is transferred from the Primary Drainage Layer (PDL) to the leachate equalization tank. The Secondary Drainage Layer (SDL) is controlled by PS2, PS4, and PS6. The trigger for implementation of groundwater contingency measures for the Expansion Site is the loss of hydraulic containment. This occurs when leachate levels within the PDL are higher than the surrounding groundwater elevations.

**Poplar Tree Leachate Irrigation System:**

The Company has established a drip irrigation system which supplies leachate to a stand of poplar trees, known as the Poplar System ("PS"). The poplars are located on top of a portion of the existing landfill and have been operable since September 27, 2017. The PS is only utilized on a seasonal basis when the trees can actively uptake the leachate. There are a number of monitoring requirements under Condition 8.7 of ECA No. A032203 related to the PS including soil monitoring, visual assessments, leachate monitoring, tree tissue monitoring and surface water monitoring.

**Off-Site Leachate Disposal:**

The remaining leachate produced from both the existing and expansion site is hauled off-Site for treatment and disposal at the Chatham Water Pollution Control Plant in Ontario.

According to reports provided by the Company, the following was shipped offsite:

March 2024 – 4938.4 mt

During the month of March 2024, no leachate was applied to the Poplar system according to the Company as the system is only utilized on a seasonal basis as stated above.

The Site's Leachate generation has been higher than normal. The Company is exploring secondary disposal options to dispose of leachate offsite in order to reduce the volumes observed onsite. The Ministry continues to watch the leachate levels and is working with the Company through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

Question ID	NOL 26	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage landfill gas by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Gas produced by the landfill is managed by the on-Site gas collection and flaring system. A portion of this gas is conveyed from the landfill to a neighboring property, where it is converted and used for building heat for a large greenhouse on an as-needed basis during the colder seasons. The remaining gas is sent to one of the two existing flares on-site. The			

Company is currently constructing a Renewable Natural Gas Plant which will convert the captured landfill gas from the Site into pipeline quality gas for injection to the commercial gas transmission and distribution network.

Waste ECA No. A032203:

- Condition 7.10 and 13.6 requires the gas control system to be managed and monitored as specified in the D&O Report and the EMP.
- Condition 14.8 states that if landfill gas concentrations exceed 10% LEL (Lower Explosive Limit) during monitoring, the Company is to undertake additional monitoring to determine if the elevated levels are landfill related.
- The Company must report all landfill gas monitoring to the Ministry on a quarterly and annual basis.

Air ECA No. 6318-CX4NFX:

- Describes the notifications, operation, maintenance, performance, and record keeping requirements for the flaring system and the RNG plant.

Question ID	NOL 31	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a surface water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The following Site-specific approvals outline the requirements for surface water monitoring:  - Industrial Sewage ECA No. 2403-BE6LZ4: Specifies operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, and treated effluent storage pond monitoring programs.  - Waste Disposal Site ECA No. A032203: Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A". Surface water will also be evaluated as per Item 91 of Schedule "A".  The Company conducts quarterly surface water monitoring following precipitation events of greater than 10 mm in a 24-hour period.			

Question ID	NOL 36	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is proper equipment available for the compaction of waste and applying cover material?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The proper equipment for waste compaction and daily cover application was observed during the Ministry's weekly on-Site inspections. Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.			

Question ID	NOL 37	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill able to accurately determine the amount of waste received?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has an entrance and exit scale and records all incoming waste volumes. Tonnage tracking reports are also sent to the Ministry on a monthly basis and yearly waste quantities are summarized in the annual reports.			

Question ID	NOL 42	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   7;			
<b>Question:</b> Is Daily cover applied to the waste at the end of each working day or as otherwise specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.47 of ECA No. A032203 outlines the requirements for daily, intermediate, and final cover.  Daily Cover: The working face must be covered with at least 15cm of soil or approved alternative cover material.  Intermittent Cover:			

In areas where landfilling is temporarily stopped for six months or more, at least 30 cm of soil cover or approved alternative cover material is required.

**Final Cover:**

In completed landfill areas, at least 1.85 m of cover soil and then at least 15cm of topsoil is required.

The Company reports that daily cover is adequately applied at the end of each working day. Stockpiles of daily cover were regularly observed on-Site near the active working face during operating hours while conducting the weekly inspections in March 2024. The following cover material was observed and/or reported to be used by the Company:

- Automobile Shredder Residue (ASR)
- Soil
- Contaminated Soil
- Woodchips
- Tarps

According to condition 6.52 of ECA No. A032203, samples of the ASR are to be taken semi-annually (spring and fall) and are to meet the specifications of non-hazardous waste under O. Reg. 347.

ASR was becoming an issue in March 2023. The Company has submitted an ASR Abatement plan in July 2023 and continues to work with the Ministry to reduce off site track out. The ASR Abatement plan included actions to clean up the roadside ditches and Nauvoo Road is continually ongoing. Final clean-up was completed in October 2023. Since the final clean-up took place, during the weekly inspections there has been no observations of ASR off-site, and the Company continues to accept ASR as a waste on the site and it is used on non-drivable surfaces as daily cover. Continued monitoring by the Company and the Ministry will ensure ASR drag out does not become a problem again.

The Ministry inspection that was conducted on March 20, 2024, took place after landfilling operations had ceased for the day to assess the daily cover requirements. The Ministry determined that the cover observed during the inspection met the criteria outlined under Condition 6.47 of ECA A032203. This condition states that at the end of each working day, the entire working face shall be covered with a minimum thickness of 150mm of soil or an approved alternative cover material.

No further issues were observed by the Inspector in March 2024.

Question ID	NOL 44	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			

**Question:**

Is site access restricted by use of a gate, fence, or physical barrier when the site is not operating?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

ECA No. A032203 requires the following to be in place at the Site:

- The entire Site enclosed with a 6-foot-high wire woven fence.
- The Site entrance and exit gates must be locked and secured against access by unauthorized persons during non-operational hours.
- Access to and exit from the Site for the transportation of waste must (under normal circumstances) be only permitted from Country Road 79 (Nauvoo Road).
- A sign must be displayed at the main entrance/exit to the Site, detailing:
  - Name of the Site and Owner
  - ECA number
  - Name of the Operator
  - Hours of operation
  - Approved and prohibited waste types
  - Warning against unauthorized access
  - Telephone number for complaints
  - 24/7 emergency telephone number (if different from above)
  - Warning against dumping outside the Site.

No concerns or issues with access control were identified during the weekly inspections or brought to the attention of the Ministry in March 2024.

Question ID	NOL 45	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste disposal area adequately screened from public view?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In accordance with Condition 5.4 of ECA No. A032203, there are 7-meter-high perimeter berms vegetated with trees along Zion Ln. and Nauvoo Rd. in order to block the public's view of the landfill.  No complaints of public view were received in March 2024.			

Question ID	NOL 48	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   23;			



**Question:**

Is scavenging being prevented?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Condition 6.33 of ECA No. A032203 states that the Company shall ensure that there is no scavenging as defined by O. Reg. 347 at the Site. "Scavenging" is defined as the uncontrolled removal of reusable material from waste at a waste disposal site.

The Site is secure during non-operating hours and there have been no reported incidents or evidence of scavenging during the Ministry's On-Site weekly inspections in March 2024. According to the Company, Waste Management staff are trained extensively in preventing scavenging in the landfill.

Question ID	NOL 49	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Has a closure plan been submitted to the MECP?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			
Condition 16.1 states that a closure plan is required to be submitted at least two years prior to closure (or when 90% of capacity is reached, whatever comes first). The site is not yet required to submit a closure plan.			

Question ID	NOL 51	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill only accepting the types of waste that they are approved to receive?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
The Site is approved to accept municipal, industrial, commercial, and institutional solid nonhazardous waste, including non-hazardous contaminated soils, generated within the Province of Ontario as per Condition 6.4 and 6.7 of ECA No. A032203.			
No issues were identified with this condition by the Inspector in March 2024.			

Question ID	NOL 52	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill have a waste refusal procedure in place to manage waste that arrives at the site that the site is not approved the accept?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 9.5 of ECA No. A032203 states that the Company must keep records in a daily logbook of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known. The Company has their own Waste Verification, Acceptance and Rejection Procedure and records rejection events by filling out a 'Waste Discrepancy Form'.  The Company confirmed there were no refusals of waste shipments in March 2024.			

Question ID	NOL 54	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address and document spills and fires?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Procedures for spills, fires and other emergencies are outlined in the D&O Report. Condition 12 of ECA No. A032203 also lists requirements regarding emergency situations:  <ul style="list-style-type: none"> <li>- in the event of a fire or discharge of a contaminant to the environment, the Company shall contact the Spills Action Centre (SAC) and the Sarnia District Office forthwith.</li> <li>- a written report shall be submitted to the District Manager within 3 days of the incident, outlining the nature of the incident, remedial measures taken, and measures taken to prevent future occurrences.</li> <li>- the Company shall ensure that adequate firefighting and contingency spill clean-up equipment is available as per Item 66 of Schedule A and that emergency response personnel are familiar with its use and location.</li> </ul> The Company confirmed that emergency response personnel are familiar with the use and location of the emergency equipment. A variety of heavy equipment is available including a backhoe, rock truck, excavator, sweepers, water truck, as well as a spill kit which is located at the scale. The Company says this information is reviewed annually at a minimum.			

Question ID	NOL 56	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is there an ECA condition requiring financial assurance?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Financial Assurance (FA) is required for private sector landfill sites under Ontario Regulation 232/98, in order to ensure that funds are available for site closure, post-closure care, and contingencies in the event that the site owner cannot or does not carry out their obligations under the ECA.  Condition 2.1 of ECA No. A032203 addresses FA requirements for the Site. The Company is required to submit a re-evaluation of the FA amount every four years. The next re-evaluation was required to be submitted on March 31, 2024, which was received by the Ministry on March 28, 2024.			

Question ID	NOL 57	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the financial assurance been submitted, as specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 58	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the company provided financial assurance re-evaluation estimates in compliance with the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company submitted the financial assurance re-evaluation for the Site to the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.			

Question ID	NOL 59	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address complaints?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company's complaint procedure is listed in the D&O Report. Responses to complaints related to dust, odour, and litter are also described in the Best Management Practices (BMP) Plans for the Site.  The following complaint procedure is required by Condition 11 of ECA No. A032203: "If at any time, the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:  a. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information, the time and date of the complaint, specific details of operations that were occurring, any changers from normal operations, types of waste loads (including source) and other on Site activities;  b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and  c. The Owner shall complete and retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.  11.2 The Owner shall designate a person to receive any complaints and to respond with a written notice of action as soon as possible. The Owner shall post the Site complaints procedure at the Site entrance. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.  11.3 The Company shall notify the District Manager, Township of Warwick and WIFN, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include: 1. this Approval number; 2. a description of the nature of the complaint; 3. the time and date of the incident to which the complaint relates.  11.4 The Company shall report all environmental complaints to the WPLC at the next WPLC			

meeting."

Question ID	NOL 60	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator addressed the complaints to the satisfaction of the ministry?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In March 2024, no complaints were received by the Ministry and no complaints were reported by the Company.			

Question ID	NOL 61	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator developed a Design and Operations Manual?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  A Design and Operations (D&O) Report was prepared by Henderson Paddon & Associates Limited, dated March 2008, and is listed as Items 66-68 of Schedule A under ECA No. A032203.			

Question ID	NOL 63	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill operator have training procedures for site personnel?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company has their own training procedure. Training requirements for employees are described under condition 10.1 of ECA No. A032203.			

Question ID	949100	Question Type	Legislative
<b>Legislative Requirement(s):</b> Not Applicable			

**Question:**

Were the inspection questions sufficient to address other identified non-compliance items?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

One purpose of the inspections is to assess the Company efforts towards preventing, minimizing and mitigating off-site impacts resulting from their operations such as odours, litter, noise and dust. The following is a summary of the findings of the inspections conducted by the Ministry during March 2024:

March 2024 Inspections Dates:

- Thursday, March 7, 2024
- Tuesday, March 12, 2024
- Wednesday, March 20, 2024
- Tuesday, March 26, 2024

Landfill related odours were observed downwind of the landfill during two of the four inspections in March 2024. Odours were rated moderately and were described to be landfill gas and garbage odours. The odours were observed during operating hours, and they were attributed to the fill location and the direction of the wind. Agricultural related odours were also noted during two of the weekly inspections that took place in March 2024.

Litter was present on-site during all of the inspections. Litter pickers were observed on-site by the Ministry during all of the March 2024 inspections. Litter was observed off-site during the March 26, 2024, inspection. The Company had multiple litter pickers on-site during this inspection in the area that the litter had blown to. When the off-site litter was brought to the Company's attention during the inspection, they moved litter pickers off-site to clean the area. The Company also added an additional layer of portable litter fencing around the active cells to prevent litter from blowing. The Company stated that the litter pickers were focusing on collecting the litter from the SWP on-site and collecting any litter that had gone offsite. The Ministry has observed the Company following their Litter BMP, litter picking has improved at the site, and no issues with the response of the Company was observed during March 2024.

ASR was becoming an issue in March 2023. The Company has submitted an ASR Abatement plan in July 2023 and continues to work with the Ministry to reduce off site track out. Final clean-up was completed in October 2023. Since the final clean-up took place, during the weekly inspections there has been no observations of ASR off-site, and the Company continues to accept ASR as a waste on the site and it is used on non-drivable surfaces as daily cover. Continued monitoring by the Company and the Ministry will ensure ASR drag out does not become a problem again.

Dust track out has been observed at site on multiple occasions, but the sweeper and water truck has been observed operating. Mud and dust on the road has also been observed from other sources around the site. The Company has shown compliance with their Dust BMP and

no issues with the response of the Company was observed during March 2024.

The Ministry inspection that was conducted on March 20, 2024, took place after landfilling operations had ceased for the day to assess the daily cover requirements. The Ministry determined that the cover observed during the inspection met the criteria outlined under Condition 6.47 of ECA A032203. This condition states that at the end of each working day, the entire working face shall be covered with a minimum thickness of 150mm of soil or an approved alternative cover material.

The Site's Leachate generation has been higher than normal. The Company is exploring secondary disposal options to dispose of leachate offsite in order to reduce the volumes observed onsite. The Ministry continues to watch the leachate levels and is working with the Company through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

No leachate seeps were observed by the Ministry and no leachate seeps were reported by the Company in March 2024.

There have been no other significant environmental concerns at the site. The Company continues to show general compliance with SOPs, BMPs and the ECA.



## APPENDIX N:

MECP April 2024 Inspection Report - No. 1-323116237





TWIN CREEKS ENVIRONMENTAL CENTRE  
Physical Address: 5768 NAUVOO RD, , WARWICK,  
ON N0M 2S0

## INSPECTION REPORT

Entity: WASTE MANAGEMENT OF  
CANADA CORPORATION  
Inspection Start Date: April 01, 2024  
Inspection End Date: April 30, 2024  
Inspected By: Amanda Seaman  
Badge #: 2129

*Amanda Seaman*

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(signature)

## INTRODUCTION

### Purpose

Ontario has a comprehensive legislative and regulatory framework to ensure that wastes are managed in an environmentally safe manner. Through the Environmental Protection Act (EPA) and accompanying regulations, the Ministry of the Environment, Conservation and Parks (the Ministry) has established a cradle to grave management system, which governs the collection, storage, transportation, and disposal of waste.

The Ministry issues Environmental Compliance Approvals (ECA) under the EPA for landfill sites that dispose of solid non-hazardous wastes. The ECA imposes conditions related to development and operation of the site, and includes monitoring requirements, etc. To confirm whether the regulated community is complying with the requirements related to the waste disposal activities, the Ministry is committed to conducting proactive inspections of waste sites. With that aim in mind, Ministry staff conducted an inspection of the Twin Creeks Environmental Centre (Site) in Warwick Township as part of the Sarnia District Office's 2024/25 inspection program.

The Site is approved to accept municipal, industrial, commercial, and institutional solid non-hazardous waste generated within the Province of Ontario, including non-hazardous contaminated soils under ECA Number A032203, dated December 16, 2023. The Site is owned and operated by Waste Management of Canada Corporation (Company).

### Scope

This inspection report summarizes the findings of the weekly inspections conducted at the Twin Creeks Environmental Centre during the month of April 2024. The focus of each inspection is to assess the Company's operation and construction of the site against the terms and conditions of its Environmental Compliance Approvals and with the requirements of applicable environmental legislation, regulations, and guidelines.

A total of four inspections were conducted by the Ministry during the month of April 2024. Inspections took place on the following dates:

- Tuesday, April 2, 2024
- Thursday, April 11, 2024
- Thursday, April 18, 2024
- Tuesday, April 23, 2024

## **NON-COMPLIANCE**

This should not be construed as a confirmation of full compliance with all potential applicable legal requirements. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## **RECOMMENDATIONS**

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program:** WASTE | **Regulated Activity:** Landfills

Question ID	NOL 1	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the Open landfill site have an Environmental Compliance Approval (ECA)?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has the following Ministry approvals:  WASTE DISPOSAL SITE ECA No. A032203, dated December 16, 2023 - For the use and operation of a 101.8-hectare landfilling area with a total site area of 301 hectares, accepting only municipal, industrial, commercial, institutional solid non-hazardous waste generated within Ontario, including non-haz contaminated soil. The site is approved to receive 1,400,000 tonnes per year.  AIR ECA No. 6318-CX4NFX, dated December 13, 2023 Approved to install and operate: - six enclosed flare systems; - emergency diesel generators to provide back-up power as needed; - a 50kW diesel generator to provide regular power to the south fill area leachate pumping system; and- exhaust fans, exhaust louvres, and aeration tanks exhausting to the atmosphere from the leachate treatment facility and one leachate treatment facility laboratory. - infrastructure for the Renewable Natural Gas Plant including one pre-treatment thermal oxidizer, one main thermal oxide, one amine reboiler and two RNG (Renewable Natural Gas) plant condensate tanks with carbon drum filters.  INDUSTRIAL SEWAGE ECA No. 8117-CUSNXX, dated April 29, 2024 - Issued for the existing industrial sewage works including the leachate collection, treatment, and disposal facility as well as a stormwater management facility to service the Site and for the establishment of the newly proposed industrial sewage works for usage and operation of condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility at the Site.  PERMIT TO TAKE WATER (PTTW) No. 4682-BLJRYJ, dated November 8, 2021 Issued for dewatering at the Site and industrial activities such as road watering to reduce			

dust. On- Site water taking locations include:  
- stormwater management ponds 1, 2, 3, and 4  
- secondary drainage layer (SDL)  
- four pumping stations, PS2, PS4, PS6, PS8.

Question ID	NOL 2	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is this landfill on Crown land?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 13	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are access roads and on-site roads provided so that vehicles hauling waste to and on the site may travel readily on any day under all normal weather conditions?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Access to and exit from the Site for the transportation of waste is permitted from Country Road 79 (Nauvoo Road).  There are both paved and unpaved access roads on site. Typically, unpaved roads are made of material that would allow for vehicles hauling waste on site to readily travel unhindered in normal weather conditions as per ECA condition 6.31a&b.			

Question ID	NOL 14	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access limited to times when an attendant is on duty?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  An attendant is always on duty at the Site during operating hours.			



During non-operating hours, the Site entrance and exit gates are locked. Site access is secured against access by unauthorized persons as per Condition 6.28 of the ECA.

Question ID	NOL 15	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the site only receive waste from within its approved service area?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Facility only receives waste generated in the Province of Ontario as per Condition 6.4 and 6.7 of the ECA.  The Site is approved for the use and operation of a 101.8-hectare landfilling area with a total Site area of 301 hectares. During the inspection period the Company deposited waste in Cells 2, 4 and 6A of the Expansion Site. All waste is being deposited within the approved landfill footprint, Condition 6.6 of ECA No. A032203 authorizes the Company to receive up to a maximum of 1,400,000 tonnes of waste per year (including contaminated soil) for disposal at the Site.  According to the tonnage report provided by the Company, April's monthly total is:  April 2024 – 112,611.75 tonnes  From the beginning of 2024 to the end of April, the Company has received 399,757.45 tonnes or approximately 28% of the yearly total.			

Question ID	NOL 16	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a ground water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The following Site-specific approvals outline the requirements for groundwater monitoring:  - Industrial Sewage ECA No. 8117-CUSNXX: Specifies the operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, treated effluent storage pond monitoring programs. The amended Industrial Sewage ECA was issued on April 29, 2024,			

specifies the operation, monitoring and reporting requirements related to the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service the proposed Renewable Natural Gas (RNG) facility at the Site.

- Waste Disposal Site ECA No. A032203:

Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A".

Groundwater monitoring is completed semi-annually in the spring and fall as per the EMP.

No alterations can be made to the program unless prior approval has been given by the District Manager.

Question ID	NOL 17	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the groundwater monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company documents the results of the required monitoring programs in quarterly and annual monitoring reports which are routinely reviewed by the Ministry for compliance purposes. The Ministry's Technical Support Section is currently reviewing the 2023 Fourth Quarter/Annual ("Q4") Monitoring Report that was submitted to the Ministry which includes all of the monitoring for 2023.			

Question ID	NOL 21	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage leachate by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is required to manage leachate in accordance with the Industrial Sewage ECA No. 8117-CUSNXX and Waste ECA No. A032203.  Leachate Collection - Existing Site: This consists of:			

- Three finger drains in the South Fill Area;
- Pumping sump in the West Central Cell near monitoring station OW-29;
- Two parallel waste underdrains in Cell 3S (north of the South Fill Area); and
- Waste underdrains in the Northern part of Cell 5 and in Cells 4, 6, 7, 8, 9, 10 and 11. The waste under-drains direct leachate to a perimeter collection system which is then automatically pumped to the leachate equalization tank.

#### Leachate Collection - Expansion Site:

A leachate collection system has been installed in Cell 1, Cell 2, Cell 4, and Cell 6A. The leachate level in the primary drainage layer of these cells is currently controlled by automated Pump Station 1 (PS1), Pump Station 3 (PS3), Pump Station 5 (PS5), and Pump Station 7 (PS7). Leachate is transferred from the Primary Drainage Layer (PDL) to the leachate equalization tank. The Secondary Drainage Layer (SDL) is controlled by PS2, PS4, and PS6. The trigger for implementation of groundwater contingency measures for the Expansion Site is the loss of hydraulic containment. This occurs when leachate levels within the PDL are higher than the surrounding groundwater elevations.

#### RNG Condensation Collection and Disposal System:

The RNG condensate system (combined with the existing Landfill Gas (LFG) condensate system) for collection and discharge of the condensate generated at the newly proposed RNG facility, collected in the two Slop Tanks inside the RNG building to the Proposed Equalization Tank 2 during first year of the operation of Proposed Works, and disposal to Equalization Tank 1 or hauled offsite depending upon the Proposed Sampling Program results, the Proposed Works also include upgrades to the Existing Pump Station 10 (PS10) for pumping of condensate to Equalization Tank.

#### Leachate Treatment and Disposal Facility:

When constructed, this will consist of:

- A chemical feed system, a sequencing Batch Reactor, effluent and sludge pumps and holding tanks, a contrate evaporator and dryer, a reverse osmosis membrane filtration system, treated effluent on-site disposal systems and storage ponds.

#### Poplar Tree Leachate Irrigation System:

The Company has established a drip irrigation system which supplies leachate to a stand of poplar trees, known as the Poplar System ("PS"). The poplars are located on top of a portion of the existing landfill and have been operable since September 27, 2017. The PS is only utilized on a seasonal basis when the trees can actively uptake the leachate. There are a number of monitoring requirements under Condition 8.7 of ECA No. A032203 related to the PS including soil monitoring, visual assessments, leachate monitoring, tree tissue monitoring and surface water monitoring.

#### Off-Site Leachate Disposal:

The remaining leachate produced from both the existing and expansion site is hauled off-Site for treatment and disposal at the Chatham Water Pollution Control Plant in Ontario.

According to reports provided by the Company, the following was shipped offsite:

April 2024 – 5399.08 mt

The Site's Leachate generation has been higher than normal. The Company is exploring secondary disposal options to dispose of leachate offsite in order to reduce the volumes observed onsite. The Ministry met with the Company on April 18, 2024, to discuss the secondary disposal options that the Company is exploring. The Ministry provided the Company with information regarding the streamlined approval process for small research and development projects to inform the Company of the different MECP approval options available if it is needed for the disposal option selected by the Company.

The Ministry continues to watch the leachate levels and is working with the Company through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

Question ID	NOL 26	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage landfill gas by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Gas produced by the landfill is managed by the on-Site gas collection and flaring system. A portion of this gas is conveyed from the landfill to a neighboring property, where it is converted and used for building heat for a large greenhouse on an as-needed basis during the colder seasons. The remaining gas is sent to one of the two existing flares on-site. The Company is currently constructing a Renewable Natural Gas Plant which will convert the captured landfill gas from the Site into pipeline quality gas for injection to the commercial gas transmission and distribution network.  Waste ECA No. A032203: - Condition 7.10 and 13.6 requires the gas control system to be managed and monitored as specified in the D&O Report and the EMP. - Condition 14.8 states that if landfill gas concentrations exceed 10% LEL (Lower Explosive Limit) during monitoring, the Company is to undertake additional monitoring to determine if the elevated levels are landfill related. - The Company must report all landfill gas monitoring to the Ministry on a quarterly and annual basis.  Air ECA No. 6318-CX4NFX: - Describes the notifications, operation, maintenance, performance, and record keeping requirements for the flaring system and the RNG plant.			

Question ID	NOL 27	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the landfill gas management requirements in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Landfill gas monitoring is completed monthly from November to April and in July at gas monitoring probes GP1A to GP10. Gas probes GP9 and GP10, were installed in late June 2022 in accordance with their respective stages of landfill construction as presented in Table 2 of the landfill EMP.  The temperatures of the flares are checked during the unannounced weekly inspections to ensure they are operating above 875 degrees Celsius. During the weekly inspections that took place in April 2024, when in operation, Flare 1 and Flare 2 were observed operating above 875 degrees Celsius according to the SCADA system on all occasions except for Flare 1 during the April 18, 2024 inspection. During the inspection the Company stated that Flare 1 was down on April 17, 2024. The Company determined there was an issue with the flow meter and there was personnel onsite during the April 18, 2024 inspection repairing the flow meter. The Company informed the Ministry that the flow meter was repaired and the temperature of Flare 1 returned to the compliance level in the afternoon of April 18, 2024. No off-site odours were observed during the April 18, 2024 inspection and no complaints were received by the Company or the Ministry during this time.			

Question ID	NOL 29	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with landfill gas at this site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  No concerns raised with the landfill gas management or monitoring at the Site during April 2024.			

Question ID	NOL 31	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a surface water monitoring program by the ECA?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The following Site-specific approvals outline the requirements for surface water monitoring:

- Industrial Sewage ECA No. 8117-CUSNXX:

Specifies operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, and treated effluent storage pond monitoring programs. The newly amended ECA specifies operation, monitoring and reporting requirements for the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility.

- Waste Disposal Site ECA No. A032203:

Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A". Surface water will also be evaluated as per Item 91 of Schedule "A".

The Company conducts quarterly surface water monitoring following precipitation events of greater than 10 mm in a 24-hour period.

Question ID	NOL 32	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the surface water monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Surface water samples were collected on April 12, 2024 at monitoring stations SS1, SS10, SS16, SP1, SP2, SP3, and SP4, following a precipitation event of greater than 10 mm in a 24-hour period between 8:00 AM on April 11, 2024 and 8:00 AM on April 12, 2024.			

Question ID	NOL 34	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Are there water quality concerns with the results of the samples that have been tested?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

In April 2022 the Company, RWDI and the Ministry had a discussion surrounding the Ministry's objective to see a reduction in Total Suspended Solids (TSS) loading to discharging surface water from large industrial facilities, including landfilling sites within the province of Ontario. The Ministry is looking for best efforts by WM (Waste Management) to address TSS loading to discharging surface water from the Twin Creeks Environmental Centre.

As a result, a letter was provided to the Ministry from RWDI outlining that a TSS Action Plan would be developed and received by the Ministry in October 2022. It should be noted that the majority of this work took place during 2021 & 2022 including the removal of sediment build up within the sedimentation ponds, seeding of inactive waste areas and installation of sedimentation structures (straw bales). According to plan the removal of sediment should restore the design optimal effectiveness of the ponds to capture sediment and therefore reduce TSS offsite.

In December 2023, RWDI submitted an TSS Evaluation Letter on behalf of the Company as a follow-up to the TSS Action plan from October 2022. The TSS Evaluation Letter outlined the tasks that were completed along with their associated timelines. After review of the TSS Evaluation Letter, it was determined that the Ministry requires more data before reasonable conclusions can be made about whether TSS is being appropriately controlled before surface water discharges. The Ministry has requested additional updates in the quarterly reports that detail the effectiveness of the TSS management efforts taken to address TSS loading to the surface water.

The Ministry's Technical Support Section is currently reviewing the 2023 Fourth Quarter/Annual ("Q4") Monitoring Report.

During the surface water sampling that took place on April 12, 2024, two total boron concentration exceedances were noted at monitoring stations SS1 and SP2. According to RWDI, they are interpreted to not be landfill leachate related as neither chloride, un-ionized ammonia, or phenols were detected at elevated concentrations which would be indicative of a landfill leachate effect. RWDI also stated that the total boron concentrations at compliance monitoring station SS1 and SP2 were noted to be within the historical range. Thus, RWDI does not interpret these monitoring results to be a landfill leachate effect.

No other concerns were raised with the surface water at the Site during April 2024.

Question ID	NOL 36	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is proper equipment available for the compaction of waste and applying cover material?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			



The proper equipment for waste compaction and daily cover application was observed during the Ministry's weekly on-Site inspections. Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.

Question ID	NOL 37	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill able to accurately determine the amount of waste received?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has an entrance and exit scale and records all incoming waste volumes. Tonnage tracking reports are also sent to the Ministry on a monthly basis and yearly waste quantities are summarized in the annual reports.			

Question ID	NOL 41	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste being compacted adequately?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 42	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   7;			
<b>Question:</b> Is Daily cover applied to the waste at the end of each working day or as otherwise specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.47 of ECA No. A032203 outlines the requirements for daily, intermediate, and final cover.  Daily Cover: The working face must be covered with at least 15cm of soil or approved alternative cover material.			

**Intermittent Cover:**

In areas where landfilling is temporarily stopped for six months or more, at least 30 cm of soil cover or approved alternative cover material is required.

**Final Cover:**

In completed landfill areas, at least 1.85 m of cover soil and then at least 15cm of topsoil is required.

The Company reports that daily cover is adequately applied at the end of each working day. Stockpiles of daily cover were regularly observed on-Site near the active working face during operating hours while conducting the weekly inspections in April 2024. The following cover material was observed and/or reported to be used by the Company:

- Automobile Shredder Residue (ASR)
- Soil
- Contaminated Soil
- Woodchips
- Tarps

According to condition 6.52 of ECA No. A032203, samples of the ASR are to be taken semi-annually (spring and fall) and are to meet the specifications of non-hazardous waste under O. Reg. 347.

ASR track out was becoming an issue in March 2023. The Company has submitted an ASR Abatement plan in July 2023 and continues to work with the Ministry to reduce off site track out. The ASR Abatement plan included actions to clean up the roadside ditches and Nauvoo Road is continually ongoing. Final clean-up was completed in October 2023. Since the final clean-up took place, during the weekly inspections there has been no observations of ASR off-site , and the Company continues to accept ASR as a waste on the site and it is used on non-drivable surfaces as daily cover. Continued monitoring by the Company and the Ministry will ensure ASR drag out does not become a problem again.

No further issues were observed by the Inspector in April 2024.

Question ID	NOL 44	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access restricted by use of a gate, fence, or physical barrier when the site is not operating?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  ECA No. A032203 requires the following to be in place at the Site:			

- The entire Site enclosed with a 6-foot-high wire woven fence.
- The Site entrance and exit gates must be locked and secured against access by unauthorized persons during non-operational hours.
- Access to and exit from the Site for the transportation of waste must (under normal circumstances) be only permitted from Country Road 79 (Nauvoo Road).
- A sign must be displayed at the main entrance/exit to the Site, detailing:
  - Name of the Site and Owner
  - ECA number
  - Name of the Operator
  - Hours of operation
  - Approved and prohibited waste types
  - Warning against unauthorized access
  - Telephone number for complaints
  - 24/7 emergency telephone number (if different from above)
  - Warning against dumping outside the Site.

No concerns or issues with access control were identified during the weekly inspections or brought to the attention of the Ministry in April 2024.

Question ID	NOL 45	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste disposal area adequately screened from public view?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In accordance with Condition 5.4 of ECA No. A032203, there are 7-meter-high perimeter berms vegetated with trees along Zion Ln. and Nauvoo Rd. in order to block the public's view of the landfill.  No complaints of public view were received in April 2024.			

Question ID	NOL 48	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   23;			
<b>Question:</b> Is scavenging being prevented?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.33 of ECA No. A032203 states that the Company shall ensure that there is no			

scavenging as defined by O. Reg. 347 at the Site. "Scavenging" is defined as the uncontrolled removal of reusable material from waste at a waste disposal site.

The Site is secure during non-operating hours and there have been no reported incidents or evidence of scavenging during the Ministry's On-Site weekly inspections in April 2024. According to the Company Waste Management staff are trained extensively in preventing scavenging in the landfill.

Question ID	NOL 49	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Has a closure plan been submitted to the MECP?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  Condition 16.1 states that a closure plan is required to be submitted at least two years prior to closure (or when 90% of capacity is reached, whatever comes first). The site is not yet required to submit a closure plan.			

Question ID	NOL 51	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill only accepting the types of waste that they are approved to receive?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is approved to accept municipal, industrial, commercial, and institutional solid nonhazardous waste, including non-hazardous contaminated soils, generated within the Province of Ontario as per Condition 6.4 and 6.7 of ECA No. A032203.  No issues were identified with this condition by the Inspector in April 2024.			

Question ID	NOL 52	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill have a waste refusal procedure in place to manage waste that arrives at the site that the site is not approved the accept?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Condition 9.5 of ECA No. A032203 states that the Company must keep records in a daily logbook of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known. The Company has their own Waste Verification, Acceptance and Rejection Procedure and records rejection events by filling out a 'Waste Discrepancy Form'.

The Company confirmed there were no refusals of waste shipments in April 2024.

Question ID	NOL 54	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address and document spills and fires?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
Procedures for spills, fires and other emergencies are outlined in the D&O Report. Condition 12 of ECA No. A032203 also lists requirements regarding emergency situations:			
<ul style="list-style-type: none"> <li>- in the event of a fire or discharge of a contaminant to the environment, the Company shall contact the Spills Action Centre (SAC) and the Sarnia District Office forthwith.</li> <li>- a written report shall be submitted to the District Manager within 3 days of the incident, outlining the nature of the incident, remedial measures taken, and measures taken to prevent future occurrences.</li> <li>- the Company shall ensure that adequate firefighting and contingency spill clean-up equipment is available as per Item 66 of Schedule A and that emergency response personnel are familiar with its use and location.</li> </ul>			
The Company confirmed that emergency response personnel are familiar with the use and location of the emergency equipment. A variety of heavy equipment is available including a backhoe, rock truck, excavator, sweepers, water truck, as well as a spill kit which is located at the scale. The Company says this information is reviewed annually at a minimum.			
There were no fires reported by the company during the reporting period.			

Question ID	NOL 56	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is there an ECA condition requiring financial assurance?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Financial Assurance (FA) is required for private sector landfill sites under Ontario Regulation 232/98, in order to ensure that funds are available for site closure, post-closure care, and contingencies in the event that the site owner cannot or does not carry out their obligations under the ECA.

Condition 2.1 of ECA No. A032203 addresses FA requirements for the Site. The Company is required to submit a re-evaluation of the FA amount every four years. The most recent re-evaluation was required to be submitted on March 31, 2024, which was received by the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.

The next FA re-evaluation is required to be submitted on March 31, 2028.

Question ID	NOL 57	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the financial assurance been submitted, as specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 58	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the company provided financial assurance re-evaluation estimates in compliance with the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company submitted the financial assurance re-evaluation for the Site to the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.			

Question ID	NOL 59	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			

**Question:**

Does the landfill have a procedure in place to address complaints?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Company's complaint procedure is listed in the D&O Report. Responses to complaints related to dust, odour, and litter are also described in the Best Management Practices (BMP) Plans for the Site.

The following complaint procedure is required by Condition 11 of ECA No. A032203: "If at any time, the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:

- a. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information, the time and date of the complaint, specific details of operations that were occurring, any changers from normal operations, types of waste loads (including source) and other on Site activities;
- b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and
- c. The Owner shall complete and retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

11.2 The Owner shall designate a person to receive any complaints and to respond with a written notice of action as soon as possible. The Owner shall post the Site complaints procedure at the Site entrance. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.

11.3 The Company shall notify the District Manager, Township of Warwick and WIFN, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:

1. this Approval number;
2. a description of the nature of the complaint;
3. the time and date of the incident to which the complaint relates.

11.4 The Company shall report all environmental complaints to the WPLC at the next WPLC meeting."



Question ID	NOL 60	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator addressed the complaints to the satisfaction of the ministry?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In April 2024, one complaint was received by the Ministry and four complaints were reported by the Company. All of the complaints were about odour from the site. Odour from the Site can originate from a variety of sources. The odours identified in these complaints were attributed to a power interruption that caused a brief shutdown of the landfill gas collection system, some odours were also attributed to the fill area, weather conditions and wind direction.  Ongoing discussions between the Ministry and WM occur on the notifications of complaints and follow up actions taken by the Company. The Company is required to review and summarize the complaints and response in the annual report. All complaints were reported to the Ministry within two (2) business days and were responded to by the Company in accordance with Condition 11 of ECA No. A032203.			

Question ID	NOL 61	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator developed a Design and Operations Manual?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  A Design and Operations (D&O) Report was prepared by Henderson Paddon & Associates Limited, dated March 2008, and is listed as Items 66-68 of Schedule A under ECA No. A032203.			

Question ID	NOL 63	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill operator have training procedures for site personnel?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

The Company has their own training procedure. Training requirements for employees are described under condition 10.1 of ECA No. A032203.

Question ID	949100	Question Type	Legislative
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Were the inspection questions sufficient to address other identified non-compliance items?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b>  <p>One purpose of the inspections is to assess the Company efforts towards preventing, minimizing and mitigating off-site impacts resulting from their operations such as odours, litter, noise and dust. The following is a summary of the findings of the inspections conducted by the Ministry during April 2024:</p> <p>April 2024 Inspections Dates:</p> <ul style="list-style-type: none"> <li>- Tuesday, April 2, 2024</li> <li>- Thursday, April 11, 2024</li> <li>- Thursday, April 18, 2024</li> <li>- Tuesday, April 23, 2024</li> </ul> <p>Landfilling related odours were observed downwind of the landfill during three of the four inspections in April 2024. Odours were rated low to moderately strong and were described to be landfill gas and garbage odours. The odours were observed during operating hours, and they were attributed to the fill location and the direction of the wind. Agricultural related odours were also noted during three of the weekly inspections that took place in April 2024.</p> <p>Litter was present on-site during all of the inspections. Litter pickers were observed on-site by the Ministry during all of the April 2024 inspections. Litter was observed off-site during the April 11, 2024, inspection. The Company was notified of the Ministry's findings and moved the litter pickers to the area where the off-site little was observed. No off-site litter was observed during the next inspection on April 18, 2024. The Ministry has observed the Company following their Litter BMP, litter picking has improved at the site, and no issues with the response of the Company was observed during April 2024.</p> <p>ASR was becoming an issue in March 2023. The Company has submitted an ASR Abatement plan in July 2023 and continues to work with the Ministry to reduce off site track out. The ASR Abatement plan included actions to clean up the roadside ditches and Nauvoo Road is continually ongoing. Final clean-up was completed in October 2023. Since the final clean-up took place, during the weekly inspections there has been no observations of ASR off-site, and the Company continues to accept ASR as a waste on the site and it is used on non-drivable surfaces as daily cover. Continued monitoring by the Company and the Ministry will ensure ASR drag out does not become a problem again.</p>			

Dust track out has been observed at site on multiple occasions, but the sweeper and water truck has been observed operating. Mud and dust on the road has also been observed from other sources around the site. The Company has shown compliance with their Dust BMP and no issues with the response of the Company was observed during April 2024.

The Site's Leachate generation has been higher than normal. The Company is exploring secondary disposal options to dispose of leachate offsite in order to reduce the volumes observed onsite. The Ministry met with the Company on April 18, 2024, to discuss the secondary disposal options that the Company is exploring. The Ministry provided the Company with information regarding the streamlined approval process for small research and development projects to inform the Company of the different MECP approval options available if it is needed for the disposal option selected by the Company. The Ministry continues to watch the leachate levels and is working with the Company through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

No leachate seeps were observed by the Ministry and no leachate seeps were reported by the Company in April 2024.

There have been no other significant environmental concerns at the site. The Company continues to show general compliance with SOPs, BMPs and the ECA.

## APPENDIX N:

MECP May 2024 Inspection Report - No. 1-419853672





TWIN CREEKS ENVIRONMENTAL CENTRE  
Physical Address: 5768 NAUVOO RD, , WARWICK,  
ON N0M 2S0

## INSPECTION REPORT

Entity: WASTE MANAGEMENT OF  
CANADA CORPORATION  
Inspection Start Date: May 01, 2024  
Inspection End Date: May 31, 2024  
Inspected By: Amanda Seaman  
Badge #: 2129

*Amanda Seaman*

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(signature)

## INTRODUCTION

### Purpose

Ontario has a comprehensive legislative and regulatory framework to ensure that wastes are managed in an environmentally safe manner. Through the Environmental Protection Act (EPA) and accompanying regulations, the Ministry of the Environment, Conservation and Parks (the Ministry) has established a cradle to grave management system, which governs the collection, storage, transportation, and disposal of waste.

The Ministry issues Environmental Compliance Approvals (ECA) under the EPA for landfill sites that dispose of solid non-hazardous wastes. The ECA imposes conditions related to development and operation of the site, and includes monitoring requirements, etc. To confirm whether the regulated community is complying with the requirements related to the waste disposal activities, the Ministry is committed to conducting proactive inspections of waste sites. With that aim in mind, Ministry staff conducted an inspection of the Twin Creeks Environmental Centre (Site) in Warwick Township as part of the Sarnia District Office's 2024/25 inspection program.

The Site is approved to accept municipal, industrial, commercial, and institutional solid non-hazardous waste generated within the Province of Ontario, including non-hazardous contaminated soils under ECA Number A032203, dated December 16, 2023. The Site is owned and operated by Waste Management of Canada Corporation (Company).

### Scope

This inspection report summarizes the findings of the weekly inspections conducted at the Twin Creeks Environmental Centre during the month of May 2024. The focus of each inspection is to assess the Company's operation and construction of the site against the terms and conditions of its Environmental Compliance Approvals and with the requirements of applicable environmental legislation, regulations, and guidelines.

A total of five inspections were conducted by the Ministry during the month of May 2024. Inspections took place on the following dates:

- Thursday, May 2, 2024
- Tuesday, May 7, 2024
- Wednesday May 15, 2024
- Wednesday, May 22, 2024
- Tuesday, May 28, 2024



## **NON-COMPLIANCE**

This should not be construed as a confirmation of full compliance with all potential applicable legal requirements. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.



## **RECOMMENDATIONS**

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program:** WASTE | **Regulated Activity:** Landfills

Question ID	NOL 1	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the Open landfill site have an Environmental Compliance Approval (ECA)?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has the following Ministry approvals:  WASTE DISPOSAL SITE ECA No. A032203, dated December 16, 2023 - For the use and operation of a 101.8-hectare landfilling area with a total site area of 301 hectares, accepting only municipal, industrial, commercial, institutional solid non-hazardous waste generated within Ontario, including non-haz contaminated soil. The site is approved to receive 1,400,000 tonnes per year.  AIR ECA No. 6318-CX4NFX, dated December 13, 2023 Approved to install and operate: - six enclosed flare systems; - emergency diesel generators to provide back-up power as needed; - a 50kW diesel generator to provide regular power to the south fill area leachate pumping system; and- exhaust fans, exhaust louvres, and aeration tanks exhausting to the atmosphere from the leachate treatment facility and one leachate treatment facility laboratory. - infrastructure for the Renewable Natural Gas Plant including one pre-treatment thermal oxidizer, one main thermal oxide, one amine reboiler and two RNG (Renewable Natural Gas) plant condensate tanks with carbon drum filters.  INDUSTRIAL SEWAGE ECA No. 8117-CUSNXX, dated April 29, 2024 - - Issued for the existing industrial sewage works including the leachate collection, treatment, and disposal facility as well as a stormwater management facility to service the Site and for the establishment of the newly proposed industrial sewage works for usage and operation of condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility at the Site.  PERMIT TO TAKE WATER (PTTW) No. 4682-BLJRYJ, dated November 8, 2021 Issued for dewatering at the Site and industrial activities such as road watering to reduce			

dust. On- Site water taking locations include:  
- stormwater management ponds 1, 2, 3, and 4  
- secondary drainage layer (SDL)  
- four pumping stations, PS2, PS4, PS6, PS8.

Question ID	NOL 13	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are access roads and on-site roads provided so that vehicles hauling waste to and on the site may travel readily on any day under all normal weather conditions?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Access to and exit from the Site for the transportation of waste is permitted from Country Road 79 (Nauvoo Road).  There are both paved and unpaved access roads on site. Typically, unpaved roads are made of material that would allow for vehicles hauling waste on site to readily travel unhindered in normal weather conditions as per ECA condition 6.31a&b.			

Question ID	NOL 14	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access limited to times when an attendant is on duty?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  An attendant is always on duty at the Site during operating hours.  During non-operating hours, the Site entrance and exit gates are locked. Site access is secured against access by unauthorized persons as per Condition 6.28 of the ECA.			

Question ID	NOL 15	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the site only receive waste from within its approved service area?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Facility only receives waste generated in the Province of Ontario as per Condition 6.4 and 6.7 of the ECA.

The Site is approved for the use and operation of a 101.8-hectare landfilling area with a total Site area of 301 hectares. During the inspection period the Company deposited waste in Cells 2, 4 and 6A of the Expansion Site. All waste is being deposited within the approved landfill footprint, Condition 6.6 of ECA No. A032203 authorizes the Company to receive up to a maximum of 1,400,000 tonnes of waste per year (including contaminated soil) for disposal at the Site.

According to the tonnage report provided by the Company, May's monthly total is:

May 2024 – 118,441.06 tonnes

From the beginning of 2024 to the end of May, the Company has received 517,413.42 tonnes or approximately 37% of the yearly total.

Question ID	NOL 16	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a ground water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
The following Site-specific approvals outline the requirements for groundwater monitoring:			
<p>- Industrial Sewage ECA No. 8117-CUSNXX: Specifies the operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, treated effluent storage pond monitoring programs. The amended Industrial Sewage ECA was issued on April 29, 2024, specifies the operation, monitoring and reporting requirements related to the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service the proposed Renewable Natural Gas (RNG) facility at the Site.</p> <p>- Waste Disposal Site ECA No. A032203: Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A".</p>			

Groundwater monitoring is completed semi-annually in the spring and fall as per the EMP.

No alterations can be made to the program unless prior approval has been given by the District Manager.

Question ID	NOL 17	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the groundwater monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company documents the results of the required monitoring programs in quarterly and annual monitoring reports which are routinely reviewed by the Ministry for compliance purposes.  The 2024 First Quarter ("Q1") Monitoring Report was submitted to the Ministry on May 23, 2024. The Q1 reporting period reflect all monitoring completed by the Facility between January 1 and March 31, 2024.  Since groundwater monitoring is completed semi-annually in the spring and fall, it was not required during the Company's Q1 monitoring period.			

Question ID	NOL 21	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage leachate by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is required to manage leachate in accordance with the Industrial Sewage ECA No. 8117-CUSNXX and Waste ECA No. A032203.  Leachate Collection - Existing Site: This consists of: - Three finger drains in the South Fill Area; - Pumping sump in the West Central Cell near monitoring station OW-29; - Two parallel waste underdrains in Cell 3S (north of the South Fill Area); and - Waste underdrains in the Northern part of Cell 5 and in Cells 4, 6, 7, 8, 9, 10 and 11. The waste under-drains direct leachate to a perimeter collection system which is then			

automatically pumped to the leachate equalization tank.

**Leachate Collection - Expansion Site:**

A leachate collection system has been installed in Cell 1, Cell 2, Cell 4, and Cell 6A. The leachate level in the primary drainage layer of these cells is currently controlled by automated Pump Station 1 (PS1), Pump Station 3 (PS3), Pump Station 5 (PS5), and Pump Station 7 (PS7). Leachate is transferred from the Primary Drainage Layer (PDL) to the leachate equalization tank. The Secondary Drainage Layer (SDL) is controlled by PS2, PS4, and PS6. The trigger for implementation of groundwater contingency measures for the Expansion Site is the loss of hydraulic containment. This occurs when leachate levels within the PDL are higher than the surrounding groundwater elevations.

**RNG Condensation Collection and Disposal System:**

The RNG condensate system (combined with the existing Landfill Gas (LFG) condensate system) for collection and discharge of the condensate generated at the newly proposed RNG facility, collected in the two Slop Tanks inside the RNG building to the Proposed Equalization Tank 2 during first year of the operation of Proposed Works, and disposal to Equalization Tank 1 or hauled offsite depending upon the Proposed Sampling Program results, the Proposed Works also include upgrades to the Existing Pump Station 10 (PS10) for pumping of condensate to Equalization Tank.

**Leachate Treatment and Disposal Facility:**

When constructed, this will consist of:

- A chemical feed system
- A sequencing Batch Reactor
- Effluent and sludge pumps and holding tanks
- A contrate evaporator and dryer
- A reverse osmosis membrane filtration system
- Treated effluent on-site disposal systems and storage ponds

**Poplar Tree Leachate Irrigation System:**

The Company has established a drip irrigation system which supplies leachate to a stand of poplar trees, known as the Poplar System ("PS"). The poplars are located on top of a portion of the existing landfill and have been operable since September 27, 2017. The PS is only utilized on a seasonal basis when the trees can actively uptake the leachate.

There are a number of monitoring requirements under Condition 8.7 of ECA No. A032203 related to the PS including soil monitoring, visual assessments, leachate monitoring, tree tissue monitoring and surface water monitoring. The PS became operational in May 2024 for the 2024 growing season.

**Off-Site Leachate Disposal:**

The remaining leachate produced from both the existing and expansion site is hauled off-Site for treatment and disposal at the Chatham Water Pollution Control Plant in Ontario.

According to reports provided by the Company, the following was shipped offsite:

May 2024 – 5478.11 mt

Question ID	NOL 22	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill implementing the procedures required by the ECA to manage leachate?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Existing Site:  Leachate liquid levels are monitored semi-annually in May and November for the Existing Site. Leachate liquid level monitoring it was not required during the Company's Q1 monitoring period. Over the long term, leachate levels are expected to decrease in the Existing Site since it is capped, and leachate is extracted for poplar system irrigation and off-Site disposal.  Expansion Site:  For the Expansion Site ECA No. A032203 condition 7.18 requires that a hydraulic trap be developed and maintained beneath the expansion area and that the leachate head on the landfill liner does not exceed 300 mm. Condition 14.1 also requires additional groundwater level monitoring if the leachate level elevation in any of the following pumping station well rise above their respective trigger level: PS1 - 232.7 mASL PS3 - 232.6 mASL PS5 - 232.8 mASL PS7 - 233.4 mASL  According to the Company's Q1 Report the leachate levels in PS1, PS3, and PS5 and PS7 generally remained below their respective trigger leachate elevations with the exception of PS3 and PS7. The leachate elevation slightly exceeded the 0.3 m head target at PS3 during different time periods throughout January, February and March 2024, these exceedances ranged from 0.01 to 0.73. The leachate elevation exceeded the 0.3 m head target at PS7 during the whole Q1 time period, these exceedances ranged from 0.88 to 1.34. According to the Company, these exceedances have been attributed to the significant amount of precipitation received during the Q1 timing period and PS7 can also be attributed to the infiltration potential of Cell 6A.  RWDI reported that during the Q1 period, leachate elevations within Cell 1, 2, 4 & 6A of the expansion site were below the historical groundwater elevation confirming the hydraulic trap was maintained as per condition 14.1.  The Company reported and the Ministry observed multiple leachate seeps during this			

reporting period in the expansion site and one in the existing site. The Company observed a small leachate seep on the existing landfill on May 2, 2024 and informed the Ministry during the May 2, 2024 inspection. During the May 2 inspection, the Ministry also identified a seep on Cell 2. The Company removed the soil where the seeps occurred and cleaned the area. During the May 7, 2024 inspection the Ministry observed multiple leachate seeps on the expansion site. The Ministry informed the Company of the seeps observed on the east slope of cell's 2 and 4 and the Company began repairing the seeps upon being notified. During the subsequent visits the Ministry observed the seeps to be re-capped with clay and no additional seeping was observed. All seeps were repaired by the Company and there were no offsite impacts reported.

The Site's Leachate generation has been higher than normal. The Company is exploring secondary disposal options to dispose of leachate offsite in order to reduce the volumes observed onsite. The Ministry continues to watch the leachate levels and is working with the Company through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

Question ID	NOL 26	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage landfill gas by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Gas produced by the landfill is managed by the on-Site gas collection and flaring system. A portion of this gas is conveyed from the landfill to a neighboring property, where it is converted and used for building heat for a large greenhouse on an as-needed basis during the colder seasons. The remaining gas is sent to one of the two existing flares on-site. The Company is currently constructing a Renewable Natural Gas Plant which will convert the captured landfill gas from the Site into pipeline quality gas for injection to the commercial gas transmission and distribution network.  Waste ECA No. A032203: - Condition 7.10 and 13.6 requires the gas control system to be managed and monitored as specified in the D&O Report and the EMP. - Condition 14.8 states that if landfill gas concentrations exceed 10% LEL (Lower Explosive Limit) during monitoring, the Company is to undertake additional monitoring to determine if the elevated levels are landfill related. - The Company must report all landfill gas monitoring to the Ministry on a quarterly and annual basis.  Air ECA No. 6318-CX4NFX: - Describes the notifications, operation, maintenance, performance, and record keeping			



requirements for the flaring system and the RNG plant.

Question ID	NOL 27	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the landfill gas management requirements in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Landfill gas monitoring is completed monthly from November to April and in July at gas monitoring probes GP1A to GP10. Gas probes GP9 and GP10, were installed in late June 2022 in accordance with their respective stages of landfill construction as presented in Table 2 of the landfill EMP.  According to the 2024 First Quarter ("Q1") Monitoring Report was submitted to the Ministry on May 23, 2024, methane gas was not detected at the established gas probes GP1A to GP10.  Total Hydrocarbon (THC) capped surface monitoring is conducted in the spring and fall in accordance with the Ambient Air Quality Monitoring Plan (AAQMP), required by Condition 13.8 of ECA No. A032203. It consists of a walk-over survey of the final capped landfill area using a handheld THC analyzer. Elevated THC concentrations are indicators of the escape of possible landfill gas in certain areas. Since this is completed semi-annually in the spring and fall, it was not required during the Company's Q1 monitoring period.  The temperatures of the flares are checked during the unannounced weekly inspections to ensure they are operating above 875 degrees Celsius. During the weekly inspections that took place in May 2024, when in operation, Flare 1 and Flare 2 were observed operating above 875 degrees Celsius according to the SCADA system on all occasions except for during the May 2, 2024 inspection. During that inspection Flare 1 and Flare 2 were both operating below 875 degrees Celsius. The Company stated that the Flare temperatures were down to install new moisture separator control meters. This was completed during the Sites scheduled maintenance and the Company reported that both Flares were within the compliance limit approx. 30 minutes after the Ministry left the site. No off-site odours were observed during the May 2, 2024 inspection and no complaints were received by the Company or the Ministry during this time.			

Question ID	NOL 29	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with landfill gas at this site?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

No

No concerns were raised with the landfill gas management or monitoring at the Site during May 2024.

Question ID	NOL 31	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a surface water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
The following Site-specific approvals outline the requirements for surface water monitoring:			
<ul style="list-style-type: none"> <li>- Industrial Sewage ECA No. 8117-CUSNXX: Specifies operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, and treated effluent storage pond monitoring programs. The newly amended ECA specifies operation, monitoring and reporting requirements for the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility.</li> <li>- Waste Disposal Site ECA No. A032203: Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A". Surface water will also be evaluated as per Item 91 of Schedule "A".</li> </ul>			
The Company conducts quarterly surface water monitoring following precipitation events of greater than 10 mm in a 24-hour period.			

Question ID	NOL 32	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the surface water monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
Following precipitation events of greater than 10 mm in a 24-hour period, routine surface			

water samples were collected during Q1 at monitoring stations SS1, SS10, SS16, SS19 (new), SP1 SP2, SP3, and SP4. SS19 not monitored since the compost facility is not yet constructed. As part of the Poplar System Monitoring program, during Q1 samples were collected at SS14A, SS14B, and SS15A.

The routine quarterly surface water monitoring results satisfied the relevant trigger concentrations, with exceptions at monitoring stations SS1 and SP2 and SS14A, SS14B, and SS15A which are part of the Poplar System Monitoring program. The exceptions are discussed in detail in the Q1 Report submitted by the Company. It is important to note that verification results indicated acceptable chemical and biological results for each trigger level exceedances at SS1 and SP2 therefore no further verification monitoring was required.

The Ministry's Technical Support Section is currently reviewing the 2024 First Quarter ("Q1") Monitoring Report was submitted to the Ministry on May 23, 2024.

Question ID	NOL 34	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Are there water quality concerns with the results of the samples that have been tested?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  In April 2022 the Company, RWDI and the Ministry had a discussion surrounding the Ministry's objective to see a reduction in Total Suspended Solids (TSS) loading to discharging surface water from large industrial facilities, including landfilling sites within the province of Ontario. The Ministry is looking for best efforts by WM (Waste Management) to address TSS loading to discharging surface water from the Twin Creeks Environmental Centre.  As a result, a letter was provided to the Ministry from RWDI outlining that a TSS Action Plan would be developed and received by the Ministry in October 2022. It should be noted that the majority of this work took place during 2021 & 2022 including the removal of sediment build up within the sedimentation ponds, seeding of inactive waste areas and installation of sedimentation structures (straw bales). According to plan the removal of sediment should restore the design optimal effectiveness of the ponds to capture sediment and therefore reduce TSS offsite.  In December 2023, RWDI submitted an TSS Evaluation Letter on behalf of the Company as a follow-up to the TSS Action plan from October 2022. The TSS Evaluation Letter outlined the tasks that were completed along with their associated timelines. After review of the TSS Evaluation Letter, it was determined that the Ministry requires more data before reasonable conclusions can be made about whether TSS is being appropriately controlled before surface water discharges. The Ministry has requested additional updates in the quarterly reports that detail the effectiveness of the TSS management efforts taken to address TSS loading to the			

surface water.

The Ministry's Technical Support Section is currently reviewing the 2024 First Quarter ("Q1") Monitoring Report was submitted to the Ministry on May 23, 2024.

No other concerns were raised with the surface water at the Site during May 2024.

Question ID	NOL 36	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is proper equipment available for the compaction of waste and applying cover material?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The proper equipment for waste compaction and daily cover application was observed during the Ministry's weekly on-Site inspections. Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.			

Question ID	NOL 37	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill able to accurately determine the amount of waste received?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has an entrance and exit scale and records all incoming waste volumes. Tonnage tracking reports are also sent to the Ministry on a monthly basis and yearly waste quantities are summarized in the annual reports.			

Question ID	NOL 39	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill operator have a site inspection program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Conditions 9.1 - 9.13 of ECA # A032203 contains daily, weekly and monthly inspection and			

record keeping requirements for the general operation and maintenance of the Site. These records are periodically requested by the Ministry during weekly inspections and are assessed for compliance.

The Ministry requested the daily inspection logs from May 1 – May 7, 2024 to review to ensure compliance with Condition's 9.3 and 9.4 of Environmental Compliance Approval No. A032203. Review of the daily inspection logs confirmed compliance with Condition's 9.3 and 9.4 of Environmental Compliance Approval No. A032203.

In addition, RWDI conducts inspections to ensure the Company is operating within the conditions of the ECA.

No issues or concerns have been identified with the frequency or details of the site inspections.

Question ID	NOL 41	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste being compacted adequately?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.			

Question ID	NOL 42	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   7;			
<b>Question:</b> Is Daily cover applied to the waste at the end of each working day or as otherwise specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.47 of ECA No. A032203 outlines the requirements for daily, intermediate, and final cover.  Daily Cover: The working face must be covered with at least 15cm of soil or approved alternative cover material.			

**Intermittent Cover:**

In areas where landfilling is temporarily stopped for six months or more, at least 30 cm of soil cover or approved alternative cover material is required.

**Final Cover:**

In completed landfill areas, at least 1.85 m of cover soil and then at least 15cm of topsoil is required.

The Company reports that daily cover is adequately applied at the end of each working day. Stockpiles of daily cover were regularly observed on-Site near the active working face during operating hours while conducting the weekly inspections in May 2024. The following cover material was observed and/or reported to be used by the Company:

- Automobile Shredder Residue (ASR)
- Soil
- Contaminated Soil
- Woodchips
- Tarps

According to condition 6.52 of ECA No. A032203, samples of the ASR are to be taken semi-annually (spring and fall) and are to meet the specifications of non-hazardous waste under O. Reg. 347.

ASR track out was becoming an issue in March 2023. The Company submitted an ASR Abatement plan in July 2023. The ASR Abatement plan included actions to clean up the roadside ditches and Nauvoo Road is continually ongoing. Final clean-up was completed in October 2023. The Ministry observed ASR track-out during the May 2, 2024, inspection. The Ministry notified the Company who identified an area where ASR was used on a drivable surface, on Cell 6A, which lead to the ASR track-out. The Company attempted to clean the ASR from the area and covered the area with woodchips to prevent track-out. The Company has stated that due to the rain observed in May, ASR has come to the surface. The Company is continuing to apply clay and clean up the ASR when it is observed. The Company has reduced the volume of ASR on-site and upon being notified and they dispatched a team of litter pickers and sweepers to clean the ASR observed off-site during the inspection. The Company continues to dispatch litter pickers to clean any additional ASR track-out. The Ministry is working with the Company and will continue to monitor the situation to ensure ASR track-out is addressed.

No further issues were observed by the Inspector in May 2024.

Question ID	NOL 43	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			

**Question:**

Are procedures implemented to control rodents or other animals and insects at the site?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Condition 6.32 of ECA No. A032203 states that the Site shall be operated and maintained such that vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance. Procedures for pest control are listed in the Company's D&O Report.

Predator Bird Services Inc. is on-Site from Monday to Friday during regular operating hours. They use a combination of noise makers, whistlers and a bird of prey (a falcon or hawk) to deter non native species from populating the landfill and surrounding area. Orkin is also on-Site monthly to maintain the prescribed plan for traps and baiting.

No concerns or issues with pest control were identified during May 2024.

Question ID	NOL 44	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access restricted by use of a gate, fence, or physical barrier when the site is not operating?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  ECA No. A032203 requires the following to be in place at the Site: <ul style="list-style-type: none"> <li>- The entire Site enclosed with a 6-foot-high wire woven fence.</li> <li>- The Site entrance and exit gates must be locked and secured against access by unauthorized persons during non-operational hours.</li> <li>- Access to and exit from the Site for the transportation of waste must (under normal circumstances) be only permitted from Country Road 79 (Nauvoo Road).</li> <li>- A sign must be displayed at the main entrance/exit to the Site, detailing: <ul style="list-style-type: none"> <li>-Name of the Site and Owner</li> <li>-ECA number</li> <li>-Name of the Operator</li> <li>-Hours of operation</li> <li>-Approved and prohibited waste types</li> <li>-Warning against unauthorized access</li> <li>-Telephone number for complaints</li> <li>-24/7 emergency telephone number (if different from above)</li> <li>-Warning against dumping outside the Site.</li> </ul> </li> </ul> <p>No concerns or issues with access control were identified during the weekly inspections or brought to the attention of the Ministry in May 2024.</p>			

Question ID	NOL 45	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste disposal area adequately screened from public view?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In accordance with Condition 5.4 of ECA No. A032203, there are 7-meter-high perimeter berms vegetated with trees along Zion Ln. and Nauvoo Rd. in order to block the public's view of the landfill.  No complaints of public view were received in May 2024.			

Question ID	NOL 48	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   23;			
<b>Question:</b> Is scavenging being prevented?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.33 of ECA No. A032203 states that the Company shall ensure that there is no scavenging as defined by O. Reg. 347 at the Site. "Scavenging" is defined as the uncontrolled removal of reusable material from waste at a waste disposal site.  The Site is secure during non-operating hours and there have been no reported incidents or evidence of scavenging during the Ministry's On-Site weekly inspections in May 2024. According to the Company Waste Management staff are trained extensively in preventing scavenging in the landfill.			

Question ID	NOL 49	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Has a closure plan been submitted to the MECP?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  Condition 16.1 states that a closure plan is required to be submitted at least two years prior to			



closure (or when 90% of capacity is reached, whatever comes first). The site is not yet required to submit a closure plan.

Question ID	NOL 51	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill only accepting the types of waste that they are approved to receive?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is approved to accept municipal, industrial, commercial, and institutional solid nonhazardous waste, including non-hazardous contaminated soils, generated within the Province of Ontario as per Condition 6.4 and 6.7 of ECA No. A032203.  No issues were identified with this condition by the Inspector in May 2024.			

Question ID	NOL 52	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill have a waste refusal procedure in place to manage waste that arrives at the site that the site is not approved the accept?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 9.5 of ECA No. A032203 states that the Company must keep records in a daily logbook of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known. The Company has their own Waste Verification, Acceptance and Rejection Procedure and records rejection events by filling out a 'Waste Discrepancy Form'.  The Company confirmed there were no refusals of waste shipments in May 2024.			

Question ID	NOL 54	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address and document spills and fires?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Procedures for spills, fires and other emergencies are outlined in the D&O Report. Condition 12 of ECA No. A032203 also lists requirements regarding emergency situations:

- in the event of a fire or discharge of a contaminant to the environment, the Company shall contact the Spills Action Centre (SAC) and the Sarnia District Office forthwith.
- a written report shall be submitted to the District Manager within 3 days of the incident, outlining the nature of the incident, remedial measures taken, and measures taken to prevent future occurrences.
- the Company shall ensure that adequate firefighting and contingency spill clean-up equipment is available as per Item 66 of Schedule A and that emergency response personnel are familiar with its use and location.

The Company confirmed that emergency response personnel are familiar with the use and location of the emergency equipment. A variety of heavy equipment is available including a backhoe, rock truck, excavator, sweepers, water truck, as well as a spill kit which is located at the scale. The Company says this information is reviewed annually at a minimum.

There were no fires or spills reported by the company during the month of May 2024.

Question ID	NOL 56	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is there an ECA condition requiring financial assurance?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Financial Assurance (FA) is required for private sector landfill sites under Ontario Regulation 232/98, in order to ensure that funds are available for site closure, post-closure care, and contingencies in the event that the site owner cannot or does not carry out their obligations under the ECA.  Condition 2.1 of ECA No. A032203 addresses FA requirements for the Site. The Company is required to submit a re-evaluation of the FA amount every four years. The most recent re-evaluation was required to be submitted on March 31, 2024, which was received by the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.  The next FA re-evaluation is required to be submitted on March 31, 2028.			

Question ID	NOL 57	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			

<b>Question:</b> Has the financial assurance been submitted, as specified in the ECA?
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes

<b>Question ID</b>	NOL 58	<b>Question Type</b>	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the company provided financial assurance re-evaluation estimates in compliance with the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company submitted the financial assurance re-evaluation for the Site to the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.			

<b>Question ID</b>	NOL 59	<b>Question Type</b>	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address complaints?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company's complaint procedure is listed in the D&O Report. Responses to complaints related to dust, odour, and litter are also described in the Best Management Practices (BMP) Plans for the Site.  The following complaint procedure is required by Condition 11 of ECA No. A032203: "If at any time, the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:  a. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information, the time and date of the complaint, specific details of operations that were occurring, any changers from normal operations, types of waste loads (including source) and other on Site activities;			

b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and

c. The Owner shall complete and retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

11.2 The Owner shall designate a person to receive any complaints and to respond with a written notice of action as soon as possible. The Owner shall post the Site complaints procedure at the Site entrance. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.

11.3 The Company shall notify the District Manager, Township of Warwick and WIFN, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:

1. this Approval number;
2. a description of the nature of the complaint;
3. the time and date of the incident to which the complaint relates.

11.4 The Company shall report all environmental complaints to the WPLC at the next WPLC meeting."

Question ID	NOL 60	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator addressed the complaints to the satisfaction of the ministry?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In May 2024, one complaint was received by the Ministry and three complaints were reported by the Company. All of the complaints were about odour from the site. Odour from the Site can originate from a variety of sources. The odours identified in these complaints were attributed to the Flares being down for maintenance work t caused a brief shutdown of the landfill gas collection system, some odours were also attributed to the fill area, weather conditions and wind direction.  Ongoing discussions between the Ministry and WM occur on the notifications of complaints and follow up actions taken by the Company. The Company is required to review and summarize the complaints and response in the quarterly and annual reports. All complaints were reported to the Ministry within two (2) business days and were responded to by the Company in accordance with Condition 11 of ECA No. A032203.			

Question ID	NOL 61	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator developed a Design and Operations Manual?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  A Design and Operations (D&O) Report was prepared by Henderson Paddon & Associates Limited, dated March 2008, and is listed as Items 66-68 of Schedule A under ECA No. A032203.			

Question ID	NOL 63	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill operator have training procedures for site personnel?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company has their own training procedure. Training requirements for employees are described under condition 10.1 of ECA No. A032203.			

Question ID	NOL 64	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill operator following the established training procedures?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company provided copies of training records to the Ministry for their employees demonstrating that the Company is following the established training procedures as described under condition 10.1 of ECA No. A032203.			

Question ID	949100	Question Type	Legislative
<b>Legislative Requirement(s):</b> Not Applicable			

**Question:**

Were the inspection questions sufficient to address other identified non-compliance items?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

One purpose of the inspections is to assess the Company efforts towards preventing, minimizing and mitigating off-site impacts resulting from their operations such as odours, litter, noise and dust. The following is a summary of the findings of the inspections conducted by the Ministry during May 2024:

May 2024 Inspection Dates:

- Thursday, May 2, 2024
- Tuesday, May 7, 2024
- Wednesday May 15, 2024
- Wednesday, May 22, 2024
- Tuesday, May 28, 2024

Landfill related odours were observed downwind of the landfill during one of the five inspections in May 2024. Odour was rated moderately strong and were described to be an garbage odour. The odours were observed during operating hours, and they were attributed to the fill location and the direction of the wind. Agricultural related odours were also noted during all five of the weekly inspections that took place in May 2024.

Litter was present on-site during all of the inspections. Litter pickers were observed on-site by the Ministry during three of the five May 2024 inspections. The Ministry has observed the Company following their Litter BMP, litter picking has improved at the site, and no issues with the response of the Company was observed during May 2024.

The Ministry observed ASR track-out during the May 2, 2024, inspection. The Ministry notified the Company who identified an area where ASR was used on a drivable surface, on Cell 6A, which lead to the ASR track-out. The Company attempted to clean the ASR from the area and covered the area with woodchips to prevent track-out. The Company has stated that due to the rain observed in May, ASR has come to the surface. The Company is continuing to apply clay and clean up the ASR when it is observed. The Company has reduced the volume of ASR on-site and upon being notified and they dispatched a team of litter pickers and sweepers to clean the ASR observed off-site during the inspection. The Company continues to dispatch litter pickers to clean any additional ASR track-out. The Ministry is working with the Company and will continue to monitor the situation to ensure ASR track-out is addressed.

The Site's Leachate generation has been higher than normal. The Company is exploring secondary disposal options to dispose of leachate offsite in order to reduce the volumes observed onsite. The Ministry continues to watch the leachate levels and is working with the Company through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

The Company reported and the Ministry observed multiple leachate seeps during this reporting period in the expansion site and one in the existing site. The Company observed a small leachate seep on the existing landfill on May 2, 2024 and informed the Ministry during the May 2, 2024 inspection. During the May 2 inspection, the Ministry also identified a seep on Cell 2. The Company removed the soil where the seeps occurred and cleaned the area. During the May 7, 2024 inspection the Ministry observed multiple leachate seeps on the expansion site. The Ministry informed the Company of the seeps observed on the east slope of cell's 2 and 4 and the Company began repairing the seeps upon being notified. During the subsequent visits the Ministry observed the seeps to be re-capped with clay and no additional seeping was observed. All seeps were repaired by the Company and there were no offsite impacts reported.

There have been no other significant environmental concerns at the site. The Company continues to show general compliance with SOPs, BMPs and the ECA.

## APPENDIX N:

MECP June 2024 Inspection Report - No. 1-461459530







TWIN CREEKS ENVIRONMENTAL CENTRE  
Physical Address: 5768 NAUVOO RD, , WARWICK,  
ON N0M 2S0

## INSPECTION REPORT

Entity: WASTE MANAGEMENT OF  
CANADA CORPORATION  
Inspection Start Date: June 01, 2024  
Inspection End Date: June 30, 2024  
Inspected By: Amanda Seaman  
Badge #: 2129

*Amanda Seaman*

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(signature)

## INTRODUCTION

### Purpose

Ontario has a comprehensive legislative and regulatory framework to ensure that wastes are managed in an environmentally safe manner. Through the Environmental Protection Act (EPA) and accompanying regulations, the Ministry of the Environment, Conservation and Parks (the Ministry) has established a cradle to grave management system, which governs the collection, storage, transportation, and disposal of waste.

The Ministry issues Environmental Compliance Approvals (ECA) under the EPA for landfill sites that dispose of solid non-hazardous wastes. The ECA imposes conditions related to development and operation of the site, and includes monitoring requirements, etc. To confirm whether the regulated community is complying with the requirements related to the waste disposal activities, the Ministry is committed to conducting proactive inspections of waste sites. With that aim in mind, Ministry staff conducted an inspection of the Twin Creeks Environmental Centre (Site) in Warwick Township as part of the Sarnia District Office's 2024/25 inspection program.

The Site is approved to accept municipal, industrial, commercial, and institutional solid non-hazardous waste generated within the Province of Ontario, including non-hazardous contaminated soils under ECA Number A032203, dated December 16, 2023. The Site is owned and operated by Waste Management of Canada Corporation (Company).

### Scope

This inspection report summarizes the findings of the weekly inspections conducted at the Twin Creeks Environmental Centre during the month of June 2024. The focus of each inspection is to assess the Company's operation and construction of the site against the terms and conditions of its Environmental Compliance Approvals and with the requirements of applicable environmental legislation, regulations, and guidelines.

A total of four inspections were conducted by the Ministry during the month of June 2024. Inspections took place on the following dates:

- Tuesday, June 4, 2024
- Wednesday June 12, 2024
- Wednesday, June 19, 2024
- Wednesday, June 26, 2024

## **NON-COMPLIANCE**

This should not be construed as a confirmation of full compliance with all potential applicable legal requirements. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## **RECOMMENDATIONS**

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program:** WASTE | **Regulated Activity:** Landfills

Question ID	NOL 1	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the Open landfill site have an Environmental Compliance Approval (ECA)?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has the following Ministry approvals:  WASTE DISPOSAL SITE ECA No. A032203, dated December 16, 2023 - For the use and operation of a 101.8-hectare landfilling area with a total site area of 301 hectares, accepting only municipal, industrial, commercial, institutional solid non-hazardous waste generated within Ontario, including non-haz contaminated soil. The site is approved to receive 1,400,000 tonnes per year.  AIR ECA No. 6318-CX4NFX, dated December 13, 2023 Approved to install and operate: - six enclosed flare systems; - emergency diesel generators to provide back-up power as needed; - a 50kW diesel generator to provide regular power to the south fill area leachate pumping system; and- exhaust fans, exhaust louvres, and aeration tanks exhausting to the atmosphere from the leachate treatment facility and one leachate treatment facility laboratory. - infrastructure for the Renewable Natural Gas Plant including one pre-treatment thermal oxidizer, one main thermal oxide, one amine reboiler and two RNG (Renewable Natural Gas) plant condensate tanks with carbon drum filters.  INDUSTRIAL SEWAGE ECA No. 8117-CUSNXX, dated April 29, 2024 - Issued for the existing industrial sewage works including the leachate collection, treatment, and disposal facility as well as a stormwater management facility to service the Site and for the establishment of the newly proposed industrial sewage works for usage and operation of condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility at the Site.  PERMIT TO TAKE WATER (PTTW) No. 4682-BLJRYJ, dated November 8, 2021 Issued for dewatering at the Site and industrial activities such as road watering to reduce			

dust. On- Site water taking locations include:

- stormwater management ponds 1, 2, 3, and 4
- secondary drainage layer (SDL)
- four pumping stations, PS2, PS4, PS6, PS8.

Question ID	NOL 13	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are access roads and on-site roads provided so that vehicles hauling waste to and on the site may travel readily on any day under all normal weather conditions?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Access to and exit from the Site for the transportation of waste is permitted from Country Road 79 (Nauvoo Road).  There are both paved and unpaved access roads on site. Typically, unpaved roads are made of material that would allow for vehicles hauling waste on site to readily travel unhindered in normal weather conditions as per ECA condition 6.31a&b.			

Question ID	NOL 14	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access limited to times when an attendant is on duty?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  An attendant is always on duty at the Site during operating hours.  During non-operating hours, the Site entrance and exit gates are locked. Site access is secured against access by unauthorized persons as per Condition 6.28 of the ECA.			

Question ID	NOL 15	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the site only receive waste from within its approved service area?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Facility only receives waste generated in the Province of Ontario as per Condition 6.4 and 6.7 of the ECA.

The Site is approved for the use and operation of a 101.8-hectare landfilling area with a total Site area of 301 hectares. During the inspection period the Company deposited waste in Cells 2, 4 and 6A of the Expansion Site. All waste is being deposited within the approved landfill footprint, Condition 6.6 of ECA No. A032203 authorizes the Company to receive up to a maximum of 1,400,000 tonnes of waste per year (including contaminated soil) for disposal at the Site.

According to the tonnage report provided by the Company, June's monthly total is:

June 2024 – 144,261.49 tonnes

From the beginning of 2024 to the end of June, the Company has received 661,775.22 tonnes or approximately 47% of the yearly total.

Question ID	NOL 16	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a ground water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
The following Site-specific approvals outline the requirements for groundwater monitoring:			
<p>- Industrial Sewage ECA No. 8117-CUSNXX: Specifies the operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, treated effluent storage pond monitoring programs. The amended Industrial Sewage ECA was issued on April 29, 2024, specifies the operation, monitoring and reporting requirements related to the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service the proposed Renewable Natural Gas (RNG) facility at the Site.</p> <p>- Waste Disposal Site ECA No. A032203: Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A".</p>			

Groundwater monitoring is completed semi-annually in the spring and fall as per the EMP.

No alterations can be made to the program unless prior approval has been given by the District Manager.

Question ID	NOL 17	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the groundwater monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Groundwater monitoring is completed semi-annually in the spring and fall as per the EMP. The Company documents the results of the required monitoring programs in quarterly and annual monitoring reports which are routinely reviewed by the Ministry for compliance purposes.  RWDI on behalf of the Company submitted the 2024 Spring Groundwater Quality Monitoring Letter of Notification for Twin Creeks Environmental Centre to the Ministry on June 5, 2024. This document outlines the monitoring events completed for the Spring Groundwater Quality Monitoring. A complete analysis of the monitoring event will be presented in the Q2 Report.			

Question ID	NOL 21	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage leachate by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is required to manage leachate in accordance with the Industrial Sewage ECA No. 8117-CUSNXX and Waste ECA No. A032203.  Leachate Collection - Existing Site: This consists of: - Three finger drains in the South Fill Area; - Pumping sump in the West Central Cell near monitoring station OW-29; - Two parallel waste underdrains in Cell 3S (north of the South Fill Area); and - Waste underdrains in the Northern part of Cell 5 and in Cells 4, 6, 7, 8, 9, 10 and 11. The waste under-drains direct leachate to a perimeter collection system which is then automatically pumped to the leachate equalization tank.			



#### Leachate Collection - Expansion Site:

A leachate collection system has been installed in Cell 1, Cell 2, Cell 4, and Cell 6A. The leachate level in the primary drainage layer of these cells is currently controlled by automated Pump Station 1 (PS1), Pump Station 3 (PS3), Pump Station 5 (PS5), and Pump Station 7 (PS7). Leachate is transferred from the Primary Drainage Layer (PDL) to the leachate equalization tank. The Secondary Drainage Layer (SDL) is controlled by PS2, PS4, and PS6. The trigger for implementation of groundwater contingency measures for the Expansion Site is the loss of hydraulic containment. This occurs when leachate levels within the PDL are higher than the surrounding groundwater elevations.

#### RNG Condensation Collection and Disposal System:

The RNG condensate system (combined with the existing Landfill Gas (LFG) condensate system) for collection and discharge of the condensate generated at the newly proposed RNG facility, collected in the two Slop Tanks inside the RNG building to the Proposed Equalization Tank 2 during first year of the operation of Proposed Works, and disposal to Equalization Tank 1 or hauled offsite depending upon the Proposed Sampling Program results, the Proposed Works also include upgrades to the Existing Pump Station 10 (PS10) for pumping of condensate to Equalization Tank.

#### Leachate Treatment and Disposal Facility:

When constructed, this will consist of:

- A chemical feed system
- A sequencing Batch Reactor
- Effluent and sludge pumps and holding tanks
- A contrate evaporator and dryer
- A reverse osmosis membrane filtration system
- Treated effluent on-site disposal systems and storage ponds

#### Poplar Tree Leachate Irrigation System:

The Company has established a drip irrigation system which supplies leachate to a stand of poplar trees, known as the Poplar System ("PS"). The poplars are located on top of a portion of the existing landfill and have been operable since September 27, 2017. The PS is only utilized on a seasonal basis when the trees can actively uptake the leachate.

There are a number of monitoring requirements under Condition 8.7 of ECA No. A032203 related to the PS including soil monitoring, visual assessments, leachate monitoring, tree tissue monitoring and surface water monitoring. The PS became operational in May 2024 and irrigation has been occurring during three of four weekly inspections in June 2024.

#### Off-Site Leachate Disposal:

The remaining leachate produced from both the existing and expansion site is hauled off-Site for treatment and disposal at the Chatham Water Pollution Control Plant in Ontario. On June 26, 2024, the Ministry approved the Company's request for off-site leachate disposal at Valicor Environmental Services in Michigan, USA. According to the Company, having the ability to send leachate to more than one location will reduce the volume observed onsite faster. The Ministry continues to watch the leachate levels and is working with the Company

through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

According to reports provided by the Company, the following was shipped offsite:  
June 2024 – 4802.27 mt

Question ID	NOL 26	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage landfill gas by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Gas produced by the landfill is managed by the on-Site gas collection and flaring system. A portion of this gas is conveyed from the landfill to a neighboring property, where it is converted and used for building heat for a large greenhouse on an as-needed basis during the colder seasons. The remaining gas is sent to one of the two existing flares on-site. The Company is currently constructing a Renewable Natural Gas Plant which will convert the captured landfill gas from the Site into pipeline quality gas for injection to the commercial gas transmission and distribution network.  Waste ECA No. A032203: - Condition 7.10 and 13.6 requires the gas control system to be managed and monitored as specified in the D&O Report and the EMP. - Condition 14.8 states that if landfill gas concentrations exceed 10% LEL (Lower Explosive Limit) during monitoring, the Company is to undertake additional monitoring to determine if the elevated levels are landfill related. - The Company must report all landfill gas monitoring to the Ministry on a quarterly and annual basis.  Air ECA No. 6318-CX4NFX: - Describes the notifications, operation, maintenance, performance, and record keeping requirements for the flaring system and the RNG plant.			

Question ID	NOL 27	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the landfill gas management requirements in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Landfill gas monitoring is completed monthly from November to April and in July at gas monitoring probes GP1A to GP10. Gas probes GP9 and GP10, were installed in late June 2022 in accordance with their respective stages of landfill construction as presented in Table 2 of the landfill EMP.

Total Hydrocarbon (THC) capped surface monitoring is conducted in the spring and fall in accordance with the Ambient Air Quality Monitoring Plan (AAQMP), required by Condition 13.8 of ECA No. A032203. It consists of a walk-over survey of the final capped landfill area using a handheld THC analyzer. Elevated THC concentrations are indicators of the escape of possible landfill gas in certain areas.

The temperatures of the flares are checked during the unannounced weekly inspections to ensure they are operating above 875 degrees Celsius. During the weekly inspections that took place in June 2024, when in operation, Flare 1 and Flare 2 were observed operating above 875 degrees Celsius according to the SCADA system on all occasions.

Question ID	NOL 29	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with landfill gas at this site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  No concerns were raised with the landfill gas management or monitoring at the Site during June 2024.			

Question ID	NOL 31	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a surface water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The following Site-specific approvals outline the requirements for surface water monitoring:  - Industrial Sewage ECA No. 8117-CUSNXX: Specifies operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, and treated effluent storage pond monitoring programs. The newly amended ECA specifies operation, monitoring and reporting requirements for the condensate collection system, leachate collection, treatment, and			

disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility.

- Waste Disposal Site ECA No. A032203:

Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A". Surface water will also be evaluated as per Item 91 of Schedule "A".

The Company conducts quarterly surface water monitoring following precipitation events of greater than 10 mm in a 24-hour period.

Question ID	NOL 35	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is there ongoing abatement to address any concerns the ministry has with the surface water monitoring?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  In April 2022 the Company, RWDI and the Ministry had a discussion surrounding the Ministry's objective to see a reduction in Total Suspended Solids (TSS) loading to discharging surface water from large industrial facilities, including landfilling sites within the province of Ontario. The Ministry is looking for best efforts by WM (Waste Management) to address TSS loading to discharging surface water from the Twin Creeks Environmental Centre.  As a result, a letter was provided to the Ministry from RWDI outlining that a TSS Action Plan would be developed and received by the Ministry in October 2022. It should be noted that the majority of this work took place during 2021 & 2022 including the removal of sediment build up within the sedimentation ponds, seeding of inactive waste areas and installation of sedimentation structures (straw bales). According to plan the removal of sediment should restore the design optimal effectiveness of the ponds to capture sediment and therefore reduce TSS offsite.  In December 2023, RWDI submitted an TSS Evaluation Letter on behalf of the Company as a follow-up to the TSS Action plan from October 2022. The TSS Evaluation Letter outlined the tasks that were completed along with their associated timelines. After review of the TSS Evaluation Letter, it was determined that the Ministry requires more data before reasonable conclusions can be made about whether TSS is being appropriately controlled before surface water discharges. The Ministry has requested additional updates in the quarterly reports that detail the effectiveness of the TSS management efforts taken to address TSS loading to the surface water.			

No other concerns were raised with the surface water at the Site during June 2024.

Question ID	NOL 36	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is proper equipment available for the compaction of waste and applying cover material?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The proper equipment for waste compaction and daily cover application was observed during the Ministry's weekly on-Site inspections. Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.			

Question ID	NOL 37	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill able to accurately determine the amount of waste received?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has an entrance and exit scale and records all incoming waste volumes. Tonnage tracking reports are also sent to the Ministry on a monthly basis and yearly waste quantities are summarized in the annual reports.			

Question ID	NOL 39	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill operator have a site inspection program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Conditions 9.1 - 9.13 of ECA # A032203 contains daily, weekly and monthly inspection and record keeping requirements for the general operation and maintenance of the Site. These records are periodically requested by the Ministry during weekly inspections and are assessed for compliance.  In addition, RWDI conducts inspections to ensure the Company is operating within the			

conditions of the ECA.

No issues or concerns have been identified with the frequency or details of the site inspections.

Question ID	NOL 41	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste being compacted adequately?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.			

Question ID	NOL 42	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   7;			
<b>Question:</b> Is Daily cover applied to the waste at the end of each working day or as otherwise specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.47 of ECA No. A032203 outlines the requirements for daily, intermediate, and final cover.  Daily Cover: The working face must be covered with at least 15cm of soil or approved alternative cover material.  Intermittent Cover: In areas where landfilling is temporarily stopped for six months or more, at least 30 cm of soil cover or approved alternative cover material is required.  Final Cover: In completed landfill areas, at least 1.85 m of cover soil and then at least 15cm of topsoil is required.  The Company reports that daily cover is adequately applied at the end of each working day. Stockpiles of daily cover were regularly observed on-Site near the active working face during			

operating hours while conducting the weekly inspections in May 2024. The following cover material was observed and/or reported to be used by the Company:

- Automobile Shredder Residue (ASR)
- Soil
- Contaminated Soil
- Woodchips
- Tarps

According to condition 6.52 of ECA No. A032203, samples of the ASR are to be taken semi-annually (spring and fall) and are to meet the specifications of non-hazardous waste under O. Reg. 347.

ASR track out was becoming an issue in March 2023. The Company has submitted an ASR Abatement plan in July 2023 and continues to work with the Ministry to reduce off site track out. The ASR Abatement plan included actions to clean up the roadside ditches and Nauvoo Road is continually ongoing. Final clean-up was completed in October 2023.

The Ministry observed ASR track-out during the May 2, 2024, inspection. The Ministry notified the Company who identified an area where ASR was used on a drivable surface, on Cell 6A, which lead to the ASR track-out. The Company attempted to clean the ASR from the area and covered the area with woodchips to prevent track-out. The Company has stated that due to the rain observed in May and June, ASR has continued to come to the surface, so the Company is continuing to apply clay and woodchips to Cell 6A and clean up the ASR when it is observed off-site. The Ministry has observed ASR track-out during all of the inspections in June 2024. The Company continues to dispatch litter pickers to clean any additional ASR track-out. The Company has ordered a new sweeper that is expected to arrive in mid-July to assist with the clean-up. The Ministry is working with the Company and will continue to monitor the situation to ensure ASR track-out is addressed.

The Ministry inspection that was conducted on June 19, 2024, took place after landfilling operations had ceased for the day to assess the daily cover requirements. The Ministry determined that the cover observed during the inspection met the criteria outlined under Condition 6.47 of ECA A032203. This condition states that at the end of each working day, the entire working face shall be covered with a minimum thickness of 150mm of soil or an approved alternative cover material.

No further issues were observed by the Inspector in June 2024.

Question ID	NOL 43	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are procedures implemented to control rodents or other animals and insects at the site?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Condition 6.32 of ECA No. A032203 states that the Site shall be operated and maintained such that vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance. Procedures for pest control are listed in the Company's D&O Report.

Predator Bird Services Inc. is on-Site from Monday to Friday during regular operating hours. They use a combination of noise makers, whistlers and a bird of prey (a falcon or hawk) to deter non native species from populating the landfill and surrounding area. Orkin is also on-Site monthly to maintain the prescribed plan for traps and baiting.

No concerns or issues with pest control were identified during June 2024.

Question ID	NOL 44	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access restricted by use of a gate, fence, or physical barrier when the site is not operating?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  ECA No. A032203 requires the following to be in place at the Site: <ul style="list-style-type: none"> <li>- The entire Site enclosed with a 6-foot-high wire woven fence.</li> <li>- The Site entrance and exit gates must be locked and secured against access by unauthorized persons during non-operational hours.</li> <li>- Access to and exit from the Site for the transportation of waste must (under normal circumstances) be only permitted from Country Road 79 (Nauvoo Road).</li> <li>- A sign must be displayed at the main entrance/exit to the Site, detailing: <ul style="list-style-type: none"> <li>-Name of the Site and Owner</li> <li>-ECA number</li> <li>-Name of the Operator</li> <li>-Hours of operation</li> <li>-Approved and prohibited waste types</li> <li>-Warning against unauthorized access</li> <li>-Telephone number for complaints</li> <li>-24/7 emergency telephone number (if different from above)</li> <li>-Warning against dumping outside the Site.</li> </ul> </li> </ul> <p>No concerns or issues with access control were identified during the weekly inspections or brought to the attention of the Ministry in June 2024.</p>			



Question ID	NOL 45	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste disposal area adequately screened from public view?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In accordance with Condition 5.4 of ECA No. A032203, there are 7-meter-high perimeter berms vegetated with trees along Zion Ln. and Nauvoo Rd. in order to block the public's view of the landfill.  No complaints of public view were received in June 2024.			

Question ID	NOL 47	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the annual operations report been submitted to MECP or available on site as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 48	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   23;			
<b>Question:</b> Is scavenging being prevented?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.33 of ECA No. A032203 states that the Company shall ensure that there is no scavenging as defined by O. Reg. 347 at the Site. "Scavenging" is defined as the uncontrolled removal of reusable material from waste at a waste disposal site.  The Site is secure during non-operating hours and there have been no reported incidents or evidence of scavenging during the Ministry's On-Site weekly inspections in June 2024. According to the Company Waste Management staff are trained extensively in preventing scavenging in the landfill.			

Question ID	NOL 49	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Has a closure plan been submitted to the MECP?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  Condition 16.1 states that a closure plan is required to be submitted at least two years prior to closure (or when 90% of capacity is reached, whatever comes first). The site is not yet required to submit a closure plan.			

Question ID	NOL 51	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill only accepting the types of waste that they are approved to receive?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is approved to accept municipal, industrial, commercial, and institutional solid nonhazardous waste, including non-hazardous contaminated soils, generated within the Province of Ontario as per Condition 6.4 and 6.7 of ECA No. A032203.  No issues were identified with this condition by the Inspector in June 2024.			

Question ID	NOL 52	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill have a waste refusal procedure in place to manage waste that arrives at the site that the site is not approved the accept?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 9.5 of ECA No. A032203 states that the Company must keep records in a daily logbook of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known. The Company has their own Waste Verification, Acceptance and Rejection Procedure and records rejection events by filling out a 'Waste Discrepancy Form'.			

The Company confirmed there were no refusals of waste shipments in June 2024.

Question ID	NOL 54	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address and document spills and fires?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Procedures for spills, fires and other emergencies are outlined in the D&O Report. Condition 12 of ECA No. A032203 also lists requirements regarding emergency situations:  - in the event of a fire or discharge of a contaminant to the environment, the Company shall contact the Spills Action Centre (SAC) and the Sarnia District Office forthwith. - a written report shall be submitted to the District Manager within 3 days of the incident, outlining the nature of the incident, remedial measures taken, and measures taken to prevent future occurrences. - the Company shall ensure that adequate firefighting and contingency spill clean-up equipment is available as per Item 66 of Schedule A and that emergency response personnel are familiar with its use and location.  The Company confirmed that emergency response personnel are familiar with the use and location of the emergency equipment. A variety of heavy equipment is available including a backhoe, rock truck, excavator, sweepers, water truck, as well as a spill kit which is located at the scale. The Company says this information is reviewed annually at a minimum.  There were no fires or spills reported by the company during the month of June 2024.			

Question ID	NOL 56	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is there an ECA condition requiring financial assurance?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Financial Assurance (FA) is required for private sector landfill sites under Ontario Regulation 232/98, in order to ensure that funds are available for site closure, post-closure care, and contingencies in the event that the site owner cannot or does not carry out their obligations under the ECA.			

Condition 2.1 of ECA No. A032203 addresses FA requirements for the Site. The Company is required to submit a re-evaluation of the FA amount every four years. The most recent re-evaluation was required to be submitted on March 31, 2024, which was received by the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.

The next FA re-evaluation is required to be submitted on March 31, 2028.

Question ID	NOL 57	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the financial assurance been submitted, as specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 58	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the company provided financial assurance re-evaluation estimates in compliance with the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company submitted the financial assurance re-evaluation for the Site to the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.			

Question ID	NOL 59	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address complaints?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company's complaint procedure is listed in the D&O Report. Responses to complaints related to dust, odour, and litter are also described in the Best Management Practices (BMP)			

## Plans for the Site.

The following complaint procedure is required by Condition 11 of ECA No. A032203: "If at any time, the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:

- a. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information, the time and date of the complaint, specific details of operations that were occurring, any changers from normal operations, types of waste loads (including source) and other on Site activities;
- b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and
- c. The Owner shall complete and retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

11.2 The Owner shall designate a person to receive any complaints and to respond with a written notice of action as soon as possible. The Owner shall post the Site complaints procedure at the Site entrance. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.

11.3 The Company shall notify the District Manager, Township of Warwick and WIFN, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:

1. this Approval number;
2. a description of the nature of the complaint;
3. the time and date of the incident to which the complaint relates.

11.4 The Company shall report all environmental complaints to the WPLC at the next WPLC meeting."

Question ID	NOL 60	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator addressed the complaints to the satisfaction of the ministry?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

In June 2024, no complaints were received by the Ministry and no complaints were reported by the Company.

Question ID	NOL 61	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator developed a Design and Operations Manual?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  A Design and Operations (D&O) Report was prepared by Henderson Paddon & Associates Limited, dated March 2008, and is listed as Items 66-68 of Schedule A under ECA No. A032203.			

Question ID	NOL 63	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill operator have training procedures for site personnel?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company has their own training procedure. Training requirements for employees are described under condition 10.1 of ECA No. A032203.			

Question ID	NOL 64	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill operator following the established training procedures?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company provided copies of training records to the Ministry for their employees demonstrating that the Company is following the established training procedures as described under condition 10.1 of ECA No. A032203.			

Question ID	949100	Question Type	Legislative
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Were the inspection questions sufficient to address other identified non-compliance items?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  One purpose of the inspections is to assess the Company efforts towards preventing, minimizing and mitigating off-site impacts resulting from their operations such as odours, litter, noise and dust. The following is a summary of the findings of the inspections conducted by the Ministry during June 2024:  June 2024 Inspection Dates: <ul style="list-style-type: none"> <li>- Tuesday, June 4, 2024</li> <li>- Wednesday June 12, 2024</li> <li>- Wednesday, June 19, 2024</li> <li>- Wednesday, June 26, 2024</li> </ul> Landfilling related odours were observed downwind of the landfill during three of the four inspections in June 2024. Odours were rated from moderate to faint and were described to be an garbage odour. The odours were observed during operating hours, and they were attributed to the fill location and the direction of the wind. There were no odours noted after the June 19, 2024 inspection after the landfill operating hours. Agricultural related odours were also noted during three of the four weekly inspections that took place in June 2024.  Litter was present on-site during all of the inspections. No litter pickers were observed on-site by the Ministry but the Company reported that litter pickers were frequently dispatched around the Site during June 2024. The Ministry observed areas where the litter pickers had been according to the Company and the areas were observed to be litter-less or have minimal litter in the general area. The Ministry has observed the Company following their Litter BMP and no issues with the response of the Company was observed during June 2024.  The Ministry observed ASR track-out during the May 2, 2024, inspection. The Ministry notified the Company who identified an area where ASR was used on a drivable surface, on Cell 6A, which lead to the ASR track-out. The Company attempted to clean the ASR from the area and covered the area with woodchips to prevent track-out. The Company has stated that due to the rain observed in May and June, ASR has continued to come to the surface, so the Company is continuing to apply clay and woodchips to Cell 6A and clean up the ASR when it is observed off-site. The Ministry has observed ASR track-out during al of the inspections in June 2024. The Company continues to dispatch litter pickers to clean any additional ASR track-out. The Company has ordered a new sweeper that is expected to arrive in mid-July to assist with the clean-up. The Ministry is working with the Company and will continue to monitor the situation to ensure ASR track-out is addressed.			

The Ministry observed a leachate seep on the existing landfill during the June 12, 2024 inspection. The Company was notified and an excavator was observed by the Inspector to be going to the seep to assess and repair. The Company removed the soil from where the seep occurred and cleaned the area. During the subsequent visits the Ministry observed the seep to be re-capped with clay and no additional seeping was observed. All seeps were repaired by the Company and there were no offsite impacts reported.

The Site's Leachate generation has been higher than normal. On June 26, 2024, the Ministry approved the Company's request for off-site leachate disposal at Valicor Environmental Services in Michigan, USA. According to the Company, having the ability to send leachate to more than one location will allow the Company to remove leachate faster from the site which will reduce the volume observed onsite. The Ministry continues to watch the leachate levels and is working with the Company through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

There have been no other significant environmental concerns at the site. The Company continues to show general compliance with SOPs, BMPs and the ECA.



## APPENDIX N:

MECP July 2024 Inspection Report - No. 1-527293625





TWIN CREEKS ENVIRONMENTAL CENTRE  
Physical Address: 5768 NAUVOO RD, , WARWICK,  
ON N0M 2S0

## INSPECTION REPORT

Entity: WASTE MANAGEMENT OF  
CANADA CORPORATION  
Inspection Start Date: July 01, 2024  
Inspection End Date: July 31, 2024  
Inspected By: Amanda Seaman  
Badge #: 2129

*Amanda Seaman*

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(signature)

## INTRODUCTION

### Purpose

Ontario has a comprehensive legislative and regulatory framework to ensure that wastes are managed in an environmentally safe manner. Through the Environmental Protection Act (EPA) and accompanying regulations, the Ministry of the Environment, Conservation and Parks (the Ministry) has established a cradle to grave management system, which governs the collection, storage, transportation, and disposal of waste.

The Ministry issues Environmental Compliance Approvals (ECA) under the EPA for landfill sites that dispose of solid non-hazardous wastes. The ECA imposes conditions related to development and operation of the site, and includes monitoring requirements, etc. To confirm whether the regulated community is complying with the requirements related to the waste disposal activities, the Ministry is committed to conducting proactive inspections of waste sites. With that aim in mind, Ministry staff conducted an inspection of the Twin Creeks Environmental Centre (Site) in Warwick Township as part of the Sarnia District Office's 2024/25 inspection program.

The Site is approved to accept municipal, industrial, commercial, and institutional solid non-hazardous waste generated within the Province of Ontario, including non-hazardous contaminated soils under ECA Number A032203, dated December 16, 2023. The Site is owned and operated by Waste Management of Canada Corporation (Company).

### Scope

This inspection report summarizes the findings of the weekly inspections conducted at the Twin Creeks Environmental Centre during the month of July 2024. The focus of each inspection is to assess the Company's operation and construction of the site against the terms and conditions of its Environmental Compliance Approvals and with the requirements of applicable environmental legislation, regulations, and guidelines.

A total of five inspections were conducted by the Ministry during the month of July 2024. Inspections took place on the following dates:

- Wednesday, July 3, 2024
- Wednesday July 10, 2024
- Tuesday, July 16, 2024
- Thursday, July 25, 2024
- Tuesday, July 30, 2024



## **NON-COMPLIANCE**

This should not be construed as a confirmation of full compliance with all potential applicable legal requirements. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## **RECOMMENDATIONS**

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program:** WASTE | **Regulated Activity:** Landfills

Question ID	NOL 1	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the Open landfill site have an Environmental Compliance Approval (ECA)?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has the following Ministry approvals:  WASTE DISPOSAL SITE ECA No. A032203, dated December 16, 2023 - For the use and operation of a 101.8-hectare landfilling area with a total site area of 301 hectares, accepting only municipal, industrial, commercial, institutional solid non-hazardous waste generated within Ontario, including non-haz contaminated soil. The site is approved to receive 1,400,000 tonnes per year.  AIR ECA No. 6318-CX4NFX, dated December 13, 2023 Approved to install and operate: - six enclosed flare systems; - emergency diesel generators to provide back-up power as needed; - a 50kW diesel generator to provide regular power to the south fill area leachate pumping system; and- exhaust fans, exhaust louvres, and aeration tanks exhausting to the atmosphere from the leachate treatment facility and one leachate treatment facility laboratory. - infrastructure for the Renewable Natural Gas Plant including one pre-treatment thermal oxidizer, one main thermal oxide, one amine reboiler and two RNG (Renewable Natural Gas) plant condensate tanks with carbon drum filters.  INDUSTRIAL SEWAGE ECA No. 8117-CUSNXX, dated April 29, 2024 - Issued for the existing industrial sewage works including the leachate collection, treatment, and disposal facility as well as a stormwater management facility to service the Site and for the establishment of the newly proposed industrial sewage works for usage and operation of condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility at the Site.  PERMIT TO TAKE WATER (PTTW) No. 4682-BLJRYJ, dated November 8, 2021 Issued for dewatering at the Site and industrial activities such as road watering to reduce			

dust. On- Site water taking locations include:

- stormwater management ponds 1, 2, 3, and 4
- secondary drainage layer (SDL)
- four pumping stations, PS2, PS4, PS6, PS8.

Question ID	NOL 13	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are access roads and on-site roads provided so that vehicles hauling waste to and on the site may travel readily on any day under all normal weather conditions?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Access to and exit from the Site for the transportation of waste is permitted from Country Road 79 (Nauvoo Road).  There are both paved and unpaved access roads on site. Typically, unpaved roads are made of material that would allow for vehicles hauling waste on site to readily travel unhindered in normal weather conditions as per ECA condition 6.31a&b.			

Question ID	NOL 14	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access limited to times when an attendant is on duty?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  An attendant is always on duty at the Site during operating hours.  During non-operating hours, the Site entrance and exit gates are locked. Site access is secured against access by unauthorized persons as per Condition 6.28 of the ECA.			

Question ID	NOL 15	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the site only receive waste from within its approved service area?			



**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Facility only receives waste generated in the Province of Ontario as per Condition 6.4 and 6.7 of the ECA.

The Site is approved for the use and operation of a 101.8-hectare landfilling area with a total Site area of 301 hectares. During the inspection period the Company deposited waste in Cells 3, 5 and 6A of the Expansion Site. All waste is being deposited within the approved landfill footprint, Condition 6.6 of ECA No. A032203 authorizes the Company to receive up to a maximum of 1,400,000 tonnes of waste per year (including contaminated soil) for disposal at the Site.

According to the tonnage report provided by the Company, July's monthly total is:

July 2024 – 157,378.00 tonnes

From the beginning of 2024 to the end of July, the Company has received 819,153.22 tonnes or approximately 58% of the yearly total.

Question ID	NOL 16	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a ground water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
The following Site-specific approvals outline the requirements for groundwater monitoring:			
<p>- Industrial Sewage ECA No. 8117-CUSNXX: Specifies the operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, treated effluent storage pond monitoring programs. The amended Industrial Sewage ECA was issued on April 29, 2024, specifies the operation, monitoring and reporting requirements related to the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service the proposed Renewable Natural Gas (RNG) facility at the Site.</p>			
<p>- Waste Disposal Site ECA No. A032203: Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A".</p>			

Groundwater monitoring is completed semi-annually in the spring and fall as per the EMP.

No alterations can be made to the program unless prior approval has been given by the District Manager.

Question ID	NOL 17	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the groundwater monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company documents the results of the required monitoring programs in quarterly and annual monitoring reports which are routinely reviewed by the Ministry for compliance purposes.  RWDI on behalf of the Company submitted the 2024 Spring Groundwater Quality Monitoring Letter of Notification for Twin Creeks Environmental Centre on June 5, 2024. This document outlines the monitoring events completed on May 1, 2024 for the Spring Groundwater Quality Monitoring. The results of the May 2024 monitoring event are being reviewed by the Ministry.  As per the Environmental Monitoring Plan (EMP), in July 2024 groundwater levels at PS2, PS4, PS6 and PS8 were monitored and the Ministry will review the results when they are received.			

Question ID	NOL 18	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   25;			
<b>Question:</b> Are monitoring well samples taken and tested to determine the quality of the ground water?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 19	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with the results of the samples that have been tested?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

No

Question ID	NOL 21	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage leachate by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
<p>The Site is required to manage leachate in accordance with the Industrial Sewage ECA No. 8117-CUSNXX and Waste ECA No. A032203.</p> <p>Leachate Collection - Existing Site: This consists of:</p> <ul style="list-style-type: none"> <li>- Three finger drains in the South Fill Area;</li> <li>- Pumping sump in the West Central Cell near monitoring station OW-29;</li> <li>- Two parallel waste underdrains in Cell 3S (north of the South Fill Area); and</li> <li>- Waste underdrains in the Northern part of Cell 5 and in Cells 4, 6, 7, 8, 9, 10 and 11. The waste under-drains direct leachate to a perimeter collection system which is then automatically pumped to the leachate equalization tank.</li> </ul> <p>Leachate Collection - Expansion Site: A leachate collection system has been installed in Cell 1, Cell 2, Cell 4, and Cell 6A. The leachate level in the primary drainage layer of these cells is currently controlled by automated Pump Station 1 (PS1), Pump Station 3 (PS3), Pump Station 5 (PS5), and Pump Station 7 (PS7). Leachate is transferred from the Primary Drainage Layer (PDL) to the leachate equalization tank. The Secondary Drainage Layer (SDL) is controlled by PS2, PS4, and PS6. The trigger for implementation of groundwater contingency measures for the Expansion Site is the loss of hydraulic containment. This occurs when leachate levels within the PDL are higher than the surrounding groundwater elevations.</p> <p>RNG Condensation Collection and Disposal System: The RNG condensate system (combined with the existing Landfill Gas (LFG) condensate system) for collection and discharge of the condensate generated at the newly proposed RNG facility, collected in the two Slop Tanks inside the RNG building to the Proposed Equalization Tank 2 during first year of the operation of Proposed Works, and disposal to Equalization Tank 1 or hauled offsite depending upon the Proposed Sampling Program results, the Proposed Works also include upgrades to the Existing Pump Station 10 (PS10) for pumping of condensate to Equalization Tank.</p>			

**Leachate Treatment and Disposal Facility:**

When constructed, this will consist of:

- A chemical feed system
- A sequencing Batch Reactor
- Effluent and sludge pumps and holding tanks
- A contrate evaporator and dryer
- A reverse osmosis membrane filtration system
- Treated effluent on-site disposal systems and storage ponds

**Poplar Tree Leachate Irrigation System:**

The Company has established a drip irrigation system which supplies leachate to a stand of poplar trees, known as the Poplar System ("PS"). The poplars are located on top of a portion of the existing landfill and have been operable since September 27, 2017. The PS is only utilized on a seasonal basis when the trees can actively uptake the leachate.

There are a number of monitoring requirements under Condition 8.7 of ECA No. A032203 related to the PS including soil monitoring, visual assessments, leachate monitoring, tree tissue monitoring and surface water monitoring. The PS became operational in May 2024 for the 2024 growing season and the irrigation system has been observed to be running during two of the five weekly inspections in July 2024.

**Off-Site Leachate Disposal:**

The remaining leachate produced from both the existing and expansion site is hauled off-Site for treatment and disposal at the Chatham Water Pollution Control Plant in Ontario and Valicor Environmental Services in Michigan, USA.

According to reports provided by the Company, the following was shipped offsite:

July 2024 – 6377.01 mt

Question ID	NOL 23	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   26;			
<b>Question:</b> Are samples taken to monitor leachate quality?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 24	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with the leachate quality?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 26	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage landfill gas by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Gas produced by the landfill is managed by the on-Site gas collection and flaring system. A portion of this gas is conveyed from the landfill to a neighboring property, where it is converted and used for building heat for a large greenhouse on an as-needed basis during the colder seasons. The remaining gas is sent to one of the two existing flares on-site. The Company is currently constructing a Renewable Natural Gas Plant which will convert the captured landfill gas from the Site into pipeline quality gas for injection to the commercial gas transmission and distribution network.  Waste ECA No. A032203: <ul style="list-style-type: none"> <li>- Condition 7.10 and 13.6 requires the gas control system to be managed and monitored as specified in the D&amp;O Report and the EMP.</li> <li>- Condition 14.8 states that if landfill gas concentrations exceed 10% LEL (Lower Explosive Limit) during monitoring, the Company is to undertake additional monitoring to determine if the elevated levels are landfill related.</li> <li>- The Company must report all landfill gas monitoring to the Ministry on a quarterly and annual basis.</li> </ul> Air ECA No. 6318-CX4NFX: <ul style="list-style-type: none"> <li>- Describes the notifications, operation, maintenance, performance, and record keeping requirements for the flaring system and the RNG plant.</li> </ul>			

Question ID	NOL 27	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			

**Question:**

Is the site implementing the landfill gas management requirements in the ECA?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Landfill gas monitoring is completed monthly from November to April and in July at gas monitoring probes GP1A to GP10. Gas probes GP9 and GP10, were installed in late June 2022 in accordance with their respective stages of landfill construction as presented in Table 2 of the landfill EMP.

Total Hydrocarbon (THC) capped surface monitoring is conducted in the spring and fall in accordance with the Ambient Air Quality Monitoring Plan (AAQMP), required by Condition 13.8 of ECA No. A032203. It consists of a walk-over survey of the final capped landfill area using a handheld THC analyzer. Elevated THC concentrations are indicators of the escape of possible landfill gas in certain areas.

The temperatures of the flares are checked during the unannounced weekly inspections to ensure they are operating above 875 degrees Celsius. During the weekly inspections that took place in July 2024, when in operation, Flare 1 and Flare 2 were observed operating above 875 degrees Celsius according to the SCADA system on all occasions.

Question ID	NOL 28	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is landfill gas managed and monitored at this site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 29	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with landfill gas at this site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  No concerns were raised with the landfill gas management or monitoring at the Site during July 2024.			

Question ID	NOL 31	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a surface water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The following Site-specific approvals outline the requirements for surface water monitoring:  - Industrial Sewage ECA No. 8117-CUSNXX: Specifies operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, and treated effluent storage pond monitoring programs. The newly amended ECA specifies operation, monitoring and reporting requirements for the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility.  - Waste Disposal Site ECA No. A032203: Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A". Surface water will also be evaluated as per Item 91 of Schedule "A".  The Company conducts quarterly surface water monitoring following precipitation events of greater than 10 mm in a 24-hour period.			

Question ID	NOL 34	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Are there water quality concerns with the results of the samples that have been tested?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  In April 2022 the Company, RWDI and the Ministry had a discussion surrounding the Ministry's objective to see a reduction in Total Suspended Solids (TSS) loading to discharging surface water from large industrial facilities, including landfilling sites within the province of Ontario. The Ministry is looking for best efforts by WM (Waste Management) to address TSS loading to discharging surface water from the Twin Creeks Environmental Centre.  As a result, a letter was provided to the Ministry from RWDI outlining that a TSS Action Plan would be developed and received by the Ministry in October 2022. It should be noted that the			

majority of this work took place during 2021 & 2022 including the removal of sediment build up within the sedimentation ponds, seeding of inactive waste areas and installation of sedimentation structures (straw bales). According to plan the removal of sediment should restore the design optimal effectiveness of the ponds to capture sediment and therefore reduce TSS offsite.

In December 2023, RWDI submitted an TSS Evaluation Letter on behalf of the Company as a follow-up to the TSS Action plan from October 2022. The TSS Evaluation Letter outlined the tasks that were completed along with their associated timelines. After review of the TSS Evaluation Letter, it was determined that the Ministry requires more data before reasonable conclusions can be made about whether TSS is being appropriately controlled before surface water discharges. The Ministry has requested additional updates in the quarterly reports that detail the effectiveness of the TSS management efforts taken to address TSS loading to the surface water.

No other concerns were raised with the surface water at the Site during July 2024.

Question ID	NOL 36	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is proper equipment available for the compaction of waste and applying cover material?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The proper equipment for waste compaction and daily cover application was observed during the Ministry's weekly on-Site inspections. Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.			

Question ID	NOL 37	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill able to accurately determine the amount of waste received?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has an entrance and exit scale and records all incoming waste volumes. Tonnage tracking reports are also sent to the Ministry on a monthly basis and yearly waste quantities are summarized in the annual reports.			



Question ID	NOL 39	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill operator have a site inspection program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Conditions 9.1 - 9.13 of ECA # A032203 contains daily, weekly and monthly inspection and record keeping requirements for the general operation and maintenance of the Site. These records are periodically requested by the Ministry during weekly inspections and are assessed for compliance.  In addition, RWDI conducts inspections to ensure the Company is operating within the conditions of the ECA.  No issues or concerns have been identified with the frequency or details of the site inspections.			

Question ID	NOL 41	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste being compacted adequately?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.			

Question ID	NOL 42	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   7;			
<b>Question:</b> Is Daily cover applied to the waste at the end of each working day or as otherwise specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.47 of ECA No. A032203 outlines the requirements for daily, intermediate, and final cover.			

**Daily Cover:**

The working face must be covered with at least 15cm of soil or approved alternative cover material.

**Intermittent Cover:**

In areas where landfilling is temporarily stopped for six months or more, at least 30 cm of soil cover or approved alternative cover material is required.

**Final Cover:**

In completed landfill areas, at least 1.85 m of cover soil and then at least 15cm of topsoil is required.

The Company reports that daily cover is adequately applied at the end of each working day. Stockpiles of daily cover were regularly observed on-Site near the active working face during operating hours while conducting the weekly inspections in May 2024. The following cover material was observed and/or reported to be used by the Company:

- Automobile Shredder Residue (ASR)
- Soil
- Contaminated Soil
- Woodchips
- Tarps

According to condition 6.52 of ECA No. A032203, samples of the ASR are to be taken semi-annually (spring and fall) and are to meet the specifications of non-hazardous waste under O. Reg. 347.

ASR track out was becoming an issue in March 2023. The Company has submitted an ASR Abatement plan in July 2023 and continues to work with the Ministry to reduce off site track out. The ASR Abatement plan included actions to clean up the roadside ditches and Nauvoo Road is continually ongoing. Final clean-up was completed in October 2023.

The Ministry observed ASR track-out during the May 2, 2024, inspection. The Ministry notified the Company who identified an area where ASR was used on a drivable surface, on Cell 6A, which lead to the ASR track-out. The Company attempted to clean the ASR from the area and covered the area with woodchips to prevent track-out. The Company has stated that due to the rain observed in June and July, ASR has continued to come to the surface, so the Company is continuing to apply clay and woodchips to Cell 6A and clean up the ASR when it is observed off-site. The Ministry has observed ASR track-out during four of five of the inspections in July 2024. The Company continues to dispatch litter pickers and the sweeper to clean any additional ASR track-out. Due to the continued presence of ASR, on Nauvoo Road the Company has reduced the volume of ASR on-site and the Company has committed to a final clean-up date of August 9, 2024 to removing the remaining pieces of ASR from Nauvoo Road. The Ministry is working with the Company and will continue to monitor the situation to ensure ASR track-out is addressed.

No further issues were observed by the Inspector in July 2024.

Question ID	NOL 43	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are procedures implemented to control rodents or other animals and insects at the site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.32 of ECA No. A032203 states that the Site shall be operated and maintained such that vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance. Procedures for pest control are listed in the Company's D&O Report.  Predator Bird Services Inc. is on-Site from Monday to Friday during regular operating hours. They use a combination of noise makers, whistlers and a bird of prey (a falcon or hawk) to deter non native species from populating the landfill and surrounding area. Orkin is also on-Site monthly to maintain the prescribed plan for traps and baiting.  No concerns or issues with pest control were identified during July 2024.			

Question ID	NOL 44	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access restricted by use of a gate, fence, or physical barrier when the site is not operating?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  ECA No. A032203 requires the following to be in place at the Site: <ul style="list-style-type: none"> <li>- The entire Site enclosed with a 6-foot-high wire woven fence.</li> <li>- The Site entrance and exit gates must be locked and secured against access by unauthorized persons during non-operational hours.</li> <li>- Access to and exit from the Site for the transportation of waste must (under normal circumstances) be only permitted from Country Road 79 (Nauvoo Road).</li> <li>- A sign must be displayed at the main entrance/exit to the Site, detailing: <ul style="list-style-type: none"> <li>-Name of the Site and Owner</li> <li>-ECA number</li> <li>-Name of the Operator</li> <li>-Hours of operation</li> <li>-Approved and prohibited waste types</li> </ul> </li> </ul>			

- Warning against unauthorized access
- Telephone number for complaints
- 24/7 emergency telephone number (if different from above)
- Warning against dumping outside the Site.

No concerns or issues with access control were identified during the weekly inspections or brought to the attention of the Ministry in July 2024.

Question ID	NOL 45	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste disposal area adequately screened from public view?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In accordance with Condition 5.4 of ECA No. A032203, there are 7-meter-high perimeter berms vegetated with trees along Zion Ln. and Nauvoo Rd. in order to block the public's view of the landfill.  No complaints of public view were received in July 2024.			

Question ID	NOL 48	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   23;			
<b>Question:</b> Is scavenging being prevented?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.33 of ECA No. A032203 states that the Company shall ensure that there is no scavenging as defined by O. Reg. 347 at the Site. "Scavenging" is defined as the uncontrolled removal of reusable material from waste at a waste disposal site.  The Site is secure during non-operating hours and there have been no reported incidents or evidence of scavenging during the Ministry's On-Site weekly inspections in July 2024. According to the Company Waste Management staff are trained extensively in preventing scavenging in the landfill.			

Question ID	NOL 49	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Has a closure plan been submitted to the MECP?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  Condition 16.1 states that a closure plan is required to be submitted at least two years prior to closure (or when 90% of capacity is reached, whatever comes first). The site is not yet required to submit a closure plan.			

Question ID	NOL 51	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill only accepting the types of waste that they are approved to receive?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is approved to accept municipal, industrial, commercial, and institutional solid nonhazardous waste, including non-hazardous contaminated soils, generated within the Province of Ontario as per Condition 6.4 and 6.7 of ECA No. A032203.  No issues were identified with this condition by the Inspector in July 2024.			

Question ID	NOL 52	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill have a waste refusal procedure in place to manage waste that arrives at the site that the site is not approved the accept?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 9.5 of ECA No. A032203 states that the Company must keep records in a daily logbook of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known. The Company has their own Waste Verification, Acceptance and Rejection Procedure and records rejection events by filling out a 'Waste Discrepancy Form'.  The Company confirmed there were no refusals of waste shipments in July 2024.			

Question ID	NOL 54	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address and document spills and fires?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Procedures for spills, fires and other emergencies are outlined in the D&O Report. Condition 12 of ECA No. A032203 also lists requirements regarding emergency situations:  <ul style="list-style-type: none"> <li>- in the event of a fire or discharge of a contaminant to the environment, the Company shall contact the Spills Action Centre (SAC) and the Sarnia District Office forthwith.</li> <li>- a written report shall be submitted to the District Manager within 3 days of the incident, outlining the nature of the incident, remedial measures taken, and measures taken to prevent future occurrences.</li> <li>- the Company shall ensure that adequate firefighting and contingency spill clean-up equipment is available as per Item 66 of Schedule A and that emergency response personnel are familiar with its use and location.</li> </ul> The Company confirmed that emergency response personnel are familiar with the use and location of the emergency equipment. A variety of heavy equipment is available including a backhoe, rock truck, excavator, sweepers, water truck, as well as a spill kit which is located at the scale. The Company says this information is reviewed annually at a minimum.  There was one fire reported by the Company during the month of July 2024. The fire occurred on July 13, 2024 on the active working face. As per Conditions 12.1 and 12.2 of ECA No. A032203, the Company contacted the MECP Spills Action Centre and the District Office forthwith and provided a written report via email that outlined the nature of the incident, remedial measures taken and measures taken to prevent future occurrences at the Site. The Company completed an investigation into the cause of the fire and the cause is unknown, the Company suspects the cause could have been lithium ion batteries. The Company reported that one of the landfill gas wells was involved in the fire but was promptly disconnected from the system and has since been replaced. The Company noted that the gas collection system remained on, just the one impacted well was disconnected. The Ministry reviewed the actions taken by the Company and confirmed that there were no impacts to surface water and no odours or off-site impacts were observed.			

Question ID	NOL 56	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			

**Question:**

Is there an ECA condition requiring financial assurance?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Financial Assurance (FA) is required for private sector landfill sites under Ontario Regulation 232/98, in order to ensure that funds are available for site closure, post-closure care, and contingencies in the event that the site owner cannot or does not carry out their obligations under the ECA.

Condition 2.1 of ECA No. A032203 addresses FA requirements for the Site. The Company is required to submit a re-evaluation of the FA amount every four years. The most recent re-evaluation was required to be submitted on March 31, 2024, which was received by the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.

The next FA re-evaluation is required to be submitted on March 31, 2028.

Question ID	NOL 57	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the financial assurance been submitted, as specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 58	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the company provided financial assurance re-evaluation estimates in compliance with the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
The Company submitted the financial assurance re-evaluation for the Site to the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.			

Question ID	NOL 59	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address complaints?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company's complaint procedure is listed in the D&O Report. Responses to complaints related to dust, odour, and litter are also described in the Best Management Practices (BMP) Plans for the Site.  The following complaint procedure is required by Condition 11 of ECA No. A032203: "If at any time, the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:  a. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information, the time and date of the complaint, specific details of operations that were occurring, any changers from normal operations, types of waste loads (including source) and other on Site activities;  b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and  c. The Owner shall complete and retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.  11.2 The Owner shall designate a person to receive any complaints and to respond with a written notice of action as soon as possible. The Owner shall post the Site complaints procedure at the Site entrance. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.  11.3 The Company shall notify the District Manager, Township of Warwick and WIFN, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include: 1. this Approval number; 2. a description of the nature of the complaint; 3. the time and date of the incident to which the complaint relates.  11.4 The Company shall report all environmental complaints to the WPLC at the next WPLC			



meeting."

Question ID	NOL 60	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator addressed the complaints to the satisfaction of the ministry?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In July 2024, no complaints were received by the Ministry and two complaints were reported by the Company. Both complaints were about odour from the site. Odour from the Site can originate from a variety of sources. The odours identified from the complaint received on July 25, 2024 were related to the gas collection system being offline for approx. 30 mins due to an electrical stability issue that the Company is investigating. The odours identified in the second complaint, on July 26, 2024, were attributed to the fill area, weather conditions and wind direction. Through the Company's investigation into the odour complaint on July 26, 2024, agricultural odours were also noted around the Site and the area of the complaint.  Ongoing discussions between the Ministry and WM occur on the notifications of complaints and follow up actions taken by the Company. The Company is required to review and summarize the complaints and response in the quarterly and annual reports. All complaints were reported to the Ministry within two (2) business days and were responded to by the Company in accordance with Condition 11 of ECA No. A032203.			

Question ID	NOL 61	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator developed a Design and Operations Manual?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  A Design and Operations (D&O) Report was prepared by Henderson Paddon & Associates Limited, dated March 2008, and is listed as Items 66-68 of Schedule A under ECA No. A032203.			

Question ID	NOL 63	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			

**Question:**

Does the landfill operator have training procedures for site personnel?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Company has their own training procedure. Training requirements for employees are described under condition 10.1 of ECA No. A032203.

Question ID	949100	Question Type	Legislative
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Were the inspection questions sufficient to address other identified non-compliance items?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b>  Yes  One purpose of the inspections is to assess the Company efforts towards preventing, minimizing and mitigating off-site impacts resulting from their operations such as odours, litter, noise and dust. The following is a summary of the findings of the inspections conducted by the Ministry during July 2024:  July 2024 Inspection Dates: - Wednesday, July 3, 2024 - Wednesday July 10, 2024 - Tuesday, July 16, 2024 - Thursday, July 25, 2024 - Tuesday, July 30, 2024  Landfilling related odours were observed downwind of the landfill during all five inspections in July 2024. Odours were rated from moderate to faint and were described to be a garbage odour. The odours were observed during operating hours, and they were attributed to the fill location and the direction of the wind. Agricultural related odours were also noted during three of the five weekly inspections that took place in July 2024.  Litter was present on-site during all of the inspections. No litter pickers were observed on-site by the Ministry but the Company reported that litter pickers were dispatched daily to pick around the Site and were sent off site on an as need basis during July 2024. The Ministry observed areas where the litter pickers had been according to the Company and the areas were observed to be litter-less or have minimal amounts of litter in the general area. The Ministry has observed the Company following their Litter BMP and no issues with the response of the Company was observed during July 2024.			

The Ministry observed ASR track-out during the May 2, 2024, inspection. The Ministry notified the Company who identified an area where ASR was used on a drivable surface, on Cell 6A, which lead to the ASR track-out. The Company attempted to clean the ASR from the area and covered the area with woodchips to prevent track-out. The Company has stated that due to the rain observed in June and July, ASR has continued to come to the surface, so the Company is continuing to apply clay and woodchips to Cell 6A and clean up the ASR when it is observed off-site. The Ministry has observed ASR track-out during four of five of the inspections in July 2024. The Company continues to dispatch litter pickers and the sweeper to clean any additional ASR track-out. Due to the continued presence of ASR, on Nauvoo Road the Company has reduced the volume of ASR on-site and the Company has committed to a final clean-up date of August 9, 2024 to removing the remaining pieces of ASR from Nauvoo Road. The Ministry is working with the Company and will continue to monitor the situation to ensure ASR track-out is addressed.

No leachate seeps were observed by the Ministry and no leachate seeps were reported by the Company in July 2024. The Ministry observed two small area where leachate had run off and ponded on the adjacent to the Poplar System. The Company was notified and as per ECA No. A032203, the Company turned off the irrigation system and cleaned-up the area where the ponding was observed. No additional issues were observed in July 2024.

The Sites leachate generation has been higher than normal. On June 26, 2024, the Ministry approved the Company's request for off-site leachate disposal at Valicor Environmental Services in Michigan, USA. According to the Company, having the ability to send leachate to more than one location will allow the Company to remove leachate faster from the site which will reduce the volume observed onsite. The Company began shipping one load of leachate a day to Valicor the week of July 15, 2024 then increased the volume to two loads of leachate a day during the week of July 25, 2024. The Ministry continues to watch the leachate levels and is working with the Company through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

There have been no other significant environmental concerns at the site. The Company continues to show general compliance with SOPs, BMPs and the ECA.

## APPENDIX N:

MECP August 2024 Inspection Report - No. 1-615976582





TWIN CREEKS ENVIRONMENTAL CENTRE  
Physical Address: 5768 NAUVOO RD, , WARWICK,  
ON N0M 2S0

## INSPECTION REPORT

Entity: WASTE MANAGEMENT OF  
CANADA CORPORATION  
Inspection Start Date: August 01, 2024  
Inspection End Date: August 31, 2024  
Inspected By: Amanda Seaman  
Badge #: 2129

*Amanda Seaman*

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(signature)

## INTRODUCTION

### Purpose

Ontario has a comprehensive legislative and regulatory framework to ensure that wastes are managed in an environmentally safe manner. Through the Environmental Protection Act (EPA) and accompanying regulations, the Ministry of the Environment, Conservation and Parks (the Ministry) has established a cradle to grave management system, which governs the collection, storage, transportation, and disposal of waste.

The Ministry issues Environmental Compliance Approvals (ECA) under the EPA for landfill sites that dispose of solid non-hazardous wastes. The ECA imposes conditions related to development and operation of the site, and includes monitoring requirements, etc. To confirm whether the regulated community is complying with the requirements related to the waste disposal activities, the Ministry is committed to conducting proactive inspections of waste sites. With that aim in mind, Ministry staff conducted an inspection of the Twin Creeks Environmental Centre (Site) in Warwick Township as part of the Sarnia District Office's 2024/25 inspection program.

The Site is approved to accept municipal, industrial, commercial, and institutional solid non-hazardous waste generated within the Province of Ontario, including non-hazardous contaminated soils under ECA Number A032203, dated December 16, 2023. The Site is owned and operated by Waste Management of Canada Corporation (Company).

### Scope

This inspection report summarizes the findings of the weekly inspections conducted at the Twin Creeks Environmental Centre during the month of August 2024. The focus of each inspection is to assess the Company's operation and construction of the site against the terms and conditions of its Environmental Compliance Approvals and with the requirements of applicable environmental legislation, regulations, and guidelines.

A total of four inspections were conducted by the Ministry during the month of August 2024. Inspections took place on the following dates:

- Friday, August 9, 2024
- Tuesday, August 13, 2024
- Friday, August 23, 2024
- Tuesday, August 27, 2024

## **NON-COMPLIANCE**

This should not be construed as a confirmation of full compliance with all potential applicable legal requirements. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## **RECOMMENDATIONS**

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.



## INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program:** WASTE | **Regulated Activity:** Landfills

Question ID	NOL 1	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the Open landfill site have an Environmental Compliance Approval (ECA)?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has the following Ministry approvals:  WASTE DISPOSAL SITE ECA No. A032203, dated December 16, 2023 - For the use and operation of a 101.8-hectare landfilling area with a total site area of 301 hectares, accepting only municipal, industrial, commercial, institutional solid non-hazardous waste generated within Ontario, including non-haz contaminated soil. The site is approved to receive 1,400,000 tonnes per year.  AIR ECA No. 6318-CX4NFX, dated December 13, 2023 Approved to install and operate: - six enclosed flare systems; - emergency diesel generators to provide back-up power as needed; - a 50kW diesel generator to provide regular power to the south fill area leachate pumping system; and- exhaust fans, exhaust louvres, and aeration tanks exhausting to the atmosphere from the leachate treatment facility and one leachate treatment facility laboratory. - infrastructure for the Renewable Natural Gas Plant including one pre-treatment thermal oxidizer, one main thermal oxide, one amine reboiler and two RNG (Renewable Natural Gas) plant condensate tanks with carbon drum filters.  INDUSTRIAL SEWAGE ECA No. 8117-CUSNXX, dated April 29, 2024 - Issued for the existing industrial sewage works including the leachate collection, treatment, and disposal facility as well as a stormwater management facility to service the Site and for the establishment of the newly proposed industrial sewage works for usage and operation of condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility at the Site.  PERMIT TO TAKE WATER (PTTW) No. 4682-BLJRYJ, dated November 8, 2021 Issued for dewatering at the Site and industrial activities such as road watering to reduce			

dust. On- Site water taking locations include:

- stormwater management ponds 1, 2, 3, and 4
- secondary drainage layer (SDL)
- four pumping stations, PS2, PS4, PS6, PS8.

Question ID	NOL 2	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is this landfill on Crown land?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 13	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are access roads and on-site roads provided so that vehicles hauling waste to and on the site may travel readily on any day under all normal weather conditions?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Access to and exit from the Site for the transportation of waste is permitted from Country Road 79 (Nauvoo Road).  There are both paved and unpaved access roads on site. Typically, unpaved roads are made of material that would allow for vehicles hauling waste on site to readily travel unhindered in normal weather conditions as per ECA condition 6.31a&b.			

Question ID	NOL 14	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access limited to times when an attendant is on duty?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  An attendant is always on duty at the Site during operating hours.			

During non-operating hours, the Site entrance and exit gates are locked. Site access is secured against access by unauthorized persons as per Condition 6.28 of the ECA.

Question ID	NOL 15	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the site only receive waste from within its approved service area?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Facility only receives waste generated in the Province of Ontario as per Condition 6.4 and 6.7 of the ECA.  The Site is approved for the use and operation of a 101.8-hectare landfilling area with a total Site area of 301 hectares. During the inspection period the Company deposited waste in Cells 3, 5 and 6A of the Expansion Site. All waste is being deposited within the approved landfill footprint, Condition 6.6 of ECA No. A032203 authorizes the Company to receive up to a maximum of 1,400,000 tonnes of waste per year (including contaminated soil) for disposal at the Site.  According to the tonnage report provided by the Company, August's monthly total is:  August 2024 – 158,532.62 tonnes  From the beginning of 2024 to the end of August, the Company has received 977,685.84 tonnes or approximately 70% of the yearly total.			

Question ID	NOL 16	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a ground water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The following Site-specific approvals outline the requirements for groundwater monitoring:  - Industrial Sewage ECA No. 8117-CUSNXX: Specifies the operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, treated effluent storage pond monitoring programs. The amended Industrial Sewage ECA was issued on April 29, 2024,			

specifies the operation, monitoring and reporting requirements related to the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service the proposed Renewable Natural Gas (RNG) facility at the Site.

- Waste Disposal Site ECA No. A032203:

Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A".

Question ID	NOL 17	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the groundwater monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Groundwater monitoring is completed semi-annually in the spring and fall as per the EMP.  No alterations can be made to the program unless prior approval has been given by the District Manager.			

Question ID	NOL 18	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   25;			
<b>Question:</b> Are monitoring well samples taken and tested to determine the quality of the ground water?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company documents the results of the required monitoring programs in quarterly and annual monitoring reports which are routinely reviewed by the Ministry for compliance purposes.  The routine quarterly groundwater monitoring results satisfied the relevant trigger concentrations, with exceptions at monitoring well OW84-6 and OW17-4. The exceptions are discussed in detail in the Q2 Report submitted by the Company. The Ministry's Technical Support Section is currently reviewing the 2024 Second Quarter ("Q2") Monitoring Report was submitted to the Ministry on August 27, 2024.			

Question ID	NOL 19	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with the results of the samples that have been tested?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  No other concerns were raised with the groundwater at the Site during August 2024.			

Question ID	NOL 21	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage leachate by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is required to manage leachate in accordance with the Industrial Sewage ECA No. 8117-CUSNXX and Waste ECA No. A032203.  Leachate Collection - Existing Site: This consists of: - Three finger drains in the South Fill Area; - Pumping sump in the West Central Cell near monitoring station OW-29; - Two parallel waste underdrains in Cell 3S (north of the South Fill Area); and - Waste underdrains in the Northern part of Cell 5 and in Cells 4, 6, 7, 8, 9, 10 and 11. The waste under-drains direct leachate to a perimeter collection system which is then automatically pumped to the leachate equalization tank.  Leachate Collection - Expansion Site: A leachate collection system has been installed in Cell 1, Cell 2, Cell 4, and Cell 6A. The leachate level in the primary drainage layer of these cells is currently controlled by automated Pump Station 1 (PS1), Pump Station 3 (PS3), Pump Station 5 (PS5), and Pump Station 7 (PS7). Leachate is transferred from the Primary Drainage Layer (PDL) to the leachate equalization tank. The Secondary Drainage Layer (SDL) is controlled by PS2, PS4, and PS6. The trigger for implementation of groundwater contingency measures for the Expansion Site is the loss of hydraulic containment. This occurs when leachate levels within the PDL are higher than the surrounding groundwater elevations.  RNG Condensation Collection and Disposal System: The RNG condensate system (combined with the existing Landfill Gas (LFG) condensate system) for collection and discharge of the condensate generated at the newly proposed			

RNG facility, collected in the two Slop Tanks inside the RNG building to the Proposed Equalization Tank 2 during first year of the operation of Proposed Works, and disposal to Equalization Tank 1 or hauled offsite depending upon the Proposed Sampling Program results, the Proposed Works also include upgrades to the Existing Pump Station 10 (PS10) for pumping of condensate to Equalization Tank.

Leachate Treatment and Disposal Facility:

When constructed, this will consist of:

- A chemical feed system
- A sequencing Batch Reactor
- Effluent and sludge pumps and holding tanks
- A contrate evaporator and dryer
- A reverse osmosis membrane filtration system
- Treated effluent on-site disposal systems and storage ponds

Poplar Tree Leachate Irrigation System:

The Company has established a drip irrigation system which supplies leachate to a stand of poplar trees, known as the Poplar System ("PS"). The poplars are located on top of a portion of the existing landfill and have been operable since September 27, 2017. The PS is only utilized on a seasonal basis when the trees can actively uptake the leachate.

There are a number of monitoring requirements under Condition 8.7 of ECA No. A032203 related to the PS including soil monitoring, visual assessments, leachate monitoring, tree tissue monitoring and surface water monitoring. The PS became operational in May 2024 for the 2024 growing season and the irrigation system has been observed to be running during three of the four weekly inspections in August 2024.

Off-Site Leachate Disposal:

The remaining leachate produced from both the existing and expansion site is hauled off-Site for treatment and disposal at the Chatham Water Pollution Control Plant in Ontario and at Valicor Environmental Services in Michigan, USA.

According to reports provided by the Company, the following was shipped offsite:

August 2024 – 8143.36 mt

Question ID	NOL 22	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill implementing the procedures required by the ECA to manage leachate?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

**Existing Site:**

Leachate liquid levels are monitored semi-annually in May and November for the Existing Site. Over the long term, leachate levels are expected to decrease in the Existing Site since it is capped, and leachate is extracted for poplar system irrigation and off-Site disposal.

The Ministry's Technical Support Section will be reviewing the Existing Landfill Assessment, Liquid Levels section in the 2024 Second Quarter ("Q2") Monitoring Report received on August 27, 2024.

**Expansion Site:**

For the Expansion Site ECA No. A032203 condition 7.18 requires that a hydraulic trap be developed and maintained beneath the expansion area and that the leachate head on the landfill liner does not exceed 300 mm. Condition 14.1 also requires additional groundwater level monitoring if the leachate level elevation in any of the following pumping station well rise above their respective trigger level:

PS1 - 232.7 mASL

PS3 - 232.6 mASL

PS5 - 232.8 mASL

PS7 - 233.4 mASL

According to the Company's Q2 Report the leachate levels in PS1, PS3, and PS5 and PS7 generally remained below their respective trigger leachate elevations with the exception of PS3 and PS7. The leachate elevation slightly exceeded the 0.3 m head target at PS3 during different time periods throughout April, May and June 2024, these exceedances ranged from 0.01 to 0.74m. The leachate elevation exceeded the 0.3 m head target at PS7 during the whole Q2 time period, these exceedances ranged from 1.33 to 1.35m. According to the Company, these exceedances have been attributed to the significant amount of precipitation received during the Q2 timing period and PS7 can also be attributed to the infiltration potential of Cell 6A. The PS7 automated leachate liquid level data was only available in Q2 from April 1 to 11, 2024. The Company noted that repair of the PS7 system is pending on parts orders and scheduling of repairs. During the August 27, 2024 inspection, the Company had fixed the power supply issue and were re-connecting the line to the system. RWDI reported that during the Q2 period, leachate elevations within Cell 1, 2, 4 & 6A of the expansion site were below the historical groundwater elevation confirming the hydraulic trap was maintained as per condition 14.1. The Ministry's Technical Support Section will be reviewing the 2024 Second Quarter ("Q2") Monitoring Report received on August 27, 2024.

The Company reported a leachate seep to the Ministry during the August 13, 2024 inspection. The Company observed the seep on the expanded landfill where the old ramp on Cell 3 was located. The Company removed the soil from where the seep occurred and cleaned the area.

During the subsequent visits the Ministry observed the seep to be re-capped with clay and no additional seeping was observed. All seeps were repaired by the Company and there were no offsite impacts reported.

Question ID	NOL 24	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with the leachate quality?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 26	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage landfill gas by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Gas produced by the landfill is managed by the on-Site gas collection and flaring system. A portion of this gas is conveyed from the landfill to a neighboring property, where it is converted and used for building heat for a large greenhouse on an as-needed basis during the colder seasons. The remaining gas is sent to one of the two existing flares on-site. The Company is currently constructing a Renewable Natural Gas Plant which will convert the captured landfill gas from the Site into pipeline quality gas for injection to the commercial gas transmission and distribution network.  Waste ECA No. A032203: - Condition 7.10 and 13.6 requires the gas control system to be managed and monitored as specified in the D&O Report and the EMP. - Condition 14.8 states that if landfill gas concentrations exceed 10% LEL (Lower Explosive Limit) during monitoring, the Company is to undertake additional monitoring to determine if the elevated levels are landfill related. - The Company must report all landfill gas monitoring to the Ministry on a quarterly and annual basis.  Air ECA No. 6318-CX4NFX: - Describes the notifications, operation, maintenance, performance, and record keeping requirements for the flaring system and the RNG plant.			



Question ID	NOL 27	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the landfill gas management requirements in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Landfill gas monitoring is completed monthly from November to April and in July at gas monitoring probes GP1A to GP10. Gas probes GP9 and GP10, were installed in late June 2022 in accordance with their respective stages of landfill construction as presented in Table 2 of the landfill EMP.  2024 Second Quarter ("Q2") Monitoring Report stated that methane gas was not detected at the established gas probes GP1A to GP10 during the Q2 calendar period.  Total Hydrocarbon (THC) capped surface monitoring is conducted in the spring and fall in accordance with the Ambient Air Quality Monitoring Plan (AAQMP), required by Condition 13.8 of ECA No. A032203. It consists of a walk-over survey of the final capped landfill area using a handheld THC analyzer. Elevated THC concentrations are indicators of the escape of possible landfill gas in certain areas.  The temperatures of the flares are checked during the unannounced weekly inspections to ensure they are operating above 875 degrees Celsius. During the weekly inspections that took place in August 2024, when in operation, Flare 1 and Flare 2 were observed operating above 875 degrees Celsius according to the SCADA system on all occasions.  In August 2024, the Ministry began unmanned aerial vehicle (UAV) methane detection around the Site. The purpose is to measure the methane values on-site and identify potential sources of high methane emissions. The UAV methane detection is still ongoing.			

Question ID	NOL 29	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with landfill gas at this site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  No concerns were raised with the landfill gas management or monitoring at the Site during August 2024.			

Question ID	NOL 31	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a surface water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The following Site-specific approvals outline the requirements for surface water monitoring:  - Industrial Sewage ECA No. 8117-CUSNXX: Specifies operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, and treated effluent storage pond monitoring programs. The newly amended ECA specifies operation, monitoring and reporting requirements for the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility.  - Waste Disposal Site ECA No. A032203: Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A". Surface water will also be evaluated as per Item 91 of Schedule "A".  The Company conducts quarterly surface water monitoring following precipitation events of greater than 10 mm in a 24-hour period.			

Question ID	NOL 32	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the surface water monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Following precipitation events of greater than 10 mm in a 24-hour period, routine surface water samples were collected during Q2 at monitoring stations SS1, SS10, SS16, SS19 (new), SP1 SP2, SP3, and SP4. SS19 not monitored since the compost facility is not yet constructed. As part of the Poplar System Monitoring program, during Q2 samples were collected at SS14A, SS14B, and SS15A.  The routine quarterly surface water monitoring results satisfied the relevant trigger concentrations, with exceptions at monitoring stations SS1 and SP2 and SS14A, SS14B, and			

SS15A which are part of the Poplar System Monitoring program. The exceptions are discussed in detail in the Q2 Report submitted by the Company. The Ministry's Technical Support Section is currently reviewing the 2024 Second Quarter ("Q2") Monitoring Report was submitted to the Ministry on August 27, 2024.

Question ID	NOL 34	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Are there water quality concerns with the results of the samples that have been tested?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  In April 2022 the Company, RWDI and the Ministry had a discussion surrounding the Ministry's objective to see a reduction in Total Suspended Solids (TSS) loading to discharging surface water from large industrial facilities, including landfilling sites within the province of Ontario. The Ministry is looking for best efforts by WM (Waste Management) to address TSS loading to discharging surface water from the Twin Creeks Environmental Centre.  As a result, a letter was provided to the Ministry from RWDI outlining that a TSS Action Plan would be developed and received by the Ministry in October 2022. It should be noted that the majority of this work took place during 2021 & 2022 including the removal of sediment build up within the sedimentation ponds, seeding of inactive waste areas and installation of sedimentation structures (straw bales). According to plan the removal of sediment should restore the design optimal effectiveness of the ponds to capture sediment and therefore reduce TSS offsite.  In December 2023, RWDI submitted an TSS Evaluation Letter on behalf of the Company as a follow-up to the TSS Action plan from October 2022. The TSS Evaluation Letter outlined the tasks that were completed along with their associated timelines. After review of the TSS Evaluation Letter, it was determined that the Ministry requires more data before reasonable conclusions can be made about whether TSS is being appropriately controlled before surface water discharges. The Ministry has requested additional updates in the quarterly reports that detail the effectiveness of the TSS management efforts taken to address TSS loading to the surface water.  No other concerns were raised with the surface water at the Site during August 2024.			

Question ID	NOL 36	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is proper equipment available for the compaction of waste and applying cover material?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The proper equipment for waste compaction and daily cover application was observed during the Ministry's weekly on-Site inspections. Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.

Question ID	NOL 37	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill able to accurately determine the amount of waste received?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
The Site has an entrance and exit scale and records all incoming waste volumes. Tonnage tracking reports are also sent to the Ministry on a monthly basis and yearly waste quantities are summarized in the annual reports.			

Question ID	NOL 38	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are all disposal operations at the site adequately and continually supervised?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
There is always a Supervisor on-Site during the weekly inspections.			

Question ID	NOL 39	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill operator have a site inspection program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
Conditions 9.1 - 9.13 of ECA # A032203 contains daily, weekly and monthly inspection and record keeping requirements for the general operation and maintenance of the Site. These records are periodically requested by the Ministry during weekly inspections and are assessed for compliance.			

In addition, RWDI conducts inspections to ensure the Company is operating within the conditions of the ECA.

No issues or concerns have been identified with the frequency or details of the site inspections.

Question ID	NOL 41	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste being compacted adequately?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.			

Question ID	NOL 42	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   7;			
<b>Question:</b> Is Daily cover applied to the waste at the end of each working day or as otherwise specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.47 of ECA No. A032203 outlines the requirements for daily, intermediate, and final cover.  Daily Cover: The working face must be covered with at least 15cm of soil or approved alternative cover material.  Intermittent Cover: In areas where landfilling is temporarily stopped for six months or more, at least 30 cm of soil cover or approved alternative cover material is required.  Final Cover: In completed landfill areas, at least 1.85 m of cover soil and then at least 15cm of topsoil is required.  The Company reports that daily cover is adequately applied at the end of each working day.			

Stockpiles of daily cover were regularly observed on-Site near the active working face during operating hours while conducting the weekly inspections in August 2024. The following cover material was observed and/or reported to be used by the Company:

- Automobile Shredder Residue (ASR)
- Soil
- Contaminated Soil
- Woodchips
- Tarps

According to condition 6.52 of ECA No. A032203, samples of the ASR are to be taken semi-annually (spring and fall) and are to meet the specifications of non-hazardous waste under O. Reg. 347.

ASR track out was becoming an issue in May 2024. The Company identified an area where ASR was used on a drivable surface, on Cell 6A, which lead to the ASR track-out. The Company attempted to clean the ASR and covered the area with woodchips to prevent track-out. The Company has stated that due to the rain observed in June and July, ASR has continued to come to the surface. In August, due to the continued presence of ASR observed on Nauvoo Road, through working with the Ministry, the Company placed at 60-day hold on ASR so it would not be applied anywhere on-site. The Company committed to a final clean-up date of August 9, 2024 to removing the remaining pieces of ASR from Nauvoo Road which was completed. The Company has committed to continue monitoring Nauvoo Road for the presence of ASR and if any is observed they will dispatch litter pickers and the sweeper to clean any additional ASR track-out. During the month of August, ASR was only observed during the August 9, 2024 inspection before the final clean-up was completed. Since the final clean-up, ASR track-out has not been observed and the Ministry will continue to monitor the situation to ensure any additional ASR track-out is addressed.

No further issues were observed by the Inspector in August 2024.

Question ID	NOL 43	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are procedures implemented to control rodents or other animals and insects at the site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.32 of ECA No. A032203 states that the Site shall be operated and maintained such that vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance. Procedures for pest control are listed in the Company's D&O Report.  Predator Bird Services Inc. is on-Site from Monday to Friday during regular operating hours.			

They use a combination of noise makers, whistlers and a bird of prey (a falcon or hawk) to deter non native species from populating the landfill and surrounding area. Orkin is also on-Site monthly to maintain the prescribed plan for traps and baiting.

No concerns or issues with pest control were identified during August 2024.

Question ID	NOL 44	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access restricted by use of a gate, fence, or physical barrier when the site is not operating?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  ECA No. A032203 requires the following to be in place at the Site: <ul style="list-style-type: none"> <li>- The entire Site enclosed with a 6-foot-high wire woven fence.</li> <li>- The Site entrance and exit gates must be locked and secured against access by unauthorized persons during non-operational hours.</li> <li>- Access to and exit from the Site for the transportation of waste must (under normal circumstances) be only permitted from Country Road 79 (Nauvoo Road).</li> <li>- A sign must be displayed at the main entrance/exit to the Site, detailing: <ul style="list-style-type: none"> <li>-Name of the Site and Owner</li> <li>-ECA number</li> <li>-Name of the Operator</li> <li>-Hours of operation</li> <li>-Approved and prohibited waste types</li> <li>-Warning against unauthorized access</li> <li>-Telephone number for complaints</li> <li>-24/7 emergency telephone number (if different from above)</li> <li>-Warning against dumping outside the Site.</li> </ul> </li> </ul> No concerns or issues with access control were identified during the weekly inspections or brought to the attention of the Ministry in August 2024.			

Question ID	NOL 45	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste disposal area adequately screened from public view?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

In accordance with Condition 5.4 of ECA No. A032203, there are 7-meter-high perimeter berms vegetated with trees along Zion Ln. and Nauvoo Rd. in order to block the public's view of the landfill.

No complaints of public view were received in August 2024.

Question ID	NOL 46	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   21;			
<b>Question:</b> Are daily records of site operations available at the site for at least the past 2 years or as otherwise required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 48	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   23;			
<b>Question:</b> Is scavenging being prevented?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.33 of ECA No. A032203 states that the Company shall ensure that there is no scavenging as defined by O. Reg. 347 at the Site. "Scavenging" is defined as the uncontrolled removal of reusable material from waste at a waste disposal site.  The Site is secure during non-operating hours and there have been no reported incidents or evidence of scavenging during the Ministry's On-Site weekly inspections in August 2024. According to the Company Waste Management staff are trained extensively in preventing scavenging in the landfill.			

Question ID	NOL 49	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Has a closure plan been submitted to the MECP?			



**Compliance Response(s)/Corrective Action(s)/Observation(s):**

No

Condition 16.1 states that a closure plan is required to be submitted at least two years prior to closure (or when 90% of capacity is reached, whatever comes first). The site is not yet required to submit a closure plan.

Question ID	NOL 51	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill only accepting the types of waste that they are approved to receive?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is approved to accept municipal, industrial, commercial, and institutional solid nonhazardous waste, including non-hazardous contaminated soils, generated within the Province of Ontario as per Condition 6.4 and 6.7 of ECA No. A032203.  No issues were identified with this condition by the Inspector in August 2024.			

Question ID	NOL 52	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill have a waste refusal procedure in place to manage waste that arrives at the site that the site is not approved the accept?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 9.5 of ECA No. A032203 states that the Company must keep records in a daily logbook of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known. The Company has their own Waste Verification, Acceptance and Rejection Procedure and records rejection events by filling out a 'Waste Discrepancy Form'.  The Company confirmed there were no refusals of waste shipments in August 2024.			

Question ID	NOL 54	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			

**Question:**

Does the landfill have a procedure in place to address and document spills and fires?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Procedures for spills, fires and other emergencies are outlined in the D&O Report. Condition 12 of ECA No. A032203 also lists requirements regarding emergency situations:

- in the event of a fire or discharge of a contaminant to the environment, the Company shall contact the Spills Action Centre (SAC) and the Sarnia District Office forthwith.
- a written report shall be submitted to the District Manager within 3 days of the incident, outlining the nature of the incident, remedial measures taken, and measures taken to prevent future occurrences.
- the Company shall ensure that adequate firefighting and contingency spill clean-up equipment is available as per Item 66 of Schedule A and that emergency response personnel are familiar with its use and location.

The Company confirmed that emergency response personnel are familiar with the use and location of the emergency equipment. A variety of heavy equipment is available including a backhoe, rock truck, excavator, sweepers, water truck, as well as a spill kit which is located at the scale. The Company says this information is reviewed annually at a minimum.

There was one fire reported by the Company during August 2024. The fire occurred on August 4, 2024 on the active face. As per Conditions 12.1 and 12.2 of ECA No. A032203, the Company contacted the MECP Spills Action Centre and the District Office forthwith and provided a written report via email that outlined the nature of the incident, remedial measures taken and measures taken to prevent future occurrences at the Site. The Company completed an investigation into the cause of the fire and the cause is unknown. The Company reported that none of the landfill gas wells were involved in the fire and the landfill gas collection system remained on. The Ministry reviewed the actions taken by the Company and confirmed that there were no impacts to surface water and no odours or off-site impacts were observed.

Question ID	NOL 56	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is there an ECA condition requiring financial assurance?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
Financial Assurance (FA) is required for private sector landfill sites under Ontario Regulation 232/98, in order to ensure that funds are available for site closure, post-closure care, and			

contingencies in the event that the site owner cannot or does not carry out their obligations under the ECA.

Condition 2.1 of ECA No. A032203 addresses FA requirements for the Site. The Company is required to submit a re-evaluation of the FA amount every four years. The most recent re-evaluation was required to be submitted on March 31, 2024, which was received by the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.

The next FA re-evaluation is required to be submitted on March 31, 2028.

Question ID	NOL 57	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the financial assurance been submitted, as specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 58	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the company provided financial assurance re-evaluation estimates in compliance with the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company submitted the financial assurance re-evaluation for the Site to the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.			

Question ID	NOL 59	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address complaints?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Company's complaint procedure is listed in the D&O Report. Responses to complaints related to dust, odour, and litter are also described in the Best Management Practices (BMP) Plans for the Site.

The following complaint procedure is required by Condition 11 of ECA No. A032203: "If at any time, the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:

- a. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information, the time and date of the complaint, specific details of operations that were occurring, any changers from normal operations, types of waste loads (including source) and other on Site activities;
- b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and
- c. The Owner shall complete and retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

11.2 The Owner shall designate a person to receive any complaints and to respond with a written notice of action as soon as possible. The Owner shall post the Site complaints procedure at the Site entrance. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.

11.3 The Company shall notify the District Manager, Township of Warwick and WIFN, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:

1. this Approval number;
2. a description of the nature of the complaint;
3. the time and date of the incident to which the complaint relates.

11.4 The Company shall report all environmental complaints to the WPLC at the next WPLC meeting."

Question ID	NOL 60	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			

**Question:**

Has the landfill operator addressed the complaints to the satisfaction of the ministry?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

In August 2024, no complaints were received by the Ministry and one complaint were reported by the Company. The complaint was from August 7, 2024 regarding odour from the site. Odour from the Site can originate from a variety of sources. The odour identified from the complaint received on August 7th was related to the loads of waste that were received from different Transfer Stations due to the fact that it was a long weekend and the waste was sitting longer than normal. During the time of the complaint, the odour suppression system was operational. Through the Company's investigation into the odour complaint on August 7, agricultural odours were also noted around the Site and the area of the complaint. The complaint was reported to the Ministry within two (2) business days and was responded to by the Company in accordance with Condition 11 of ECA No. A032203.

Ongoing discussions between the Ministry and WM occur on the notifications of complaints and follow up actions taken by the Company. The Company is required to review and summarize the complaints and response in the quarterly and annual reports.

Question ID	NOL 61	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator developed a Design and Operations Manual?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  A Design and Operations (D&O) Report was prepared by Henderson Paddon & Associates Limited, dated March 2008, and is listed as Items 66-68 of Schedule A under ECA No. A032203.			

Question ID	NOL 63	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill operator have training procedures for site personnel?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company has their own training procedure. Training requirements for employees are described under condition 10.1 of ECA No. A032203.			

Question ID	NOL 64	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill operator following the established training procedures?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company provided copies of training records to the Ministry for their employees demonstrating that the Company is following the established training procedures as described under condition 10.1 of ECA No. A032203.			

Question ID	949100	Question Type	Legislative
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Were the inspection questions sufficient to address other identified non-compliance items?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b>  One purpose of the inspections is to assess the Company efforts towards preventing, minimizing and mitigating off-site impacts resulting from their operations such as odours, litter, noise and dust. The following is a summary of the findings of the inspections conducted by the Ministry during August 2024:  August 2024 Inspection Dates: - Friday, August 9, 2024 - Tuesday, August 13, 2024 - Friday, August 23, 2024 - Tuesday, August 27, 2024  Landfilling related odours were observed downwind of the landfill during all four inspections in August 2024. Odours were rated from moderate to faint and were described to be an garbage odour. The odours were observed during operating hours, and they were attributed to the fill location, wind direction and the activities associated with gas lines being replaced. Agricultural related odours were also noted during all four of the weekly inspections that took place in August 2024.  Litter was present on-site during all of the inspections. No litter pickers were observed on-site by the Ministry but the Company reported that litter pickers were dispatched daily to pick around the Site and were sent off site on an as need basis during August 2024. The Ministry observed areas where the litter pickers had been according to the Company and the areas			

were observed to be litter-less or have minimal amounts of litter in the general area. The Ministry observed litter off-site during the August 27th inspection, on the turn-out lane on Nauvoo Road. The Company was notified and promptly cleaned the litter off of Nauvoo Road before the August 27th inspection was completed.

In May 2024, the Company identified an area where ASR was used on a drivable surface, on Cell 6A, which lead to ASR track-out. The Company attempted to clean the ASR and covered the area with woodchips to prevent track-out. The Company has stated that due to the rain observed in June and July, ASR has continued to come to the surface. In August, due to the continued presence of ASR observed on Nauvoo Road, through working with the Ministry, the Company placed at 60-day hold on ASR so it would not be applied anywhere on-site. The Company committed to a final clean-up date of August 9, 2024 to removing the remaining pieces of ASR from Nauvoo Road which was completed. The Company has committed to continue monitoring Nauvoo Road for the presence of ASR and if any is observed they will dispatch litter pickers and the sweeper to clean any additional ASR track-out. During the month of August, ASR was only observed during the August 9, 2024 inspection before the finally clean-up was completed. Since the final clean-up, ASR track-out has not been observed and the Ministry will continue to monitor the situation to ensure any additional ASR track-out is addressed.

Dust was not observed off-site during any weekly inspection in August 2024. During the weekly inspections, the water truck and sweeper were observed around the Site on internal roads and on Nauvoo Road. Dust was only observed on-site during the August 9, 2024 inspection and the Company confirmed that the water truck was refilling and would be deployed to eliminate the dust.

The Company reported a leachate seep to the Ministry during the August 13, 2024 inspection. The Company observed the seep on the expanded landfill where the old ramp on Cell 3 was located. The Company removed the soil from where the seep occurred and cleaned the area. During the subsequent visits the Ministry observed the seep to be re-capped with clay and no additional seeping was observed. All seeps were repaired by the Company and there were no offsite impacts reported. No additional issues were observed in August 2024.

On June 26, 2024, the Ministry approved the Company's request for off-site leachate disposal at Valicor Environmental Services in Michigan, USA. During the month of August, the Company shipped four loads of leachate a week to Valicor and six loads of leachate to the Chatham Water Pollution Control Plant in addition to the leachate disposed of through the Poplar System. On August 27, 2024 the Ministry received a letter requesting approval for off-site leachate disposal to Walkerton Wastewater Treatment Plant, the Ministry is currently reviewing the Company's request. According to the Company, having the ability to send leachate to more than one location will allow leachate to be removed faster from which will reduce the volume observed onsite. The Ministry continues to watch the leachate levels and is working with the Company through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

There have been no other significant environmental concerns at the site. The Company continues to show general compliance with SOPs, BMPs and the ECA.

## APPENDIX N:

MECP September 2024 Inspection Report - No. 1-734010128







TWIN CREEKS ENVIRONMENTAL CENTRE  
Physical Address: 5768 NAUVOO RD, , WARWICK,  
ON N0M 2S0

## INSPECTION REPORT

Entity: WASTE MANAGEMENT OF  
CANADA CORPORATION  
Inspection Start Date: September 01, 2024  
Inspection End Date: September 30, 2024  
Inspected By: Amanda Seaman  
Badge #: 2129

*Amanda Seaman*

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(signature)

## INTRODUCTION

### Purpose

Ontario has a comprehensive legislative and regulatory framework to ensure that wastes are managed in an environmentally safe manner. Through the Environmental Protection Act (EPA) and accompanying regulations, the Ministry of the Environment, Conservation and Parks (the Ministry) has established a cradle to grave management system, which governs the collection, storage, transportation, and disposal of waste.

The Ministry issues Environmental Compliance Approvals (ECA) under the EPA for landfill sites that dispose of solid non-hazardous wastes. The ECA imposes conditions related to development and operation of the site, and includes monitoring requirements, etc. To confirm whether the regulated community is complying with the requirements related to the waste disposal activities, the Ministry is committed to conducting proactive inspections of waste sites. With that aim in mind, Ministry staff conducted an inspection of the Twin Creeks Environmental Centre (Site) in Warwick Township as part of the Sarnia District Office's 2024/25 inspection program.

The Site is approved to accept municipal, industrial, commercial, and institutional solid non-hazardous waste generated within the Province of Ontario, including non-hazardous contaminated soils under ECA Number A032203, dated December 16, 2023. The Site is owned and operated by Waste Management of Canada Corporation (Company).

### Scope

This inspection report summarizes the findings of the weekly inspections conducted at the Twin Creeks Environmental Centre during the month of September 2024. The focus of each inspection is to assess the Company's operation and construction of the site against the terms and conditions of its Environmental Compliance Approvals and with the requirements of applicable environmental legislation, regulations, and guidelines.

A total of four inspections were conducted by the Ministry during the month of September 2024. Inspections took place on the following dates:

- Wednesday, September 4, 2024
- Wednesday, September 11, 2024
- Monday, September 16, 2024
- Monday, September 23, 2024

## **NON-COMPLIANCE**

This should not be construed as a confirmation of full compliance with all potential applicable legal requirements. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## **RECOMMENDATIONS**

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program:** WASTE | **Regulated Activity:** Landfills

Question ID	NOL 1	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the Open landfill site have an Environmental Compliance Approval (ECA)?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has the following Ministry approvals:  WASTE DISPOSAL SITE ECA No. A032203, dated December 16, 2023 - For the use and operation of a 101.8-hectare landfilling area with a total site area of 301 hectares, accepting only municipal, industrial, commercial, institutional solid non-hazardous waste generated within Ontario, including non-haz contaminated soil. The site is approved to receive 1,400,000 tonnes per year.  AIR ECA No. 6318-CX4NFX, dated December 13, 2023 Approved to install and operate: - six enclosed flare systems; - emergency diesel generators to provide back-up power as needed; - a 50kW diesel generator to provide regular power to the south fill area leachate pumping system; and- exhaust fans, exhaust louvres, and aeration tanks exhausting to the atmosphere from the leachate treatment facility and one leachate treatment facility laboratory. - infrastructure for the Renewable Natural Gas Plant including one pre-treatment thermal oxidizer, one main thermal oxide, one amine reboiler and two RNG (Renewable Natural Gas) plant condensate tanks with carbon drum filters.  INDUSTRIAL SEWAGE ECA No. 8117-CUSNXX, dated April 29, 2024 - Issued for the existing industrial sewage works including the leachate collection, treatment, and disposal facility as well as a stormwater management facility to service the Site and for the establishment of the newly proposed industrial sewage works for usage and operation of condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility at the Site.  PERMIT TO TAKE WATER (PTTW) No. 4682-BLJRYJ, dated November 8, 2021 Issued for dewatering at the Site and industrial activities such as road watering to reduce			

dust. On- Site water taking locations include:

- stormwater management ponds 1, 2, 3, and 4
- secondary drainage layer (SDL)
- four pumping stations, PS2, PS4, PS6, PS8.

Question ID	NOL 13	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are access roads and on-site roads provided so that vehicles hauling waste to and on the site may travel readily on any day under all normal weather conditions?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Access to and exit from the Site for the transportation of waste is permitted from Country Road 79 (Nauvoo Road).  There are both paved and unpaved access roads on site. Typically, unpaved roads are made of material that would allow for vehicles hauling waste on site to readily travel unhindered in normal weather conditions as per ECA condition 6.31a&b.			

Question ID	NOL 14	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access limited to times when an attendant is on duty?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  An attendant is always on duty at the Site during operating hours.  During non-operating hours, the Site entrance and exit gates are locked. Site access is secured against access by unauthorized persons as per Condition 6.28 of the ECA.			

Question ID	NOL 15	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the site only receive waste from within its approved service area?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Facility only receives waste generated in the Province of Ontario as per Condition 6.4 and 6.7 of the ECA.

The Site is approved for the use and operation of a 101.8-hectare landfilling area with a total Site area of 301 hectares. During the inspection period the Company deposited waste in Cells 3, 5 and 6A of the Expansion Site. All waste is being deposited within the approved landfill footprint, Condition 6.6 of ECA No. A032203 authorizes the Company to receive up to a maximum of 1,400,000 tonnes of waste per year (including contaminated soil) for disposal at the Site.

According to the tonnage report provided by the Company, September's monthly total is:

September 2024 – 103,541.35 tonnes

From the beginning of 2024 to the end of September, the Company has received 1,081,227.19 tonnes or approximately 77% of the yearly total.

Question ID	NOL 16	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a ground water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
The following Site-specific approvals outline the requirements for groundwater monitoring:			
<p>- Industrial Sewage ECA No. 8117-CUSNXX: Specifies the operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, treated effluent storage pond monitoring programs. The amended Industrial Sewage ECA was issued on April 29, 2024, specifies the operation, monitoring and reporting requirements related to the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service the proposed Renewable Natural Gas (RNG) facility at the Site.</p> <p>- Waste Disposal Site ECA No. A032203: Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A".</p>			

Groundwater monitoring is completed semi-annually in the spring and fall as per the EMP.

No alterations can be made to the program unless prior approval has been given by the District Manager.

Question ID	NOL 17	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the groundwater monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 21	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage leachate by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
<p>The Site is required to manage leachate in accordance with the Industrial Sewage ECA No. 8117-CUSNXX and Waste ECA No. A032203.</p> <p>Leachate Collection - Existing Site: This consists of:</p> <ul style="list-style-type: none"> <li>- Three finger drains in the South Fill Area;</li> <li>- Pumping sump in the West Central Cell near monitoring station OW-29;</li> <li>- Two parallel waste underdrains in Cell 3S (north of the South Fill Area); and</li> <li>- Waste underdrains in the Northern part of Cell 5 and in Cells 4, 6, 7, 8, 9, 10 and 11. The waste under-drains direct leachate to a perimeter collection system which is then automatically pumped to the leachate equalization tank.</li> </ul> <p>Leachate Collection - Expansion Site: A leachate collection system has been installed in Cell 1, Cell 2, Cell 4, and Cell 6A. The leachate level in the primary drainage layer of these cells is currently controlled by automated Pump Station 1 (PS1), Pump Station 3 (PS3), Pump Station 5 (PS5), and Pump Station 7 (PS7). Leachate is transferred from the Primary Drainage Layer (PDL) to the leachate equalization tank. The Secondary Drainage Layer (SDL) is controlled by PS2, PS4, and PS6. The trigger for implementation of groundwater contingency measures for the Expansion Site</p>			



is the loss of hydraulic containment. This occurs when leachate levels within the PDL are higher than the surrounding groundwater elevations.

**RNG Condensation Collection and Disposal System:**

The RNG condensate system (combined with the existing Landfill Gas (LFG) condensate system) for collection and discharge of the condensate generated at the newly proposed RNG facility, collected in the two Slop Tanks inside the RNG building to the Proposed Equalization Tank 2 during first year of the operation of Proposed Works, and disposal to Equalization Tank 1 or hauled offsite depending upon the Proposed Sampling Program results, the Proposed Works also include upgrades to the Existing Pump Station 10 (PS10) for pumping of condensate to Equalization Tank.

**Leachate Treatment and Disposal Facility:**

When constructed, this will consist of:

- A chemical feed system
- A sequencing Batch Reactor
- Effluent and sludge pumps and holding tanks
- A contrate evaporator and dryer
- A reverse osmosis membrane filtration system
- Treated effluent on-site disposal systems and storage ponds

**Poplar Tree Leachate Irrigation System:**

The Company has established a drip irrigation system which supplies leachate to a stand of poplar trees, known as the Poplar System ("PS"). The poplars are located on top of a portion of the existing landfill and have been operable since September 27, 2017. The PS is only utilized on a seasonal basis when the trees can actively uptake the leachate.

There are a number of monitoring requirements under Condition 8.7 of ECA No. A032203 related to the PS including soil monitoring, visual assessments, leachate monitoring, tree tissue monitoring and surface water monitoring. The PS became operational in May 2024 for the 2024 growing season. During the weekly inspections that took place in September 2024, the irrigation system has not been observed to be running. According to the Company, there was maintenance on the system that was occurring during the weekly inspections and the system was turned off on September 11, 2024 due to pooling of leachate around the system.

**Off-Site Leachate Disposal:**

The remaining leachate produced from both the existing and expansion site is hauled off-Site for treatment and disposal at the Chatham Water Pollution Control Plant in Ontario and at Valicor Environmental Services in Michigan, USA.

According to reports provided by the Company, the following was shipped offsite:

September 2024 – 7535.9 mt

Question ID	NOL 22	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill implementing the procedures required by the ECA to manage leachate?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
Existing Site:			
Leachate liquid levels are monitored semi-annually in May and November for the Existing Site. Over the long term, leachate levels are expected to decrease in the Existing Site since it is capped, and leachate is extracted for poplar system irrigation and off-Site disposal.			
Expansion Site:			
For the Expansion Site ECA No. A032203 condition 7.18 requires that a hydraulic trap be developed and maintained beneath the expansion area and that the leachate head on the landfill liner does not exceed 300 mm. Condition 14.1 also requires additional groundwater level monitoring if the leachate level elevation in any of the following pumping station well rise above their respective trigger level:			
PS1 - 232.7 mASL PS3 - 232.6 mASL PS5 - 232.8 mASL PS7 - 233.4 mASL			
The PS7 automated leachate liquid level data was only available in Q2 from April 1 to 11, 2024. The Company noted that repair of the PS7 system is pending on parts orders and scheduling of repairs. During the August 27, 2024 inspection, the Company had fixed the power supply issue and were re-connecting the line to the system. PS7 was recording liquid levels during the month of September 2024.			
No leachate seeps were observed by the Ministry and no leachate seeps were reported by the Company in September 2024. The Ministry observed a small area where leachate had run off and pooled adjacent to the Poplar System. The Company was notified and as per ECA No. A032203, the Company turned off the irrigation system and cleaned-up the area where the ponding was observed. The Company investigated the cause and repaired the irrigation line that had been damaged. No additional issues were observed in September 2024, the pooling was observed to have been cleaned and no impacts to surface water were observed.			
The Ministry's Technical Support Section will be reviewing the 2024 Second Quarter ("Q2") Monitoring Report received on August 27, 2024.			

Question ID	NOL 26	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage landfill gas by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Gas produced by the landfill is managed by the on-Site gas collection and flaring system. A portion of this gas is conveyed from the landfill to a neighboring property, where it is converted and used for building heat for a large greenhouse on an as-needed basis during the colder seasons. The remaining gas is sent to one of the two existing flares on-site. The Company is currently constructing a Renewable Natural Gas Plant which will convert the captured landfill gas from the Site into pipeline quality gas for injection to the commercial gas transmission and distribution network.  Waste ECA No. A032203: - Condition 7.10 and 13.6 requires the gas control system to be managed and monitored as specified in the D&O Report and the EMP. - Condition 14.8 states that if landfill gas concentrations exceed 10% LEL (Lower Explosive Limit) during monitoring, the Company is to undertake additional monitoring to determine if the elevated levels are landfill related. - The Company must report all landfill gas monitoring to the Ministry on a quarterly and annual basis.  Air ECA No. 6318-CX4NFX: - Describes the notifications, operation, maintenance, performance, and record keeping requirements for the flaring system and the RNG plant.			

Question ID	NOL 27	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the landfill gas management requirements in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Landfill gas monitoring is completed monthly from November to April and in July at gas monitoring probes GP1A to GP10. Gas probes GP9 and GP10, were installed in late June 2022 in accordance with their respective stages of landfill construction as presented in Table 2 of the landfill EMP.  2024 Second Quarter ("Q2") Monitoring Report stated that methane gas was not detected at			

the established gas probes GP1A to GP10 during the Q2 calendar period.

Total Hydrocarbon (THC) capped surface monitoring is conducted in the spring and fall in accordance with the Ambient Air Quality Monitoring Plan (AAQMP), required by Condition 13.8 of ECA No. A032203. It consists of a walk-over survey of the final capped landfill area using a handheld THC analyzer. Elevated THC concentrations are indicators of the escape of possible landfill gas in certain areas.

The temperatures of the flares are checked during the unannounced weekly inspections to ensure they are operating above 875 degrees Celsius. During the weekly inspections that took place in September 2024, when in operation, Flare 1 and Flare 2 were observed operating above 875 degrees Celsius according to the SCADA system on all occasions.

In August 2024, the Ministry began unmanned aerial vehicle (UAV) methane detection around the Site. The purpose is to measure the methane values on-site and identify potential sources of high methane emissions. The UAV methane detection is still ongoing in September 2024.

Question ID	NOL 29	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with landfill gas at this site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  As a result of the UAV methane detection flight that occurred on September 16, 2024, there were three areas on the existing landfill where high methane levels were detected (greater than 1000 ppm). The Company investigated and identified the source of the elevated levels as the leachate manholes on the existing landfill. The Company removed the cast iron manhole cover and replaced them with a sealed HDPE lid. Upon re-monitoring, the Company found it was still exceeding and sealed it up again. The Company's next step will be to bring vacuum to the location. The Company stated that installing vacuum is not in the current plan however due to the construction of the RNG Facility, they are reviewing all aspects of the gas collection plan. The Ministry is continuing to monitor the situation and will work with the Company as required.  No concerns were raised with the landfill gas management or monitoring at the Site during September 2024.			

Question ID	NOL 31	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			

**Question:**

Is the site required to have a surface water monitoring program by the ECA?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The following Site-specific approvals outline the requirements for surface water monitoring:

- Industrial Sewage ECA No. 8117-CUSNXX:

Specifies operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, and treated effluent storage pond monitoring programs. The newly amended ECA specifies operation, monitoring and reporting requirements for the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility.

- Waste Disposal Site ECA No. A032203:

Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A". Surface water will also be evaluated as per Item 91 of Schedule "A".

The Company conducts quarterly surface water monitoring following precipitation events of greater than 10 mm in a 24-hour period.

Question ID	NOL 32	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the surface water monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 34	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Are there water quality concerns with the results of the samples that have been tested?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

In April 2022 the Company, RWDI and the Ministry had a discussion surrounding the Ministry's objective to see a reduction in Total Suspended Solids (TSS) loading to discharging surface water from large industrial facilities, including landfilling sites within the province of Ontario. The Ministry is looking for best efforts by WM (Waste Management) to address TSS loading to discharging surface water from the Twin Creeks Environmental Centre.

As a result, a letter was provided to the Ministry from RWDI outlining that a TSS Action Plan would be developed and received by the Ministry in October 2022. It should be noted that the majority of this work took place during 2021 & 2022 including the removal of sediment build up within the sedimentation ponds, seeding of inactive waste areas and installation of sedimentation structures (straw bales). According to plan the removal of sediment should restore the design optimal effectiveness of the ponds to capture sediment and therefore reduce TSS offsite.

In December 2023, RWDI submitted an TSS Evaluation Letter on behalf of the Company as a follow-up to the TSS Action plan from October 2022. The TSS Evaluation Letter outlined the tasks that were completed along with their associated timelines. After review of the TSS Evaluation Letter, it was determined that the Ministry requires more data before reasonable conclusions can be made about whether TSS is being appropriately controlled before surface water discharges. The Ministry has requested additional updates in the quarterly reports that detail the effectiveness of the TSS management efforts taken to address TSS loading to the surface water.

No other concerns were raised with the surface water at the Site during September 2024.

Question ID	NOL 36	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is proper equipment available for the compaction of waste and applying cover material?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The proper equipment for waste compaction and daily cover application was observed during the Ministry's weekly on-Site inspections. Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.			

Question ID	NOL 37	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill able to accurately determine the amount of waste received?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Site has an entrance and exit scale and records all incoming waste volumes. Tonnage tracking reports are also sent to the Ministry on a monthly basis and yearly waste quantities are summarized in the annual reports.

Question ID	NOL 38	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are all disposal operations at the site adequately and continually supervised?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  There is always a Supervisor on-Site during the weekly inspections.			

Question ID	NOL 39	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill operator have a site inspection program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Conditions 9.1 - 9.13 of ECA # A032203 contains daily, weekly and monthly inspection and record keeping requirements for the general operation and maintenance of the Site. These records are periodically requested by the Ministry during weekly inspections and are assessed for compliance.  In addition, RWDI conducts inspections to ensure the Company is operating within the conditions of the ECA.  No issues or concerns have been identified with the frequency or details of the site inspections.			

Question ID	NOL 41	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste being compacted adequately?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.

Question ID	NOL 42	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   7;			
<b>Question:</b> Is Daily cover applied to the waste at the end of each working day or as otherwise specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.47 of ECA No. A032203 outlines the requirements for daily, intermediate, and final cover.  Daily Cover: The working face must be covered with at least 15cm of soil or approved alternative cover material.  Intermittent Cover: In areas where landfilling is temporarily stopped for six months or more, at least 30 cm of soil cover or approved alternative cover material is required.  Final Cover: In completed landfill areas, at least 1.85 m of cover soil and then at least 15cm of topsoil is required.  The Company reports that daily cover is adequately applied at the end of each working day. Stockpiles of daily cover were regularly observed on-Site near the active working face during operating hours while conducting the weekly inspections in September 2024. The following cover material was observed and/or reported to be used by the Company:  <ul style="list-style-type: none"> <li>- Automobile Shredder Residue (ASR)</li> <li>- Soil</li> <li>- Contaminated Soil</li> <li>- Woodchips</li> <li>- Tarps</li> </ul> According to condition 6.52 of ECA No. A032203, samples of the ASR are to be taken semi-annually (spring and fall) and are to meet the specifications of non-hazardous waste under O. Reg. 347.			



ASR track out was becoming an issue in May 2024. The Company identified an area where ASR was used on a drivable surface, on Cell 6A, which lead to the ASR track-out. The Company attempted to clean the ASR and covered the area with woodchips to prevent track-out. The Company has stated that due to the rain observed in June and July, ASR has continued to come to the surface. In August, due to the continued presence of ASR observed on Nauvoo Road, through working with the Ministry, the Company placed at 60-day hold on ASR so it would not be applied anywhere on-site. The Company committed to a final clean-up date of August 9, 2024 to removing the remaining pieces of ASR from Nauvoo Road which was completed. The Company has committed to continue monitoring Nauvoo Road for the presence of ASR and if any is observed they will dispatch litter pickers and the sweeper to clean any additional ASR track-out. ASR track-out was not observed by the Ministry during any inspection in September 2024 and the Ministry will continue to monitor the situation to ensure any additional ASR track-out is addressed.

The Ministry inspection conducted on September 4th, 2024 took place before landfilling operations began and the Ministry inspection conducted on September 11th 2024, took place after landfilling operations had ceased for the day, both inspections were to assess the daily cover requirements. The Ministry determined that the cover observed during both inspections on September 4th and 11th met the criteria outlined under Condition 6.47 of ECA A032203. This condition states that at the end of each working day, the entire working face shall be covered with a minimum thickness of 150mm of soil or an approved alternative cover material.

No further issues were observed by the Inspector in September 2024.

Question ID	NOL 43	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are procedures implemented to control rodents or other animals and insects at the site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.32 of ECA No. A032203 states that the Site shall be operated and maintained such that vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance. Procedures for pest control are listed in the Company's D&O Report.  Predator Bird Services Inc. is on-Site from Monday to Friday during regular operating hours. They use a combination of noise makers, whistlers and a bird of prey (a falcon or hawk) to deter non native species from populating the landfill and surrounding area. Orkin is also on-Site monthly to maintain the prescribed plan for traps and baiting.  No concerns or issues with pest control were identified during September 2024.			

Question ID	NOL 44	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access restricted by use of a gate, fence, or physical barrier when the site is not operating?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  ECA No. A032203 requires the following to be in place at the Site: <ul style="list-style-type: none"> <li>- The entire Site enclosed with a 6-foot-high wire woven fence.</li> <li>- The Site entrance and exit gates must be locked and secured against access by unauthorized persons during non-operational hours.</li> <li>- Access to and exit from the Site for the transportation of waste must (under normal circumstances) be only permitted from Country Road 79 (Nauvoo Road).</li> <li>- A sign must be displayed at the main entrance/exit to the Site, detailing: <ul style="list-style-type: none"> <li>-Name of the Site and Owner</li> <li>-ECA number</li> <li>-Name of the Operator</li> <li>-Hours of operation</li> <li>-Approved and prohibited waste types</li> <li>-Warning against unauthorized access</li> <li>-Telephone number for complaints</li> <li>-24/7 emergency telephone number (if different from above)</li> <li>-Warning against dumping outside the Site.</li> </ul> </li> </ul> No concerns or issues with access control were identified during the weekly inspections or brought to the attention of the Ministry in September 2024.			

Question ID	NOL 45	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste disposal area adequately screened from public view?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In accordance with Condition 5.4 of ECA No. A032203, there are 7-meter-high perimeter berms vegetated with trees along Zion Ln. and Nauvoo Rd. in order to block the public's view of the landfill.  No complaints of public view were received in September 2024.			

Question ID	NOL 46	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   21;			
<b>Question:</b> Are daily records of site operations available at the site for at least the past 2 years or as otherwise required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 1.22 and 9.8 of ECA No. A032203 state that all records required by the ECA are to be retained at the Site for a minimum of two years.			

Question ID	NOL 48	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   23;			
<b>Question:</b> Is scavenging being prevented?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.33 of ECA No. A032203 states that the Company shall ensure that there is no scavenging as defined by O. Reg. 347 at the Site. "Scavenging" is defined as the uncontrolled removal of reusable material from waste at a waste disposal site.  The Site is secure during non-operating hours and there have been no reported incidents or evidence of scavenging during the Ministry's On-Site weekly inspections in September 2024. According to the Company Waste Management staff are trained extensively in preventing scavenging in the landfill.			

Question ID	NOL 49	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Has a closure plan been submitted to the MECP?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  Condition 16.1 states that a closure plan is required to be submitted at least two years prior to closure (or when 90% of capacity is reached, whatever comes first). The site is not yet required to submit a closure plan.			

Question ID	NOL 51	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill only accepting the types of waste that they are approved to receive?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is approved to accept municipal, industrial, commercial, and institutional solid nonhazardous waste, including non-hazardous contaminated soils, generated within the Province of Ontario as per Condition 6.4 and 6.7 of ECA No. A032203.  No issues were identified with this condition by the Inspector in September 2024.			

Question ID	NOL 52	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill have a waste refusal procedure in place to manage waste that arrives at the site that the site is not approved the accept?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 9.5 of ECA No. A032203 states that the Company must keep records in a daily logbook of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known. The Company has their own Waste Verification, Acceptance and Rejection Procedure and records rejection events by filling out a 'Waste Discrepancy Form'.  The Company confirmed there were no refusals of waste shipments in September 2024.			

Question ID	NOL 54	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address and document spills and fires?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Procedures for spills, fires and other emergencies are outlined in the D&O Report. Condition 12 of ECA No. A032203 also lists requirements regarding emergency situations:			

- in the event of a fire or discharge of a contaminant to the environment, the Company shall contact the Spills Action Centre (SAC) and the Sarnia District Office forthwith.
- a written report shall be submitted to the District Manager within 3 days of the incident, outlining the nature of the incident, remedial measures taken, and measures taken to prevent future occurrences.
- the Company shall ensure that adequate firefighting and contingency spill clean-up equipment is available as per Item 66 of Schedule A and that emergency response personnel are familiar with its use and location.

The Company confirmed that emergency response personnel are familiar with the use and location of the emergency equipment. A variety of heavy equipment is available including a backhoe, rock truck, excavator, sweepers, water truck, as well as a spill kit which is located at the scale. The Company says this information is reviewed annually at a minimum.

There were no fires or spills reported by the company during the month of September 2024.

Question ID	NOL 56	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is there an ECA condition requiring financial assurance?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
Financial Assurance (FA) is required for private sector landfill sites under Ontario Regulation 232/98, in order to ensure that funds are available for site closure, post-closure care, and contingencies in the event that the site owner cannot or does not carry out their obligations under the ECA.			
Condition 2.1 of ECA No. A032203 addresses FA requirements for the Site. The Company is required to submit a re-evaluation of the FA amount every four years. The most recent re-evaluation was required to be submitted on March 31, 2024, which was received by the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.			
The next FA re-evaluation is required to be submitted on March 31, 2028.			

Question ID	NOL 57	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the financial assurance been submitted, as specified in the ECA?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Question ID	NOL 58	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the company provided financial assurance re-evaluation estimates in compliance with the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company submitted the financial assurance re-evaluation for the Site to the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.			

Question ID	NOL 59	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address complaints?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company's complaint procedure is listed in the D&O Report. Responses to complaints related to dust, odour, and litter are also described in the Best Management Practices (BMP) Plans for the Site.  The following complaint procedure is required by Condition 11 of ECA No. A032203: "If at any time, the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:  a. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information, the time and date of the complaint, specific details of operations that were occurring, any changers from normal operations, types of waste loads (including source) and other on Site activities;  b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine			

all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and

c. The Owner shall complete and retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

11.2 The Owner shall designate a person to receive any complaints and to respond with a written notice of action as soon as possible. The Owner shall post the Site complaints procedure at the Site entrance. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.

11.3 The Company shall notify the District Manager, Township of Warwick and WIFN, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:

1. this Approval number;
2. a description of the nature of the complaint;
3. the time and date of the incident to which the complaint relates.

11.4 The Company shall report all environmental complaints to the WPLC at the next WPLC meeting."

Question ID	NOL 60	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator addressed the complaints to the satisfaction of the ministry?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In September 2024, no complaints were received by the Ministry and four complaint were reported by the Company. All four complaints were related to odour. Odour from the Site can originate from a variety of sources.  The odours identified from the complaints received on September 14th and 16th were identified to be agriculturally related, not landfill related. Through the Company's investigation into the odour complaint on September 14th, based on the wind direction and location of the complaint, the source was determined to be agriculture. The Company Representative told the Ministry that during the perimeter check on September 14th, they observed manure being spread on a farmers field near the complainants address, which was the source of the odour. The Ministry was on-site completing an inspection when the Company received the odour complaint on September 16th. The Ministry complete a perimeter check and based on the wind direction and farming activities observed around the complainants address, identified the			

source of the odour to be agriculturally related, not landfill related.

The odours identified from the two complaints received on September 26, 2024 were identified to be landfill related. During the time of the complaint, the odour suppression system was operational. Through the Company's investigation into the odour complaints, were attributed to the fill area, temporary construction activities, and wind direction. Agricultural odours were also noted around the Site and the area of the complaint.

All complaints in September 2024 were reported to the Ministry within two (2) business days and was responded to by the Company in accordance with Condition 11 of ECA No. A032203. Ongoing discussions between the Ministry and WM occur on the notifications of complaints and follow up actions taken by the Company. The Company is required to review and summarize the complaints and response in the quarterly and annual reports.

Question ID	NOL 61	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator developed a Design and Operations Manual?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  A Design and Operations (D&O) Report was prepared by Henderson Paddon & Associates Limited, dated March 2008, and is listed as Items 66-68 of Schedule A under ECA No. A032203.			

Question ID	NOL 63	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill operator have training procedures for site personnel?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company has their own training procedure. Training requirements for employees are described under condition 10.1 of ECA No. A032203.			

Question ID	NOL 64	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			



**Question:**

Is the landfill operator following the established training procedures?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Company provided copies of training records to the Ministry for their employees demonstrating that the Company is following the established training procedures as described under condition 10.1 of ECA No. A032203.

Question ID	949100	Question Type	Legislative
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Were the inspection questions sufficient to address other identified non-compliance items?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b>  One purpose of the inspections is to assess the Company efforts towards preventing, minimizing and mitigating off-site impacts resulting from their operations such as odours, litter, noise and dust. The following is a summary of the findings of the inspections conducted by the Ministry during September 2024:  September 2024 Inspection Dates: - Wednesday, September 4, 2024 - Wednesday, September 11, 2024 - Monday, September 16, 2024 - Monday, September 23, 2024  Landfilling related odours were observed downwind of the landfill during all four inspections in September 2024. Odours were rated from moderate to faint and were described to be an garbage odour. The odours were observed during operating hours and after/before operating hours. They were attributed to the fill location, the direction of the wind and the activities associated with gas lines being replaced. Agricultural related odours were also noted during three of the four of the weekly inspections that took place in September 2024.  Litter was present on-site during all of the inspections. Litter pickers were observed on-site by the Ministry during the September 23, 2024 inspection but the Company reported that litter pickers were dispatched daily to pick around the Site and were sent off site on an as need basis during September 2024. The Ministry observed areas where the litter pickers had been according to the Company and the areas were observed to be litter-less or have minimal amounts of litter in the general area. No litter was observed off site by the Ministry in September 2024. The Ministry has observed the Company following their Litter BMP and no issues with the response of the Company was observed during September 2024.			

Dust was not observed off-site during any weekly inspection in September 2024. During the weekly inspections, the water truck and sweeper were observed around the Site on internal roads and on Nauvoo Road. Dust was only observed on-site during the September 16, 2024 inspection. Before the weekly inspection was completed, the Ministry observed the water truck on the internal road where the dust originally was observed. The Ministry observed the Company following their Dust BMP.

In May 2024, the Ministry observed ASR track-out onto Nauvoo Road. The Company identified an area where ASR was used on a drivable surface, on Cell 6A, which lead to the ASR track-out. In August 2024, due to the continued presence of ASR observed on Nauvoo Road, through working with the Ministry, the Company placed at 60-day hold on ASR so it would not be applied anywhere on-site. The Company removed the remaining pieces of ASR from Nauvoo Road on August 9, 2024. The Company has committed to continue monitoring Nauvoo Road for the presence of ASR and if any is observed they will dispatch litter pickers and the sweeper to clean any additional ASR track-out. During the month of September 2024 no ASR track-out was observed on Nauvoo Road. The Ministry will continue to monitor the situation to ensure any additional ASR track-out is addressed.

No leachate seeps were observed by the Ministry and no leachate seeps were reported by the Company in September 2024. The Ministry observed a small area where leachate had run off and pooled adjacent to the Poplar System. The Company was notified and as per ECA No. A032203, the Company turned off the irrigation system and cleaned-up the area where the ponding was observed. The Company investigated the cause and repaired the irrigation line that had been damaged. No additional issues were observed in September 2024.

On June 26, 2024, the Ministry approved the Company's request for off-site leachate disposal at Valicor Environmental Services in Michigan, USA. During the month of September, the Company shipped four loads of leachate a week to Valicor and six loads of leachate to the Chatham Water Pollution Control Plant in addition to the leachate disposed of through the Poplar System. On August 27, 2024 the Ministry received a letter from Waste Management requesting approval for off-site leachate disposal to Walkerton Wastewater Treatment Plant, the Ministry is currently reviewing the Company's request. On September 13, 2024 the Ministry received a letter from Waste Management requesting approval for off-site leachate disposal to Clean Harbors in Guelph, ON, the Ministry is currently reviewing the Company's request. According to the Company, having the ability to send leachate to more than one location will allow the Company to remove leachate faster from the site which will reduce the volume observed onsite. The Ministry continues to watch the leachate levels and is working with the Company through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

There have been no other significant environmental concerns at the site. The Company continues to show general compliance with SOPs, BMPs and the ECA.

## APPENDIX N:

MECP October 2024 Inspection Report - No. 1-734495735





TWIN CREEKS ENVIRONMENTAL CENTRE  
Physical Address: 5768 NAUVOO RD, , WARWICK,  
ON N0M 2S0

## INSPECTION REPORT

Entity: WASTE MANAGEMENT OF  
CANADA CORPORATION  
Inspection Start Date: October 01, 2024  
Inspection End Date: October 31, 2024  
Inspected By: Amanda Seaman  
Badge #: 2129

*Amanda Seaman*

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(signature)

## INTRODUCTION

### Purpose

Ontario has a comprehensive legislative and regulatory framework to ensure that wastes are managed in an environmentally safe manner. Through the Environmental Protection Act (EPA) and accompanying regulations, the Ministry of the Environment, Conservation and Parks (the Ministry) has established a cradle to grave management system, which governs the collection, storage, transportation, and disposal of waste.

The Ministry issues Environmental Compliance Approvals (ECA) under the EPA for landfill sites that dispose of solid non-hazardous wastes. The ECA imposes conditions related to development and operation of the site, and includes monitoring requirements, etc. To confirm whether the regulated community is complying with the requirements related to the waste disposal activities, the Ministry is committed to conducting proactive inspections of waste sites. With that aim in mind, Ministry staff conducted an inspection of the Twin Creeks Environmental Centre (Site) in Warwick Township as part of the Sarnia District Office's 2024/25 inspection program.

The Site is approved to accept municipal, industrial, commercial, and institutional solid non-hazardous waste generated within the Province of Ontario, including non-hazardous contaminated soils under ECA Number A032203, dated December 16, 2023. The Site is owned and operated by Waste Management of Canada Corporation (Company).

### Scope

This inspection report summarizes the findings of the weekly inspections conducted at the Twin Creeks Environmental Centre during the month of October 2024. The focus of each inspection is to assess the Company's operation and construction of the site against the terms and conditions of its Environmental Compliance Approvals and with the requirements of applicable environmental legislation, regulations, and guidelines.

A total of five inspections were conducted by the Ministry during the month of October 2024. Inspections took place on the following dates:

- Tuesday, October 1, 2024
- Wednesday, October 9, 2024
- Thursday, October 17, 2024
- Monday, October 21, 2024
- Thursday, October 31, 2024



## **NON-COMPLIANCE**

This should not be construed as a confirmation of full compliance with all potential applicable legal requirements. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## **RECOMMENDATIONS**

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.



## INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program:** WASTE | **Regulated Activity:** Landfills

Question ID	NOL 1	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the Open landfill site have an Environmental Compliance Approval (ECA)?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has the following Ministry approvals:  WASTE DISPOSAL SITE ECA No. A032203, dated December 16, 2023 - For the use and operation of a 101.8-hectare landfilling area with a total site area of 301 hectares, accepting only municipal, industrial, commercial, institutional solid non-hazardous waste generated within Ontario, including non-haz contaminated soil. The site is approved to receive 1,400,000 tonnes per year.  AIR ECA No. 6318-CX4NFX, dated December 13, 2023 Approved to install and operate: - six enclosed flare systems; - emergency diesel generators to provide back-up power as needed; - a 50kW diesel generator to provide regular power to the south fill area leachate pumping system; and- exhaust fans, exhaust louvres, and aeration tanks exhausting to the atmosphere from the leachate treatment facility and one leachate treatment facility laboratory. - infrastructure for the Renewable Natural Gas Plant including one pre-treatment thermal oxidizer, one main thermal oxide, one amine reboiler and two RNG (Renewable Natural Gas) plant condensate tanks with carbon drum filters.  INDUSTRIAL SEWAGE ECA No. 8117-CUSNXX, dated April 29, 2024 - Issued for the existing industrial sewage works including the leachate collection, treatment, and disposal facility as well as a stormwater management facility to service the Site and for the establishment of the newly proposed industrial sewage works for usage and operation of condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility at the Site.  PERMIT TO TAKE WATER (PTTW) No. 4682-BLJRYJ, dated November 8, 2021 Issued for dewatering at the Site and industrial activities such as road watering to reduce dust. On- Site water taking locations include:			

- stormwater management ponds 1, 2, 3, and 4
- secondary drainage layer (SDL)
- four pumping stations, PS2, PS4, PS6, PS8.

Question ID	NOL 2	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is this landfill on Crown land?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 13	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are access roads and on-site roads provided so that vehicles hauling waste to and on the site may travel readily on any day under all normal weather conditions?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Access to and exit from the Site for the transportation of waste is permitted from Country Road 79 (Nauvoo Road).  There are both paved and unpaved access roads on site. Typically, unpaved roads are made of material that would allow for vehicles hauling waste on site to readily travel unhindered in normal weather conditions as per ECA condition 6.31a&b.			

Question ID	NOL 14	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access limited to times when an attendant is on duty?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  An attendant is always on duty at the Site during operating hours.			

During non-operating hours, the Site entrance and exit gates are locked. Site access is secured against access by unauthorized persons as per Condition 6.28 of the ECA.

Question ID	NOL 15	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the site only receive waste from within its approved service area?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Facility only receives waste generated in the Province of Ontario as per Condition 6.4 and 6.7 of the ECA.  The Site is approved for the use and operation of a 101.8-hectare landfilling area with a total Site area of 301 hectares. During the inspection period the Company deposited waste in Cells 3, 5 and 6A of the Expansion Site. All waste is being deposited within the approved landfill footprint, Condition 6.6 of ECA No. A032203 authorizes the Company to receive up to a maximum of 1,400,000 tonnes of waste per year (including contaminated soil) for disposal at the Site.  According to the tonnage report provided by the Company, October's monthly total is: October 2024 – 110,878.59 tonnes  From the beginning of 2024 to the end of October, the Company has received 1,192,071.71 tonnes or approximately 85% of the yearly total.			

Question ID	NOL 16	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a ground water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The following Site-specific approvals outline the requirements for groundwater monitoring:  - Industrial Sewage ECA No. 8117-CUSNXX: Specifies the operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, treated effluent storage pond monitoring programs. The amended Industrial Sewage ECA was issued on April 29, 2024, specifies the operation, monitoring and reporting requirements related to the condensate			

collection system, leachate collection, treatment, and disposal facility and stormwater management works to service the proposed Renewable Natural Gas (RNG) facility at the Site.

- Waste Disposal Site ECA No. A032203:

Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A".

Groundwater monitoring is completed semi-annually in the spring and fall as per the EMP.

No alterations can be made to the program unless prior approval has been given by the District Manager.

Question ID	NOL 17	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the groundwater monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 20	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is there ongoing abatement to address any concerns the ministry has with the ground water monitoring?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 21	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage leachate by the ECA?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Site is required to manage leachate in accordance with the Industrial Sewage ECA No. 8117-CUSNXX and Waste ECA No. A032203.

**Leachate Collection - Existing Site:**

This consists of:

- Three finger drains in the South Fill Area;
- Pumping sump in the West Central Cell near monitoring station OW-29;
- Two parallel waste underdrains in Cell 3S (north of the South Fill Area); and
- Waste underdrains in the Northern part of Cell 5 and in Cells 4, 6, 7, 8, 9, 10 and 11. The waste under-drains direct leachate to a perimeter collection system which is then automatically pumped to the leachate equalization tank.

**Leachate Collection - Expansion Site:**

A leachate collection system has been installed in Cell 1, Cell 2, Cell 4, Cell 6A and Cell 6B. The leachate level in the primary drainage layer of these cells is currently controlled by automated Pump Station 1 (PS1), Pump Station 3 (PS3), Pump Station 5 (PS5), and Pump Station 7 (PS7). Leachate is transferred from the Primary Drainage Layer (PDL) to the leachate equalization tank. The Secondary Drainage Layer (SDL) is controlled by PS2, PS4, and PS6. The trigger for implementation of groundwater contingency measures for the Expansion Site is the loss of hydraulic containment. This occurs when leachate levels within the PDL are higher than the surrounding groundwater elevations.

**RNG Condensate Collection and Disposal System:**

The RNG condensate system (combined with the existing Landfill Gas (LFG) condensate system) for collection and discharge of the condensate generated at the newly proposed RNG facility, collected in the two Slop Tanks inside the RNG building to the Proposed Equalization Tank 2 during first year of the operation of Proposed Works, and disposal to Equalization Tank 1 or hauled offsite depending upon the Proposed Sampling Program results, the Proposed Works also include upgrades to the Existing Pump Station 10 (PS10) for pumping of condensate to Equalization Tank.

**Leachate Treatment and Disposal Facility:**

When constructed, this will consist of:

- A chemical feed system
- A sequencing Batch Reactor
- Effluent and sludge pumps and holding tanks
- A contrate evaporator and dryer
- A reverse osmosis membrane filtration system
- Treated effluent on-site disposal systems and storage ponds

**Poplar Tree Leachate Irrigation System:**

The Company has established a drip irrigation system which supplies leachate to a stand of poplar trees, known as the Poplar System ("PS"). The poplars are located on top of a portion

of the existing landfill and have been operable since September 27, 2017. The PS is only utilized on a seasonal basis when the trees can actively uptake the leachate.

There are a number of monitoring requirements under Condition 8.7 of ECA No. A032203 related to the PS including soil monitoring, visual assessments, leachate monitoring, tree tissue monitoring and surface water monitoring. The PS became operational in May 2024 for the 2024 growing season. During the weekly inspections that took place in October 2024, the irrigation system has not been observed to be running, however according to the daily logs, irrigation was occurring throughout the beginning of October 2024. During the October 9, 2024 inspection, pooling was observed around the system. According to the Company, the system was turned off on October 9, 2024, due to pooling of leachate around the system and was turned off for the Season on October 15, 2024.

**Off-Site Leachate Disposal:**

The remaining leachate produced from both the existing and expansion site is hauled off-Site for treatment and disposal at the Chatham Water Pollution Control Plant in Ontario.

According to reports provided by the Company, the following was shipped offsite: October 2024 – 5646.05 mt

Question ID	NOL 22	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill implementing the procedures required by the ECA to manage leachate?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Existing Site:  Leachate liquid levels are monitored semi-annually in May and November for the Existing Site. Over the long term, leachate levels are expected to decrease in the Existing Site since it is capped, and leachate is extracted for poplar system irrigation and off-Site disposal.  Expansion Site:  For the Expansion Site ECA No. A032203 condition 7.18 requires that a hydraulic trap be developed and maintained beneath the expansion area and that the leachate head on the landfill liner does not exceed 300 mm. Condition 14.1 also requires additional groundwater level monitoring if the leachate level elevation in any of the following pumping station well rise above their respective trigger level:  PS1 - 232.7 mASL PS3 - 232.6 mASL PS5 - 232.8 mASL PS7 - 233.4 mASL			

No leachate seeps were observed by the Ministry and one leachate seep was reported by the Company in October 2024. The Company identified an old gas line that leachate entered causing it to travel to the side slope of Cell 2. The Company remediated the issue and there were not impacts to surface water as a result of the seep.

The Ministry observed a small area where leachate had run off and pooled adjacent to the Poplar System during the October 9, 2024 inspection. The Company was notified and as per ECA No. A032203, the Company turned off the irrigation system and cleaned-up the area where the ponding was observed. The Company investigated the cause and determined it there was damage to the irrigation line from lawn mowing activities. No additional issues were observed in October 2024, the pooling was observed to have been cleaned and no impacts to surface water were observed.

Question ID	NOL 26	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage landfill gas by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Gas produced by the landfill is managed by the on-Site gas collection and flaring system. A portion of this gas is conveyed from the landfill to a neighboring property, where it is converted and used for building heat for a large greenhouse on an as-needed basis during the colder seasons. The remaining gas is sent to one of the two existing flares on-site. The Company is currently constructing a Renewable Natural Gas Plant which will convert the captured landfill gas from the Site into pipeline quality gas for injection to the commercial gas transmission and distribution network.  Waste ECA No. A032203: - Condition 7.10 and 13.6 requires the gas control system to be managed and monitored as specified in the D&O Report and the EMP. - Condition 14.8 states that if landfill gas concentrations exceed 10% LEL (Lower Explosive Limit) during monitoring, the Company is to undertake additional monitoring to determine if the elevated levels are landfill related. - The Company must report all landfill gas monitoring to the Ministry on a quarterly and annual basis.  Air ECA No. 6318-CX4NFX: - Describes the notifications, operation, maintenance, performance, and record keeping requirements for the flaring system and the RNG plant.			

Question ID	NOL 27	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the landfill gas management requirements in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Landfill gas monitoring is completed monthly from November to April and in July at gas monitoring probes GP1A to GP10. Gas probes GP9 and GP10, were installed in late June 2022 in accordance with their respective stages of landfill construction as presented in Table 2 of the landfill EMP.  Total Hydrocarbon (THC) capped surface monitoring is conducted in the spring and fall in accordance with the Ambient Air Quality Monitoring Plan (AAQMP), required by Condition 13.8 of ECA No. A032203. It consists of a walk-over survey of the final capped landfill area using a handheld THC analyzer. Elevated THC concentrations are indicators of the escape of possible landfill gas in certain areas.  The temperatures of the flares are checked during the unannounced weekly inspections to ensure they are operating above 875 degrees Celsius. During the weekly inspections that took place in October 2024, when in operation, Flare 1 and Flare 2 were observed operating above 875 degrees Celsius according to the SCADA system on all occasions.  In August 2024, the Ministry began unmanned aerial vehicle (UAV) methane detection around the Site. The purpose is to measure the methane values on-site and identify potential sources of high methane emissions. The UAV methane detection is still ongoing in October 2024.			

Question ID	NOL 29	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with landfill gas at this site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  As a result of the UAV methane detection flight that occurred on September 16, 2024, there were three areas on the existing landfill where high methane levels were detected (greater than 1000 ppm). The Company investigated and identified the source of the elevated levels as the leachate manholes on the existing landfill. The Company removed the cast iron manhole cover and replaced them with a sealed HDPE lid. Upon re-monitoring, the Company found it was still exceeding and sealed it up again. The Company's next step will be to bring vacuum to the location. The Company stated that installing vacuum is not in the current plan			



however due to the construction of the RNG Facility, they are reviewing all aspects of the gas collection plan. The Ministry is continuing to monitor the situation and will work with the Company as required.

No concerns were raised with the landfill gas management or monitoring at the Site during October 2024.

Question ID	NOL 31	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a surface water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The following Site-specific approvals outline the requirements for surface water monitoring:  - Industrial Sewage ECA No. 8117-CUSNXX: Specifies operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, and treated effluent storage pond monitoring programs. The newly amended ECA specifies operation, monitoring and reporting requirements for the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility.  - Waste Disposal Site ECA No. A032203: Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A". Surface water will also be evaluated as per Item 91 of Schedule "A".  The Company conducts quarterly surface water monitoring following precipitation events of greater than 10 mm in a 24-hour period.			

Question ID	NOL 32	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the surface water monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 34	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Are there water quality concerns with the results of the samples that have been tested?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  In April 2022 the Company, RWDI and the Ministry had a discussion surrounding the Ministry's objective to see a reduction in Total Suspended Solids (TSS) loading to discharging surface water from large industrial facilities, including landfilling sites within the province of Ontario. The Ministry is looking for best efforts by WM (Waste Management) to address TSS loading to discharging surface water from the Twin Creeks Environmental Centre.  As a result, a letter was provided to the Ministry from RWDI outlining that a TSS Action Plan would be developed and received by the Ministry in October 2022. It should be noted that the majority of this work took place during 2021 & 2022 including the removal of sediment build up within the sedimentation ponds, seeding of inactive waste areas and installation of sedimentation structures (straw bales). According to plan the removal of sediment should restore the design optimal effectiveness of the ponds to capture sediment and therefore reduce TSS offsite.  In December 2023, RWDI submitted an TSS Evaluation Letter on behalf of the Company as a follow-up to the TSS Action plan from October 2022. The TSS Evaluation Letter outlined the tasks that were completed along with their associated timelines. After review of the TSS Evaluation Letter, it was determined that the Ministry requires more data before reasonable conclusions can be made about whether TSS is being appropriately controlled before surface water discharges. The Ministry has requested additional updates in the quarterly reports that detail the effectiveness of the TSS management efforts taken to address TSS loading to the surface water.  No other concerns were raised with the surface water at the Site during October 2024.			

Question ID	NOL 36	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is proper equipment available for the compaction of waste and applying cover material?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

The proper equipment for waste compaction and daily cover application was observed during the Ministry's weekly on-Site inspections. Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.

Question ID	NOL 37	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill able to accurately determine the amount of waste received?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has an entrance and exit scale and records all incoming waste volumes. Tonnage tracking reports are also sent to the Ministry on a monthly basis and yearly waste quantities are summarized in the annual reports.			

Question ID	NOL 38	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are all disposal operations at the site adequately and continually supervised?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  There is always a Supervisor on-Site during the weekly inspections.			

Question ID	NOL 39	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill operator have a site inspection program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Conditions 9.1 - 9.13 of ECA # A032203 contains daily, weekly and monthly inspection and record keeping requirements for the general operation and maintenance of the Site. These records are periodically requested by the Ministry during weekly inspections and are assessed for compliance.  In addition, RWDI conducts inspections to ensure the Company is operating within the			

conditions of the ECA.

No issues or concerns have been identified with the frequency or details of the site inspections.

Question ID	NOL 41	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste being compacted adequately?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.			

Question ID	NOL 42	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   7;			
<b>Question:</b> Is Daily cover applied to the waste at the end of each working day or as otherwise specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.47 of ECA No. A032203 outlines the requirements for daily, intermediate, and final cover.  Daily Cover: The working face must be covered with at least 15cm of soil or approved alternative cover material.  Intermittent Cover: In areas where landfilling is temporarily stopped for six months or more, at least 30 cm of soil cover or approved alternative cover material is required.  Final Cover: In completed landfill areas, at least 1.85 m of cover soil and then at least 15cm of topsoil is required.  The Company reports that daily cover is adequately applied at the end of each working day. Stockpiles of daily cover were regularly observed on-Site near the active working face during			

operating hours while conducting the weekly inspections in October 2024. The following cover material was observed and/or reported to be used by the Company:

- Automobile Shredder Residue (ASR)
- Soil
- Contaminated Soil
- Woodchips
- Tarps

According to condition 6.52 of ECA No. A032203, samples of the ASR are to be taken semi-annually (spring and fall) and are to meet the specifications of non-hazardous waste under O. Reg. 347.

ASR track out was becoming an issue in May 2024. The Company identified an area where ASR was used on a drivable surface, on Cell 6A, which lead to the ASR track-out. The Company attempted to clean the ASR and covered the area with woodchips to prevent track-out. The Company has stated that due to the rain observed in June and July, ASR has continued to come to the surface. In August, due to the continued presence of ASR observed on Nauvoo Road, through working with the Ministry, the Company placed at 60-day hold on ASR so it would not be applied anywhere on-site. The Company committed to a final clean-up date of August 9, 2024 to removing the remaining pieces of ASR from Nauvoo Road which was completed. ASR track-out observed by the Ministry during two inspections on October 9 and 17, 2024. Through discussions with the Company, litter pickers were dispatched to address the track-out and no ASR was observed during the following inspections on October 21 and 31, 2024. During the weekly inspections, the Ministry will continue to monitor the situation to ensure any additional ASR track-out is addressed.

No further issues were observed by the Inspector in October 2024.

Question ID	NOL 43	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are procedures implemented to control rodents or other animals and insects at the site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.32 of ECA No. A032203 states that the Site shall be operated and maintained such that vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance. Procedures for pest control are listed in the Company's D&O Report.  Predator Bird Services Inc. is on-Site from Monday to Friday during regular operating hours. They use a combination of noise makers, whistlers and a bird of prey (a falcon or hawk) to deter non native species from populating the landfill and surrounding area. Orkin is also on-			

Site monthly to maintain the prescribed plan for traps and baiting.

No concerns or issues with pest control were identified during October 2024.

Question ID	NOL 44	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access restricted by use of a gate, fence, or physical barrier when the site is not operating?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  ECA No. A032203 requires the following to be in place at the Site: <ul style="list-style-type: none"> <li>- The entire Site enclosed with a 6-foot-high wire woven fence.</li> <li>- The Site entrance and exit gates must be locked and secured against access by unauthorized persons during non-operational hours.</li> <li>- Access to and exit from the Site for the transportation of waste must (under normal circumstances) be only permitted from Country Road 79 (Nauvoo Road).</li> <li>- A sign must be displayed at the main entrance/exit to the Site, detailing: <ul style="list-style-type: none"> <li>-Name of the Site and Owner</li> <li>-ECA number</li> <li>-Name of the Operator</li> <li>-Hours of operation</li> <li>-Approved and prohibited waste types</li> <li>-Warning against unauthorized access</li> <li>-Telephone number for complaints</li> <li>-24/7 emergency telephone number (if different from above)</li> <li>-Warning against dumping outside the Site.</li> </ul> </li> </ul> No concerns or issues with access control were identified during the weekly inspections or brought to the attention of the Ministry in October 2024.			

Question ID	NOL 45	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste disposal area adequately screened from public view?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In accordance with Condition 5.4 of ECA No. A032203, there are 7-meter-high perimeter			

berms vegetated with trees along Zion Ln. and Nauvoo Rd. in order to block the public's view of the landfill.

No complaints of public view were received in October 2024.

Question ID	NOL 46	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   21;			
<b>Question:</b> Are daily records of site operations available at the site for at least the past 2 years or as otherwise required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 1.22 and 9.8 of ECA No. A032203 state that all records required by the ECA are to be retained at the Site for a minimum of two years.			

Question ID	NOL 48	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   23;			
<b>Question:</b> Is scavenging being prevented?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.33 of ECA No. A032203 states that the Company shall ensure that there is no scavenging as defined by O. Reg. 347 at the Site. "Scavenging" is defined as the uncontrolled removal of reusable material from waste at a waste disposal site.  The Site is secure during non-operating hours and there have been no reported incidents or evidence of scavenging during the Ministry's On-Site weekly inspections in October 2024. According to the Company Waste Management staff are trained extensively in preventing scavenging in the landfill.			

Question ID	NOL 49	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Has a closure plan been submitted to the MECP?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

No

Condition 16.1 states that a closure plan is required to be submitted at least two years prior to closure (or when 90% of capacity is reached, whatever comes first). The site is not yet required to submit a closure plan.

Question ID	NOL 51	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill only accepting the types of waste that they are approved to receive?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is approved to accept municipal, industrial, commercial, and institutional solid nonhazardous waste, including non-hazardous contaminated soils, generated within the Province of Ontario as per Condition 6.4 and 6.7 of ECA No. A032203.  No issues were identified with this condition by the Inspector in October 2024.			

Question ID	NOL 52	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill have a waste refusal procedure in place to manage waste that arrives at the site that the site is not approved the accept?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 9.5 of ECA No. A032203 states that the Company must keep records in a daily logbook of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known. The Company has their own Waste Verification, Acceptance and Rejection Procedure and records rejection events by filling out a 'Waste Discrepancy Form'.  The Company confirmed there were no refusals of waste shipments in October 2024.			

Question ID	NOL 54	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			



**Question:**

Does the landfill have a procedure in place to address and document spills and fires?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Procedures for spills, fires and other emergencies are outlined in the D&O Report. Condition 12 of ECA No. A032203 also lists requirements regarding emergency situations:

- in the event of a fire or discharge of a contaminant to the environment, the Company shall contact the Spills Action Centre (SAC) and the Sarnia District Office forthwith.
- a written report shall be submitted to the District Manager within 3 days of the incident, outlining the nature of the incident, remedial measures taken, and measures taken to prevent future occurrences.
- the Company shall ensure that adequate firefighting and contingency spill clean-up equipment is available as per Item 66 of Schedule A and that emergency response personnel are familiar with its use and location.

The Company confirmed that emergency response personnel are familiar with the use and location of the emergency equipment. A variety of heavy equipment is available including a backhoe, rock truck, excavator, sweepers, water truck, as well as a spill kit which is located at the scale. The Company says this information is reviewed annually at a minimum.

There was one spill observed on site by the Ministry and no spills reported by the Company during the month of October 2024. During the October 9, 2024 weekly inspection, staining was observed on the gravel shoulder of the internal road in front of Cell 6A/B. The staining was observed to stop before entering the drainage ditch, no surface water impacts were observed. The Ministry notified the Company who investigated the source of the spill which was from a broken hydraulic line on a tractor trailer which spilled less than 1 gallon of hydraulic oil onto the gravel shoulder. The Company removed the impacted gravel and replaced it with clean gravel. During the October 17, 2024 weekly inspection, the Ministry observed the area to be cleaned. No fires were reported by the Company during the month of October 2024.

Question ID	NOL 56	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is there an ECA condition requiring financial assurance?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
Financial Assurance (FA) is required for private sector landfill sites under Ontario Regulation 232/98, in order to ensure that funds are available for site closure, post-closure care, and			

contingencies in the event that the site owner cannot or does not carry out their obligations under the ECA.

Condition 2.1 of ECA No. A032203 addresses FA requirements for the Site. The Company is required to submit a re-evaluation of the FA amount every four years. The most recent re-evaluation was required to be submitted on March 31, 2024, which was received by the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.

The next FA re-evaluation is required to be submitted on March 31, 2028.

Question ID	NOL 57	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the financial assurance been submitted, as specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 58	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the company provided financial assurance re-evaluation estimates in compliance with the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company submitted the financial assurance re-evaluation for the Site to the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.			

Question ID	NOL 59	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address complaints?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The Company's complaint procedure is listed in the D&O Report. Responses to complaints related to dust, odour, and litter are also described in the Best Management Practices (BMP) Plans for the Site.

The following complaint procedure is required by Condition 11 of ECA No. A032203: "If at any time, the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:

- a. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information, the time and date of the complaint, specific details of operations that were occurring, any changers from normal operations, types of waste loads (including source) and other on Site activities;
- b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and
- c. The Owner shall complete and retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

11.2 The Owner shall designate a person to receive any complaints and to respond with a written notice of action as soon as possible. The Owner shall post the Site complaints procedure at the Site entrance. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.

11.3 The Company shall notify the District Manager, Township of Warwick and WIFN, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:

1. this Approval number;
2. a description of the nature of the complaint;
3. the time and date of the incident to which the complaint relates.

11.4 The Company shall report all environmental complaints to the WPLC at the next WPLC meeting."

Question ID	NOL 60	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			

**Question:**

Has the landfill operator addressed the complaints to the satisfaction of the ministry?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

In October 2024, one complaint was received by the Ministry and no complaints were reported by the Company. The complaint was related to odour. Odour from the Site can originate from a variety of sources.

The complaint identified landfill odours occurring overnight on October 2 and 6, 2024. During the time of the complaint, the landfill was not operational, daily cover was applied and the landfill gas collection system was operational, no issues were occurring on-site. The Ministry reviewed the meteorological data at the time of the complaints and observed the wind speed and direction to be variable but at times, lined up with area where the complaint was received from. Ongoing discussions between the Ministry and WM occur on the notifications of complaints and follow up actions taken by the Company.

Question ID	NOL 61	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator developed a Design and Operations Manual?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  A Design and Operations (D&O) Report was prepared by Henderson Paddon & Associates Limited, dated March 2008, and is listed as Items 66-68 of Schedule A under ECA No. A032203.			

Question ID	NOL 63	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill operator have training procedures for site personnel?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company has their own training procedure. Training requirements for employees are described under condition 10.1 of ECA No. A032203.			

Question ID	NOL 64	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill operator following the established training procedures?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company provided copies of training records to the Ministry for their employees demonstrating that the Company is following the established training procedures as described under condition 10.1 of ECA No. A032203.			

Question ID	949100	Question Type	Legislative
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Were the inspection questions sufficient to address other identified non-compliance items?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b>  One purpose of the inspections is to assess the Company efforts towards preventing, minimizing and mitigating off-site impacts resulting from their operations such as odours, litter, noise and dust. The following is a summary of the findings of the inspections conducted by the Ministry during October 2024:  <ul style="list-style-type: none"> <li>- Tuesday, October 1, 2024</li> <li>- Wednesday, October 9, 2024</li> <li>- Thursday, October 17, 2024</li> <li>- Monday, October 21, 2024</li> <li>- Thursday, October 31, 2024</li> </ul> Landfilling related odours were observed downwind of the landfill during four of the five inspections in October 2024. Odours were rated from moderate to faint and were described to be a mix of garbage and methane odour. The odours were observed during operating hours. They were attributed to the fill location, the direction of the wind and the activities associated with gas lines being replaced. Agricultural related odours were also noted during two of the five of the weekly inspections that took place in October 2024.  Litter was present on-site during all of the inspections. Litter pickers were observed on-site/off-site by the Ministry during the October 9 and 17, 2024 inspections but the Company reported that litter pickers were dispatched daily to pick around the Site and were sent off site on an as need basis. The Ministry observed areas where the litter pickers had been according			

to the Company and the areas were observed to be litter-less or have minimal amounts of litter in the general area. No litter was observed off site by the Ministry in October 2024 other than the ASR discussed previously in this inspection report. During the October 9, 2024 inspection large holes (greater than 6 inches) were observed by the Ministry in the perimeter litter fencing near the leachate equalization tank on site. As per the Litter BMP, holes greater than 6 inches in diameter require repair within three weeks. The Company confirmed on October 24, 2024 that the repairs were complete. The Ministry has observed the Company following their Litter BMP and no issues with the response.

Dust was not observed off-site during any weekly inspection in October 2024. During the weekly inspections, the water truck and sweeper were observed around the Site on internal roads and on Nauvoo Road. Dust was observed on-site during three of the five October 2024 inspections. Before the three weekly inspections were completed, the Ministry observed the water truck and sweeper on the internal road where the dust originally was observed. The Ministry has observed the Company following their Dust Control BMP and no issues with the response of the Company was observed during October 2024.

On June 26, 2024, the Ministry approved the Company's request for off-site leachate disposal at Valicor Environmental Services in Michigan, USA. During the month of October, the Company ceased shipments to Valicor and continued to send six loads of leachate to the Chatham Water Pollution Control Plant in addition to the leachate disposed of through the Poplar System for half of October. On August 27, 2024 the Ministry received a letter from Waste Management requesting approval for off-site leachate disposal to Walkerton Wastewater Treatment Plant, the Ministry is currently reviewing the Company's request. On September 13, 2024 the Ministry received a letter from Waste Management requesting approval for off-site leachate disposal to Clean Harbors in Guelph, ON, the Ministry is currently reviewing the Company's request. According to the Company, having the ability to send leachate to more than one location will allow the Company to remove leachate faster from the site which will reduce the volume observed onsite. The Ministry continues to watch the leachate levels and is working with the Company to ensure proper disposal offsite to reduce the leachate levels.

There have been no other significant environmental concerns at the site. The Company continues to show general compliance with SOPs, BMPs and the ECA's.

## APPENDIX N:

MECP November 2024 Inspection Report - No. 1-850582620





TWIN CREEKS ENVIRONMENTAL CENTRE  
Physical Address: 5768 NAUVOO RD, , WARWICK,  
ON N0M 2S0

## INSPECTION REPORT

Entity: WASTE MANAGEMENT OF  
CANADA CORPORATION  
Inspection Start Date: November 01, 2024  
Inspection End Date: November 30, 2024  
Inspected By: Amanda Seaman  
Badge #: 2129

*Amanda Seaman*

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(signature)



## INTRODUCTION

### Purpose

Ontario has a comprehensive legislative and regulatory framework to ensure that wastes are managed in an environmentally safe manner. Through the Environmental Protection Act (EPA) and accompanying regulations, the Ministry of the Environment, Conservation and Parks (the Ministry) has established a cradle to grave management system, which governs the collection, storage, transportation, and disposal of waste.

The Ministry issues Environmental Compliance Approvals (ECA) under the EPA for landfill sites that dispose of solid non-hazardous wastes. The ECA imposes conditions related to development and operation of the site, and includes monitoring requirements, etc. To confirm whether the regulated community is complying with the requirements related to the waste disposal activities, the Ministry is committed to conducting proactive inspections of waste sites. With that aim in mind, Ministry staff conducted an inspection of the Twin Creeks Environmental Centre (Site) in Warwick Township as part of the Sarnia District Office's 2024/25 inspection program.

The Site is approved to accept municipal, industrial, commercial, and institutional solid non-hazardous waste generated within the Province of Ontario, including non-hazardous contaminated soils under ECA Number A032203, dated December 16, 2023. The Site is owned and operated by Waste Management of Canada Corporation (Company).

### Scope

This inspection report summarizes the findings of the weekly inspections conducted at the Twin Creeks Environmental Centre during the month of November 2024. The focus of each inspection is to assess the Company's operation and construction of the site against the terms and conditions of its Environmental Compliance Approvals and with the requirements of applicable environmental legislation, regulations, and guidelines.

A total of four inspections were conducted by the Ministry during the month of November 2024. Inspections took place on the following dates:

- Tuesday, November 5, 2024
- Thursday, November, 14, 2024
- Tuesday, November 19, 2024
- Friday, November 29, 2024

## **NON-COMPLIANCE**

This should not be construed as a confirmation of full compliance with all potential applicable legal requirements. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## **RECOMMENDATIONS**

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program:** WASTE | **Regulated Activity:** Landfills

Question ID	NOL 1	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the Open landfill site have an Environmental Compliance Approval (ECA)?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has the following Ministry approvals:  WASTE DISPOSAL SITE ECA No. A032203, dated December 16, 2023 - For the use and operation of a 101.8-hectare landfilling area with a total site area of 301 hectares, accepting only municipal, industrial, commercial, institutional solid non-hazardous waste generated within Ontario, including non-haz contaminated soil. The site is approved to receive 1,400,000 tonnes per year.  AIR ECA No. 6318-CX4NFX, dated December 13, 2023 Approved to install and operate: - six enclosed flare systems; - emergency diesel generators to provide back-up power as needed; - a 50kW diesel generator to provide regular power to the south fill area leachate pumping system; and- exhaust fans, exhaust louvres, and aeration tanks exhausting to the atmosphere from the leachate treatment facility and one leachate treatment facility laboratory. - infrastructure for the Renewable Natural Gas Plant including one pre-treatment thermal oxidizer, one main thermal oxide, one amine reboiler and two RNG (Renewable Natural Gas) plant condensate tanks with carbon drum filters.  INDUSTRIAL SEWAGE ECA No. 8117-CUSNXX, dated April 29, 2024 - Issued for the existing industrial sewage works including the leachate collection, treatment, and disposal facility as well as a stormwater management facility to service the Site and for the establishment of the newly proposed industrial sewage works for usage and operation of condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility at the Site.  PERMIT TO TAKE WATER (PTTW) No. 4682-BLJRYJ, dated November 8, 2021 Issued for dewatering at the Site and industrial activities such as road watering to reduce dust. On- Site water taking locations include:			

- stormwater management ponds 1, 2, 3, and 4
- secondary drainage layer (SDL)
- four pumping stations, PS2, PS4, PS6, PS8.

Question ID	NOL 2	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is this landfill on Crown land?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 13	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are access roads and on-site roads provided so that vehicles hauling waste to and on the site may travel readily on any day under all normal weather conditions?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Access to and exit from the Site for the transportation of waste is permitted from Country Road 79 (Nauvoo Road).  There are both paved and unpaved access roads on site. Typically, unpaved roads are made of material that would allow for vehicles hauling waste on site to readily travel unhindered in normal weather conditions as per ECA condition 6.31a&b.			

Question ID	NOL 14	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access limited to times when an attendant is on duty?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  An attendant is always on duty at the Site during operating hours.			

During non-operating hours, the Site entrance and exit gates are locked. Site access is secured against access by unauthorized persons as per Condition 6.28 of the ECA.

Question ID	NOL 15	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the site only receive waste from within its approved service area?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Facility only receives waste generated in the Province of Ontario as per Condition 6.4 and 6.7 of the ECA.  The Site is approved for the use and operation of a 101.8-hectare landfilling area with a total Site area of 301 hectares. During the inspection period the Company deposited waste in Cells 3, 5 and 6A of the Expansion Site. All waste is being deposited within the approved landfill footprint, Condition 6.6 of ECA No. A032203 authorizes the Company to receive up to a maximum of 1,400,000 tonnes of waste per year (including contaminated soil) for disposal at the Site.  According to the tonnage report provided by the Company, November's monthly total is:  November 2024 – 99,759.64 tonnes  From the beginning of 2024 to the end of November, the Company has received 1,291,898.41 tonnes or approximately 92% of the yearly total.			

Question ID	NOL 16	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a ground water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The following Site-specific approvals outline the requirements for groundwater monitoring:  - Industrial Sewage ECA No. 8117-CUSNXX: Specifies the operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, treated effluent storage pond monitoring programs. The amended Industrial Sewage ECA was issued on April 29, 2024,			

specifies the operation, monitoring and reporting requirements related to the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service the proposed Renewable Natural Gas (RNG) facility at the Site.

- Waste Disposal Site ECA No. A032203:

Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A".

Groundwater monitoring is completed semi-annually in the spring and fall as per the EMP.

No alterations can be made to the program unless prior approval has been given by the District Manager.

Question ID	NOL 17	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the groundwater monitoring program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  During the November 5, 2024, inspection, the Ministry observed three groundwater monitoring wells on-site that were unlocked. As per Condition 13.1 of ECA A032203, 'The Owner shall ensure all groundwater monitoring wells are properly capped, locked and protected from damage.' The Ministry informed the Company of the unlocked wells and according to the Company, their consultant RWDI was on-site earlier that day to complete the semi-annual monitoring and missed replacing the locks on those three wells after the monitoring was completed. The Company replaced the locks on the groundwater monitoring wells that day. No other issues were identified with the groundwater monitoring program.			

Question ID	NOL 20	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is there ongoing abatement to address any concerns the ministry has with the ground water monitoring?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 21	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage leachate by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			
<p>The Site is required to manage leachate in accordance with the Industrial Sewage ECA No. 8117-CUSNXX and Waste ECA No. A032203.</p> <p>Leachate Collection - Existing Site: This consists of:</p> <ul style="list-style-type: none"> <li>- Three finger drains in the South Fill Area;</li> <li>- Pumping sump in the West Central Cell near monitoring station OW-29;</li> <li>- Two parallel waste underdrains in Cell 3S (north of the South Fill Area); and</li> <li>- Waste underdrains in the Northern part of Cell 5 and in Cells 4, 6, 7, 8, 9, 10 and 11. The waste under-drains direct leachate to a perimeter collection system which is then automatically pumped to the leachate equalization tank.</li> </ul> <p>Leachate Collection - Expansion Site: A leachate collection system has been installed in Cell 1, Cell 2, Cell 4, Cell 6A and Cell 6B. The leachate level in the primary drainage layer of these cells is currently controlled by automated Pump Station 1 (PS1), Pump Station 3 (PS3), Pump Station 5 (PS5), and Pump Station 7 (PS7). Leachate is transferred from the Primary Drainage Layer (PDL) to the leachate equalization tank. The Secondary Drainage Layer (SDL) is controlled by PS2, PS4, and PS6. The trigger for implementation of groundwater contingency measures for the Expansion Site is the loss of hydraulic containment. This occurs when leachate levels within the PDL are higher than the surrounding groundwater elevations.</p> <p>RNG Condensation Collection and Disposal System: The RNG condensate system (combined with the existing Landfill Gas (LFG) condensate system) for collection and discharge of the condensate generated at the newly proposed RNG facility, collected in the two Slop Tanks inside the RNG building to the Proposed Equalization Tank 2 during first year of the operation of Proposed Works, and disposal to Equalization Tank 1 or hauled offsite depending upon the Proposed Sampling Program results, the Proposed Works also include upgrades to the Existing Pump Station 10 (PS10) for pumping of condensate to Equalization Tank.</p> <p>Leachate Treatment and Disposal Facility: When constructed, this will consist of:</p> <ul style="list-style-type: none"> <li>- A chemical feed system</li> <li>- A sequencing Batch Reactor</li> <li>- Effluent and sludge pumps and holding tanks</li> </ul>			



- A contrate evaporator and dryer
- A reverse osmosis membrane filtration system
- Treated effluent on-site disposal systems and storage ponds

**Poplar Tree Leachate Irrigation System:**

The Company has established a drip irrigation system which supplies leachate to a stand of poplar trees, known as the Poplar System ("PS"). The poplars are located on top of a portion of the existing landfill and have been operable since September 27, 2017. The PS is only utilized on a seasonal basis when the trees can actively uptake the leachate.

During the month of November 2024, no leachate was applied to the Poplar system according to the Company as the system is only utilized on a seasonal basis as stated above.

**Off-Site Leachate Disposal:**

The remaining leachate produced from both the existing and expansion site is hauled off-Site for treatment and disposal at the Chatham Water Pollution Control Plant in Ontario.

According to reports provided by the Company, the following was shipped offsite: November 2024 – 4946.07 mt

Question ID	NOL 22	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill implementing the procedures required by the ECA to manage leachate?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Existing Site:  Leachate liquid levels are monitored semi-annually in May and November for the Existing Site. Over the long term, leachate levels are expected to decrease in the Existing Site since it is capped, and leachate is extracted for poplar system irrigation and off-Site disposal.  Expansion Site:  For the Expansion Site ECA No. A032203 condition 7.18 requires that a hydraulic trap be developed and maintained beneath the expansion area and that the leachate head on the landfill liner does not exceed 300 mm. Condition 14.1 also requires additional groundwater level monitoring if the leachate level elevation in any of the following pumping station well rise above their respective trigger level:			

PS1 - 232.7 mASL PS3 - 232.6 mASL PS5 - 232.8 mASL PS7 - 233.4 mASL

No leachate seeps were observed by the Ministry and no leachate seeps were reported by the Company in November 2024.

Question ID	NOL 24	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with the leachate quality?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No			

Question ID	NOL 26	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to manage landfill gas by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Gas produced by the landfill is managed by the on-Site gas collection and flaring system. A portion of this gas is conveyed from the landfill to a neighboring property, where it is converted and used for building heat for a large greenhouse on an as-needed basis during the colder seasons. The remaining gas is sent to one of the two existing flares on-site. The Company is currently constructing a Renewable Natural Gas Plant which will convert the captured landfill gas from the Site into pipeline quality gas for injection to the commercial gas transmission and distribution network.  Waste ECA No. A032203: - Condition 7.10 and 13.6 requires the gas control system to be managed and monitored as specified in the D&O Report and the EMP. - Condition 14.8 states that if landfill gas concentrations exceed 10% LEL (Lower Explosive Limit) during monitoring, the Company is to undertake additional monitoring to determine if the elevated levels are landfill related. - The Company must report all landfill gas monitoring to the Ministry on a quarterly and annual basis.  Air ECA No. 6318-CX4NFX: - Describes the notifications, operation, maintenance, performance, and record keeping			

requirements for the flaring system and the RNG plant.

Question ID	NOL 27	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the landfill gas management requirements in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Landfill gas monitoring is completed monthly from November to April and in July at gas monitoring probes GP1A to GP10. Gas probes GP9 and GP10, were installed in late June 2022 in accordance with their respective stages of landfill construction as presented in Table 2 of the landfill EMP.  Total Hydrocarbon (THC) capped surface monitoring is conducted in the spring and fall in accordance with the Ambient Air Quality Monitoring Plan (AAQMP), required by Condition 13.8 of ECA No. A032203. It consists of a walk-over survey of the final capped landfill area using a handheld THC analyzer. Elevated THC concentrations are indicators of the escape of possible landfill gas in certain areas.  The temperatures of the flares are checked during the unannounced weekly inspections to ensure they are operating above 875 degrees Celsius. During the weekly inspections that took place in November 2024, when in operation, Flare 1 and Flare 2 were observed operating above 875 degrees Celsius according to the SCADA system on all occasions.  In August 2024, the Ministry began unmanned aerial vehicle (UAV) methane detection around the Site. The purpose is to measure the methane values on-site and identify potential sources of high methane emissions. No UAV methane detection occurred in November 2024 due to weather.			

Question ID	NOL 29	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the ministry concerned with landfill gas at this site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  As a result of the UAV methane detection flight that occurred on September 16, 2024, there were three areas on the existing landfill where high methane levels were detected (greater than 1000 ppm). The Company investigated and identified the source of the elevated levels			

as the leachate manholes on the existing landfill. The Company removed the cast iron manhole cover and replaced them with a sealed HDPE lid. Upon re-monitoring, the Company found it was still exceeding and sealed it up again. The Company's next step will be to bring vacuum to the location. The Company stated that installing vacuum is not in the current plan however due to the construction of the RNG Facility, they are reviewing all aspects of the gas collection plan. The Ministry is continuing to monitor the situation and will work with the Company as required.

No concerns were raised with the landfill gas management or monitoring at the Site during November 2024.

Question ID	NOL 31	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Is the site required to have a surface water monitoring program by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The following Site-specific approvals outline the requirements for surface water monitoring:  - Industrial Sewage ECA No. 8117-CUSNXX: Specifies operation, monitoring and reporting requirements related to storm/surface water, ground water, leachate, leachate treatment plant effluent, and treated effluent storage pond monitoring programs. The newly amended ECA specifies operation, monitoring and reporting requirements for the condensate collection system, leachate collection, treatment, and disposal facility and stormwater management works to service a proposed Renewable Natural Gas (RNG) facility.  - Waste Disposal Site ECA No. A032203: Condition 13.6 requires monitoring programs to be carried out for groundwater, surface water, and landfill gas in accordance with the Environmental Monitoring Plan (EMP), listed as Item 39 and Appendix H of Item 68 of Schedule "A". Surface water will also be evaluated as per Item 91 of Schedule "A".  The Company conducts quarterly surface water monitoring following precipitation events of greater than 10 mm in a 24-hour period.			

Question ID	NOL 32	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the site implementing the surface water monitoring program as required by the ECA?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Question ID	NOL 34	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Are there water quality concerns with the results of the samples that have been tested?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> No  In April 2022 the Company, RWDI and the Ministry had a discussion surrounding the Ministry's objective to see a reduction in Total Suspended Solids (TSS) loading to discharging surface water from large industrial facilities, including landfilling sites within the province of Ontario. The Ministry is looking for best efforts by WM (Waste Management) to address TSS loading to discharging surface water from the Twin Creeks Environmental Centre.  As a result, a letter was provided to the Ministry from RWDI outlining that a TSS Action Plan would be developed and received by the Ministry in October 2022. It should be noted that the majority of this work took place during 2021 & 2022 including the removal of sediment build up within the sedimentation ponds, seeding of inactive waste areas and installation of sedimentation structures (straw bales). According to plan the removal of sediment should restore the design optimal effectiveness of the ponds to capture sediment and therefore reduce TSS offsite.  In December 2023, RWDI submitted an TSS Evaluation Letter on behalf of the Company as a follow-up to the TSS Action plan from October 2022. The TSS Evaluation Letter outlined the tasks that were completed along with their associated timelines. After review of the TSS Evaluation Letter, it was determined that the Ministry requires more data before reasonable conclusions can be made about whether TSS is being appropriately controlled before surface water discharges. The Ministry has requested additional updates in the quarterly reports that detail the effectiveness of the TSS management efforts taken to address TSS loading to the surface water.  No other concerns were raised with the surface water at the Site during November 2024.			

Question ID	NOL 36	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is proper equipment available for the compaction of waste and applying cover material?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

The proper equipment for waste compaction and daily cover application was observed during the Ministry's weekly on-Site inspections. Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.

Question ID	NOL 37	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill able to accurately determine the amount of waste received?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site has an entrance and exit scale and records all incoming waste volumes. Tonnage tracking reports are also sent to the Ministry on a monthly basis and yearly waste quantities are summarized in the annual reports.			

Question ID	NOL 38	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are all disposal operations at the site adequately and continually supervised?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  There is always a Supervisor on-Site during the weekly inspections.			

Question ID	NOL 39	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill operator have a site inspection program as required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Conditions 9.1 - 9.13 of ECA # A032203 contains daily, weekly and monthly inspection and record keeping requirements for the general operation and maintenance of the Site. These records are periodically requested by the Ministry during weekly inspections and are assessed for compliance.			

In addition, RWDI conducts inspections to ensure the Company is operating within the conditions of the ECA.

No issues or concerns have been identified with the frequency or details of the site inspections.

Question ID	NOL 41	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste being compacted adequately?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Compactors are regularly observed in operation at the active working face during weekly on-Site inspections.			

Question ID	NOL 42	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   7;			
<b>Question:</b> Is Daily cover applied to the waste at the end of each working day or as otherwise specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.47 of ECA No. A032203 outlines the requirements for daily, intermediate, and final cover.  Daily Cover: The working face must be covered with at least 15cm of soil or approved alternative cover material.  Intermittent Cover: In areas where landfilling is temporarily stopped for six months or more, at least 30 cm of soil cover or approved alternative cover material is required.  Final Cover: In completed landfill areas, at least 1.85 m of cover soil and then at least 15cm of topsoil is required.  The Company reports that daily cover is adequately applied at the end of each working day.			

Stockpiles of daily cover were regularly observed on-Site near the active working face during operating hours while conducting the weekly inspections in November 2024. The following cover material was observed and/or reported to be used by the Company:

- Automobile Shredder Residue (ASR)
- Soil
- Contaminated Soil
- Woodchips
- Tarps

According to condition 6.52 of ECA No. A032203, samples of the ASR are to be taken semi-annually (spring and fall) and are to meet the specifications of non-hazardous waste under O. Reg. 347.

ASR track out was becoming an issue in May 2024. The Company identified an area where ASR was used on a drivable surface, on Cell 6A, which lead to the ASR track-out. The Company attempted to clean the ASR and covered the area with woodchips to prevent track-out. The Company has stated that due to the rain observed in June and July, ASR has continued to come to the surface. In August, due to the continued presence of ASR observed on Nauvoo Road, through working with the Ministry, the Company placed at 60-day hold on ASR so it would not be applied anywhere on-site. The Company committed to a final clean-up date of August 9, 2024 to removing the remaining pieces of ASR from Nauvoo Road which was completed. Minimal ASR track-out observed by the Ministry during two inspections on October 9 and 17, 2024. Through discussions with the Company, litter pickers were dispatched to address the track-out. No ASR was observed off-site during any weekly inspection in November 2024. The Ministry will continue to monitor the situation to ensure any additional ASR track-out is addressed.

No further issues were observed by the Inspector in November 2024.

Question ID	NOL 43	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Are procedures implemented to control rodents or other animals and insects at the site?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.32 of ECA No. A032203 states that the Site shall be operated and maintained such that vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance. Procedures for pest control are listed in the Company's D&O Report.  Predator Bird Services Inc. is on-Site from Monday to Friday during regular operating hours. They use a combination of noise makers, whistlers and a bird of prey (a falcon or hawk) to			



deter non native species from populating the landfill and surrounding area. Orkin is also on-Site monthly to maintain the prescribed plan for traps and baiting.

No concerns or issues with pest control were identified during November 2024.

Question ID	NOL 44	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is site access restricted by use of a gate, fence, or physical barrier when the site is not operating?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  ECA No. A032203 requires the following to be in place at the Site: <ul style="list-style-type: none"> <li>- The entire Site enclosed with a 6-foot-high wire woven fence.</li> <li>- The Site entrance and exit gates must be locked and secured against access by unauthorized persons during non-operational hours.</li> <li>- Access to and exit from the Site for the transportation of waste must (under normal circumstances) be only permitted from Country Road 79 (Nauvoo Road).</li> <li>- A sign must be displayed at the main entrance/exit to the Site, detailing: <ul style="list-style-type: none"> <li>-Name of the Site and Owner</li> <li>-ECA number</li> <li>-Name of the Operator</li> <li>-Hours of operation</li> <li>-Approved and prohibited waste types</li> <li>-Warning against unauthorized access</li> <li>-Telephone number for complaints</li> <li>-24/7 emergency telephone number (if different from above)</li> <li>-Warning against dumping outside the Site.</li> </ul> </li> </ul> No concerns or issues with access control were identified during the weekly inspections or brought to the attention of the Ministry in November 2024.			

Question ID	NOL 45	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the waste disposal area adequately screened from public view?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

In accordance with Condition 5.4 of ECA No. A032203, there are 7-meter-high perimeter berms vegetated with trees along Zion Ln. and Nauvoo Rd. in order to block the public's view of the landfill.

No complaints of public view were received in November 2024.

Question ID	NOL 46	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   21;			
<b>Question:</b> Are daily records of site operations available at the site for at least the past 2 years or as otherwise required by the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 1.22 and 9.8 of ECA No. A032203 state that all records required by the ECA are to be retained at the Site for a minimum of two years.			

Question ID	NOL 48	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1); EPA   O. Reg. 232/98   23;			
<b>Question:</b> Is scavenging being prevented?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 6.33 of ECA No. A032203 states that the Company shall ensure that there is no scavenging as defined by O. Reg. 347 at the Site. "Scavenging" is defined as the uncontrolled removal of reusable material from waste at a waste disposal site.  The Site is secure during non-operating hours and there have been no reported incidents or evidence of scavenging during the Ministry's On-Site weekly inspections in November 2024. According to the Company Waste Management staff are trained extensively in preventing scavenging in the landfill.			

Question ID	NOL 49	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Has a closure plan been submitted to the MECP?			

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

No

Condition 16.1 states that a closure plan is required to be submitted at least two years prior to closure (or when 90% of capacity is reached, whatever comes first). The site is not yet required to submit a closure plan.

Question ID	NOL 51	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill only accepting the types of waste that they are approved to receive?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Site is approved to accept municipal, industrial, commercial, and institutional solid nonhazardous waste, including non-hazardous contaminated soils, generated within the Province of Ontario as per Condition 6.4 and 6.7 of ECA No. A032203.  No issues were identified with this condition by the Inspector in November 2024.			

Question ID	NOL 52	Question Type	Information
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Does the landfill have a waste refusal procedure in place to manage waste that arrives at the site that the site is not approved the accept?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  Condition 9.5 of ECA No. A032203 states that the Company must keep records in a daily logbook of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known. The Company has their own Waste Verification, Acceptance and Rejection Procedure and records rejection events by filling out a 'Waste Discrepancy Form'.  The Company confirmed there were no refusals of waste shipments in November 2024.			

Question ID	NOL 54	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			

**Question:**

Does the landfill have a procedure in place to address and document spills and fires?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**

Yes

Procedures for spills, fires and other emergencies are outlined in the D&O Report. Condition 12 of ECA No. A032203 also lists requirements regarding emergency situations:

- in the event of a fire or discharge of a contaminant to the environment, the Company shall contact the Spills Action Centre (SAC) and the Sarnia District Office forthwith.
- a written report shall be submitted to the District Manager within 3 days of the incident, outlining the nature of the incident, remedial measures taken, and measures taken to prevent future occurrences.
- the Company shall ensure that adequate firefighting and contingency spill clean-up equipment is available as per Item 66 of Schedule A and that emergency response personnel are familiar with its use and location.

The Company confirmed that emergency response personnel are familiar with the use and location of the emergency equipment. A variety of heavy equipment is available including a backhoe, rock truck, excavator, sweepers, water truck, as well as a spill kit which is located at the scale. The Company says this information is reviewed annually at a minimum.

There were no fires or spills reported by the company during the month of November 2024

Question ID	NOL 56	Question Type	Information
<b>Legislative Requirement(s):</b>			
Not Applicable			
<b>Question:</b>			
Is there an ECA condition requiring financial assurance?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b>			
Yes			
Financial Assurance (FA) is required for private sector landfill sites under Ontario Regulation 232/98, in order to ensure that funds are available for site closure, post-closure care, and contingencies in the event that the site owner cannot or does not carry out their obligations under the ECA.			
Condition 2.1 of ECA No. A032203 addresses FA requirements for the Site. The Company is required to submit a re-evaluation of the FA amount every four years. The most recent re-evaluation was required to be submitted on March 31, 2024, which was received by the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.			
The next FA re-evaluation is required to be submitted on March 31, 2028.			

Question ID	NOL 57	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the financial assurance been submitted, as specified in the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

Question ID	NOL 58	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the company provided financial assurance re-evaluation estimates in compliance with the ECA?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company submitted the financial assurance re-evaluation for the Site to the Ministry on March 28, 2024. The submission is currently under review by the Ministry's Environmental Permissions Branch.			

Question ID	NOL 59	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill have a procedure in place to address complaints?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company's complaint procedure is listed in the D&O Report. Responses to complaints related to dust, odour, and litter are also described in the Best Management Practices (BMP) Plans for the Site.  The following complaint procedure is required by Condition 11 of ECA No. A032203: "If at any time, the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:  a. The Owner shall record and number each complaint, either electronically or in a log book,			

and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information, the time and date of the complaint, specific details of operations that were occurring, any changers from normal operations, types of waste loads (including source) and other on Site activities;

b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and

c. The Owner shall complete and retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

11.2 The Owner shall designate a person to receive any complaints and to respond with a written notice of action as soon as possible. The Owner shall post the Site complaints procedure at the Site entrance. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.

11.3 The Company shall notify the District Manager, Township of Warwick and WIFN, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:

1. this Approval number;
2. a description of the nature of the complaint;
3. the time and date of the incident to which the complaint relates.

11.4 The Company shall report all environmental complaints to the WPLC at the next WPLC meeting."

Question ID	NOL 60	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator addressed the complaints to the satisfaction of the ministry?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  In November 2024, no complaints were received by the Ministry and one complaint was reported by the Company. The complaint was related to undulations from the flares.  The complaint experienced undulations from the flares on November 25, 2024, at 10:25pm. The Company completed an investigation and concluded that oxygen entered the gas			

collection system from the connection of a new gas line on Cell 5. The Company stated that the lines are purged however not all oxygen can be removed and takes time to work through the system. In order to prevent this from occurring again, the Company has advised the contractor to make connections in the morning to allow the system to balance during the day and not create issue at night. Ongoing discussions between the Ministry and WM occur on the notifications of complaints and follow up actions taken by the Company. The Company is required to review and summarize the complaints and response in the quarterly and annual reports.

Question ID	NOL 61	Question Type	Information
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Has the landfill operator developed a Design and Operations Manual?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  A Design and Operations (D&O) Report was prepared by Henderson Paddon & Associates Limited, dated March 2008, and is listed as Items 66-68 of Schedule A under ECA No. A032203.			

Question ID	NOL 63	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Does the landfill operator have training procedures for site personnel?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes  The Company has their own training procedure. Training requirements for employees are described under condition 10.1 of ECA No. A032203.			

Question ID	NOL 64	Question Type	Legislative
<b>Legislative Requirement(s):</b> EPA   27   (1);			
<b>Question:</b> Is the landfill operator following the established training procedures?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b> Yes			

The Company provided copies of training records to the Ministry for their employees demonstrating that the Company is following the established training procedures as described under condition 10.1 of ECA No. A032203.

Question ID	949100	Question Type	Legislative
<b>Legislative Requirement(s):</b> Not Applicable			
<b>Question:</b> Were the inspection questions sufficient to address other identified non-compliance items?			
<b>Compliance Response(s)/Corrective Action(s)/Observation(s):</b>  <p>One purpose of the inspections is to assess the Company efforts towards preventing, minimizing and mitigating off-site impacts resulting from their operations such as odours, litter, noise and dust. The following is a summary of the findings of the inspections conducted by the Ministry during November 2024:</p> <ul style="list-style-type: none"> <li>- Tuesday, November 5, 2024</li> <li>- Thursday, November, 14, 2024</li> <li>- Tuesday, November 19, 2024</li> <li>- Friday, November 29, 2024</li> </ul> <p>Landfilling related odours were observed downwind of the landfill during three of the four inspections in November 2024. Odours were rated from moderate to faint and were described to be a mix of garbage and methane odour. The odours were observed during operating hours. They were attributed to the fill location, the direction of the wind and the activities associated with gas lines being replaced. Agricultural related odours were also noted during one of the four of the weekly inspections that took place in November 2024.</p> <p>Litter was present on-site during all of the inspections. Litter pickers were not observed on-site/off-site by the Ministry during any of the November 2024 inspections but the Company reported that litter pickers were dispatched daily to pick around the Site and were sent off site on an as need basis. The Ministry observed areas where the litter pickers had been according to the Company and the areas were observed to be litter-less or have minimal amounts of litter in the general area. No litter was observed off site by the Ministry in November 2024. The Ministry has observed the Company following their Litter BMP and no issues with the response of the Company was observed during November 2024.</p> <p>Dust was not observed off-site during any weekly inspection in November 2024. During the weekly inspections, the water truck and sweeper were observed around the Site on internal roads and on Nauvoo Road. Dust was observed on-site during one of the four November 2024 inspections. Before the weekly inspection was completed on November 29, 2024, the Ministry followed up with the Company who stated that the sweeper was being dispatched to</p>			



clean the roadways to prevent the dust. The Ministry has observed the Company following their Dust Control BMP and no issues with the response of the Company was observed during November 2024.

During the month of November, leachate produced from both the existing and expansion site is hauled off-Site for treatment and disposal at the Chatham Water Pollution Control Plant.

On August 27, 2024 the Ministry received a letter from Waste Management requesting approval for off-site leachate disposal to Walkerton Wastewater Treatment Plant, the Ministry is currently reviewing the Company's request.

On September 13, 2024 the Ministry received a letter from Waste Management requesting approval for off-site leachate disposal to Clean Harbors in Guelph, ON. On November 21, 2024 the Ministry approved the Company's request approval for off-site leachate disposal to Clean Harbors in Guelph, ON. According to the Company, having the ability to send leachate to more than one location will allow the Company to remove leachate faster from the site which will reduce the volume observed onsite. The Ministry continues to watch the leachate levels and is working with the Company through ongoing discussions to ensure proper disposal offsite to reduce the leachate levels on-site.

There have been no other significant environmental concerns at the site. The Company continues to show general compliance with SOPs, BMPs and the ECA's.

## APPENDIX O:

Quarterly Contaminated Soil Analytical Results



## APPENDIX O:

Table O-1 Contaminated Soil Chemical Results



Table O-1  
Contaminated Soil - General Chemical Results - Compliance Monitoring  
Twin Creeks Environmental Centre

Parameter	Units	O. Reg. 558	Contaminated Soil																				
Date			14-Jan-16	5-Apr-16	7-Jul-16	17-Oct-16	13-Jun-17	1-Aug-17	4-Oct-17	4-Jan-18	5-Apr-18	4-Jul-18	1-Oct-18	2-Jan-19	4-Apr-19	9-Jul-19	1-Oct-19	17-Jan-20	1-Apr-20	3-Sep-20	8-Oct-20	16-Mar-21	
Laboratory			EXOVA	EXOVA	EXOVA	EXOVA	EXOVA	EXOVA	EXOVA	EXOVA	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins	Eurofins
Metals and Inorganics																							
Arsenic	mg/L	2.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.0064	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Barium	mg/L	100	0.66	0.64	0.87	<1	<1	0.70	1.02	0.44	0.67	0.37	2.44	0.50	0.62	0.40	1.31	0.75	0.56	0.48	0.37	1.10	
Boron	mg/L	500	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	0.148	<0.1	<0.1	<0.1	0.3	0.1	<0.1	<0.1	0.10	0.10	
Cadmium	mg/L	0.5	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.0003	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.014	<0.008	0.01	
Chromium	mg/L	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0011	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Lead	mg/L	5	<0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	
Selenium	mg/L	1	<0.02	<0.02	<0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.0012	<0.02	<0.001	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Silver	mg/L	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0003	<0.1	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Uranium	mg/L	10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.003	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Mercury	mg/L	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	0.00003	<0.001	0.00005	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Cyanide (free)	mg/L	20	<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	<0.005	<0.05	<0.05	<0.05	<0.005	<0.05	<0.05	
Fluoride	mg/L	150	0.32	0.21	0.16	0.18	0.20	0.31	0.54	0.24	0.25	<0.10	0.33	0.22	0.17	0.210	0.29	0.22	0.22	<0.10	0.17	0.18	
Nitrate + Nitrite	mg/L	1000	<0.10	10.90	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	<0.10	<0.10	0.14	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<10	<10	<1.0	
Polychlorinated Biphenyls (PCBs)																							
Polychlorinated Biphenyls (PCBs)	ug/L	300	<0.1	<0.1	<10	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Volatile Organic Compounds (VOCs)																							
1,1-dichloroethylene	ug/L	1400	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,2-dichlorobenzene	ug/L	20000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	
1,2-dichloroethane	ug/L	500	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	103	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	2	
1,4-dichlorobenzene	ug/L	500	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	
Benzene	ug/L	500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.4	<0.5	<0.5	<0.5	<0.5	
Carbon Tetrachloride	ug/L	500	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Chloroform	ug/L	10000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	1	
Dichloromethane	ug/L	5000	<4.0	<4.0	<4.0	<4.0	<0.2	<0.2	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	
Methyl Ethyl Ketone (MEK)	ug/L	200000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	30	<10	<10	<10	<10	
Monochlorobenzene	ug/L	8000	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	
Tetrachloroethylene	ug/L	3000	<0.3	<0.3	<0.3	0.4	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.02	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	
Trichloroethylene	ug/L	5000	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	2.1	<0.3	<0.3	
Vinyl Chloride	ug/L	200	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Semi-Volatile Organic Compounds (SVOCs)																							
1-methylnaphthalene	ug/L		<0.1	56.1	22.3	0.1	<0.2	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.7	0.4	<0.1	0.1	<0.1	5.3	2.1	<0.2	<0.1	<0.1
2-methylnaphthalene	ug/L		<0.1	19.7	6.2	0.3	<0.2	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.6	0.3	<0.1	<0.1	<0.1	6.0	1.4	<0.2	<0.1	<0.1
Acenaphthene	ug/L		<0.1	3.4	3.6	0.3	<0.2	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	0.2	0.9	0.4	<0.2	<0.1	<0.1
Acenaphthylene	ug/L		<0.1	0.4	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	1.8	<0.1	<0.2	<0.1	<0.1
Anthracene	ug/L		<0.1	0.3	0.2	0.1	<0.2	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	0.5	0.1	<0.2	<0.1	<0.1
Benzo(a)anthracene	ug/L		<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
Benzo(a)pyrene	ug/L	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01
Benzo(b)fluoranthene	ug/L		<0.05	<0.2	<0.05	<0.05	<0.2	<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	<0.1	<0.05	<0.05
Benzo(g,h,i)perylene	ug/L		<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	ug/L		<0.05	<0.2	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05
Chrysene	ug/L		<0.05	<0.2	0.06	<0.05	<0.2	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	ug/L		<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
Fluoranthene	ug/L		<0.1	<0.2	0.1	0.1	<0.2	0.5	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.2	<0.1	<0.1	<0.1
Fluorene	ug/L		<0.1	3.0	2.3	0.3	<0.2	0.6	<0.1	<0.1	<0.1	<0.1	0.8	<0.1	<0.1	<0.1	0.2	1.8	0.4	<0.2	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	ug/L		<0.1	<0.2	<0.1	<0.1	<0.2	<0.1															

NOTE: 1) \*mg/L denotes milligrams per litre; ug/L denotes microgram per litre.  
2) \*<1 denotes parameter concentration is some concentration less than the laboratory reportable detection limit (RDL).  
3) BV Labs denotes chemical analytical testing was completed by Bureau Veritas.

Table O-1  
Contaminated Soil - General Chemical Results - Compliance Monitoring  
Twin Creeks Environmental Centre

Parameter	Units	O. Reg. 558	Contaminated Soil																			
Date			5-May-21	12-Aug-21	1-Oct-21	11-Jan-22	6-Apr-22	6-Jul-22	5-Oct-22	18-Jan-23	10-Apr-23	11-Jul-23	3-Oct-23	24-Jan-24	9-Apr-24	19-Jul-24	3-Oct-24					
Laboratory			Eurofins	Eurofins	Eurofins	Eurofins	BV Labs	BV Labs	BV Labs	BV Labs	BV Labs	BV Labs	BV Labs	BV Labs	BV Labs	BV Labs	BV Labs	BV Labs				
Metals and Inorganics																						
Arsenic	mg/L	2.5	<0.02	<0.02	<0.02	<0.02	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2					
Barium	mg/L	100	0.4	0.5	0.37	0.91	0.8	0.7	0.4	0.5	<0.2	0.3	0.4	<0.2	<0.2	0.3	0.4					
Boron	mg/L	500	<0.1	<0.1	<0.1	0.2	0.1	0.3	0.3	0.1	0.1	0.2	0.2	<0.1	<0.1	0.2	<0.1					
Cadmium	mg/L	0.5	<0.008	<0.008	<0.008	0.026	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05					
Chromium	mg/L	5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					
Lead	mg/L	5	<0.01	0.01	<0.01	0.2	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					
Selenium	mg/L	1	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					
Silver	mg/L	5	<0.01	<0.01	<0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					
Uranium	mg/L	10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					
Mercury	mg/L	0.1	<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	<0.001	<0.001					
Cyanide (free)	mg/L	20	<0.05	<0.05	<0.05	<0.05	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010					
Fluoride	mg/L	150	0.34	0.25	0.25	mg/L	0.32	0.11	0.17	0.26	0.30	0.38	0.38	<0.10	0.24	0.29	0.22					
Nitrate + Nitrite	mg/L	1000	<1.0	<1.0	0.43	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0					
Polychlorinated Biphenyls (PCBs)																						
Polychlorinated Biphenyls (PCBs)	ug/L	300	<0.1	<0.1	<0.1	<0.1	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0					
Volatile Organic Compounds (VOCs)																						
1,1-dichloroethylene	ug/L	1400	<0.5	<0.5	<0.5	<0.5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20					
1,2-dichlorobenzene	ug/L	20000	<0.4	<0.4	<0.4	<0.4	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50					
1,2-dichloroethane	ug/L	500	<0.2	<0.2	<0.2	<0.2	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50					
1,4-dichlorobenzene	ug/L	500	<0.4	<0.4	<0.4	ug/L	<0.4	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50					
Benzene	ug/L	500	<0.5	<0.5	<0.5	<0.5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20					
Carbon Tetrachloride	ug/L	500	<0.2	<0.2	<0.2	<0.2	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20					
Chloroform	ug/L	10000	<0.5	<0.5	<0.5	<0.5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20					
Dichloromethane	ug/L	5000	<4.0	<4.0	<4.0	ug/L	<4.0	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200					
Methyl Ethyl Ketone (MEK)	ug/L	200000	<10	<10	<10	<10	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000					
Monochlorobenzene	ug/L	8000	<0.5	<0.5	<0.5	<0.5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20					
Tetrachloroethylene	ug/L	3000	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20					
Trichloroethylene	ug/L	5000	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20					
Vinyl Chloride	ug/L	200	<0.2	<0.2	<0.2	<0.2	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20					
Semi-Volatile Organic Compounds (SVOCs)																						
1-methylnaphthalene	ug/L		<0.1	<0.1	<0.1	<0.1	0.4	0.7	<0.20	<0.20	<0.20	0.3	<0.20	<0.20	<0.20	<0.20	<0.20					
2-methylnaphthalene	ug/L		<0.1	<0.1	<0.1	<0.1	0.4	0.5	<0.20	<0.20	<0.20	0.44	<0.20	<0.20	<0.20	<0.20	<0.20					
Acenaphthene	ug/L		<0.1	<0.1	<0.1	<0.1	0.6	<0.20	<0.20	<0.20	<0.20	0.49	<0.20	<0.20	<0.20	<0.20	0.22	<0.20				
Acenaphthylene	ug/L		<0.1	<0.1	<0.1	<0.1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20					
Anthracene	ug/L		<0.1	<0.1	<0.1	<0.1	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20					
Benzo(a)anthracene	ug/L		<0.1	<0.1	<0.1	<0.1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20					
Benzo(a)pyrene	ug/L	1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10					
Benzo(b)fluoranthene	ug/L		<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10					
Benzo(g,h,i)perylene	ug/L		<0.1	<0.1	<0.1	<0.1	<0.20	<0.20	<0.20	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20					
Benzo(k)fluoranthene	ug/L		<0.05	<0.05	<0.05	<0.05	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20					
Chrysene	ug/L		<0.05	<0.05	<0.05	<0.05	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20					
Dibenzo(a,h)anthracene	ug/L		<0.1	<0.1	<0.1	<0.1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20					
Fluoranthene	ug/L		<0.1	<0.1	<0.1	<0.1	<0.20	<0.20	<0.20	0.22	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20					
Fluorene	ug/L		<0.1	<0.1	<0.1	<0.1	0.8	0.21	<0.20	<0.20	<0.20	0.48	<0.20	<0.20	<0.20	0.23	<0.20					
Indeno(1,2,3-c,d)pyrene	ug/L		<0.1	<0.1	<0.1	<0.1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20					
Naphthalene	ug/L		<0.1	<0.1	<0.1	<0.1	1.0	<0.20	<0.20	<0.20	<0.20	2.6	0.54	<0.20	<0.20	0.23	<0.20					
Phenanthrene	ug/L		<0.1	<0.1	<0.1	<0.1	1.1	0.27	<0.20	<0.20	<0.20	0.78	0.32	<0.20	<0.20	0.42	<0.20					
Pyrene	ug/L		<0.1	<0.1	<0.1	<0.1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20					

NOTE: 1) \*mg/L denotes milligrams per litre; ug/L denotes microgram per litre.  
2) '<' denotes parameter concentration is some concentration less than the laboratory reportable detection limit (RDL).  
3) BV Labs denotes chemical analytical testing was completed by Bureau Veritas.

## APPENDIX O2:

### Laboratory Reports





**Attention: Khalid Hussein - Twin Creeks**

RWDI Inc.  
600 Southgate Drive  
Guelph, ON  
Canada N1G 4P6

Your P.O. #: 13384122  
Your Project #: 2402553.01  
Site#: 500  
Site Location: ON07  
Your C.O.C. #: 878558

**Report Date: 2024/04/19**  
Report #: R8114625  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C4A7402**

**Received: 2024/04/11, 10:05**

Sample Matrix: Soil  
# Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Cyanide (WAD) in Leachates	1	N/A	2024/04/16	CAM SOP-00457	OMOE 3015 m
Fluoride by ISE in Leachates	1	2024/04/15	2024/04/16	CAM SOP-00449	SM 24 4500-F- C m
Total Metals in TCLP Leachate by ICPMS	1	2024/04/15	2024/04/15	CAM SOP-00447	EPA 6020B m
Moisture	1	N/A	2024/04/12	CAM SOP-00445	Carter 2nd ed 70.2 m
Nitrate& Nitrite as Nitrogen in Leachate	1	N/A	2024/04/16	CAM SOP-00440	SM 24 4500-NO3I/NO2B
PAH Compounds in Leachate by GC/MS (SIM)	1	2024/04/15	2024/04/16	CAM SOP-00318	EPA 8270E
Polychlorinated Biphenyl in Leachate	1	2024/04/16	2024/04/17	CAM SOP-00309	EPA 8082A m
TCLP - % Solids	1	2024/04/12	2024/04/13	CAM SOP-00401	EPA 1311 Update I m
TCLP - Extraction Fluid	1	N/A	2024/04/13	CAM SOP-00401	EPA 1311 Update I m
TCLP - Initial and final pH	1	N/A	2024/04/13	CAM SOP-00401	EPA 1311 Update I m
TCLP Zero Headspace Extraction	1	2024/04/17	2024/04/18	CAM SOP-00430	EPA 1311 m
VOCs in ZHE Leachates	1	2024/04/18	2024/04/19	CAM SOP-00228	EPA 8260D

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.



**Attention: Khalid Hussein - Twin Creeks**

RWDI Inc.  
600 Southgate Drive  
Guelph, ON  
Canada N1G 4P6

Your P.O. #: 13384122  
Your Project #: 2402553.01  
Site#: 500  
Site Location: ON07  
Your C.O.C. #: 878558

**Report Date: 2024/04/19**  
Report #: R8114625  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C4A7402**

**Received: 2024/04/11, 10:05**

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to:

Patricia Legette, Project Manager

Email: Patricia.Legette@bureauveritas.com

Phone# (905)817-5799

=====

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.





BUREAU  
VERITAS

Bureau Veritas Job #: C4A7402

Report Date: 2024/04/19

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

## RESULTS OF ANALYSES OF SOIL

<b>Bureau Veritas ID</b>		YWH026		
<b>Sampling Date</b>		2024/04/09 14:20		
<b>COC Number</b>		878558		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Charge/Prep Analysis</b>				
Amount Extracted (Wet Weight) (g)	N/A	25	N/A	9339065
<b>Inorganics</b>				
Final pH	pH	5.80		9332474
Leachable Fluoride (F-)	mg/L	0.24	0.10	9333643
Initial pH	pH	9.60		9332474
Moisture	%	9.6	1.0	9331729
TCLP - % Solids	%	100	0.2	9330796
TCLP Extraction Fluid	N/A	FLUID 2		9332473
Leachable WAD Cyanide (Free)	mg/L	<0.010	0.010	9333665
Leachable Nitrite (N)	mg/L	<0.10	0.10	9333664
Leachable Nitrate (N)	mg/L	<1.0	1.0	9333664
Leachable Nitrate + Nitrite (N)	mg/L	<1.0	1.0	9333664
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable				



### ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

<b>Bureau Veritas ID</b>		YWH026		
<b>Sampling Date</b>		2024/04/09 14:20		
<b>COC Number</b>		878558		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Metals</b>				
Leachable Arsenic (As)	mg/L	<0.2	0.2	9333447
Leachable Barium (Ba)	mg/L	<0.2	0.2	9333447
Leachable Boron (B)	mg/L	<0.1	0.1	9333447
Leachable Cadmium (Cd)	mg/L	<0.05	0.05	9333447
Leachable Chromium (Cr)	mg/L	<0.1	0.1	9333447
Leachable Lead (Pb)	mg/L	<0.1	0.1	9333447
Leachable Mercury (Hg)	mg/L	<0.001	0.001	9333447
Leachable Selenium (Se)	mg/L	<0.1	0.1	9333447
Leachable Silver (Ag)	mg/L	<0.01	0.01	9333447
Leachable Uranium (U)	mg/L	<0.01	0.01	9333447
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

Bureau Veritas Job #: C4A7402

Report Date: 2024/04/19

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

<b>Bureau Veritas ID</b>		YWH026		
<b>Sampling Date</b>		2024/04/09 14:20		
<b>COC Number</b>		878558		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Polyaromatic Hydrocarbons</b>				
Leachable Benzo(b)fluoranthene	ug/L	<0.10	0.10	9335147
Leachable Naphthalene	ug/L	<0.20	0.20	9335147
Leachable Acenaphthylene	ug/L	<0.20	0.20	9335147
Leachable Acenaphthene	ug/L	<0.20	0.20	9335147
Leachable Fluorene	ug/L	<0.20	0.20	9335147
Leachable Phenanthrene	ug/L	<0.20	0.20	9335147
Leachable Anthracene	ug/L	<0.20	0.20	9335147
Leachable Fluoranthene	ug/L	<0.20	0.20	9335147
Leachable Pyrene	ug/L	<0.20	0.20	9335147
Leachable Benzo(a)anthracene	ug/L	<0.20	0.20	9335147
Leachable Chrysene	ug/L	<0.20	0.20	9335147
Leachable Benzo(k)fluoranthene	ug/L	<0.20	0.20	9335147
Leachable Benzo(a)pyrene	ug/L	<0.10	0.10	9335147
Leachable Indeno(1,2,3-cd)pyrene	ug/L	<0.20	0.20	9335147
Leachable Dibenzo(a,h)anthracene	ug/L	<0.20	0.20	9335147
Leachable Benzo(g,h,i)perylene	ug/L	<0.20	0.20	9335147
Leachable 1-Methylnaphthalene	ug/L	<0.20	0.20	9335147
Leachable 2-Methylnaphthalene	ug/L	<0.20	0.20	9335147
<b>Surrogate Recovery (%)</b>				
Leachable D10-Anthracene	%	111		9335147
Leachable D14-Terphenyl (FS)	%	98		9335147
Leachable D8-Acenaphthylene	%	107		9335147
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



### VOLATILE ORGANICS BY GC/MS (SOIL)

<b>Bureau Veritas ID</b>		YWH026		
<b>Sampling Date</b>		2024/04/09 14:20		
<b>COC Number</b>		878558		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Volatile Organics</b>				
Leachable Benzene	mg/L	<0.020	0.020	9341840
Leachable Carbon Tetrachloride	mg/L	<0.020	0.020	9341840
Leachable Chlorobenzene	mg/L	<0.020	0.020	9341840
Leachable Chloroform	mg/L	<0.020	0.020	9341840
Leachable 1,2-Dichlorobenzene	mg/L	<0.050	0.050	9341840
Leachable 1,4-Dichlorobenzene	mg/L	<0.050	0.050	9341840
Leachable 1,2-Dichloroethane	mg/L	<0.050	0.050	9341840
Leachable 1,1-Dichloroethylene	mg/L	<0.020	0.020	9341840
Leachable Methylene Chloride(Dichloromethane)	mg/L	<0.20	0.20	9341840
Leachable Methyl Ethyl Ketone (2-Butanone)	mg/L	<1.0	1.0	9341840
Leachable Tetrachloroethylene	mg/L	<0.020	0.020	9341840
Leachable Trichloroethylene	mg/L	<0.020	0.020	9341840
Leachable Vinyl Chloride	mg/L	<0.020	0.020	9341840
<b>Surrogate Recovery (%)</b>				
Leachable 4-Bromofluorobenzene	%	98		9341840
Leachable D4-1,2-Dichloroethane	%	106		9341840
Leachable D8-Toluene	%	92		9341840
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



### POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Bureau Veritas ID		YWH026		
Sampling Date		2024/04/09 14:20		
COC Number		878558		
	UNITS	CONT SOIL	RDL	QC Batch
PCBs				
Leachable Total PCB	ug/L	<3.0	3.0	9336909
Surrogate Recovery (%)				
Leachable Decachlorobiphenyl	%	114		9336909
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

Bureau Veritas Job #: C4A7402  
Report Date: 2024/04/19

RWDI Inc.  
Client Project #: 2402553.01  
Site Location: ON07  
Your P.O. #: 13384122  
Sampler Initials: JA

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	15.7°C
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Results relate only to the items tested.

BUREAU  
VERITAS

Bureau Veritas Job #: C4A7402

Report Date: 2024/04/19

## QUALITY ASSURANCE REPORT

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9335147	Leachable D10-Anthracene	2024/04/15	111	50 - 130	108	50 - 130	108	%				
9335147	Leachable D14-Terphenyl (FS)	2024/04/15	99	50 - 130	99	50 - 130	104	%				
9335147	Leachable D8-Acenaphthylene	2024/04/15	104	50 - 130	104	50 - 130	104	%				
9336909	Leachable Decachlorobiphenyl	2024/04/17	110	30 - 130	107	30 - 130	108	%				
9341840	Leachable 4-Bromofluorobenzene	2024/04/19	103	70 - 130	102	70 - 130	102	%				
9341840	Leachable D4-1,2-Dichloroethane	2024/04/19	99	70 - 130	99	70 - 130	103	%				
9341840	Leachable D8-Toluene	2024/04/19	103	70 - 130	103	70 - 130	91	%				
9331729	Moisture	2024/04/12							1.6 (1)	20		
9333447	Leachable Arsenic (As)	2024/04/15	102	80 - 120	100	80 - 120	<0.2	mg/L	NC (1)	35	<0.2	mg/L
9333447	Leachable Barium (Ba)	2024/04/15	100	80 - 120	101	80 - 120	<0.2	mg/L	NC (1)	35	<0.2	mg/L
9333447	Leachable Boron (B)	2024/04/15	NC	80 - 120	97	80 - 120	<0.1	mg/L	2.8 (1)	35	<0.1	mg/L
9333447	Leachable Cadmium (Cd)	2024/04/15	NC	80 - 120	98	80 - 120	<0.05	mg/L	3.0 (1)	35	<0.05	mg/L
9333447	Leachable Chromium (Cr)	2024/04/15	93	80 - 120	95	80 - 120	<0.1	mg/L	NC (1)	35	<0.1	mg/L
9333447	Leachable Lead (Pb)	2024/04/15	NC	80 - 120	95	80 - 120	<0.1	mg/L	3.4 (1)	35	<0.1	mg/L
9333447	Leachable Mercury (Hg)	2024/04/15	100	80 - 120	103	80 - 120	<0.001	mg/L	NC (1)	35	<0.001	mg/L
9333447	Leachable Selenium (Se)	2024/04/15	97	80 - 120	101	80 - 120	<0.1	mg/L	NC (1)	35	<0.1	mg/L
9333447	Leachable Silver (Ag)	2024/04/15	90	80 - 120	96	80 - 120	<0.01	mg/L	NC (1)	35	<0.01	mg/L
9333447	Leachable Uranium (U)	2024/04/15	90	80 - 120	92	80 - 120	<0.01	mg/L	NC (1)	35	<0.01	mg/L
9333643	Leachable Fluoride (F-)	2024/04/16	79 (2)	80 - 120	98	80 - 120	<0.10	mg/L	9.7 (1)	25	<0.10	mg/L
9333664	Leachable Nitrate (N)	2024/04/16	50 (2)	80 - 120	98	80 - 120	<1.0	mg/L	NC (1)	20	<1.0	mg/L
9333664	Leachable Nitrate + Nitrite (N)	2024/04/16	59 (2)	80 - 120	99	80 - 120	<1.0	mg/L	NC (1)	20	<1.0	mg/L
9333664	Leachable Nitrite (N)	2024/04/16	95	80 - 120	104	80 - 120	<0.10	mg/L	0.92 (1)	20	<0.10	mg/L
9333665	Leachable WAD Cyanide (Free)	2024/04/16	66 (3)	80 - 120	105	80 - 120	<0.0020	mg/L	NC (1)	20	<0.010	mg/L
9335147	Leachable 1-Methylnaphthalene	2024/04/15	100	50 - 130	97	50 - 130	<0.20	ug/L				
9335147	Leachable 2-Methylnaphthalene	2024/04/15	97	50 - 130	93	50 - 130	<0.20	ug/L				
9335147	Leachable Acenaphthene	2024/04/15	109	50 - 130	106	50 - 130	<0.20	ug/L				
9335147	Leachable Acenaphthylene	2024/04/15	108	50 - 130	104	50 - 130	<0.20	ug/L				
9335147	Leachable Anthracene	2024/04/15	117	50 - 130	109	50 - 130	<0.20	ug/L				
9335147	Leachable Benzo(a)anthracene	2024/04/15	111	50 - 130	109	50 - 130	<0.20	ug/L				
9335147	Leachable Benzo(a)pyrene	2024/04/16	108	50 - 130	106	50 - 130	<0.10	ug/L	NC (1)	40		



BUREAU  
VERITAS

Bureau Veritas Job #: C4A7402

Report Date: 2024/04/19

## QUALITY ASSURANCE REPORT(CONT'D)

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9335147	Leachable Benzo(b)fluoranthene	2024/04/15	108	50 - 130	106	50 - 130	<0.10	ug/L				
9335147	Leachable Benzo(g,h,i)perylene	2024/04/15	102	50 - 130	102	50 - 130	<0.20	ug/L				
9335147	Leachable Benzo(k)fluoranthene	2024/04/15	105	50 - 130	104	50 - 130	<0.20	ug/L				
9335147	Leachable Chrysene	2024/04/15	97	50 - 130	96	50 - 130	<0.20	ug/L				
9335147	Leachable Dibenzo(a,h)anthracene	2024/04/15	85	50 - 130	89	50 - 130	<0.20	ug/L				
9335147	Leachable Fluoranthene	2024/04/15	119	50 - 130	114	50 - 130	<0.20	ug/L				
9335147	Leachable Fluorene	2024/04/15	112	50 - 130	109	50 - 130	<0.20	ug/L				
9335147	Leachable Indeno(1,2,3-cd)pyrene	2024/04/15	106	50 - 130	107	50 - 130	<0.20	ug/L				
9335147	Leachable Naphthalene	2024/04/15	98	50 - 130	95	50 - 130	<0.20	ug/L				
9335147	Leachable Phenanthrene	2024/04/15	118	50 - 130	114	50 - 130	<0.20	ug/L				
9335147	Leachable Pyrene	2024/04/15	116	50 - 130	113	50 - 130	<0.20	ug/L				
9336909	Leachable Total PCB	2024/04/17	112	30 - 130	111	30 - 130	<3.0	ug/L	NC (1)	40		
9341840	Leachable 1,1-Dichloroethylene	2024/04/19	102	70 - 130	96	70 - 130	<0.020	mg/L				
9341840	Leachable 1,2-Dichlorobenzene	2024/04/19	94	70 - 130	90	70 - 130	<0.050	mg/L				
9341840	Leachable 1,2-Dichloroethane	2024/04/19	97	70 - 130	93	70 - 130	<0.050	mg/L				
9341840	Leachable 1,4-Dichlorobenzene	2024/04/19	111	70 - 130	106	70 - 130	<0.050	mg/L				
9341840	Leachable Benzene	2024/04/19	95	70 - 130	91	70 - 130	<0.020	mg/L	NC (1)	30		
9341840	Leachable Carbon Tetrachloride	2024/04/19	95	70 - 130	90	70 - 130	<0.020	mg/L				
9341840	Leachable Chlorobenzene	2024/04/19	103	70 - 130	98	70 - 130	<0.020	mg/L				
9341840	Leachable Chloroform	2024/04/19	105	70 - 130	99	70 - 130	<0.020	mg/L				
9341840	Leachable Methyl Ethyl Ketone (2-Butanone)	2024/04/19	113	60 - 140	110	60 - 140	<1.0	mg/L				
9341840	Leachable Methylene Chloride (Dichloromethane)	2024/04/19	104	70 - 130	99	70 - 130	<0.20	mg/L				
9341840	Leachable Tetrachloroethylene	2024/04/19	97	70 - 130	91	70 - 130	<0.020	mg/L				
9341840	Leachable Trichloroethylene	2024/04/19	100	70 - 130	95	70 - 130	<0.020	mg/L				





BUREAU  
VERITAS

Bureau Veritas Job #: C4A7402

Report Date: 2024/04/19

## QUALITY ASSURANCE REPORT(CONT'D)

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9341840	Leachable Vinyl Chloride	2024/04/19	94	70 - 130	88	70 - 130	<0.020	mg/L				
<p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.</p> <p>Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.</p> <p>Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.</p> <p>NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)</p> <p>NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <math>\leq 2 \times \text{RDL}</math>).</p> <p>(1) Duplicate Parent ID</p> <p>(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.</p> <p>(3) The recovery was below the lower control limit. This may represent a low bias in some results for this specific analyte.</p>												



BUREAU  
VERITAS

Bureau Veritas Job #: C4A7402

Report Date: 2024/04/19

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

---

Cristina Carriere, Senior Scientific Specialist

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



## Custody Tracking Form



T878558

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: CONT SOIL  
Last Sample: CONT SOIL  
Sample Count: 1

Relinquished By				Received By			
J. Artikl		Date	24/04/10			Date	24/04/11
		Time (24 HR)	16:20			Time (24 HR)	1705
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at [www.bvna.com](http://www.bvna.com).

### Triage Information

Sampled By (Print)

J. Artikl

# of Coolers/Pkgs:

1

Rush ☐Immediate Test ☐Food Residue ☐Micro ☐Food Chemistry ☐

### \*\*\* LABORATORY USE ONLY \*\*\*

Received At

Lab Comments:

Labeled By

Verified By

11-Apr-24 10:05  
Patricia Legette  
C4A7402  
AJH ENV-1770

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	not kept	17	15	15
Drinking Water Metals Preservation Check Done (Circle)			YES	NO	

COR FCD-00383/4

Page 1 of 1



**Attention: Khalid Hussein - Twin Creeks**

RWDI Inc.  
600 Southgate Drive  
Guelph, ON  
Canada N1G 4P6

Your P.O. #: 13384122  
Your Project #: 2402553.01  
Site#: 900  
Site Location: ON07  
Your C.O.C. #: 934044

**Report Date: 2024/07/30**  
Report #: R8256481  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C4M4897**

**Received: 2024/07/23, 09:35**

Sample Matrix: Soil  
# Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Cyanide (WAD) in Leachates	1	N/A	2024/07/27	CAM SOP-00457	OMOE 3015 m
Fluoride by ISE in Leachates	1	2024/07/26	2024/07/27	CAM SOP-00449	SM 24 4500-F- C m
Total Metals in TCLP Leachate by ICPMS	1	2024/07/29	2024/07/29	CAM SOP-00447	EPA 6020B m
Moisture	1	N/A	2024/07/24	CAM SOP-00445	Carter 2nd ed 70.2 m
Nitrate& Nitrite as Nitrogen in Leachate	1	N/A	2024/07/26	CAM SOP-00440	SM 24 4500-NO3I/NO2B
PAH Compounds in Leachate by GC/MS (SIM)	1	2024/07/29	2024/07/29	CAM SOP-00318	EPA 8270E
Polychlorinated Biphenyl in Leachate	1	2024/07/27	2024/07/27	CAM SOP-00309	EPA 8082A m
TCLP - % Solids	1	2024/07/25	2024/07/26	CAM SOP-00401	EPA 1311 Update I m
TCLP - Extraction Fluid	1	N/A	2024/07/26	CAM SOP-00401	EPA 1311 Update I m
TCLP - Initial and final pH	1	N/A	2024/07/26	CAM SOP-00401	EPA 1311 Update I m
TCLP Zero Headspace Extraction	1	2024/07/24	2024/07/25	CAM SOP-00430	EPA 1311 m
VOCs in ZHE Leachates	1	2024/07/25	2024/07/25	CAM SOP-00228	EPA 8260D

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.



**Attention: Khalid Hussein - Twin Creeks**

RWDI Inc.  
600 Southgate Drive  
Guelph, ON  
Canada N1G 4P6

Your P.O. #: 13384122  
Your Project #: 2402553.01  
Site#: 900  
Site Location: ON07  
Your C.O.C. #: 934044

**Report Date: 2024/07/30**  
Report #: R8256481  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C4M4897**

**Received: 2024/07/23, 09:35**

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to:

Patricia Legette, Project Manager

Email: Patricia.Legette@bureauveritas.com

Phone# (905)817-5799

=====

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BUREAU  
VERITAS

Bureau Veritas Job #: C4M4897

Report Date: 2024/07/30

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JC

### RESULTS OF ANALYSES OF SOIL

<b>Bureau Veritas ID</b>		ZUM281		
<b>Sampling Date</b>		2024/07/19 11:30		
<b>COC Number</b>		934044		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Charge/Prep Analysis</b>				
Amount Extracted (Wet Weight) (g)	N/A	25	N/A	9534933
<b>Inorganics</b>				
Final pH	pH	5.63		9541166
Leachable Fluoride (F-)	mg/L	0.29	0.10	9540803
Initial pH	pH	9.12		9541166
Moisture	%	14	1.0	9536606
TCLP - % Solids	%	100	0.2	9537113
TCLP Extraction Fluid	N/A	FLUID 2		9541164
Leachable WAD Cyanide (Free)	mg/L	<0.010	0.010	9540802
Leachable Nitrite (N)	mg/L	<0.10	0.10	9540789
Leachable Nitrate (N)	mg/L	<1.0	1.0	9540789
Leachable Nitrate + Nitrite (N)	mg/L	<1.0	1.0	9540789
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable				



BUREAU  
VERITAS

Bureau Veritas Job #: C4M4897

Report Date: 2024/07/30

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JC

### ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

<b>Bureau Veritas ID</b>		ZUM281		
<b>Sampling Date</b>		2024/07/19 11:30		
<b>COC Number</b>		934044		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Metals</b>				
Leachable Arsenic (As)	mg/L	<0.2	0.2	9543531
Leachable Barium (Ba)	mg/L	0.3	0.2	9543531
Leachable Boron (B)	mg/L	0.2	0.1	9543531
Leachable Cadmium (Cd)	mg/L	<0.05	0.05	9543531
Leachable Chromium (Cr)	mg/L	<0.1	0.1	9543531
Leachable Lead (Pb)	mg/L	<0.1	0.1	9543531
Leachable Mercury (Hg)	mg/L	<0.001	0.001	9543531
Leachable Selenium (Se)	mg/L	<0.1	0.1	9543531
Leachable Silver (Ag)	mg/L	<0.01	0.01	9543531
Leachable Uranium (U)	mg/L	<0.01	0.01	9543531
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

Bureau Veritas Job #: C4M4897

Report Date: 2024/07/30

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JC

### SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

<b>Bureau Veritas ID</b>		ZUM281		
<b>Sampling Date</b>		2024/07/19 11:30		
<b>COC Number</b>		934044		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Polyaromatic Hydrocarbons</b>				
Leachable Benzo(b)fluoranthene	ug/L	<0.10	0.10	9544744
Leachable Naphthalene	ug/L	0.23	0.20	9544744
Leachable Acenaphthylene	ug/L	<0.20	0.20	9544744
Leachable Acenaphthene	ug/L	0.22	0.20	9544744
Leachable Fluorene	ug/L	0.23	0.20	9544744
Leachable Phenanthrene	ug/L	0.42	0.20	9544744
Leachable Anthracene	ug/L	<0.20	0.20	9544744
Leachable Fluoranthene	ug/L	<0.20	0.20	9544744
Leachable Pyrene	ug/L	<0.20	0.20	9544744
Leachable Benzo(a)anthracene	ug/L	<0.20	0.20	9544744
Leachable Chrysene	ug/L	<0.20	0.20	9544744
Leachable Benzo(k)fluoranthene	ug/L	<0.20	0.20	9544744
Leachable Benzo(a)pyrene	ug/L	<0.10	0.10	9544744
Leachable Indeno(1,2,3-cd)pyrene	ug/L	<0.20	0.20	9544744
Leachable Dibenzo(a,h)anthracene	ug/L	<0.20	0.20	9544744
Leachable Benzo(g,h,i)perylene	ug/L	<0.20	0.20	9544744
Leachable 1-Methylnaphthalene	ug/L	<0.20	0.20	9544744
Leachable 2-Methylnaphthalene	ug/L	<0.20	0.20	9544744
<b>Surrogate Recovery (%)</b>				
Leachable D10-Anthracene	%	99		9544744
Leachable D14-Terphenyl (FS)	%	101		9544744
Leachable D8-Acenaphthylene	%	90		9544744
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				





BUREAU  
VERITAS

Bureau Veritas Job #: C4M4897

Report Date: 2024/07/30

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JC

### VOLATILE ORGANICS BY GC/MS (SOIL)

Bureau Veritas ID		ZUM281		
Sampling Date		2024/07/19 11:30		
COC Number		934044		
	UNITS	CONT SOIL	RDL	QC Batch
<b>Volatile Organics</b>				
Leachable Benzene	mg/L	<0.020	0.020	9537195
Leachable Carbon Tetrachloride	mg/L	<0.020	0.020	9537195
Leachable Chlorobenzene	mg/L	<0.020	0.020	9537195
Leachable Chloroform	mg/L	<0.020	0.020	9537195
Leachable 1,2-Dichlorobenzene	mg/L	<0.050	0.050	9537195
Leachable 1,4-Dichlorobenzene	mg/L	<0.050	0.050	9537195
Leachable 1,2-Dichloroethane	mg/L	<0.050	0.050	9537195
Leachable 1,1-Dichloroethylene	mg/L	<0.020	0.020	9537195
Leachable Methylene Chloride(Dichloromethane)	mg/L	<0.20	0.20	9537195
Leachable Methyl Ethyl Ketone (2-Butanone)	mg/L	<1.0	1.0	9537195
Leachable Tetrachloroethylene	mg/L	<0.020	0.020	9537195
Leachable Trichloroethylene	mg/L	<0.020	0.020	9537195
Leachable Vinyl Chloride	mg/L	<0.020	0.020	9537195
<b>Surrogate Recovery (%)</b>				
Leachable 4-Bromofluorobenzene	%	94		9537195
Leachable D4-1,2-Dichloroethane	%	112		9537195
Leachable D8-Toluene	%	95		9537195
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



### POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Bureau Veritas ID		ZUM281		
Sampling Date		2024/07/19 11:30		
COC Number		934044		
	UNITS	CONT SOIL	RDL	QC Batch
PCBs				
Leachable Total PCB	ug/L	<3.0	3.0	9542354
Surrogate Recovery (%)				
Leachable Decachlorobiphenyl	%	104		9542354
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

Bureau Veritas Job #: C4M4897

Report Date: 2024/07/30

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JC

### GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.7°C
-----------	-------

Results relate only to the items tested.

BUREAU  
VERITAS

Bureau Veritas Job #: C4M4897

Report Date: 2024/07/30

## QUALITY ASSURANCE REPORT

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9537195	Leachable 4-Bromofluorobenzene	2024/07/25	96	70 - 130	97	70 - 130	94	%				
9537195	Leachable D4-1,2-Dichloroethane	2024/07/25	107	70 - 130	112	70 - 130	110	%				
9537195	Leachable D8-Toluene	2024/07/25	111	70 - 130	108	70 - 130	95	%				
9542354	Leachable Decachlorobiphenyl	2024/07/27	116	30 - 130	101	30 - 130	100	%				
9544744	Leachable D10-Anthracene	2024/07/29	101	50 - 130	99	50 - 130	98	%				
9544744	Leachable D14-Terphenyl (FS)	2024/07/29	104	50 - 130	105	50 - 130	104	%				
9544744	Leachable D8-Acenaphthylene	2024/07/29	96	50 - 130	94	50 - 130	89	%				
9536606	Moisture	2024/07/24							4.1 (1)	20		
9537195	Leachable 1,1-Dichloroethylene	2024/07/25	101	70 - 130	93	70 - 130	<0.020	mg/L	NC (1)	30		
9537195	Leachable 1,2-Dichlorobenzene	2024/07/25	103	70 - 130	93	70 - 130	<0.050	mg/L	NC (1)	30		
9537195	Leachable 1,2-Dichloroethane	2024/07/25	105	70 - 130	102	70 - 130	<0.050	mg/L	NC (1)	30		
9537195	Leachable 1,4-Dichlorobenzene	2024/07/25	103	70 - 130	90	70 - 130	<0.050	mg/L	NC (1)	30		
9537195	Leachable Benzene	2024/07/25	103	70 - 130	96	70 - 130	<0.020	mg/L	NC (1)	30		
9537195	Leachable Carbon Tetrachloride	2024/07/25	98	70 - 130	89	70 - 130	<0.020	mg/L	NC (1)	30		
9537195	Leachable Chlorobenzene	2024/07/25	98	70 - 130	90	70 - 130	<0.020	mg/L	NC (1)	30		
9537195	Leachable Chloroform	2024/07/25	97	70 - 130	91	70 - 130	<0.020	mg/L	NC (1)	30		
9537195	Leachable Methyl Ethyl Ketone (2-Butanone)	2024/07/25	114	60 - 140	114	60 - 140	<1.0	mg/L	NC (1)	30		
9537195	Leachable Methylene Chloride (Dichloromethane)	2024/07/25	113	70 - 130	108	70 - 130	<0.20	mg/L	NC (1)	30		
9537195	Leachable Tetrachloroethylene	2024/07/25	100	70 - 130	89	70 - 130	<0.020	mg/L	NC (1)	30		
9537195	Leachable Trichloroethylene	2024/07/25	94	70 - 130	87	70 - 130	<0.020	mg/L	NC (1)	30		
9537195	Leachable Vinyl Chloride	2024/07/25	100	70 - 130	92	70 - 130	<0.020	mg/L	NC (1)	30		
9540789	Leachable Nitrate (N)	2024/07/26	90	80 - 120	92	80 - 120	<1.0	mg/L	NC (1)	20	<1.0	mg/L
9540789	Leachable Nitrate + Nitrite (N)	2024/07/26	93	80 - 120	94	80 - 120	<1.0	mg/L	NC (1)	20	<1.0	mg/L
9540789	Leachable Nitrite (N)	2024/07/26	103	80 - 120	99	80 - 120	<0.10	mg/L	NC (1)	20	<0.10	mg/L
9540802	Leachable WAD Cyanide (Free)	2024/07/27	102	80 - 120	105	80 - 120	<0.0020	mg/L	NC (1)	20	<0.010	mg/L
9540803	Leachable Fluoride (F-)	2024/07/27	89	80 - 120	102	80 - 120	<0.10	mg/L	1.4 (1)	25	<0.10	mg/L
9542354	Leachable Total PCB	2024/07/27	120	30 - 130	110	30 - 130	<3.0	ug/L	NC (1)	40		
9543531	Leachable Arsenic (As)	2024/07/29	99	80 - 120	99	80 - 120	<0.2	mg/L	NC (1)	35	<0.2	mg/L
9543531	Leachable Barium (Ba)	2024/07/29	107	80 - 120	103	80 - 120	<0.2	mg/L	4.9 (1)	35	<0.2	mg/L



BUREAU  
VERITAS

Bureau Veritas Job #: C4M4897

Report Date: 2024/07/30

## QUALITY ASSURANCE REPORT(CONT'D)

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9543531	Leachable Boron (B)	2024/07/29	95	80 - 120	94	80 - 120	<0.1	mg/L	0.27 (1)	35	<0.1	mg/L
9543531	Leachable Cadmium (Cd)	2024/07/29	96	80 - 120	95	80 - 120	<0.05	mg/L	NC (1)	35	<0.05	mg/L
9543531	Leachable Chromium (Cr)	2024/07/29	98	80 - 120	100	80 - 120	<0.1	mg/L	NC (1)	35	<0.1	mg/L
9543531	Leachable Lead (Pb)	2024/07/29	95	80 - 120	97	80 - 120	<0.1	mg/L	NC (1)	35	<0.1	mg/L
9543531	Leachable Mercury (Hg)	2024/07/29	100	80 - 120	102	80 - 120	<0.001	mg/L	NC (1)	35	<0.001	mg/L
9543531	Leachable Selenium (Se)	2024/07/29	97	80 - 120	103	80 - 120	<0.1	mg/L	NC (1)	35	<0.1	mg/L
9543531	Leachable Silver (Ag)	2024/07/29	94	80 - 120	95	80 - 120	<0.01	mg/L	NC (1)	35	<0.01	mg/L
9543531	Leachable Uranium (U)	2024/07/29	95	80 - 120	97	80 - 120	<0.01	mg/L	NC (1)	35	<0.01	mg/L
9544744	Leachable 1-Methylnaphthalene	2024/07/29	98	50 - 130	87	50 - 130	<0.20	ug/L	7.8 (1)	40		
9544744	Leachable 2-Methylnaphthalene	2024/07/29	96	50 - 130	84	50 - 130	<0.20	ug/L	10 (1)	40		
9544744	Leachable Acenaphthene	2024/07/29	97	50 - 130	91	50 - 130	<0.20	ug/L	12 (1)	40		
9544744	Leachable Acenaphthylene	2024/07/29	96	50 - 130	90	50 - 130	<0.20	ug/L	NC (1)	40		
9544744	Leachable Anthracene	2024/07/29	92	50 - 130	89	50 - 130	<0.20	ug/L	3.1 (1)	40		
9544744	Leachable Benzo(a)anthracene	2024/07/29	93	50 - 130	96	50 - 130	<0.20	ug/L	NC (1)	40		
9544744	Leachable Benzo(a)pyrene	2024/07/29	87	50 - 130	94	50 - 130	<0.10	ug/L	NC (1)	40		
9544744	Leachable Benzo(b)fluoranthene	2024/07/29	92	50 - 130	98	50 - 130	<0.10	ug/L				
9544744	Leachable Benzo(g,h,i)perylene	2024/07/29	87	50 - 130	94	50 - 130	<0.20	ug/L	NC (1)	40		
9544744	Leachable Benzo(k)fluoranthene	2024/07/29	88	50 - 130	95	50 - 130	<0.20	ug/L	NC (1)	40		
9544744	Leachable Chrysene	2024/07/29	89	50 - 130	94	50 - 130	<0.20	ug/L	NC (1)	40		
9544744	Leachable Dibenzo(a,h)anthracene	2024/07/29	89	50 - 130	96	50 - 130	<0.20	ug/L	NC (1)	40		
9544744	Leachable Fluoranthene	2024/07/29	105	50 - 130	104	50 - 130	<0.20	ug/L	13 (1)	40		
9544744	Leachable Fluorene	2024/07/29	99	50 - 130	94	50 - 130	<0.20	ug/L	9.5 (1)	40		
9544744	Leachable Indeno(1,2,3-cd)pyrene	2024/07/29	88	50 - 130	95	50 - 130	<0.20	ug/L	NC (1)	40		
9544744	Leachable Naphthalene	2024/07/29	96	50 - 130	83	50 - 130	<0.20	ug/L	10 (1)	40		
9544744	Leachable Phenanthrene	2024/07/29	96	50 - 130	91	50 - 130	<0.20	ug/L	12 (1)	40		



BUREAU  
VERITAS

Bureau Veritas Job #: C4M4897

Report Date: 2024/07/30

## QUALITY ASSURANCE REPORT(CONT'D)

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9544744	Leachable Pyrene	2024/07/29	98	50 - 130	99	50 - 130	<0.20	ug/L	8.2 (1)	40		

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference  $\leq$  2x RDL).

(1) Duplicate Parent ID



BUREAU  
VERITAS

Bureau Veritas Job #: C4M4897

Report Date: 2024/07/30

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JC

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

---

Cristina Carriere, Senior Scientific Specialist

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Louise Harding, Team Lead

---

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



## Custody Tracking Form



T934044

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: CONT SOIL  
Last Sample: CONT SOIL  
Sample Count: 1

Relinquished By				Received By			
Maja DeForest		Date	2024/07/22	SUGAR SALVAM		Date	2024/07/23
		Time (24 HR)	9:30			Time (24 HR)	09:35
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at [www.bvna.com](http://www.bvna.com).

Triage Information			
Sampled By (Print)	# of Coolers/Pkgs:	Rush <input type="checkbox"/>	Immediate Test <input type="checkbox"/>
Maja DeForest	1	Micro <input type="checkbox"/>	Food Residue <input type="checkbox"/>
			Food Chemistry <input type="checkbox"/>

*** LABORATORY USE ONLY ***						
Received At	Lab Comments:	Custody Seal		Cooling Media	Temperature °C	
		Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2
Labeled By		Y	Y	Y	8	7
Verified By						8
	23-Jul-24 09:35					
	Patricia Legette					
	C4M4897					
	RIK ENV-1218					
		Drinking Water Metals Preservation Check Done (Circle) YES NO				

COR FCD-00383/4

Page 1 of 1





**Attention: Khalid Hussein - Twin Creeks**

RWDI Inc.  
600 Southgate Drive  
Guelph, ON  
Canada N1G 4P6

Your P.O. #: 13384122  
Your Project #: 2402553.01  
Site#: 900  
Site Location: ON07  
Your C.O.C. #: 975884

**Report Date: 2024/10/21**  
Report #: R8370295  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C4V7216**

**Received: 2024/10/09, 11:57**

Sample Matrix: Soil  
# Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Cyanide (WAD) in Leachates	1	N/A	2024/10/17	CAM SOP-00457	OMOE 3015 m
Fluoride by ISE in Leachates	1	2024/10/17	2024/10/17	CAM SOP-00449	SM 24 4500-F- C m
Total Metals in TCLP Leachate by ICPMS	1	2024/10/17	2024/10/17	CAM SOP-00447	EPA 6020B m
Moisture	1	N/A	2024/10/15	CAM SOP-00445	Carter 2nd ed 70.2 m
Nitrate& Nitrite as Nitrogen in Leachate	1	N/A	2024/10/17	CAM SOP-00440	SM 24 4500-NO3I/NO2B
PAH Compounds in Leachate by GC/MS (SIM)	1	2024/10/16	2024/10/17	CAM SOP-00318	EPA 8270E
Polychlorinated Biphenyl in Leachate	1	2024/10/16	2024/10/16	CAM SOP-00309	EPA 8082A m
TCLP - % Solids	1	2024/10/15	2024/10/16	CAM SOP-00401	EPA 1311 Update I m
TCLP - Extraction Fluid	1	N/A	2024/10/16	CAM SOP-00401	EPA 1311 Update I m
TCLP - Initial and final pH	1	N/A	2024/10/16	CAM SOP-00401	EPA 1311 Update I m
TCLP Zero Headspace Extraction	1	2024/10/17	2024/10/18	CAM SOP-00430	EPA 1311 m
VOCs in ZHE Leachates	1	2024/10/18	2024/10/18	CAM SOP-00228	EPA 8260D

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.



**Attention: Khalid Hussein - Twin Creeks**

RWDI Inc.  
600 Southgate Drive  
Guelph, ON  
Canada N1G 4P6

Your P.O. #: 13384122  
Your Project #: 2402553.01  
Site#: 900  
Site Location: ON07  
Your C.O.C. #: 975884

**Report Date: 2024/10/21**  
Report #: R8370295  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C4V7216**

**Received: 2024/10/09, 11:57**

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to:

Patricia Legette, Project Manager

Email: Patricia.Legette@bureauveritas.com

Phone# (905)817-5799

=====

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BUREAU  
VERITAS

Bureau Veritas Job #: C4V7216

Report Date: 2024/10/21

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### RESULTS OF ANALYSES OF SOIL

<b>Bureau Veritas ID</b>		AFHW99		
<b>Sampling Date</b>		2024/10/03 13:30		
<b>COC Number</b>		975884		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Charge/Prep Analysis</b>				
Amount Extracted (Wet Weight) (g)	N/A	25	N/A	9707512
<b>Inorganics</b>				
Final pH	pH	5.64		9703983
Leachable Fluoride (F-)	mg/L	0.22	0.10	9706150
Initial pH	pH	9.22		9703983
Moisture	%	25	1.0	9701467
TCLP - % Solids	%	100	0.2	9701269
TCLP Extraction Fluid	N/A	FLUID 2		9703981
Leachable WAD Cyanide (Free)	mg/L	<0.010	0.010	9706156
Leachable Nitrite (N)	mg/L	<0.10	0.10	9706158
Leachable Nitrate (N)	mg/L	<1.0	1.0	9706158
Leachable Nitrate + Nitrite (N)	mg/L	<1.0	1.0	9706158
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable				



BUREAU  
VERITAS

Bureau Veritas Job #: C4V7216

Report Date: 2024/10/21

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

<b>Bureau Veritas ID</b>		AFHW99		
<b>Sampling Date</b>		2024/10/03 13:30		
<b>COC Number</b>		975884		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Metals</b>				
Leachable Arsenic (As)	mg/L	<0.2	0.2	9706469
Leachable Barium (Ba)	mg/L	0.4	0.2	9706469
Leachable Boron (B)	mg/L	<0.1	0.1	9706469
Leachable Cadmium (Cd)	mg/L	<0.05	0.05	9706469
Leachable Chromium (Cr)	mg/L	<0.1	0.1	9706469
Leachable Lead (Pb)	mg/L	<0.1	0.1	9706469
Leachable Mercury (Hg)	mg/L	<0.001	0.001	9706469
Leachable Selenium (Se)	mg/L	<0.1	0.1	9706469
Leachable Silver (Ag)	mg/L	<0.01	0.01	9706469
Leachable Uranium (U)	mg/L	<0.01	0.01	9706469
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



**BUREAU  
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Bureau Veritas Job #: C4V7216

Report Date: 2024/10/21

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

<b>Bureau Veritas ID</b>		AFHW99		
<b>Sampling Date</b>		2024/10/03 13:30		
<b>COC Number</b>		975884		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Polyaromatic Hydrocarbons</b>				
Leachable Benzo(b)fluoranthene	ug/L	<0.10	0.10	9705609
Leachable Naphthalene	ug/L	<0.20	0.20	9705609
Leachable Acenaphthylene	ug/L	<0.20	0.20	9705609
Leachable Acenaphthene	ug/L	<0.20	0.20	9705609
Leachable Fluorene	ug/L	<0.20	0.20	9705609
Leachable Phenanthrene	ug/L	<0.20	0.20	9705609
Leachable Anthracene	ug/L	<0.20	0.20	9705609
Leachable Fluoranthene	ug/L	<0.20	0.20	9705609
Leachable Pyrene	ug/L	<0.20	0.20	9705609
Leachable Benzo(a)anthracene	ug/L	<0.20	0.20	9705609
Leachable Chrysene	ug/L	<0.20	0.20	9705609
Leachable Benzo(k)fluoranthene	ug/L	<0.20	0.20	9705609
Leachable Benzo(a)pyrene	ug/L	<0.10	0.10	9705609
Leachable Indeno(1,2,3-cd)pyrene	ug/L	<0.20	0.20	9705609
Leachable Dibenzo(a,h)anthracene	ug/L	<0.20	0.20	9705609
Leachable Benzo(g,h,i)perylene	ug/L	<0.20	0.20	9705609
Leachable 1-Methylnaphthalene	ug/L	<0.20	0.20	9705609
Leachable 2-Methylnaphthalene	ug/L	<0.20	0.20	9705609
<b>Surrogate Recovery (%)</b>				
Leachable D10-Anthracene	%	123		9705609
Leachable D14-Terphenyl (FS)	%	98		9705609
Leachable D8-Acenaphthylene	%	94		9705609
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

Bureau Veritas Job #: C4V7216

Report Date: 2024/10/21

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### VOLATILE ORGANICS BY GC/MS (SOIL)

<b>Bureau Veritas ID</b>		AFHW99		
<b>Sampling Date</b>		2024/10/03 13:30		
<b>COC Number</b>		975884		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Volatile Organics</b>				
Leachable Benzene	mg/L	<0.020	0.020	9709538
Leachable Carbon Tetrachloride	mg/L	<0.020	0.020	9709538
Leachable Chlorobenzene	mg/L	<0.020	0.020	9709538
Leachable Chloroform	mg/L	<0.020	0.020	9709538
Leachable 1,2-Dichlorobenzene	mg/L	<0.050	0.050	9709538
Leachable 1,4-Dichlorobenzene	mg/L	<0.050	0.050	9709538
Leachable 1,2-Dichloroethane	mg/L	<0.050	0.050	9709538
Leachable 1,1-Dichloroethylene	mg/L	<0.020	0.020	9709538
Leachable Methylene Chloride(Dichloromethane)	mg/L	<0.20	0.20	9709538
Leachable Methyl Ethyl Ketone (2-Butanone)	mg/L	<1.0	1.0	9709538
Leachable Tetrachloroethylene	mg/L	<0.020	0.020	9709538
Leachable Trichloroethylene	mg/L	<0.020	0.020	9709538
Leachable Vinyl Chloride	mg/L	<0.020	0.020	9709538
<b>Surrogate Recovery (%)</b>				
Leachable 4-Bromofluorobenzene	%	105		9709538
Leachable D4-1,2-Dichloroethane	%	97		9709538
Leachable D8-Toluene	%	92		9709538
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



### POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Bureau Veritas ID		AFHW99		
Sampling Date		2024/10/03 13:30		
COC Number		975884		
	UNITS	CONT SOIL	RDL	QC Batch
PCBs				
Leachable Total PCB	ug/L	<3.0	3.0	9704026
Surrogate Recovery (%)				
Leachable Decachlorobiphenyl	%	110		9704026
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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VERITAS

Bureau Veritas Job #: C4V7216

Report Date: 2024/10/21

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	13.0°C
-----------	--------

Results relate only to the items tested.



BUREAU  
VERITAS

Bureau Veritas Job #: C4V7216

Report Date: 2024/10/21

## QUALITY ASSURANCE REPORT

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9704026	Leachable Decachlorobiphenyl	2024/10/16	55	30 - 130	113	30 - 130	113	%				
9705609	Leachable D10-Anthracene	2024/10/16	125	50 - 130	125	50 - 130	126	%				
9705609	Leachable D14-Terphenyl (FS)	2024/10/16	106	50 - 130	107	50 - 130	107	%				
9705609	Leachable D8-Acenaphthylene	2024/10/16	103	50 - 130	97	50 - 130	96	%				
9709538	Leachable 4-Bromofluorobenzene	2024/10/18	102	70 - 130	103	70 - 130	103	%				
9709538	Leachable D4-1,2-Dichloroethane	2024/10/18	96	70 - 130	100	70 - 130	98	%				
9709538	Leachable D8-Toluene	2024/10/18	102	70 - 130	100	70 - 130	95	%				
9701467	Moisture	2024/10/15							5.9 (1)	20		
9704026	Leachable Total PCB	2024/10/16	61	30 - 130	111	30 - 130	<3.0	ug/L	NC (1)	40		
9705609	Leachable 1-Methylnaphthalene	2024/10/16	88	50 - 130	82	50 - 130	<0.20	ug/L				
9705609	Leachable 2-Methylnaphthalene	2024/10/16	88	50 - 130	80	50 - 130	<0.20	ug/L				
9705609	Leachable Acenaphthene	2024/10/16	97	50 - 130	93	50 - 130	<0.20	ug/L				
9705609	Leachable Acenaphthylene	2024/10/16	99	50 - 130	92	50 - 130	<0.20	ug/L				
9705609	Leachable Anthracene	2024/10/16	101	50 - 130	100	50 - 130	<0.20	ug/L				
9705609	Leachable Benzo(a)anthracene	2024/10/16	85	50 - 130	88	50 - 130	<0.20	ug/L				
9705609	Leachable Benzo(a)pyrene	2024/10/16	84	50 - 130	89	50 - 130	<0.10	ug/L	NC (1)	40		
9705609	Leachable Benzo(b)fluoranthene	2024/10/16	80	50 - 130	83	50 - 130	<0.10	ug/L				
9705609	Leachable Benzo(g,h,i)perylene	2024/10/16	72	50 - 130	79	50 - 130	<0.20	ug/L				
9705609	Leachable Benzo(k)fluoranthene	2024/10/16	83	50 - 130	95	50 - 130	<0.20	ug/L				
9705609	Leachable Chrysene	2024/10/16	76	50 - 130	81	50 - 130	<0.20	ug/L				
9705609	Leachable Dibenzo(a,h)anthracene	2024/10/16	74	50 - 130	79	50 - 130	<0.20	ug/L				
9705609	Leachable Fluoranthene	2024/10/16	100	50 - 130	98	50 - 130	<0.20	ug/L				
9705609	Leachable Fluorene	2024/10/16	97	50 - 130	92	50 - 130	<0.20	ug/L				
9705609	Leachable Indeno(1,2,3-cd)pyrene	2024/10/16	80	50 - 130	86	50 - 130	<0.20	ug/L				
9705609	Leachable Naphthalene	2024/10/16	95	50 - 130	87	50 - 130	<0.20	ug/L				
9705609	Leachable Phenanthrene	2024/10/16	106	50 - 130	103	50 - 130	<0.20	ug/L				
9705609	Leachable Pyrene	2024/10/16	100	50 - 130	99	50 - 130	<0.20	ug/L				
9706150	Leachable Fluoride (F-)	2024/10/17	107	80 - 120	103	80 - 120	<0.10	mg/L	0.49 (1)	25	<0.10	mg/L
9706156	Leachable WAD Cyanide (Free)	2024/10/17	92	80 - 120	99	80 - 120	<0.0020	mg/L	NC (1)	20	<0.010	mg/L
9706158	Leachable Nitrate (N)	2024/10/17	95	80 - 120	99	80 - 120	<1.0	mg/L	NC (1)	20	<1.0	mg/L



BUREAU  
VERITAS

Bureau Veritas Job #: C4V7216

Report Date: 2024/10/21

## QUALITY ASSURANCE REPORT(CONT'D)

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9706158	Leachable Nitrate + Nitrite (N)	2024/10/17	97	80 - 120	101	80 - 120	<1.0	mg/L	NC (1)	20	<1.0	mg/L
9706158	Leachable Nitrite (N)	2024/10/17	109	80 - 120	107	80 - 120	<0.10	mg/L	NC (1)	20	<0.10	mg/L
9706469	Leachable Arsenic (As)	2024/10/17	99	80 - 120	97	80 - 120	<0.2	mg/L	NC (1)	35	<0.2	mg/L
9706469	Leachable Barium (Ba)	2024/10/17	101	80 - 120	96	80 - 120	<0.2	mg/L	NC (1)	35	<0.2	mg/L
9706469	Leachable Boron (B)	2024/10/17	94	80 - 120	91	80 - 120	<0.1	mg/L	2.2 (1)	35	<0.1	mg/L
9706469	Leachable Cadmium (Cd)	2024/10/17	96	80 - 120	94	80 - 120	<0.05	mg/L	NC (1)	35	<0.05	mg/L
9706469	Leachable Chromium (Cr)	2024/10/17	98	80 - 120	97	80 - 120	<0.1	mg/L	NC (1)	35	<0.1	mg/L
9706469	Leachable Lead (Pb)	2024/10/17	91	80 - 120	94	80 - 120	<0.1	mg/L	NC (1)	35	<0.1	mg/L
9706469	Leachable Mercury (Hg)	2024/10/17	94	80 - 120	88	80 - 120	<0.001	mg/L	NC (1)	35	<0.001	mg/L
9706469	Leachable Selenium (Se)	2024/10/17	97	80 - 120	100	80 - 120	<0.1	mg/L	NC (1)	35	<0.1	mg/L
9706469	Leachable Silver (Ag)	2024/10/17	93	80 - 120	91	80 - 120	<0.01	mg/L	NC (1)	35	<0.01	mg/L
9706469	Leachable Uranium (U)	2024/10/17	94	80 - 120	94	80 - 120	<0.01	mg/L	NC (1)	35	<0.01	mg/L
9709538	Leachable 1,1-Dichloroethylene	2024/10/18	96	70 - 130	98	70 - 130	<0.020	mg/L	NC (1)	30		
9709538	Leachable 1,2-Dichlorobenzene	2024/10/18	94	70 - 130	95	70 - 130	<0.050	mg/L	NC (1)	30		
9709538	Leachable 1,2-Dichloroethane	2024/10/18	89	70 - 130	96	70 - 130	<0.050	mg/L	NC (1)	30		
9709538	Leachable 1,4-Dichlorobenzene	2024/10/18	96	70 - 130	97	70 - 130	<0.050	mg/L	NC (1)	30		
9709538	Leachable Benzene	2024/10/18	96	70 - 130	100	70 - 130	<0.020	mg/L	NC (1)	30		
9709538	Leachable Carbon Tetrachloride	2024/10/18	99	70 - 130	101	70 - 130	<0.020	mg/L	NC (1)	30		
9709538	Leachable Chlorobenzene	2024/10/18	87	70 - 130	88	70 - 130	<0.020	mg/L	NC (1)	30		
9709538	Leachable Chloroform	2024/10/18	94	70 - 130	98	70 - 130	<0.020	mg/L	NC (1)	30		
9709538	Leachable Methyl Ethyl Ketone (2-Butanone)	2024/10/18	94	60 - 140	101	60 - 140	<1.0	mg/L	NC (1)	30		
9709538	Leachable Methylene Chloride (Dichloromethane)	2024/10/18	91	70 - 130	97	70 - 130	<0.20	mg/L	NC (1)	30		
9709538	Leachable Tetrachloroethylene	2024/10/18	95	70 - 130	94	70 - 130	<0.020	mg/L	NC (1)	30		
9709538	Leachable Trichloroethylene	2024/10/18	97	70 - 130	101	70 - 130	<0.020	mg/L	NC (1)	30		



BUREAU  
VERITAS

Bureau Veritas Job #: C4V7216

Report Date: 2024/10/21

## QUALITY ASSURANCE REPORT(CONT'D)

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9709538	Leachable Vinyl Chloride	2024/10/18	91	70 - 130	93	70 - 130	<0.020	mg/L	NC (1)	30		

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference  $\leq 2 \times$  RDL).

(1) Duplicate Parent ID



BUREAU  
VERITAS

Bureau Veritas Job #: C4V7216

Report Date: 2024/10/21

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JA

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Louise Harding, Scientific Specialist

---

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



## Custody Tracking Form



T975884-H

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: CONT SOIL  
Last Sample: CONT SOIL  
Sample Count: 1

Relinquished By				Received By			
J. Artibelli		Date	27/10/07	MARC FRAZ		Date	09/11/08
		Time (24 HR)	10:00			Time (24 HR)	11:57
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at [www.bvna.com](http://www.bvna.com).

### Triage Information

Sampled By (Print)

J. Artibelli

# of Coolers/Pkgs:

1

Rush ☐Immediate Test ☐Food Residue ☐Micro ☐Food Chemistry ☐

### \*\*\* LABORATORY USE ONLY \*\*\*

Received At

Mississauga

09-Oct-24 11:57

Labeled By

PBL

Patricia Legette



C4V7216

Verified By

A8K

ENV-902

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
7	7	7	13	12	17
Drinking Water Metals Preservation Check Done (Circle)			YES	NO	

COR FCD-00383/4

Page 1 of 1



**Attention: Khalid Hussein - Twin Creeks**

RWDI Inc.  
600 Southgate Drive  
Guelph, ON  
Canada N1G 4P6

Your P.O. #: 13384122  
Your Project #: 2402553.01  
Site#: 900  
Site Location: ON07  
Your C.O.C. #: TCLF-SOIL-JAN

**Report Date: 2024/02/05**  
Report #: R8016346  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C424988**

**Received: 2024/01/25, 11:20**

Sample Matrix: Soil  
# Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Cyanide (WAD) in Leachates	1	N/A	2024/02/05	CAM SOP-00457	OMOE 3015 m
Fluoride by ISE in Leachates	1	2024/02/01	2024/02/01	CAM SOP-00449	SM 24 4500-F- C m
Total Metals in TCLP Leachate by ICPMS	1	2024/02/02	2024/02/02	CAM SOP-00447	EPA 6020B m
Moisture	1	N/A	2024/01/27	CAM SOP-00445	Carter 2nd ed 70.2 m
Nitrate& Nitrite as Nitrogen in Leachate	1	N/A	2024/02/01	CAM SOP-00440	SM 24 4500-NO3I/NO2B
PAH Compounds in Leachate by GC/MS (SIM)	1	2024/02/03	2024/02/03	CAM SOP-00318	EPA 8270E
Polychlorinated Biphenyl in Leachate	1	2024/02/02	2024/02/05	CAM SOP-00309	EPA 8082A m
TCLP - % Solids	1	2024/01/31	2024/02/01	CAM SOP-00401	EPA 1311 Update I m
TCLP - Extraction Fluid	1	N/A	2024/02/01	CAM SOP-00401	EPA 1311 Update I m
TCLP - Initial and final pH	1	N/A	2024/02/01	CAM SOP-00401	EPA 1311 Update I m
TCLP Zero Headspace Extraction	1	2024/01/31	2024/02/01	CAM SOP-00430	EPA 1311 m
VOCs in ZHE Leachates	1	2024/02/01	2024/02/01	CAM SOP-00228	EPA 8260D

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.



**Attention: Khalid Hussein - Twin Creeks**

RWDI Inc.  
600 Southgate Drive  
Guelph, ON  
Canada N1G 4P6

Your P.O. #: 13384122  
Your Project #: 2402553.01  
Site#: 900  
Site Location: ON07  
Your C.O.C. #: TCLF-SOIL-JAN

**Report Date: 2024/02/05**  
Report #: R8016346  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C424988**

**Received: 2024/01/25, 11:20**

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to:

Patricia Legette, Project Manager

Email: Patricia.Legette@bureauveritas.com

Phone# (905)817-5799

=====

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU  
VERITAS

Bureau Veritas Job #: C424988

Report Date: 2024/02/05

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JRA

### RESULTS OF ANALYSES OF SOIL

<b>Bureau Veritas ID</b>		YFE160		
<b>Sampling Date</b>		2024/01/24		
<b>COC Number</b>		TCLF-SOIL-JAN		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Charge/Prep Analysis</b>				
Amount Extracted (Wet Weight) (g)	N/A	25	N/A	9192801
<b>Inorganics</b>				
Final pH	pH	4.99		9196651
Leachable Fluoride (F-)	mg/L	<0.10	0.10	9196042
Initial pH	pH	8.32		9196651
Moisture	%	14	1.0	9186921
TCLP - % Solids	%	100	0.2	9194105
TCLP Extraction Fluid	N/A	FLUID 1		9196650
Leachable WAD Cyanide (Free)	mg/L	<0.010	0.010	9196044
Leachable Nitrite (N)	mg/L	<0.10	0.10	9196041
Leachable Nitrate (N)	mg/L	<1.0	1.0	9196041
Leachable Nitrate + Nitrite (N)	mg/L	<1.0	1.0	9196041
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				
N/A = Not Applicable				





BUREAU  
VERITAS

Bureau Veritas Job #: C424988

Report Date: 2024/02/05

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JRA

### ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

<b>Bureau Veritas ID</b>		YFE160		
<b>Sampling Date</b>		2024/01/24		
<b>COC Number</b>		TCLF-SOIL-JAN		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Metals</b>				
Leachable Arsenic (As)	mg/L	<0.2	0.2	9198035
Leachable Barium (Ba)	mg/L	<0.2	0.2	9198035
Leachable Boron (B)	mg/L	<0.1	0.1	9198035
Leachable Cadmium (Cd)	mg/L	<0.05	0.05	9198035
Leachable Chromium (Cr)	mg/L	<0.1	0.1	9198035
Leachable Lead (Pb)	mg/L	<0.1	0.1	9198035
Leachable Mercury (Hg)	mg/L	<0.001	0.001	9198035
Leachable Selenium (Se)	mg/L	<0.1	0.1	9198035
Leachable Silver (Ag)	mg/L	<0.01	0.01	9198035
Leachable Uranium (U)	mg/L	<0.01	0.01	9198035
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

Bureau Veritas Job #: C424988

Report Date: 2024/02/05

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JRA

### SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

<b>Bureau Veritas ID</b>		YFE160		
<b>Sampling Date</b>		2024/01/24		
<b>COC Number</b>		TCLF-SOIL-JAN		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Polyaromatic Hydrocarbons</b>				
Leachable Benzo(b)fluoranthene	ug/L	<0.10	0.10	9200198
Leachable Naphthalene	ug/L	<0.20	0.20	9200198
Leachable Acenaphthylene	ug/L	<0.20	0.20	9200198
Leachable Acenaphthene	ug/L	<0.20	0.20	9200198
Leachable Fluorene	ug/L	<0.20	0.20	9200198
Leachable Phenanthrene	ug/L	<0.20	0.20	9200198
Leachable Anthracene	ug/L	<0.20	0.20	9200198
Leachable Fluoranthene	ug/L	<0.20	0.20	9200198
Leachable Pyrene	ug/L	<0.20	0.20	9200198
Leachable Benzo(a)anthracene	ug/L	<0.20	0.20	9200198
Leachable Chrysene	ug/L	<0.20	0.20	9200198
Leachable Benzo(k)fluoranthene	ug/L	<0.20	0.20	9200198
Leachable Benzo(a)pyrene	ug/L	<0.10	0.10	9200198
Leachable Indeno(1,2,3-cd)pyrene	ug/L	<0.20	0.20	9200198
Leachable Dibenzo(a,h)anthracene	ug/L	<0.20	0.20	9200198
Leachable Benzo(g,h,i)perylene	ug/L	<0.20	0.20	9200198
Leachable 1-Methylnaphthalene	ug/L	<0.20	0.20	9200198
Leachable 2-Methylnaphthalene	ug/L	<0.20	0.20	9200198
<b>Surrogate Recovery (%)</b>				
Leachable D10-Anthracene	%	101		9200198
Leachable D14-Terphenyl (FS)	%	97		9200198
Leachable D8-Acenaphthylene	%	93		9200198
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

Bureau Veritas Job #: C424988

Report Date: 2024/02/05

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JRA

### VOLATILE ORGANICS BY GC/MS (SOIL)

<b>Bureau Veritas ID</b>		YFE160		
<b>Sampling Date</b>		2024/01/24		
<b>COC Number</b>		TCLF-SOIL-JAN		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Volatile Organics</b>				
Leachable Benzene	mg/L	<0.020	0.020	9195823
Leachable Carbon Tetrachloride	mg/L	<0.020	0.020	9195823
Leachable Chlorobenzene	mg/L	<0.020	0.020	9195823
Leachable Chloroform	mg/L	<0.020	0.020	9195823
Leachable 1,2-Dichlorobenzene	mg/L	<0.050	0.050	9195823
Leachable 1,4-Dichlorobenzene	mg/L	<0.050	0.050	9195823
Leachable 1,2-Dichloroethane	mg/L	<0.050	0.050	9195823
Leachable 1,1-Dichloroethylene	mg/L	<0.020	0.020	9195823
Leachable Methylene Chloride(Dichloromethane)	mg/L	<0.20	0.20	9195823
Leachable Methyl Ethyl Ketone (2-Butanone)	mg/L	<1.0	1.0	9195823
Leachable Tetrachloroethylene	mg/L	<0.020	0.020	9195823
Leachable Trichloroethylene	mg/L	<0.020	0.020	9195823
Leachable Vinyl Chloride	mg/L	<0.020	0.020	9195823
<b>Surrogate Recovery (%)</b>				
Leachable 4-Bromofluorobenzene	%	103		9195823
Leachable D4-1,2-Dichloroethane	%	112		9195823
Leachable D8-Toluene	%	85		9195823
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

Bureau Veritas Job #: C424988

Report Date: 2024/02/05

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JRA

### POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

<b>Bureau Veritas ID</b>		YFE160		
<b>Sampling Date</b>		2024/01/24		
<b>COC Number</b>		TCLF-SOIL-JAN		
	<b>UNITS</b>	<b>CONT SOIL</b>	<b>RDL</b>	<b>QC Batch</b>
<b>PCBs</b>				
Leachable Total PCB	ug/L	<3.0	3.0	9198466
<b>Surrogate Recovery (%)</b>				
Leachable Decachlorobiphenyl	%	132 (1)		9198466
RDL = Reportable Detection Limit QC Batch = Quality Control Batch (1) Surrogate recovery was above the upper control limit due to matrix interference. This may represent a high bias in some results. For results that were not detected (ND), this potential bias has no impact.				



BUREAU  
VERITAS

Bureau Veritas Job #: C424988

Report Date: 2024/02/05

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JRA

### GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.3°C
-----------	-------

Results relate only to the items tested.

BUREAU  
VERITAS

Bureau Veritas Job #: C424988

Report Date: 2024/02/05

## QUALITY ASSURANCE REPORT

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JRA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9195823	Leachable 4-Bromofluorobenzene	2024/02/01	105	70 - 130	105	70 - 130	103	%				
9195823	Leachable D4-1,2-Dichloroethane	2024/02/01	99	70 - 130	96	70 - 130	100	%				
9195823	Leachable D8-Toluene	2024/02/01	105	70 - 130	104	70 - 130	87	%				
9198466	Leachable Decachlorobiphenyl	2024/02/05	140 (4,2)	30 - 130	132 (4)	30 - 130	134 (4)	%				
9200198	Leachable D10-Anthracene	2024/02/03	104	50 - 130	104	50 - 130	100	%				
9200198	Leachable D14-Terphenyl (FS)	2024/02/03	101	50 - 130	100	50 - 130	98	%				
9200198	Leachable D8-Acenaphthylene	2024/02/03	98	50 - 130	96	50 - 130	94	%				
9186921	Moisture	2024/01/27							5.3 (1)	20		
9195823	Leachable 1,1-Dichloroethylene	2024/02/01	96	70 - 130	88	70 - 130	<0.020	mg/L	NC (1)	30		
9195823	Leachable 1,2-Dichlorobenzene	2024/02/01	93	70 - 130	90	70 - 130	<0.050	mg/L	NC (1)	30		
9195823	Leachable 1,2-Dichloroethane	2024/02/01	92	70 - 130	86	70 - 130	<0.050	mg/L	NC (1)	30		
9195823	Leachable 1,4-Dichlorobenzene	2024/02/01	106	70 - 130	102	70 - 130	<0.050	mg/L	NC (1)	30		
9195823	Leachable Benzene	2024/02/01	92	70 - 130	87	70 - 130	<0.020	mg/L	NC (1)	30		
9195823	Leachable Carbon Tetrachloride	2024/02/01	95	70 - 130	88	70 - 130	<0.020	mg/L	NC (1)	30		
9195823	Leachable Chlorobenzene	2024/02/01	101	70 - 130	97	70 - 130	<0.020	mg/L	NC (1)	30		
9195823	Leachable Chloroform	2024/02/01	100	70 - 130	94	70 - 130	<0.020	mg/L	NC (1)	30		
9195823	Leachable Methyl Ethyl Ketone (2-Butanone)	2024/02/01	102	60 - 140	98	60 - 140	<1.0	mg/L	NC (1)	30		
9195823	Leachable Methylene Chloride (Dichloromethane)	2024/02/01	96	70 - 130	92	70 - 130	<0.20	mg/L	NC (1)	30		
9195823	Leachable Tetrachloroethylene	2024/02/01	96	70 - 130	91	70 - 130	<0.020	mg/L	NC (1)	30		
9195823	Leachable Trichloroethylene	2024/02/01	97	70 - 130	94	70 - 130	<0.020	mg/L	NC (1)	30		
9195823	Leachable Vinyl Chloride	2024/02/01	85	70 - 130	83	70 - 130	<0.020	mg/L	NC (1)	30		
9196041	Leachable Nitrate (N)	2024/02/01	91 (2)	80 - 120	96	80 - 120	<1.0	mg/L	NC (3)	20	<1.0	mg/L
9196041	Leachable Nitrate + Nitrite (N)	2024/02/01	95 (2)	80 - 120	98	80 - 120	<1.0	mg/L	NC (3)	20	<1.0	mg/L
9196041	Leachable Nitrite (N)	2024/02/01	113 (2)	80 - 120	108	80 - 120	<0.10	mg/L	NC (3)	20	<0.10	mg/L
9196042	Leachable Fluoride (F-)	2024/02/01	100 (2)	80 - 120	100	80 - 120	<0.10	mg/L	NC (3)	25	<0.10	mg/L
9196044	Leachable WAD Cyanide (Free)	2024/02/05	74 (4,2)	80 - 120	105	80 - 120	<0.0020	mg/L	NC (3)	20	<0.010	mg/L
9198035	Leachable Arsenic (As)	2024/02/02	99 (2)	80 - 120	99	80 - 120	<0.2	mg/L	NC (3)	35	<0.2	mg/L
9198035	Leachable Barium (Ba)	2024/02/02	99 (2)	80 - 120	96	80 - 120	<0.2	mg/L	NC (3)	35	<0.2	mg/L
9198035	Leachable Boron (B)	2024/02/02	98 (2)	80 - 120	99	80 - 120	<0.1	mg/L	NC (3)	35	<0.1	mg/L



BUREAU  
VERITAS

Bureau Veritas Job #: C424988

Report Date: 2024/02/05

## QUALITY ASSURANCE REPORT(CONT'D)

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JRA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9198035	Leachable Cadmium (Cd)	2024/02/02	98 (2)	80 - 120	97	80 - 120	<0.05	mg/L	NC (3)	35	<0.05	mg/L
9198035	Leachable Chromium (Cr)	2024/02/02	98 (2)	80 - 120	98	80 - 120	<0.1	mg/L	NC (3)	35	<0.1	mg/L
9198035	Leachable Lead (Pb)	2024/02/02	98 (2)	80 - 120	97	80 - 120	<0.1	mg/L	NC (3)	35	<0.1	mg/L
9198035	Leachable Mercury (Hg)	2024/02/02	106 (2)	80 - 120	103	80 - 120	<0.001	mg/L	NC (3)	35	<0.001	mg/L
9198035	Leachable Selenium (Se)	2024/02/02	99 (2)	80 - 120	101	80 - 120	<0.1	mg/L	NC (3)	35	<0.1	mg/L
9198035	Leachable Silver (Ag)	2024/02/02	98 (2)	80 - 120	96	80 - 120	<0.01	mg/L	NC (3)	35	<0.01	mg/L
9198035	Leachable Uranium (U)	2024/02/02	99 (2)	80 - 120	99	80 - 120	<0.01	mg/L	NC (3)	35	<0.01	mg/L
9198466	Leachable Total PCB	2024/02/05	112 (2)	30 - 130	110	30 - 130	<3.0	ug/L	NC (3)	40		
9200198	Leachable 1-Methylnaphthalene	2024/02/03	102	50 - 130	105	50 - 130	<0.20	ug/L				
9200198	Leachable 2-Methylnaphthalene	2024/02/03	94	50 - 130	97	50 - 130	<0.20	ug/L				
9200198	Leachable Acenaphthene	2024/02/03	103	50 - 130	100	50 - 130	<0.20	ug/L				
9200198	Leachable Acenaphthylene	2024/02/03	102	50 - 130	98	50 - 130	<0.20	ug/L				
9200198	Leachable Anthracene	2024/02/03	106	50 - 130	104	50 - 130	<0.20	ug/L				
9200198	Leachable Benzo(a)anthracene	2024/02/03	110	50 - 130	109	50 - 130	<0.20	ug/L				
9200198	Leachable Benzo(a)pyrene	2024/02/03	101	50 - 130	99	50 - 130	<0.10	ug/L	NC (1)	40		
9200198	Leachable Benzo(b)fluoranthene	2024/02/03	105	50 - 130	105	50 - 130	<0.10	ug/L				
9200198	Leachable Benzo(g,h,i)perylene	2024/02/03	102	50 - 130	100	50 - 130	<0.20	ug/L				
9200198	Leachable Benzo(k)fluoranthene	2024/02/03	101	50 - 130	98	50 - 130	<0.20	ug/L				
9200198	Leachable Chrysene	2024/02/03	95	50 - 130	93	50 - 130	<0.20	ug/L				
9200198	Leachable Dibenzo(a,h)anthracene	2024/02/03	98	50 - 130	96	50 - 130	<0.20	ug/L				
9200198	Leachable Fluoranthene	2024/02/03	107	50 - 130	105	50 - 130	<0.20	ug/L				
9200198	Leachable Fluorene	2024/02/03	106	50 - 130	105	50 - 130	<0.20	ug/L				
9200198	Leachable Indeno(1,2,3-cd)pyrene	2024/02/03	102	50 - 130	100	50 - 130	<0.20	ug/L				
9200198	Leachable Naphthalene	2024/02/03	90	50 - 130	93	50 - 130	<0.20	ug/L				
9200198	Leachable Phenanthrene	2024/02/03	100	50 - 130	98	50 - 130	<0.20	ug/L				



BUREAU  
VERITAS

Bureau Veritas Job #: C424988

Report Date: 2024/02/05

## QUALITY ASSURANCE REPORT(CONT'D)

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JRA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
9200198	Leachable Pyrene	2024/02/03	105	50 - 130	103	50 - 130	<0.20	ug/L				
<p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.</p> <p>Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.</p> <p>Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.</p> <p>NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference &lt;= 2x RDL).</p> <p>(1) Duplicate Parent ID</p> <p>(2) Matrix Spike Parent ID [YFE160-01]</p> <p>(3) Duplicate Parent ID [YFE160-01]</p> <p>(4) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.</p>												





BUREAU  
VERITAS

Bureau Veritas Job #: C424988

Report Date: 2024/02/05

RWDI Inc.

Client Project #: 2402553.01

Site Location: ON07

Your P.O. #: 13384122

Sampler Initials: JRA

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist


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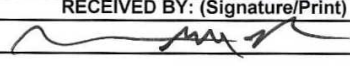
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

INVOICE INFORMATION:				REPORT INFORMATION (if differs from invoice):				PROJECT INFORMATION:				MAXXAM JOB NUMBER:	
Company Name: Waste Management of Canada Corporation				Company Name: RWDI AIR Inc.				Quotation #				<div style="border: 1px solid black; padding: 5px;"> <b>CHAIN OF CUSTODY # :</b>   <div style="border: 1px solid black; padding: 5px; text-align: center;">TCLF-SOIL-JAN</div> </div>	
Contact Name: Lisa Mertick				Contact Name: Brent Langille				P.O. #: 12285741					
Address: 5768 Nauvoo Rd, Watford, ON				Address: 4510 Rhodes Drive, Unit 530				Project #: 2402553.01					
NOM 2S0				Windsor, ON, N8W 5K5				Project Name: TCLF-SOIL-JAN					
Phone: 519-849-5810 Fax: 519-849-5811				Phone: 519-823-1311 x:2984 Fax: 519-823-1316				Location: Twin Creeks					
Email: <a href="mailto:lmertick@wm.com">lmertick@wm.com</a>				Email: <a href="mailto:Brent.Langille@RWDI.com">Brent.Langille@RWDI.com</a> , <a href="mailto:Jeffery.Cleland@RWDI.com">Jeffery.Cleland@RWDI.com</a>				Sampled By: JRA					

REGULATORY CRITERIA				ANALYSIS REQUESTED ( Please be specific ):								TURNAROUND TIME (TAT) REQUIRED:		
<p><i>Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form</i></p> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> MISA Reg. 153  <input type="checkbox"/> PWQO  <input type="checkbox"/> Reg. 558 </div> <div> <input type="checkbox"/> Table 1  <input type="checkbox"/> Table 2  <input type="checkbox"/> Table 3 </div> <div> <input type="checkbox"/> Sewer Use  <input type="checkbox"/> Sanitary  <input type="checkbox"/> Storm              Region _____ </div> <div> <input checked="" type="checkbox"/> Other              site specific              specify _____ </div> </div> <p style="text-align: right;">Report Criteria on C of A ? <input type="checkbox"/> n</p>				<div style="display: flex;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Regulated Drinking Water ? ( Y / N )</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Metals Field Filtered ? ( Y / N )</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">ON-WLF-2024 TCLS - SOIL (TCLP) QUARTERLY</div> </div>								<p><b>PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS</b></p> <p><b>Regular (Standard) TAT:</b>  <input checked="" type="checkbox"/> 5 to 7 Working Days</p> <p><b>Rush TAT:</b> Rush Confirmation # _____              (call Lab for #)</p> <p><input type="checkbox"/> 1 day <input type="checkbox"/> 2 days <input type="checkbox"/> 3 days</p> <p>DATE Required: 2-Feb-24</p> <p>TIME Required: 12:00 PM</p> <p><small>Please note that TAT for certain tests such as BOD and Dioxins/Furans are &gt; 5 days - contact your Project Manager for details.</small></p>		
<p><b>SAMPLES MUST BE KEPT COOL ( &lt; 10 °C ) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM</b></p>												<p># of Cont. COMMENTS / TAT COMMENTS</p>		
	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)										
1	CONT SOIL	24-Jan-24	AM	SOIL	N	N	X						5	
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														

  
 NONT-2024-01-1383

RELINQUISHED BY: (Signature/Print)		RECEIVED BY: (Signature/Print)		Date:	Time:	Laboratory Use Only	
JRA 24-Jan-24 / AM				2024/01/25	1120	Temperature (°C) on Receipt	Condition of Sample on Receipt
						7/17/18	<input type="checkbox"/> OK <input type="checkbox"/> SIF

\* MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS

*Handwritten signature*

White: Maxxam Yellow: Mail Pink: Client

## APPENDIX P:

### Complaint Logs



## APPENDIX P:

Table P-1 - Complaints Summary & Logs



Table P-1  
WM Twin Creeks Environmental Centre - Summary of Complaints - 2024-ECA A032203

Log	Name	Date	Time	Relationship	Type	Where	Wind Direction	Corrective Action	Response
1	Jody Jasek	2024-02-03	6:33 p.m.	Resident	Odour	Residence	N	Investigation with Ops, Gas, Residents in area did not detect	Left message
2a	Therese Copeland	2024-04-10	8:10 p.m.	Resident	Odour	Residence	ENE	Investigation with Gas, A power interruption caused a shutdown of the gas collection system, following restart the system returned to normal operations.	Left message
2b	Kevin McNeil	2024-04-10	10:03 p.m.	Resident	Odour	Transient/Residence	ENE	Investigation with Gas, A power interruption caused a shutdown of the gas collection system, following restart the system returned to normal operations.	Add info requested on power availability, could smell same odour last night
3	Kevin McNeil	2024-04-16	2:39 p.m.	Resident	Odour	Workplace	NE	Investigation, agricultural odours, light methane odour at front gate, report as timely as possible	No response at this time
4	Kevin McNeil	2024-04-30	9:39 p.m.	Resident	Odour	Residence	NE	Investigation-nothing abnormal noted	No response at this time
5	Kevin McNeil	2024-05-06	8:02 a.m.	Resident	Odour	Residence/Workplace	NE	Investigation-Ops Mgr detected at 6:15 a.m. odour to Home Hardware, went to addresses at 8:27 a.m. no odour detected	No response at this time
6	Martina Jackson	2024-05-24	8:05 a.m.	Resident	Odour	In Town	N	Investigation-Ops Mgr, Gas Tech went out did not detect in Town, could smell waste by South Slope on site and did note agricultural odours in the morning	No response at this time
7	Kevin McNeil	2024-05-30	9:08 p.m.	Resident	Odour	Residence	NW	Flare had gone down earlier in day, back up by afternoon	No response at this time
8	Martina Jackson	2024-07-25	8:15 a.m.	Resident	Odour	Residence	NE	Investigation-Gas System went offline at 8:10 a.m. back up within 30 mins.	No response at this time
9	Therese Copeland	2024-07-26	8:17 a.m.	Resident	Odour	Residence	NNE	Investigation: Mix of agricultural and some garbage odours detected on Sunset	No response at this time
10	Mark Van Lieshout	2024-08-07	7:59 a.m.	Resident	Odour	Residence	NNE	Investigation:compounding odours of Agricultural and Landfill. Typically after a long weekend waste that has been accumulated in the Transfer Stations is shipped and this waste is known to be odourous due to the length of time sitting	No response at this time
11	Bill & Linda Nugent	2024-09-14	8:21 p.m.	Resident	Odour (Transient)	Hwy. 402	ESE	Wind direction does not align with complaint	Believes it was Landfill
12	Crystal Worsfold	2024-09-16	11:21 a.m.	Resident	Odour (Transient)	Walking up Town	SSE	Wind direction does not align with complaint	Agreed on Wind Direction, apologies
13	Bill & Linda Nugent	2024-09-26	7:36 a.m.	Resident	Odour	Residence	NE	Ops Mgr went to location faint garbage as well as agricult.	Phone not working?
14	Chris Van Loon	2024-09-26	9:26 p.m.	Resident	Odour (Transient)	Multiple locations	Various	Investigation, agricultural odours in area	No response at this time
15	Lily Braet	2024-11-25	10:25 p.m.	Resident	Undulation from Flares	Residence	S	Investigation gas line installations connections create excess oxygen in the system.	Would like to speak to John as well (this did occur)

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-001
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	February 3, 2024 @ 6:33 p.m.
2. Name of Complainant	Jody Jasek
3. Address of Complainant	548 Front St.
4. Telephone Number of Complainant	519-876-3642
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour
8. Nature of complaint (details): Could smell the Landfill	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: N
11. Precipitation Type & Amount: N/A	12. Wind Speed: 4 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

## D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint.

Describe:

- Investigation into possible source of on-site odour-Operations/Gas – Nothing abnormal to generate landfill odour offsite.
- Reviewed occurrence with Operations – Gas-nothing abnormal to generate landfill odour offsite
- Flares running at full capacity
- Completed and filed relevant complaint log.
- Weather Conditions reviewed
- Investigation Notes: Reported odour was not substantiated by other residents in the area.

2. When were these actions taken (date/time): February 3, 2024 @ 6:38 p.m.

3. What measures have been employed or will be employed to prevent any future reoccurrence?

Describe:

- Continue to follow the Odour BMP

## E. FOLLOW-UP

*Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.*

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:

February 5, 2024 @  
11:40 a.m.

Who contacted the complainant (name/title): Angela McLachlan

How was the complainant contacted? Phone

Complainant Response:

Left message on machine

## F. FORM COMPLETION

Form completed by: Name:	Angela McLachlan
Title:	Environmental Compliance Manager

Date completed:	February 5, 2024
-----------------	------------------

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-002a
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	April 10, 2024 @ 8:10 p.m.
2. Name of Complainant	Therese Copeland
3. Address of Complainant	37 Sunset Avenue
4. Telephone Number of Complainant	226-886-2693
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour
8. Nature of complaint (details): Could smell the Landfill	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: ENE
11. Precipitation Type & Amount: N/A	12. Wind Speed: 5 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint.

Describe:

- Investigation into possible source of on-site odour-Operations/Gas
- A power interruption caused a shutdown of the gas collection system, following restart the system returned to normal operations
- Completed and filed relevant complaint log.
- Weather Conditions reviewed.

2. When were these actions taken (date/time): April 10, 2024 @ 8:13 p.m.

3. What measures have been employed or will be employed to prevent any future reoccurrence?

Describe:

- Continue to follow the Odour BMP

#### E. FOLLOW-UP

*Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.*

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:

April 11, 2024 @ 9:18 a.m.

Who contacted the complainant (name/title): Angela McLachlan

How was the complainant contacted? Phone

Complainant Response:

Left message on machine

#### F. FORM COMPLETION

Form completed by: Name:  
Title:

Angela McLachlan  
Environmental Compliance Manager

Date completed:

April 11, 2024

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-002b
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	April 10, 2024 @ 10:03 p.m.
2. Name of Complainant	Kevin McNeil
3. Address of Complainant	87 Michelin Ave
4. Telephone Number of Complainant	519 330 5726
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour
8. Nature of complaint (details): I was out for a walk within the town of Watford and the odour of what I would call methane gas smell was excessive I continued to observe the smell while doing yard work on my property. The smell being emitted was very offensive making it difficult to enjoy the great outdoors...	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: ENE
11. Precipitation Type & Amount: N/A	12. Wind Speed: 8 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint. Describe: <ul style="list-style-type: none"><li>Investigation into possible source of on-site odour-Operations/Gas</li><li>A power interruption caused a shutdown of the gas collection system, following restart the system returned to normal operations</li><li>Completed and filed relevant complaint log.</li><li>Weather Conditions reviewed.</li></ul>
2. When were these actions taken (date/time): April 10, 2024 @ 8:13 p.m.
3. What measures have been employed or will be employed to prevent any future reoccurrence? Describe: <ul style="list-style-type: none"><li>Continue to follow the Odour BMP</li></ul>

#### E. FOLLOW-UP

<i>Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.</i>	
Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:	April 11, 2024 @ 9:12 a.m.
Who contacted the complainant (name/title):	Angela McLachlan
How was the complainant contacted?	Email
Complainant Response:  Requested additional information on availability of power to Site  Update-04/15/24 2:11 p.m.-Can you also add to this formal complaint. That last night April 14,2024 between 7:00&8:00 pm the same odour could be smelt at my address 87 Michelin Ave Watford	

#### F. FORM COMPLETION

Form completed by: Name: Title:	Angela McLachlan Environmental Compliance Manager
Date completed:	April 15, 2024

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-003
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	April 16, 2024 @ 2:39 p.m.
2. Name of Complainant	Kevin McNeil
3. Address of Complainant	87 Michelin Ave
4. Telephone Number of Complainant	519 330 5726
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour
8. Nature of complaint (details): When arriving at work this morning 5523 Nauvoo Road Watford at approximately 7:50am the odour in the air was quite excessive. I would describe it as a methane smell. It could be smelt both outside my work and inside	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: NE
11. Precipitation Type & Amount: N/A	12. Wind Speed: 6 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

## D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint.

Describe:

- Investigation into possible source of on-site odour-Operations/Gas— Nothing abnormal to generate landfill odour offsite
- Gas System fully operational
- Completed and filed relevant complaint log.
- Weather Conditions reviewed.
- Investigation Notes: agricultural odours detected at 6:30 a.m., light methane odour at front gate of Landfill

2. When were these actions taken (date/time): April 16, 2024 @ 3:27 p.m.

3. What measures have been employed or will be employed to prevent any future reoccurrence?

Describe:

- Continue to follow the Odour BMP
- Have previously asked Complainant to attempt to report at time of occurrence

## E. FOLLOW-UP

*Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.*

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:

April 17, 2024 @ 12:58 p.m.

Who contacted the complainant (name/title): Angela McLachlan

How was the complainant contacted? Email

Complainant Response:

No Response at this time

## F. FORM COMPLETION

Form completed by: Name: Angela McLachlan  
Title: Environmental Compliance Manager

Date completed: April 17, 2024

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-004
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	April 30, 2024 @ 9:39 p.m.
2. Name of Complainant	Kevin McNeil
3. Address of Complainant	87 Michelin Ave
4. Telephone Number of Complainant	519 330 5726
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour
8. Nature of complaint (details): ,,odour at 87 Michelin Ave. Watford. I would call it a methane odour	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: NE
11. Precipitation Type & Amount: N/A	12. Wind Speed: 5 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint.

Describe:

- Investigation into possible source of on-site odour-Operations/Gas— Nothing abnormal to generate landfill odour offsite
- Gas System fully operational
- Completed and filed relevant complaint log.
- Weather Conditions reviewed.

2. When were these actions taken (date/time): May 1, 2024 @ 6:33 a.m.

3. What measures have been employed or will be employed to prevent any future reoccurrence?

Describe:

- Continue to follow the Odour BMP

#### E. FOLLOW-UP

*Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.*

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:

May 1, 2024 @ 11:31 a.m.

Who contacted the complainant (name/title): Angela McLachlan

How was the complainant contacted? Email

Complainant Response:

No Response at this time

#### F. FORM COMPLETION

Form completed by: Name:	Angela McLachlan
Title:	Environmental Compliance Manager
Date completed:	May 1, 2024

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-005
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	May 6, 2024 @ 8:02 a.m.
2. Name of Complainant	Kevin McNeil
3. Address of Complainant	87 Michelin Ave
4. Telephone Number of Complainant	519 330 5726
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour
8. Nature of complaint (details): ,,,Excessive methane smell observed at 87 Michelin Ave and 5523 Nauvoo Road Watford approximately 7:55am	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: NE
11. Precipitation Type & Amount: N/A	12. Wind Speed: 4 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint.

Describe:

- Investigation into possible source of on-site odour-Operations/Gas— Nothing abnormal to generate landfill odour offsite
- Gas System fully operational
- Completed and filed relevant complaint log.
- Weather Conditions reviewed.
- Investigation: Ops Manager detected faint odour to the Home Hardware at 6:15 a.m. went to specific addresses at 8:27 a.m. could not detect odour.

2. When were these actions taken (date/time): May 6, 2024 @ 8:12 a.m.

3. What measures have been employed or will be employed to prevent any future reoccurrence?

Describe:

- Continue to follow the Odour BMP

#### E. FOLLOW-UP

*Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.*

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:

May 7, 2024 @ 11:52 a.m.

Who contacted the complainant (name/title): Angela McLachlan

How was the complainant contacted? Email

Complainant Response:

No Response at this time

#### F. FORM COMPLETION

Form completed by: Name: Angela McLachlan  
Title: Environmental Compliance Manager

Date completed: May 7, 2024

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2023-006
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with ECA/Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	May 24, 2024 @ 8:05 a.m.
2. Name of Complainant	Martina Jackson
3. Address of Complainant	537 Gold
4. Telephone Number of Complainant	N/A
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour (Transient)
8. Nature of complaint (details): May 24 2024 8am Smell of trash all through town	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: NNE
11. Precipitation Type & Amount: N/A	12. Wind Speed: 8 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint.

Describe:

- Investigation into possible source of on-site odour-Operations – Nothing abnormal to generate landfill odour offsite.
- Reviewed occurrence with Operations - Gas – Nothing abnormal to generate landfill odour offsite.
- Completed and filed relevant complaint log.
- Weather Conditions reviewed.
- Investigation Notes: Gas Tech checked East side of Town no odour detected.
- Ops Mgr: did not detect odour in Town. There was an agricultural smell this morning. Onsite -detected waste odour on South Rd.

2. When were these actions taken (date/time): May 24, 2024 @ 8:10 a.m.

3. What measures have been employed or will be employed to prevent any future reoccurrence?

Describe:

- Continue to comply with Odour BMP

#### E. FOLLOW-UP

*Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.*

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:	May 28, 2024 @ 11:25 a.m.
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Who contacted the complainant (name/title):	Angela McLachlan/Envtl Compl Mgr.
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How was the complainant contacted?	Email
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Complainant Response:  
No Response at this time.

#### F. FORM COMPLETION

Form completed by: Name:	Angela McLachlan
Title:	Environmental Compliance Manager

Date completed:	May 28, 2024
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**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-007
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	May 30, 2024 @ 9:08 p.m.
2. Name of Complainant	Kevin McNeil
3. Address of Complainant	87 Michelin Ave
4. Telephone Number of Complainant	519 330 5726
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour
8. Nature of complaint (details): ,,,...A very foul odour that smells like methane could be detected at 87 Michelin Ave Watford starting at approximately 8:45 pm....	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: NW
11. Precipitation Type & Amount: N/A	12. Wind Speed: 8 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint.

Describe:

- Investigation into possible source of odour-Operations/Gas
- Gas System fully operational at time of complaint
- Investigation Notes: Flares were down earlier in day for maintenance work, back up by afternoon.
- Completed and filed relevant complaint log.
- Weather Conditions reviewed.

2. When were these actions taken (date/time): May 31, 2024 @ 6:28 a.m.

3. What measures have been employed or will be employed to prevent any future reoccurrence?

Describe:

- Continue to follow the Odour BMP

#### E. FOLLOW-UP

*Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.*

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:

June 4, 2024 @ 1:33 p.m.

Who contacted the complainant (name/title): Angela McLachlan

How was the complainant contacted? Email

Complainant Response:

No Response at this time

#### F. FORM COMPLETION

Form completed by: Name: Angela McLachlan  
Title: Environmental Compliance Manager

Date completed: June 4, 2024

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-008
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with ECA/Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	July 25, 2024 @ 8:18 a.m.
2. Name of Complainant	Martina Jackson
3. Address of Complainant	537 Gold
4. Telephone Number of Complainant	N/A
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour
8. Nature of complaint (details): Smell of garbage July 25 2024 8:15am 537 Gold Street and all over town	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: NE
11. Precipitation Type & Amount: N/A	12. Wind Speed: 7 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

c) Is the suppression system dispatched on Site?

☐ Yes ☒ No

#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint.

Describe:

- Investigation into possible source of on-site odour-Operations – Nothing abnormal to generate landfill odour offsite.
- Reviewed occurrence with Operations - Gas – System went offline approx. 8:10 a.m. was back on within approx. 30 mins.
- Completed and filed relevant complaint log.
- Weather Conditions reviewed.

2. When were these actions taken (date/time): July 25, 2024 @ 8:32 a.m.

3. What measures have been employed or will be employed to prevent any future reoccurrence?

Describe:

- Continue to comply with Odour BMP

#### E. FOLLOW-UP

*Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.*

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:	July 25, 2024 @ 8:53 a.m.
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Who contacted the complainant (name/title):	Angela McLachlan/Env'tal Compl Mgr.
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How was the complainant contacted?	Email
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Complainant Response:  
No Response at this time.

#### F. FORM COMPLETION

Form completed by: Name:	Angela McLachlan
Title:	Environmental Compliance Manager

Date completed:	August 6, 2024
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**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-009
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	July 26, 2024 @ 8:17 a.m.
2. Name of Complainant	Therese Copeland
3. Address of Complainant	37 Sunset Avenue
4. Telephone Number of Complainant	226-886-2693
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour
8. Nature of complaint (details): Could smell the Landfill	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: NNE
11. Precipitation Type & Amount: N/A	12. Wind Speed: 3 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



## D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint.

Describe:

- Investigation into possible source of on-site odour-Operations/Gas
- Weather Conditions reviewed
- Completed and filed relevant log
- Investigation Notes: Gas Tech: at 6:55 a.m. drove through Town, no odours detected until across from Graveyard. 8:55 a.m. took a drive to Sunset, detected slight garbage smell, but overpowered by agricultural odours. No garbage odours east of Sunset.
- Operations Manager – drove to Town at 8:55 a.m. did not detect odours, could smell Gas at the Gate. Detected agricultural odours from Nauvoo to Tractor dealership

2. When were these actions taken (date/time): July 26, 2024 @ 8:25 a.m.

3. What measures have been employed or will be employed to prevent any future reoccurrence?

Describe:

- Continue to follow the Odour BMP

## E. FOLLOW-UP

*Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.*

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:

August 2, 2024 @ 11:31 a.m.

Who contacted the complainant (name/title): Angela McLachlan

How was the complainant contacted? Phone

Complainant Response:

Left message on machine.

## F. FORM COMPLETION

Form completed by: Name:	Angela McLachlan
Title:	Environmental Compliance Manager
Date completed:	August 6, 2024

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-010
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	August 7, 2024 @ 7:59 a.m.
2. Name of Complainant	Mark Lieshout
3. Address of Complainant	7711Confederation Line
4. Telephone Number of Complainant	519-464-8602
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour
8. Nature of complaint (details): Could smell the Landfill	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: NNE
11. Precipitation Type & Amount: N/A	12. Wind Speed: 9 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint.

Describe:

- Investigation into possible source of on-site odour-Operations/Gas— Nothing abnormal to generate landfill odour offsite.
- Weather Conditions reviewed
- Completed and filed relevant log
- Investigation Notes: compounding odours of Agricultural and Landfill. Typically after a long weekend waste that has been accumulated in the Transfer Stations is shipped and this waste is known to be odourous due to the length of time sitting.

2. When were these actions taken (date/time): August 7, 2024 @ 8:07 a.m.

3. What measures have been employed or will be employed to prevent any future reoccurrence?

Describe:

- Continue to follow the Odour BMP

#### E. FOLLOW-UP

*Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.*

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:	August 13, 2024 @ 10:40 a.m.
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Who contacted the complainant (name/title):	Angela McLachlan
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How was the complainant contacted?	Email
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Complainant Response:

#### F. FORM COMPLETION

Form completed by: Name: Title:	Angela McLachlan Environmental Compliance Manager
Date completed:	August 13, 2024

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-011
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with ECA/Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	September 14, 2024 @ 8:21 p.m.
2. Name of Complainant	Linda Nugent
3. Address of Complainant	618 Huron St.
4. Telephone Number of Complainant	519-494-4401
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour (Transient)
8. Nature of complaint (details): Was driving down the 402 and could smell the Landfill	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: ESE
11. Precipitation Type & Amount: N/A	12. Wind Speed: 8 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatch on site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint.

Describe:

- Investigation into possible source of on-site odour-Operations/Gas – Nothing abnormal to generate landfill odour offsite.
- Completed and filed relevant complaint log.
- Weather Conditions reviewed
- Investigation Notes: There were some very strong agricultural odours in the area Saturday and Sunday, wind direction does not align

2. When were these actions taken (date/time): September 14, 2024 @ 8:33 p.m.

3. What measures have been employed or will be employed to prevent any future reoccurrence?

Describe:

- Not Landfill related

#### E. FOLLOW-UP

*Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.*

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:

September 16, 2024 @ 12:10 p.m.

Who contacted the complainant (name/title): AMcLachlan

How was the complainant contacted? Phone

Complainant Response:

Believes it was the Landfill as when drove by it was the same smell.

#### F. FORM COMPLETION

Form completed by: Name: Title:	Angela McLachlan Environmental Compliance Manager
Date completed:	September 16, 2024

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-012
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	September 16, 2024 @ 11:21 a.m.
2. Name of Complainant	Crystal Worsfold
3. Address of Complainant	555 Front St.
4. Telephone Number of Complainant	519-384-1218
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour (Transient)
8. Nature of complaint (details): I live on the south side of Watford and while walking up town there is a distinct dump order	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: SSE
11. Precipitation Type & Amount: N/A	12. Wind Speed: 15 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint. Describe: <ul style="list-style-type: none"><li>Investigation into possible source of on-site odour-Operations/Gas – Nothing abnormal to generate landfill odour offsite.</li><li>Landfill was operational at the time</li><li>Completed and filed relevant complaint log.</li><li>Weather Conditions reviewed</li><li>Investigation Notes: Wind does not align with complaint time and direction, strong agricultural odours in Town noted by Gas Tech and Ops Manager</li></ul>
2. When were these actions taken (date/time): September 16, 2024 @ 11:26 a.m.
3. What measures have been employed or will be employed to prevent any future reoccurrence? Describe: <ul style="list-style-type: none"><li>not Landfill related</li></ul>

#### E. FOLLOW-UP

<i>Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.</i>	
Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:	September 16, 2024 @ 12:06 p.m.
Who contacted the complainant (name/title):	Angela McLachlan
How was the complainant contacted?	Email
Complainant Response: Thanks Angela! I guess just a poopy day. Gary just walked home and confirmed the wind is from the south. My mistake	

#### F. FORM COMPLETION

Form completed by: Name: Title:	Angela McLachlan Environmental Compliance Manager
Date completed:	September 16, 2024

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-013
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	September 26, 2024 @ 7:39 a.m.
2. Name of Complainant	Bill Nugent
3. Address of Complainant	618 Huron St.
4. Telephone Number of Complainant	519-808-1957
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour
8. Nature of complaint (details): When steps outside can smell the Landfill	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: NE
11. Precipitation Type & Amount: N/A	12. Wind Speed: 4 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint.

Describe:

- Investigation into possible source of on-site odour-Operations/Gas – Nothing abnormal to generate landfill odour offsite.
- Landfill was operational at the time
- Completed and filed relevant complaint log.
- Weather Conditions reviewed
- Investigation Notes: Ops Manager went by address at 8:14 a.m., really faint garbage smell, faint smell of agricultural odour as well
- 8: 47 a.m. strong manure smell at the Landfill started

2. When were these actions taken (date/time): September 26, 2024 @ 7:46 a.m.

3. What measures have been employed or will be employed to prevent any future reoccurrence?

Describe:

- Continue to follow the BMP

#### E. FOLLOW-UP

*Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.*

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:

September 30, 2024 @ 11:35 a.m.

Who contacted the complainant (name/title): Angela McLachlan

How was the complainant contacted? Phone

Complainant Response:

No answer, phone did not seem to be working, could not leave message

#### F. FORM COMPLETION

Form completed by: Name: Angela McLachlan  
Title: Environmental Compliance Manager

Date completed: September 30, 2024

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-014
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	September 26, 2024 @ 9:26 p.m.
2. Name of Complainant	Chris Van Loon
3. Address of Complainant	8597 Confederation Line
4. Telephone Number of Complainant	519-709-3818
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Odour (Transient)
8. Nature of complaint (details): Smell of garbage...throughout multiple stops in Watford from 4 to 9 p.m.	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: Various (N-NW-NE)
11. Precipitation Type & Amount: N/A	12. Wind Speed: Various (4-10kmh)

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint. Describe: <ul style="list-style-type: none"><li>• Investigation into possible source of on-site odour-Operations/Gas – Nothing abnormal to generate landfill odour offsite.</li><li>• Completed and filed relevant complaint log.</li><li>• Weather Conditions reviewed</li><li>• Strong agricultural odours in the area</li></ul>
2. When were these actions taken (date/time): September 27, 2024 @ 7:31 a.m.
3. What measures have been employed or will be employed to prevent any future reoccurrence? Describe: <ul style="list-style-type: none"><li>• continue to follow the BMP</li></ul>

#### E. FOLLOW-UP

<i>Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.</i>	
Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:	September 30, 2024 @ 11:44 a.m.
Who contacted the complainant (name/title):	Angela McLachlan
How was the complainant contacted?	Email
Complainant Response:  No response at this time	

#### F. FORM COMPLETION

Form completed by: Name: Title:	Angela McLachlan Environmental Compliance Manager
Date completed:	September 30, 2024

**COMPLAINT LOG (FO-02)****A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):	2024-015
Certificate of Approval/Permit Number for site: (If none, go to Section B)	A032203
Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):	
a) Retained on site	<input checked="" type="checkbox"/>
b) Submitted to the Environment Ministry	<input checked="" type="checkbox"/>
c) Summarized for inclusion in a Report (monthly, quarterly, annual)	<input checked="" type="checkbox"/>
<i>Note: it is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.</i>	

**B. SUMMARY**

1. Date and Time of Complaint	November 25, 2024 @ 10:25 p.m.
2. Name of Complainant	Lily Braet
3. Address of Complainant	8255 Zion Line
4. Telephone Number of Complainant	519-464-8958
5. Relationship of Complainant	Resident
6. Employee receiving complaint (name):	Angela McLachlan
7. Type of complaint	Undulations
8. Nature of complaint (details): ....experiencing vibrations outside the home..the window panes are vibrating	
9. Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10. Wind Direction: S
11. Precipitation Type & Amount: N/A	12. Wind Speed: 10 kmh

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc): N/A	
3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected: N/A	
4. Where the complaint was for odours, was:	
a) The suppression system operational?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b) Is the odour caused by a specific operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c) Is the suppression system dispatched on Site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

#### D. CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint. Describe: <ul style="list-style-type: none"><li>• Completed and filed relevant complaint log.</li><li>• Investigated Flare activity</li></ul>
2. When were these actions taken (date/time): November 26, 2024 @ 7:15 a.m.
3. What measures have been employed or will be employed to prevent any future reoccurrence? Describe: <ul style="list-style-type: none"><li>• Gas line installation reschedule to make final connections in the morning to ensure trapped oxygen can be purged from the system before being sent to flare.</li></ul>

#### E. FOLLOW-UP

<i>Note: where complainant contact information is provided, all complainants must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.</i>	
Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures:	November 26, 2024 @ 9:00 a.m.
Who contacted the complainant (name/title):	Angela McLachlan/John McDonald
How was the complainant contacted?	Telephone
Complainant Response:	

#### F. FORM COMPLETION

Form completed by: Name: Title:	Angela McLachlan Environmental Compliance Manager
Date completed:	November 29, 2024

# APPENDIX Q:

## Annual Operations Report



# APPENDIX Q:

## 2024 Annual Operations Report



## 2024 ANNUAL OPERATIONS REPORT: PER CONDITION 15.7 OF WASTE ECA NO. A032203

RWDI AIR Inc.  
Consulting Engineers & Scientists  
4510 Rhodes Drive – Suite 530  
Windsor Ontario Canada N8W 5K5  
T: 519.974.7384  
F: 519.823.1316





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This Annual Operations Report for the 2024 reporting year for the Waste Management of Canada Corporation's (WM) Twin Creeks Environmental Centre (Site) is submitted as part of Volumes 1 and 2 of the 2024 Fourth Quarter and Annual Monitoring Report (2024 Annual Report) and in accordance with the regulatory approvals noted below.

- Amended Environmental Compliance Approval (ECA) No. A032203, dated December 16, 2023 (Waste ECA).
- Amended ECA for Industrial Sewage Works No. 8117-CUSNXX, dated April 29, 2024 (Sewage ECA). It is noted that up to April 28, 2024, WM was required to conform to Amended ECA for Industrial Sewage Works No. 2403-BE6LZ4, dated August 21, 2019.
- Amended ECA for Air No. 6318-CX4NFX, dated December 13, 2023 (Air ECA).
- Permit-To-Take-Water (PTTW) No. 4682-BLJRYJ, dated November 8, 2021, for the removal of surface water from four (4) Sedimentation Ponds and the dewatering of the Secondary Drainage Layer (SDL) for the Expansion Landfill.

## Q1. ECA NO. A032203

The following subsections address the annual reporting requirements per Condition 15.7 of the Waste ECA.

### Q.1.1 Condition 15.7(a)

Leachate, groundwater, surface water, and subsurface landfill gas monitoring results for 2024 are discussed in detail in Sections 1 to 5 of Volume 1 of the 2024 Annual Report. No subsurface landfill gas migration was observed in 2024. Ambient air quality monitoring that was completed is discussed in detail within Volume 4 of the 2024 Annual Report. Noise monitoring was also completed and is discussed within Volume 5 of the 2024 Annual Report.

### Q.1.2 Condition 15.7(b)

The existing and constructed engineered facilities on the Site during 2024 were generally effective in their respective functions. An assessment of the operation and performance of the engineered facilities of the Existing and Expansion Landfills, with respect to leachate elevations and leachate management is provided in Section 4.1 of Volume 1 of the 2024 Annual Report. Changes to the designs of the existing engineered facilities on the Site or the implementation of remedial measures are not warranted. The implementation of contingency measures was not required in 2024.

Design specifications are provided under Items 66 to 68 in Schedule A of the Waste ECA, namely, the report titled *"Development and Operations Plans – Warwick Landfill Expansion (Volumes 1 to 3)"*, as prepared by Henderson Paddon & Associates and dated March 2008 (D&O Report).

### Q.1.3 Condition 15.7(c)

The expanded Poplar System was operational from May 1 to October 11, 2024. Per the Waste ECA, the last approved day to apply irrigation liquid to the Poplar System is October 15. During 2024, approximately 10,374.55 m<sup>3</sup> of leachate was applied to the expanded Poplar System. Monitoring of the Poplar System in 2024 included the required routine monitoring requirements, in consideration of the operational dates of the system. Details are presented in the Volume 3 of the 2024 Annual Report.



#### Q.1.4 Condition 15.7(d)

Per Condition 8.6(1) of the Waste ECA, the on-Site leachate treatment facility was not constructed or operated in 2024.

#### Q.1.5 Condition 15.7(e)

A detailed Site Contour Plan, as prepared by WSP Canada Inc., was updated to December 2024 and is presented as Figure Q-1 of Volume 2 of the 2024 Annual Report (WSP Canada Inc. Drawing No. CA0034510.2576 - D2024).

#### Q.1.6 Condition 15.7(f)

During 2024, landfilling of waste and contaminated soil occurred in Cells 3 and 5 (above Cells 1, 2, and 4) as well as in Cell 6A/6B.

#### Q.1.7 Condition 15.7(g)

During 2025, it is anticipated that landfilling of waste is planned to continue to occur in Cells 3 and 5 (above Cells 1, 2, and 4) as well as in Cell 6A/6B. Upon completion of the landfill liner system of Cell 6C, it is anticipated that landfilling of waste is also planned to occur in Cell 6C in late 2025. Contaminated soil is anticipated to be disposed in the active portions of the Expansion Landfill. Contaminated soil may also be disposed in Cell 12 of the Existing Landfill, if a large enough demand for disposal of contaminated soil is required. Cell 12 is currently on idle status. Of note, contaminated soil must meet the 10% toxicity characteristic leachate procedure (TCLP) criteria for acceptable disposal into Cell 12. Contaminated soil used for daily cover is only used where precipitation runoff would not be directed to a surface water drainage course (i.e. an outside sideslope).

#### Q.1.8 Condition 15.7(h)

During 2024, a portion of the Cell 6C pre-excavation activities related to the future construction of the Cell 6C landfill liner system of the Expansion Landfill was initiated.

#### Q.1.9 Condition 15.7(i)

Cover placement activities during 2024 consisted of intermediate cover placement on portions of the southern, eastern, and western sideslopes of Cell 3, as well as on portions of the northern, eastern, and western sideslopes of Cell 5. Portions of Cells 3 and 5 also had interim cover placed on the relative "flat-top".

#### Q.1.10 Condition 15.7(j)

There are no pre-existing Site facilities of significance to report.

#### Q.1.11 Condition 15.7(k)

Completed facilities/infrastructure at Twin Creeks Environmental Centre during 2024 consisted of the following.

- Select stages of the expansion of the horizontal gas extraction system in Cell 3 and Cell 5.
- Cell 6B landfill liner system of the Expansion Landfill.



- A portion of the Cell 6C pre-excavation activities related to the future construction of the Cell 6C landfill liner system.

## Q.1.12 Condition 15.7(l)

Planned Site construction activities in 2025 are anticipated to consist of the following.

- Select stages of the expansion of the horizontal gas extraction system in Cell 3, Cell 5 and Cell 6A/6B.
- Select stages of the expansion of the vertical gas extraction system in Cell 6A/6B.
- The remaining portion of Cell 6C pre-excavation activities related to the future construction of the Cell 6C landfill liner system.
- Cell 6C landfill liner system of the Expansion Landfill.
- Potential resurfacing of select internal paved roads.
- Continued construction of the Renewable Natural Gas (RNG) Facility and associated additional two (2) landfill gas flares.
- Leachate Equalization Tank #2 and associated upgrades to existing pumping station PS10.

There are no surface water stations scheduled to be constructed or established during the 2025 monitoring period.

## Q.1.13 Condition 15.7(m)

Based on the quarterly GPS surveys conducted by WSP Canada Inc. (Owen Sound, ON) for the Site, the total volume of waste and daily cover material consumed within the Expansion Landfill during the survey period from November 30, 2023, to November 27, 2024, was approximately 1,419,770 cubic metres (m<sup>3</sup>). This represents approximately 5.4% of the total approved air space volume available for the Existing and Expansion Landfills combined (Existing Landfill: 2,917,371 m<sup>3</sup> + Expansion Landfill: 23,590,629 m<sup>3</sup>).

## Q.1.14 Condition 15.7(n)

Based on GPS survey data collected at the Site on November 27, 2024, the total volume of waste plus daily cover consumed of the Expansion Landfill represents 14,774,681 m<sup>3</sup>. It is noted that at approximately 15% cover material, this actual waste volume is approximately 12,558,479 m<sup>3</sup>. The total tonnage of waste received at Expansion Landfill to November 27, 2024, was approximately 13,472,739 T. For calculating the remaining Site Life for the Twin Creeks Environmental Centre, the waste represents a density of 1,073 kg/m<sup>3</sup> (13,472,739 T / 12,558,479 m<sup>3</sup> = 1.073 T/m<sup>3</sup>).

As of November 27, 2024, a total of 17,692,052 m<sup>3</sup> (Existing Landfill: 2,917,371 m<sup>3</sup> + Expansion Landfill: 14,774,681 m<sup>3</sup>) of air space (without final cap) was consumed of the 26,508,000 m<sup>3</sup> of available air space (without final cap). Therefore, 8,815,948 m<sup>3</sup> is remaining for waste disposal. This calculates that the remaining total approved air space volume available for waste filling is 33.3% of the permitted volume (Existing and Expansion Landfills combined).

Assuming WM will landfill the full amount of the approved 1,400,000 T of waste per year and achieve a waste density of 1,073 kg/m<sup>3</sup>, for a resultant volume consumption of 1,304,996 m<sup>3</sup> per year of the remaining airspace of 8,815,948 m<sup>3</sup>, then the remaining landfill Site Life is approximately 7 years as calculated below.

$$\text{Site Life} = \frac{\text{remaining air space}}{\text{waste volume per year}} = \frac{8,815,948 \text{ m}^3}{1,304,996 \text{ m}^3/\text{yr}} = 6.8 \text{ years}$$

### Q.1.15 Condition 15.7(o)

Between January 1 and December 31, 2024, a total of 78,533.71 m<sup>3</sup> of leachate was managed, of which 68,159.16 m<sup>3</sup> of leachate was removed and transported off-Site for treatment and disposal at the Chatham Water Pollution Control Plant and the Valicor Environmental Services plant in Michigan, while 10,374.55 m<sup>3</sup> was irrigated onto the Poplar system during the 2024 growing season. Details regarding the 2024 Poplar System irrigation activities are discussed in Volume 3 of the 2024 Annual Report.

Of the 78,533.71 m<sup>3</sup> noted above, the approximate breakdown of leachate source location between the Existing Landfill and the Expansion Landfill is 23% (17,766.29 m<sup>3</sup>) and 77% (60,767.42 m<sup>3</sup>), respectively. This breakdown is based on the leachate source distribution which incorporates the separate approximate volumes of leachate extracted from the Existing Landfill (37.5% of area) and Expansion Landfill (62.5% of area).

Leachate treatment management considered either off-site disposal of stronger strength leachate (i.e. Expansion Landfill leachate) or storage of weaker strength leachate (i.e. Existing Landfill leachate) for use as irrigation liquid to the Poplar System during the 2024 growing season.

A breakdown of the leachate volume treated in 2024 is presented in Section 4.1.3 of Volume 1 of the 2024 Annual Report.

### Q.1.16 Condition 15.7(p)

Detailed in Table Q-1 of Volume 2 of the 2024 Annual Report are the weekly summaries and total annual waste disposed at the Site during 2024. Original commodity reports are maintained on file. The maximum daily tonnage received at the Site during 2024 was on August 13<sup>th</sup> at 8,815.09 tonnes (T). In 2024, the total amount of waste received at the Site was 1,399,385.65 T, of which 138,322.64 T was contaminated soil and 1,397.45 T was waste from the Township of Warwick public drop off bins.

### Q.1.17 Condition 15.7(q)

Where complaints were received during the 2024 monitoring period, Waste Management completed the required steps in response. This included logging the complaint, completing the appropriate investigation into the potential source of the complaint, any required corrective action or mitigation and complainant follow up, as well as filling a formal complaint log (Complaint Log). The Complaint Log includes the above noted steps and is distributed to the MECP and other relevant stakeholders. The relevant Complaint Logs are detailed in Appendix P of Volume 2 of the 2024 Annual Report.

In 2024, WM received a total of 16 odour complaints. Of the complaints received, they represented a total of 15 complaint driven odour events which occurred on 14 separate days. Of these odour events, 12 were documented from discrete physical locations such as a residence or commercial building. The other three (3) odour events represented transient (driving or walking) occurrences in which the complainant observed an odour while driving or walking in different areas (e.g. in town in Watford or near Highway 402). Two (2) of the odour complaints were observed to not be downwind of the Site, and therefore were likely a result of off-site source(s).



## Q.1.18 Condition 15.7(r)

The operational problems that were observed during the 2024 monitoring period are noted below.

- The Sump's pump failure and repair, as noted in Section 4.1.1 of Volume 1 of the 2024 Annual Report.
- The PS7 electrical communications failures and repairs, as noted Section 4.1.2 of Volume 1 of the 2024 Annual Report.
- Infrequent occurrences of temporary power outages, some of which would require the LFG flare system to be re-activated. WM would quickly respond to the power outages, to restore power and re-active the LFG flare system as necessary.
- Although not an operational problem with respect to waste disposal, it is noted that a localized fire within the wastemound occurred on July 13 and August 4, 2024. During these events, the MECP was notified each time and the fire was put out each time by the additional of water via the fire department and then WM smothering the affected area with clayey soil material.

## Q.1.19 Condition 15.7(s)

Financial assurances have been provided to the Ministry of the Environment, Conservation and Parks (MECP) Director, as required. Details are maintained on file with WM and the MECP. Per Condition 2.1 of the amended Waste ECA dated December 16, 2023, WM provided financial assurance in a form acceptable to the MECP Director, which by March 31, 2024, was in the amount of \$39,434,722.00.

## Q.1.20 Condition 15.7(t)

Each monitoring well on-Site complies with Ontario Regulation 903. Monitoring wells are labeled, capped, encased in a steel protective casing, and locked. Monitoring wells near vehicle access routes are also marked with 4" X 4" wooden protective/warning posts, which are painted yellow. Monitoring wells were generally noted to be in good condition during the 2024 monitoring period.

It is noted that the groundwater quality at monitoring well OW69-5 at the Site continued to show elevated boron concentrations in 2024. The boron concentrations are interpreted to be an early indication of the bentonite seal moving into the screened interval of the monitoring well. A similar trend of periodic infrequent spikes in boron concentrations is evident at OW46-7, which is also likely a result of bentonite moving into the filter pack of the monitoring well. It is likely that, similar to observations for monitoring well OW58-14, the bentonite seal for these locations is likely moving into the filter screen material of the monitoring well, and as such may require decommissioning and replacement in the future depending on chemical results.

The 2024 monitoring well and gas probe installation/decommissioning status summary is provided in Appendix M of Volume 2 of the 2024 Annual Report. For monitoring wells that were active in 2024, the borehole logs are presented in Appendix D and monitoring well construction details are summarized in Table F-1, Appendix F, of Volume 2 of the 2024 Annual Report.

## Q.1.21 Condition 15.7(u)

Additional information was requested from WM by the MECP local office. The submitted information is summarized below.

- An email response from WM with supporting information in follow up to the MECP's review of the TSS Evaluation Letter, dated December 23, 2023.
  - Email response to the MECP that provided the supporting documentation, submitted on March 13, 2024.



- An email response from WM with supporting information in follow up to the MECP's review of the Leachate Off-Site Disposal Notification, dated June 13, 2024, requesting approval to dispose of leachate generated at the Twin Creeks Environmental centre at Valicor Environmental Services, LLC (Valicor) located at 27140 Princeton Avenue, in Inkster, Michigan.
  - Email response to the MECP that provided the supporting documentation, submitted on June 21, 2024.
- An email response from WM regarding the action items outlined in MECP site inspection, dated October 9, 2024.
  - Email response to the MECP with actions taken by WM to address observations (1) and (2), submitted on October 15, 2024.
  - Email response to the MECP with actions taken by WM to address observation (3), submitted on October 24, 2024.

## Q.1.22 Condition 15.7(v)

The Site was operated from January 1 to December 31, 2024, in conformance with the regulatory approvals noted below.

- Amended Environmental Compliance Approval (ECA) No. A032203, dated December 16, 2023 (Waste ECA).
- Amended ECA for Industrial Sewage Works No. 8117-CUSNXX, dated April 29, 2024 (Sewage ECA). It is noted that up to April 28, 2024, WM was required to conform to Amended ECA for Industrial Sewage Works No. 2403-BE6LZ4, dated August 21, 2019.
- Amended ECA for Air No. 6318-CX4NFX, dated December 13, 2023 (Air ECA).
- Permit-To-Take-Water (PTTW) No. 4682-BLJRYJ, dated November 8, 2021, for the removal of surface water from four (4) Sedimentation Ponds and the dewatering of the Secondary Drainage Layer (SDL) for the Expansion Landfill.

## Q.1.23 Condition 15.7(w)

Inspections at the Site were conducted by WM and/or RWDI in 2024 in accordance with Conditions 6.17, 6.31, 6.32, 7.11, 8.7, 9.1, 9.2, 9.3, and 9.6 of the Waste ECA. Where action items were required, they were addressed by WM. Inspections of the watercourses during each precipitation monitoring event (typically after  $\geq 10$  mm of rain in a 24-hr period between 08:00 and 08:00 hrs) were completed by RWDI and indicated acceptable conditions. Except as discussed above in Section Q.1.20, where relevant, monitoring wells and maintenance holes were in acceptable condition. Findings from the MECP semi-annual Inspection Report from October 1, 2023 to February 29, 2024, and the monthly Inspection Reports for March through November 2024, are summarized in Appendix N of Volume 2 of the 2024 Annual Report. It is noted that the monthly MECP inspection summary reports are scheduled to be provided by the MECP to WM the following end of each month when possible.

## Q.1.24 Condition 15.7(x)

During 2024, WM collected 12.62 T of recyclable material as summarized in the following table. The material consisted of recyclable goods such as paper, cardboard, metal, glass, and plastics.





Month	Total Metric Tonnes
January	2.21
February	0.18
March	0.90
April	0.22
May	0.77
June	0.91
July	0.89
August	0.33
September	0.71
October	1.25
November	2.11
December	2.14
Total	12.62

WM also actively uses recycled products on-Site where possible, including crushed building materials for aggregate road base for internal haul roads within the waste disposal cells. No compost material was received, processed, or used at the Site during 2024.

### Q.1.25 Condition 15.7(y)

No changes in operations, equipment, or procedures were implemented at the Site during 2024 as a result of corrective actions. The relevant requirements of the Waste, Air, and Sewage ECA's, as well as the PTTW, were satisfied in 2024.

### Q.1.26 Condition 15.7(z)

No recommended changes are proposed for the operations of the Site in 2025, with the exception of the implementation of the infrastructure noted in Section Q.1.12

## Q.2 AMENDED AIR ENVIRONMENTAL COMPLIANCE APPROVAL NO. 6318-CX4NFX

Although the flare became operational on November 18, 2009, the flare was unable to run for more than 4 consecutive months until February 2010, due to the limited gas volume generated from the Existing Landfill. The Expansion Landfill was connected to the landfill gas extraction, collection, and flaring system (Gas Facility) in 2012, with horizontal wells that had been installed in Cell 1A – Stage 1 in 2011. Further horizontals were installed and connected in 2012. Additionally, the horizontal gas collection system – Elevation A, within Cell 1B – Stage 1 and 2 was installed in 2013. During 2013 through 2024 the early vertical gas extraction wells were installed progressively through Cell 2A through 4C, with Cell 2A through 4C connected to the landfill gas extraction system.



In 2015 and 2017 vertical gas extraction wells were installed in Cell 1, with these wells connected to the landfill gas extraction system. In late 2017 the landfill gas utilization project for redirecting landfill gas to the neighbouring farm for use in its greenhouse operations was completed. Outlined in the following subsections is a summary of the annual performance reporting per the Amended Air ECA No. 6318-CX4NFX, dated December 13, 2023.

## Q.2.1 Conditions 1.1 to 1.2

The Equipment, that is operational, was operated by trained WM personnel in accordance with the Flare Operation Manual. The Flare Operation Manual is maintained at the Gas Facility for reference. Flare operation records are maintained on file by WM.

As the leachate treatment facility was not required to be constructed at the Site per the Waste ECA (Notice No.6, dated April 4, 2014), no operation and maintenance was required for 2024.

Construction of the RNG Plant was not completed in 2024. As such, the RNG Plant and associated Equipment was not operational in 2024.

## Q.2.2 Conditions 2.1 to 2.2

Construction of the RNG Plant was not completed in 2024. As such, the RNG Plant and associated Thermal Oxidizers were not operational in 2024.

## Q.2.3 Conditions 3.1 to 3.4

The constructed Enclosed Flares, when operational, were operated at greater than 875°C at a point representing a minimum retention time of 0.7 seconds. Documentation is maintained on file by WM.

Construction of the RNG Plant was not completed in 2024. As such, the RNG Plant Enclosed Flares were not operational in 2024.

## Q.2.4 Condition 4.1

As the leachate treatment facility was not required to be constructed at the Site per the Waste ECA (Notice No.6, dated April 4, 2014), no source testing for the leachate treatment facility was required for 2024.

## Q.2.5 Condition 5.1

The Best Management Practices Plan (Dust) for the Site was utilized by WM for its operations during 2024. The Dust Inspection and Dispatch Log for each event as filled out by WM are maintained on file.

Details of the Ambient Air Quality Monitoring Program for the Site are presented within Volume 4 of the 2024 Annual Report.

## Q.2.6 Condition 6.1

Odour control is achieved through the Best Management Practices Plan (Odour). The Odour Control Plan was implemented at the Site during 2024. Additionally, an odour suppression system is available to manage refuse odours during normal operating procedures as identified by WM.

Further explanation of odour as it relates to the Ambient Air Quality Monitoring Program for the Site is presented within Volume 4 of the 2024 Annual Report.



## Q.2.7 Condition 7.1

Required records are maintained by WM for a minimum of two (2) years. Records are maintained on-Site or are presented in previous years quarterly and annual reports for the Air Quality and Noise Monitoring Programs.

## Q.2.8 Conditions 8.1

No complaints were received by WM during 2024 related to the Facility.

## Q.2.9 Conditions 9.1

An application to amend the Air ECA for the Site was not required to be submitted to the MECP in 2024.

## Q.2.11 Conditions 10

Noise emissions from the Gas Facility are detailed in Volume 5 of the 2024 Annual Report and generally comply with the limits set in MECP Publication NPC-300.

# Q.3 PERMIT TO TAKE WATER NO. 4682-BLJRYJ

Reporting of 2024 water takings is required to be completed for Sedimentation Ponds 1 to 4 and the SDL per PTTW No. 4682-BLJRYJ, dated November 8, 2021. The water taking information collated for 2024 is submitted electronically to the Water Taking Registry System (WTRS) by March 31 following each calendar period. In 2024, water that was taken from the aforementioned ponds was used mainly for dust control for the RNG Facility construction activities and roadway watering for landfill operations. The water taking volumes in 2024 at the Site satisfied the PTTW requirements and are summarized in Section 11 of Volume 1 of the 2024 Annual Report.

# Q.4 EAA MONITORING AND ANNUAL REPORTING

In accordance with the Notice of Approval to Proceed with the Undertaking, dated January 15, 2007, in regard to the Environmental Assessment Act (EAA) approval of the Twin Creeks (formerly Warwick) Landfill Expansion, WM provides the following information.

## Q.4.1 Condition 5

The landfill site was operated from January 1 to December 31, 2024, in conformance with the regulatory documents noted below.

- Amended Environmental Compliance Approval (ECA) No. A032203, dated December 16, 2023 (Waste ECA).
- Amended ECA for Industrial Sewage Works No. 8117-CUSNXX, dated April 29, 2024 (Sewage ECA). It is noted that up to April 28, 2024, WM was required to conform to Amended ECA for Industrial Sewage Works No. 2403-BE6LZ4, dated August 21, 2019.
- Amended ECA for Air No. 6318-CX4NFX, dated December 13, 2023 (Air ECA).
- Permit-To-Take-Water (PTTW) No. 4682-BLJRYJ, dated November 8, 2021, for the removal of surface water from four (4) Sedimentation Ponds and the dewatering of the Secondary Drainage Layer (SDL) for the Expansion Landfill.



## Q.4.2 Condition 6

WM maintains copies of annual reports and associated documentation of compliance monitoring activities at the Site.

## Q.4.3 Condition 7

Table Q-2 of this report and Volume 2 of the 2024 Annual Report provides a summary of the status of mitigation measures under commitment by WM as detailed in Discussion Paper No. 8, dated September 2005. Tables Q-3 and Q-4 of Volume 2 of the 2024 Annual Report indicate the status of the monitoring measures and contingency measures referred to in Exhibits 7-1 and 7-2, respectively, of the EA dated September 2005. Therefore, Conditions 5, 6, and 7 of the Site EA were satisfied for the 2024 reporting period.

## FIGURES





LEGEND — EXISTING :

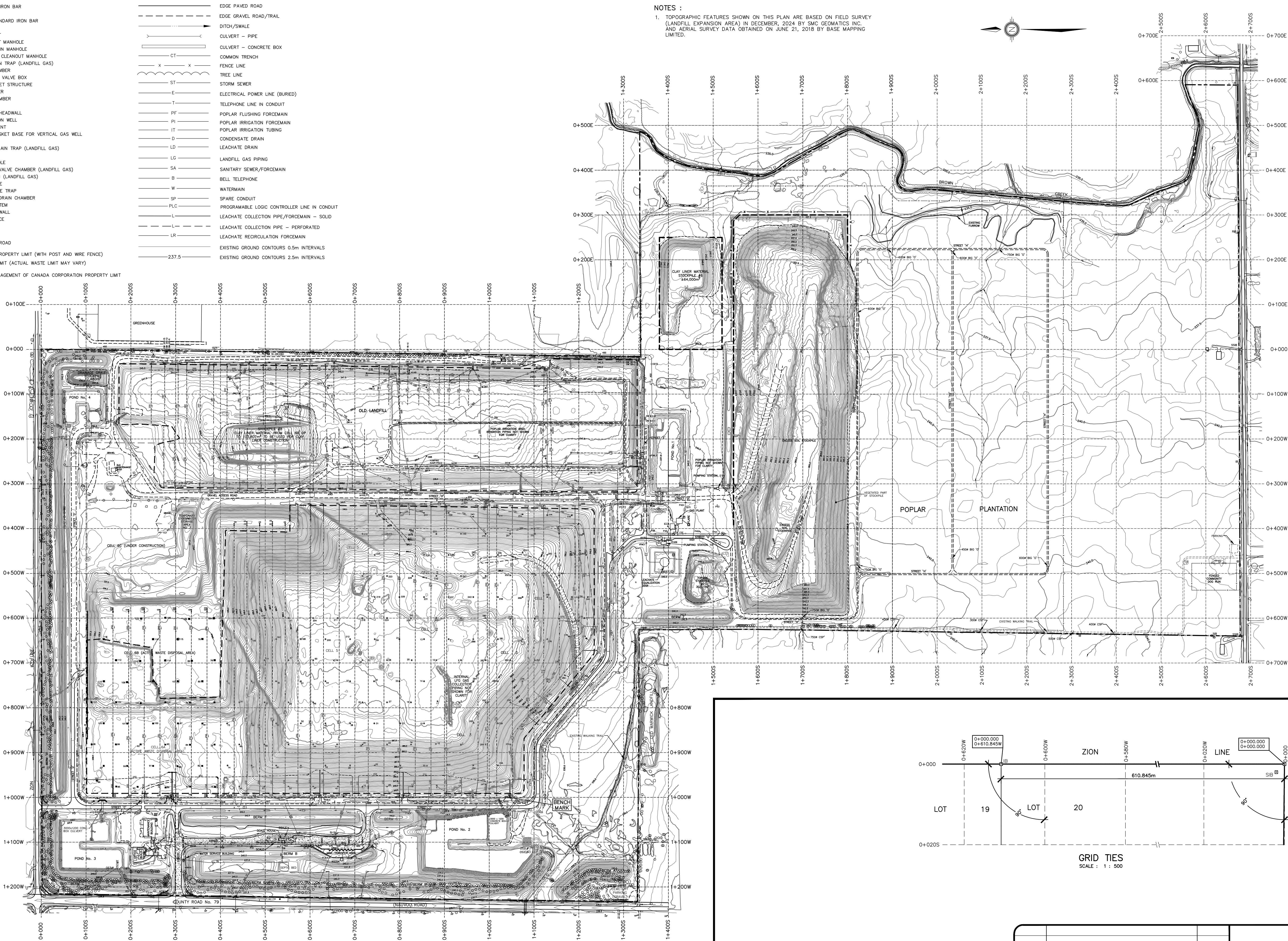
(APPLICABLE TO 1:750 SCALE DRAWINGS)

- SIB  
□ SIB  
□ SSB  
□ MH18  
□ DI-5  
□ DIMH1  
□ CBM12  
□ COMH4  
□ PDI#1  
□ DC5  
□ OS3#1  
□ AS2  
□ VC3  
□ HH4  
□ OSW-12  
□ FH  
□ 100  
□ GW4/12  
□ SDT4  
□ CO  
□ AP  
□ IVC01  
□ BD1  
□ HP/PQ1  
□ CD13  
□ DC16  
□ UN  
RTW
- STANDARD IRON BAR  
IRON BAR  
SHORT STANDARD IRON BAR  
MANHOLE  
DITCH INLET  
DITCH INLET MANHOLE  
CATCH BASIN MANHOLE  
FORCEMAIN CLEANOUT MANHOLE  
PUMP DRAIN TRAP (LANDFILL GAS)  
DRAIN CHAMBER  
VALVE AND VALVE BOX  
POND OUTLET STRUCTURE  
AIR SAMPLER  
VALVE CHAMBER  
HANDHOLE  
CONCRETE HEADWALL  
OBSERVATION WELL  
FIRE HYDRANT  
GABION BASKET BASE FOR VERTICAL GAS WELL  
GAS WELL  
GRAVITY DRAIN TRAP (LANDFILL GAS)  
CLEANOUT  
ANCHOR POLE  
ISOLATION VALVE CHAMBER (LANDFILL GAS)  
BLOW DOWN (LANDFILL GAS)  
HYDRO POLE  
CONDENSATE TRAP  
LEACHATE DRAIN CHAMBER  
UNKNOWN ITEM  
RETAINING WALL  
LITTER FENCE  
RIP RAP  
CONCRETE ROAD
- LANDFILL PROPERTY LIMIT (WITH POST AND WIRE FENCE)  
LANDFILL LIMIT (ACTUAL WASTE LIMIT MAY VARY)  
WASTE MANAGEMENT OF CANADA CORPORATION PROPERTY LIMIT

- EDGE PAVED ROAD  
EDGE GRAVEL ROAD/TRAIL  
DITCH/SWALE  
CULVERT — PIPE  
CULVERT — CONCRETE BOX  
COMMON TRENCH  
FENCE LINE  
TREE LINE  
STORM SEWER  
ELECTRICAL POWER LINE (BURIED)  
TELEPHONE LINE IN CONDUIT  
POPLAR FLUSHING FORCEMAIN  
POPLAR IRRIGATION FORCEMAIN  
POPLAR IRRIGATION TUBING  
CONDENSATE DRAIN  
LEACHATE DRAIN  
LANDFILL GAS PIPING  
SANITARY SEWER/FORCEMAIN  
BELL TELEPHONE  
WATERMAIN  
SPARE CONDUIT  
PROGRAMMABLE LOGIC CONTROLLER LINE IN CONDUIT  
LEACHATE COLLECTION PIPE/FORCEMAIN — SOLID  
LEACHATE COLLECTION PIPE — PERFORATED  
LEACHATE RECIRCULATION FORCEMAIN  
EXISTING GROUND CONTOURS 0.5m INTERVALS  
EXISTING GROUND CONTOURS 2.5m INTERVALS

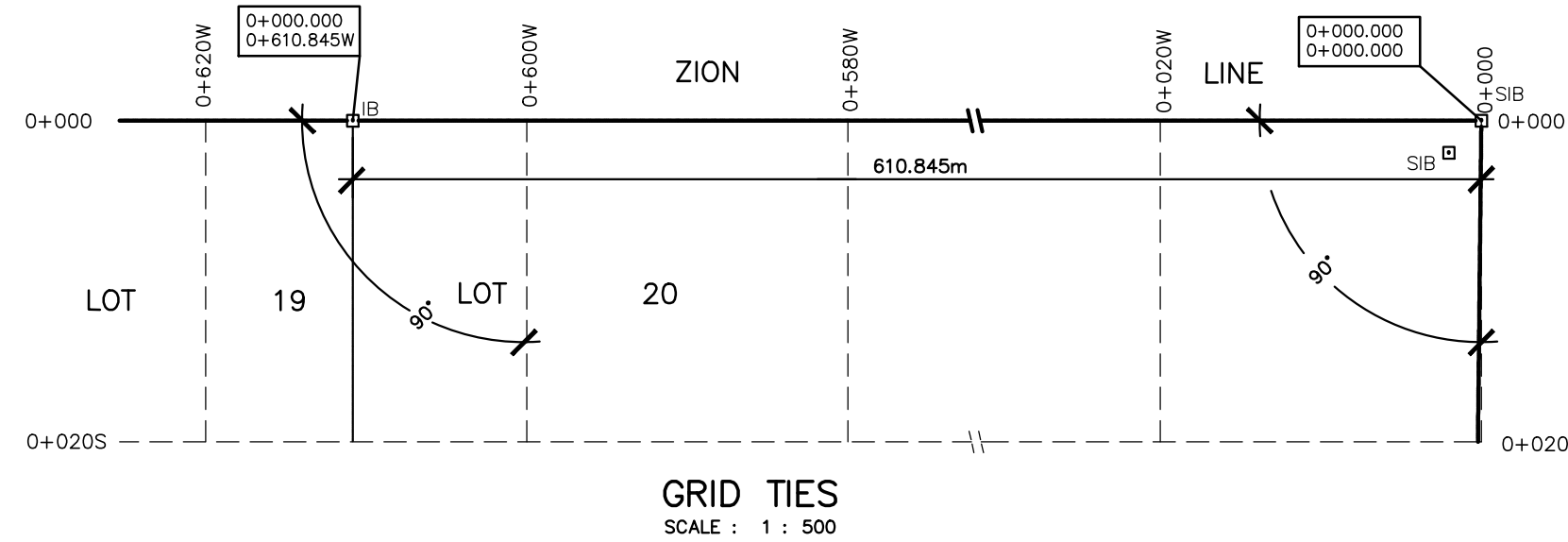
NOTES :

1. TOPOGRAPHIC FEATURES SHOWN ON THIS PLAN ARE BASED ON FIELD SURVEY (LANDFILL EXPANSION AREA) IN DECEMBER, 2024 BY SMC GEOMATICS INC. AND AERIAL SURVEY DATA OBTAINED ON JUNE 21, 2018 BY BAYE MAPPING LIMITED.



SCALE : 1:4000  
0 100 200 300m

B.M. ELEV. 235.571  
CUT CROSS ON TOP OF VFM2 — CONTROL POINT #108  
AT GRID POINT 1+046.18S, 0+999.75W



DATE	DESCRIPTION	C.O.R
01/15/25		
	REVISION / ISSUE	

Seal not valid unless signed & dated

DECEMBER 2024  
EXISTING CONDITIONS PLAN

TWIN CREEKS ENVIRONMENTAL CENTRE  
WARWICK TOWNSHIP

DWN BY: W S  
CHK BY: C O R  
DATE: JANUARY 2025  
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.  
DRAWING NO. CA0034510.2576 - D2024

DRAWING

801

WSP

55 KING STREET, SUITE 700  
ST CATHARINES (ONTARIO) CANADA L2R 3H5  
TEL.: 905-687-1771 | WWW.WSP.COM



# TABLES



**Table Q-1**  
**Weekly Waste Tonnage - Twin Creeks Environmental Centre**

**Calendar Year 2024**

Week Start		Week End		Total Metric (tonnes)	MSW (tonnes)	Contaminated Soil	Warwick Residents (tonnes)
January	1	January	7	19,480.61	19,453.92	0.00	26.69
January	8	January	14	22,213.78	22,194.24	0.00	19.54
January	15	January	21	19,453.52	19,433.70	0.00	19.82
January	22	January	28	23,273.58	22,693.74	557.57	22.27
January	29	January	31	14,766.54	14,742.46	0.00	24.08
February	1	February	4	9,895.27	9,748.38	146.89	0.00
February	5	February	11	24,729.86	23,574.87	1,129.99	25.00
February	12	February	18	21,670.00	21,299.21	348.83	21.96
February	19	February	25	18,367.09	18,344.63	0.00	22.46
February	26	February	29	18,337.62	18,314.92	0.00	22.70
March	1	March	3	4,832.75	4,832.75	0.00	0.00
March	4	March	10	24,247.21	23,533.21	690.01	23.99
March	11	March	17	22,497.52	22,474.04	0.00	23.48
March	18	March	24	24,541.03	24,518.41	0.00	22.62
March	25	March	31	19,108.33	19,010.53	72.88	24.92
April	1	April	7	23,091.94	23,062.76	0.00	29.18
April	8	April	14	25,319.99	25,294.11	0.00	25.88
April	15	April	21	27,675.41	26,782.41	862.26	30.74
April	22	April	28	26,026.69	25,838.03	161.32	27.34
April	29	April	30	9,859.09	9,856.29	0.00	2.80
May	1	May	5	15,530.13	15,500.69	0.00	29.44
May	6	May	12	26,426.90	26,399.54	0.00	27.36
May	13	May	19	27,686.10	26,944.64	707.42	34.04
May	20	May	26	22,709.73	22,516.71	163.91	29.11
May	27	May	31	26,338.36	26,308.46	0.00	29.90
June	1	June	2	1,097.92	1,097.92	0.00	0.00
June	3	June	9	31,675.76	27,843.47	3,801.95	30.34
June	10	June	16	39,913.65	26,718.52	13,172.50	22.63
June	17	June	23	36,968.86	25,902.37	11,042.15	24.34
June	24	June	30	34,675.01	25,286.50	9,362.04	26.47
July	1	July	7	33,777.18	24,402.00	9,346.36	28.82
July	8	July	14	34,668.16	26,956.08	7,682.36	29.72
July	15	July	21	29,283.22	23,394.66	5,857.45	31.11
July	22	July	28	38,476.01	27,541.58	10,904.64	29.79
July	29	July	31	21,309.46	14,622.64	6,670.23	16.59
August	1	August	4	14,933.59	10,865.40	4,058.02	10.17
August	5	August	11	31,934.13	22,611.44	9,292.12	30.57
August	12	August	18	41,211.86	28,347.62	12,844.62	19.62
August	19	August	25	35,269.77	24,701.01	10,534.29	34.47
August	26	August	31	35,302.53	24,723.76	10,554.34	24.43
September	1	September	8	24,233.74	21,410.13	2,794.50	29.11
September	9	September	15	25,253.00	24,887.53	336.13	29.34
September	16	September	22	25,246.77	23,168.56	2,052.39	25.82
September	23	September	29	24,214.15	23,522.97	664.34	26.84
September	30	September	30	4,114.64	4,111.50	0.00	3.14
October	1	October	6	19,609.25	19,212.01	373.36	23.88
October	7	October	13	25,380.29	25,031.14	324.84	24.31
October	14	October	20	20,597.32	20,572.41	0.00	24.91
October	21	October	27	25,986.53	25,184.54	786.87	15.12
October	28	October	31	19,485.18	19,088.03	372.45	24.70
November	1	November	3	5,599.05	5,599.05	0.00	0.00
November	4	November	10	24,045.11	23,995.95	0.00	49.16
November	11	November	17	23,091.63	23,065.79	0.00	25.84
November	18	November	24	23,585.59	23,548.82	0.00	36.77
November	25	November	30	23,571.19	23,550.03	0.00	21.16
December	1	December	8	23,080.48	23,057.01	0.00	23.47
December	9	December	15	28,934.51	28,264.12	643.93	26.46
December	16	December	22	30,999.40	30,964.97	0.00	34.43
December	23	December	29	16,072.75	16,037.66	9.68	25.41
December	30	December	31	9,106.36	9,103.17	0.00	3.19
<b>Totals</b>				<b>1,399,385.65</b>	<b>1,261,063.01</b>	<b>138,322.64</b>	<b>1,397.45</b>

Note: Total tonnes is sum of MSW and Contaminated Soil. The Warwick Resident tonnage is already accounted in the MSW value.



**Table Q-2**  
**Mitigation, Monitoring, and Contingency Summary**

Discipline	Mitigation, Monitoring, and Contingency Measure	Comments
<b>Air Quality:</b> <i>Dust</i>	<b>Design and Operation</b>	
	► Increase the watering during dry conditions.	Completed as required
	► Applying material such as encrusting agents to exposed areas (areas without vegetation) to reduce the amount of material that might erode during high wind events (greater than 6.0 m/s).	Completed as required
	► For areas frequently disturbed (for example the daily cover area), apply water or an encrusting agent. The exposed areas should only be moistened. Over watering will increase the leachate production on-site.	Completed as required
	► Post an on-site speed limit of 15 km/h to minimize the amount of dust that becomes airborne from fast vehicle movements.	Completed
	► Use on-site tire clean methods to reduce silt carried by trucks onto internal and external haul routes.	Road finishing reduces tracking. Regular road cleaning
	► Sweeping/washing of roads on external and internal haul routes and paving of road shoulders along key sections of the external route.	Completed as required
	► During heavy construction periods consider increased mitigation efforts such as additional watering of haul routes and exposed areas, use of meteorological information to define appropriate conditions for construction, possible night or winter construction, additional berms around construction areas, sealing of surfaces in areas infrequently disturbed.	Completed as required
	► Construct additional screening berms along the haul route. Placing a berm along the internal haul route should act as a wind block to reduce the effects of the wind on vehicles travelling along the internal haul routes.	Completed
	► Consider providing adverse weather areas for construction and landfilling. The defined area should be landfilled or worked only during high wind events. The area should be located in a position that would supply adequate screening to reduce the wind effects from vehicle travel and materials being handled at the working face. Each expansion phase should allow for an inclement weather area, low-level area. These areas would be at lower elevations, sheltered from north and west winds.	Completed as required
	► Minimize exposed areas.	On-going operations procedure
	<b>Other Measures</b>	
	► Create a complaint log including a list of all dust complaints, dates and times that dust emissions were problematic, the location of the complaint, dominant wind direction and on-site activities that may have caused the complaint.	Completed
	► Install an on-site meteorological station. A meteorological station can be used to provide wind data to validate complaints. This station could help minimize future complaints by relating events to on-site activities and concurrent meteorological conditions.	Completed
	► Prepare a dust mitigation plan outlining all of the dust mitigation and monitoring recommendations.	Completed
	<b>Monitoring</b>	
	► Monitor off-site particulate concentrations, particularly the PM10 and PM2.5 fractions.	Completed per AQMP
	► The monitoring station should also be equipped to measure meteorological parameters such as wind speed and wind direction. This will help determine the impact related to on-site and external haul route activities. The station may also be used to validate the predicted concentrations and determine the relative conservatism within the modeling.	Completed per AQMP

Note: Table based on Appendix D of Discussion Paper #8, dated September 2005.

**Table Q-2**  
**Mitigation, Monitoring, and Contingency Summary**

Discipline	Mitigation, Monitoring, and Contingency Measure	Comments
<b>Air Quality:</b> <i>Vehicle Emissions</i>	<b>Design and Operation</b>	
	No mitigation measures are required.	
	<b>Additional Measures</b>	
	▶ While mitigation is unnecessary, the following good practices may be considered.	
	▪ Minimize the amount of time vehicles are allowed to idle when on-site.	On-going operations procedure
	▪ Process trucks through the scale house as quickly as possible in order to reduce the number of vehicles that are queuing and on-site.	On-going operations procedure
<b>Air Quality:</b> <i>Landfill Gas</i>	<b>Design and Operation</b>	
	▶ A thick soil cap of 2.0 m (including final cover), as provided in Draft DP#6 Site Characteristics, will provide excellent control of landfill gas emissions.	On-going operations procedure
	<b>Monitoring</b>	
	▶ Regularly inspect the covered landfill areas (existing and future landfill areas) to identify any fissures, cracks or erosion of the soil cover that would allow unmitigated landfill gas to escape directly to the atmosphere. This inspection could be undertaken with the use of a handheld portable flame ionization detector (FID) capable of measuring methane in small quantities.	On-going operations procedure
	▶ An annual monitoring program for volatile organic compounds at the property line during the worst-case, summer conditions.	Completed
<b>Air Quality:</b> <i>Combustion</i>  <i>Emissions Landfill Gas Flare</i>	<b>Design and Operation</b>	
	▶ Although, maximum predicted concentrations from the flare emissions were predicted to be below provincial limits and AAQCs, the following are recommended to maintain the system and minimize emissions.	
	Install a flame out indicator with an automatic shut-off to prevent landfill gas from flowing through the collection system during an upset condition. This control system would minimize potential adverse effects associated with a flare out situation.	Completed
	Progressively install the landfill gas collection system as the working face expands into new areas. This strategy could minimize odour problems and reduce the amount of landfill gas escaping from the landfill.	On-going operations procedure
<b>Air Quality:</b> <i>Odour</i>	<b>Design and Operation</b>	
	▶ Cap completed cells as quickly as possible with final soil to minimize odorous emissions from the landfilled gas.	On-going operations procedure
	▶ Conduct regular inspections of the covered fill areas to identify any fissures, cracks or erosion of the soil cover that would allow landfill gases to escape.	On-going operations procedure
	▶ Progressively expand and activate the landfill gas collection and flaring system to minimize the amount of odorous landfill gas that escapes through the mound.	On-going operations procedure
	▶ Maintain the leachate collection systems, including all manholes and clean outs, under negative pressure to minimize the amount of odorous leachate gases that escape through the system.	Completed as required.

Note: Table based on Appendix D of Discussion Paper #8, dated September 2005.

**Table Q-2**  
**Mitigation, Monitoring, and Contingency Summary**

Discipline	Mitigation, Monitoring, and Contingency Measure	Comments
Air Quality: Odour (Cont'd)	<b>Monitoring</b>	
	<ul style="list-style-type: none"> <li>▶ Develop a monitoring plan, which may include: <ul style="list-style-type: none"> <li>▪ outlining landfill cover inspection intervals.</li> <li>▪ methods of recording odour complaints.</li> <li>▪ log of mitigation work completed.</li> </ul> </li> </ul>	Completed
	<ul style="list-style-type: none"> <li>▶ Develop a reporting system for odour complaints, and relate odour events to local meteorological conditions at the site. This system would allow WM to track and potentially validate odour complaints from the public. This strategy could assist in determining the source of odours and expedite mitigation.</li> </ul>	Completed
Air Quality: Blowing Litter	<b>Design and Operation</b>	
	<ul style="list-style-type: none"> <li>▶ Recommended components of Litter Management Plan for consideration:</li> </ul>	
	<ul style="list-style-type: none"> <li>▶ Install portable litter fences that can be moved around the working face area to capture blowing litter on a day-to-day basis.</li> </ul>	Completed
	<ul style="list-style-type: none"> <li>▶ Install permanent litter fences, downwind of the new proposed phases to capture the blowing litter for the predominant wind directions.</li> </ul>	Completed
	<ul style="list-style-type: none"> <li>▶ Routinely monitor and retrieve blowing litter around the site. This will help to minimize the amount of litter than may leave the site if not captured by the portable or permanent litter fences.</li> </ul>	On-going operations procedure
Agriculture	<ul style="list-style-type: none"> <li>▶ Create an inclement weather area. This area should be designed as an inclement weather area and landfill only during high wind events. The area should be in locations where adequate screening would reduce the effects of the wind on blowing litter at the working face. Each expansion phase should allow for an inclement weather area, low-level area, to be considered.</li> </ul>	On-going operations procedure
	<b>Design and Operations</b>	
	<ul style="list-style-type: none"> <li>▶ During design phase of road alterations, consider agricultural traffic moving along the shoulders of the roadway, avoiding design features that affect this equipment travel.</li> </ul>	Completed
	<b>Monitoring</b>	
	<ul style="list-style-type: none"> <li>▶ Monitor groundwater, wells and surface water for leachate contamination, on an on-going basis.</li> </ul>	On-going
	<ul style="list-style-type: none"> <li>▶ Provide a monitoring program to identify and remove litter from neighbouring farm fields, including a spring and later summer pickup coinciding with most active farm operations.</li> </ul>	On-going operations procedure
	<b>Contingency</b>	
Archaeology and Heritage	<ul style="list-style-type: none"> <li>▶ Any changes in surface water, quality or quantity affecting livestock can be mitigated by providing alternative water sources. This could involve the provision of new wells.</li> </ul>	Will be implemented if required
	<ul style="list-style-type: none"> <li>▶ Any tile drainage impacts or disruption of drainage outlets can be mitigated by installation of new drainage works.</li> </ul>	Will be implemented if required
	<b>Design and Operations</b>	
Archaeology and Heritage	<b>Archealogy</b>	
	<ul style="list-style-type: none"> <li>▶ Conduct Stage 3 assessment on seven identified sites prior to start of construction. Appropriate mitigation measures must be evaluated and recommended in response to the results of that investigation.</li> </ul>	Completed

Note: Table based on Appendix D of Discussion Paper #8, dated September 2005.

**Table Q-2**  
**Mitigation, Monitoring, and Contingency Summary**

Discipline	Mitigation, Monitoring, and Contingency Measure	Comments
<b>Economics:</b> <i>Community Economics: Impact</i>	<b>Other Measures</b>	
	▶ Property Value Protection Program.	Completed
	▶ Community Information Programs.	On-going
	▶ Develop Financing Model to assure municipality that increased municipal costs will be covered.	Completed
	▶ Continued and expanded use of local suppliers.	On-going
	▶ Support new business that would compliment landfill operation.	On-going
	▶ Provide financial support to local charities/community organizations.	On-going
<b>Hydrogeology</b>	<b>Design and Operations</b>	
	▶ None required beyond the mitigation built into site design components.	Completed
	<b>Monitoring and Contingency</b>	
	▶ Pumping of Secondary Drainage Layer with treatment of water prior to disposal.	Completed as required
<b>Landfill Gas: Explosive Hazard</b>	▶ A full Environmental Monitoring and Contingency Plan will be prepared.	Completed
	<b>Design and Operations</b>	
	▶ Install methane detectors in every on-site building.	Completed as required
	▶ Equip foundations of on-site buildings with passive LFG venting systems.	Completed as construction progresses
	▶ Equip all on-site manholes with appropriate explosive hazard signage.	Completed as construction progresses
	<b>Monitoring</b>	
	▶ Install landfill gas monitoring probes at landfill boundary.	Installations completed per EMP landfill expansion progress
	▶ Regular monitoring program for LFG probes; predetermined methane level would trigger further mitigation activities.	On-going
	<b>Contingency</b>	
	▶ A full inspection and monitoring plan will be prepared.	Completed
<b>Land Use Planning</b>	<b>Design and Operations</b>	
	▶ None required.	
	<b>Other Measures</b>	
	▶ Modify Warwick Official Plan to reflect Provincial land use standards for landfills.	Completed
	▶ Develop a Site Plan Agreement between WM and the Township of Warwick to implement mitigation requirements for any potential impacts of the expansion, and thus guide its development and phasing. The agreement is registered on title and would provide the framework for mitigation measures required during the operating life of the landfill. Revise Zoning Bylaws to be consistent with the agreement.	Completed

Note: Table based on Appendix D of Discussion Paper #8, dated September 2005.

**Table Q-2**  
**Mitigation, Monitoring, and Contingency Summary**

Discipline	Mitigation, Monitoring, and Contingency Measure	Comments
Natural Environment and Resources	<b>Design and Operation</b>	
	▶ Mitigate all stream crossings to maintain baseline flow and down channel characteristics.	Completed as required
	▶ Store treated effluent in a lagoon, discharge to surface water on seasonal and flow-weighted basis so that effluent volume will not exceed 20% of stream flow during periods of discharge, and discharge volume will not exceed channel capacity.	Not Applicable - No discharge of leachate or treated leachate to surface water will occur.
	▶ Use standard procedures for management of erosion and sediment to prevent significant alteration to aquatic environment.	Completed
	▶ Provide additional planting and naturalization on the southern part of the landfill when closed.	To be completed - Poplar System
	▶ Undertake potential for rehabilitation/enhancement riparian work on Brown Creek.	On-going
	▶ Consider options for final use that allow portions of the site to be naturalized or allowed to succeed naturally, or periodically (i.e., once annually or biannually) mowed.	Dog park constructed within south east portion of land in 2013. Public trail enhanced in 2016, 2017, and 2022.
	▶ Provide long-term plan to replant forest with native locally indigenous trees and shrubs when the southern part of proposed landfill is closed. Consider initiating this replanting in Phase 5 when the south face has reached its maximum extent.	To be completed
	▶ Plant native locally indigenous species on the berms.	Completed
	▶ Consider the potential for sedimentation ponds to provide habitat for amphibians, water birds, etc.	Completed
	▶ Transplant any False Mermaid-weed and Spotted St. Johns Wort that occur in the proposed landfill footprint, into suitable habitat in the forest area to be protected.	Completed
	▶ Develop a litter management program to minimize garbage blowing into the retained woodlots.	On-going operations procedure
	▶ At the time when the portion of woodlot is removed, salvage useable trees for use as fuel wood.	Completed
	<b>Monitoring</b>	
	▶ Leachate monitoring program to determine any effects on water quality in Bear Creek.	Not Applicable - No discharge of leachate or treated leachate to surface water will occur.
	<b>Contingency</b>	
	▶ If required, additional treatment of leachate prior to release to surface water can be achieved through aeration of lagoon waters.	Not Applicable - No discharge of leachate or treated leachate to surface water will occur.
	▶ Further reduction in potential effects can be achieved with higher dilution (6:1); will require a larger storage lagoon for treated leachate.	Not Applicable - No discharge of leachate or treated leachate to surface water will occur.
	▶ Appropriate spills management protocols to minimize effects of waste, chemical or leachate spills.	On-going operations procedure

Note: Table based on Appendix D of Discussion Paper #8, dated September 2005.

**Table Q-2**  
**Mitigation, Monitoring, and Contingency Summary**

Discipline	Mitigation, Monitoring, and Contingency Measure	Comments
Noise	<b>Design and Operation</b>	
	▶ Erect a perimeter berm or acoustically equivalent barrier of some form around the site as shown on Figure 8-1-ALT 2 (Noise Impact Assessment) at the earliest feasible time in the landfill preparation stage. It should remain in place throughout the life of the landfill.	Completed
	▶ Provide a working berm around the area where landfilling is in progress as shown in each Phase figure and Figure 4 (Noise Impact Assessment).	On-going as landfill expands
	▶ When landfilling in phases 1, 10 and 11 provide maximum feasible barrier effect to protect the closest receptors. In those phases landfilling should start where shown on Figure 8-1-ALT 2, Figure 8-10-ALT 2 and Figure 8-11-ALT 2 and move in the direction specified (Noise Impact Assessment).	On-going
	▶ Noise emission levels from landfilling equipment should not exceed the levels in Table 8-1 (Noise Assessment).	On-going operations procedure.
	▶ Locate site and acoustically shield all wood chipping, tire shredding and crushing of concrete and asphalt so that those operations will not produce noise impacts in excess of the levels predicted.	On-going
	▶ Provide queuing area inside the premises behind a berm, so truck heaters or air conditioners can run without noise impact while waiting.	Completed
	<b>Other Measures</b>	
	▶ Limit any equipment activity, such as removing daily cover to prepare for landfilling or placing daily cover after landfilling during night-time hours, as specified in the Noise Assessment Report. In Phase 11, limit waste receipt times such that no equipment activities at the working face are required during night-time hours.	On-going operations procedure
	▶ Subject any proposed changes to the operating plan or noise sources to review of acoustic implications by an acoustical engineer.	On-going
	▶ Selection of back-up warnings should include the objective of minimal noise impact that is commensurate with safety. If beepers are used it is recommended that they be installed down low to ensure maximum barrier attenuation at distant receptors, and selection of models at the low end of the noise emission range should be considered.	On-going operations procedure
	▶ Consider prohibiting use of engine brakes in specified zones.	Completed
	▶ Implement a maintenance program to ensure minimal unnecessary noise - squeals, bangs, rattles, exhaust -- from vehicles and machinery and from broken road surfaces.	On-going operations procedure
	▶ Provide noise reduction measures where there are predicted exceedances of interior noise guidelines due to increase in traffic; particularly residences along CR79 north of Zion Line. Combined baseline and landfill traffic indicates need for air conditioning and possibly acoustic insulation for closest residences and forced air recommended for residences up to 100 m from road.	To be completed as required

Note: Table based on Appendix D of Discussion Paper #8, dated September 2005.

**Table Q-2**  
**Mitigation, Monitoring, and Contingency Summary**

Discipline	Mitigation, Monitoring, and Contingency Measure	Comments
Social	<b>Impact Management Recommendations:</b>	
	► Property Value Protection Program.	Completed
	► Nuisance compensation payments.	Completed
	► Other nuisance impact measures such as window washing.	Completed as required
	► Community Impact Management Measures such as: ▪ support of economic activity in adjacent Industrial Park. ▪ royalty payment. ▪ complaints/dispute resolution/small claims compensation process.	Part of Community Commitment Agreement (CCA)
	► Monitoring and Community Information Programs.	On-going
	► Consideration of additional impact management suggestions made by community.	On-going
Transportation	<b>Design and Operation</b>	
	► New northbound/eastbound access ramp; County Road 79 at Highway 402.	Completed
	► Lift intersections at off and on ramps of Hwy 402 and County Road 79 to improve sight distances.	Completed
	► Provide for signalization at Highway 402 north on/off at County Road 79.	Not required
	► Southbound left turn lane at CR79 site access.	Completed
	► Northbound right turn lane at CR 79 site access.	Completed
	► Northbound acceleration lane at CR79 site access.	Completed
	► Provide an inspection and cleaning lay-by on-site near the site's egress, where drivers and/or WM employees can safely inspect and clean off (if necessary) any mud picked up while traveling through the site. Visitors to the expanded landfill (both commercial and private) as well as WM will share in this responsibility.	On-going operations procedure
	<b>Other Measures</b>	
	► Reduce speed limit along County Road 79 from just south of Zion Line, southward to Watford.	Completed
Visual	<b>Design and Operation</b>	
	A) <i>Landfill and Site</i>	
	▪ aggressive clean up of blown litter.	On-going operations procedure
	▪ removal of south berm at County Road 39. Replace with evergreen trees (1.5 m o.c.) to include extension along west property line of south property.	Completed
	▪ natural shaping of the ponds should be explored. This would allow for easy incorporation as an amenity for future end use.	Completed
	▪ return berms at vehicular entrances or re-align entrance roads to minimize direct views into the site from Zion Line.	Completed
	▪ site perimeter fencing.	Completed
	▪ gas combustion chamber and equalization storage tank to be painted a dark colour to minimize light reflection.	Completed
	▪ equalization storage tank height to be minimized.	Completed
	▪ County Road 79 berm to be shifted to allow ±10.0 m setback property line and the toe of the berm. The height is to be increased to 7.0 m.	Completed

Note: Table based on Appendix D of Discussion Paper #8, dated September 2005.

**Table Q-2**  
**Mitigation, Monitoring, and Contingency Summary**

Discipline	Mitigation, Monitoring, and Contingency Measure	Comments
Visual (Cont'd)	B) <i>Landscape</i>	
	▪ extend large caliper tree planting ( $\pm 3.0$ m height) along east property line of north property.	Completed
	▪ uniformly planted evergreen and deciduous trees along the Zion Line berm.	Completed
	▪ naturalized planting (woodland extension) for berm along the County Road 79 (refer to Figure 7-45). This will also enhance the gateway approach to the village.	Completed
	▪ evergreen tree installation at the property line of the adjacent cemetery.	Completed
	▪ woodland rehabilitation at southwest corner of expansion area.	Completed
	▪ evergreen trees at gas management and leachate treatment facilities.	To be completed
	▪ naturalization of soil stockpile (outside face).	On-going
	▪ Brown Creek rehabilitation planting.	On-going
	<b>Monitoring</b>	
	► On-going visual impact monitoring program should be considered. Series of photographs would be assessed for discrepancies between built conditions and anticipated conditions defined in the report.	On-going
	<b>Contingency Plans</b>	
	► augmentation of the on-site measures to ensure consistency with design intent.	To be completed
	► additional off-site mitigation options including: ▪ roadside tree planting within the municipal road allowance. ▪ tree planting within private properties. ▪ screen fencing within private properties.	Part of the CCA

Note: Table based on Appendix D of Discussion Paper #8, dated September 2005.



**Table Q-3**  
**Monitoring Measures Summary**

Type of Monitoring	Status	Status
<b>Landfill Operations</b>	Amount of waste/contaminated soil tonnage each day, week, year.	On-going weekly summary in Table Q-1
	Annual (or more frequent) survey of landfill mound.	Completed annually
	Amount of landfill with interim cover, final cap, vegetation.	Documented in Section Q.1.9
	Complaints, action taken, response.	Documented in Section Q.1.17
	New Cells constructed.	Documented in Section Q.1.8
<b>Stormwater Management</b>	On-site Ditches (selected locations).	On-going
	Stormwater Pond Contents.	On-going
	Stormwater Pond Discharge.	On-going
	Downgradient Stream Locations.	On-going
	Upgradient Stream Location (if applicable).	On-going
	At Weather Station on Site.	On-going
	Wind direction and velocity.	On-going
	Precipitation.	On-going
<b>Groundwater</b>	Temperature.	On-going
	Pumping of secondary Drainage Layer with treatment of water prior to disposal.	Will be completed as required.
<b>Leachate Treatment</b>	A full Environmental Monitoring and Contingency Plan will be prepared.	Completed
	Leachate monitoring program to determine any effects on water quality in Bear Creek.	Direct discharge not applicable. Monitoring on-going
<b>Air Quality</b>	Monitor off-site particulate concentrations, particularly the PM10 and PM2.5 fractions.	On-going
	The monitoring station should also be equipped to measure meteorological parameters such as wind speed and wind direction. This will help determine the impact related to on-site and external haul route activities. The station may also be used to validate the predicted concentrations and determine the relative conservatism within the modeling.	Completed
	Regularly inspect the covered landfill areas (existing and future landfill areas) to identify any fissures, cracks or erosion of the soil cover that would allow for unmitigated landfill gas to escape directly to the atmosphere. This inspection could be undertaken with the use of a handheld portable flame ionization detector (FID) capable of measuring methane in small quantities.	Completed
	An annual monitoring program for volatile organic compounds at the property line during the worst-case, summer conditions.	Completed
	Develop a monitoring plan, which may include: <ul style="list-style-type: none"> <li>▪ outlining landfill cover inspection intervals.</li> <li>▪ methods of recording odour complaints.</li> <li>▪ log of mitigation work completed.</li> </ul>	Completed
	Develop a reporting system for odour complaints, and relate odour events to local meteorological conditions at the site. This system would allow WM to track and potentially validate odour complaints from the public. This strategy could assist in determining the source of odours and expedite mitigation.	Completed
<b>Litter</b>	Routine monitoring and retrieving escaped litter.	On-going operations procedure
<b>Gas</b>	Install landfill gas monitoring probes, as required, at landfill boundary.	On-going per EMP as landfill progresses
	Regular monitoring program for LFG probes; predetermined methane level would trigger further mitigation activities.	On-going per EMP as landfill progresses
<b>Agriculture</b>	Monitor groundwater, wells and surface water for leachate contamination, on an on-going basis.	On-going per EMP as landfill progresses
	Provide a monitoring program to identify and remove litter from neighbouring farm fields, including a spring and later summer pickup coinciding with most active farm operations.	On-going operations procedure
<b>Visual</b>	On-going visual impact monitoring program should be considered. Series of photographs would be assessed for discrepancies between built conditions and anticipated conditions.	On-going

Note: Table based on Exhibit 7-1 of Environmental Assessment document, dated September 2005.

**Table Q-4**  
**Contingency Measures Summary**

Contingency Plan	Contingency Plan Details	Status
<b>Leachate-Impacted Groundwater</b>	► Leachate elevation control with waste sumps or trenches.	On-going. No discharge of leachate or treated leachate to surface water will be completed.
	► Groundwater control through use of the Secondary Drainage Layer.	On-going
	► Perimeter leachate interceptor system within the active aquitard.	Will be completed if required.
	► Perimeter cut-off wall.	Will be completed if required.
	► If required, temporary or permanent groundwater supplies would be provided to affected groundwater users.	Will be completed if required.
<b>Contaminated Stormwater</b>	► If confined to a local area, close off ditch and sump out contaminated water into tanker truck for treatment in an on-site leachate treatment plant, or dispose (if suitable) in a treated leachate pond for irrigation on poplar forest, or haul to off-site sewage treatment plant.	Will be completed if required.
	► If stormwater pond is contaminated, do not permit discharge. Pump out and pump or truck for treatment to an on-site leachate treatment plant or dispose (if suitable) in a treated leachate pond for irrigation on a poplar forest or haul to an off-site sewage treatment plant.	Will be completed if required.
<b>Emergency Spill Response-Waste Truck on Public Road</b>	► Have a crew trained on notification and clean up procedures so workers and equipment can attend to local waste spill.	Completed.
	► Cooperate with local officials (e.g., police, road crews, environment officials, etc.).	Will be completed if required.
	► Prevent contact with ditches and watercourses and retrieve from vulnerable locations.	Will be completed if required.
	► Clean up spilled material into roll off or appropriate containers and remove to landfill.	Will be completed if required.
<b>Emergency Spill Response-Liquids on Public Road</b>	► Have crew trained on notification and clean up procedures so workers and equipment can attend to local waste spill.	Completed.
	► Assemble appropriate protective equipment and containment equipment.	Completed.
	► Contain spill with absorbent material, ponds and berms. Ditch, berm or excavate sump as required to contain spill.	Will be completed if required.
	► Clean up liquid or solids into appropriate leak-proof containers, such as drums or lugger boxes.	Will be completed if required.
	► Dispose to proper facility.	Will be completed if required.
	► If spill is a dangerous chemical or toxic to handle with equipment on site, then contain any escape paths and engage crews skilled in handling hazardous waste.	Will be completed if required.

Note: Table based on Exhibit 7-2 of Environmental Assessment document, dated September 2005.

## APPENDIX R:

2024 Annual Sewage Works Performance Report



## 2024 ANNUAL SEWAGE WORKS PERFORMANCE REPORT: PER CONDITION 7.5. OF SEWAGE ECA NO. 8117-CUSNXX

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## SEWAGE ENVIRONMENTAL COMPLIANCE APPROVAL

The following subsections address the annual performance reporting requirements for the Waste Management of Canada Corporation's Twin Creeks Environmental (Site) per Amended ECA for Industrial Sewage Works No. 2403-BE6LZ4 (Condition 12(3)), dated August 21, 2019, up until April 28, 2024, as well as Amended ECA for Industrial Sewage Works No. 8117-CUSNXX (Condition 7. 5.), dated April 29, 2024 – both collectively referred to as "Sewage ECA" in consideration of their relevant approval dates.

Of note, this report is structured based on Conditions 7.5. a. through j. of the current Amended ECA for Industrial Sewage Works No. 8117-CUSNXX, dated April 29, 2024.

### R.1 CONDITION 7. 5. (A)

It is noted that the Leachate Treatment Facility and Renewable Natural Gas (RNG) Facility were not constructed or operational in 2024. Therefore, with respect to these Works there was no requirement to assess against the effluent limits as noted in the Sewage ECA in 2024.

### R.2 CONDITION 7. 5. (B)

For the stormwater management Works outlined in the Sewage ECA, a summary of the surface water monitoring completed in 2024 and a detailed interpretation of the relevant monitoring results, including a comparison to relevant trigger concentrations, is provided in Sections 2.4 and 5.3 of Volume 1 of the 2024 Fourth Quarter and Annual Monitoring Report (2024 Annual Report). Generally, the stormwater management Works were effective in managing surface water at the Site during 2024. The surface water drainage network evaluation is provided in Section 5.3.6 of Volume 1 of the 2024 Annual Report.

The relevant operational sewage Works (e.g. raw leachate pumping stations, secondary drainage layer pumping stations, pumping station PS10, and Equalization Tank #1) as outlined in the Sewage ECA, generally performed as required. A summary of the liquid level monitoring completed in 2024 and a detailed interpretation of the relevant monitoring results with respect to these sewage Works, including a comparison to relevant trigger levels, is provided in Sections 2.1 and 4.1 to 4.2 of Volume 1 of the 2024 Annual Report.

As the Poplar Plantation was not operational in 2024, groundwater monitoring at the relevant monitoring wells was not required in 2024.

As noted in Section R.1, the Leachate Treatment Facility and RNG Facility were not constructed or operational in 2024. As such, there was no monitoring data to evaluate with respect to these Works in 2024.

### R.3 CONDITION 7. 5. (C)

Overall, the constructed/operational sewage Works performed as required. Relating to performance, operational problems with respect to the constructed/operational sewage Works are noted in Section R.4.

As noted in Section R.1, the Leachate Treatment Facility and RNG Facility were not constructed or operational in 2024. As such, no review and assessment with respect to the performance of these sewage Works was required in 2024.

### R.4 CONDITION 7. 5. (D)

There were no operational problems related to the Sewage Works during 2024, with the exception of the electrical communications failures for the SCADA system recording of leachate liquid levels at raw leachate pumping station PS7 during a couple time periods, as discussed in detail in Section 4.1.2 of Volume 1 of the 2024 Annual Report.

As noted in Section R.1, the Leachate Treatment Facility and RNG Facility were not constructed or operational in 2024.

### R.5 CONDITION 7. 5. (E)

Maintenance on major structure, equipment, apparatus, mechanism, or thing forming part of the constructed/operational Works was not required in 2024, with the exception of repairs required to restore the electrical communications to PS7, as noted in Section R.4.

### R.6 CONDITION 7. 5. (F)

As noted in Section R.1, the Leachate Treatment Facility and RNG Facility were not constructed or operational in 2024. As such, no effluent quality assurance or quality control (QA/QC) measures with respect to the Leachate Treatment Facility or RNG Facility were required in 2024.

### R.8 CONDITION 7. 5. (G)

As noted in Section R.1, the Leachate Treatment Facility and RNG Facility were not constructed or operational in 2024. Therefore, with respect to these Works there was no daily flow data in 2024.

### R.9 CONDITION 7. 5. (H)

A summary of the complaints and the associated response action for each complaint is presented in Appendix P of Volume 2 of the 2024 Annual Report.

In 2024, WM received a total of 16 odour complaints. Of the complaints received, they represented a total of 15 complaint driven odour events which occurred on 14 separate days. Of these odour events, 12 were documented from discrete physical locations such as a residence or commercial building. The other three (3) odour events represented transient (driving or walking) occurrences in which the complainant observed an odour while driving or walking in different areas (e.g. in town in Watford or near Highway 402). Two (2) of the odour complaints were observed to not be downwind of the Site, and therefore were likely a result of off-site source(s).

No complaints were received during 2024 related to the Works.

#### R.9 CONDITION 7. 5. (I)

A summary of all spills or abnormal discharge events is summarized below.

As noted in the MECP semi-annual inspection report for October 2023 through February 2024, the MECP observed a hydraulic fluid spill in an on-site ditch adjacent to the landfill flares on January 30<sup>th</sup>. The MECP notified WM and WM immediately responded and contained the spill in the length of ditch where the spill occurred. Through follow up with WM, the MECP confirmed that the spill was cleaned up and no off-site impacts were observed.

#### R.10 CONDITION 7. 5. (J)

Additional information was requested from WM by the MECP local office. The submitted information is summarized in Section Q.1.21, Appendix Q Volume 1 of the 2024 Annual Report.

## APPENDIX S:

Monitoring and Screening Checklist





## Appendix D-Monitoring and Screening Checklist

### General Information and Instructions

**General Information: The checklist is to be completed, and submitted with the Monitoring Report.**

**Instructions:** A complete checklist consists of:

- (a) a completed and signed checklist, including any additional pages of information which can be attached as needed to provide further details where indicated.
- (b) completed contact information for the Competent Environmental Practitioner (CEP)
- (c) self-declaration that CEP(s) meet(s) the qualifications as set out below and in Section 1.2 of the Technical Guidance Document.

**Definition of Groundwater CEP:**

For groundwater, the CEP must have expertise in hydrogeology and meet one of the following:

- (a) the person holds a licence, limited licence or temporary licence under the *Professional Engineers Act*; or
- (b) the person holds a certificate of registration under the *Professional Geoscientists Act, 2000* and is a practicing member, temporary, member or limited member of the Association of Professional Geoscientists of Ontario. O. Reg. 66/08, s. 2..

**Definition of Surface water CEP:**

A CEP for surface water assessments is a scientist, professional engineer or professional geoscientist as described in (a) and (b) above with demonstrated experience and post-secondary education, either a diploma or degree, in hydrology, aquatic ecology, limnology, aquatic biology, physical geography with specialization in surface water, and/or water resource management.

The type of scientific work that a CEP performs must be consistent with that person's education and experience. If an individual has appropriate training and credentials in both groundwater and surface water and is responsible for both areas of expertise, the CEP may then complete and validate both sections of the checklist.

<b>Monitoring Report and Site Information</b>	
<b>Waste Disposal Site Name</b>	Twin Creeks Environmental Centre
<b>Location (e.g. street address, lot, concession)</b>	5768 Nauvoo Road (Watford)
<b>GPS Location (taken within the property boundary at front gate/ front entry)</b>	NAD 83: Zone 17, 428350E, 4758780N
<b>Municipality</b>	Township of Warwick, County of Lambton
<b>Client and/or Site Owner</b>	Waste Management of Canada Corporation
<b>Monitoring Period (Year)</b>	2024
This Monitoring Report is being submitted under the following:	
<b>Certificate of Approval No.:</b>	Waste ECA No. A032203; Sewage ECAs No. 2403-BE6LZ4 and No. 6318-CX4NFX
<b>Director's Order No.:</b>	
<b>Provincial Officer's Order No.:</b>	
<b>Other:</b>	

Report Submission Frequency	<div><input type="radio"/> Annual</div> <div><input checked="" type="radio"/> Other</div>	Specify (Type Here): Quarterly and Annual Reports
The site is:	<div><input checked="" type="radio"/> Active</div> <div><input type="radio"/> Inactive</div> <div><input type="radio"/> Closed</div>	
If closed, specify C of A, control or authorizing document closure date:		Select Date
Has the nature of the operations at the site changed during this monitoring period?	<div><input type="radio"/> Yes</div> <div><input checked="" type="radio"/> No</div>	
If yes, provide details:	Type Here	
Have any measurements been taken since the last reporting period that indicate landfill gas volumes have exceeded the MOE limits for subsurface or adjacent buildings? (i. e. exceeded the LEL for methane)	<div><input type="radio"/> Yes</div> <div><input checked="" type="radio"/> No</div>	

## Groundwater WDS Verification:

Based on all available information about the site and site knowledge, it is my opinion that:

### Sampling and Monitoring Program Status:

1) The monitoring program continues to effectively characterize site conditions and any groundwater discharges from the site. All monitoring wells are confirmed to be in good condition and are secure:	<input checked="" type="radio"/> Yes <input type="radio"/> No	If no, list exceptions (Type Here):	
2) All groundwater, leachate and WDS gas sampling and monitoring for the monitoring period being reported on was successfully completed as required by Certificate(s) of Approval or other relevant authorizing/control document(s):	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Applicable	If no, list exceptions below or attach information.	
Groundwater Sampling Location	Description/Explanation for change (change in name or location, additions, deletions)	Date	

<b>3) a) Some or all groundwater, leachate and WDS gas sampling and monitoring requirements have been established or defined outside of a ministry C of A, authorizing, or control document.</b>		<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Applicable	
<b>b) If yes, the sampling and monitoring identified under 3(a) for the monitoring period being reported on was successfully completed in accordance with established protocols, frequencies, locations, and parameters developed as per the Technical Guidance Document:</b>		<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Not Applicable	If no, list exceptions below or attach additional information.
<b>Groundwater Sampling Location</b>	<b>Description/Explanation for change (change in name or location, additions, deletions)</b>	<b>Date</b>	
<b>4) All field work for groundwater investigations was done in accordance with standard operating procedures as established/outlined per the Technical Guidance Document (including internal/external QA/QC requirements) (Note: A SOP can be from a published source, developed internally by the site owner's consultant, or adopted by the consultant from another organization):</b>	<input checked="" type="radio"/> Yes  <input type="radio"/> No		

## Sampling and Monitoring Program Results/WDS Conditions and Assessment:

<p>5) The site has an adequate buffer, Contaminant Attenuation Zone (CAZ) and/or contingency plan in place. Design and operational measures, including the size and configuration of any CAZ, are adequate to prevent potential human health impacts and impairment of the environment.</p>	<p><input checked="" type="radio"/> Yes</p> <p><input type="radio"/> No</p>		
<p>6) The site meets compliance and assessment criteria.</p>	<p><input checked="" type="radio"/> Yes</p> <p><input type="radio"/> No</p>	<p>Refer to Section 5.2.3 of the 2024 Fourth Quarter and Annual Monitoring Report.</p>	
<p>7) The site continues to perform as anticipated. There have been no unusual trends/ changes in measured leachate and groundwater levels or concentrations.</p>	<p><input checked="" type="radio"/> Yes</p> <p><input type="radio"/> No</p>		
<p>1) Is one or more of the following risk reduction practices in place at the site:</p> <p>(a) There is minimal reliance on natural attenuation of leachate due to the presence of an effective waste liner and active leachate collection/treatment; or</p> <p>(b) There is a predictive monitoring program in-place (modeled indicator concentrations projected over time for key locations); or</p> <p>(c) The site meets the following two conditions (typically achieved after 15 years or longer of site operation):</p> <p style="margin-left: 20px;"><i>i.</i> The site has developed stable leachate mound(s) and stable leachate plume geometry/concentrations; and</p> <p style="margin-left: 20px;"><i>ii.</i> Seasonal and annual water levels and water quality fluctuations are well understood.</p>	<p><input checked="" type="radio"/> Yes</p> <p><input type="radio"/> No</p>	<p>Note which practice(s):</p>	<p><input checked="" type="checkbox"/> (a)</p> <p><input type="checkbox"/> (b)</p> <p><input type="checkbox"/> (c)</p>
<p>9) Have trigger values for contingency plans or site remedial actions been exceeded (where they exist):</p>	<p><input type="radio"/> Yes</p> <p><input checked="" type="radio"/> No</p> <p><input type="radio"/> Not Applicable</p>	<p>Refer to Section 5.2.3 of the 2024 Fourth Quarter and Annual Monitoring Report.</p>	

## Groundwater CEP Declaration:

I am a licensed professional Engineer or a registered professional geoscientist in Ontario with expertise in hydrogeology, as defined in Appendix D under Instructions. Where additional expertise was needed to evaluate the site monitoring data, I have relied on individuals who I believe to be experts in the relevant discipline, who have co-signed the compliance monitoring report or monitoring program status report, and who have provided evidence to me of their credentials.

I have examined the applicable Certificate of Approval and any other environmental authorizing or control documents that apply to the site. I have read and followed the Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water Technical Guidance Document (MOE, 2010, or as amended), and associated monitoring and sampling guidance documents, as amended from time to time. I have reviewed all of the data collected for the above-referenced site for the monitoring period(s) identified in this checklist. Except as otherwise agreed with the ministry for certain parameters, all of the analytical work has been undertaken by a laboratory which is accredited for the parameters analysed to *ISO/IEC 17025:2005 (E)- General requirements for the competence of testing and calibration laboratories*, or as amended from time to time by the ministry.

If any exceptions or potential concerns have been noted in the questions in the checklist attached to this declaration, it is my opinion that these exceptions and concerns are minor in nature and will be rectified for the next monitoring/reporting period. Where this is not the case, the circumstances concerning the exception or potential concern and my client's proposed action have been documented in writing to the Ministry of the Environment District Manager in a letter from me dated:

## Recommendations:





Based on my technical review of the monitoring results for the waste disposal site:

☒ No changes to the monitoring program are recommended

☐ The following change(s) to the monitoring program is/are recommended:

☒ No Changes to site design and operation are recommended

☐ The following change(s) to the site design and operation is/are recommended:

Name:	Brent J. Langille		
Seal:			
Signature:		Date:	2025/02/25
CEP Contact Information:	Brent J. Langille		
Company:	RWDI AIR Inc.		
Address:	4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5		
Telephone No.:	(519) 823-1311	Fax No. :	(519) 823-1316
E-mail Address:	Brent.Langille@rwdi.com		
Co-signers for additional expertise provided:			
Signature:		Date:	
Signature:		Date:	

Surface Water WDS Verification:		
Provide the name of surface water body/bodies potentially receiving the WDS effluent and the approximate distance to the waterbody (including the nearest surface water body/bodies to the site):		
Name (s)	Gilliand-Geerts Drain 'A' - Bear Creek Watershed Brown Creek - Brown Creek Watershed	
Distance(s)	The water bodies are adjacent to the landfill property limits.	
Based on all available information and site knowledge, it is my opinion that:		
Sampling and Monitoring Program Status:		
1) The current surface water monitoring program continues to effectively characterize the surface water conditions, and includes data that relates upstream/background and downstream receiving water conditions:	<input checked="" type="radio"/> Yes  <input type="radio"/> No	If no, identify issues (Type Here):
2) All surface water sampling for the monitoring period being reported was successfully completed in accordance with the Certificate(s) of Approval or relevant authorizing/control document(s) (if applicable):	<input checked="" type="radio"/> Yes  <input type="radio"/> No  <input type="radio"/> Not applicable (No C of A, authorizing / control document applies)	If no, specify below or provide details in an attachment.
Surface Water Sampling Location	Description/Explanation for change (change in name or location, additions, deletions)	Date
SS10	Could not be sampled in Q3 of 2024 as insufficient flow was observed for sample collection.	Q3



<b>3) a) Some or all surface water sampling and monitoring program requirements for the monitoring period have been established outside of a ministry C of A or authorizing/control document.</b>		<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Applicable	
<b>b) If yes, all surface water sampling and monitoring identified under 3 (a) was successfully completed in accordance with the established program from the site, including sampling protocols, frequencies, locations and parameters) as developed per the Technical Guidance Document:</b>		<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Not Applicable	If no, specify below or provide details in an attachment.
<b>Surface Water Sampling Location</b>	<b>Description/Explanation for change (change in name or location, additions, deletions)</b>	<b>Date</b>	
<b>4) All field work for surface water investigations was done in accordance with standard operating procedures, including internal/external QA/QC requirements, as established/ outlined as per the Technical Guidance Document, MOE 2010, or as amended. (Note: A SOP can be from a published source, developed internally by the site owner's consultant, or adopted by the consultant from another organization):</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No	If no, specify (Type Here):	

Sampling and Monitoring Program Results/WDS Conditions and Assessment:

5) The receiving water body meets surface water-related compliance criteria and assessment criteria: i.e., there are no exceedances of criteria, based on MOE legislation, regulations, Water Management Policies, Guidelines and Provincial Water Quality Objectives and other assessment criteria (e.g., CWQGs, APVs), as noted in Table A or Table B in the Technical Guidance Document (Section 4.6):

☐ Yes

☒ No

If no, list parameters that exceed criteria outlined above and the amount/percentage of the exceedance as per the table below or provide details in an attachment:

Parameter	Compliance or Assessment Criteria or Background	Amount by which Compliance or Assessment Criteria or Background Exceeded
e.g. Nickel	e.g. C of A limit, PWQO, background	e.g. X% above PWQO
Please refer to Section 5.3 of Volume 1 of the 2024 Fourth Quarter and Annual Monitoring Report.		
6) In my opinion, any exceedances listed in Question 5 are the result of non-WDS related influences (such as background, road salting, sampling site conditions)?	<div><div><input checked="" type="radio"/> Yes</div><div><input type="radio"/> No</div></div>	Section 5.3 of Volume 1 of the 2024 Fourth Quarter and Annual Monitoring Report summarizes the surface water monitoring findings.

<p>7) <b>All monitoring program surface water parameter concentrations fall within a stable or decreasing trend. The site is not characterized by historical ranges of concentrations above assessment and compliance criteria.</b></p>	<p><input type="radio"/> Yes</p> <p><input checked="" type="radio"/> No</p>	<p>Refer to Section 5.3 of Volume 1 of the 2024 Fourth Quarter and Annual Monitoring Report.</p>
<p>8) <b>For the monitoring program parameters, does the water quality in the groundwater zones adjacent to surface water receivers exceed assessment or compliance criteria (e.g., PWQOs, CWQGs, or toxicity values for aquatic biota (APVs)):</b></p>	<p><input checked="" type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p><input type="radio"/> Not Known</p> <p><input type="radio"/> Not Applicable</p>	<p>Groundwater quality naturally exceeds select surface water trigger concentrations.</p>
<p>9) <b>Have trigger values for contingency plans or site remedial actions been exceeded (where they exist):</b></p>	<p><input type="radio"/> Yes</p> <p><input checked="" type="radio"/> No</p> <p><input type="radio"/> Not Applicable</p>	<p>Refer to Section 5.3 of the 2024 Fourth Quarter and Annual Monitoring Report. Trigger concentration exceedances were noted in Q1 (at SS1 and SP2), Q2 (at SS1 and SP2), Q3 (at SS1 and SP2), and Q4 (SS1 and SP2).</p>

## Surface Water CEP Declaration:

I, the undersigned hereby declare that I am a Competent Environmental Practitioner as defined in Appendix D under Instructions, holding the necessary level of experience and education to design surface water monitoring and sampling programs, conduct appropriate surface water investigations and interpret the related data as it pertains to the site for this monitoring period.

I have examined the applicable Certificate of Approval and any other environmental authorizing or control documents that apply to the site. I have read and followed the Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water Technical Guidance Document (MOE, 2010, or as amended) and associated monitoring and sampling guidance documents, as amended from time to time. I have reviewed all of the data collected for the above-referenced site for the monitoring period(s) identified in this checklist. Except as otherwise agreed with the ministry for certain parameters, all of the analytical work has been undertaken by a laboratory which is accredited for the parameters analysed to *ISO/IEC 17025:2005 (E)- General requirements for the competence of testing and calibration laboratories*, or as amended from time to time by the ministry.


If any exceptions or potential concerns have been noted in the questions in the checklist attached to this declaration, it is my opinion that these exceptions and concerns are minor in nature or will be rectified for future monitoring events. Where this is not the case, the circumstances concerning the exception or potential concern and my client's proposed action have been documented in writing to the Ministry of the Environment District Manager in a letter from me dated:

Select Date

## Recommendations:

Based on my technical review of the monitoring results for the waste disposal site:

<p><input checked="" type="radio"/> No Changes to the monitoring program are recommended</p> <p><input type="radio"/> The following change(s) to the monitoring program is/are recommended:</p>	
<p><input checked="" type="radio"/> No changes to the site design and operation are recommended</p> <p><input type="radio"/> The following change(s) to the site design and operation is/are recommended:</p>	

<b>CEP Signature</b>		
<b>Relevant Discipline</b>	Geology	
<b>Date:</b>	2025/02/26	
<b>CEP Contact Information:</b>	Brent J. Langille	
<b>Company:</b>	RWDI AIR Inc.	
<b>Address:</b>	4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5	
<b>Telephone No.:</b>	(519) 823-1311	
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<b>E-mail Address:</b>	Brent.Langille@rwdi.com	
<b>Save As</b>		<b>Print Form</b>