CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0495
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:21

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0495-10 (RMU2-W19-W4(6-7.8) - Solid)						**Sampled: 02/16/09 11:20**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	ND	D02	34	2.4	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
1,1,2,2-Tetrachloroethane	ND	D02	34	5.5	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
1,1,2-Trichloroethane	ND	D02	34	1.7	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
1,1-Dichloroethane	ND	D02	34	3.9	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
1,1-Dichloroethene	ND	D02	34	4.1	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
1,2-Dichloroethane	ND	D02	34	1.7	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
1,2-Dichloroethene, Total	ND	D02	67	18	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
1,2-Dichloropropane	ND	D02	34	1.7	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
2-Butanone	ND	D02	170	46	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
2-Hexanone	ND	D02	170	42	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
4-Methyl-2-pentanone (MIBK)	ND	D02	170	42	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Acetone	ND	D02	170	7.4	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Benzene	ND	D02	34	3.7	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Bromodichloromethane	ND	D02	34	1.7	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Bromoform	ND	D02	34	3.1	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Bromomethane	ND	D02	34	3.1	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Carbon disulfide	ND	D02	34	2.9	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Carbon Tetrachloride	ND	D02	34	4.6	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Chlorobenzene	ND	D02	34	3.5	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Dibromochloromethane	ND	D02	34	1.9	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Chloroethane	ND	D02	34	5.4	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Chloroform	ND	D02	34	2.1	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Chloromethane	ND	D02	34	2.0	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
cis-1,3-Dichloropropene	ND	D02	34	1.9	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Ethylbenzene	ND	D02	34	2.3	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Methylene Chloride	ND	D02	34	15	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Styrene	ND	D02	34	1.7	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Tetrachloroethene	ND	D02	34	4.5	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Toluene	ND	D02	34	5.7	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
trans-1,3-Dichloropropene	ND	D02	34	4.3	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Trichloroethene	ND	D02	34	10	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Vinyl acetate	ND	D02	170	42	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Vinyl chloride	ND	D02	67	1.4	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Xylenes, total	ND	D02	67	2.9	ug/kg dry	1.00	02/27/09 21:13	DHF	9B20060	8260B
Surr: 1,2-Dichloroethane-d4 (10-190%)	*130 %*	*D02*					02/27/09 21:13	DHF	9B20060	8260B
Surr: 4-Bromofluorobenzene (10-190%)	*131 %*	*D02*					02/27/09 21:13	DHF	9B20060	8260B
Surr: Toluene-d8 (10-190%)	*133 %*	*D02*					02/27/09 21:13	DHF	9B20060	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0495
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:21

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0495-11 (RMU2-W19-W4(6-7.8) - Solid)						**Sampled: 02/16/09 11:25**			**Recvd: 02/16/09 17:11**	
General Chemistry Parameters										
SGT Total Petroleum Hydrocarbons	ND		115	NA	mg/kg dry	1.00	03/10/09 22:27	RJK	9C10071	1664 SGT

CWM Chemical Services Inc - Model City, NY
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Model City, NY 14107

Work Order: RSB0495
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:21

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0495-12 (RMU2-W19-W4 - Water)						**Sampled: 02/16/09 11:20**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	D11	20	2.9	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
1,1,2,2-Tetrachloroethane	ND	D11	20	2.2	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
1,1,2-Trichloroethane	ND	D11	20	1.9	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
1,1-Dichloroethane	**12**	D11,J	20	2.4	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
1,1-Dichloroethene	ND	D11	20	3.4	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
1,2-Dichloroethane	ND	D11	20	2.4	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
1,2-Dichloroethene, Total	ND	D11	40	13	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
1,2-Dichloropropane	ND	D11	20	2.4	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
2-Butanone	ND	D11	40	14	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
2-Hexanone	ND	D11	40	14	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
4-Methyl-2-pentanone	ND	D11	40	14	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Acetone	ND	D11	100	15	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Benzene	**11**	D11,J	20	2.4	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Bromodichloromethane	ND	D11	20	2.1	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Bromoform	ND	D11	20	1.9	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Bromomethane	ND	D11	20	4.8	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Carbon disulfide	ND	D11	20	3.5	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Carbon Tetrachloride	ND	D11	20	3.3	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Chlorobenzene	**54**	D11	20	1.9	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Dibromochloromethane	ND	D11	20	1.7	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Chloroethane	ND	D11	20	3.5	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Chloroform	ND	D11	20	2.2	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Chloromethane	ND	D11	20	2.5	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
cis-1,3-Dichloropropene	ND	D11	20	2.3	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Ethylbenzene	**22**	D11	20	1.9	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Methylene Chloride	**5.5**	D11,J	20	3.3	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Styrene	ND	D11	20	1.5	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Tetrachloroethene	ND	D11	20	2.2	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Toluene	**12**	D11,J	20	1.8	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
trans-1,3-Dichloropropene	ND	D11	20	1.8	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Trichloroethene	**4.0**	D11,J	20	2.4	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Vinyl acetate	ND	D11	40	17	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Vinyl chloride	**15**	D11,J	20	3.0	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Xylenes, total	**58**	D11	40	6.0	ug/L	4.00	02/26/09 23:40	MF	9B26076	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*110 %*	*D11*					02/26/09 23:40	MF	9B26076	624
Surr: 4-Bromofluorobenzene (78-122%)	*96 %*	*D11*					02/26/09 23:40	MF	9B26076	624
Surr: Toluene-d8 (87-110%)	*100 %*	*D11*					02/26/09 23:40	MF	9B26076	624

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

WASTE MANAGEMENT CHAIN OF CUSTODY

Internal Use Only

Sampler Name (Print)	Signature:
Russell J. Marchese	Russell J Marchese
Site Name:	**Spec Request:**
CWM Model City	AC
Site Location:	**Event Name:**
Lewiston, NY	RMU-2 Footprint Relocation

TA Sample No.	Client Sample ID	Sampling Date	Sampling Time	MATRIX	COMP / GRAB	8260VOA	T-METALS	D-METALS	CHLORIDE/SULFATE/NITRATE PH, TSS, TDS	ALK / CARB / BICARB	HARDNESS	NH_3 / COD	TOC	Total Petroleum Hydrocarbons (TPH) (Method 1664)				Additional Analysis/Remarks
				INDICATE PRESERVATIVE BY USING KEY BELOW (OPTIONAL)														
				INDICATE CONTAINER BY USING KEY BELOW														
	RMU2-W19-W1(6-8')	2/16/09	0910	S	G	4/6												
	RMU2-W19-W2(6-8')	2/16/09	0940	S	G	4/6								4/6				
	RMU2-W19-W3(6-8')	2/16/09	1015	S	G	4/6												
	RMU2-W19-W1(6-8')	2/16/09	0915	S	G									4/6				
	RMU2-W19-W3(6-8')	2/16/09	1020	S	G									4/6				
	RMU2-W19-W1	2/16/09	1030	W	G	2/2												
	RMU2-W19-W2	2/16/09	1035	W	G	2/2												
	RMU2-W19-W3	2/16/09	1045	W	G	2/2												
	RMU2-W19(6-8')	2/16/09	0900	S	G									4/6				
	RMU2-W19-W4(6-7.8')	2/16/09	1120	S	G	4/6												
	RMU2-W19-W4(6-7.8')	2/16/09	1125	S	G									4/6				
	RMU2-W19-W4	2/16/09	1120	W	G	2/2												

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
Russell J Marchese	Geosyntec	2/16/09	1711		2/16/09	1711	TAL
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME

Matrix Key
- WW = Wastewater
- W = Water/Groundwater
- S = Solid
- SI = Sludge
- MS = Miscellaneous Solids
- OI = Oil
- A = Air
- O = _____

Container Key
1. Plastic
2. VOA Vial
3. Sterile Plastic
4. Amber Glass
5. Widemouth Glass
6. Other

Preservation Key
1. HCl, Cool to 4°
2. H_2SO_4, Cool to 4°
3. HNO_3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn Acetate, Cool to 4°
6. Cool to 4°
7. None

COMMENTS

Some Samples may contain petroleum product; GW samples very silty.

Courier:

Bill of Lading:

TAL-8219 (1207)

10°

NYSDEC OHMS Document No. 201469232-00007

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Analytical Report

Work Order: RSB0496

Site ID: 810::Model City Landfill::

Work Order Description: RMU-2 Background Sampling

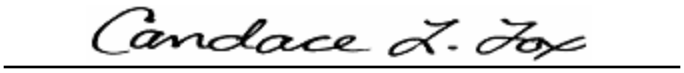
For:

Greg Zayatz

CWM Chemical Services Inc - Model City, NY

1550 Balmer Road

Model City, NY 14107



Candace Fox

Project Manager

candace.fox@testamericainc.com

Wednesday, March 11, 2009

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exception to NELAP requirements are noted in this report. Persuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project manager who has signed this report.

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

TestAmerica Buffalo
Current Certifications

As of 1/27/2009

STATE	Program	Cert # / Lab ID
Arkansas	CWA, RCRA, SOIL	88-0686
California*	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida*	NELAP CWA, RCRA	E87672
Georgia*	SDWA,NELAP CWA, RCRA	956
Illinois*	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas*	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana*	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY0044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA,CWA, RCRA	036-999-337
New Hampshire*	NELAP SDWA, CWA	233701
New Jersey*	NELAP,SDWA, CWA, RCRA,	NY455
New York*	NELAP, AIR, SDWA, CWA, RCRA,CLP	10026
Oklahoma	CWA, RCRA	9421
Pennsylvania*	NELAP CWA,RCRA	68-00281
Tennessee	SDWA	02970
Texas*	NELAP CWA, RCRA	T10470441208-TX
USDA	FOREIGN SOIL PERMIT	S-41579
USDOE	Department ofEnergy	DOECAP-STB
Virginia	SDWA	278
Washington*	NELAP CWA,RCRA	C1677
Wisconsin	CWA, RCRA	998310390
West Virginia	CWA,RCRA	252

*As required under the indicated accreditation, the test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

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Case Narrative

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. field-pH), they were not analyzed immediately, but as soon as possible after laboratory receipt.

A pertinent document is appended to this report, 1 page, is included and is an integral part of this report.

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our Laboratory.

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
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The requested project specific reporting limits listed below were less than lab standard quantitation limits but greater than or equal to the lab MDL. It must be noted that results reported below lab standard quantitation limits (PQL) may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

SpecificMethod	Analyte	Units	Client RL	Lab PQL
624	2-Butanone	ug/L	10	25.00
624	2-Hexanone	ug/L	10	25.00
624	4-Methyl-2-pentanone	ug/L	10	25.00
624	Vinyl acetate	ug/L	10	25.00

CWM Chemical Services Inc - Model City, NY
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DATA QUALIFIERS AND DEFINITIONS

D08	Dilution required due to high concentration of target analyte(s)
D11	insufficient volume for lower dilution
J	Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.
M7	The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).
R2	The RPD exceeded the acceptance limit.
R3	The RPD exceeded the acceptance limit due to sample matrix effects.

ADDITIONAL COMMENTS

Results are reported on a wet weight basis unless otherwise noted.

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-01 (RMU2-W19-W4-N1(8-11) - Solid)						**Sampled: 02/16/09 12:50**		**Recvd: 02/16/09 17:11**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	210		26	1.9	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
1,1-Dichloroethane	500		26	1.3	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
4-Methyl-2-pentanone	65	J	130	8.6	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Carbon disulfide	170		26	2.2	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Carbon Tetrachloride	650		26	0.95	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Chlorobenzene	250		26	1.1	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Chloroform	720		26	1.6	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
cis-1,3-Dichloropropene	60		26	1.5	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Toluene	500		26	4.4	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
trans-1,3-Dichloropropene	99		26	1.3	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Xylenes, total	320		78	15	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Sample ID: RSB0496-01RE1 (RMU2-W19-W4-N1(8-11) - Solid)						**Sampled: 02/16/09 12:50**		**Recvd: 02/16/09 17:11**		
Volatile Organic Compounds by EPA 8260B										
1,1,2,2-Tetrachloroethane	75000	D08	1500	240	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
1,1,2-Trichloroethane	95000	D08	1500	74	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
1,2-Dichloroethane	4200	D08	1500	75	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
1,2-Dichloropropane	17000	D08	1500	76	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
Tetrachloroethene	210000	D08	1500	200	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
Trichloroethene	66000	D08	1500	460	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
Sample ID: RSB0496-03 (RMU2-W19-W4-S1(3-5) - Solid)						**Sampled: 02/16/09 13:25**		**Recvd: 02/16/09 17:11**		
Volatile Organic Compounds by EPA 8260B										
Carbon disulfide	3.0	J	6.4	0.55	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Chlorobenzene	2.1	J	6.4	0.28	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Methylene Chloride	12		6.4	0.45	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Sample ID: RSB0496-04 (RMU2-W19-W4-S1(3-5) - Solid)						**Sampled: 02/16/09 13:30**		**Recvd: 02/16/09 17:11**		
General Chemistry Parameters										
SGT Total Petroleum Hydrocarbons	191		125	NA	mg/kg dry	1.00	03/10/09 22:27	RJK	9C10071	1664 SGT
Sample ID: RSB0496-05 (RMU2-W19-E2(10-12) - Solid)						**Sampled: 02/16/09 14:10**		**Recvd: 02/16/09 17:11**		
Volatile Organic Compounds by EPA 8260B										
1,1-Dichloroethane	2.3	J	6.4	0.32	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Acetone	27	J	32	1.4	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Benzene	3.3	J	6.4	0.31	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Carbon disulfide	2.9	J	6.4	0.55	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Chlorobenzene	100		6.4	0.28	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Ethylbenzene	27		6.4	0.44	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Methylene Chloride	3.2	J	6.4	0.45	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Tetrachloroethene	2.4	J	6.4	0.86	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Toluene	210		6.4	1.1	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Trichloroethene	2.1	J	6.4	0.44	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Xylenes, total	92		19	3.8	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Sample ID: RSB0496-06 (RMU2-W19-E2(10-12) - Solid)						**Sampled: 02/16/09 14:15**		**Recvd: 02/16/09 17:11**		
General Chemistry Parameters										
SGT Total Petroleum Hydrocarbons	901		134	NA	mg/kg dry	1.00	03/10/09 22:27	RJK	9C10071	1664 SGT
Sample ID: RSB0496-07 (RMU2-W19-W4-N1 - Water)						**Sampled: 02/16/09 14:25**		**Recvd: 02/16/09 17:11**		

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-07 (RMU2-W19-W4-N1 - Water) - cont.						**Sampled: 02/16/09 14:25**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds										
1,1,2,2-Tetrachloroethane	**7100**	D08	2500	270	ug/L	500	02/25/09 06:12	MF	9B24059	624
1,1,2-Trichloroethane	**12000**	D08	2500	240	ug/L	500	02/25/09 06:12	MF	9B24059	624
1,2-Dichloroethane	**710**	D08,J	2500	300	ug/L	500	02/25/09 06:12	MF	9B24059	624
1,2-Dichloropropane	**2100**	D08,J	2500	310	ug/L	500	02/25/09 06:12	MF	9B24059	624
Methylene Chloride	**750**	D08,J	2500	410	ug/L	500	02/25/09 06:12	MF	9B24059	624
Tetrachloroethene	**1200**	D08,J	2500	280	ug/L	500	02/25/09 06:12	MF	9B24059	624
Trichloroethene	**2300**	D08,J	2500	300	ug/L	500	02/25/09 06:12	MF	9B24059	624
Sample ID: RSB0496-08 (RMU2-W19-W4-S1 - Water)						**Sampled: 02/16/09 14:30**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds										
1,1,2,2-Tetrachloroethane	**3.4**	D11,J	20	2.2	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,1,2-Trichloroethane	**24**	D11	20	1.9	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,1-Dichloroethane	**4.8**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,1-Dichloroethene	**4.0**	D11,J	20	3.4	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,2-Dichloroethane	**7.4**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,2-Dichloroethene, Total	**46**	D11	40	13	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,2-Dichloropropane	**12**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Acetone	**37**	D11,J	100	15	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Benzene	**3.3**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Chlorobenzene	**6.0**	D11,J	20	1.9	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Methylene Chloride	**6.0**	D11,J	20	3.3	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Toluene	**6.0**	D11,J	20	1.8	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Trichloroethene	**7.5**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Vinyl chloride	**37**	D11	20	3.0	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Xylenes, total	**8.2**	D11,J	40	6.0	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Sample ID: RSB0496-09 (RMU2-W19-E2 - Water)						**Sampled: 02/16/09 14:40**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds										
1,1,1-Trichloroethane	**5.3**	D11,J	20	2.9	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
1,1,2-Trichloroethane	**14**	D11,J	20	1.9	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
1,1-Dichloroethane	**45**	D11	20	2.4	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
1,2-Dichloroethane	**27**	D11	20	2.4	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
1,2-Dichloroethene, Total	**160**	D11	40	13	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
1,2-Dichloropropane	**140**	D11	20	2.4	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Acetone	**32**	D11,J	100	15	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Benzene	**20**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Carbon disulfide	**4.2**	D11,J	20	3.5	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Chlorobenzene	**97**	D11	20	1.9	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Chloroform	**31**	D11	20	2.2	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Ethylbenzene	**77**	D11	20	1.9	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Methylene Chloride	**7.3**	D11,J	20	3.3	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Toluene	**290**	D11	20	1.8	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Trichloroethene	**13**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Vinyl chloride	**42**	D11	20	3.0	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Xylenes, total	**150**	D11	40	6.0	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Sample ID: RSB0496-10 (RMU2-W19-E3(6-8) - Solid)						**Sampled: 02/16/09 15:15**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds by EPA 8260B										
2-Butanone	**12**	J	31	8.5	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B

CWM Chemical Services Inc - Model City, NY
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Work Order: RSB0496
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Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Executive Summary - Detections

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-10 (RMU2-W19-E3(6-8) - Solid) - cont.						**Sampled: 02/16/09 15:15**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds by EPA 8260B - cont.										
Acetone	**33**		31	1.4	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Benzene	**2.6**	J	6.2	0.31	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Chlorobenzene	**6.4**		6.2	0.27	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Methylene Chloride	**4.8**	J	6.2	0.44	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Sample ID: RSB0496-12 (RMU2-W19-E3 - Water)						**Sampled: 02/16/09 15:40**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds										
Acetone	**22**	D11,J	100	15	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Benzene	**6.4**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Chlorobenzene	**6.0**	D11,J	20	1.9	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Methylene Chloride	**5.9**	D11,J	20	3.3	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Toluene	**3.7**	D11,J	20	1.8	ug/L	4.00	02/27/09 00:55	MF	9B26076	624

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Reported: 03/11/09 16:24

Sample Summary

SAMPLE IDENTIFICATION	LAB NUMBER	Client Matrix	Date/Time Sampled	Date/Time Received
RMU2-W19-W4-N1(8-11)	RSB0496-01	Solid	02/16/09 12:50	02/16/09 17:11
RMU2-W19-W4-N1(8-11)	RSB0496-02	Solid	02/16/09 12:55	02/16/09 17:11
RMU2-W19-W4-S1(3-5)	RSB0496-03	Solid	02/16/09 13:25	02/16/09 17:11
RMU2-W19-W4-S1(3-5)	RSB0496-04	Solid	02/16/09 13:30	02/16/09 17:11
RMU2-W19-E2(10-12)	RSB0496-05	Solid	02/16/09 14:10	02/16/09 17:11
RMU2-W19-E2(10-12)	RSB0496-06	Solid	02/16/09 14:15	02/16/09 17:11
RMU2-W19-W4-N1	RSB0496-07	Water	02/16/09 14:25	02/16/09 17:11
RMU2-W19-W4-S1	RSB0496-08	Water	02/16/09 14:30	02/16/09 17:11
RMU2-W19-E2	RSB0496-09	Water	02/16/09 14:40	02/16/09 17:11
RMU2-W19-E3(6-8)	RSB0496-10	Solid	02/16/09 15:15	02/16/09 17:11
RMU2-W19-E3(6-8)	RSB0496-11	Solid	02/16/09 15:20	02/16/09 17:11
RMU2-W19-E3	RSB0496-12	Water	02/16/09 15:40	02/16/09 17:11
TRIP BLANK	RSB0496-13	Water	02/16/09	02/16/09 17:11

CWM Chemical Services Inc - Model City, NY
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Work Order: RSB0496
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Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-01 (RMU2-W19-W4-N1(8-11) - Solid)						**Sampled: 02/16/09 12:50**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	**210**		26	1.9	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
1,1-Dichloroethane	**500**		26	1.3	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
1,1-Dichloroethene	ND		26	3.2	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
2-Butanone	ND		130	36	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
2-Hexanone	ND		130	9.1	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
4-Methyl-2-pentanone	**65**	J	130	8.6	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Acetone	ND		130	5.7	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Benzene	ND		26	1.3	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Bromoform	ND		26	2.4	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Bromomethane	ND		26	2.4	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Carbon disulfide	**170**		26	2.2	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Carbon Tetrachloride	**650**		26	0.95	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Chlorobenzene	**250**		26	1.1	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Dibromochloromethane	ND		26	1.4	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Chloroethane	ND		26	4.2	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Chloroform	**720**		26	1.6	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Chloromethane	ND		26	1.6	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
cis-1,3-Dichloropropene	**60**		26	1.5	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Ethylbenzene	ND		26	1.8	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Styrene	ND		26	1.3	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Toluene	**500**		26	4.4	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
trans-1,3-Dichloropropene	**99**		26	1.3	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Vinyl acetate	ND		130	5.4	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Xylenes, total	**320**		78	15	ug/kg dry	1.00	02/20/09 18:01	LH	9B20029	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*108 %*						02/20/09 18:01	LH	9B20029	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*100 %*						02/20/09 18:01	LH	9B20029	8260B
Surr: Toluene-d8 (71-125%)	*116 %*						02/20/09 18:01	LH	9B20029	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
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Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-01RE1 (RMU2-W19-W4-N1(8-11) - Solid)						**Sampled: 02/16/09 12:50**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds by EPA 8260B										
1,1,2,2-Tetrachloroethane	**75000**	D08	1500	240	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
1,1,2-Trichloroethane	**95000**	D08	1500	74	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
1,2-Dichloroethane	**4200**	D08	1500	75	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
1,2-Dichloroethene, Total	ND	D08	3000	780	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
1,2-Dichloropropane	**17000**	D08	1500	76	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
Bromodichloromethane	ND	D08	1500	77	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
Methylene Chloride	ND	D08	1500	650	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
Tetrachloroethene	**210000**	D08	1500	200	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
Trichloroethene	**66000**	D08	1500	460	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
Vinyl chloride	ND	D08	3000	61	ug/kg dry	40.0	02/28/09 05:49	ND	9B20060	8260B
Surr: 4-Bromofluorobenzene (10-190%)	*130 %*	*D08*					02/28/09 05:49	ND	9B20060	8260B
Surr: Toluene-d8 (10-190%)	*109 %*	*D08*					02/28/09 05:49	ND	9B20060	8260B

CWM Chemical Services Inc - Model City, NY
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Work Order: RSB0496
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Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-02 (RMU2-W19-W4-N1(8-11) - Solid)						**Sampled: 02/16/09 12:55**			**Recvd: 02/16/09 17:11**	
General Chemistry Parameters										
SGT Total Petroleum Hydrocarbons	ND		120	NA	mg/kg dry	1.00	03/10/09 22:27	RJK	9C10071	1664 SGT

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
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Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Sample ID: RSB0496-03 (RMU2-W19-W4-S1(3-5) - Solid) — **Sampled: 02/16/09 13:25** — **Recvd: 02/16/09 17:11**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		6.4	0.47	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
1,1,2,2-Tetrachloroethane	ND		6.4	1.0	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
1,1,2-Trichloroethane	ND		6.4	0.32	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
1,1-Dichloroethane	ND		6.4	0.32	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
1,1-Dichloroethene	ND		6.4	0.78	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
1,2-Dichloroethane	ND		6.4	0.32	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
1,2-Dichloroethene, Total	ND		13	3.4	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
1,2-Dichloropropane	ND		6.4	0.33	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
2-Butanone	ND		32	8.7	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
2-Hexanone	ND		32	2.2	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
4-Methyl-2-pentanone	ND		32	2.1	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Acetone	ND		32	1.4	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Benzene	ND		6.4	0.31	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Bromodichloromethane	ND		6.4	0.33	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Bromoform	ND		6.4	0.59	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Bromomethane	ND		6.4	0.59	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Carbon disulfide	**3.0**	J	6.4	0.55	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Carbon Tetrachloride	ND		6.4	0.23	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Chlorobenzene	**2.1**	J	6.4	0.28	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Dibromochloromethane	ND		6.4	0.35	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Chloroethane	ND		6.4	1.0	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Chloroform	ND		6.4	0.40	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Chloromethane	ND		6.4	0.39	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
cis-1,3-Dichloropropene	ND		6.4	0.37	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Ethylbenzene	ND		6.4	0.44	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Methylene Chloride	**12**		6.4	0.45	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Styrene	ND		6.4	0.32	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Tetrachloroethene	ND		6.4	0.86	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Toluene	ND		6.4	1.1	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
trans-1,3-Dichloropropene	ND		6.4	0.31	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Trichloroethene	ND		6.4	0.44	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Vinyl acetate	ND		32	1.3	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Vinyl chloride	ND		13	0.26	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Xylenes, total	ND		19	3.8	ug/kg dry	1.00	02/20/09 16:19	LH	9B20029	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*106 %*						02/20/09 16:19	LH	9B20029	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*106 %*						02/20/09 16:19	LH	9B20029	8260B
Surr: Toluene-d8 (71-125%)	*114 %*						02/20/09 16:19	LH	9B20029	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-04 (RMU2-W19-W4-S1(3-5) - Solid)						**Sampled: 02/16/09 13:30**			**Recvd: 02/16/09 17:11**	
General Chemistry Parameters										
SGT Total Petroleum Hydrocarbons	**191**		125	NA	mg/kg dry	1.00	03/10/09 22:27	RJK	9C10071	1664 SGT

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Sample ID: RSB0496-05 (RMU2-W19-E2(10-12) - Solid) — **Sampled: 02/16/09 14:10** — **Recvd: 02/16/09 17:11**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		6.4	0.47	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
1,1,2,2-Tetrachloroethane	ND		6.4	1.0	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
1,1,2-Trichloroethane	ND		6.4	0.32	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
1,1-Dichloroethane	**2.3**	J	6.4	0.32	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
1,1-Dichloroethene	ND		6.4	0.79	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
1,2-Dichloroethane	ND		6.4	0.32	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
1,2-Dichloroethene, Total	ND		13	3.4	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
1,2-Dichloropropane	ND		6.4	0.33	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
2-Butanone	ND		32	8.7	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
2-Hexanone	ND		32	2.2	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
4-Methyl-2-pentanone	ND		32	2.1	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Acetone	**27**	J	32	1.4	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Benzene	**3.3**	J	6.4	0.31	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Bromodichloromethane	ND		6.4	0.33	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Bromoform	ND		6.4	0.59	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Bromomethane	ND		6.4	0.59	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Carbon disulfide	**2.9**	J	6.4	0.55	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Carbon Tetrachloride	ND		6.4	0.23	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Chlorobenzene	**100**		6.4	0.28	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Dibromochloromethane	ND		6.4	0.35	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Chloroethane	ND		6.4	1.0	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Chloroform	ND		6.4	0.40	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Chloromethane	ND		6.4	0.39	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
cis-1,3-Dichloropropene	ND		6.4	0.37	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Ethylbenzene	**27**		6.4	0.44	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Methylene Chloride	**3.2**	J	6.4	0.45	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Styrene	ND		6.4	0.32	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Tetrachloroethene	**2.4**	J	6.4	0.86	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Toluene	**210**		6.4	1.1	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
trans-1,3-Dichloropropene	ND		6.4	0.31	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Trichloroethene	**2.1**	J	6.4	0.44	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Vinyl acetate	ND		32	1.3	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Vinyl chloride	ND		13	0.26	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Xylenes, total	**92**		19	3.8	ug/kg dry	1.00	02/20/09 16:44	LH	9B20029	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*108 %*						02/20/09 16:44	LH	9B20029	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*102 %*						02/20/09 16:44	LH	9B20029	8260B
Surr: Toluene-d8 (71-125%)	*104 %*						02/20/09 16:44	LH	9B20029	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-06 (RMU2-W19-E2(10-12) - Solid)						**Sampled: 02/16/09 14:15**			**Recvd: 02/16/09 17:11**	
General Chemistry Parameters										
SGT Total Petroleum Hydrocarbons	**901**		134	NA	mg/kg dry	1.00	03/10/09 22:27	RJK	9C10071	1664 SGT

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
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Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-07 (RMU2-W19-W4-N1 - Water)						**Sampled: 02/16/09 14:25**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	D08	2500	360	ug/L	500	02/25/09 06:12	MF	9B24059	624
1,1,2,2-Tetrachloroethane	**7100**	D08	2500	270	ug/L	500	02/25/09 06:12	MF	9B24059	624
1,1,2-Trichloroethane	**12000**	D08	2500	240	ug/L	500	02/25/09 06:12	MF	9B24059	624
1,1-Dichloroethane	ND	D08	2500	290	ug/L	500	02/25/09 06:12	MF	9B24059	624
1,1-Dichloroethene	ND	D08	2500	430	ug/L	500	02/25/09 06:12	MF	9B24059	624
1,2-Dichloroethane	**710**	D08,J	2500	300	ug/L	500	02/25/09 06:12	MF	9B24059	624
1,2-Dichloroethene, Total	ND	D08	5000	1600	ug/L	500	02/25/09 06:12	MF	9B24059	624
1,2-Dichloropropane	**2100**	D08,J	2500	310	ug/L	500	02/25/09 06:12	MF	9B24059	624
2-Butanone	ND	D08	5000	1800	ug/L	500	02/25/09 06:12	MF	9B24059	624
2-Hexanone	ND	D08	5000	1800	ug/L	500	02/25/09 06:12	MF	9B24059	624
4-Methyl-2-pentanone	ND	D08	5000	1700	ug/L	500	02/25/09 06:12	MF	9B24059	624
Acetone	ND	D08	12000	1900	ug/L	500	02/25/09 06:12	MF	9B24059	624
Benzene	ND	D08	2500	300	ug/L	500	02/25/09 06:12	MF	9B24059	624
Bromodichloromethane	ND	D08	2500	270	ug/L	500	02/25/09 06:12	MF	9B24059	624
Bromoform	ND	D08	2500	230	ug/L	500	02/25/09 06:12	MF	9B24059	624
Bromomethane	ND	D08	2500	600	ug/L	500	02/25/09 06:12	MF	9B24059	624
Carbon disulfide	ND	D08	2500	440	ug/L	500	02/25/09 06:12	MF	9B24059	624
Carbon Tetrachloride	ND	D08	2500	410	ug/L	500	02/25/09 06:12	MF	9B24059	624
Chlorobenzene	ND	D08	2500	240	ug/L	500	02/25/09 06:12	MF	9B24059	624
Dibromochloromethane	ND	D08	2500	210	ug/L	500	02/25/09 06:12	MF	9B24059	624
Chloroethane	ND	D08	2500	440	ug/L	500	02/25/09 06:12	MF	9B24059	624
Chloroform	ND	D08	2500	270	ug/L	500	02/25/09 06:12	MF	9B24059	624
Chloromethane	ND	D08	2500	320	ug/L	500	02/25/09 06:12	MF	9B24059	624
cis-1,3-Dichloropropene	ND	D08	2500	280	ug/L	500	02/25/09 06:12	MF	9B24059	624
Ethylbenzene	ND	D08	2500	230	ug/L	500	02/25/09 06:12	MF	9B24059	624
Methylene Chloride	**750**	D08,J	2500	410	ug/L	500	02/25/09 06:12	MF	9B24059	624
Styrene	ND	D08	2500	190	ug/L	500	02/25/09 06:12	MF	9B24059	624
Tetrachloroethene	**1200**	D08,J	2500	280	ug/L	500	02/25/09 06:12	MF	9B24059	624
Toluene	ND	D08	2500	230	ug/L	500	02/25/09 06:12	MF	9B24059	624
trans-1,3-Dichloropropene	ND	D08	2500	220	ug/L	500	02/25/09 06:12	MF	9B24059	624
Trichloroethene	**2300**	D08,J	2500	300	ug/L	500	02/25/09 06:12	MF	9B24059	624
Vinyl acetate	ND	D08	5000	2100	ug/L	500	02/25/09 06:12	MF	9B24059	624
Vinyl chloride	ND	D08	2500	370	ug/L	500	02/25/09 06:12	MF	9B24059	624
Xylenes, total	ND	D08	5000	750	ug/L	500	02/25/09 06:12	MF	9B24059	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*106 %*	*D08*					02/25/09 06:12	MF	9B24059	624
Surr: 4-Bromofluorobenzene (78-122%)	*98 %*	*D08*					02/25/09 06:12	MF	9B24059	624
Surr: Toluene-d8 (87-110%)	*101 %*	*D08*					02/25/09 06:12	MF	9B24059	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-08 (RMU2-W19-W4-S1 - Water)						**Sampled: 02/16/09 14:30**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	D11	20	2.9	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,1,2,2-Tetrachloroethane	**3.4**	D11,J	20	2.2	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,1,2-Trichloroethane	**24**	D11	20	1.9	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,1-Dichloroethane	**4.8**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,1-Dichloroethene	**4.0**	D11,J	20	3.4	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,2-Dichloroethane	**7.4**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,2-Dichloroethene, Total	**46**	D11	40	13	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
1,2-Dichloropropane	**12**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
2-Butanone	ND	D11	40	14	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
2-Hexanone	ND	D11	40	14	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
4-Methyl-2-pentanone	ND	D11	40	14	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Acetone	**37**	D11,J	100	15	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Benzene	**3.3**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Bromodichloromethane	ND	D11	20	2.1	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Bromoform	ND	D11	20	1.9	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Bromomethane	ND	D11	20	4.8	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Carbon disulfide	ND	D11	20	3.5	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Carbon Tetrachloride	ND	D11	20	3.3	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Chlorobenzene	**6.0**	D11,J	20	1.9	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Dibromochloromethane	ND	D11	20	1.7	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Chloroethane	ND	D11	20	3.5	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Chloroform	ND	D11	20	2.2	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Chloromethane	ND	D11	20	2.5	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
cis-1,3-Dichloropropene	ND	D11	20	2.3	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Ethylbenzene	ND	D11	20	1.9	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Methylene Chloride	**6.0**	D11,J	20	3.3	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Styrene	ND	D11	20	1.5	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Tetrachloroethene	ND	D11	20	2.2	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Toluene	**6.0**	D11,J	20	1.8	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
trans-1,3-Dichloropropene	ND	D11	20	1.8	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Trichloroethene	**7.5**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Vinyl acetate	ND	D11	40	17	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Vinyl chloride	**37**	D11	20	3.0	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Xylenes, total	**8.2**	D11,J	40	6.0	ug/L	4.00	02/27/09 00:05	MF	9B26076	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*110 %*	*D11*					02/27/09 00:05	MF	9B26076	624
Surr: 4-Bromofluorobenzene (78-122%)	*96 %*	*D11*					02/27/09 00:05	MF	9B26076	624
Surr: Toluene-d8 (87-110%)	*99 %*	*D11*					02/27/09 00:05	MF	9B26076	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-09 (RMU2-W19-E2 - Water)						**Sampled: 02/16/09 14:40**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds										
1,1,1-Trichloroethane	**5.3**	D11,J	20	2.9	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
1,1,2,2-Tetrachloroethane	ND	D11	20	2.2	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
1,1,2-Trichloroethane	**14**	D11,J	20	1.9	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
1,1-Dichloroethane	**45**	D11	20	2.4	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
1,1-Dichloroethene	ND	D11	20	3.4	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
1,2-Dichloroethane	**27**	D11	20	2.4	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
1,2-Dichloroethene, Total	**160**	D11	40	13	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
1,2-Dichloropropane	**140**	D11	20	2.4	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
2-Butanone	ND	D11	40	14	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
2-Hexanone	ND	D11	40	14	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
4-Methyl-2-pentanone	ND	D11	40	14	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Acetone	**32**	D11,J	100	15	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Benzene	**20**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Bromodichloromethane	ND	D11	20	2.1	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Bromoform	ND	D11	20	1.9	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Bromomethane	ND	D11	20	4.8	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Carbon disulfide	**4.2**	D11,J	20	3.5	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Carbon Tetrachloride	ND	D11	20	3.3	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Chlorobenzene	**97**	D11	20	1.9	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Dibromochloromethane	ND	D11	20	1.7	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Chloroethane	ND	D11	20	3.5	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Chloroform	**31**	D11	20	2.2	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Chloromethane	ND	D11	20	2.5	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
cis-1,3-Dichloropropene	ND	D11	20	2.3	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Ethylbenzene	**77**	D11	20	1.9	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Methylene Chloride	**7.3**	D11,J	20	3.3	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Styrene	ND	D11	20	1.5	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Tetrachloroethene	ND	D11	20	2.2	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Toluene	**290**	D11	20	1.8	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
trans-1,3-Dichloropropene	ND	D11	20	1.8	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Trichloroethene	**13**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Vinyl acetate	ND	D11	40	17	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Vinyl chloride	**42**	D11	20	3.0	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Xylenes, total	**150**	D11	40	6.0	ug/L	4.00	02/27/09 00:30	MF	9B26076	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*109 %*	*D11*					02/27/09 00:30	MF	9B26076	624
Surr: 4-Bromofluorobenzene (78-122%)	*95 %*	*D11*					02/27/09 00:30	MF	9B26076	624
Surr: Toluene-d8 (87-110%)	*99 %*	*D11*					02/27/09 00:30	MF	9B26076	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Sample ID: RSB0496-10 (RMU2-W19-E3(6-8) - Solid) **Sampled: 02/16/09 15:15** **Recvd: 02/16/09 17:11**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		6.2	0.45	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
1,1,2,2-Tetrachloroethane	ND		6.2	1.0	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
1,1,2-Trichloroethane	ND		6.2	0.31	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
1,1-Dichloroethane	ND		6.2	0.31	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
1,1-Dichloroethene	ND		6.2	0.76	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
1,2-Dichloroethane	ND		6.2	0.31	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
1,2-Dichloroethene, Total	ND		12	3.3	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
1,2-Dichloropropane	ND		6.2	0.32	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
2-Butanone	**12**	J	31	8.5	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
2-Hexanone	ND		31	2.2	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
4-Methyl-2-pentanone	ND		31	2.0	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Acetone	**33**		31	1.4	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Benzene	**2.6**	J	6.2	0.31	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Bromodichloromethane	ND		6.2	0.32	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Bromoform	ND		6.2	0.58	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Bromomethane	ND		6.2	0.57	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Carbon disulfide	ND		6.2	0.54	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Carbon Tetrachloride	ND		6.2	0.23	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Chlorobenzene	**6.4**		6.2	0.27	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Dibromochloromethane	ND		6.2	0.34	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Chloroethane	ND		6.2	1.0	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Chloroform	ND		6.2	0.39	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Chloromethane	ND		6.2	0.38	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
cis-1,3-Dichloropropene	ND		6.2	0.36	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Ethylbenzene	ND		6.2	0.43	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Methylene Chloride	**4.8**	J	6.2	0.44	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Styrene	ND		6.2	0.31	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Tetrachloroethene	ND		6.2	0.84	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Toluene	ND		6.2	1.1	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
trans-1,3-Dichloropropene	ND		6.2	0.31	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Trichloroethene	ND		6.2	0.43	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Vinyl acetate	ND		31	1.3	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Vinyl chloride	ND		12	0.25	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Xylenes, total	ND		19	3.7	ug/kg dry	1.00	02/20/09 17:10	LH	9B20029	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*108 %*						02/20/09 17:10	LH	9B20029	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*104 %*						02/20/09 17:10	LH	9B20029	8260B
Surr: Toluene-d8 (71-125%)	*108 %*						02/20/09 17:10	LH	9B20029	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-11 (RMU2-W19-E3(6-8) - Solid)						**Sampled: 02/16/09 15:20**			**Recvd: 02/16/09 17:11**	
General Chemistry Parameters										
SGT Total Petroleum Hydrocarbons	ND		125	NA	mg/kg dry	1.00	03/10/09 22:27	RJK	9C10071	1664 SGT

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-12 (RMU2-W19-E3 - Water)						**Sampled: 02/16/09 15:40**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	D11	20	2.9	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
1,1,2,2-Tetrachloroethane	ND	D11	20	2.2	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
1,1,2-Trichloroethane	ND	D11	20	1.9	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
1,1-Dichloroethane	ND	D11	20	2.4	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
1,1-Dichloroethene	ND	D11	20	3.4	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
1,2-Dichloroethane	ND	D11	20	2.4	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
1,2-Dichloroethene, Total	ND	D11	40	13	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
1,2-Dichloropropane	ND	D11	20	2.4	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
2-Butanone	ND	D11	40	14	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
2-Hexanone	ND	D11	40	14	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
4-Methyl-2-pentanone	ND	D11	40	14	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Acetone	**22**	D11,J	100	15	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Benzene	**6.4**	D11,J	20	2.4	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Bromodichloromethane	ND	D11	20	2.1	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Bromoform	ND	D11	20	1.9	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Bromomethane	ND	D11	20	4.8	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Carbon disulfide	ND	D11	20	3.5	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Carbon Tetrachloride	ND	D11	20	3.3	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Chlorobenzene	**6.0**	D11,J	20	1.9	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Dibromochloromethane	ND	D11	20	1.7	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Chloroethane	ND	D11	20	3.5	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Chloroform	ND	D11	20	2.2	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Chloromethane	ND	D11	20	2.5	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
cis-1,3-Dichloropropene	ND	D11	20	2.3	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Ethylbenzene	ND	D11	20	1.9	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Methylene Chloride	**5.9**	D11,J	20	3.3	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Styrene	ND	D11	20	1.5	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Tetrachloroethene	ND	D11	20	2.2	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Toluene	**3.7**	D11,J	20	1.8	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
trans-1,3-Dichloropropene	ND	D11	20	1.8	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Trichloroethene	ND	D11	20	2.4	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Vinyl acetate	ND	D11	40	17	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Vinyl chloride	ND	D11	20	3.0	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Xylenes, total	ND	D11	40	6.0	ug/L	4.00	02/27/09 00:55	MF	9B26076	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*110 %*	*D11*					02/27/09 00:55	MF	9B26076	624
Surr: 4-Bromofluorobenzene (78-122%)	*97 %*	*D11*					02/27/09 00:55	MF	9B26076	624
Surr: Toluene-d8 (87-110%)	*98 %*	*D11*					02/27/09 00:55	MF	9B26076	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSB0496
Site ID: Model City Landfill
Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 02/16/09
Reported: 03/11/09 16:24

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSB0496-13 (TRIP BLANK - Water)						**Sampled: 02/16/09**			**Recvd: 02/16/09 17:11**	
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND		5.0	0.73	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
1,1,2,2-Tetrachloroethane	ND		5.0	0.55	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
1,1-Dichloroethane	ND		5.0	0.59	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
1,1-Dichloroethene	ND		5.0	0.85	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
1,2-Dichloroethane	ND		5.0	0.60	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
1,2-Dichloroethene, Total	ND		10	3.2	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
1,2-Dichloropropane	ND		5.0	0.61	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
2-Butanone	ND		10	3.6	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
2-Hexanone	ND		10	3.5	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
4-Methyl-2-pentanone	ND		10	3.5	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Acetone	ND		34	3.7	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Benzene	ND		5.0	0.60	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Bromodichloromethane	ND		5.0	0.54	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Bromoform	ND		5.0	0.47	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Bromomethane	ND		10	1.2	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Carbon disulfide	ND		5.0	0.88	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Carbon Tetrachloride	ND		5.0	0.83	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Chlorobenzene	ND		5.0	0.48	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Dibromochloromethane	ND		5.0	0.41	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Chloroethane	ND		10	0.87	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Chloroform	ND		5.0	0.54	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Chloromethane	ND		10	0.64	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
cis-1,3-Dichloropropene	ND		5.0	0.57	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Ethylbenzene	ND		5.0	0.46	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Methylene Chloride	ND		5.0	0.81	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Styrene	ND		5.0	0.38	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Tetrachloroethene	ND		5.0	0.55	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Toluene	ND		5.0	0.45	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Trichloroethene	ND		5.0	0.60	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Vinyl acetate	ND		10	4.3	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Vinyl chloride	ND		10	0.75	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Xylenes, total	ND		10	1.5	ug/L	1.00	02/25/09 08:03	MF	9B24059	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*105 %*						02/25/09 08:03	MF	9B24059	624
Surr: 4-Bromofluorobenzene (78-122%)	*96 %*						02/25/09 08:03	MF	9B24059	624
Surr: Toluene-d8 (87-110%)	*99 %*						02/25/09 08:03	MF	9B24059	624

TestAmerica

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WASTE MANAGEMENT CHAIN OF CUSTODY

Internal Use Only

Sampler Name (Print)	Signature:
Russell J. Marchese	Russell J Marchese
Site Name:	**Spec Request:**
CWM Model City	AC
Site Location:	**Event Name:**
Lewiston, NY	RMW-2 Footprint Relocation

TA Sample No.	Client Sample ID	Sampling Date	Sampling Time	MATRIX	COMP / GRAB	8260VOA	T-METALS	D-METALS	CHLORIDE/SULFATE/NITRATE PH, TSS, TDS	ALK / CARB / BICARB	HARDNESS	NH_3 / COD	TOC	Total Petroleum Hydrocarbons CT PH (Method 1664)					Additional Analysis/Remarks
				INDICATE PRESERVATIVE BY USING KEY BELOW (OPTIONAL)															
				INDICATE CONTAINER BY USING KEY BELOW															
	RMW2-W19-W4-N1(9-11)	2/16/09	1250	S	G	4/6													
	RMW2-W19-W4-N1(9-11)	2/16/09	1255	S	G									4/6					
	RMW2-W19-W4-S1(3-5')	2/16/09	1325	S	G	4/6													
	RMW2-W19-W4-S1(3-5)	2/16/09	1330	S	G									4/6					
	RMW2-W19-E2(10-12')	2/16/09	1410	S	G	4/6													
	RMW2-W19-E2(10-12')	2/16/09	1415	S	G									4/6					
	RMW2-W19-W4-N1	2/16/09	1425	W	G	2/1													
	RMW2-W19-W4-S1	2/16/09	1430	W	G	2/1													
	RMW2-W19-E2	2/16/09	1440	W	G	2/1													
	RMW2-W19-E3(6-8')	2/16/09	1515	S	G	4/6													
	RMW2-W19-E3(6-8)	2/16/09	1520	S	G									4/6					
	RMW2-W19-E3	2/16/09	1540	W	G	2/1													
	TRIP BLANK	12/12/08	—	W	G	2/1													

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
Russell J Marchese	GOLDER	2/16/09	1711		TAL	2/16/09	1711
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME

Matrix Key
WW = Wastewater
W = Water/Groundwater
S = Solid
SI = Sludge
MS = Miscellaneous Solids
OI = Oil
A = Air
O = _____

Container Key
1. Plastic
2. VOA Vial
3. Sterile Plastic
4. Amber Glass
5. Widemouth Glass
6. Other

Preservation Key
1. HCl, Cool to 4°
2. H_2SO_4, Cool to 4°
3. HNO_3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn Acetate, Cool to 4°
6. Cool to 4°
7. None

COMMENTS
Some samples may contain petroleum product; GW samples: Very SILTY.

Courier:

Bill of Lading:

TAL-8219 (1207)

NYSDEC OHMS Document No. 201469232-00007

APPENDIX I

TEST AMERICA ANALYTICAL DATA REPORTS – PHASE II BORINGS

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Analytical Report

SDG Number: RSD0850

Project Description(s)

Work Order RSD0850 - RMU-2 Background Sampling
Work Order RSD0851 - RMU-2 Background Sampling
Work Order RSD0907 - RMU-2 Background Sampling

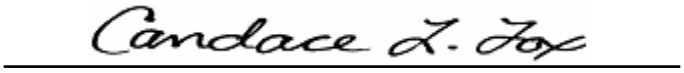
For:

Greg Zayatz

CWM Chemical Services Inc - Model City, NY

1550 Balmer Road

Model City, NY 14107



Candace Fox

Project Manager

candace.fox@testamericainc.com

Friday, April 24, 2009

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exception to NELAP requirements are noted in this report. Persuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project manager who has signed this report.

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

TestAmerica Buffalo
Current Certifications

As of 1/27/2009

STATE	Program	Cert # / Lab ID
Arkansas	CWA, RCRA, SOIL	88-0686
California*	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida*	NELAP CWA, RCRA	E87672
Georgia*	SDWA,NELAP CWA, RCRA	956
Illinois*	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas*	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana*	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY0044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA,CWA, RCRA	036-999-337
New Hampshire*	NELAP SDWA, CWA	233701
New Jersey*	NELAP,SDWA, CWA, RCRA,	NY455
New York*	NELAP, AIR, SDWA, CWA, RCRA,CLP	10026
Oklahoma	CWA, RCRA	9421
Pennsylvania*	NELAP CWA,RCRA	68-00281
Tennessee	SDWA	02970
Texas*	NELAP CWA, RCRA	T104704412-08-TX
USDA	FOREIGN SOIL PERMIT	S-41579
USDOE	Department of Energy	DOECAP-STB
Virginia	SDWA	278
Washington*	NELAP CWA,RCRA	C1677
Wisconsin	CWA, RCRA	998310390
West Virginia	CWA,RCRA	252

*As required under the indicated accreditation, the test results in this report meet all NELAP requirements for parameters for which accre ditation is required or available. Any exceptions to NELAP requirements are noted in this report.

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Case Narrative

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. field-pH), they were not analyzed immediately, but as soon as possible after laboratory receipt.

There are pertinent documents appended to this report, 3 pages, are included and are an integral part of this report.

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our Laboratory.

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

The requested project specific reporting limits listed below were less than lab standard quantitation limits but greater than or equal to the lab MDL. It must be noted that results reported below lab standard quantitation limits (PQL) may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

SpecificMethod	Analyte	Units	Client RL	Lab PQL
624	2-Butanone	ug/L	10	25
624	2-Hexanone	ug/L	10	25
624	4-Methyl-2-pentanone	ug/L	10	25
624	Vinyl acetate	ug/L	10	25

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

DATA QUALIFIERS AND DEFINITIONS

D08	Dilution required due to high concentration of target analyte(s)
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
J	Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.
P6	Sample received unpreserved, however the sample was analyzed within 7 days per EPA recommendation.
S6	Sediment present.

ADDITIONAL COMMENTS

Results are reported on a wet weight basis unless otherwise noted.

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Sample Summary

SAMPLE IDENTIFICATION	LAB NUMBER	Client Matrix	Date/Time Sampled	Date/Time Received
RMU2-W36 (3-4)	RSD0850-01	Solid	04/21/09 13:40	04/21/09 16:45
RMU2-W37 (8-9)	RSD0850-02	Solid	04/21/09 14:10	04/21/09 16:45
RMU2-W38 (4-5)	RSD0850-03	Solid	04/21/09 14:35	04/21/09 16:45
RMU2-W38	RSD0850-04	Water	04/21/09 15:10	04/21/09 16:45
RMU2-W37	RSD0850-05	Water	04/21/09 15:15	04/21/09 16:45
RMU2-W36	RSD0850-06	Water	04/21/09 15:20	04/21/09 16:45
TRIP BLANK	RSD0850-07	Water	04/21/09	04/21/09 16:45

SAMPLE IDENTIFICATION	LAB NUMBER	Client Matrix	Date/Time Sampled	Date/Time Received
RMU2-W29	RSD0851-01	Water	04/20/09 15:05	04/21/09 16:45
RMU2-W31	RSD0851-02	Water	04/21/09 08:10	04/21/09 16:45
RMU2-W30R(12-13)	RSD0851-03	Solid	04/21/09 08:55	04/21/09 16:45
RMU2-W32(8-10)	RSD0851-04	Solid	04/21/09 09:25	04/21/09 16:45
RMU2-W33(6-8)	RSD0851-05	Solid	04/21/09 09:50	04/21/09 16:45
RMU2-W34(9-10)	RSD0851-06	Solid	04/21/09 10:40	04/21/09 16:45
RMU2-W35(6-7)	RSD0851-07	Solid	04/21/09 11:05	04/21/09 16:45
RMU2-W30R	RSD0851-08	Water	04/21/09 11:25	04/21/09 16:45
RMU2-W32	RSD0851-09	Water	04/21/09 11:30	04/21/09 16:45
RMU2-W33	RSD0851-10	Water	04/21/09 11:35	04/21/09 16:45
RMU2-W34	RSD0851-11	Water	04/21/09 11:40	04/21/09 16:45
RMU2-W35	RSD0851-12	Water	04/21/09 11:45	04/21/09 16:45

SAMPLE IDENTIFICATION	LAB NUMBER	Client Matrix	Date/Time Sampled	Date/Time Received
RMU2-W19-W4-N2 (4-5)	RSD0907-01	Solid	04/22/09 09:25	04/22/09 14:15
RMU2-W19-W4-N3 (4-5)	RSD0907-02	Solid	04/22/09 10:25	04/22/09 14:15
RMU2-W19-W4-N4 (6-8)	RSD0907-03	Solid	04/22/09 11:20	04/22/09 14:15
RMU2-W19-W4-N4 (6-8)	RSD0907-04	Solid	04/22/09 11:25	04/22/09 14:15
RMU2-W19-W4-N2	RSD0907-05	Water	04/22/09 11:40	04/22/09 14:15
RMU2-W19-W4-N3	RSD0907-06	Water	04/22/09 11:45	04/22/09 14:15
RMU2-W19-W4-N4	RSD0907-07	Water	04/22/09 11:55	04/22/09 14:15
TRIP BLANK	RSD0907-08	Water	04/21/09	04/22/09 14:15

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0850-01 (RMU2-W36 (3-4) - Solid)						**Sampled: 04/21/09 13:40**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	ND		5.8	0.42	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
1,1,2,2-Tetrachloroethane	ND		5.8	0.94	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
1,1,2-Trichloroethane	ND		5.8	0.29	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
1,1-Dichloroethane	ND		5.8	0.29	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
1,1-Dichloroethene	ND		5.8	0.71	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
1,2-Dichloroethane	ND		5.8	0.29	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
1,2-Dichloroethene, Total	ND		12	3.0	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
1,2-Dichloropropane	ND		5.8	0.30	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
2-Butanone	**19**	J	29	7.9	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
2-Hexanone	ND		29	2.0	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
4-Methyl-2-pentanone	ND		29	1.9	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Acetone	**140**		29	1.3	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Benzene	ND		5.8	0.28	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Bromodichloromethane	ND		5.8	0.30	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Bromoform	ND		5.8	0.53	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Bromomethane	ND		5.8	0.53	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Carbon disulfide	**1.3**	J	5.8	0.50	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Carbon Tetrachloride	ND		5.8	0.21	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Chlorobenzene	**6.9**		5.8	0.25	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Dibromochloromethane	ND		5.8	0.32	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Chloroethane	ND		5.8	0.94	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Chloroform	ND		5.8	0.36	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Chloromethane	ND		5.8	0.35	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
cis-1,3-Dichloropropene	ND		5.8	0.33	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Ethylbenzene	ND		5.8	0.40	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Methylene Chloride	**10**		5.8	0.40	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Styrene	ND		5.8	0.29	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Tetrachloroethene	ND		5.8	0.78	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Toluene	ND		5.8	0.98	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
trans-1,3-Dichloropropene	ND		5.8	0.28	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Trichloroethene	ND		5.8	0.40	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Vinyl acetate	ND		29	1.2	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Vinyl chloride	ND		12	0.24	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Xylenes, total	**10**	J	12	0.97	ug/kg dry	1.00	04/23/09 17:43	PQ	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*99 %*						04/23/09 17:43	PQ	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*112 %*						04/23/09 17:43	PQ	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*108 %*						04/23/09 17:43	PQ	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Sample ID: RSD0850-02 (RMU2-W37 (8-9) - Solid) — **Sampled: 04/21/09 14:10** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,2,2-Tetrachloroethane	ND		5.8	0.93	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
1,1,2-Trichloroethane	**2.2**	J	5.8	0.29	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
1,1-Dichloroethane	**83**		5.8	0.28	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
1,1-Dichloroethene	**180**		5.8	0.70	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
1,2-Dichloroethane	ND		5.8	0.29	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
1,2-Dichloroethene, Total	ND		12	3.0	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
1,2-Dichloropropane	ND		5.8	0.29	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
2-Butanone	ND		29	7.8	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
2-Hexanone	ND		29	2.0	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
4-Methyl-2-pentanone	ND		29	1.9	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Acetone	**340**		29	1.3	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Benzene	ND		5.8	0.28	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Bromodichloromethane	ND		5.8	0.30	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Bromoform	ND		5.8	0.53	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Bromomethane	ND		5.8	0.53	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Carbon disulfide	ND		5.8	0.49	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Carbon Tetrachloride	ND		5.8	0.21	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Chlorobenzene	ND		5.8	0.25	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Dibromochloromethane	ND		5.8	0.32	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Chloroethane	ND		5.8	0.93	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Chloroform	ND		5.8	0.36	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Chloromethane	ND		5.8	0.35	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
cis-1,3-Dichloropropene	ND		5.8	0.33	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Ethylbenzene	ND		5.8	0.40	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Methylene Chloride	**5.2**	J	5.8	0.40	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Styrene	ND		5.8	0.29	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Tetrachloroethene	ND		5.8	0.77	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Toluene	ND		5.8	0.98	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
trans-1,3-Dichloropropene	ND		5.8	0.28	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Trichloroethene	**1.9**	J	5.8	0.40	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Vinyl acetate	ND		29	1.2	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Vinyl chloride	ND		12	0.23	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Xylenes, total	ND		12	0.97	ug/kg dry	1.00	04/23/09 18:09	PQ	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*98 %*						04/23/09 18:09	PQ	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*109 %*						04/23/09 18:09	PQ	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*109 %*						04/23/09 18:09	PQ	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0850-02RE1 (RMU2-W37 (8-9) - Solid)						**Sampled: 04/21/09 14:10**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	**180**	D08	27	1.9	ug/kg dry	1.00	04/23/09 22:49	PQ	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*95 %*	*D08*					04/23/09 22:49	PQ	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*107 %*	*D08*					04/23/09 22:49	PQ	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*108 %*	*D08*					04/23/09 22:49	PQ	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Sample ID: RSD0850-03 (RMU2-W38 (4-5) - Solid) — **Sampled: 04/21/09 14:35** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		6.3	0.46	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
1,1,2,2-Tetrachloroethane	ND		6.3	1.0	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
1,1,2-Trichloroethane	ND		6.3	0.32	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
1,1-Dichloroethane	ND		6.3	0.31	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
1,1-Dichloroethene	ND		6.3	0.77	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
1,2-Dichloroethane	ND		6.3	0.32	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
1,2-Dichloroethene, Total	ND		13	3.3	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
1,2-Dichloropropane	ND		6.3	0.32	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
2-Butanone	ND		32	8.6	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
2-Hexanone	ND		32	2.2	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
4-Methyl-2-pentanone	ND		32	2.1	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Acetone	**120**		32	1.4	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Benzene	ND		6.3	0.31	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Bromodichloromethane	ND		6.3	0.32	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Bromoform	ND		6.3	0.58	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Bromomethane	ND		6.3	0.58	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Carbon disulfide	ND		6.3	0.54	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Carbon Tetrachloride	ND		6.3	0.23	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Chlorobenzene	ND		6.3	0.28	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Dibromochloromethane	ND		6.3	0.35	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Chloroethane	ND		6.3	1.0	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Chloroform	ND		6.3	0.39	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Chloromethane	ND		6.3	0.38	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
cis-1,3-Dichloropropene	ND		6.3	0.36	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Ethylbenzene	ND		6.3	0.44	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Methylene Chloride	**8.2**		6.3	0.44	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Styrene	ND		6.3	0.32	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Tetrachloroethene	ND		6.3	0.85	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Toluene	ND		6.3	1.1	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
trans-1,3-Dichloropropene	ND		6.3	0.31	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Trichloroethene	ND		6.3	0.44	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Vinyl acetate	ND		32	1.3	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Vinyl chloride	ND		13	0.26	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Xylenes, total	ND		13	1.1	ug/kg dry	1.00	04/23/09 18:34	PQ	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*96 %*						04/23/09 18:34	PQ	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*112 %*						04/23/09 18:34	PQ	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*112 %*						04/23/09 18:34	PQ	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Sample ID: RSD0850-04 (RMU2-W38 - Water) — **Sampled: 04/21/09 15:10** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND	P6, S6	5.0	0.73	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6, S6	5.0	0.55	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
1,1,2-Trichloroethane	ND	P6, S6	5.0	0.48	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
1,1-Dichloroethane	ND	P6, S6	5.0	0.59	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
1,1-Dichloroethene	ND	P6, S6	5.0	0.85	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
1,2-Dichloroethane	ND	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
1,2-Dichloroethene, Total	ND	P6, S6	10	3.2	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
1,2-Dichloropropane	ND	P6, S6	5.0	0.61	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
2-Butanone	ND	P6, S6	10	3.6	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
2-Hexanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
4-Methyl-2-pentanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Acetone	**17**	P6, S6,J	34	3.7	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Benzene	ND	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Bromodichloromethane	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Bromoform	ND	P6, S6	5.0	0.47	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Bromomethane	ND	P6, S6	10	1.2	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Carbon disulfide	ND	P6, S6	5.0	0.88	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Carbon Tetrachloride	ND	P6, S6	5.0	0.83	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Chlorobenzene	ND	P6, S6	5.0	0.48	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Dibromochloromethane	ND	P6, S6	5.0	0.41	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Chloroethane	ND	P6, S6	10	0.87	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Chloroform	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Chloromethane	ND	P6, S6	10	0.64	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
cis-1,3-Dichloropropene	ND	P6, S6	5.0	0.57	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Ethylbenzene	ND	P6, S6	5.0	0.46	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Methylene Chloride	ND	P6, S6	5.0	0.81	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Styrene	ND	P6, S6	5.0	0.38	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Tetrachloroethene	ND	P6, S6	5.0	0.55	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Toluene	**1.0**	P6, S6,J	5.0	0.45	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
trans-1,3-Dichloropropene	ND	P6, S6	5.0	0.44	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Trichloroethene	ND	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Vinyl acetate	ND	P6, S6	10	4.3	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Vinyl chloride	ND	P6, S6	10	0.75	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Xylenes, total	ND	P6, S6	10	1.1	ug/L	1.00	04/24/09 10:05	TRB	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*111 %*	*P6, S6*					04/24/09 10:05	TRB	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*99 %*	*P6, S6*					04/24/09 10:05	TRB	9D23090	624
Surr: Toluene-d8 (87-110%)	*101 %*	*P6, S6*					04/24/09 10:05	TRB	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Sample ID: RSD0850-05 (RMU2-W37 - Water) — **Sampled: 04/21/09 15:15** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	**77**	P6, S6	5.0	0.73	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6, S6	5.0	0.55	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
1,1,2-Trichloroethane	**1.9**	P6, S6,J	5.0	0.48	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
1,1-Dichloroethane	**94**	P6, S6	5.0	0.59	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
1,1-Dichloroethene	**39**	P6, S6	5.0	0.85	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
1,2-Dichloroethane	ND	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
1,2-Dichloroethene, Total	**3.6**	P6, S6,J	10	3.2	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
1,2-Dichloropropane	ND	P6, S6	5.0	0.61	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
2-Butanone	ND	P6, S6	10	3.6	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
2-Hexanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
4-Methyl-2-pentanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Acetone	**6.0**	P6, S6,J	34	3.7	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Benzene	ND	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Bromodichloromethane	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Bromoform	ND	P6, S6	5.0	0.47	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Bromomethane	ND	P6, S6	10	1.2	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Carbon disulfide	ND	P6, S6	5.0	0.88	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Carbon Tetrachloride	ND	P6, S6	5.0	0.83	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Chlorobenzene	ND	P6, S6	5.0	0.48	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Dibromochloromethane	ND	P6, S6	5.0	0.41	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Chloroethane	ND	P6, S6	10	0.87	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Chloroform	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Chloromethane	ND	P6, S6	10	0.64	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
cis-1,3-Dichloropropene	ND	P6, S6	5.0	0.57	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Ethylbenzene	ND	P6, S6	5.0	0.46	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Methylene Chloride	ND	P6, S6	5.0	0.81	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Styrene	ND	P6, S6	5.0	0.38	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Tetrachloroethene	**2.9**	P6, S6,J	5.0	0.55	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Toluene	ND	P6, S6	5.0	0.45	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
trans-1,3-Dichloropropene	ND	P6, S6	5.0	0.44	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Trichloroethene	**4.8**	P6, S6,J	5.0	0.60	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Vinyl acetate	ND	P6, S6	10	4.3	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Vinyl chloride	**1.9**	P6, S6,J	10	0.75	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Xylenes, total	ND	P6, S6	10	1.1	ug/L	1.00	04/24/09 10:30	TRB	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*110 %*	*P6, S6*					04/24/09 10:30	TRB	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*98 %*	*P6, S6*					04/24/09 10:30	TRB	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*	*P6, S6*					04/24/09 10:30	TRB	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Sample ID: RSD0850-06 (RMU2-W36 - Water) — **Sampled: 04/21/09 15:20** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND	P6, S6	5.0	0.73	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6, S6	5.0	0.55	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
1,1,2-Trichloroethane	ND	P6, S6	5.0	0.48	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
1,1-Dichloroethane	ND	P6, S6	5.0	0.59	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
1,1-Dichloroethene	ND	P6, S6	5.0	0.85	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
1,2-Dichloroethane	**2.4**	P6, S6,J	5.0	0.60	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
1,2-Dichloroethene, Total	ND	P6, S6	10	3.2	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
1,2-Dichloropropane	ND	P6, S6	5.0	0.61	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
2-Butanone	ND	P6, S6	10	3.6	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
2-Hexanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
4-Methyl-2-pentanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Acetone	**12**	P6, S6,J	34	3.7	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Benzene	**2.5**	P6, S6,J	5.0	0.60	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Bromodichloromethane	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Bromoform	ND	P6, S6	5.0	0.47	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Bromomethane	ND	P6, S6	10	1.2	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Carbon disulfide	ND	P6, S6	5.0	0.88	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Carbon Tetrachloride	ND	P6, S6	5.0	0.83	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Chlorobenzene	**5.4**	P6, S6	5.0	0.48	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Dibromochloromethane	ND	P6, S6	5.0	0.41	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Chloroethane	ND	P6, S6	10	0.87	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Chloroform	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Chloromethane	ND	P6, S6	10	0.64	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
cis-1,3-Dichloropropene	ND	P6, S6	5.0	0.57	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Ethylbenzene	ND	P6, S6	5.0	0.46	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Methylene Chloride	ND	P6, S6	5.0	0.81	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Styrene	ND	P6, S6	5.0	0.38	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Tetrachloroethene	ND	P6, S6	5.0	0.55	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Toluene	**4.1**	P6, S6,J	5.0	0.45	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
trans-1,3-Dichloropropene	ND	P6, S6	5.0	0.44	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Trichloroethene	**0.89**	P6, S6,J	5.0	0.60	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Vinyl acetate	ND	P6, S6	10	4.3	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Vinyl chloride	**1.2**	P6, S6,J	10	0.75	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Xylenes, total	**5.8**	P6, S6,J	10	1.1	ug/L	1.00	04/24/09 10:57	TRB	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*110 %*	*P6, S6*					04/24/09 10:57	TRB	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*101 %*	*P6, S6*					04/24/09 10:57	TRB	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*	*P6, S6*					04/24/09 10:57	TRB	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Sample ID: RSD0850-07 (TRIP BLANK - Water) — **Sampled: 04/21/09** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		5.0	0.73	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
1,1,2,2-Tetrachloroethane	ND		5.0	0.55	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
1,1-Dichloroethane	ND		5.0	0.59	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
1,1-Dichloroethene	ND		5.0	0.85	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
1,2-Dichloroethane	ND		5.0	0.60	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
1,2-Dichloroethene, Total	ND		10	3.2	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
1,2-Dichloropropane	ND		5.0	0.61	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
2-Butanone	ND		10	3.6	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
2-Hexanone	ND		10	3.5	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
4-Methyl-2-pentanone	ND		10	3.5	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Acetone	ND		34	3.7	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Benzene	ND		5.0	0.60	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Bromodichloromethane	ND		5.0	0.54	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Bromoform	ND		5.0	0.47	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Bromomethane	ND		10	1.2	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Carbon disulfide	ND		5.0	0.88	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Carbon Tetrachloride	ND		5.0	0.83	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Chlorobenzene	ND		5.0	0.48	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Dibromochloromethane	ND		5.0	0.41	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Chloroethane	ND		10	0.87	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Chloroform	ND		5.0	0.54	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Chloromethane	ND		10	0.64	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
cis-1,3-Dichloropropene	ND		5.0	0.57	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Ethylbenzene	ND		5.0	0.46	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Methylene Chloride	ND		5.0	0.81	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Styrene	ND		5.0	0.38	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Tetrachloroethene	ND		5.0	0.55	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Toluene	ND		5.0	0.45	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Trichloroethene	ND		5.0	0.60	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Vinyl acetate	ND		10	4.3	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Vinyl chloride	ND		10	0.75	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Xylenes, total	ND		10	1.1	ug/L	1.00	04/23/09 20:57	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*102 %*						04/23/09 20:57	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*97 %*						04/23/09 20:57	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*						04/23/09 20:57	MF	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0851-01 (RMU2-W29 - Water)						**Sampled: 04/20/09 15:05**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	P6	5.0	0.73	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
1,1,2-Trichloroethane	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
1,1-Dichloroethane	ND	P6	5.0	0.59	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
1,1-Dichloroethene	ND	P6	5.0	0.85	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
1,2-Dichloroethane	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
1,2-Dichloroethene, Total	ND	P6	10	3.2	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
1,2-Dichloropropane	ND	P6	5.0	0.61	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
2-Butanone	ND	P6	10	3.6	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
2-Hexanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
4-Methyl-2-pentanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Acetone	ND	P6	34	3.7	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Benzene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Bromodichloromethane	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Bromoform	ND	P6	5.0	0.47	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Bromomethane	ND	P6	10	1.2	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Carbon disulfide	ND	P6	5.0	0.88	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Carbon Tetrachloride	ND	P6	5.0	0.83	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Chlorobenzene	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Dibromochloromethane	ND	P6	5.0	0.41	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Chloroethane	ND	P6	10	0.87	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Chloroform	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Chloromethane	ND	P6	10	0.64	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
cis-1,3-Dichloropropene	ND	P6	5.0	0.57	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Ethylbenzene	ND	P6	5.0	0.46	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Methylene Chloride	ND	P6	5.0	0.81	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Styrene	ND	P6	5.0	0.38	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Tetrachloroethene	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Toluene	ND	P6	5.0	0.45	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
trans-1,3-Dichloropropene	ND	P6	5.0	0.44	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Trichloroethene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Vinyl acetate	ND	P6	10	4.3	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Vinyl chloride	ND	P6	10	0.75	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Xylenes, total	ND	P6	10	1.1	ug/L	1.00	04/24/09 06:42	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*111 %*	*P6*					04/24/09 06:42	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*97 %*	*P6*					04/24/09 06:42	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*	*P6*					04/24/09 06:42	MF	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Sample ID: RSD0851-02 (RMU2-W31 - Water) — **Sampled: 04/21/09 08:10** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND	P6	5.0	0.73	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
1,1,2-Trichloroethane	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
1,1-Dichloroethane	**0.76**	P6,J	5.0	0.59	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
1,1-Dichloroethene	ND	P6	5.0	0.85	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
1,2-Dichloroethane	**1.2**	P6,J	5.0	0.60	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
1,2-Dichloroethene, Total	**3.4**	P6,J	10	3.2	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
1,2-Dichloropropane	**1.9**	P6,J	5.0	0.61	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
2-Butanone	ND	P6	10	3.6	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
2-Hexanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
4-Methyl-2-pentanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Acetone	**11**	P6,J	34	3.7	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Benzene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Bromodichloromethane	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Bromoform	ND	P6	5.0	0.47	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Bromomethane	ND	P6	10	1.2	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Carbon disulfide	ND	P6	5.0	0.88	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Carbon Tetrachloride	ND	P6	5.0	0.83	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Chlorobenzene	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Dibromochloromethane	ND	P6	5.0	0.41	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Chloroethane	ND	P6	10	0.87	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Chloroform	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Chloromethane	ND	P6	10	0.64	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
cis-1,3-Dichloropropene	ND	P6	5.0	0.57	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Ethylbenzene	ND	P6	5.0	0.46	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Methylene Chloride	ND	P6	5.0	0.81	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Styrene	ND	P6	5.0	0.38	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Tetrachloroethene	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Toluene	**0.80**	P6,J	5.0	0.45	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
trans-1,3-Dichloropropene	ND	P6	5.0	0.44	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Trichloroethene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Vinyl acetate	ND	P6	10	4.3	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Vinyl chloride	**1.2**	P6,J	10	0.75	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Xylenes, total	ND	P6	10	1.1	ug/L	1.00	04/24/09 07:07	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*110 %*	*P6*					04/24/09 07:07	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*97 %*	*P6*					04/24/09 07:07	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*	*P6*					04/24/09 07:07	MF	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0851-03 (RMU2-W30R(12-13) - Solid)						**Sampled: 04/21/09 08:55**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	ND		5.5	0.40	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
1,1,2,2-Tetrachloroethane	ND		5.5	0.89	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
1,1,2-Trichloroethane	ND		5.5	0.28	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
1,1-Dichloroethane	ND		5.5	0.27	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
1,1-Dichloroethene	ND		5.5	0.67	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
1,2-Dichloroethane	ND		5.5	0.28	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
1,2-Dichloroethene, Total	ND		11	2.9	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
1,2-Dichloropropane	ND		5.5	0.28	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
2-Butanone	ND		28	7.5	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
2-Hexanone	ND		28	1.9	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
4-Methyl-2-pentanone	ND		28	1.8	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Acetone	**15**	J	28	1.2	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Benzene	ND		5.5	0.27	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Bromodichloromethane	ND		5.5	0.28	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Bromoform	ND		5.5	0.51	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Bromomethane	ND		5.5	0.51	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Carbon disulfide	ND		5.5	0.47	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Carbon Tetrachloride	ND		5.5	0.20	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Chlorobenzene	ND		5.5	0.24	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Dibromochloromethane	ND		5.5	0.30	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Chloroethane	ND		5.5	0.89	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Chloroform	ND		5.5	0.34	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Chloromethane	ND		5.5	0.33	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
cis-1,3-Dichloropropene	ND		5.5	0.31	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Ethylbenzene	ND		5.5	0.38	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Methylene Chloride	**9.8**		5.5	0.38	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Styrene	ND		5.5	0.27	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Tetrachloroethene	ND		5.5	0.74	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Toluene	ND		5.5	0.93	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
trans-1,3-Dichloropropene	ND		5.5	0.27	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Trichloroethene	ND		5.5	0.38	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Vinyl acetate	ND		28	1.1	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Vinyl chloride	ND		11	0.22	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Xylenes, total	ND		11	0.93	ug/kg dry	1.00	04/23/09 19:00	PQ	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*99 %*						04/23/09 19:00	PQ	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*108 %*						04/23/09 19:00	PQ	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*107 %*						04/23/09 19:00	PQ	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0851-04 (RMU2-W32(8-10) - Solid)						**Sampled: 04/21/09 09:25**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	ND		5.7	0.42	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
1,1,2,2-Tetrachloroethane	ND		5.7	0.93	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
1,1,2-Trichloroethane	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
1,1-Dichloroethane	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
1,1-Dichloroethene	ND		5.7	0.70	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
1,2-Dichloroethane	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
1,2-Dichloroethene, Total	ND		11	3.0	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
1,2-Dichloropropane	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
2-Butanone	ND		29	7.8	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
2-Hexanone	ND		29	2.0	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
4-Methyl-2-pentanone	ND		29	1.9	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Acetone	**390**		29	1.3	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Benzene	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Bromodichloromethane	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Bromoform	ND		5.7	0.53	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Bromomethane	ND		5.7	0.53	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Carbon disulfide	**1.4**	J	5.7	0.49	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Carbon Tetrachloride	ND		5.7	0.21	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Chlorobenzene	ND		5.7	0.25	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Dibromochloromethane	ND		5.7	0.32	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Chloroethane	ND		5.7	0.93	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Chloroform	ND		5.7	0.35	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Chloromethane	ND		5.7	0.35	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
cis-1,3-Dichloropropene	ND		5.7	0.33	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Ethylbenzene	ND		5.7	0.40	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Methylene Chloride	**4.0**	J	5.7	0.40	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Styrene	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Tetrachloroethene	ND		5.7	0.77	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Toluene	ND		5.7	0.97	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
trans-1,3-Dichloropropene	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Trichloroethene	ND		5.7	0.40	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Vinyl acetate	ND		29	1.2	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Vinyl chloride	ND		11	0.23	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Xylenes, total	ND		11	0.96	ug/kg dry	1.00	04/23/09 19:25	PQ	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*97 %*						04/23/09 19:25	PQ	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*106 %*						04/23/09 19:25	PQ	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*110 %*						04/23/09 19:25	PQ	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Sample ID: RSD0851-05 (RMU2-W33(6-8) - Solid) — **Sampled: 04/21/09 09:50** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		5.7	0.41	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
1,1,2,2-Tetrachloroethane	ND		5.7	0.92	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
1,1,2-Trichloroethane	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
1,1-Dichloroethane	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
1,1-Dichloroethene	ND		5.7	0.70	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
1,2-Dichloroethane	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
1,2-Dichloroethene, Total	ND		11	3.0	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
1,2-Dichloropropane	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
2-Butanone	ND		28	7.8	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
2-Hexanone	ND		28	2.0	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
4-Methyl-2-pentanone	ND		28	1.9	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Acetone	**60**		28	1.3	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Benzene	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Bromodichloromethane	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Bromoform	ND		5.7	0.53	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Bromomethane	ND		5.7	0.52	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Carbon disulfide	ND		5.7	0.49	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Carbon Tetrachloride	ND		5.7	0.21	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Chlorobenzene	ND		5.7	0.25	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Dibromochloromethane	ND		5.7	0.31	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Chloroethane	ND		5.7	0.92	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Chloroform	ND		5.7	0.35	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Chloromethane	ND		5.7	0.34	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
cis-1,3-Dichloropropene	ND		5.7	0.33	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Ethylbenzene	ND		5.7	0.39	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Methylene Chloride	**8.6**		5.7	0.40	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Styrene	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Tetrachloroethene	ND		5.7	0.76	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Toluene	ND		5.7	0.97	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
trans-1,3-Dichloropropene	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Trichloroethene	ND		5.7	0.39	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Vinyl acetate	ND		28	1.2	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Vinyl chloride	ND		11	0.23	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Xylenes, total	ND		11	0.96	ug/kg dry	1.00	04/23/09 19:51	PQ	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*98 %*						04/23/09 19:51	PQ	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*109 %*						04/23/09 19:51	PQ	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*109 %*						04/23/09 19:51	PQ	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0851-06 (RMU2-W34(9-10) - Solid)						**Sampled: 04/21/09 10:40**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	ND		5.7	0.42	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
1,1,2,2-Tetrachloroethane	ND		5.7	0.93	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
1,1,2-Trichloroethane	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
1,1-Dichloroethane	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
1,1-Dichloroethene	ND		5.7	0.70	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
1,2-Dichloroethane	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
1,2-Dichloroethene, Total	ND		11	3.0	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
1,2-Dichloropropane	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
2-Butanone	ND		29	7.8	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
2-Hexanone	ND		29	2.0	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
4-Methyl-2-pentanone	ND		29	1.9	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Acetone	**270**		29	1.3	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Benzene	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Bromodichloromethane	ND		5.7	0.30	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Bromoform	ND		5.7	0.53	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Bromomethane	ND		5.7	0.53	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Carbon disulfide	**1.3**	J	5.7	0.49	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Carbon Tetrachloride	ND		5.7	0.21	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Chlorobenzene	ND		5.7	0.25	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Dibromochloromethane	ND		5.7	0.32	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Chloroethane	ND		5.7	0.93	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Chloroform	ND		5.7	0.35	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Chloromethane	ND		5.7	0.35	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
cis-1,3-Dichloropropene	ND		5.7	0.33	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Ethylbenzene	ND		5.7	0.40	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Methylene Chloride	**5.9**		5.7	0.40	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Styrene	ND		5.7	0.29	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Tetrachloroethene	ND		5.7	0.77	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Toluene	ND		5.7	0.97	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
trans-1,3-Dichloropropene	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Trichloroethene	ND		5.7	0.40	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Vinyl acetate	ND		29	1.2	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Vinyl chloride	ND		11	0.23	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Xylenes, total	ND		11	0.96	ug/kg dry	1.00	04/23/09 20:17	PQ	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*98 %*						04/23/09 20:17	PQ	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*106 %*						04/23/09 20:17	PQ	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*108 %*						04/23/09 20:17	PQ	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0851-07 (RMU2-W35(6-7) - Solid)						**Sampled: 04/21/09 11:05**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	ND		5.5	0.40	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
1,1,2,2-Tetrachloroethane	ND		5.5	0.89	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
1,1,2-Trichloroethane	ND		5.5	0.28	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
1,1-Dichloroethane	ND		5.5	0.27	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
1,1-Dichloroethene	ND		5.5	0.67	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
1,2-Dichloroethane	ND		5.5	0.28	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
1,2-Dichloroethene, Total	ND		11	2.9	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
1,2-Dichloropropane	ND		5.5	0.28	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
2-Butanone	ND		28	7.5	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
2-Hexanone	ND		28	1.9	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
4-Methyl-2-pentanone	ND		28	1.8	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Acetone	**19**	J	28	1.2	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Benzene	ND		5.5	0.27	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Bromodichloromethane	ND		5.5	0.28	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Bromoform	ND		5.5	0.51	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Bromomethane	ND		5.5	0.51	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Carbon disulfide	ND		5.5	0.47	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Carbon Tetrachloride	ND		5.5	0.20	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Chlorobenzene	ND		5.5	0.24	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Dibromochloromethane	ND		5.5	0.30	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Chloroethane	ND		5.5	0.89	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Chloroform	ND		5.5	0.34	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Chloromethane	ND		5.5	0.33	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
cis-1,3-Dichloropropene	ND		5.5	0.31	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Ethylbenzene	ND		5.5	0.38	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Methylene Chloride	**6.5**		5.5	0.38	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Styrene	ND		5.5	0.28	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Tetrachloroethene	ND		5.5	0.74	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Toluene	ND		5.5	0.94	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
trans-1,3-Dichloropropene	ND		5.5	0.27	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Trichloroethene	ND		5.5	0.38	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Vinyl acetate	ND		28	1.1	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Vinyl chloride	ND		11	0.22	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Xylenes, total	ND		11	0.93	ug/kg dry	1.00	04/23/09 20:42	PQ	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*99 %*						04/23/09 20:42	PQ	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*115 %*						04/23/09 20:42	PQ	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*115 %*						04/23/09 20:42	PQ	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Sample ID: RSD0851-08 (RMU2-W30R - Water) **Sampled: 04/21/09 11:25** **Recvd: 04/21/09 16:45**

Volatile Organic Compounds

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND	P6	5.0	0.73	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
1,1,2-Trichloroethane	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
1,1-Dichloroethane	ND	P6	5.0	0.59	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
1,1-Dichloroethene	ND	P6	5.0	0.85	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
1,2-Dichloroethane	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
1,2-Dichloroethene, Total	ND	P6	10	3.2	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
1,2-Dichloropropane	ND	P6	5.0	0.61	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
2-Butanone	ND	P6	10	3.6	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
2-Hexanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
4-Methyl-2-pentanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Acetone	**15**	P6,J	34	3.7	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Benzene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Bromodichloromethane	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Bromoform	ND	P6	5.0	0.47	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Bromomethane	ND	P6	10	1.2	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Carbon disulfide	ND	P6	5.0	0.88	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Carbon Tetrachloride	ND	P6	5.0	0.83	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Chlorobenzene	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Dibromochloromethane	ND	P6	5.0	0.41	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Chloroethane	ND	P6	10	0.87	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Chloroform	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Chloromethane	ND	P6	10	0.64	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
cis-1,3-Dichloropropene	ND	P6	5.0	0.57	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Ethylbenzene	ND	P6	5.0	0.46	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Methylene Chloride	ND	P6	5.0	0.81	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Styrene	ND	P6	5.0	0.38	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Tetrachloroethene	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Toluene	**1.5**	P6,J	5.0	0.45	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
trans-1,3-Dichloropropene	ND	P6	5.0	0.44	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Trichloroethene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Vinyl acetate	ND	P6	10	4.3	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Vinyl chloride	ND	P6	10	0.75	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Xylenes, total	ND	P6	10	1.1	ug/L	1.00	04/24/09 07:32	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*110 %*	*P6*					04/24/09 07:32	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*98 %*	*P6*					04/24/09 07:32	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*	*P6*					04/24/09 07:32	MF	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0851-09 (RMU2-W32 - Water)						**Sampled: 04/21/09 11:30**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	P6	5.0	0.73	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
1,1,2-Trichloroethane	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
1,1-Dichloroethane	ND	P6	5.0	0.59	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
1,1-Dichloroethene	ND	P6	5.0	0.85	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
1,2-Dichloroethane	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
1,2-Dichloroethene, Total	ND	P6	10	3.2	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
1,2-Dichloropropane	ND	P6	5.0	0.61	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
2-Butanone	ND	P6	10	3.6	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
2-Hexanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
4-Methyl-2-pentanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Acetone	**22**	P6,J	34	3.7	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Benzene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Bromodichloromethane	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Bromoform	ND	P6	5.0	0.47	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Bromomethane	ND	P6	10	1.2	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Carbon disulfide	ND	P6	5.0	0.88	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Carbon Tetrachloride	ND	P6	5.0	0.83	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Chlorobenzene	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Dibromochloromethane	ND	P6	5.0	0.41	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Chloroethane	ND	P6	10	0.87	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Chloroform	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Chloromethane	ND	P6	10	0.64	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
cis-1,3-Dichloropropene	ND	P6	5.0	0.57	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Ethylbenzene	ND	P6	5.0	0.46	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Methylene Chloride	ND	P6	5.0	0.81	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Styrene	ND	P6	5.0	0.38	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Tetrachloroethene	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Toluene	**1.1**	P6,J	5.0	0.45	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
trans-1,3-Dichloropropene	ND	P6	5.0	0.44	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Trichloroethene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Vinyl acetate	ND	P6	10	4.3	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Vinyl chloride	ND	P6	10	0.75	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Xylenes, total	ND	P6	10	1.1	ug/L	1.00	04/24/09 07:58	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*109 %*	*P6*					04/24/09 07:58	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*97 %*	*P6*					04/24/09 07:58	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*	*P6*					04/24/09 07:58	MF	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0851-10 (RMU2-W33 - Water)						**Sampled: 04/21/09 11:35**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	P6	5.0	0.73	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
1,1,2-Trichloroethane	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
1,1-Dichloroethane	ND	P6	5.0	0.59	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
1,1-Dichloroethene	ND	P6	5.0	0.85	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
1,2-Dichloroethane	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
1,2-Dichloroethene, Total	ND	P6	10	3.2	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
1,2-Dichloropropane	ND	P6	5.0	0.61	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
2-Butanone	ND	P6	10	3.6	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
2-Hexanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
4-Methyl-2-pentanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Acetone	**26**	P6,J	34	3.7	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Benzene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Bromodichloromethane	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Bromoform	ND	P6	5.0	0.47	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Bromomethane	ND	P6	10	1.2	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Carbon disulfide	ND	P6	5.0	0.88	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Carbon Tetrachloride	ND	P6	5.0	0.83	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Chlorobenzene	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Dibromochloromethane	ND	P6	5.0	0.41	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Chloroethane	ND	P6	10	0.87	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Chloroform	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Chloromethane	ND	P6	10	0.64	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
cis-1,3-Dichloropropene	ND	P6	5.0	0.57	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Ethylbenzene	ND	P6	5.0	0.46	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Methylene Chloride	ND	P6	5.0	0.81	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Styrene	ND	P6	5.0	0.38	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Tetrachloroethene	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Toluene	**1.3**	P6,J	5.0	0.45	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
trans-1,3-Dichloropropene	ND	P6	5.0	0.44	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Trichloroethene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Vinyl acetate	ND	P6	10	4.3	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Vinyl chloride	ND	P6	10	0.75	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Xylenes, total	ND	P6	10	1.1	ug/L	1.00	04/24/09 08:23	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*110 %*	*P6*					04/24/09 08:23	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*98 %*	*P6*					04/24/09 08:23	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*98 %*	*P6*					04/24/09 08:23	MF	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0851-11 (RMU2-W34 - Water)						**Sampled: 04/21/09 11:40**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	P6	5.0	0.73	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
1,1,2-Trichloroethane	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
1,1-Dichloroethane	ND	P6	5.0	0.59	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
1,1-Dichloroethene	ND	P6	5.0	0.85	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
1,2-Dichloroethane	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
1,2-Dichloroethene, Total	ND	P6	10	3.2	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
1,2-Dichloropropane	ND	P6	5.0	0.61	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
2-Butanone	ND	P6	10	3.6	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
2-Hexanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
4-Methyl-2-pentanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Acetone	**11**	P6,J	34	3.7	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Benzene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Bromodichloromethane	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Bromoform	ND	P6	5.0	0.47	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Bromomethane	ND	P6	10	1.2	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Carbon disulfide	ND	P6	5.0	0.88	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Carbon Tetrachloride	ND	P6	5.0	0.83	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Chlorobenzene	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Dibromochloromethane	ND	P6	5.0	0.41	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Chloroethane	ND	P6	10	0.87	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Chloroform	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Chloromethane	ND	P6	10	0.64	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
cis-1,3-Dichloropropene	ND	P6	5.0	0.57	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Ethylbenzene	ND	P6	5.0	0.46	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Methylene Chloride	ND	P6	5.0	0.81	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Styrene	ND	P6	5.0	0.38	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Tetrachloroethene	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Toluene	**1.4**	P6,J	5.0	0.45	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
trans-1,3-Dichloropropene	ND	P6	5.0	0.44	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Trichloroethene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Vinyl acetate	ND	P6	10	4.3	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Vinyl chloride	**1.0**	P6,J	10	0.75	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Xylenes, total	ND	P6	10	1.1	ug/L	1.00	04/24/09 08:48	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*110 %*	*P6*					04/24/09 08:48	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*99 %*	*P6*					04/24/09 08:48	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*	*P6*					04/24/09 08:48	MF	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0851-12 (RMU2-W35 - Water)						**Sampled: 04/21/09 11:45**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	P6	5.0	0.73	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
1,1,2-Trichloroethane	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
1,1-Dichloroethane	ND	P6	5.0	0.59	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
1,1-Dichloroethene	ND	P6	5.0	0.85	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
1,2-Dichloroethane	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
1,2-Dichloroethene, Total	ND	P6	10	3.2	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
1,2-Dichloropropane	ND	P6	5.0	0.61	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
2-Butanone	ND	P6	10	3.6	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
2-Hexanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
4-Methyl-2-pentanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Acetone	**9.5**	P6,J	34	3.7	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Benzene	**1.8**	P6,J	5.0	0.60	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Bromodichloromethane	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Bromoform	ND	P6	5.0	0.47	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Bromomethane	ND	P6	10	1.2	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Carbon disulfide	ND	P6	5.0	0.88	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Carbon Tetrachloride	ND	P6	5.0	0.83	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Chlorobenzene	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Dibromochloromethane	ND	P6	5.0	0.41	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Chloroethane	ND	P6	10	0.87	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Chloroform	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Chloromethane	ND	P6	10	0.64	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
cis-1,3-Dichloropropene	ND	P6	5.0	0.57	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Ethylbenzene	ND	P6	5.0	0.46	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Methylene Chloride	ND	P6	5.0	0.81	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Styrene	ND	P6	5.0	0.38	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Tetrachloroethene	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Toluene	**3.3**	P6,J	5.0	0.45	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
trans-1,3-Dichloropropene	ND	P6	5.0	0.44	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Trichloroethene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Vinyl acetate	ND	P6	10	4.3	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Vinyl chloride	ND	P6	10	0.75	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Xylenes, total	**1.6**	P6,J	10	1.1	ug/L	1.00	04/24/09 09:14	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*110 %*	*P6*					04/24/09 09:14	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*99 %*	*P6*					04/24/09 09:14	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*98 %*	*P6*					04/24/09 09:14	MF	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Sample ID: RSD0907-01 (RMU2-W19-W4-N2 (4-5) - Solid) — **Sampled: 04/22/09 09:25** — **Recvd: 04/22/09 14:15**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		5.9	0.43	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
1,1,2,2-Tetrachloroethane	ND		5.9	0.96	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
1,1,2-Trichloroethane	ND		5.9	0.30	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
1,1-Dichloroethane	**12**		5.9	0.29	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
1,1-Dichloroethene	**6.8**		5.9	0.72	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
1,2-Dichloroethane	**9.0**		5.9	0.30	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
1,2-Dichloroethene, Total	**160**		12	3.1	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
1,2-Dichloropropane	**88**		5.9	0.30	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
2-Butanone	ND		30	8.1	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
2-Hexanone	ND		30	2.1	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
4-Methyl-2-pentanone	ND		30	1.9	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Acetone	**25**	J	30	1.3	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Benzene	**16**		5.9	0.29	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Bromodichloromethane	ND		5.9	0.30	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Bromoform	ND		5.9	0.55	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Bromomethane	ND		5.9	0.54	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Carbon disulfide	**4.5**	J	5.9	0.51	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Carbon Tetrachloride	ND		5.9	0.21	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Chlorobenzene	**130**		5.9	0.26	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Dibromochloromethane	ND		5.9	0.33	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Chloroethane	ND		5.9	0.96	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Chloroform	**1.5**	J	5.9	0.37	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Chloromethane	ND		5.9	0.36	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
cis-1,3-Dichloropropene	ND		5.9	0.34	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Ethylbenzene	**170**		5.9	0.41	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Methylene Chloride	**9.7**		5.9	0.41	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Styrene	ND		5.9	0.30	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Toluene	**12**		5.9	1.0	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
trans-1,3-Dichloropropene	ND		5.9	0.29	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Trichloroethene	**70**		5.9	0.41	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Vinyl acetate	ND		30	1.2	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Vinyl chloride	**47**		12	0.24	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Xylenes, total	**160**		12	0.99	ug/kg dry	1.00	04/24/09 04:39	CDC	9D24003	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*101 %*						04/24/09 04:39	CDC	9D24003	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*117 %*						04/24/09 04:39	CDC	9D24003	8260B
Surr: Toluene-d8 (71-125%)	*118 %*						04/24/09 04:39	CDC	9D24003	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0907-01RE1 (RMU2-W19-W4-N2 (4-5) - Solid)						**Sampled: 04/22/09 09:25**		**Recvd: 04/22/09 14:15**		
Volatile Organic Compounds by EPA 8260B										
Tetrachloroethene	**170**	D08	32	4.2	ug/kg dry	1.00	04/23/09 15:10	PQ	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*99 %*	*D08*					04/23/09 15:10	PQ	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*108 %*	*D08*					04/23/09 15:10	PQ	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*106 %*	*D08*					04/23/09 15:10	PQ	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Sample ID: RSD0907-02 (RMU2-W19-W4-N3 (4-5) - Solid) — **Sampled: 04/22/09 10:25** — **Recvd: 04/22/09 14:15**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		5.6	0.41	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
1,1,2,2-Tetrachloroethane	ND		5.6	0.91	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
1,1,2-Trichloroethane	ND		5.6	0.28	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
1,1-Dichloroethane	ND		5.6	0.28	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
1,1-Dichloroethene	ND		5.6	0.69	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
1,2-Dichloroethane	ND		5.6	0.28	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
1,2-Dichloroethene, Total	ND		11	2.9	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
1,2-Dichloropropane	ND		5.6	0.29	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
2-Butanone	ND		28	7.7	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
2-Hexanone	ND		28	2.0	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
4-Methyl-2-pentanone	ND		28	1.8	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Acetone	**1100**		28	1.2	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Benzene	ND		5.6	0.28	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Bromodichloromethane	ND		5.6	0.29	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Bromoform	ND		5.6	0.52	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Bromomethane	ND		5.6	0.52	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Carbon disulfide	**2.4**	J	5.6	0.48	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Carbon Tetrachloride	ND		5.6	0.20	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Chlorobenzene	ND		5.6	0.25	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Dibromochloromethane	ND		5.6	0.31	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Chloroethane	ND		5.6	0.91	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Chloroform	ND		5.6	0.35	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Chloromethane	ND		5.6	0.34	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
cis-1,3-Dichloropropene	ND		5.6	0.32	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Ethylbenzene	ND		5.6	0.39	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Methylene Chloride	**11**		5.6	0.39	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Styrene	ND		5.6	0.28	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Tetrachloroethene	ND		5.6	0.76	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Toluene	ND		5.6	0.96	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
trans-1,3-Dichloropropene	ND		5.6	0.28	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Trichloroethene	ND		5.6	0.39	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Vinyl acetate	ND		28	1.2	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Vinyl chloride	ND		11	0.23	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Xylenes, total	ND		11	0.95	ug/kg dry	1.00	04/23/09 16:02	PQ	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*95 %*						04/23/09 16:02	PQ	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*109 %*						04/23/09 16:02	PQ	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*106 %*						04/23/09 16:02	PQ	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Sample ID: RSD0907-03 (RMU2-W19-W4-N4 (6-8) - Solid) — **Sampled: 04/22/09 11:20** — **Recvd: 04/22/09 14:15**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		5.7	0.41	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
1,1,2,2-Tetrachloroethane	**79**		5.7	0.92	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
1,1,2-Trichloroethane	**200**		5.7	0.28	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
1,1-Dichloroethane	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
1,1-Dichloroethene	**53**		5.7	0.69	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
1,2-Dichloroethane	**9.7**		5.7	0.28	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
1,2-Dichloroethene, Total	**91**		11	3.0	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
1,2-Dichloropropane	**27**		5.7	0.29	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
2-Butanone	ND		28	7.7	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
2-Hexanone	ND		28	2.0	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
4-Methyl-2-pentanone	ND		28	1.9	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Acetone	**160**		28	1.2	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Benzene	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Bromodichloromethane	**3.3**	J	5.7	0.29	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Bromoform	ND		5.7	0.52	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Bromomethane	ND		5.7	0.52	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Carbon disulfide	**1.5**	J	5.7	0.49	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Carbon Tetrachloride	**12**		5.7	0.21	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Chlorobenzene	**8.2**		5.7	0.25	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Dibromochloromethane	ND		5.7	0.31	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Chloroethane	ND		5.7	0.92	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Chloroform	**7.3**		5.7	0.35	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Chloromethane	ND		5.7	0.34	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
cis-1,3-Dichloropropene	ND		5.7	0.32	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Ethylbenzene	**2.5**	J	5.7	0.39	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Methylene Chloride	**12**		5.7	0.40	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Styrene	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Toluene	**2.3**	J	5.7	0.96	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
trans-1,3-Dichloropropene	ND		5.7	0.28	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Vinyl acetate	ND		28	1.2	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Vinyl chloride	**15**		11	0.23	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Xylenes, total	**5.7**	J	11	0.95	ug/kg dry	1.00	04/23/09 16:27	PQ	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*102 %*						04/23/09 16:27	PQ	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*115 %*						04/23/09 16:27	PQ	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*114 %*						04/23/09 16:27	PQ	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0907-03RE1 (RMU2-W19-W4-N4 (6-8) - Solid)						**Sampled: 04/22/09 11:20**		**Recvd: 04/22/09 14:15**		
Volatile Organic Compounds by EPA 8260B										
Tetrachloroethene	**410**	D08	28	3.7	ug/kg dry	1.00	04/23/09 23:32	CDC	9D23062	8260B
Trichloroethene	**170**	D08	28	1.9	ug/kg dry	1.00	04/23/09 23:32	CDC	9D23062	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*101 %*	*D08*					04/23/09 23:32	CDC	9D23062	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*111 %*	*D08*					04/23/09 23:32	CDC	9D23062	8260B
Surr: Toluene-d8 (71-125%)	*110 %*	*D08*					04/23/09 23:32	CDC	9D23062	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0907-04 (RMU2-W19-W4-N4 (6-8) - Solid)						**Sampled: 04/22/09 11:25**		**Recvd: 04/22/09 14:15**		
General Chemistry Parameters										
SGT Total Petroleum Hydrocarbons	**421**		117	NA	mg/kg dry	1.00	04/23/09 23:12	RJK	9D23117	1664 SGT

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0907-05 (RMU2-W19-W4-N2 - Water)						**Sampled: 04/22/09 11:40**		**Recvd: 04/22/09 14:15**		
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	P6, S6	5.0	0.73	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6, S6	5.0	0.55	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
1,1,2-Trichloroethane	**7.4**	P6, S6	5.0	0.48	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
1,1-Dichloroethane	**11**	P6, S6	5.0	0.59	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
1,1-Dichloroethene	**25**	P6, S6	5.0	0.85	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
1,2-Dichloropropane	**52**	P6, S6	5.0	0.61	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
2-Butanone	ND	P6, S6	10	3.6	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
2-Hexanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
4-Methyl-2-pentanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Acetone	**18**	P6, S6,J	34	3.7	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Benzene	**4.1**	P6, S6,J	5.0	0.60	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Bromodichloromethane	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Bromoform	ND	P6, S6	5.0	0.47	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Bromomethane	ND	P6, S6	10	1.2	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Carbon disulfide	**2.3**	P6, S6,J	5.0	0.88	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Carbon Tetrachloride	ND	P6, S6	5.0	0.83	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Chlorobenzene	**18**	P6, S6	5.0	0.48	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Dibromochloromethane	ND	P6, S6	5.0	0.41	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Chloroethane	ND	P6, S6	10	0.87	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Chloroform	**3.0**	P6, S6,J	5.0	0.54	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Chloromethane	ND	P6, S6	10	0.64	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
cis-1,3-Dichloropropene	ND	P6, S6	5.0	0.57	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Ethylbenzene	**18**	P6, S6	5.0	0.46	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Methylene Chloride	**1.9**	P6, S6,J	5.0	0.81	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Styrene	ND	P6, S6	5.0	0.38	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Tetrachloroethene	**7.6**	P6, S6	5.0	0.55	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Toluene	**8.8**	P6, S6	5.0	0.45	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
trans-1,3-Dichloropropene	ND	P6, S6	5.0	0.44	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Trichloroethene	**10**	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Vinyl acetate	ND	P6, S6	10	4.3	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Xylenes, total	**16**	P6, S6	10	1.1	ug/L	1.00	04/24/09 05:26	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*106 %*	*P6, S6*					04/24/09 05:26	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*101 %*	*P6, S6*					04/24/09 05:26	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*100 %*	*P6, S6*					04/24/09 05:26	MF	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0907-05RE1 (RMU2-W19-W4-N2 - Water)						**Sampled: 04/22/09 11:40**		**Recvd: 04/22/09 14:15**		
Volatile Organic Compounds										
1,2-Dichloroethane	**130**	D08, P6	25	3.0	ug/L	5.00	04/24/09 09:39	MF	9D23090	624
1,2-Dichloroethene, Total	**200**	D08, P6	50	16	ug/L	5.00	04/24/09 09:39	MF	9D23090	624
Vinyl chloride	**170**	D08, P6	25	3.7	ug/L	5.00	04/24/09 09:39	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*108 %*	*D08, P6*					04/24/09 09:39	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*98 %*	*D08, P6*					04/24/09 09:39	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*98 %*	*D08, P6*					04/24/09 09:39	MF	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0907-06 (RMU2-W19-W4-N3 - Water)						**Sampled: 04/22/09 11:45**		**Recvd: 04/22/09 14:15**		
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	P6, S6	5.0	0.73	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6, S6	5.0	0.55	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
1,1,2-Trichloroethane	**3.1**	P6, S6,J	5.0	0.48	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
1,1-Dichloroethane	**3.4**	P6, S6,J	5.0	0.59	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
1,1-Dichloroethene	**18**	P6, S6	5.0	0.85	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
1,2-Dichloroethane	**10**	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
1,2-Dichloroethene, Total	**23**	P6, S6	10	3.2	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
1,2-Dichloropropane	**4.8**	P6, S6,J	5.0	0.61	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
2-Butanone	ND	P6, S6	10	3.6	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
2-Hexanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
4-Methyl-2-pentanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Acetone	**8.0**	P6, S6,J	34	3.7	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Benzene	**1.8**	P6, S6,J	5.0	0.60	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Bromodichloromethane	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Bromoform	ND	P6, S6	5.0	0.47	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Bromomethane	ND	P6, S6	10	1.2	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Carbon disulfide	**1.1**	P6, S6,J	5.0	0.88	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Carbon Tetrachloride	ND	P6, S6	5.0	0.83	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Chlorobenzene	**2.6**	P6, S6,J	5.0	0.48	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Dibromochloromethane	ND	P6, S6	5.0	0.41	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Chloroethane	ND	P6, S6	10	0.87	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Chloroform	**1.1**	P6, S6,J	5.0	0.54	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Chloromethane	ND	P6, S6	10	0.64	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
cis-1,3-Dichloropropene	ND	P6, S6	5.0	0.57	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Ethylbenzene	ND	P6, S6	5.0	0.46	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Methylene Chloride	ND	P6, S6	5.0	0.81	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Styrene	ND	P6, S6	5.0	0.38	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Tetrachloroethene	**1.5**	P6, S6,J	5.0	0.55	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Toluene	**2.2**	P6, S6,J	5.0	0.45	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
trans-1,3-Dichloropropene	ND	P6, S6	5.0	0.44	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Trichloroethene	**8.5**	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Vinyl acetate	ND	P6, S6	10	4.3	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Vinyl chloride	**33**	P6, S6	10	0.75	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Xylenes, total	**2.4**	P6, S6,J	10	1.1	ug/L	1.00	04/24/09 05:51	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*107 %*	*P6, S6*					04/24/09 05:51	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*98 %*	*P6, S6*					04/24/09 05:51	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*100 %*	*P6, S6*					04/24/09 05:51	MF	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0907-07 (RMU2-W19-W4-N4 - Water)						**Sampled: 04/22/09 11:55**		**Recvd: 04/22/09 14:15**		
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	D08, P6	50	7.3	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
1,1,2,2-Tetrachloroethane	**270**	D08, P6	50	5.5	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
1,1,2-Trichloroethane	**280**	D08, P6	50	4.8	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
1,1-Dichloroethane	ND	D08, P6	50	5.9	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
1,1-Dichloroethene	**160**	D08, P6	50	8.5	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
1,2-Dichloroethane	**16**	D08, P6,J	50	6.0	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
1,2-Dichloroethene, Total	**230**	D08, P6	100	32	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
1,2-Dichloropropane	**50**	D08, P6,J	50	6.1	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
2-Butanone	ND	D08, P6	100	36	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
2-Hexanone	ND	D08, P6	100	35	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
4-Methyl-2-pentanone	ND	D08, P6	100	35	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Acetone	ND	D08, P6	250	37	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Benzene	ND	D08, P6	50	6.0	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Bromodichloromethane	ND	D08, P6	50	5.4	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Bromoform	ND	D08, P6	50	4.7	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Bromomethane	ND	D08, P6	50	12	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Carbon disulfide	ND	D08, P6	50	8.8	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Carbon Tetrachloride	**13**	D08, P6,J	50	8.3	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Chlorobenzene	ND	D08, P6	50	4.8	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Dibromochloromethane	ND	D08, P6	50	4.1	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Chloroethane	ND	D08, P6	50	8.7	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Chloroform	**55**	D08, P6	50	5.4	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Chloromethane	ND	D08, P6	50	6.4	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
cis-1,3-Dichloropropene	ND	D08, P6	50	5.7	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Ethylbenzene	ND	D08, P6	50	4.6	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Methylene Chloride	**33**	D08, P6,J	50	8.1	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Styrene	ND	D08, P6	50	3.8	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Tetrachloroethene	**490**	D08, P6	50	5.5	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Toluene	ND	D08, P6	50	4.5	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
trans-1,3-Dichloropropene	ND	D08, P6	50	4.4	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Trichloroethene	**490**	D08, P6	50	6.0	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Vinyl acetate	ND	D08, P6	100	43	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Vinyl chloride	**160**	D08, P6	50	7.5	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Xylenes, total	ND	D08, P6	100	11	ug/L	10.0	04/24/09 06:17	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*109 %*	*D08, P6*					04/24/09 06:17	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*98 %*	*D08, P6*					04/24/09 06:17	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*100 %*	*D08, P6*					04/24/09 06:17	MF	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

SDG Number: RSD0850

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 04/24/09 18:11

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0907-08 (TRIP BLANK - Water)					**Sampled: 04/21/09**			**Recvd: 04/22/09 14:15**		
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND		5.0	0.73	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
1,1,2,2-Tetrachloroethane	ND		5.0	0.55	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
1,1-Dichloroethane	ND		5.0	0.59	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
1,1-Dichloroethene	ND		5.0	0.85	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
1,2-Dichloroethane	ND		5.0	0.60	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
1,2-Dichloroethene, Total	ND		10	3.2	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
1,2-Dichloropropane	ND		5.0	0.61	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
2-Butanone	ND		10	3.6	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
2-Hexanone	ND		10	3.5	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
4-Methyl-2-pentanone	ND		10	3.5	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Acetone	ND		34	3.7	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Benzene	ND		5.0	0.60	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Bromodichloromethane	ND		5.0	0.54	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Bromoform	ND		5.0	0.47	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Bromomethane	ND		10	1.2	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Carbon disulfide	ND		5.0	0.88	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Carbon Tetrachloride	ND		5.0	0.83	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Chlorobenzene	ND		5.0	0.48	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Dibromochloromethane	ND		5.0	0.41	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Chloroethane	ND		10	0.87	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Chloroform	ND		5.0	0.54	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Chloromethane	ND		10	0.64	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
cis-1,3-Dichloropropene	ND		5.0	0.57	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Ethylbenzene	ND		5.0	0.46	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Methylene Chloride	ND		5.0	0.81	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Styrene	ND		5.0	0.38	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Tetrachloroethene	ND		5.0	0.55	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Toluene	ND		5.0	0.45	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Trichloroethene	ND		5.0	0.60	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Vinyl acetate	ND		10	4.3	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Vinyl chloride	ND		10	0.75	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Xylenes, total	ND		10	1.1	ug/L	1.00	04/23/09 21:23	MF	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*105 %*						04/23/09 21:23	MF	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*97 %*						04/23/09 21:23	MF	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*						04/23/09 21:23	MF	9D23090	624

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Sampler Name (Print)	Signature:
RUSSELL MARCHEZ	Russell J. Marchez
Site Name:	**Spec Request:**
CWM MODEL CITY	AC
Site Location:	**Event Name:**
LEWISTON, NY	RMU2 - FOOTPRINT RELOCATION

TA Sample No.	Client Sample ID	Sampling Date	Sampling Time	MATRIX	COMP / GRAB	8260VOA	T-METALS	D-METALS	CHLORIDE/SULFATE/NITRATE PH, TSS, TDS	ALK / CARB / BICARB	HARDNESS	NH_3 / COD	TOC						
				INDICATE PRESERVATIVE BY USING KEY BELOW (OPTIONAL)															
				INDICATE CONTAINER BY USING KEY BELOW															
	RMU2-W36(3-4')	4/21/09	1340	S	G	4/6													
	RMU2W37 (8-9')	4/21/09	1410	S	G	4/6													
	RMU2-W38(4-5)	4/21/09	1435	S	G	4/6													
	RMU2-W38	4/21/09	1510	W	G	2/1													
	RMU2-W37	4/21/09	1515	W	G	2/2													
	RMU2-W36	4/21/09	1520	W	G	2/2													
	TRIP BLANK	~~4~~	—	W	G	2/2													

Additional Analysis/Remarks

EXPEDITED T/A REQUESTED

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
Russell J. Marchez	GOLDER	4/21/09	1645		TAL	4/21/09	1645
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME

Matrix Key
WW = Wastewater
W = Water/Groundwater
S = Solid
SI = Sludge
MS = Miscellaneous Solids
OI = Oil
A = Air
O = _____

Container Key
1. Plastic
2. VOA Vial
3. Sterile Plastic
4. Amber Glass
5. Widemouth Glass
6. Other

Preservstion Key
1. HCl, Cool to 4°
2. H_2SO_4, Cool to 4°
3. HNO_3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn Acetate, Cool to 4°
6. Cool to 4°
7. None

COMMENTS

GW samples very turbid.

2.0°

Courier:

Bill of Lading:

TAL-8219 (1207)

NYSDEC OHMS Document No. 201469232-00007

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

WASTE MANAGEMENT CHAIN OF CUSTODY

PAGE 2 OF 3 — Rev

Internal Use Only

Sampler Name (Print)	Signature:
RUSSELL MARCHESE	Russell J. Marchese
Site Name:	Spec Request:
CWM/MODEL CITY	AC
Site Location:	Event Name:
LEWISTON, NY	RMU2 FOOTPRINT RELOCATION

TA Sample No.	Client Sample ID	Sampling Date	Sampling Time	MATRIX	COMP / GRAB	8260VOA	T-METALS	D-METALS	CHLORIDE/SULFATE/NITRATE PH, TSS, TDS	ALK / CARB / BICARB	HARDNESS	NH_3 / COD	TOC						Additional Analysis/Remarks
				INDICATE PRESERVATIVE BY USING KEY BELOW (OPTIONAL)															
				INDICATE CONTAINER BY USING KEY BELOW															
	RMU2-W29	4/20/09	1505	W	G	2/1													
	RMU2-W31	4/21/09	0810	W	G	2/1													
	RMU2-W30R(12-14')	4/21/09	0855	S	G	4/6													
	RMU2-W32(8-10')	4/21/09	0925	S	G	4/6													
	RMU2-W33(6-8')	4/21/09	0950	S	G	4/6													
	RMU2-W34(9-10')	4/21/09	1040	S	G	4/6													
	RMU2-W35(6-7')	4/21/09	1105	S	G	4/6													
	RMU2-W30R	4/21/09	1125	W	G	2/1													
	RMU2-W32	4/21/09	1130	W	G	2/1													
	RMU2-W33	4/21/09	1135	W	G	2/1													
	RMU2-W34	4/21/09	1140	W	G	2/1													
	RMU2-W35	4/21/09	1145	W	G	2/1													

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
Russell J. Marchese	GOLDER	4/21/09	1645		TAL	4/21/09	1645
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME

Matrix Key
- WW = Wastewater
- W = Water/Groundwater
- S = Solid
- Sl = Sludge
- MS = Miscellaneous Solids
- Ol = Oil
- A = Air
- O = ____

Container Key
1. Plastic
2. VOA Vial
3. Sterile Plastic
4. Amber Glass
5. Widemouth Glass
6. Other

Preservstion Key
1. HCl, Cool to 4°
2. H_2SO_4, Cool to 4°
3. HNO_3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn Acetate, Cool to 4°
6. Cool to 4°
7. None

COMMENTS: GW Samples very turbid.

Courier: (2.0°C)

Bill of Lading:

TAL-8219 (1207)

NYSDEC OHMS Document No. 201409232-00007

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

WASTE MANAGEMENT CHAIN OF CUSTODY

Internal Use Only

Sampler Name (Print)	Signature:
RUSSELL J. MARCHESE	Russell J. Marchese
Site Name:	**Spec Request:**
CWM MODEL CITY	AC
Site Location:	**Event Name:**
LEWISTON, NY	RMU2- ~~WP~~ FOOTPRINT RELOCATION

TA Sample No.	Client Sample ID	Sampling Date	Sampling Time	MATRIX	COMP / GRAB	8260VOA	T-METALS	D-METALS	CHLORIDE/SULFATE/NITRATE PH, TSS, TDS	ALK / CARB / BICARB	HARDNESS	NH_3 / COD	TOC	Total Petroleum Hydroc. (TPH) Analysis					Additional Analysis/Remarks
				INDICATE PRESERVATIVE BY USING KEY BELOW (OPTIONAL)															
				INDICATE CONTAINER BY USING KEY BELOW															
	RMU2-W39(4-6')	4/22/09	0830	S	G	4/6													
	RMU2-WP-W4-N2(4-5)	4/22/09	0925	S	G	4/6													
	RMU2-W19-W4-N3(4-5')	4/22/09	1025	S	G	4/6													
	RMU2-W19-W4-N4(6-8)	4/22/09	1120	S	G	4/6													
	RMU2-W19-W4-N4(6-8)	4/22/09	1125	S	G									4/6					
	RMU2-WP-W4-N2	4/22/09	1140	W	G	2/2													
	RMU2-W19-W4-N3	4/22/09	1145	W	G	2/2													
	RMU2-W19-W4-N4	4/22/09	1155	W	G	2/2													
	RMU2-W39	4/22/09	1210	W	G	2/2													
	TRIP BLANK	4/22/09	—	W	G	2/2													

NYSDEC OHMS Document No. 201469232-00007

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
Russell J. Marchese	GROPER	4/22/09	1419	Jay Gifford		4/22/09	2:15 PM
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME

Matrix Key	Container Key	Preservstion Key
WW = Wastewater	1. Plastic	1. HCl, Cool to 4°
W = Water/Groundwater	2. VOA Vial	2. H_2SO_4, Cool to 4°
S = Solid	3. Sterile Plastic	3. HNO_3, Cool to 4°
SI = Sludge	4. Amber Glass	4. NaOH, Cool to 4°
MS = Miscellaneous Solids	5. Widemouth Glass	5. NaOH/Zn Acetate, Cool to 4°
OI = Oil	6. Other	6. Cool to 4°
A = Air		7. None
O = _____		

COMMENTS	Courier:
GW Samples Very turb. d.	
3.0 oz	Bill of Lading:

TAL-8219 (1207)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Analytical Report

Work Order: RSD0849

Project Description

RMU-2 Background Sampling
RMU-2 Background Sampling

For:

Greg Zayatz

CWM Chemical Services Inc - Model City, NY

1550 Balmer Road

Model City, NY 14107

Candace L. Fox

Candace Fox

Project Manager

candace.fox@testamericainc.com

Monday, May 4, 2009

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exception to NELAP requirements are noted in this report. Persuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project manager who has signed this report.

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

TestAmerica Buffalo
Current Certifications

As of 1/27/2009

STATE	Program	Cert # / Lab ID
Arkansas	CWA, RCRA, SOIL	88-0686
California*	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida*	NELAP CWA, RCRA	E87672
Georgia*	SDWA,NELAP CWA, RCRA	956
Illinois*	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas*	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana*	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY0044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA,CWA, RCRA	036-999-337
New Hampshire*	NELAP SDWA, CWA	233701
New Jersey*	NELAP,SDWA, CWA, RCRA,	NY455
New York*	NELAP, AIR, SDWA, CWA, RCRA,CLP	10026
Oklahoma	CWA, RCRA	9421
Pennsylvania*	NELAP CWA,RCRA	68-00281
Tennessee	SDWA	02970
Texas*	NELAP CWA, RCRA	T104704412-08-TX
USDA	FOREIGN SOIL PERMIT	S-41579
USDOE	Department of Energy	DOECAP-STB
Virginia	SDWA	278
Washington*	NELAP CWA,RCRA	C1677
Wisconsin	CWA, RCRA	998310390
West Virginia	CWA,RCRA	252

*As required under the indicated accreditation, the test results in this report meet all NELAP requirements for parameters for which accre ditation is required or available. Any exceptions to NELAP requirements are noted in this report.

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Case Narrative

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. field-pH), they were not analyzed immediately, but as soon as possible after laboratory receipt.

There are pertinent documents appended to this report, 2 pages, are included and are an integral part of this report.

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our Laboratory.

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

The requested project specific reporting limits listed below were less than lab standard quantitation limits but greater than or equal to the lab MDL. It must be noted that results reported below lab standard quantitation limits (PQL) may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

SpecificMethod	Analyte	Units	Client RL	Lab PQL
624	2-Butanone	ug/L	10	25
624	2-Hexanone	ug/L	10	25
624	4-Methyl-2-pentanone	ug/L	10	25
624	Vinyl acetate	ug/L	10	25

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

DATA QUALIFIERS AND DEFINITIONS

B	Analyte was detected in the associated Method Blank.
J	Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.
M8	The MS and/or MSD were below the acceptance limits. See Blank Spike (LCS).
P6	Sample received unpreserved, however the sample was analyzed within 7 days per EPA recommendation.
S13	Due to the amount of sediment present in the sample vials, volumes from two or more separate vials were combined for analysis.
S6	Sediment present.

ADDITIONAL COMMENTS

Results are reported on a wet weight basis unless otherwise noted.

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Sample Summary

SAMPLE IDENTIFICATION	LAB NUMBER	Client Matrix	Date/Time Sampled	Date/Time Received
RMU2-W24(4-6)	RSD0849-01	Solid	04/20/09 08:50	04/21/09 16:45
RMU2-W25(4-6)	RSD0849-02	Solid	04/20/09 09:40	04/21/09 16:45
RMU2-W26(6-8)	RSD0849-03	Solid	04/20/09 10:35	04/21/09 16:45
RMU2-W27(5-6)	RSD0849-04	Solid	04/20/09 11:00	04/21/09 16:45
RMU2-W24	RSD0849-05	Water	04/20/09 11:15	04/21/09 16:45
RMU2-W25	RSD0849-06	Water	04/20/09 11:20	04/21/09 16:45
RMU2-W26	RSD0849-07	Water	04/20/09 11:25	04/21/09 16:45
RMU2-W27	RSD0849-08	Water	04/20/09 11:35	04/21/09 16:45
RMU2-W28(6-7)	RSD0849-09	Solid	04/20/09 13:15	04/21/09 16:45
RMU2-W29(4-6)	RSD0849-10	Solid	04/20/09 13:50	04/21/09 16:45
RMU2-W31(4-6)	RSD0849-11	Solid	04/20/09 14:45	04/21/09 16:45
RMU2-W28	RSD0849-12	Water	04/20/09 15:00	04/21/09 16:45

SAMPLE IDENTIFICATION	LAB NUMBER	Client Matrix	Date/Time Sampled	Date/Time Received
RMU2-W39 (4-6)	RSD0910-01	Solid	04/22/09 08:30	04/22/09 14:15
RMU2-W39	RSD0910-02	Water	04/22/09 12:10	04/22/09 14:15

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Sample ID: RSD0849-01 (RMU2-W24(4-6) - Solid) — **Sampled: 04/20/09 08:50** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		5.7	0.41	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
1,1,2,2-Tetrachloroethane	ND		5.7	0.92	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
1,1,2-Trichloroethane	ND		5.7	0.29	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
1,1-Dichloroethane	ND		5.7	0.28	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
1,1-Dichloroethene	ND		5.7	0.70	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
1,2-Dichloroethane	**1.7**	J	5.7	0.29	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
1,2-Dichloroethene, Total	ND		11	3.0	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
1,2-Dichloropropane	ND		5.7	0.29	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
2-Butanone	ND		28	7.7	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
2-Hexanone	ND		28	2.0	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
4-Methyl-2-pentanone	ND		28	1.9	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Acetone	**12**	J	28	1.2	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Benzene	ND		5.7	0.28	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Bromodichloromethane	ND		5.7	0.29	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Bromoform	ND		5.7	0.52	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Bromomethane	ND		5.7	0.52	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Carbon disulfide	**1.3**	J	5.7	0.49	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Carbon Tetrachloride	ND		5.7	0.21	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Chlorobenzene	ND		5.7	0.25	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Dibromochloromethane	ND		5.7	0.31	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Chloroethane	ND		5.7	0.92	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Chloroform	ND		5.7	0.35	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Chloromethane	ND		5.7	0.34	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
cis-1,3-Dichloropropene	ND		5.7	0.32	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Ethylbenzene	**4.6**	J	5.7	0.39	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Methylene Chloride	**16**	B	5.7	0.40	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Styrene	ND		5.7	0.28	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Tetrachloroethene	**9.6**		5.7	0.76	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Toluene	**3.1**	J	5.7	0.96	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
trans-1,3-Dichloropropene	ND		5.7	0.28	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Trichloroethene	**9.6**		5.7	0.39	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Vinyl acetate	ND		28	1.2	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Vinyl chloride	ND		11	0.23	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Xylenes, total	**37**		11	0.96	ug/kg dry	1.00	04/27/09 22:34	CDC	9D27090	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*91 %*						04/27/09 22:34	CDC	9D27090	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*112 %*						04/27/09 22:34	CDC	9D27090	8260B
Surr: Toluene-d8 (71-125%)	*112 %*						04/27/09 22:34	CDC	9D27090	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Sample ID: RSD0849-02 (RMU2-W25(4-6) - Solid) — **Sampled: 04/20/09 09:40** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		5.8	0.42	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
1,1,2,2-Tetrachloroethane	ND		5.8	0.94	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
1,1,2-Trichloroethane	ND		5.8	0.29	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
1,1-Dichloroethane	ND		5.8	0.29	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
1,1-Dichloroethene	ND		5.8	0.71	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
1,2-Dichloroethane	ND		5.8	0.29	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
1,2-Dichloroethene, Total	ND		12	3.0	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
1,2-Dichloropropane	ND		5.8	0.30	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
2-Butanone	ND		29	7.9	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
2-Hexanone	ND		29	2.0	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
4-Methyl-2-pentanone	ND		29	1.9	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Acetone	**94**		29	1.3	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Benzene	ND		5.8	0.28	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Bromodichloromethane	ND		5.8	0.30	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Bromoform	ND		5.8	0.53	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Bromomethane	ND		5.8	0.53	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Carbon disulfide	ND		5.8	0.50	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Carbon Tetrachloride	ND		5.8	0.21	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Chlorobenzene	ND		5.8	0.25	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Dibromochloromethane	ND		5.8	0.32	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Chloroethane	ND		5.8	0.94	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Chloroform	ND		5.8	0.36	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Chloromethane	ND		5.8	0.35	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
cis-1,3-Dichloropropene	ND		5.8	0.33	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Ethylbenzene	ND		5.8	0.40	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Methylene Chloride	**6.5**	B	5.8	0.40	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Styrene	ND		5.8	0.29	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Tetrachloroethene	ND		5.8	0.78	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Toluene	ND		5.8	0.98	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
trans-1,3-Dichloropropene	ND		5.8	0.28	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Trichloroethene	ND		5.8	0.40	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Vinyl acetate	ND		29	1.2	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Vinyl chloride	ND		12	0.24	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Xylenes, total	ND		12	0.97	ug/kg dry	1.00	04/27/09 23:00	CDC	9D27090	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*92 %*						04/27/09 23:00	CDC	9D27090	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*111 %*						04/27/09 23:00	CDC	9D27090	8260B
Surr: Toluene-d8 (71-125%)	*111 %*						04/27/09 23:00	CDC	9D27090	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0849-03 (RMU2-W26(6-8) - Solid)						**Sampled: 04/20/09 10:35**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	ND		5.7	0.41	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
1,1,2,2-Tetrachloroethane	ND		5.7	0.92	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
1,1,2-Trichloroethane	ND		5.7	0.28	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
1,1-Dichloroethane	ND		5.7	0.28	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
1,1-Dichloroethene	ND		5.7	0.69	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
1,2-Dichloroethane	ND		5.7	0.28	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
1,2-Dichloroethene, Total	ND		11	3.0	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
1,2-Dichloropropane	ND		5.7	0.29	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
2-Butanone	ND		28	7.7	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
2-Hexanone	ND		28	2.0	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
4-Methyl-2-pentanone	ND		28	1.9	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Acetone	**22**	J	28	1.2	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Benzene	ND		5.7	0.28	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Bromodichloromethane	ND		5.7	0.29	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Bromoform	ND		5.7	0.52	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Bromomethane	ND		5.7	0.52	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Carbon disulfide	ND		5.7	0.48	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Carbon Tetrachloride	ND		5.7	0.20	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Chlorobenzene	ND		5.7	0.25	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Dibromochloromethane	ND		5.7	0.31	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Chloroethane	ND		5.7	0.91	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Chloroform	ND		5.7	0.35	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Chloromethane	ND		5.7	0.34	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
cis-1,3-Dichloropropene	ND		5.7	0.32	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Ethylbenzene	ND		5.7	0.39	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Methylene Chloride	**11**	B	5.7	0.39	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Styrene	ND		5.7	0.28	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Tetrachloroethene	ND		5.7	0.76	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Toluene	ND		5.7	0.96	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
trans-1,3-Dichloropropene	ND		5.7	0.28	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Trichloroethene	ND		5.7	0.39	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Vinyl acetate	ND		28	1.2	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Vinyl chloride	ND		11	0.23	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Xylenes, total	ND		11	0.95	ug/kg dry	1.00	04/27/09 23:26	CDC	9D27090	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*91 %*						04/27/09 23:26	CDC	9D27090	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*110 %*						04/27/09 23:26	CDC	9D27090	8260B
Surr: Toluene-d8 (71-125%)	*109 %*						04/27/09 23:26	CDC	9D27090	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Sample ID: RSD0849-04 (RMU2-W27(5-6) - Solid) — **Sampled: 04/20/09 11:00** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		6.4	0.47	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
1,1,2,2-Tetrachloroethane	ND		6.4	1.0	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
1,1,2-Trichloroethane	ND		6.4	0.32	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
1,1-Dichloroethane	ND		6.4	0.32	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
1,1-Dichloroethene	ND		6.4	0.79	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
1,2-Dichloroethane	ND		6.4	0.32	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
1,2-Dichloroethene, Total	**4.6**	J	13	3.4	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
1,2-Dichloropropane	ND		6.4	0.33	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
2-Butanone	ND		32	8.8	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
2-Hexanone	ND		32	2.2	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
4-Methyl-2-pentanone	ND		32	2.1	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Acetone	**120**		32	1.4	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Benzene	**7.2**		6.4	0.32	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Bromodichloromethane	ND		6.4	0.33	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Bromoform	ND		6.4	0.59	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Bromomethane	ND		6.4	0.59	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Carbon disulfide	**4.5**	J	6.4	0.55	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Carbon Tetrachloride	ND		6.4	0.23	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Chlorobenzene	**12**		6.4	0.28	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Dibromochloromethane	ND		6.4	0.36	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Chloroethane	ND		6.4	1.0	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Chloroform	ND		6.4	0.40	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Chloromethane	ND		6.4	0.39	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
cis-1,3-Dichloropropene	ND		6.4	0.37	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Ethylbenzene	**72**		6.4	0.45	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Methylene Chloride	**10**	B	6.4	0.45	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Styrene	ND		6.4	0.32	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Tetrachloroethene	**1.5**	J	6.4	0.86	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Toluene	ND		6.4	1.1	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
trans-1,3-Dichloropropene	ND		6.4	0.32	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Trichloroethene	**29**		6.4	0.44	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Vinyl acetate	ND		32	1.3	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Vinyl chloride	ND		13	0.26	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Xylenes, total	**85**		13	1.1	ug/kg dry	1.00	04/27/09 23:51	CDC	9D27090	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*98 %*						04/27/09 23:51	CDC	9D27090	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*123 %*						04/27/09 23:51	CDC	9D27090	8260B
Surr: Toluene-d8 (71-125%)	*115 %*						04/27/09 23:51	CDC	9D27090	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0849-05 (RMU2-W24 - Water)						**Sampled: 04/20/09 11:15**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	P6, S6	5.0	0.73	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6, S6	5.0	0.55	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
1,1,2-Trichloroethane	ND	P6, S6	5.0	0.48	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
1,1-Dichloroethane	ND	P6, S6	5.0	0.59	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
1,1-Dichloroethene	ND	P6, S6	5.0	0.85	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
1,2-Dichloroethane	**1.9**	P6, S6,J	5.0	0.60	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
1,2-Dichloroethene, Total	ND	P6, S6	10	3.2	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
1,2-Dichloropropane	ND	P6, S6	5.0	0.61	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
2-Butanone	ND	P6, S6	10	3.6	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
2-Hexanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
4-Methyl-2-pentanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Acetone	**8.6**	P6, S6,J	34	3.7	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Benzene	**1.3**	P6, S6,J	5.0	0.60	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Bromodichloromethane	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Bromoform	ND	P6, S6	5.0	0.47	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Bromomethane	ND	P6, S6	10	1.2	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Carbon disulfide	ND	P6, S6	5.0	0.88	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Carbon Tetrachloride	ND	P6, S6	5.0	0.83	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Chlorobenzene	ND	P6, S6	5.0	0.48	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Dibromochloromethane	ND	P6, S6	5.0	0.41	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Chloroethane	ND	P6, S6	10	0.87	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Chloroform	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Chloromethane	ND	P6, S6	10	0.64	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
cis-1,3-Dichloropropene	ND	P6, S6	5.0	0.57	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Ethylbenzene	ND	P6, S6	5.0	0.46	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Methylene Chloride	**3.1**	P6, S6,J	5.0	0.81	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Styrene	ND	P6, S6	5.0	0.38	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Tetrachloroethene	**1.4**	P6, S6,J	5.0	0.55	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Toluene	**1.8**	P6, S6,J	5.0	0.45	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
trans-1,3-Dichloropropene	ND	P6, S6	5.0	0.44	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Trichloroethene	**2.2**	P6, S6,J	5.0	0.60	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Vinyl acetate	ND	P6, S6	10	4.3	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Vinyl chloride	ND	P6, S6	10	0.75	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Xylenes, total	**3.7**	P6, S6,J	10	1.1	ug/L	1.00	04/24/09 11:23	TRB	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*109 %*	*P6, S6*					04/24/09 11:23	TRB	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*100 %*	*P6, S6*					04/24/09 11:23	TRB	9D23090	624
Surr: Toluene-d8 (87-110%)	*100 %*	*P6, S6*					04/24/09 11:23	TRB	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0849-06 (RMU2-W25 - Water)						**Sampled: 04/20/09 11:20**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds										
1,1,1-Trichloroethane	ND	P6	5.0	0.73	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
1,1,2-Trichloroethane	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
1,1-Dichloroethane	ND	P6	5.0	0.59	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
1,1-Dichloroethene	ND	P6	5.0	0.85	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
1,2-Dichloroethane	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
1,2-Dichloroethene, Total	ND	P6	10	3.2	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
1,2-Dichloropropane	ND	P6	5.0	0.61	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
2-Butanone	ND	P6	10	3.6	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
2-Hexanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
4-Methyl-2-pentanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Acetone	**30**	P6,J	34	3.7	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Benzene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Bromodichloromethane	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Bromoform	ND	P6	5.0	0.47	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Bromomethane	ND	P6	10	1.2	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Carbon disulfide	ND	P6	5.0	0.88	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Carbon Tetrachloride	ND	P6	5.0	0.83	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Chlorobenzene	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Dibromochloromethane	ND	P6	5.0	0.41	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Chloroethane	ND	P6	10	0.87	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Chloroform	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Chloromethane	ND	P6	10	0.64	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
cis-1,3-Dichloropropene	ND	P6	5.0	0.57	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Ethylbenzene	ND	P6	5.0	0.46	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Methylene Chloride	ND	P6	5.0	0.81	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Styrene	ND	P6	5.0	0.38	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Tetrachloroethene	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Toluene	**1.9**	P6,J	5.0	0.45	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
trans-1,3-Dichloropropene	ND	P6	5.0	0.44	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Trichloroethene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Vinyl acetate	ND	P6	10	4.3	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Vinyl chloride	ND	P6	10	0.75	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Xylenes, total	ND	P6	10	1.1	ug/L	1.00	04/24/09 11:48	TRB	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*107 %*	*P6*					04/24/09 11:48	TRB	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*98 %*	*P6*					04/24/09 11:48	TRB	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*	*P6*					04/24/09 11:48	TRB	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Sample ID: RSD0849-07 (RMU2-W26 - Water) — **Sampled: 04/20/09 11:25** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND	P6	5.0	0.73	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
1,1,2-Trichloroethane	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
1,1-Dichloroethane	ND	P6	5.0	0.59	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
1,1-Dichloroethene	ND	P6	5.0	0.85	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
1,2-Dichloroethane	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
1,2-Dichloroethene, Total	ND	P6	10	3.2	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
1,2-Dichloropropane	ND	P6	5.0	0.61	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
2-Butanone	ND	P6	10	3.6	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
2-Hexanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
4-Methyl-2-pentanone	ND	P6	10	3.5	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Acetone	**7.7**	P6,J	34	3.7	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Benzene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Bromodichloromethane	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Bromoform	ND	P6	5.0	0.47	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Bromomethane	ND	P6	10	1.2	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Carbon disulfide	ND	P6	5.0	0.88	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Carbon Tetrachloride	ND	P6	5.0	0.83	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Chlorobenzene	ND	P6	5.0	0.48	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Dibromochloromethane	ND	P6	5.0	0.41	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Chloroethane	ND	P6	10	0.87	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Chloroform	ND	P6	5.0	0.54	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Chloromethane	ND	P6	10	0.64	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
cis-1,3-Dichloropropene	ND	P6	5.0	0.57	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Ethylbenzene	ND	P6	5.0	0.46	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Methylene Chloride	ND	P6	5.0	0.81	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Styrene	ND	P6	5.0	0.38	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Tetrachloroethene	ND	P6	5.0	0.55	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Toluene	**1.6**	P6,J	5.0	0.45	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
trans-1,3-Dichloropropene	ND	P6	5.0	0.44	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Trichloroethene	ND	P6	5.0	0.60	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Vinyl acetate	ND	P6	10	4.3	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Vinyl chloride	ND	P6	10	0.75	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Xylenes, total	ND	P6	10	1.1	ug/L	1.00	04/24/09 12:13	TRB	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*110 %*	*P6*					04/24/09 12:13	TRB	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*100 %*	*P6*					04/24/09 12:13	TRB	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*	*P6*					04/24/09 12:13	TRB	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Sample ID: RSD0849-08 (RMU2-W27 - Water) — **Sampled: 04/20/09 11:35** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND	P6, S6	5.0	0.73	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6, S6	5.0	0.55	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
1,1,2-Trichloroethane	ND	P6, S6	5.0	0.48	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
1,1-Dichloroethane	ND	P6, S6	5.0	0.59	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
1,1-Dichloroethene	ND	P6, S6	5.0	0.85	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
1,2-Dichloroethane	ND	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
1,2-Dichloroethene, Total	ND	P6, S6	10	3.2	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
1,2-Dichloropropane	ND	P6, S6	5.0	0.61	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
2-Butanone	ND	P6, S6	10	3.6	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
2-Hexanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
4-Methyl-2-pentanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Acetone	**11**	P6, S6,J	34	3.7	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Benzene	**3.8**	P6, S6,J	5.0	0.60	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Bromodichloromethane	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Bromoform	ND	P6, S6	5.0	0.47	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Bromomethane	ND	P6, S6	10	1.2	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Carbon disulfide	ND	P6, S6	5.0	0.88	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Carbon Tetrachloride	ND	P6, S6	5.0	0.83	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Chlorobenzene	**1.6**	P6, S6,J	5.0	0.48	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Dibromochloromethane	ND	P6, S6	5.0	0.41	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Chloroethane	ND	P6, S6	10	0.87	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Chloroform	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Chloromethane	ND	P6, S6	10	0.64	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
cis-1,3-Dichloropropene	ND	P6, S6	5.0	0.57	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Ethylbenzene	**9.4**	P6, S6	5.0	0.46	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Methylene Chloride	ND	P6, S6	5.0	0.81	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Styrene	ND	P6, S6	5.0	0.38	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Tetrachloroethene	**1.5**	P6, S6,J	5.0	0.55	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Toluene	**1.4**	P6, S6,J	5.0	0.45	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
trans-1,3-Dichloropropene	ND	P6, S6	5.0	0.44	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Trichloroethene	**8.1**	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Vinyl acetate	ND	P6, S6	10	4.3	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Vinyl chloride	ND	P6, S6	10	0.75	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Xylenes, total	**26**	P6, S6	10	1.1	ug/L	1.00	04/24/09 12:39	TRB	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*107 %*	*P6, S6*					04/24/09 12:39	TRB	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*100 %*	*P6, S6*					04/24/09 12:39	TRB	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*	*P6, S6*					04/24/09 12:39	TRB	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0849-09 (RMU2-W28(6-7) - Solid)						**Sampled: 04/20/09 13:15**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	ND		5.7	0.42	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
1,1,2,2-Tetrachloroethane	ND		5.7	0.93	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
1,1,2-Trichloroethane	ND		5.7	0.29	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
1,1-Dichloroethane	ND		5.7	0.28	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
1,1-Dichloroethene	ND		5.7	0.70	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
1,2-Dichloroethane	ND		5.7	0.29	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
1,2-Dichloroethene, Total	ND		11	3.0	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
1,2-Dichloropropane	ND		5.7	0.29	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
2-Butanone	ND		29	7.8	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
2-Hexanone	ND		29	2.0	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
4-Methyl-2-pentanone	ND		29	1.9	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Acetone	**12**	J	29	1.3	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Benzene	ND		5.7	0.28	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Bromodichloromethane	ND		5.7	0.29	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Bromoform	ND		5.7	0.53	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Bromomethane	ND		5.7	0.53	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Carbon disulfide	ND		5.7	0.49	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Carbon Tetrachloride	ND		5.7	0.21	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Chlorobenzene	ND		5.7	0.25	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Dibromochloromethane	ND		5.7	0.32	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Chloroethane	ND		5.7	0.93	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Chloroform	ND		5.7	0.35	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Chloromethane	ND		5.7	0.35	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
cis-1,3-Dichloropropene	ND		5.7	0.33	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Ethylbenzene	ND		5.7	0.40	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Methylene Chloride	**7.7**	B	5.7	0.40	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Styrene	ND		5.7	0.29	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Tetrachloroethene	ND		5.7	0.77	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Toluene	ND		5.7	0.97	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
trans-1,3-Dichloropropene	ND		5.7	0.28	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Trichloroethene	ND		5.7	0.40	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Vinyl acetate	ND		29	1.2	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Vinyl chloride	ND		11	0.23	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Xylenes, total	ND		11	0.96	ug/kg dry	1.00	04/28/09 00:17	CDC	9D27090	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*99 %*						04/28/09 00:17	CDC	9D27090	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*112 %*						04/28/09 00:17	CDC	9D27090	8260B
Surr: Toluene-d8 (71-125%)	*112 %*						04/28/09 00:17	CDC	9D27090	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0849-10 (RMU2-W29(4-6) - Solid)						**Sampled: 04/20/09 13:50**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	ND		6.0	0.44	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
1,1,2,2-Tetrachloroethane	ND		6.0	0.98	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
1,1,2-Trichloroethane	ND		6.0	0.30	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
1,1-Dichloroethane	ND		6.0	0.30	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
1,1-Dichloroethene	ND		6.0	0.74	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
1,2-Dichloroethane	ND		6.0	0.30	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
1,2-Dichloroethene, Total	ND		12	3.2	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
1,2-Dichloropropane	ND		6.0	0.31	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
2-Butanone	**170**		30	8.2	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
2-Hexanone	ND		30	2.1	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
4-Methyl-2-pentanone	ND		30	2.0	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Acetone	**450**		30	1.3	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Benzene	ND		6.0	0.30	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Bromodichloromethane	ND		6.0	0.31	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Bromoform	ND		6.0	0.56	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Bromomethane	ND		6.0	0.55	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Carbon disulfide	ND		6.0	0.52	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Carbon Tetrachloride	ND		6.0	0.22	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Chlorobenzene	ND		6.0	0.26	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Dibromochloromethane	ND		6.0	0.33	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Chloroethane	ND		6.0	0.98	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Chloroform	ND		6.0	0.37	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Chloromethane	ND		6.0	0.36	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
cis-1,3-Dichloropropene	ND		6.0	0.34	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Ethylbenzene	ND		6.0	0.42	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Methylene Chloride	**13**	B	6.0	0.42	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Styrene	ND		6.0	0.30	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Tetrachloroethene	ND		6.0	0.81	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Toluene	ND		6.0	1.0	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
trans-1,3-Dichloropropene	ND		6.0	0.30	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Trichloroethene	ND		6.0	0.42	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Vinyl acetate	ND		30	1.3	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Vinyl chloride	ND		12	0.25	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Xylenes, total	ND		12	1.0	ug/kg dry	1.00	04/28/09 00:42	CDC	9D27090	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*92 %*						04/28/09 00:42	CDC	9D27090	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*110 %*						04/28/09 00:42	CDC	9D27090	8260B
Surr: Toluene-d8 (71-125%)	*108 %*						04/28/09 00:42	CDC	9D27090	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: RSD0849-11 (RMU2-W31(4-6) - Solid)						**Sampled: 04/20/09 14:45**		**Recvd: 04/21/09 16:45**		
Volatile Organic Compounds by EPA 8260B										
1,1,1-Trichloroethane	ND		5.7	0.41	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
1,1,2,2-Tetrachloroethane	ND		5.7	0.92	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
1,1,2-Trichloroethane	ND		5.7	0.28	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
1,1-Dichloroethane	ND		5.7	0.28	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
1,1-Dichloroethene	ND		5.7	0.69	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
1,2-Dichloroethane	ND		5.7	0.28	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
1,2-Dichloroethene, Total	ND		11	3.0	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
1,2-Dichloropropane	ND		5.7	0.29	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
2-Butanone	ND		28	7.7	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
2-Hexanone	ND		28	2.0	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
4-Methyl-2-pentanone	ND		28	1.9	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Acetone	**480**		28	1.2	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Benzene	ND		5.7	0.28	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Bromodichloromethane	ND		5.7	0.29	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Bromoform	ND		5.7	0.52	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Bromomethane	ND		5.7	0.52	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Carbon disulfide	ND		5.7	0.48	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Carbon Tetrachloride	ND		5.7	0.20	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Chlorobenzene	ND		5.7	0.25	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Dibromochloromethane	ND		5.7	0.31	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Chloroethane	ND		5.7	0.91	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Chloroform	ND		5.7	0.35	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Chloromethane	ND		5.7	0.34	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
cis-1,3-Dichloropropene	ND		5.7	0.32	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Ethylbenzene	ND		5.7	0.39	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Methylene Chloride	**10**	B	5.7	0.39	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Styrene	ND		5.7	0.28	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Tetrachloroethene	ND		5.7	0.76	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Toluene	ND		5.7	0.96	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
trans-1,3-Dichloropropene	ND		5.7	0.28	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Trichloroethene	ND		5.7	0.39	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Vinyl acetate	ND		28	1.2	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Vinyl chloride	ND		11	0.23	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Xylenes, total	ND		11	0.95	ug/kg dry	1.00	04/28/09 01:08	CDC	9D27090	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*98 %*						04/28/09 01:08	CDC	9D27090	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*119 %*						04/28/09 01:08	CDC	9D27090	8260B
Surr: Toluene-d8 (71-125%)	*115 %*						04/28/09 01:08	CDC	9D27090	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Sample ID: RSD0849-12 (RMU2-W28 - Water) — **Sampled: 04/20/09 15:00** — **Recvd: 04/21/09 16:45**

Volatile Organic Compounds

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND	P6, S6	5.0	0.73	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
1,1,2,2-Tetrachloroethane	ND	P6, S6	5.0	0.55	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
1,1,2-Trichloroethane	ND	P6, S6	5.0	0.48	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
1,1-Dichloroethane	ND	P6, S6	5.0	0.59	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
1,1-Dichloroethene	ND	P6, S6	5.0	0.85	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
1,2-Dichloroethane	ND	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
1,2-Dichloroethene, Total	ND	P6, S6	10	3.2	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
1,2-Dichloropropane	ND	P6, S6	5.0	0.61	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
2-Butanone	ND	P6, S6	10	3.6	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
2-Hexanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
4-Methyl-2-pentanone	ND	P6, S6	10	3.5	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Acetone	**11**	P6, S6,J	34	3.7	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Benzene	ND	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Bromodichloromethane	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Bromoform	ND	P6, S6	5.0	0.47	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Bromomethane	ND	P6, S6	10	1.2	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Carbon disulfide	ND	P6, S6	5.0	0.88	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Carbon Tetrachloride	ND	P6, S6	5.0	0.83	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Chlorobenzene	ND	P6, S6	5.0	0.48	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Dibromochloromethane	ND	P6, S6	5.0	0.41	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Chloroethane	ND	P6, S6	10	0.87	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Chloroform	ND	P6, S6	5.0	0.54	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Chloromethane	ND	P6, S6	10	0.64	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
cis-1,3-Dichloropropene	ND	P6, S6	5.0	0.57	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Ethylbenzene	ND	P6, S6	5.0	0.46	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Methylene Chloride	ND	P6, S6	5.0	0.81	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Styrene	ND	P6, S6	5.0	0.38	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Tetrachloroethene	ND	P6, S6	5.0	0.55	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Toluene	**1.4**	P6, S6,J	5.0	0.45	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
trans-1,3-Dichloropropene	ND	P6, S6	5.0	0.44	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Trichloroethene	ND	P6, S6	5.0	0.60	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Vinyl acetate	ND	P6, S6	10	4.3	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Vinyl chloride	ND	P6, S6	10	0.75	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Xylenes, total	ND	P6, S6	10	1.1	ug/L	1.00	04/24/09 13:04	TRB	9D23090	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*108 %*	*P6, S6*					04/24/09 13:04	TRB	9D23090	624
Surr: 4-Bromofluorobenzene (78-122%)	*98 %*	*P6, S6*					04/24/09 13:04	TRB	9D23090	624
Surr: Toluene-d8 (87-110%)	*99 %*	*P6, S6*					04/24/09 13:04	TRB	9D23090	624

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Sample ID: RSD0910-01 (RMU2-W39 (4-6) - Solid) — **Sampled: 04/22/09 08:30** — **Recvd: 04/22/09 14:15**

Volatile Organic Compounds by EPA 8260B

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND		5.3	0.39	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
1,1,2,2-Tetrachloroethane	ND		5.3	0.86	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
1,1,2-Trichloroethane	ND		5.3	0.27	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
1,1-Dichloroethane	ND		5.3	0.26	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
1,1-Dichloroethene	ND		5.3	0.65	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
1,2-Dichloroethane	ND		5.3	0.27	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
1,2-Dichloroethene, Total	ND		11	2.8	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
1,2-Dichloropropane	ND		5.3	0.27	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
2-Butanone	ND		27	7.3	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
2-Hexanone	ND		27	1.9	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
4-Methyl-2-pentanone	ND		27	1.7	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Acetone	**62**		27	1.2	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Benzene	ND		5.3	0.26	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Bromodichloromethane	ND		5.3	0.27	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Bromoform	ND		5.3	0.49	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Bromomethane	ND		5.3	0.49	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Carbon disulfide	ND		5.3	0.46	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Carbon Tetrachloride	ND		5.3	0.19	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Chlorobenzene	ND		5.3	0.23	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Dibromochloromethane	ND		5.3	0.29	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Chloroethane	ND		5.3	0.86	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Chloroform	ND		5.3	0.33	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Chloromethane	ND		5.3	0.32	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
cis-1,3-Dichloropropene	ND		5.3	0.30	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Ethylbenzene	ND		5.3	0.37	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Methylene Chloride	**40**	B	5.3	0.37	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Styrene	ND		5.3	0.27	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Tetrachloroethene	ND		5.3	0.72	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Toluene	**6.3**		5.3	0.90	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
trans-1,3-Dichloropropene	ND		5.3	0.26	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Trichloroethene	ND		5.3	0.37	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Vinyl acetate	ND		27	1.1	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Vinyl chloride	ND		11	0.22	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Xylenes, total	**2.1**	J	11	0.90	ug/kg dry	1.00	04/24/09 23:13	PQ	9D24090	8260B
Surr: 1,2-Dichloroethane-d4 (64-126%)	*98 %*						04/24/09 23:13	PQ	9D24090	8260B
Surr: 4-Bromofluorobenzene (72-126%)	*110 %*						04/24/09 23:13	PQ	9D24090	8260B
Surr: Toluene-d8 (71-125%)	*109 %*						04/24/09 23:13	PQ	9D24090	8260B

CWM Chemical Services Inc - Model City, NY
1550 Balmer Road
Model City, NY 14107

Work Order: RSD0849

Project: RMU-2 Background Sampling
Project Number: WMI01545

Received: 04/21/09-04/22/09
Reported: 05/04/09 10:25

Analytical Report

Sample ID: RSD0910-02 (RMU2-W39 - Water) — **Sampled: 04/22/09 12:10** — **Recvd: 04/22/09 14:15**

Volatile Organic Compounds

Analyte	Sample Result	Data Qualifiers	Rpt Limit	MDL	Units	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
1,1,1-Trichloroethane	ND	P6, S13	5.0	0.73	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
1,1,2,2-Tetrachloroethane	ND	P6, S13	5.0	0.55	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
1,1,2-Trichloroethane	ND	P6, S13	5.0	0.48	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
1,1-Dichloroethane	ND	P6, S13	5.0	0.59	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
1,1-Dichloroethene	ND	P6, S13	5.0	0.85	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
1,2-Dichloroethane	ND	P6, S13	5.0	0.60	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
1,2-Dichloroethene, Total	ND	P6, S13	10	3.2	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
1,2-Dichloropropane	ND	P6, S13	5.0	0.61	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
2-Butanone	ND	P6, S13	10	3.6	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
2-Hexanone	ND	P6, S13	10	3.5	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
4-Methyl-2-pentanone	ND	P6, S13	10	3.5	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Acetone	**7.6**	P6, S13,J	34	3.7	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Benzene	ND	P6, S13	5.0	0.60	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Bromodichloromethane	ND	P6, S13	5.0	0.54	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Bromoform	ND	P6, S13	5.0	0.47	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Bromomethane	ND	P6, S13	10	1.2	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Carbon disulfide	ND	P6, S13	5.0	0.88	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Carbon Tetrachloride	ND	P6, S13	5.0	0.83	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Chlorobenzene	ND	P6, S13	5.0	0.48	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Dibromochloromethane	ND	P6, S13	5.0	0.41	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Chloroethane	ND	P6, S13	10	0.87	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Chloroform	ND	P6, S13	5.0	0.54	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Chloromethane	ND	P6, S13	10	0.64	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
cis-1,3-Dichloropropene	ND	P6, S13	5.0	0.57	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Ethylbenzene	**1.2**	P6, S13,J	5.0	0.46	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Methylene Chloride	ND	P6, S13	5.0	0.81	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Styrene	ND	P6, S13	5.0	0.38	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Tetrachloroethene	ND	P6, S13	5.0	0.55	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Toluene	**13**	P6, S13	5.0	0.45	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
trans-1,3-Dichloropropene	ND	P6, S13	5.0	0.44	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Trichloroethene	ND	P6, S13	5.0	0.60	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Vinyl acetate	ND	P6, S13	10	4.3	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Vinyl chloride	ND	P6, S13	10	0.75	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Xylenes, total	**5.2**	P6, S13,J	10	1.1	ug/L	1.00	04/26/09 20:23	MF	9D26001	624
Surr: 1,2-Dichloroethane-d4 (88-132%)	*106 %*	*P6, S13*					04/26/09 20:23	MF	9D26001	624
Surr: 4-Bromofluorobenzene (78-122%)	*98 %*	*P6, S13*					04/26/09 20:23	MF	9D26001	624
Surr: Toluene-d8 (87-110%)	*100 %*	*P6, S13*					04/26/09 20:23	MF	9D26001	624

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

WASTE MANAGEMENT CHAIN OF CUSTODY

PAGE 1 OF ~~2~~ 3 Rev

Internal Use Only

Sampler Name (Print)	Signature:
Russell S. Marchese	Russell J. Marchese
Site Name:	**Spec Request:**
Cum/Model City	AC
Site Location:	**Event Name:**
Lewiston, NY	RMU2 Footprint Relocation

TA Sample No.	Client Sample ID	Sampling Date	Sampling Time	MATRIX	COMP / GRAB	8260VOA	T-METALS	D-METALS	CHLORIDE/SULFATE/NITRATE PH, TSS, TDS	ALK / CARB / BICARB	HARDNESS	NH_3 / COD	TOC						
				INDICATE PRESERVATIVE BY USING KEY BELOW (OPTIONAL)															
				INDICATE CONTAINER BY USING KEY BELOW															
	RMU2-W24(4-6')	4/20/09	0850	S	X	4/6													
	RMU2-W25(4-6')	4/20/09	0940	S	G	4/6													
	RMU2-W26(6-8')	4/20/09	1035	S	G	4/6													
	RMU2-W27(5-6')	4/20/09	1100	S	G	4/6													
	RMU2-W24	4/20/09	1115	W	G	2/1													
	RMU2-W25	4/20/09	1120	W	G	2/1													
	RMU2-W26	4/20/09	1125	W	G	2/1													
	RMU2-W27	4/20/09	1135	W	G	2/1													
	RMU2-W28(6-7')	4/20/09	1315	S	G	4/6													
	RMU2-W29(4-6')	4/20/09	1350	S	G	4/6													
	RMU2-W31(4-6')	4/20/09	1445	S	G	4/6													
	RMU2-W28	4/20/09	1500	W	G	2/1													

Additional Analysis/Remarks

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
Russell J. Marchese	Golder	4/21/09	1645		TAL	4/21/09	1645
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME

Matrix Key
WW = Wastewater
W = Water/Groundwater
S = Solid
Sl = Sludge
MS = Miscellaneous Solids
Ol = Oil
A = Air
O = _____

Container Key
1. Plastic
2. VOA Vial
3. Sterile Plastic
4. Amber Glass
5. Widemouth Glass
6. Other

Preservstion Key
1. HCl, Cool to 4°
2. H_2SO_4, Cool to 4°
3. HNO_3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn Acetate, Cool to 4°
6. Cool to 4°
7. None

COMMENTS
GW Samples Very Turbid

Courier: 2.00

Bill of Lading:

TAL-8219 (1207)

NYSDEC OHMS Document No. 2014699232-00007

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

WASTE MANAGEMENT CHAIN OF CUSTODY

Internal Use Only

Sampler Name (Print)	Signature:
RUSSELL J. MARCHESE	Russell J. Marchese
Site Name:	**Spec Request:**
CWM MODEL CITY	AC
Site Location:	**Event Name:**
LEWISTON, NY	RMU2- ~~LW~~ FOOTPRINT RELOCATION

TA Sample No.	Client Sample ID	Sampling Date	Sampling Time	MATRIX	COMP / GRAB	8260VOA	T-METALS	D-METALS	CHLORIDE/SULFATE/NITRATE PH, TSS, TDS	ALK / CARB / BICARB	HARDNESS	NH_3 / COD	TOC	Total Petroleum Hydroc. (TPH) ANALYSIS	Additional Analysis/Remarks
				INDICATE PRESERVATIVE BY USING KEY BELOW (OPTIONAL)											
				INDICATE CONTAINER BY USING KEY BELOW											
	RMU2-W39 (4-6')	4/22/09	0830	S	G	4/6									
	RMU2-W19-W4-N2 (4-5')	4/22/09	0925	S	G	4/6									
	RMU2-W19-W4-N3 (4-5')	4/22/09	1025	S	G	4/6									
	RMU2-W19-W4-N4 (6-8')	4/22/09	1120	S	G	4/6									
	RMU2-W19-W4-N4 (6-8')	4/22/09	1125	S	G									4/6	
	RMU2-W19-W4-N2	4/22/09	1140	W	G	2/2									
	RMU2-W19-W4-N3	4/22/09	1145	W	G	2/2									
	RMU2-W19-W4-N4	4/22/09	1155	W	G	2/2									
	RMU2-W39	4/22/09	1210	W	G	2/2									
	TRIP BLANK	—	—	W	G	2/2									

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
Russell J. Marchese	GEI/ERA	4/22/09	1419				
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	4/22/09 DATE	2:15 PM TIME
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME

Matrix Key
WW = Wastewater
W = Water/Groundwater
S = Solid
Sl = Sludge
MS = Miscellaneous Solids
Ol = Oil
A = Air
O = _____

Container Key
1. Plastic
2. VOA Vial
3. Sterile Plastic
4. Amber Glass
5. Widemouth Glass
6. Other

Preservstion Key
1. HCl, Cool to 4°
2. H_2SO_4, Cool to 4°
3. HNO_3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn Acetate, Cool to 4°
6. Cool to 4°
7. None

COMMENTS: GW Samples Very turbid.

3.0°C

Courier:

Bill of Lading:

TAL-8219 (1207)

NYSDEC OHMS Document No. 2014092200007

ARCADIS

Appendix A-5

Letter Report on RMU-2 Glaciolacustrine Clay Sampling & Lab Testing Results (Golder, February 2013)

February 13, 2013 123-89491

Via Electronic Mail

CWM Chemical Services, L.L.C
Model City TSD Facility
1550 Balmer Road
Youngstown, New York 14174

Attention: Mr. Jonathan Rizzo

RE: LETTER REPORT ON RMU-2 GLACIOLACUSTRINE CLAY SAMPLING & LAB TESTING RESULTS
CWM CHEMICAL SERVICES, L.L.C., MODEL CITY, NEW YORK

Dear Mr. Rizzo:

Golder Associates Inc. (Golder) is pleased to submit this letter report for geotechnical soil sampling and laboratory testing associated with the proposed construction of Residuals Management Unit Number 2 (RMU-2), located at the Model City Treatment, Storage, and Disposal (TSD) Facility, Model City, New York.

1.0 INTRODUCTION

CWM owns and operates a permitted commercial hazardous waste TSD facility in Model City, Niagara County, New York. In May 2003, CWM submitted a permit application and design for RMU-2 to the New York State Department of Environmental Conservation (NYSDEC). RMU-2 has recently been redesigned and the planned boundary of the footprint of RMU-2 has been modified from that presented in the RMU-2 Preliminary Groundwater Monitoring Plan (PGWMP) prepared by Golder in 2003. This letter report presents the field work results and laboratory testing results for the geotechnical sampling of the underlying Glaciolacustrine Clay unit beneath a portion of the proposed RMU-2 and laboratory testing of the samples as part of the RMU-2 permit application process.

2.0 SCOPE OF WORK

2.1 Boring Layout

Two (2) borings were installed at select drilling locations (provided by CWM) within the proposed footprint of RMU-2:

- 1 north of Facultative Pond 3 (FAC Pond 3), SB12-01, and,
- 1 south of FAC Pond 3,SB12-02

The borings were laid out by CWM and approved by CWM prior to the commencement of drilling to obtain utility clearance. A layout survey was performed following the field program.

2.2 Boring Installation and Sampling

Initially, geotechnical test borings (pilot holes) at both drilling locations (SB12-01 and SB12-02) were installed using hollow stem auger (HSA) drilling techniques with continuous soil sampling through to the total depth of the boring. The total borehole depth in the pilot holes was approximately the top of the Glaciolacustrine Silt and Sand (GSS) horizon (determined from the SB12-01 pilot hole location to be at a depth of approximately 32 feet below ground surface [bgs] and from the SB12-02 pilot hole location to be at a depth of approximately 33.6 feet bgs in these areas).

Golder Associates Inc.
2430 North Forest Road, Suite 100
Getzville, NY 14068 USA
Tel: (716) 204-5880 Fax: (716) 204-5878 www.golder.com

Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

Once the pilot hole was completed to target depth, a sample borehole at each location was offset approximately 5-feet and auger drilled without sampling (10-feet bgs) to the target depth based on the drilling results at each of the pilot hole locations. The target sampling depth in the sample boreholes was the upper and lower Glaciolacustrine Clay (GC) horizon (determined from the SB12-01 pilot hole to be at a depth of approximately 12 feet bgs and from the SB12-02 pilot hole to be to be at a depth of approximately 14 feet bgs). Once the select sampling depths were reached with HSAs, the drill rods were removed and a specialized sampling device, a Gregory undisturbed sampler (GUS), was attached and reinserted into the ancillary borehole and lowered to select depths to collect an approximate 30-inch sample of the GC horizon, utilizing a thinned walled sampling tube (Shelby tube). The above drilling technique was repeated in the ancillary borehole to collect a sample of the lower GC unit at each of the two drilling locations.

Air monitoring and screening of soil for volatile organic compounds was performed using a photoionization detector (PID) during drilling. EnSol, Inc. (under contract to CWM) screened the soil cores and drill cuttings and monitored the breathing zone for indications of volatile organic compounds.

Prior to and during boring installation procedures, EnSol also performed radiation surveying and screening according to the "Radiological Survey Plan for RMU-2 Groundwater Well Installation", dated April 2005 (revised March 2006), and the "Generic Small Project Soil Excavation Monitoring and Management Plan", dated September 2005 (revised November 2006), which were approved by the NYSDEC on August 24, 2007. An area survey of each drilling location was performed prior to boring installation and radiation surveying was also performed during boring installation. The survey and soil screening was performed using a Ludlum Model 2221 ratemeter with Ludlum Model 44-10 detector. The results were submitted to Golder by EnSol and are presented in Attachment B. Site survey radiation screening results were well below CWM's site investigation value of 16,000 counts per minute (cpm) and soil core readings were less than two times background with the background level ranging from approximately 3125 cpm to 5115 cpm.

2.3 Laboratory Analysis

Golder coordinated with the contracted analytical laboratory, Geotesting Express, for transfer of collected samples midway en-route to the lab, located in Acton, Massachusetts. All field samples collected were handled and preserved according to American Society for Testing and Materials (ASTM) D4220, "Standard Practices for Preserving and Transporting Soil Samples", using a combination of paraffin wax and select packing materials to ensure minimization of disturbance during transport on site. The samples were hand delivered to an analytical laboratory courier off-site and transferred utilizing correct chain of custody methods according to the D4220 standard.

A total of 2 soil samples were analyzed for various engineering properties, including moisture content (ASTM D2216), density of soil specimens (ASTM D7263), Atterberg limits (ASTM D4318) and directional simple shear testing (ASTM D6528). The laboratory data is presented in Attachment C.

3.0 CLOSURE

Golder appreciates the continued opportunity to provide CWM with engineering services. If you have any questions or comments, please call the undersigned at (716) 204-5880.

Very truly yours,

GOLDER ASSOCIATES INC.

Russell J. Marchese
Senior Project Geologist

David C. Wehn
Associate and Office Manager

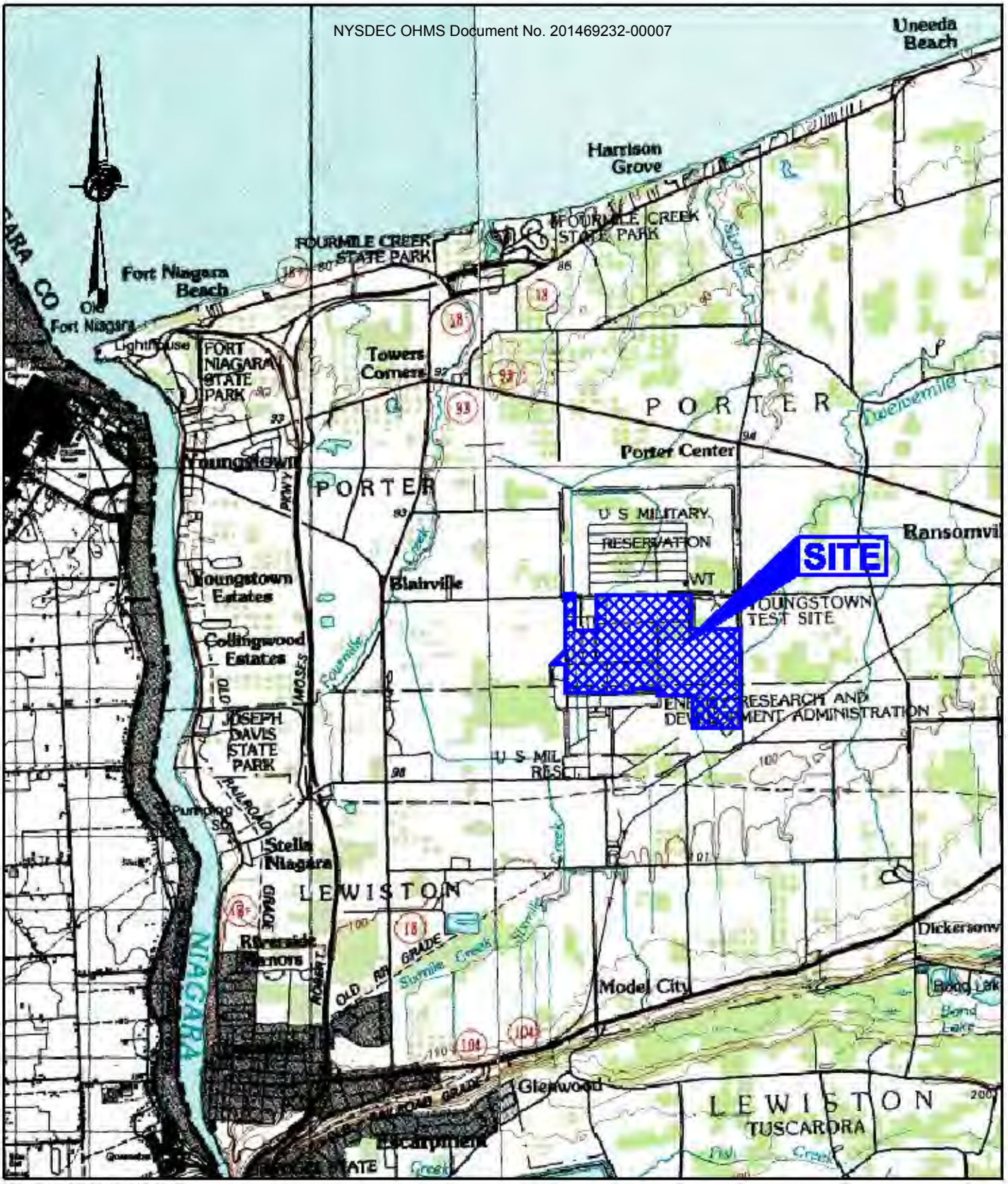
cc: R. Zayatz, WMNY

Attachments: Figure 1 – Site Location Map
Figure 2 – Investigation Sample Location Map
Attachment A – Investigation Boring Logs
Attachment B – Investigation Radiation Screening & Air Monitoring
Attachment C – Investigation Laboratory Results

RJM/DCW:dmp

FIGURES

NYSDEC OHMS Document No. 201469232-00007

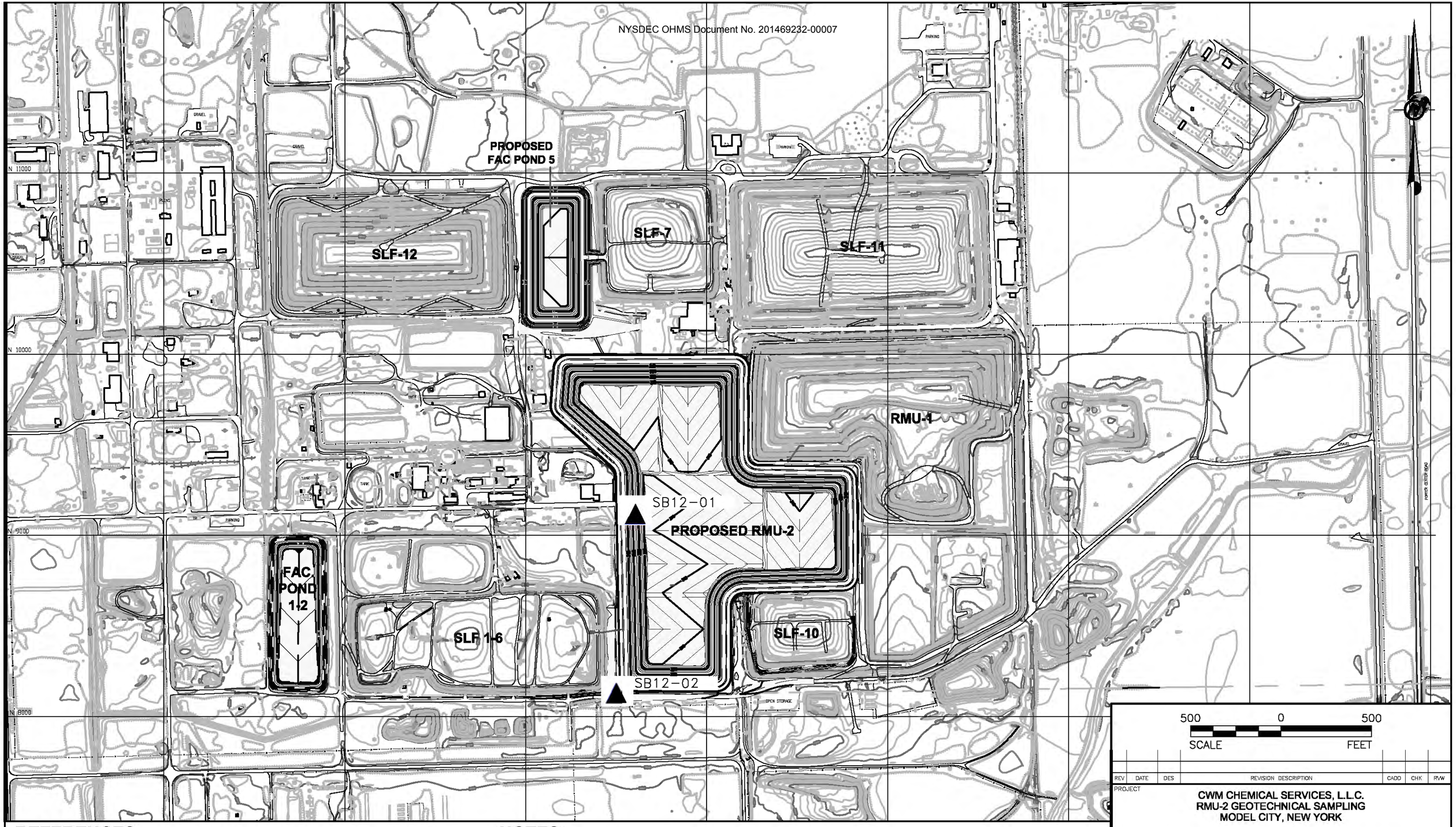


REFERENCE

1.) DRAWING WAS ADAPTED FROM THE USGS TOPOGRAPHIC QUADRANGLE OF RANSOMVILLE, NEW YORK. OBTAINED FROM www.topozone.com.

Golder Associates Buffalo, New York	SCALE 1:28,000	TITLE	
	DATE 02/12/13		SITE LOCATION MAP
	DESIGN AJN		
	CADD AJN		
FILE No. 12389491A413	CHECK RJM		
PROJECT No. 123-89491 REV. 0	REVIEW DCW	CWM CHEMICAL SERVICES, L.L.C./MODEL CITY TSD FACILITY	FIGURE 1

NYSDEC OHMS Document No. 201469232-00007



REFERENCES

1.) BASE MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED MAY 31, 2001 BY AIR SURVEY CORP., DULLES, VIRGINIA.

2.) RMU-2 SUBGRADES FROM DIGITAL CAD FILE 23725G03.DWG ENTITLED "SUBGRADE GRADES," DATED AUGUST 2009, PREPARED BY ARCADIS.

3.) FAC POND 5 AND FAC POND 1-2 FROM DIGITAL CAD FILE 23725G39.DWG ENTITLED "FAC POND GRADING PLAN," DATED AUGUST 2009, PREPARED BY ARCADIS.

NOTES

▲ SB12-02 GEOTECHNICAL SAMPLE BOREHOLE LOCATION

500 0 500
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

CWM CHEMICAL SERVICES, L.L.C.
RMU-2 GEOTECHNICAL SAMPLING
MODEL CITY, NEW YORK

TITLE

INVESTIGATION SAMPLE LOCATIONS

NJ Authorization #24GA28029100
Golder Associates
Mt. Laurel, New Jersey

PROJECT No.	123-89491		FILE No.	12389491A414	
DESIGN	RJM	10/25/12	SCALE AS SHOWN	REV.	0
CADD	RJM	2/12/13			
CHECK	RJM	2/12/13			
REVIEW	DCW	2/13/13			

FIGURE 2

ATTACHMENT A

INVESTIGATION BORING LOGS

INSIDE GOLDER Document No. 2014369232-00007

SOIL BOREHOLE LOG

SITE NAME AND LOCATION CWM CHEMICAL SERVICES MODEL CITY, NEW YORK RMU-2 GEOTECHNICAL SAMPLING	DRILLING METHOD: 4 1/4" ID HOLLOW STEM AUGER SAMPLING METHOD: 24" SPLIT SPOON (S.S)	BORING NO. SB12-01(PILOT) SHEET 1 OF 1

		DRILLING START	DRILLING FINISH
WATER LEVEL	N/A	TIME 0940	TIME 1600
TIME	N/A		
DATE	N/A	DATE 10/22/12	DATE 10/22/12
CASING DEPTH	N/A		

DATUM MSL ELEVATION 320.0

DRILL RIG CME-45C SURFACE CONDITIONS GRASS

ANGLE VERTICAL BEARING

SAMPLE HAMMER TORQUE 140 lb. 30 in.

DRILLING CONTR ART KOSKE
SJB SERVICES, INC.

LOGGED BY RUSSELL J. MARCHESE
DATE 10/22/2012 CHKD BY DCW

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS: WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)
0.0		320.0 AUGERED WITH NO SAMPLING 0.0-10.0' bgs.								
10.0	3-3-4-5 38%	310.0 1 UPPER CLAY TILLS Firm, gray brown-brown SILTY CLAY, trace to little subangular fine gravel, occasional coarse gravel, occasional thin sand lenses, low plasticity, v. moist. (CL)	24" S.S.							
	5-4-3-3 83%	2	24" S.S.							
		306.35								
15.0	1-2-2-2 28%	3	24" S.S.							
	WH-2-2-2 100%	4	24" S.S.							
	WH-2-1-1 100%	5 GLACIOLACUSTRINE CLAY	24" S.S.							
20.0	1-3-5-5 38%	6 Soft to very soft, brown-gray CLAY, trace fine gravel, with occasional zones (0.2-0.7-ft) of compact, red-brown silty clayey SAND, occasional silt seams, occasional c-gravel, medium to high plasticity, very moist to wet. (CL)	24" S.S.							
	5-3-3-2 100%	7	24" S.S.							
25.0	WH-WH-WH-1 100%	8	24" S.S.							
	WH-11-17-14 100%	9	24" S.S.							
	WH-2-11-4 63%	10	24" S.S.							
30.0	1-1-1-3 0%	11 GLACIOLACUSTRINE SILT/SAND	24" S.S.							
		288.0								
	31-75-100/.3 100%	12 Compact, gray-brown sandy SILT, little fine gravel, little coarse sand, little clay content, wet. (SM)	24" S.S.							
		286.0								
35.0		END OF BORING @ 34.0 FT. bgs.								

SOIL BOREHOLE LOG

Golder Associates

SITE NAME AND LOCATION CWM CHEMICAL SERVICES MODEL CITY, NEW YORK RMU–2 GEOTECHNICAL SAMPLING	DRILLING METHOD: 4 1/4" ID HOLLOW STEM AUGER SAMPLING METHOD: 24" SPLIT SPOON (S.S)	BORING NO. SB12–02 (PILOT) SHEET 1 OF 1

		DRILLING START	DRILLING FINISH
WATER LEVEL	N/A	TIME 0820	TIME 1245
TIME	N/A		
DATE	N/A	DATE 10/23/12	DATE 10/23/12
CASING DEPTH	N/A		

DATUM MSL ELEVATION 321.50

DRILL RIG CME–45C SURFACE CONDITIONS GRAVEL ROADWAY

ANGLE VERTICAL BEARING

SAMPLE HAMMER TORQUE 140 lb. 30 in.

DRILLING CONTR ART KOSKE
SJB SERVICES, INC.

LOGGED BY RUSSELL J. MARCHESE
DATE 10/23/2012 CHKD BY DCW

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS: WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)
0.0		321.50 AUGERED WITH NO SAMPLING 0.0–10.0' bgs.								
10.0	4–5–8–12 70%	311.5 1 UPPER CLAY TILLS Firm, gray brown SILTY CLAY, little subangular fine gravel, occasional coarse gravel, moist. (ML–CL)	24" S.S.							
	11–12–14–11 15%	2	24" S.S.							
15.0	2–2–4–2 85%	306.6 3	24" S.S.							
	2–1–2–2 100%	4	24" S.S.							
	WH–WH–3–6 55%	5 GLACIOLACUSTRINE CLAY	24" S.S.							
20.0	4–3–3–1 35%	6 Soft to very soft, brown–gray CLAY, trace fine gravel, with occasional lenses of compact red–brown CLAYEY SILT to SILT and fine to medium SAND, occasional c–gravel, medium to high plasticity, very moist to wet. (CL)	24" S.S.							
	WH–WH–2–1 70%	7	24" S.S.							
25.0	WH–WH–WH–WH 100%	8	24" S.S.							
	WH–WH–2–2 100%	9	24" S.S.							
	WH–WH–WH–WH 100%	10	24" S.S.							
30.0	WH–WH–WH–WH 95%	11 GLACIOLACUSTRINE SILT/SAND Compact brown SILTY SAND, little fine gravel, little coarse sand, trace clay, wet. (SM–ML)	24" S.S.							
	WH–3–12–25 90%	12 287.9 287.5 END OF BORING @ 34.0 FT. bgs.	24" S.S.							
35.0										

ATTACHMENT B

INVESTIGATION RADIATION SCREENING (PROVIDED BY OTHERS)

NYSDEC OHMS Document No. 201469232-00007

DAILY CONSTRUCTION INSPECTION REPORT

PROJECT: Generic Small Project - Soil Borings @ FAC Pond 3	**DATE:** 10/22/12
PROJECT NO.: 08 7027	**CLIENT:** CWM

ARRIVE TIME:	**DEPART TIME:**
WEATHER CONDITIONS: Sunny, Breezy 60-70° F	

CONTRACTOR PERSONNEL AND EQUIPMENT:

Golder Assoc.
SJB

WORK IN PROGRESS:

Soil Boring for Sample collection

INSPECTIONS/TESTS/SAMPLES:

Rad/TID Scanning

MATERIALS RECEIVED:

N/A

CONSTRUCTION ACTIVITIES:

Scanned Material as continuously as it came out of the hole. Scanned Samples that came out of the pilot SB 12-01 Boring. Scanned the Spoils as the auger was removed. Augered 2 Holes, 1 pilot hole and SB-12-01 to a depth of 25-35 feet.

OBSERVER: Justin Darling Jr	**SIGNATURE:**

NYSDEC OHMS Document No. 201469232-00007

WASTE MANAGEMENT

CWM Chemical Services, LLC.

Generic Small Project
Soil Excavation Monitoring and Management Report

Prepared By: Justin Darling **Date of Report:** 10/22/12

Description of Excavation Location: North of FAC Pond 3, west side of shed; South side of FAC Pond 3 on the west side of truck traffic

GPSNorthing: _____ **Purpose of Excavation:** Soil borings
GPS Eastern: _____
Elevation: _____

1. RADIOLOGICAL SURVEY SCAN

Date of Rad Survey: 10/22/12

Rad Scan Performed By: J. Darling **Date of Calibration:** 8/3/12

Rad Instrument Used: Ludlum 2221/44/10 **SN# of Instrumentation:** 262345 / 226924

Documentation of QC checks performed before and after survey (describe): Background & Source Checks.

Pre-Op Daily QC Bkg: 4607 **Pre-Op Daily QC Source Check:** 27404
Post-Op Daily QC Bkg: 4601 **Post-Op Daily QC Source Check:** 26845
Pre-Op Field Location Bkg: 5530
Post-Op Field Location Bkg: 6504

Description of Rad Survey performed: Scanned material in 6" lifts, continuous scan as the soil Exits the Boring and the soil sample

Rad Scan Survey Results:

Time	Scan Survey Data	Units	Scan Location (Layer, Lift, Bottom)
8:10	5400-6200	CPM	Surface Scan by west side of Gray shed.
8:30	3700-4500		Surface Scan by the SE corner of SLF 1-6
9:40	4760-5300		0-5' Continuous scan pilot SB 12-01
9:51	4900-6200		5-10' Continuous scan pilot SB 12-01
9:57	3397		1min Count 10-12' sample pilot SB 12-01
10:03	3200		1min count 12-14 sample pilot SB 12-01
10:07	5200-6100		10-15' continuous scan pilot SB 12-01
10:15	3002		1min Count 14-16' sample pilot SB 12-01
10:19	3157		1min Count 16-18' sample pilot SB 12-01
10:23	4200-58		15'-20' Continuous scan pilot SB 12-01

Note: Attach sketches, maps or drawings of scan and sample locations as necessary to document exact location of excavation activities.

WASTE MANAGEMENT

If soil or other media samples are collected, complete the following:

Sample ID#	Sample Location			1 Minute Static Count within 1 inch of Sample Location		Estimated Sample Volume (Include Units)
	Northing	Easting	Elevation (msl)	Before	After	

Note: Attach analytical analysis of samples to this report when results are obtained.

2. CHEMICAL CONTAMINATION SCREENING

Date of PID Survey: 10/22/12

PID Scan Performed By: J. Darling

Date of Calibration: 10/11/12

PID Instrument Used: Mini Rae Lite

SN# of Instrumentation: 590-001471

Level of PPE Required: D

Visible Evidence of Chemical Contamination: Yes (No) (Circle One)

Description of PID Survey performed: Scanned material in 6" lifts, Continuous scan as the soil Exits the boring and the soil sample

Time	VOC Screening Data	Units	Scan Location (Layer, Lift, Bottom)
8:10	0	PPM	Surface scan by west side of shed
8:30	0		Surface scan by SE corner of SLF
9:40	0		0-5 continuous scan pilot SB 12-01
9:54	0		5-10 continuous scan pilot SB 12-01
9:57	0		1 min Count 10-12' sample pilot SB 12-01
10:03	0		1 min Count 12-14 Sample pilot SB 12-01
10:07	0		10-15' Continuous scan pilot SB 12-01
10:15	0		1 min Count 14-16 sample pilot SB 12-01
10:19	0		1 min Count 16-18 Sample pilot SB 12-01
10:23	0		15-20' Continuous scan

Comments:

Attach chain of custody and any analytical results of soil samples collected.

Page 3 of ____

CWM Chemical Services, LLC.

Generic Small Project
Soil Excavation Monitoring and Management Report Extension

Prepared By: Justin Darling **Date of Report:** 10/22/12

Rad Instrument Used: Ludlum 2221/4410 **Rad Instrument Used:** Mini Rae Lite

SN# of Instrumentation 262345/226924 **SN# of Instrumentation:** 590-001471

Date of Calibration: 8/3/12 **Date of Calibration:** 10/11/12

Pre-Op Daily QC Source Check: 27404 **Pre-Op Field Location Bkg:** 5530

Post-Op Daily QC Source Check: 26845 **Post-Op Field Location Bkg:** 6504

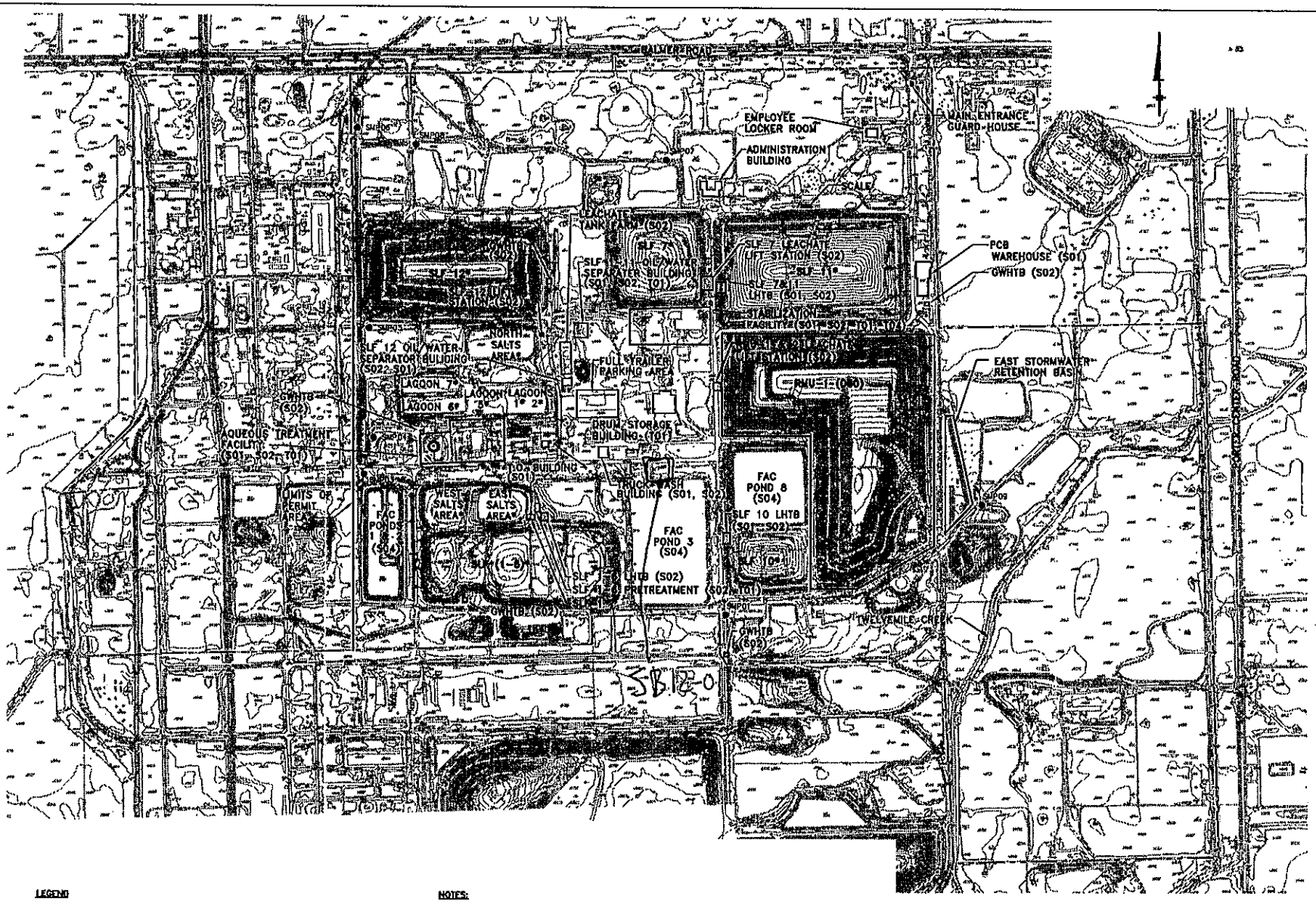
Pre-Op Field Location Bkg: ~~5503~~ 4607

Post-Op Field Location Bkg: 6 4601

Rad Scan Survey Results:

Time	Scan Survey Data	Units	V.O.C (PPM)	Scan Location
10:34	2957	CPM	0	1Min Count 18-20' sample pilot SB12
10:38	3320	CPM	0	1 min Count 20-22' Sample pilot SB1
10:44	3313	CPM	0	1min Count 22-24 Sample pilot SB 12-
10:47	4800 - 5600	CPM	0	20-25' continuous Scan pilot SB 12
10:50	3245	CPM	0	1 min count 24-26 sample pilot SB 12-01
11:00	3162	CPM	0	1 min Count 26-28 Sample pilot SB 12-01
11:06	4900 - 6000	CPM	0	25-30' Continuous Scan
11:14	3298	CPM	0	1min count 28-30 sample pilot SB-12-01
12:20	3416	CPM	0	1 Min Count 30-32 sample pilot SB 12-01
12:30	5000 - 6700	CPM	0	Spoils of pilot SB 12-01
1:12	5200 - 6200	CPM	0	Surface Scan
1:18	4700 - 5900	CPM	0	0-5' Continuous Scan SB 12-01
1:28	4300 - 6100	CPM	0	5-10 Continuous Scan SB 12-01
1:33	5200 - 6200	CPM	0	10-15' Continuous Scan SB12-01
2:15	4800 - 6100	CPM	0	15-20 Continuous Scan SB12-01
2:55	4900 5600	CPM	0	20-25' Continuous Scan SB12-01
3:13	4900 - 5900	CPM	0	25-25' Continuous Scan SB12-01
3:31	5900 - 6600	CPM	0	Sample types
4:08	5300 - 6300	CPM	0	Spoils of SB-12-01
4:15	5200 - 6500		0	Final Scan

Note: Attach sketches, maps or drawings of scan and sample locations as necessary to document exact location of excavation activities.



LEGEND

SLF =	SECURE LANDFILL	———	PROPERTY LINE
FAC =	FACULTATIVE	———	LIMITS OF ACTIVE LANDFILL
LAG =	LAGOON	S02 =	TANK STORAGE
* =	INACTIVE	S04 =	SURFACE IMPOUNDMENTS
LHTB =	LEACHATE HOLDING TANK BUILDING	T01 =	TANK TREATMENT
GWHTB =	GROUNDWATER COLLECTION HOLDING TANK BUILDING	T04 =	OTHER TREATMENT
080 =	LANDFILL	SMP09 ● =	SURFACE MONITORING POINT (SMP)
S01 =	CONTAINER STORAGE		

NOTES:

1. THIS MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 5-31-01. (AIR SURVEY CORP. PROJECT NO.71010503)
2. VERTICAL DATUM BASED ON NGS MEAN SEA LEVEL.
3. GRID BASED ON LOCAL COORDINATE SYSTEM.
4. CONTOUR INTERVAL 2 FT.
5. DASHED CONTOURS INDICATE THAT GROUND IS PARTIALLY OBSCURED BY VEGETATION OR SHADOWS. THESE AREAS MAY NOT MEET STANDARD ACCURACY AND REQUIRE FIELD TESTING COMPLETION.
6. PROPERTY LINES ARE APPROXIMATE.
7. 630 PERMITTED ACRES.
8. 710 TOTAL ACRES.
9. LOCATION OF SMPs ARE APPROXIMATE.

500' 0' 500' 1000'

EnSol, Inc.
Environmental Solutions
661 MAIN STREET
NIAGARA FALLS, NY 14301
PHONE (716) 285-3920
FAX (716) 285-3928

FACILITY LAYOUT PLAN

CWM CHEMICAL SERVICES, LLC.
MODEL CITY, NY

FIGURE 3

X:\AA\dgj\CWM\Record Site Figures, Drawings, and Documents\Report Figures (EnSol)\ACAD\Fig 3_Facility Layout.dwg, 12/7/2011 4:17:53 PM, Joseph Chicko, Ensol Inc

NYSDEC OHMS Document No. 201469232-00007

DAILY CONSTRUCTION INSPECTION REPORT

PROJECT: Generic Small Project - Soil Borings	DATE: 10/23/12
PROJECT NO.: 08-7027	CLIENT: CWM

ARRIVE TIME:	DEPART TIME:
WEATHER CONDITIONS: Cloudy, Rainy 50-60°F	

CONTRACTOR PERSONNEL AND EQUIPMENT:

Golder
SJB

WORK IN PROGRESS:

Rad/PID Scanning of Soil Boring

INSPECTIONS/TESTS/SAMPLES:

Rad/PID Scanning

MATERIALS RECEIVED:

N/A

CONSTRUCTION ACTIVITIES: Scanned material in 6" lifts and continuously as it came out of the hole. Scanned samples that came out of the pilot SB12-02 Boring Scanned the spoils as the auger was removed Augered 2 holes, 1 pilot and SB12-02 to a depth of 25-30 feet

OBSERVER: Justin Darling	SIGNATURE:

WASTE MANAGEMENT

CWM Chemical Services, LLC.

Generic Small Project
Soil Excavation Monitoring and Management Report

Prepared By: Justin Darling **Date of Report:** 10/23/12

Description of Excavation Location: South East Corner of B SLF 1-6 next to truck traffic Road

GPSNorthing:
GPS Eastern:
Elevation:

Purpose of Excavation: Soil Boring SB12-02

1. RADIOLOGICAL SURVEY SCAN

Date of Rad Survey: 10/23/12

Rad Scan Performed By: J. Darling **Date of Calibration:** 8/3/12

Rad Instrument Used: Ludlum2221/14410 **SN# of Instrumentation:** 262345/226934

Documentation of QC checks performed before and after survey (describe): Background & Source Checks.

Pre-Op Daily QC Bkg: 4726 **Pre-Op Daily QC Source Check:** 28119

Post-Op Daily QC Bkg: 5090 **Post-Op Daily QC Source Check:** 27337

Pre-Op Field Location Bkg: 5674

Post-Op Field Location Bkg: 5210

Description of Rad Survey performed: Scanned material in 6" lifts w/ Probe held 4-6" above grade, Continuous scan as soil exit Boring and 1 minute count of soil sample

Rad Scan Survey Results:

Time	Scan Survey Data	Units	Scan Location (Layer, Lift, Bottom)
8:00	3700 - 4500	CPM	Surface Scan by SLF 1-6 SE Corner
8:30	5300 - 7200		0-5' continuous Scan pilot SB12-02
8:45	5600 - 7100		5-10' continuous Scan pilot SB12-02
8:50	5552		1 min count for 10-12' sample pilot SB12-02
8:55	5264		1 min count for 12-14' sample pilot SB12-02
9:01	5800 - 7700		10-15' Continuous scan pilot SB12-02
9:10	5080		1 min Count for 14-16' sample pilot SB12-02
9:16	4828		1 min count for 16-18' sample pilot SB12-02
9:18	5200 - 6800		15-20' Continuous Scan pilot SB 12-02
9:25	4539		1 min Count for 18-20' Sample pilot SB 12-02

Note: Attach sketches, maps or drawings of scan and sample locations as necessary to document exact location of excavation activities.

WASTE MANAGEMENT

If soil or other media samples are collected, complete the following:

Sample ID#	Sample Location			1 Minute Static Count within 1 inch of Sample Location		Estimated Sample Volume (Include Units)
	Northing	Easting	Elevation (msl)	Before	After	

Note: Attach analytical analysis of samples to this report when results are obtained.

2. CHEMICAL CONTAMINATION SCREENING

Date of PID Survey: 10/23/12

PID Scan Performed By: J. Darling

Date of Calibration: 10/11/12

PID Instrument Used: Mini Rae Lite

SN# of Instrumentation: 590-001471

Level of PPE Required: D

Visible Evidence of Chemical Contamination: Yes (No) (Circle One)

Description of PID Survey performed: Scanned material in 6" lifts. Continuous scann as soil exit Boring and 1 minute counts

Time	VOC Screening Data	Units	Scan Location (Layer, Lift, Bottom)
8:00	0	PPM	Surface Scan by SLF 1-C SE Corner
8:30	0		0-5 continuous scan pilot SB12-02
8:45	0		5-10 Continuous scan pilot SB12-02
8:50	0		1 minute count for 10-12' sample pilot SB12-02
8:55	0		1 Minute Count for 12-14' sample pilot SB12-02
9:01	0		10-15 continuous Scan pilot SB12-02
9:10	0		1 minute count for 14-16' Sample pilot SB12-02
9:16	0		1 minute count for 16-18' Sample pilot SB12-02
9:18	0		15-20 continuous scan pilot SB12-02
9:25	0		1 minute Count for 18-20' sample pilot SB-12-02

Comments:

Attach chain of custody and any analytical results of soil samples collected.

CWM Chemical Services, LLC.

Generic Small Project
Soil Excavation Monitoring and Management Report Extension

Prepared By: Justin Darling **Date of Report:** 10/23/12

Rad Instrument Used: Ludlum 2221/4410 **Rad Instrument Used:** Mini Rae Lite

SN# of Instrumentation 262345/226924 **SN# of Instrumentation:** 590-001471

Date of Calibration: 8/3/12 **Date of Calibration:** 10/11/12

Pre-Op Daily QC Source Check: 28189 **Pre-Op Field Location Bkg:** 5C74

Post-Op Daily QC Source Check: 27337 **Post-Op Field Location Bkg:** 5210

Pre-Op Field Location Bkg: 4726

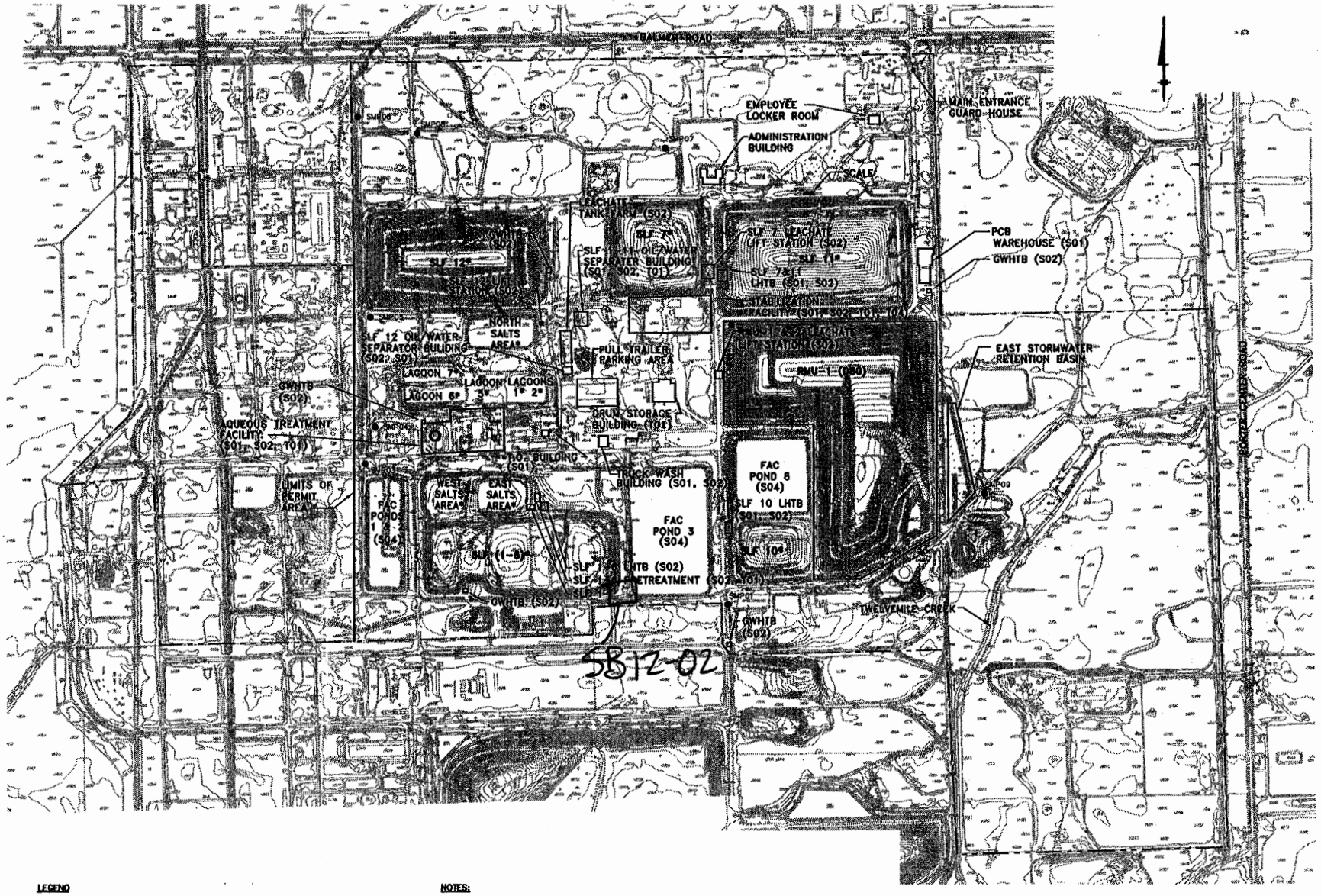
Post-Op Field Location Bkg: 5090

Rad Scan Survey Results:

Time	Scan Survey Data	Units	V.O.C (PPM)	Scan Location
9:31	4448	CPM	0	1min Count for 20-22' sample pil
9:37	4319		0	1min count for 22-24 sample
9:40	4900-6500		0	20-25 Continuous scan pilot
9:48	4033		0	1min count for 24-26 sample
9:52	3981		0	1min count for 26-28 Sample
9:58	4200-6100		0	25-30 Continuous Scan pilot SB12-
10:08	4738		0	1min count for 28-30 sample
10:15	3779		0	1min count for 30-32 Sample
10:07	3868		0	1min count for 32-34 sample
10:35	5500-6100		0	Spoils of pilot Hole
11:36	4800-5900		0	0-5' Continuous Scan SB12-02
11:46	4800-6800		0	5-10 Continuous Scan SB12-02
11:53	5500-6300		0	10-15 Continuous Scan SB 12-02
11:58	5300-6400		0	15-20 Continuous Scan SB12-02
12:18	4700-6100		0	20-25 Continuous Scan SB12-02
12:48	4800-5200		0	Samples
1:10	5100-6600		0	Spoils of SB12-02
1:29	4300-6700		0	Final walkover

Note: Attach sketches, maps or drawings of scan and sample locations as necessary to document exact location of excavation activities.

NYSDEC OHMS Document No. 201469232-00007



LEGEND

SLF =	SECURE LANDFILL	———	PROPERTY LINE
FAC =	FACULTATIVE	———	LIMITS OF ACTIVE LANDFILL
LAG =	LAGOON	S02 =	TANK STORAGE
* =	INACTIVE	S04 =	SURFACE IMPOUNDMENTS
LHTB =	LEACHATE HOLDING TANK BUILDING	T01 =	TANK TREATMENT
GWHTB =	GROUNDWATER COLLECTION HOLDING TANK BUILDING	T04 =	OTHER TREATMENT
080 =	LANDFILL	SMP09 ● =	SURFACE MONITORING POINT (SMP)
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500' 0' 500' 1000'

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FACILITY LAYOUT PLAN

CWM CHEMICAL SERVICES, LLC.
MODEL CITY, NY

FIGURE 3

X:\AA\ap\CWM\Record Site Figures, Drawings, and Documents\Report Figures (EnSol)\ACAD\Fig 3_Facility Layout.dwg, 1/27/2011 4:17:53 PM, Joseph Chiodo, Ensol Inc

ATTACHMENT C

INVESTIGATION LABORATORY RESULTS

NYSDEC OHMS Document No. 201469232-00007

GeoTesting EXPRESS

Atlanta
Boston
Chicago
New York
San Francisco

www.geotesting.com

Technologies to manage risk for infrastructure

February 7, 2013

Russell Marchese
Golder Associates, Inc.
2430 North Forest Road, Suite 100
Getzville, NY 14068

RE: CWM/RMU-2 GC Sampling, Lewiston, NY (GTX-12376)

Dear Russell:

Enclosed are the test results you requested for the above referenced project. GeoTesting Express, Inc. (GTX) received five samples from you on 10/24/2012. These samples were labeled as follows:

Boring	Sample	Depth
SB12-01	SB12-01	16-17 ft.
SB12-01	SB12-01	22-24 ft.
SB12-01	SB12-01	24-26 ft.
SB12-02	SB12-02	18-20 ft.
SB12-02	SB12-02	24-26 ft.

GTX performed the following tests on these samples:

2 ASTM D2216 - Moisture Contents
2 ASTM D4318 - Atterberg Limits
2 ASTM D7263 - Density (Unit Weight) of Soil Specimens
3 ASTM D6528 - Direct Simple Shear Tests

As requested, the Direct Simple Shear tests were performed with a horizontal stress applied to the test specimen during the consolidation phase of the test. First, a normal load of 2 tsf was applied on the specimen. Then the application of the horizontal stress began, proportionally in increasing steps along with the rest of the requested normal load until a ratio of 0.2 of the requested normal load was reached. The test specimen was then allowed to reach equilibrium before the shear phase of the test was started.

The results presented in this report apply only to the items tested. This report shall not be reproduced except in full, without written approval from GeoTesting Express. The remainder of these samples will be retained for a period of sixty (60) days and will then be discarded unless otherwise notified by you. Please call me if you have any questions or require additional information. Thank you for allowing GeoTesting Express the opportunity of providing you with testing services. We look forward to working with you again in the future.

Respectfully yours,

Joe Tomei
Laboratory Manager

GeoTesting EXPRESS

Technologies to manage risk for infrastructure

Atlanta
Boston
Chicago
New York
San Francisco

www.geotesting.com

Geotechnical Test Report

2/6/2013

GTX-12376
CWM/RMU-2 GC Sampling

Lewiston, NY

Client Project No.: 123-89491

Prepared for:

Golder Associates, Inc.

NYSDEC OHMS Document No. 201469232-00007

GeoTesting EXPRESS

Client:	Golder Associates, Inc.				
Project:	CWM/RMU-2 GC Sampling				
Location:	Lewiston, NY			Project No:	GTX-12376
Boring ID:	SB12-01	Sample Type:	tube	Tested By:	cam
Sample ID:	SB12-01	Test Date:	11/09/12	Checked By:	jdt
Depth :	22-24 ft.	Test Id:	253671		
Test Comment:	---				
Sample Description:	Moist, brown clay				
Sample Comment:	---				

Moisture Content of Soil and Rock - ASTM D2216

Boring ID	Sample ID	Depth	Description	Moisture Content,%
SB12-01	SB12-01	22-24 ft.	Moist, brown clay	33.8

Notes: Temperature of Drying : 110° Celsius

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GeoTesting EXPRESS

Client:	Golder Associates, Inc.
Project Name:	CWM/RMU-2 GC Sampling
Project Location:	Lewiston, NY
GTX #:	12376
Test Date:	11/04/12
Tested By:	md
Checked By:	jdt

Density (Unit Weight) of Soil by ASTM D 7263

Boring ID	Sample ID	Depth, ft	Visual Description	Bulk Density, lb/ft^3	Moisture Content, %	Dry Density, lb/ft^3
SB12-01	SB12-01	22-24	Moist, brown clay	114	33.8	85.6

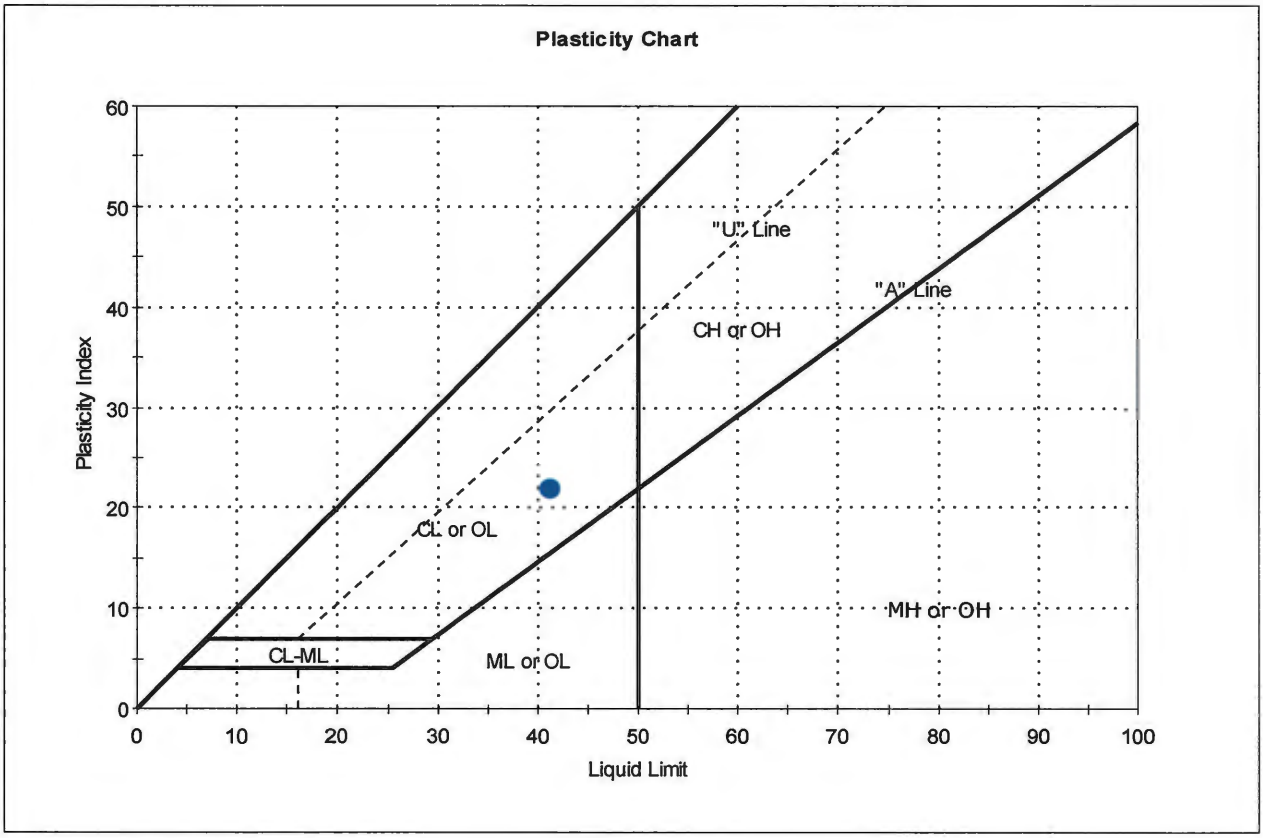
Notes: Density determined on undisturbed tube sample provided to GeoTesting Express in tubes
Moisture content determined by ASTM D 2216 at 110° C

NYSDEC OHMS Document No. 201469232-00007

GeoTesting EXPRESS

Client:	Golder Associates, Inc.				
Project:	CWM/RMU-2 GC Sampling				
Location:	Lewiston, NY			Project No:	GTX-12376
Boring ID:	SB12-01	Sample Type:	tube	Tested By:	cam
Sample ID:	SB12-01	Test Date:	11/07/12	Checked By:	jdt
Depth :	22-24 ft.	Test Id:	253667		
Test Comment:	---				
Sample Description:	Moist, brown clay				
Sample Comment:	---				

Atterberg Limits - ASTM D 4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
●	SB12-01	SB12-01	22-24 ft.	34	41	19	22	1	

Sample Prepared using the WET method

Dry Strength: VERY HIGH
Dilatancy: SLOW
Toughness: LOW

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NYSDEC OHMS Document No. 201469232-00007

Client:	Golder Associates, Inc.				
Project:	CWM/RMU-2 GC Sampling				
Location:	Lewiston, NY			Project No:	GTX-12376
Boring ID:	SB12-02	Sample Type:	tube	Tested By:	cam
Sample ID:	SB12-02	Test Date:	11/12/12	Checked By:	jdt
Depth :	24-26 ft.	Test Id:	253672		
Test Comment:	---				
Sample Description:	Moist, brown clay				
Sample Comment:	---				

Moisture Content of Soil and Rock - ASTM D 2216-10

Boring ID	Sample ID	Depth	Description	Moisture Content,%
SB12-02	SB12-02	24-26 ft.	Moist, brown clay	33.1

Notes: Temperature of Drying : 110° Celsius

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GeoTesting EXPRESS

Client:	Golder Associates, Inc.
Project Name:	CWM/RMU-2 GC Sampling
Project Location:	Lewiston, NY
GTX #:	12376
Test Date:	10/29/12
Tested By:	md
Checked By:	jdt

Density (Unit Weight) of Soil by ASTM D 7263

Boring ID	Sample ID	Depth, ft	Visual Description	Bulk Density, lb/ft^3	Moisture Content, %	Dry Density, lb/ft^3
SB12-02	SB12-02	24-26	Moist, brown clay	120	33.1	89.9

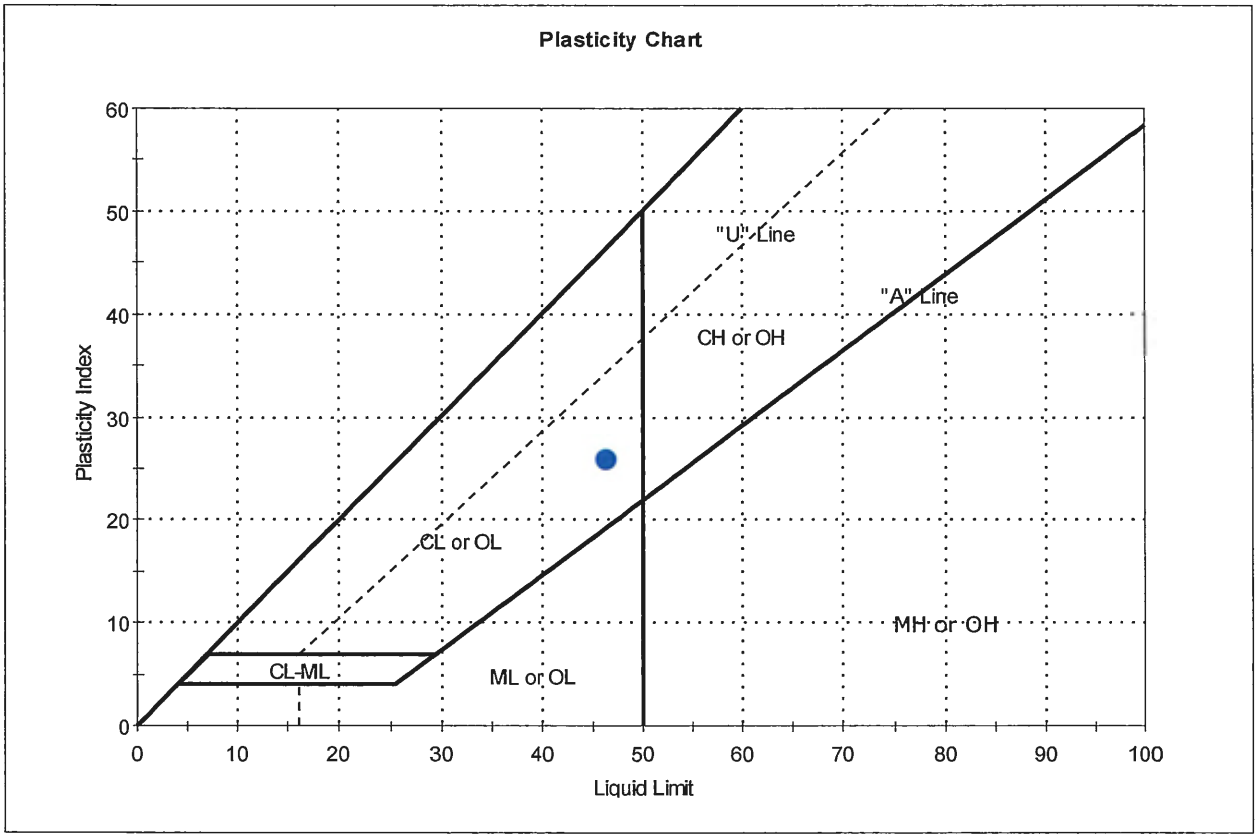
Notes: Density determined on undisturbed tube sample provided to GeoTesting Express in tubes
Moisture content determined by ASTM D 2216 at 110° C

NYSDEC OHMS Document No. 201469232-00007

GeoTesting EXPRESS

Client:	Golder Associates, Inc.				
Project:	CWM/RMU-2 GC Sampling				
Location:	Lewiston, NY			Project No:	GTX-12376
Boring ID:	SB12-02	Sample Type:	tube	Tested By:	cam
Sample ID:	SB12-02	Test Date:	10/31/12	Checked By:	jdt
Depth :	24-26 ft.	Test Id:	253668		
Test Comment:	---				
Sample Description:	Moist, brown clay				
Sample Comment:	---				

Atterberg Limits - ASTM D 4318-10



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
●	SB12-02	SB12-02	24-26 ft.	33	46	20	26	0	

Sample Prepared using the WET method

Dry Strength: VERY HIGH
Dilatancy: SLOW
Toughness: LOW

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GeoTesting EXPRESS

Consolidated Undrained Direct Simple Shear Testing of Cohesive Soils by ASTM D 6528

Client:	Golder Associates, Inc.	GTX#:	12376
Project Name:	CWM/RMU-2 GC Sampling	Test Date:	1/2/13-1/11/13
Project Location:	Lewiston, NY		
Boring ID:	SB12-01		
Sample ID:	SB12-01		
Depth, ft:	22-24		

Visual Description: Moist, brown clay

Test Equipment: Top and bottom box (circular) = 2.62 in diameter. Load cells and LVDT's connected to data acquisition system for shear force, normal load, horizontal and vertical displacement; surface area = 5.39 in^2, soil height = 1 inch. Reinforced Membrane used. Set up included porous stones with pins.

Test Condition: Inundated prior to consolidation

Sample Type and Preparation: Extruded from tube, cut, trimmed and placed into apparatus at as-received density and moisture content.

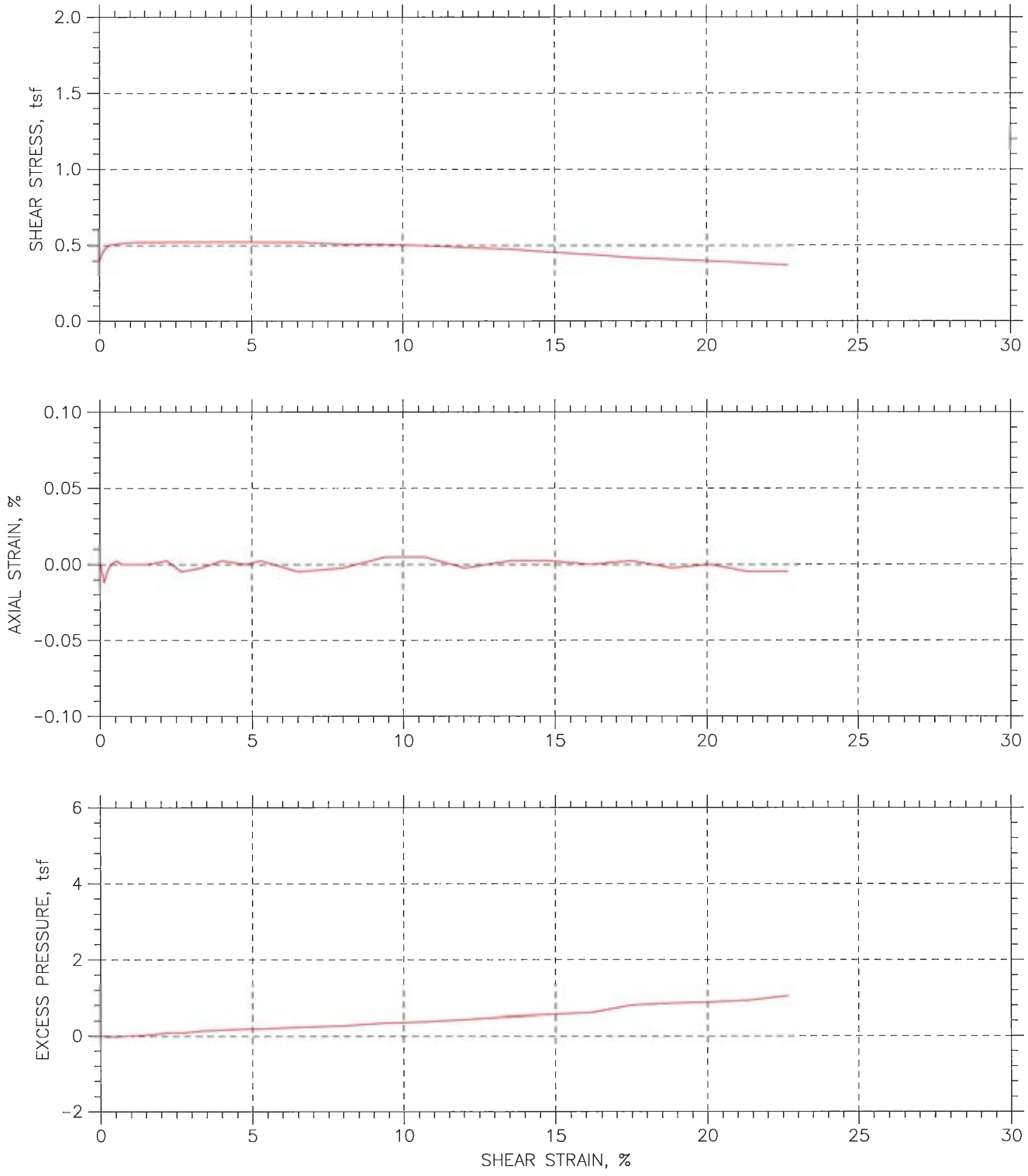
Parameter	Point 1	Point 2	Point 3	Point 4	Point 5
Test No.	DSS-13	DSS-12	DSS-11		
Initial Moisture Content, %	32.8	30.6	30.9		
Initial Dry Density, pcf	92.2	90.7	93.4		
Nominal Rate of Shear Strain, /hr	0.08	0.08	0.08		
Vertical Consolidation Stress, tsf	2	4	6		
Initial Horizontal Stress, tsf	0.4	0.8	1.2		
Final Moisture Content, %	30.2	27.9	23.1		
Measured Peak Shear Stress, tsf	0.52	0.97	1.46		
Shear Strain at Peak Shear Stress, %	4.0	1.3	2.2		
Membrane Correction, tsf	0.02	0.01	0.01		
Corrected Peak Shear Stress, tsf	0.50	0.96	1.45		
S_u / σ'_{vc}	0.25	0.24	0.24		

Comments: Normal load applied to 2 tsf, then initial horizontal stress applied in steps at a ratio of 0.2 until reaching the target loads prior to shearing.

Tested By: md/njh Checked By: jdt

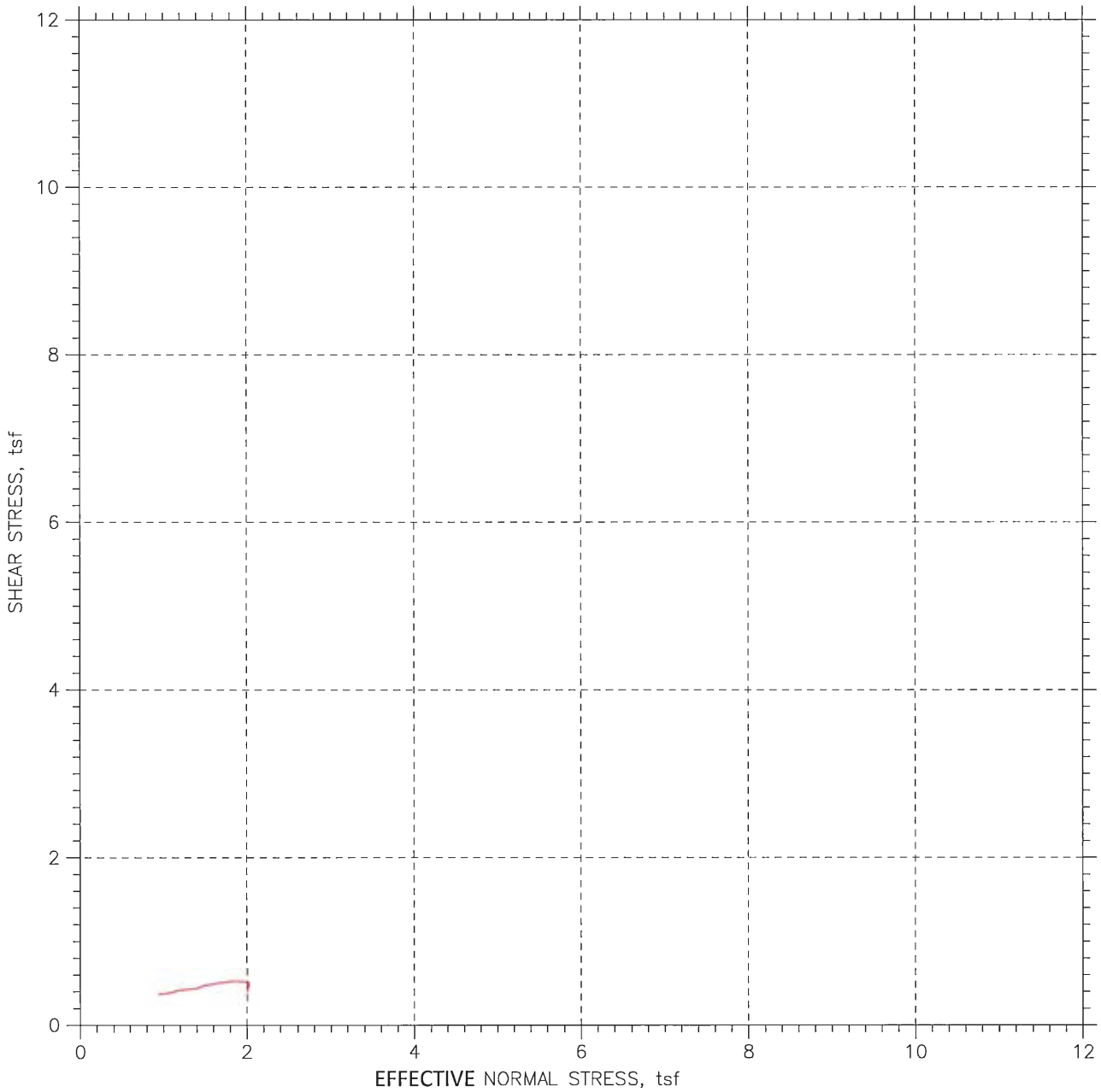
Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

DIRECT SIMPLE SHEAR TEST



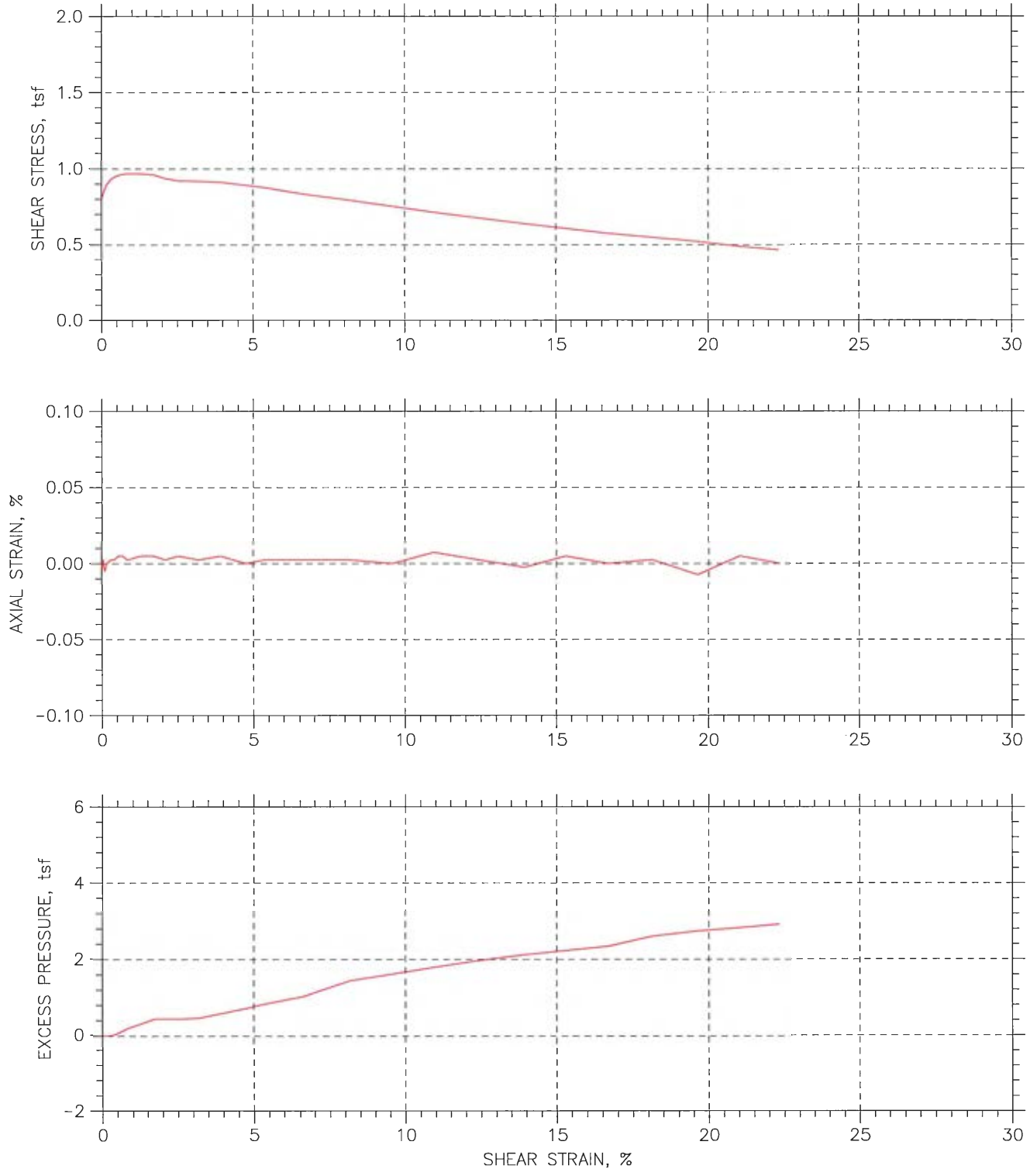
Project: CWM/RMU 2 GC	Location: Lewiston, NY	Project No.: GTX-12376
Boring No.: SB12-01	Tested By: md/njh	Checked By: jdt
Sample No.: SB12-01	Test Date: 1/9/13	Depth: 22-24 ft
Test No.: DSS-13	Sample Type: intact	Elevation: ---
Description: Moist, brown clay		
Remarks: System J		
File: \\Geocompdb1\Projects\GTX12376\CDSS\12376-DSS-13n.dat		Page 2 of 7

DIRECT SIMPLE SHEAR TEST



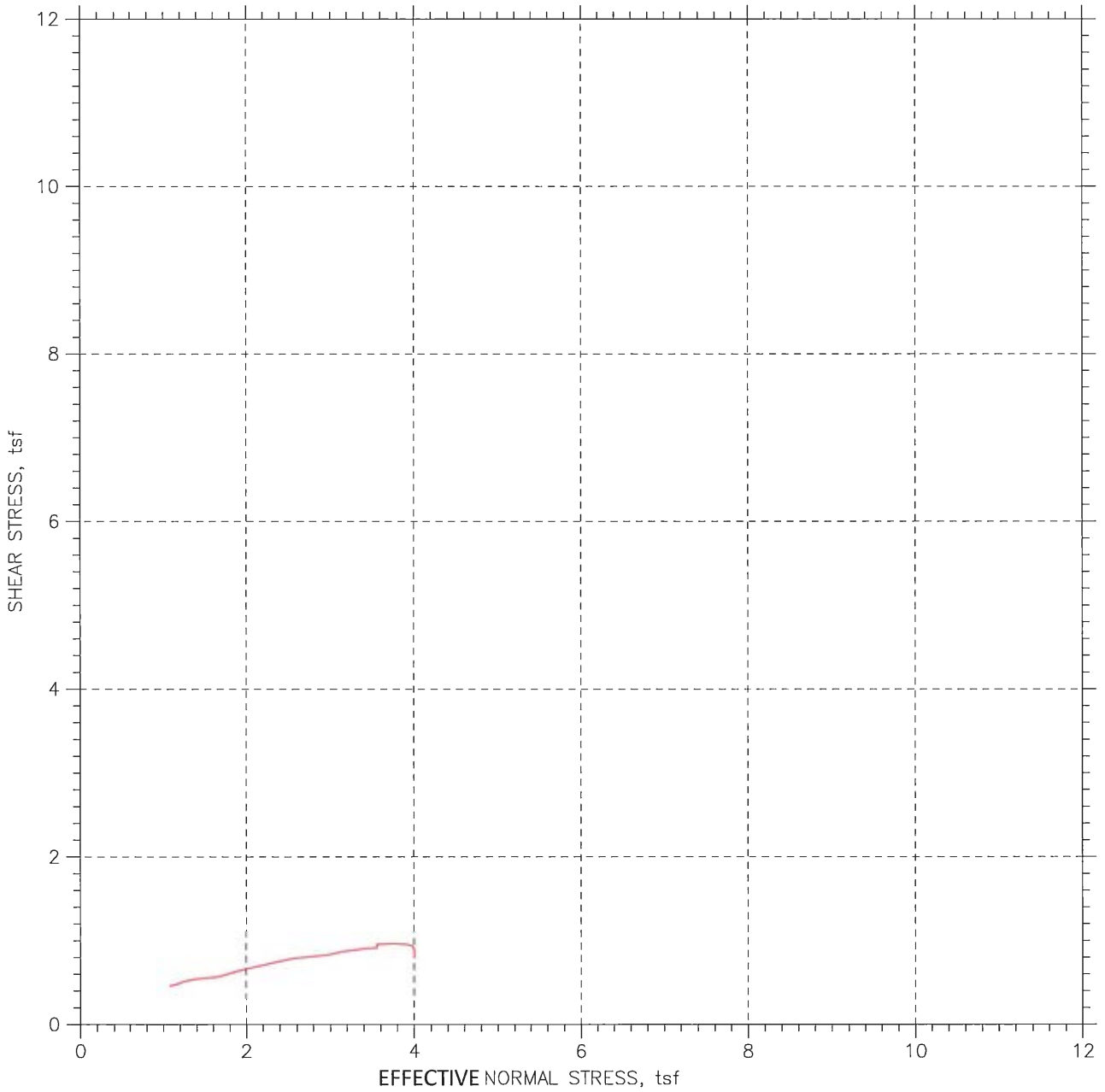
Project: CWM/RMU 2 GC	Location: Lewiston, NY	Project No.: GTX-12376
Boring No.: SB12-01	Tested By: md/njh	Checked By: jdt
Sample No.: SB12-01	Test Date: 1/9/13	Depth: 22-24 ft
Test No.: DSS-13	Sample Type: intact	Elevation: ---
Description: Moist, brown clay		
Remarks: System J		
File: \\Geocompdb1\Projects\GTX12376\CDSS\12376-DSS-13n.dat		Page 3 of 7

DIRECT SIMPLE SHEAR TEST



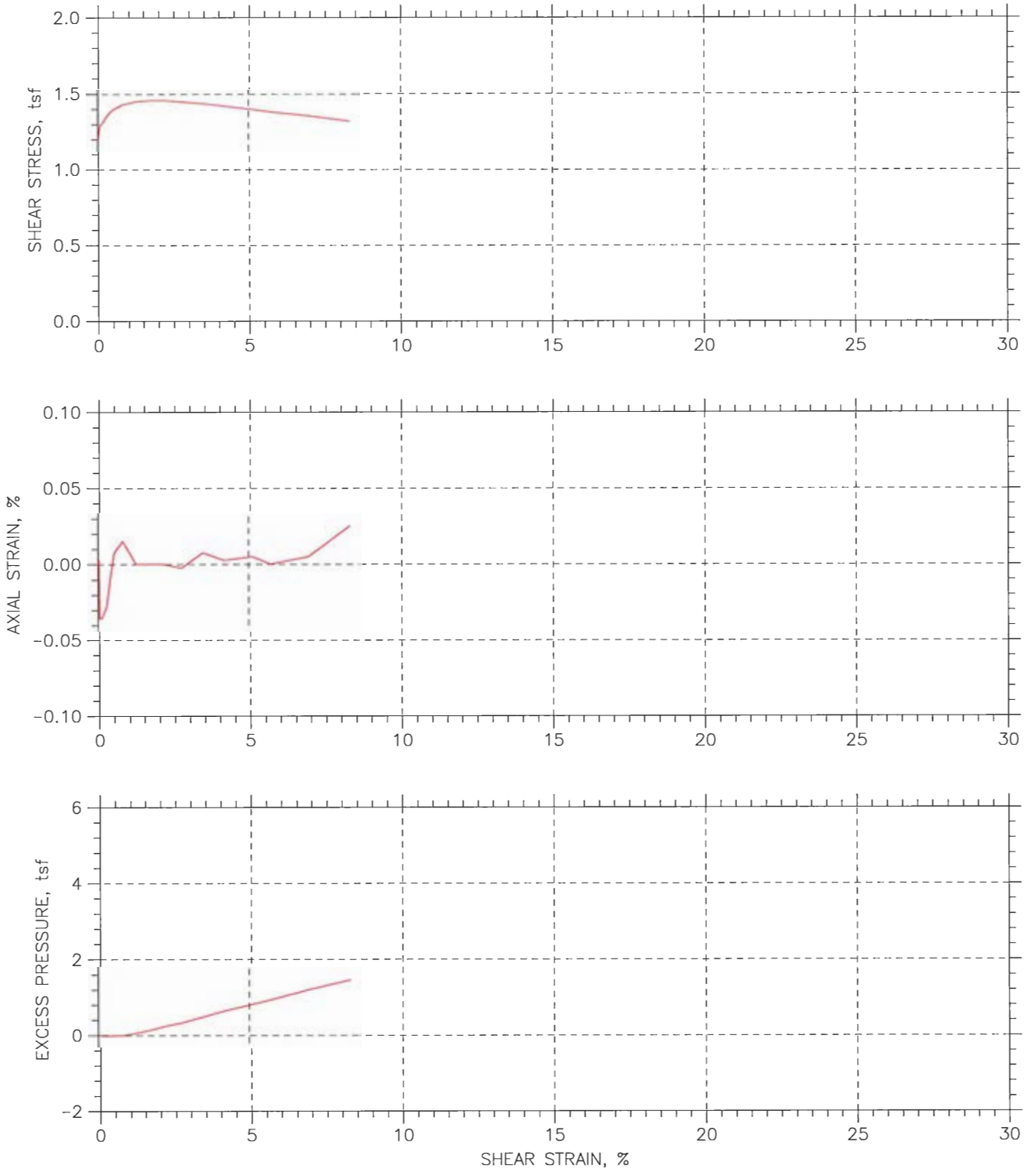
Project: CWM/RMU 2 GC	Location: Lewiston, NY	Project No.: GTX-12376
Boring No.: SB12-01	Tested By: md/njh	Checked By: jdt
Sample No.: SB12-01	Test Date: 1/7/13	Depth: 22-24 ft
Test No.: DSS-12	Sample Type: intact	Elevation: ---
Description: Moist, brown clay		
Remarks: System J		
File: \\Geocompdb1\Projects\GTX12376\CDSS\12376-DSS-12n.dat		Page 4 of 7

DIRECT SIMPLE SHEAR TEST



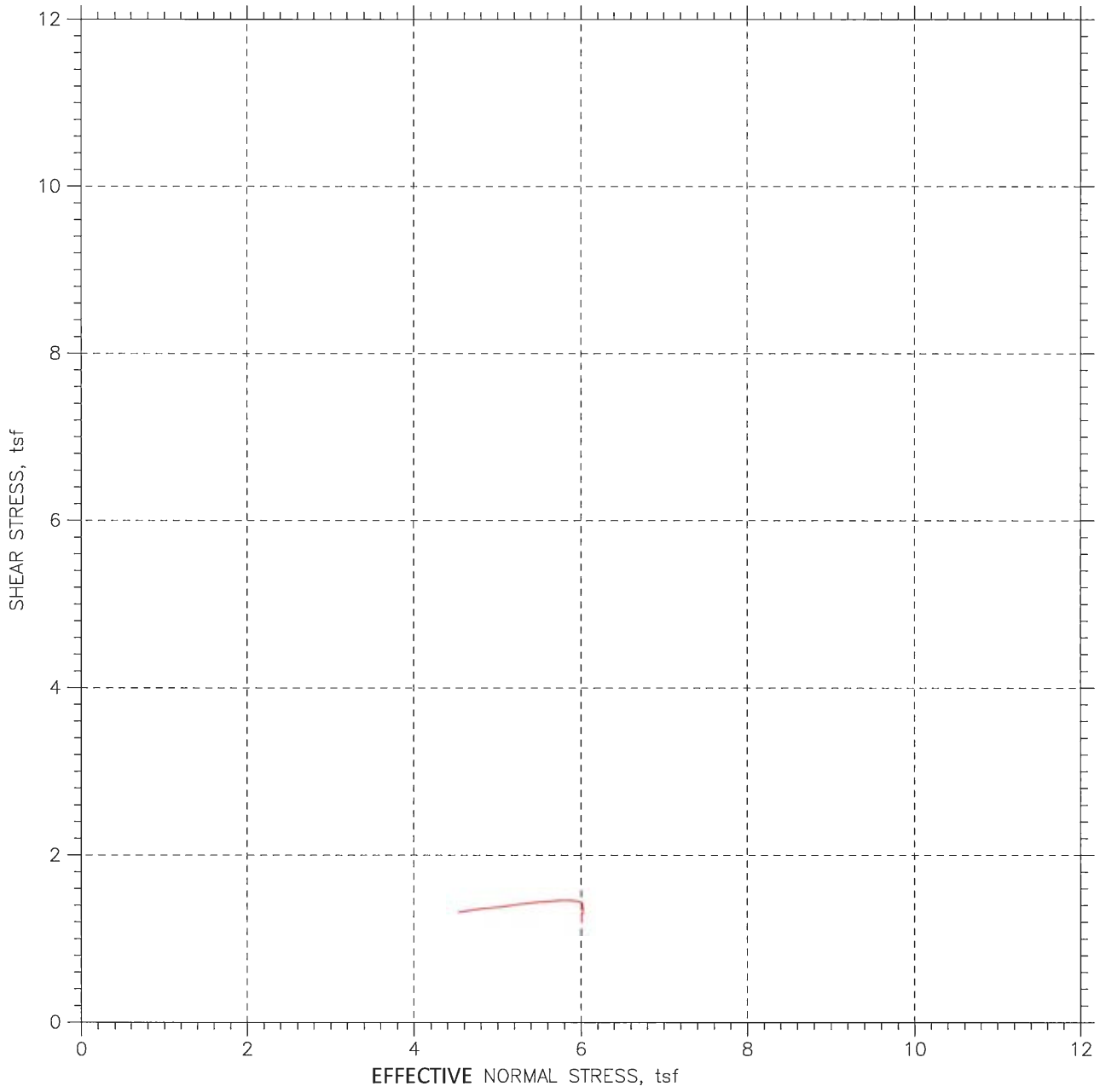
Project: CWM/RMU 2 GC	Location: Lewiston, NY	Project No.: GTX-12376
Boring No.: SB12-01	Tested By: md/njh	Checked By: jdt
Sample No.: SB12-01	Test Date: 1/7/13	Depth: 22-24 ft
Test No.: DSS-12	Sample Type: intact	Elevation: ---
Description: Moist, brown clay		
Remarks: System J		
File: \\Geocompdb1\Projects\GTX12376\CDSS\12376-DSS-12n.dat		Page 5 of 7

DIRECT SIMPLE SHEAR TEST



Project: CWM/RMU 2 GC	Location: Lewiston, NY	Project No.: GTX-12376
Boring No.: SB12-01	Tested By: md/njh	Checked By: jdt
Sample No.: SB12-01	Test Date: 1/2/13	Depth: 22-24 ft
Test No.: DSS-11	Sample Type: intact	Elevation: ---
Description: Moist, brown clay		
Remarks: System J		
File: \\Geocompdb1\Projects\GTX12376\CDSS\12376-DSS-11.dat		Page 6 of 7

DIRECT SIMPLE SHEAR TEST



Project: CWM/RMU 2 GC	Location: Lewiston, NY	Project No.: GTX-12376
Boring No.: SB12-01	Tested By: md/njh	Checked By: jdt
Sample No.: SB12-01	Test Date: 1/2/13	Depth: 22-24 ft
Test No.: DSS-11	Sample Type: intact	Elevation: ---
Description: Moist, brown clay		
Remarks: System J		
File: \\Geocompdb1\Projects\GTX12376\CDSS\12376-DSS-11.dat		Page 7 of 7

GeoTesting EXPRESS

WARRANTY and LIABILITY

GeoTesting Express (GTX) warrants that all tests it performs are run in general accordance with the specified test procedures and accepted industry practice. GTX will correct or repeat any test that does not comply with this warranty. GTX has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

GTX may report engineering parameters that require us to interpret the test data. Such parameters are determined using accepted engineering procedures. However, GTX does not warrant that these parameters accurately reflect the true engineering properties of the *in situ* material. Responsibility for interpretation and use of the test data and these parameters for engineering and/or construction purposes rests solely with the user and not with GTX or any of its employees.

GTX's liability will be limited to correcting or repeating a test which fails our warranty. GTX's liability for damages to the Purchaser of testing services for any cause whatsoever shall be limited to the amount GTX received for the testing services. GTX will not be liable for any damages, or for any lost benefits or other consequential damages resulting from the use of these test results, even if GTX has been advised of the possibility of such damages. GTX will not be responsible for any liability of the Purchaser to any third party.

Commonly Used Symbols

A	pore pressure parameter for $\Delta\sigma_1 - \Delta\sigma_3$
B	pore pressure parameter for $\Delta\sigma_3$
CIU	isotropically consolidated undrained triaxial shear test
CR	compression ratio for one dimensional consolidation
C_c	coefficient of curvature, $(D_{30})^2 / (D_{10} \times D_{60})$
C_u	coefficient of uniformity, D_{60}/D_{10}
C_c	compression index for one dimensional consolidation
C_α	coefficient of secondary compression
c_v	coefficient of consolidation
c	cohesion intercept for total stresses
c'	cohesion intercept for effective stresses
D	diameter of specimen
D_{10}	diameter at which 10% of soil is finer
D_{15}	diameter at which 15% of soil is finer
D_{30}	diameter at which 30% of soil is finer
D_{50}	diameter at which 50% of soil is finer
D_{60}	diameter at which 60% of soil is finer
D_{85}	diameter at which 85% of soil is finer
d_{50}	displacement for 50% consolidation
d_{90}	displacement for 90% consolidation
d_{100}	displacement for 100% consolidation
E	Young's modulus
e	void ratio
e_c	void ratio after consolidation
e_o	initial void ratio
G	shear modulus
G_s	specific gravity of soil particles
H	height of specimen
PI	plasticity index
i	gradient
K_o	lateral stress ratio for one dimensional strain
k	permeability
LI	Liquidity Index
m_v	coefficient of volume change
n	porosity
PI	plasticity index
P_c	preconsolidation pressure
p	$(\sigma_1 + \sigma_3) / 2$, $(\sigma_v + \sigma_h) / 2$
p'	$(\sigma'_1 + \sigma'_3) / 2$, $(\sigma'_v + \sigma'_h) / 2$
p'_c	p' at consolidation
Q	quantity of flow
q	$(\sigma_1 - \sigma_3) / 2$
q_f	q at failure
q_o, q_i	initial q
q_c	q at consolidation
S	degree of saturation
SL	shrinkage limit
s_u	undrained shear strength
T	time factor for consolidation
T	temperature
t	time
U, UC	unconfined compression test
UU, Q	unconsolidated undrained triaxial test
u_a	pore gas pressure
u_e	excess pore water pressure
u, u_w	pore water pressure
V	total volume
V_g	volume of gas
V_s	volume of solids
V_v	volume of voids
V_w	volume of water
V_o	initial volume
v	velocity
W	total weight
W_s	weight of solids
W_w	weight of water
w	water content
w_c	water content at consolidation
w_f	final water content
w_l	liquid limit
w_n	natural water content
w_p	plastic limit
w_s	shrinkage limit
w_o, w_i	initial water content
α	slope of q_f versus p_f
α'	slope of q_f versus p_f'
γ_t	total unit weight
γ_d	dry unit weight
γ_s	unit weight of solids
γ_w	unit weight of water
ε	strain
ε_{vol}	volume strain
ε_h, ε_v	horizontal strain, vertical strain
μ	Poisson's ratio, also viscosity
σ	normal stress
σ'	effective normal stress
σ_c, σ'_c	consolidation stress in isotropic stress system
σ_h, σ'_h	horizontal normal stress
σ_v, σ'_v	vertical normal stress
σ_1	major principal stress
σ_2	intermediate principal stress
σ_3	minor principal stress
τ	shear stress
φ	friction angle based on total stresses
φ'	friction angle based on effective stresses
φ'_r	residual friction angle
φ_{ult}	φ for ultimate strength

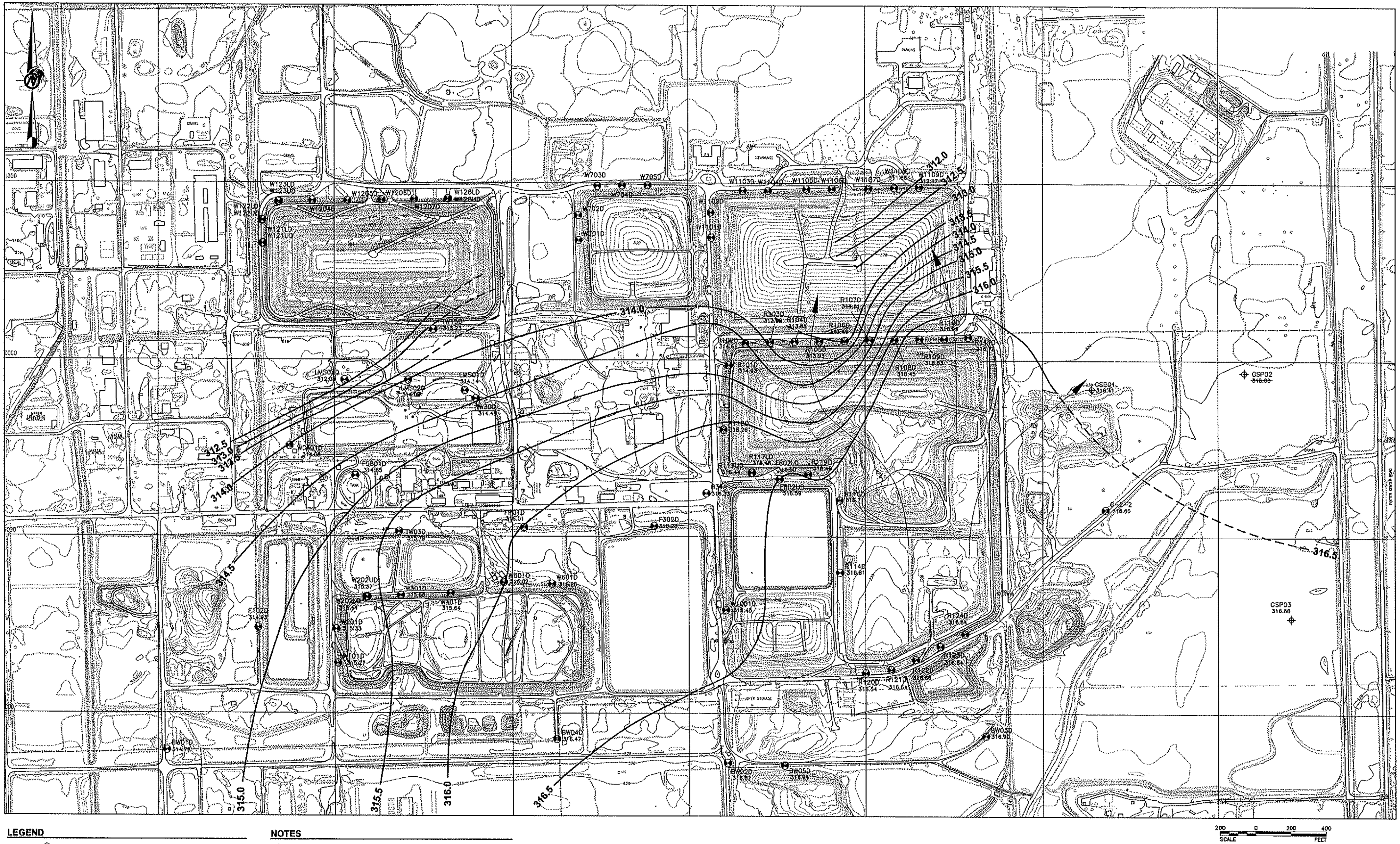
ARCADIS

Appendix B

ARCADIS

Appendix B-1

Figure Entitled “Glaciolacustrine Silt/Sand Unit Potentiometric Contour Map – May 15, 2001” (Golder, January 2002)“



LEGEND

(monitoring well symbol)	GLACIOLACUSTRINE SILT/SAND UNIT MONITORING WELL
(piezometer symbol)	GLACIOLACUSTRINE SILT/SAND UNIT PIEZOMETER
BW03D	GLACIOLACUSTRINE SILT/SAND UNIT MONITORING WELL/PIEZOMETER DESTINATION
309.65	GROUNDWATER ELEVATION
~~309.65~~	GROUNDWATER ELEVATION NOT USED FOR INTERPRETATION
(arrow)	FLOW DIRECTION
(solid line)	312.0 LINE OF EQUAL POTENTIAL
(dashed line)	311.5 INFERRED LINE OF EQUAL POTENTIAL

NOTES

1.) WATER LEVELS OBTAINED ON MAY 15, 2001 BY CWM PERSONNEL.

REFERENCES

1.) BASE MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED MAY 31, 2001 BY AIR SURVEY CORP., DULLES, VIRGINIA.

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

CWM CHEMICAL SERVICES, L.L.C.
MODEL CITY, NEW YORK

TITLE

GLACIOLACUSTRINE SILT/SAND UNIT POTENTIOMETRIC CONTOUR MAP MAY 15, 2001

Golder Associates
Philadelphia USA

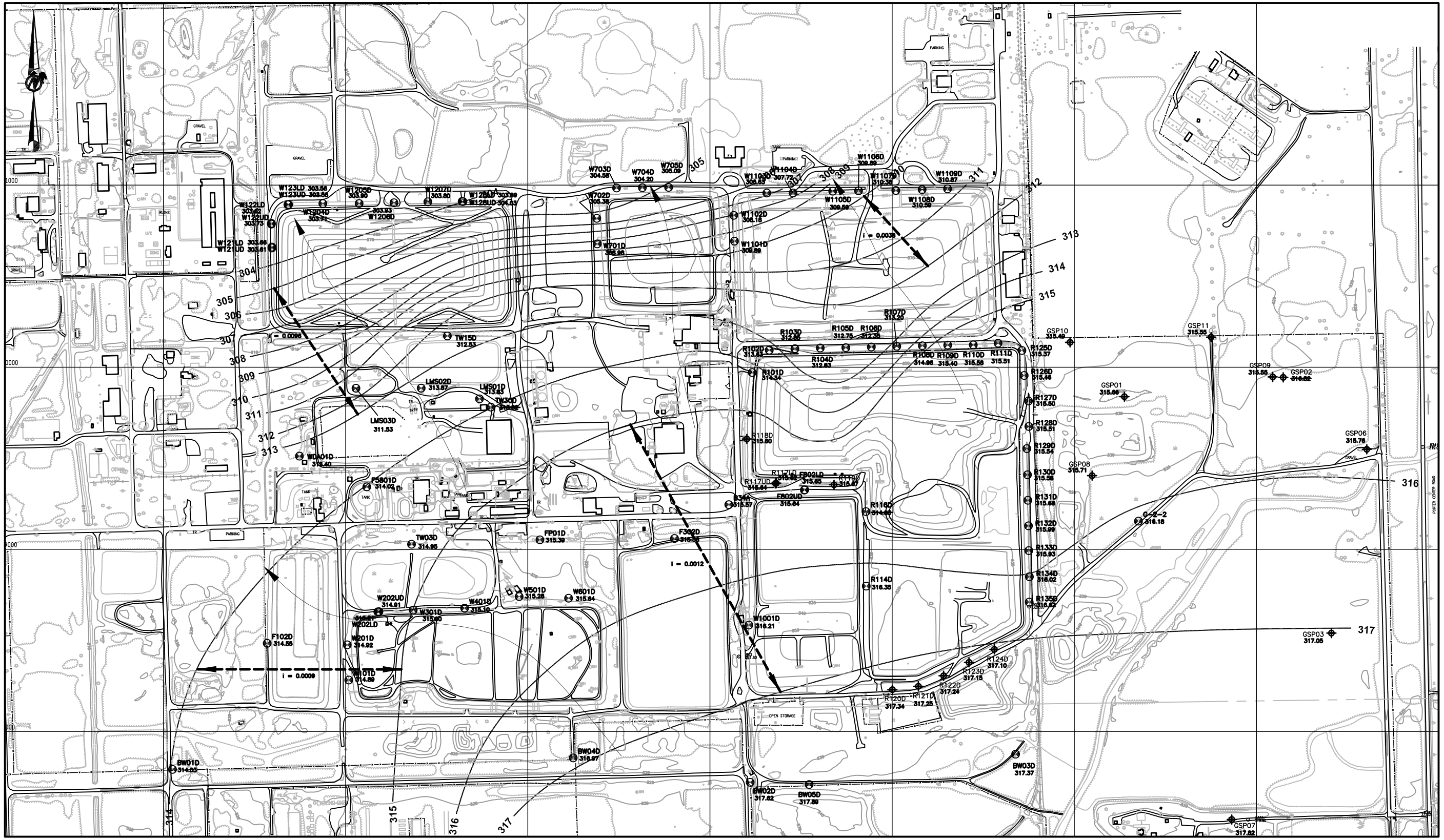
PROJECT No.		013-9309	FILE No.	0139309C158
DESIGN	JPR	01/07/02	SCALE AS SHOWN	REV. 0
CADD	AM	01/22/02	**FIGURE 1**	
CHECK	JPR	4/29/02		
REVIEW	DW	4/30/02		

ARCADIS

Appendix B-2

Figure Entitled “Glaciolacustrine Silt/Sand Unit Potentiometric Surface Contours – October 2004” (Golder, January 2005)

NYSDEC OHMS Document No. 201469232-00007



LEGEND

- GLACIOLACUSTRINE SILT/SAND UNIT MONITORING WELL
- GLACIOLACUSTRINE SILT/SAND UNIT PIEZOMETER
- BW03D — GLACIOLACUSTRINE SILT/SAND UNIT MONITORING WELL/PIEZOMETER DESIGNATION
- 309.65 — GROUNDWATER ELEVATION
- ~~316.84~~ — GROUNDWATER ELEVATION NOT USED FOR INTERPRETATION
- LINE OF EQUAL POTENTIAL
- FLOW DIRECTION
- i=0.0050 — HYDRAULIC GRADIENT

NOTES

1.) WATER LEVELS OBTAINED ON OCTOBER 12, 2004 BY CWM and GOLDER PERSONNEL.

REFERENCES

1.) BASE MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED MAY 31, 2001 BY AIR SURVEY CORP., DULLES, VIRGINIA.

200 0 200 400
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
CWM CHEMICAL SERVICES, L.L.C.
2004 GROUNDWATER INTERPRETATION
MODEL CITY, NEW YORK

TITLE
GLACIOLACUSTRINE SILT/SAND POTENTIOMETRIC SURFACE CONTOURS OCTOBER 2004

Golder Associates Buffalo, NY

PROJECT No.	043-9418	FILE No.	0439149247		
DESIGN	AJN	01/13/05	SCALE	AS SHOWN	REV. 0
CADD	AM	1/14/05			
CHECK					
REVIEW					

FIGURE 3

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Appendix C

Geotechnical Calculations

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Appendix C-1

RMU-2 Settlement Analysis

APPENDIX C-1

RMU-2 SETTLEMENT ANALYSIS

PREPARED FOR

CWM

PREPARED BY

P.J. Carey & Associates, PC

September 14, 2009

TABLE OF CONTENTS1 ..... INTRODUCTION 1

ATTACHMENTS

1 INTRODUCTION

1.1 SCOPE OF APPENDIX C-1

This appendix presents the calculation of settlement of the subgrade (below liner system) under the RMU-2 facility. The analysis presented, uses the settlement parameters and unit weights described in detail in Appendix A-1. The calculations are presented for a single point, at a location requested by ARCADIS, and at over 10,900 points within the limits of the bottom of the RMU-2 facility.

1.2 METHOD OF CALCULATION

The calculations were performed by using the common settlement calculation

$Settlement = \sum_{i=1}^{n} settlement_i$, where settlement$_i$ is the settlement of the ith of n layers

$$settlement_i := t_i \cdot \left(RR \cdot Log\left(\frac{\sigma'_{vm}}{\sigma'_{v0}} \right) + CR \cdot Log\left(\frac{\sigma'_{vf}}{\sigma'_{vm}} \right) \right)$$

Where

t is the thickness of the layer

σ'.vm is the maximum past pressure a the mid point of the layer

σ'.v0 is the initial effective stress at the mid point of the layer

σ'.vf is the final effective stress at the mid point of the layer

RR is the recompression ratio for the layer

CR is the compression ratio for the layer

The maximum past pressure in each layer was assigned by using the greater of that computed using an over consolidation ratio (OCR) or minimum assigned value (MPP). σ'_{vm} was calculated for each layer in the manner described above.

1.3 LOCATION OF CALCULATED POINTS

The proposed subbase for RMU-2 was provided by ARCADIS in CAD format. The portion of the subbase inside the toe of the 3:1 side slopes of the perimeter was subject to calculation of settlement. Points were generated on grid of 10 ft in both north and south directions and at all breaks in slope at 10 foot center to center spacing. These points were then copied to each of the subsurface strata and landfill layers, in ascending order:

- Bedrock,

- Lower Glacial Till (LGT),
- Glacial Sand and Silt (GSS),
- Glaciolacustrine Clay (GC),
- Upper Glacial Till (UGT),
- Liner Subbase and
- Final Grade

and assigned the elevation of the corresponding layer at the point location.

Settlement of any significance was assumed to be limited to layers above the LGT only, given the very high blow counts in the LGT. The resulting points were off loaded from CAD to an excel file where they were manipulated into an array of elevations at specific northing and eastings. This array of elevations was imported into a mathcad worksheet where the calculations were performed. Small routines were written to determine the thickness of each layer, the mid point elevation, the initial effective stress, the final effective stress etc. The details of the calculations provided in Attachments 1 and 2.

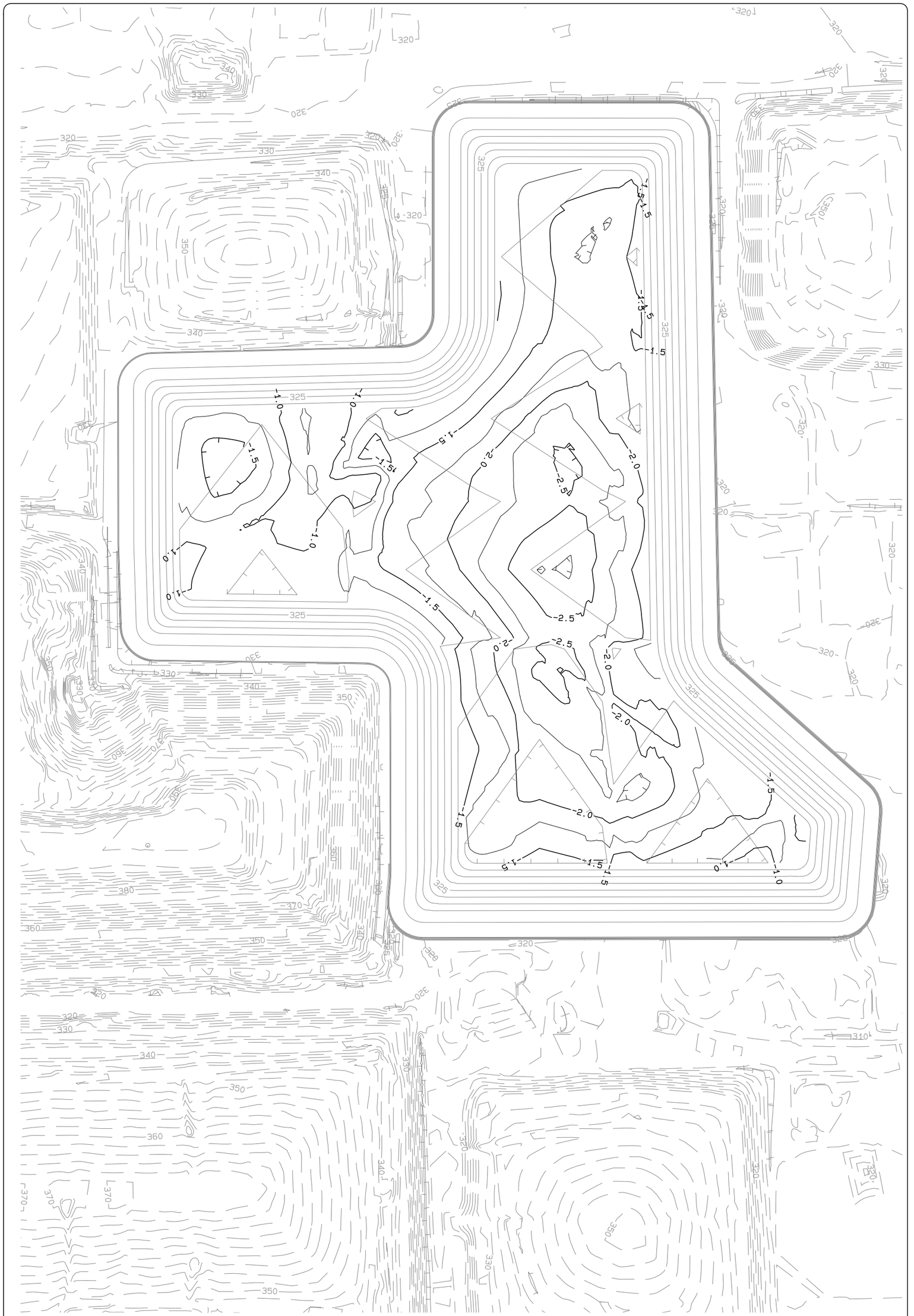
At many locations the liner subbase is below the bottom of the UGT, this was accounted for in the calculation, removing the layers that were fully excavated or reducing their original thickness if they were excavated partially.

The upper 2 feet of the GC was assigned settlement parameters associated with overconsolidated GC. This conservative estimate was made given the limited data concerning the distribution of actual thickness under the site.

1.4 RESULTING SETTLEMENTS

The resulting settlements are depicted in Figure 1, showing contours of settlement superimposed on the base grading. The computed settlements were provided to ARCADIS for their use. The actual computed settlement at each of the points is provided electronically on the CD along with the other data and analysis associated with the Geotechnical Evaluation of RMU-2.

FIGURES



NEGATIVE SETTLEMENT IS DOWNWARD
SETTLMENT BASED ON FINAL GRADING SCHEME

CONTOURS OF SETTLEMENT IN FEET

GRAPHIC SCALE 1"=200'

0 200 400 600

SHEET 4 OF

DRAWING

RMU-2 GEOTECHICAL EVALUATION

FIGURE 1
SETTLEMENT

PROJ. NO.: 154.002
DATE: 9/14/2009
DESIGNED BY: PJC
DRAWN BY: PJC
CHECKED BY: PJC/KLH
APPROVED BY: PJC

P. J. CAREY & ASSOCIATES, P.C.
5878 VALINE WAY, SUGAR HILL, GA. 30518

REVISION	DATE
1	
2	
3	
4	
5	

CWM
MODEL CITY, NY

NYSDEC OHMS Document No. 201469232-00007

ATTACHMENT 1

P.J.Carey & Associates, P.C.

CLIENT CMW

PROJECT RMU-2

JOB No 154.002

DATE JULY 30, 2009

CALCULATION BY PJC AND KLH

CHECKED BY PJC

APPROVED BY PETER J. CAREY

OBJECT Calculation of Settlement under final loadings for RMU-2 at a definied point by ARCADIS utilizing the elevations of the various geologic contacts, the proposed baseliner and final grade elevations, the water table and properties of the compressible soil layers and wastes.

From the data points

$n := 1$ $i := 1..n$

Elevation of Top of Strata

$EL_{FG} := 436.36ft$ Final Grade

$EL_{BL} := 313.85 \cdot ft$ Baseliner

$EL_{XGR} := 319.09 \cdot ft$ Existing Grade (top Upper Till)

$EL_{GC.Crust} := 306.48 \cdot ft$ GC-Crust (Glaciolacustrine Clay)

$EL_{GC.Norm} := \left(EL_{GC.Crust} - 2ft\right)$ GC-Normal

$EL_{GSS} := 286.79ft$ Glacio Sand & Silt

$EL_{LTILL} := 280.82 \cdot ft$ Lower Till

$EL_{BR} := 271.26ft$ Bedrock

define b to allow an example of the calculations to seen, but since there is only one point,

$b := 1$

$EL_{GW_i} := 315.5ft$

Groundwater

$$Material := \begin{pmatrix} \text{"Waste"} \\ \text{"Upper Till"} \\ \text{"GC-Crust"} \\ \text{"GC-Normal"} \\ \text{"Sand \& Silt"} \\ \text{"Lower Till"} \end{pmatrix} \qquad \gamma := \begin{pmatrix} 111 \\ 130 \\ 135 \\ 120 \\ 125 \\ 140 \end{pmatrix} pcf \qquad EL := \begin{pmatrix} EL_{FG} \\ EL_{BL} \\ EL_{GC.Crust} \\ EL_{GC.Norm} \\ EL_{GSS} \\ EL_{LTILL} \end{pmatrix}$$

Material Properties

Density

Top of Strata Elevations

Material =

	1
1	"Waste"
2	"Upper Till"
3	"GC-Crust"
4	"GC-Normal"
5	"Sand & Silt"
6	"Lower Till"

$\gamma =$

	1
1	111
2	130
3	135
4	120
5	125
6	140

$\cdot pcf$

$EL^{\langle b \rangle} =$

	1
1	436.36
2	313.85
3	306.48
4	304.48
5	286.79
6	280.82

ft

$\gamma_{water} := 62.4pcf$

Consolidation Properties

SEE APPENDIX A-1 FOR EXPLANATION OF PROPERTIES

OCR =

	1
1	""
2	6
3	3
4	1.5
5	2

CR =

	1
1	""
2	0.08
3	0.11
4	0.2
5	0.08

RR =

	1
1	""
2	0.008
3	0.006
4	0.015
5	0.008

MPP =

	1
1	0
2	12000
3	8000
4	4000
5	16000

$\cdot psf$

6	""

6	""

6	""

6	0

Elevations

$$EL_{design} := \left| \begin{array}{l} \text{for } i \in 1..n \\ \quad \text{for } j \in 1..\text{rows}(EL) \\ \quad\quad el_{j,i} \leftarrow \left| \begin{array}{ll} \left(EL^{\langle i \rangle}\right)_1 & \text{if } j = 1 \\ \left(EL^{\langle i \rangle}\right)_2 & \text{if } \left(EL^{\langle i \rangle}\right)_2 \le \left(EL^{\langle i \rangle}\right)_j \wedge j \neq 1 \\ \left(EL^{\langle i \rangle}\right)_j & \text{otherwise} \end{array} \right. \\ el \end{array} \right.$$

$$EL_{design}^{\langle b \rangle} = \begin{array}{|c|c|} \hline & 1 \\ \hline 1 & 436.36 \\ 2 & 313.85 \\ 3 & 306.48 \\ 4 & 304.48 \\ 5 & 286.79 \\ 6 & 280.82 \\ \hline \end{array} \text{ ft}$$

$$EL_{design\_mid} := \left| \begin{array}{l} \text{for } i \in 1..n \\ \quad \text{for } j \in 1..\text{rows}(EL) - 1 \\ \quad\quad el_{j,i} \leftarrow \left(EL_{design}^{\langle i \rangle}\right)_j - \left[\frac{\left(EL_{design}^{\langle i \rangle}\right)_j - \left(EL_{design}^{\langle i \rangle}\right)_{j+1}}{2} \right] \\ el \end{array} \right.$$

$$\left(EL_{design\_mid}^{\langle b \rangle}\right) = \begin{array}{|c|c|} \hline & 1 \\ \hline 1 & 375.105 \\ 2 & 310.165 \\ 3 & 305.48 \\ 4 & 295.635 \\ 5 & 283.805 \\ \hline \end{array} \text{ ft}$$

Stress Calculation

Change in Stress

$$\Delta\sigma_{lf_i} := \left[\left(EL_{design}^{\langle i \rangle}\right)_1 - \left(EL_{design}^{\langle i \rangle}\right)_2 \right] \cdot \gamma 1$$

$$\Delta\sigma_{lf_b} = 13598.61 \cdot \text{psf}$$

Initial Total Vertical Stresses

$$\sigma_{vo\_top} := \text{for } i \in 1..n$$

$$\text{for } j \in 1..\text{rows}(EL) - 1$$

$$\left(s_{j,i}\right) \leftarrow \begin{cases} 0\text{psf} & \text{if } j = 1 \\ \left[\left(EL_{design}^{\langle i \rangle}\right)_j - \left(EL_{design}^{\langle i \rangle}\right)_{j+1}\right] \cdot \gamma_j + s_{j-1,i} & \text{otherwise} \end{cases}$$

$$\sigma_{vo\_mid} := \text{for } i \in 1..n$$

$$\text{for } j \in 1..\text{rows}(EL) - 1$$

$$\left(s_{j,i}\right) \leftarrow \begin{cases} 0\text{psf} & \text{if } j = 1 \\ \left[\left(EL_{design}^{\langle i \rangle}\right)_j - \left(EL_{design\_mid}^{\langle i \rangle}\right)_j\right] \cdot \gamma_j + \left(\sigma_{vo\_top}^{\langle i \rangle}\right)_j & \text{otherwise} \end{cases}$$

Initial Effective Stresses

$$\sigma_{w\_top} := \text{for } i \in 1..n$$

$$\text{for } j \in 1..\text{rows}(EL)$$

$$\left(s_{j,i}\right) \leftarrow \begin{cases} 0 & \text{if } \left(EL_{design}^{\langle i \rangle}\right)_j \geq EL_{GW_i} \\ \left[EL_{GW_i} - \left(EL_{design}^{\langle i \rangle}\right)_j\right] 62.4\text{pcf} & \text{otherwise} \end{cases}$$

$\sigma_{vo\_top}^{\langle b \rangle} =$

	1
1	0
2	958.1
3	1228.1
4	3350.9
5	4097.15

$\cdot$psf

$\sigma_{vo\_mid}^{\langle b \rangle} =$

	1
1	0
2	1437.15
3	1363.1
4	4412.3
5	4470.275

$\cdot$psf

$\sigma_{w\_top}^{\langle b \rangle} =$

	1
1	0
2	102.96
3	562.848
4	687.648
5	1791.504
6	2164.032

$\cdot$psf

$\sigma_{w\_mid} := \text{for } i \in 1..n$

$\text{for } j \in 1..\text{rows}(EL) - 1$

$$\left(s_{j,i}\right) \leftarrow \begin{cases} 0 & \text{if } \left(EL_{design\_mid}^{\langle i \rangle}\right)_j \geq EL_{GW_i} \\ \left[EL_{GW_i} - \left(EL_{design\_mid}^{\langle i \rangle}\right)_j\right] 62.4\text{pcf} & \text{otherwise} \end{cases}$$

$\sigma_{w\_mid}^{\langle b \rangle} =$

	1
1	0
2	332.904
3	625.248
4	1239.576
5	1977.768

$\cdot psf$

$\sigma_{vo'\_top} := \text{for } i \in 1..n$

$\text{for } j \in 1..\text{rows}(EL) - 1$

$$\left(s_{j,i}\right) \leftarrow \begin{cases} 0.001\text{psf} & \text{if } \left[\left(\sigma_{vo\_top}^{\langle i \rangle}\right)_j = 0 \vee \left[\left(\sigma_{vo\_top}^{\langle i \rangle}\right)_j - \left(\sigma_{w\_top}^{\langle i \rangle}\right)_j\right] < 0\right] \\ \left[\left(\sigma_{vo\_top}^{\langle i \rangle}\right)_i - \left(\sigma_{w\_top}^{\langle i \rangle}\right)_i\right] & \text{otherwise} \end{cases}$$

$\sigma_{vo'\_top}^{\langle b \rangle} =$

	1
1	0.001
2	855.14
3	665.252
4	2663.252
5	2305.646

$\cdot psf$

$\sigma_{vo'\_mid} := \text{for } i \in 1..n$

$\text{for } j \in 1..\text{rows}(EL) - 1$

$$\left(s_{j,i}\right) \leftarrow \begin{cases} 0.001\text{psf} & \text{if } \left[\left(\sigma_{vo\_mid}^{\langle i \rangle}\right)_j = 0 \vee \left[\left(\sigma_{vo\_mid}^{\langle i \rangle}\right)_j - \left(\sigma_{w\_mid}^{\langle i \rangle}\right)_j\right] < 0\right] \\ \left[\left(\sigma_{vo\_mid}^{\langle i \rangle}\right)_j - \left(\sigma_{w\_mid}^{\langle i \rangle}\right)_j\right] & \text{otherwise} \end{cases}$$

$\sigma_{vo'\_mid}^{\langle b \rangle} =$

	1
1	0.001
2	1104.246
3	737.852
4	3172.724
5	2492.507

$\cdot psf$

Settlement calculation using the above calculated stresses

$$Sett := \text{for } i \in 1..n$$

$$\text{for } j \in 1..\text{rows}(EL) - 1$$

$$(s_{j,i}) \leftarrow \begin{cases} 0\text{ft} & \text{if } \left(\sigma_{vo\_mid}^{\langle i \rangle}\right)_j = 0 \\ \left[\left(EL_{design}^{\langle i \rangle}\right)_j - \left(EL_{design}^{\langle i \rangle}\right)_{j+1}\right] \cdot \left[RR_j \cdot \log\left[\frac{\Delta\sigma_{lf_i} + \left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j}{\left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j}\right]\right] & \text{if } \Delta\sigma_{lf_i} + \left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j < MPP_j \\ \left[\left(EL_{design}^{\langle i \rangle}\right)_j - \left(EL_{design}^{\langle i \rangle}\right)_{j+1}\right] \cdot \left[RR_j \cdot \log\left[\frac{\text{if}\left[\left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j \cdot OCR_j \le MPP_j, MPP_j, \left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j \cdot OCR_j\right]}{\left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j}\right] \ldots\right. & \text{otherwise} \\ \left. + CR_j \cdot \log\left[\frac{\Delta\sigma_{lf_i} + \left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j}{\text{if}\left[\left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j \cdot OCR_j \le MPP_j, MPP_j, \left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j \cdot OCR_j\right]}\right]\right] & \end{cases}$$

$$Sett^{\langle b \rangle} = \begin{array}{|r|} \hline 0 \\ \hline 0.113 \\ \hline 0.068 \\ \hline 1.982 \\ \hline 0.04 \\ \hline \\ \hline \end{array} \text{ ft}$$

$$\text{rows}(Sett) = 5$$

$$j := 1..\text{cols}(Sett)$$

the computed settlement at b with the sign changed to reflect the dropping of elevation (needed for the direct import into CADD)

$$ComputedSettlement := \sum_{z=1}^{\text{rows}(Sett)} \frac{[-(Sett)]_z}{\text{ft}} = -2.203$$

$$ComputedSettlement = -2.203$$

ATTACHMENT 2

APPENDIX C-1

P.J.Carey & Associates, P.C.

CLIENT CMW

PROJECT RMU-2

JOB No 154.002

DATE JULY 30, 2009

CALCULATION BY PJC AND KLH

CHECKED BY PJC

APPROVED BY PETER J. CAREY

OBJECT Calculation of Settlement under final loadings for RMU-2 at a large number of locations utilizing the elevations of the various geologic contacts, the proposed baseliner and final grade elevations, the water table and properties of the compressible soil layers and wastes.

Import the array of northing , easting and elevations for the points of calculation from the excel file

geo := Strata-SurfaceGridptsrv1.xls

From the data points

$n := rows(geo)$ $n = 10954$ $i := 1 .. n$

determines the number of rows of data in the array (number of calculation locations for settlement)

Elevation of Top of Strata

$EL_{FG} := geo^{\langle 21 \rangle} \cdot ft$ Final Grade

$EL_{BL} := geo^{\langle 18 \rangle} \cdot ft$ Baseliner

$EL_{XGR} := geo^{\langle 15 \rangle} \cdot ft$ Existing Grade (top Upper Till)

$EL_{GC.Crust} := geo^{\langle 12 \rangle} \cdot ft$ GC-Crust (Glaciolacustrine Clay)

$EL_{GC.Norm} := \left(geo^{\langle 12 \rangle} - 2\right) \cdot ft$ GC-Normal

$EL_{GSS} := geo^{\langle 9 \rangle} \cdot ft$ Glacio Sand & Silt

$EL_{LTILL} := geo^{\langle 6 \rangle} \cdot ft$ Lower Till

$EL_{BR} := geo^{\langle 3 \rangle} \cdot ft$ Bedrock

$EL_{GW_i} := 315.5 ft$ Groundwater

define b to allow an example of the calculations to seen

$b := 3$

$$Material := \begin{pmatrix} \text{"Waste"} \\ \text{"Upper Till"} \\ \text{"GC-Crust"} \\ \text{"GC-Normal"} \\ \text{"Sand \& Silt"} \\ \text{"Lower Till"} \end{pmatrix}$$

Material Properties

$$EL := \text{for } i \in (1..n) \quad el^{\langle i \rangle} \leftarrow \begin{pmatrix} EL_{FG_i} \\ EL_{BL_i} \\ EL_{GC.Crust_i} \\ EL_{GC.Norm_i} \\ EL_{GSS_i} \\ EL_{LTILL_i} \end{pmatrix}$$

Density

Top of Strata Elevations

$Material =$

	1
1	"Waste"
2	"Upper Till"
3	"GC-Crust"
4	"GC-Normal"
5	"Sand & Silt"
6	"Lower Till"

$\gamma =$

	1
1	111
2	130
3	135
4	120
5	125
6	140

$\cdot pcf$

$EL^{\langle b \rangle} =$

	1
1	383.317
2	309.983
3	303.115
4	301.115
5	290.214
6	284.75

ft

$\gamma_{water} := 62.4pcf$

Consolidation Properties

$OCR =$

	1
1	""
2	6
3	3
4	1.5
5	2
6	""

$CR =$

	1
1	""
2	0.08
3	0.11
4	0.2
5	0.08
6	""

$RR =$

	1
1	""
2	0.008
3	0.006
4	0.015
5	0.008
6	""

$MPP =$

	1
1	0
2	12000
3	8000
4	4000
5	16000
6	0

$\cdot psf$

Elevations

$$EL_{design} := \left| \begin{array}{l} \text{for } i \in 1..n \\ \quad \text{for } j \in 1..\text{rows}(EL) \\ \quad\quad el_{j,i} \leftarrow \begin{cases} \left(EL^{\langle i \rangle}\right)_1 & \text{if } j = 1 \\ \left(EL^{\langle i \rangle}\right)_2 & \text{if } \left(EL^{\langle i \rangle}\right)_2 \le \left(EL^{\langle i \rangle}\right)_j \wedge j \neq 1 \\ \left(EL^{\langle i \rangle}\right)_j & \text{otherwise} \end{cases} \\ el \end{array} \right.$$

$$EL_{design}^{\langle b \rangle} = \begin{array}{|c|c|} \hline & 1 \\ \hline 1 & 383.317 \\ 2 & 309.983 \\ 3 & 303.115 \\ 4 & 301.115 \\ 5 & 290.214 \\ 6 & 284.75 \\ \hline \end{array} \text{ ft}$$

$$EL_{design\_mid} := \left| \begin{array}{l} \text{for } i \in 1..n \\ \quad \text{for } j \in 1..\text{rows}(EL) - 1 \\ \quad\quad el_{j,i} \leftarrow \left(EL_{design}^{\langle i \rangle}\right)_j - \left[\dfrac{\left(EL_{design}^{\langle i \rangle}\right)_j - \left(EL_{design}^{\langle i \rangle}\right)_{j+1}}{2}\right] \\ el \end{array} \right.$$

$$\left(EL_{design\_mid}^{\langle b \rangle}\right) = \begin{array}{|c|c|} \hline & 1 \\ \hline 1 & 346.65 \\ 2 & 306.549 \\ 3 & 302.115 \\ 4 & 295.664 \\ 5 & 287.482 \\ \hline \end{array} \text{ ft}$$

Stress Calculation

Change in Stress $\Delta\sigma_{lf_i} := \left[\left(EL_{design}^{\langle i \rangle}\right)_1 - \left(EL_{design}^{\langle i \rangle}\right)_2\right] \cdot \gamma 1$

$\Delta\sigma_{lf_b} = 8140.107 \cdot psf$

Initial Total Vertical Stresses

$\sigma_{vo\_top} := \text{for } i \in 1..n$

$\text{for } j \in 1..rows(EL) - 1$

$\left(s_{j,i}\right) \leftarrow \begin{cases} 0psf & \text{if } j = 1 \\ \left[\left(EL_{design}^{\langle i \rangle}\right)_j - \left(EL_{design}^{\langle i \rangle}\right)_{j+1}\right] \cdot \gamma_j + s_{j-1,i} & \text{otherwise} \end{cases}$

$\sigma_{vo\_top}^{\langle b \rangle} =$

	1
1	0
2	892.84
3	1162.84
4	2470.972
5	3153.897

$\cdot psf$

$\sigma_{vo\_mid} := \text{for } i \in 1..n$

$\text{for } j \in 1..rows(EL) - 1$

$\left(s_{j,i}\right) \leftarrow \begin{cases} 0psf & \text{if } j = 1 \\ \left[\left(EL_{design}^{\langle i \rangle}\right)_j - \left(EL_{design\_mid}^{\langle i \rangle}\right)_j\right] \cdot \gamma_j + \left(\sigma_{vo\_top}^{\langle i \rangle}\right)_j & \text{otherwise} \end{cases}$

$\sigma_{vo\_mid}^{\langle b \rangle} =$

	1
1	0
2	1339.26
3	1297.84
4	3125.038
5	3495.359

$\cdot psf$

Initial Effective Stresses

$\sigma_{w\_top} := \text{for } i \in 1..n$

$\text{for } j \in 1..rows(EL)$

$\left(s_{j,i}\right) \leftarrow \begin{cases} 0 & \text{if } \left(EL_{design}^{\langle i \rangle}\right)_j \geq EL_{GW_i} \\ \left[EL_{GW_i} - \left(EL_{design}^{\langle i \rangle}\right)_j\right] 62.4pcf & \text{otherwise} \end{cases}$

$\sigma_{w\_top}^{\langle b \rangle} =$

	1
1	0
2	344.286
3	772.849
4	897.649
5	1577.878
6	1918.794

$\cdot psf$

$\sigma_{w\_mid} := \text{for } i \in 1..n$

$\text{for } j \in 1..\text{rows}(EL) - 1$

$$\left(s_{j,i}\right) \leftarrow \begin{cases} 0 & \text{if } \left(EL_{design\_mid}^{\langle i \rangle}\right)_j \geq EL_{GW_i} \\ \left[EL_{GW_i} - \left(EL_{design\_mid}^{\langle i \rangle}\right)_j\right] 62.4\text{pcf} & \text{otherwise} \end{cases}$$

$\sigma_{w\_mid}^{\langle b \rangle} =$

	1
1	0
2	558.567
3	835.249
4	1237.763
5	1748.336

$\cdot \text{psf}$

$\sigma_{vo'\_top} := \text{for } i \in 1..n$

$\text{for } j \in 1..\text{rows}(EL) - 1$

$$\left(s_{j,i}\right) \leftarrow \begin{cases} 0.001\text{psf} & \text{if } \left[\left(\sigma_{vo\_top}^{\langle i \rangle}\right)_j = 0 \vee \left[\left(\sigma_{vo\_top}^{\langle i \rangle}\right)_j - \left(\sigma_{w\_top}^{\langle i \rangle}\right)_j\right] < 0\right] \\ \left[\left(\sigma_{vo\_top}^{\langle i \rangle}\right)_i - \left(\sigma_{w\_top}^{\langle i \rangle}\right)_i\right] & \text{otherwise} \end{cases}$$

$\sigma_{vo'\_top}^{\langle b \rangle} =$

	1
1	0.001
2	548.554
3	389.991
4	1573.323
5	1576.019

$\cdot \text{psf}$

$\sigma_{vo'\_mid} := \text{for } i \in 1..n$

$\text{for } j \in 1..\text{rows}(EL) - 1$

$$\left(s_{j,i}\right) \leftarrow \begin{cases} 0.001\text{psf} & \text{if } \left[\left(\sigma_{vo\_mid}^{\langle i \rangle}\right)_j = 0 \vee \left[\left(\sigma_{vo\_mid}^{\langle i \rangle}\right)_j - \left(\sigma_{w\_mid}^{\langle i \rangle}\right)_j\right] < 0\right] \\ \left[\left(\sigma_{vo\_mid}^{\langle i \rangle}\right)_j - \left(\sigma_{w\_mid}^{\langle i \rangle}\right)_j\right] & \text{otherwise} \end{cases}$$

$\sigma_{vo'\_mid}^{\langle b \rangle} =$

	1
1	0.001
2	780.693
3	462.591
4	1887.275
5	1747.024

$\cdot \text{psf}$

Settlement calculation using the above calculated stresses

$$Sett := \text{for } i \in 1..n$$

$$\text{for } j \in 1..\text{rows}(EL) - 1$$

$$\left(s_{j,i}\right) \leftarrow \begin{cases} 0\text{ft} & \text{if } \left(\sigma_{vo\_mid}^{\langle i \rangle}\right)_j = 0 \\ \left[\left(EL_{design}^{\langle i \rangle}\right)_j - \left(EL_{design}^{\langle i \rangle}\right)_{j+1}\right] \cdot \left[RR_j \cdot \log\left[\frac{\Delta\sigma_{lf_i} + \left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j}{\left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j}\right]\right] & \text{if } \Delta\sigma_{lf_i} + \left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j < MPP_j \\ \left[\left(EL_{design}^{\langle i \rangle}\right)_j - \left(EL_{design}^{\langle i \rangle}\right)_{j+1}\right] \cdot \left[RR_j \cdot \log\left[\frac{\text{if}\left[\left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j \cdot OCR_j \le MPP_j, MPP_j, \left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j \cdot OCR_j\right]}{\left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j}\right] \ldots\right. & \text{otherwise} \\ \left. + CR_j \cdot \log\left[\frac{\Delta\sigma_{lf_i} + \left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j}{\text{if}\left[\left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j \cdot OCR_j \le MPP_j, MPP_j, \left(\sigma_{vo'\_mid}^{\langle i \rangle}\right)_j \cdot OCR_j\right]}\right]\right] & \end{cases}$$

$$\text{rows}(Sett) = 5$$

$$Sett^{\langle b \rangle} = \begin{bmatrix} 0 \\ 0.058 \\ 0.022 \\ 0.924 \\ 0.033 \\ \end{bmatrix} \text{ft}$$

$j := 1 .. cols(Sett)$

$$ComputedSettlement_j := \sum_{z=1}^{rows(Sett)} \frac{[-(Sett)]_{z,j}}{ft}$$

the computed settlement at b with the sign changed to reflect the dropping of elevation (needed for the direct import into CADD)

$ComputedSettlement_3 = -1.036$

ComputedSettlement.txt

ComputedSettlement

norhing easting computed settlement file

$N := geo^{\langle 1 \rangle}$ $E := geo^{\langle 2 \rangle}$

define the northing and easting to create an array of northing easting and settlement in a comma delimited file for cadd importation

$Settlementexport := augment(N, E, ComputedSettlement)$

terramodelptexportrv1.pts

Settlementexport

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Appendix C-2

Waste Settlement Analysis

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Imagine the result

Calculation Sheet

Client: CWM Chemical Services, LLC

Project Location: Model City, New York

Project: RMU-2 Design Calculations **Project No.:** B0023725.2009

Subject: Appendix C-2: Waste Settlement Analysis

Prepared By: JPT **Date:** August 2009

Reviewed By: APC **Date:** August 2009

Checked By: BMS **Date:** August 2009

OBJECTIVE:

Estimate the magnitude of secondary settlement of the waste at the final buildout configuration for RMU-2 and evaluate the elongation of the 40-mil HDPE liner in the final cover system as a result of the secondary settlement. Also estimate the post-settlement slope along the top of the landfill to verify that a minimum slope of 4% is maintained after closure.

REFERENCES:

1. *Engineering Report for CWM Chemical Services, LLC, Model City Facility, Residuals Management Unit-1,* Earth Tech.

2. *RMU-2 Engineering Report*, ARCADIS, August 2009.

3. RMU-2 Permit Drawing No. 5 entitled "Top of Operations Layer Grades," ARCADIS, August 2009.

4. RMU-2 Permit Drawing No. 6 entitled "Top of Waste Grades," ARCADIS, August 2009.

5. "Settlement and Engineering Considerations in Landfill and Final Cover Design," in *Geotechnics of Waste Fills, Theory and Practice,* D. V. Morris and C.E. Woods, Technical Paper from ASTM STP 1070, 1990.

6. "Settlement of Waste Disposal Fills," in Proceedings *of the International Conference on Soil Mechanics and Foundation Engineering,* George Sowers, 1973.

7. Manufacturer's literature for HDPE Textured 40-mil Geomembrane, GSE (Attachment 1).

8. Geotechnical Engineering Principles and Practices, D.P. Coduto, 1999 (Attachment 2).

ASSUMPTIONS:

1. Settlement is evaluated for the final landfill buildout configuration at the location of maximum waste height (Point WS-1 located at 9,070N and 10,950E). In addition, settlement is also evaluated at two locations along the top of the landfill (Points WS-2 and WS-3) to verify that a post-settlement minimum slope of 4% is maintained. Points WS-2 and WS-3 are located at (8,590N, 11,000E) and (9,070N, 10,825E), respectively. Settlement calculation points are depicted on References 3 and 4.

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Imagine the result

Calculation Sheet

2. Primary consolidation settlement of the waste occurs during placement and is assumed to be complete prior to placement of the final cover (References 5 and 6). Typically, primary consolidation settlement is completed within a month of placement. Therefore, only secondary consolidation settlement (i.e., long term post-construction settlement) is evaluated.

3. Settlement of waste results from the stresses developed by the placement of cover soils and the waste itself. Since biological decomposition is considered negligible at this site due to the nature of the waste, biological decomposition is not included in this evaluation, and the waste is assumed to act like a coarse grained soil based on its historic content.

CALCULATIONS:

Long-term secondary settlement of a landfill can be estimated using the method outlined in Reference 5. The long-term secondary settlement, S_s, is evaluated as follows:

$$S_s = H \frac{C_s}{1+e_o} \log \frac{t_2}{t_1}$$

where H is the height of the layer being considered, C_s is the secondary compression index, e_o is the initial void ratio of the layer, and t_1 and t_2 are the starting and ending time, respectively, of the period for which long-term settlement is evaluated.

A conservative initial void ratio of 0.5 was assumed for the waste from Table 4.5 (Reference 8). The secondary compression index, C_s, can be approximated from this. Given the coarse grained nature of the waste, $C_c/1+e_o$ is estimated from Table 11.1 (Reference 8) as 0.1, where C_c is the compression index. This yields a C_c of 0.15. According to Table 11.4 (Reference 8), a conservative value of 0.02 is used for C_s/C_c. This gives C_s of 0.003.

Based on References 5 and 6, a starting time, t_1, of 1 month is used because primary settlement is typically completed within 1 month (Assumption 2). Finally, based on a post-closure period of 30 years, an ending time, t_2, of 360 months is used. A summary of the values used in this analysis is provided in the below table (Table 1).

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Calculation Sheet

Table 1: Settlement Calculation Input

Parameter	Value
Initial void ratio, e_o	0.5
Point WS-1	
Top of Waste Elevation	437.45 ft
Top of Base Liner Elevation	319.36 ft
Thickness of Waste Layer (maximum), H_1	118.09 ft
Point WS-2	
Top of Waste Elevation	431.10 ft
Top of Base Liner Elevation	318.98 ft
Thickness of Waste Layer, H_2	112.12 ft
Point WS-3	
Top of Waste Elevation	431.00 ft
Top of Base Liner Elevation	317.12 ft
Thickness of Waste Layer, H_3	113.88 ft
Starting time for secondary settlement, t_1	1 month
Ending time for secondary settlement, t_2	360 months
Secondary compression index, C_s (Reference 8)	0.003

Using the values presented in Table 1 (above), and the formula long-term secondary settlement, the maximum secondary settlement of the waste (Point WS-1) is approximately 0.60 ft. Similarly, the secondary settlements at Points WS-2 and WS-3 are 0.57 ft and 0.58 ft, respectively. These calculations are provided in Attachment 3.

The maximum percent settlement can be calculated as the maximum secondary settlement divided by the total waste height. This calculation yields a value of 0.5% for Point WS-1, which is a typical value for waste landfills for secondary compression.

From Reference 7, the strain at yield for 40-mil HDPE geomembrane in the cover system is 13%. The strain imposed on the geomembrane by differential settlement is calculated as follows:

$$\frac{T - L}{L} = \varepsilon$$

where ε is strain, L is the original (unstrained) length of geomembrane, and T is the strained length following differential settlement. Based on the settlement calculations above, a differential settlement of 0.03 ft (0.60 – 0.57 = 0.03 ft) occurs between Points WS-1 and WS-2. Since these two points are approximately 180 feet apart, the strained length between these two points (as calculated using the Pythagorean Theorem) is not measurably larger than the unstrained length. Thus, no significant strain is imposed on the geomembrane by the differential settlement of the waste.

The differential settlement between Points WS-1 and WS-2 also reduces the slope along the top of the landfill. The differential settlement of 0.03 ft decreases the slope from 4.88% to 4.86% between Points WS-1 and WS-2. The following table (Table 2) presents the post-settlement slopes for the other points that were evaluated:

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Imagine the result

Calculation Sheet

Table 2: Summary of Post-Settlement Slopes

Points	Differential Settlement (ft)	Post-Settlement Slope (%)
Points WS-1 & WS-2	0.03	4.86
Points WS-2 & WS-3	0.01	5.17

Since the post-settlement slopes are greater than 4%, the amount of settlement is acceptable.

SUMMARY:

Based on the above calculations, the 40-mil HDPE geomembrane in the cover system will not be elongated to its yield point due to differential settlement at the locations analyzed. Furthermore, for the post-settlement condition, a minimum 4% slope is maintained across the top of the landfill.

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Attachment 1

HDPE Product Data Sheet

GSE

Product Data Sheet

GSE STANDARD PRODUCTS

GSE HD Textured

GSE HD Textured is the textured version of GSE HD. It is a high quality, high density polyethylene (HDPE) geomembrane with one or two coextruded, textured surfaces, and consisting of approximately 97.5% polyethylene, 2.5% carbon black and trace amounts of antioxidants and heat stabilizers; no other additives, fillers or extenders are used. The resin used is specially formulated, virgin polyethylene and is designed specifically for flexible geomembrane applications. GSE HD Textured has excellent resistance to UV radiation and is suitable for exposed conditions. This product allows projects with greater slopes to be designed since frictional characteristics are enhanced. *These product specifications meet or exceed GRI GM13.*

Product Specifications

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE				
Product Code			HDT 030A000	HDT 040A000	HDT 060A000	HDT 080A000	HDT 100A000
Thickness, mils (mm)	ASTM D 5994	every roll	27 (0.69)	36 (0.91)	54 (1.4)	72 (1.8)	90 (2.3)
Density, g/cm³	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94	0.94
Tensile Properties (each direction)[1]	ASTM D 6693, Type IV	20,000 lb					
Strength at Break, lb/in-width (N/mm)	Dumbell, 2 ipm		45 (8)	60 (11)	90 (16)	120(21)	150 (27)
Strength at Yield, lb/in-width (N/mm)			63 (11)	84 (15)	130 (23)	173 (30)	216 (38)
Elongation at Break, %	G.L. = 2.0 in (51 mm)		150	150	150	150	150
Elongation at Yield, %	G.L. = 1.3 in (33 mm)		13	13	13	13	13
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	21 (93)	28 (125)	42 (187)	56 (249)	70 (311)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	54 (240)	72 (320)	108 (480)	144 (641)	180 (801)
Carbon Black Content, %	ASTM D 1603	20,000 lb	2.0	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1	+Note 1	+Note 1
Notched Constant Tensile Load[2], hrs	ASTM D 5397, Appendix	200,000 lb	400	400	400	400	400
REFERENCE PROPERTY	**TEST METHOD**	**FREQUENCY**	**NOMINAL VALUE**				
Thickness, mils (mm)	ASTM D 5994	every roll	30 (0.75)	40 (1.0)	60 (1.5)	80 (20)	100 (2.5)
Oxidative Induction Time, minutes	ASTM D 3895, 200° C; O_2, 1 atm	200,000 lb	>100	>100	>100	>100	>100
Roll Length (approximate), ft (m)	Standard Textured		830 (253)	700 (213)	520 (158)	400(122)	330 (101)
Roll Width, ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft² (m²)			18,674 (1,735)	15,750 (1,463)	11,700 (1,087)	9,000 (836)	7,425 (690)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- GSE HD Standard Textured is available in rolls weighing about 4,000 lb (1,800 kg).
- [1]The combination of stress concentrations due to coextrusion texture geometry and the small specimen size results in large variation of test results. Therefore, these tensile properties are minimum average values.
- [2]Note: NCTL for HD Textured is conducted on representative smooth membrane samples.
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and LTB of <-77° C when tested with ASTM D 746.

DS006 R09/30/02

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Asia/Pacific	GSE Lining Technology Company Ltd.	Bangkok, Thailand		66-2-937-0091	Fax: 66-2-937-0097

This product data sheet is also available on our website at:

www.gseworld.com

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Attachment 2

Reference 8

NYSDEC OHMS Document No. 201469232-00007

where:

$(N_1)_{60}$ = corrected SPT N-value, as defined in Chapter 3

C_P = grain size correction factor

C_A = aging correction factor

C_{OCR} = overconsolidation correction factor

D_{50} = grain size at which 50 percent of the soil is finer (mm) as defined in Section 4.4

t = age of soil (time since deposition in years). If no age information data is available, use $t = 100$ yr.

OCR = overconsolidation ratio, as defined in Chapter 11. If no information is available to assess the OCR, use a value of 2.

q_c = cone resistance (kg/cm^2 or ton/ft^2), as defined in Chapter 3

Q_c = compressibility factor

= 0.91 for highly compressible sands

= 1.00 for moderately compressible sands

= 1.09 for slightly compressible sands

For purposes of solving this formula, a sand with a high fines content or a high mica content is "highly compressible," whereas a pure quartz sand is "slightly compressible."

σ_z' = vertical effective stress (lb/ft^2; kPa), as defined in Chapter 10

Many people confuse relative density with relative compaction. The latter is defined in Chapter 6. Although the names are similar, and they measure similar properties, these two parameters are numerically different. In addition, some people in other professions use the term "relative density" to describe what we call specific gravity! Geotechnical engineers should never use the term in this way.

Table 4.5 presents typical values of e_{min} and e_{max} for various sandy soils. These are not intended to be used in lieu of laboratory or in-situ tests, but could be used to check test results or for preliminary analyses.

TABLE 4.5 TYPICAL VALUES OF e_{min} AND e_{max} (Hough, 1969; Adapted by permission of John Wiley and Sons, Inc.)

Soil Description	e_{min} (dense)	e_{max} (loose)
Equal spheres (theoretical values)	0.35	0.92
Clean, poorly graded medium sand (Ottawa, Illinois)	0.50	0.80
Clean, fine-to-medium sand	0.40	1.0
Uniform inorganic silt	0.40	1.1
Silty sand	0.30	0.90
Clean fine-to-coarse sand	0.20	0.95
Micaceous sand	0.40	1.2
Silty sand and gravel	0.14	0.85

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TABLE 11.1 CLASSIFICATION OF SOIL COMPRESSIBILITY

$\frac{C_c}{1+e_0}$ or $\frac{C_r}{1+e_0}$	Classification
0–0.05	Very slightly compressible
0.05–0.10	Slightly compressible
0.10–0.20	Moderately compressible
0.20–0.35	Highly compressible
> 0.35	Very highly compressible

For soils that are normally consolidated, base the classification on $C_c/(1+e_0)$. For soils that are overconsolidated, base it on $C_r/(1+e_0)$.

Example 11.4

Using the consolidation test results developed in Example 11.3, determine whether the soil at point A in Figure 11.6 is normally consolidated or overconsolidated. The proposed fill has not yet been placed.

Solution

At sample depth:

$$\sigma'_{z0} = 69 \text{ kPa} \quad \text{Per Example 11.2}$$

$$\sigma'_c = 140 \text{ kPa} \quad \text{Per Example 11.3}$$

$\sigma_{z0}' < \sigma_c'$ by more than 20 percent, so **the soil is overconsolidated** ⇐ *Answer*

Overconsolidation Margin and Overconsolidation Ratio

The σ_c' values from the laboratory only represent the preconsolidation stress at the sample depth. However, we sometimes need to compute σ_c' at other depths (i.e., in a soil strata with the same geologic origin). To do so, compute the *overconsolidation margin*, σ_m', using σ_{z0}' at the sample depth and the following equation:

$$\sigma'_m = \sigma'_c - \sigma'_{z0} \tag{11.17}$$

Table 11.2 presents typical values of σ_m'.

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secondary compression and occurs under a constant effective stress. We don't fully understand the physical basis for secondary compression, but it appears to be due to particle rearrangement, creep, and the decomposition of organics. Highly plastic clays, organic soils, and sanitary landfills are most likely to have significant secondary compression. However, secondary compression is negligible in sands and gravels.

The *secondary compression index*, C_α, defines the rate of secondary compression. It can be defined either in terms of either void ratio or strain:

$$C_\alpha = -\frac{de}{d\log t} \tag{11.26}$$

$$\frac{C_\alpha}{1+e_p} = \frac{d\epsilon_z}{d\log t} \tag{11.27}$$

where:

C_α = secondary compression index
e = void ratio
e_p = void ratio at end of consolidation settlement (can use $e_p = e_0$ without introducing much error)
ϵ_z = vertical strain
t = time

Design values are normally determined while conducting a laboratory consolidation test. The consolidation settlement occurs very rapidly in the lab (because of the short drainage distance), so it is not difficult to maintain one or more of the load increments beyond the completion of consolidation settlement. The change in void ratio after this point can be plotted against log time to determine C_α.

Another way of developing design values of C_α is to rely on empirical data that relates it to the compression index, C_c. This data is summarized in Table 11.4.

TABLE 11.4 EMPIRICAL CORRELATION BETWEEN C_α AND C_c (Terzaghi, Peck, and Mesri, 1996)

Material	C_α/C_c
Granular soils, including rockfill	0.02 ± 0.01
Shale and mudstone	0.03 ± 0.01
Inorganic clays and silts	0.04 ± 0.01
Organic clays and silts	0.05 ± 0.01
Peat and muskeg	0.06 ± 0.01

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Attachment 3

Waste Settlement Calculations

CWM Chemical Services, LLC
Model City Facility
RMU-2
Appendix C2: Waste Settlement Calculations

Point WS-1		
Initial Void Ratio, e_o =	0.5	
Height of Waste, H_1 =	118.09	ft
Starting time for secondary settlement, t_1 =	1	month
Ending time for secondary settlement, t_2 =	360	months
Secondary Compression Index, C_s =	0.003	
Secondary Settlement =	**0.60**	**ft**
Maximum Percent Settlement=	0.5	%
Point WS-2		
Initial Void Ratio, e_o =	0.5	
Height of Waste, H_2 =	112.12	ft
Starting time for secondary settlement, t_1 =	1	month
Ending time for secondary settlement, t_2 =	360	months
Secondary Compression Index, C_s =	0.003	
Secondary Settlement =	**0.57**	**ft**
Maximum Percent Settlement=	0.5	%
Point WS-3		
Initial Void Ratio, e_o =	0.5	
Height of Waste, H_3 =	113.88	ft
Starting time for secondary settlement, t_1 =	1	month
Ending time for secondary settlement, t_2 =	360	months
Secondary Compression Index, C_s =	0.003	
Secondary Settlement =	**0.58**	**ft**
Maximum Percent Settlement=	0.5	%

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Appendix C-3

Excavation Heave Analysis

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Calculation Sheet

Client: CWM Chemical Services, LLC

Project Location: Model City, New York

Project: RMU-2 Design Calculations **Project No.:** B0023725.2009

Subject: Appendix C-3: Excavation Heave Analysis

Prepared By: JPT **Date:** August 2009

Reviewed By: APC **Date:** August 2009

Checked By: BMS **Date:** August 2009

OBJECTIVE:

Evaluate the magnitude of heave in Cells 15 through 20 of RMU-2 resulting from the excavation of soils above/within the Glaciolacustrine Clay layer. Also to evaluate the impact of heave on the structural integrity of the excavation base for Cells 15 through 20.

REFERENCES:

1. *Engineering Report for CWM Chemical Services, LLC Model City Facility, Residuals Management Unit-1*, Earth Tech.

2. *RMU-2 Engineering Report*, ARCADIS, August 2009.

3. Fang, Hsai-Yang Editor, *Foundation Engineering Handbook, Second* Edition, Van Nostrand Reinhold, 1991, pg.174 (Attachment 1).

4. RMU-2 Permit Drawing No. 2 entitled "RMU-2 Site," August 2009.

5. RMU-2 Permit Drawing No. 3 entitled "Excavation Grades," August 2009.

6. *Letter Report on Geotechnical Investigation for Proposed Western Expansion Area, Model City TSD Facility*, *Model City, New York* prepared by Golder Associates, Inc., December 2002 (included as Appendix A-2 to the RMU-2 Engineering Report).

7. *1993 Hydrogeologic Characterization Update, Model City TSDR Facility* prepared by Golder Associates, Inc., June 1993.

8. *Shear Strength Evaluation for Slope Stability Analyses Residuals Management Unit One (RMU-1) Model City TSD Facility Model City, New York*, prepared by Drs. Robert M. Koerner, Robert B. Gilbert, and Timothy D. Stark and Francis T. Adams, March 2001.

ASSUMPTIONS:

1. The undrained shear strength, S_u, of the Glaciolacustrine Clay is conservatively estimated to be 400 psf based on previous undrained triaxial testing (References 1 and 6).

2. The modulus of elasticity of the Glaciolacustrine Clay is estimated to be 500 S_u, based on Reference 3. Using the S_u value from Assumption 1, the modulus of elasticity of the clay is 200,000 psf.

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3. The excavated soil unit weight, γ, is assumed to be 125 pcf (unit weight of Glaciolacustrine Clay in Reference 1).

4. The heave factor and shape factor are estimated from Figures 5.6 and 5.7 of Reference 3.

5. The Basal Red Till is assumed to be the rigid boundary.

METHODOLOGY:

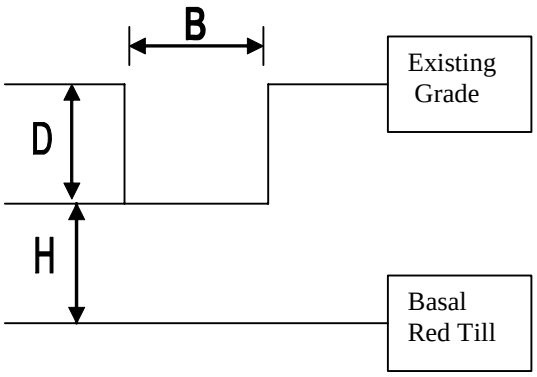
The method presented in References 1 and 3 is used to analyze the excavation heave for Cells 15 through 20 of RMU-2. The maximum heave, R_d, is calculated as follows:

$$R_d = C_r'' \Delta_{strip} \frac{\gamma D^2}{E}$$

where,

R_d = Maximum Heave, ft;
C_r'' = Shape Factor (a function of H, average depth from excavation bottom to top of rigid boundary);
Δ_{strip} = Heave Factor;
γ = Excavated Soil Unit Weight, pcf;
D = Excavation Depth, ft; and
E = Modulus of Elasticity of the Glaciolacustrine Clay, psf.

The following diagram physically defines some of these variables:



CALCULATIONS:

The following table (Table 1) provides the parameters required for the heave calculation for Cells 15 through 20:

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Table 1: Heave Calculation Input

Cell	Average Length of Cell, L (ft)	Average Width of Cell, B (ft)	Average Depth from Excavation Bottom to Top of Basal Till, H (ft)	Average Excavation Depth, D (ft)
15	490	435	21.7	17.2
16	470	325	22.8	21.2
17	655	325	28.7	15.8
18	645	340	29.1	10.1
19	420	300	27.1	9.7
20	400	375	33.8	13.0

Attachment 2 includes the elevations used to determine some of the values provided above. Based on the physical parameters in figures provided in Reference 3, the ratios and factors presented in the following table (Table 2) were established:

Table 2: Heave Calculation Ratios and Factors

Cell	H/B	B/D	L/B	Heave Factor Center	Heave Factor Edge	Shape Factor Center	Shape Factor Edge
15	0.05	25.3	1.1	0.51	0.35	1	1
16	0.07	15.3	1.4	0.44	0.31	1	1
17	0.09	20.6	2.0	0.48	0.33	1	1
18	0.09	33.7	1.9	0.56	0.44	1	1
19	0.09	30.9	1.4	0.54	0.43	1	1
20	0.09	28.8	1.1	0.53	0.42	1	1

The spreadsheets used for the calculations of the maximum heave along the center line and the edge are provided in Attachment 2.

SUMMARY:

The following table provides a summary of the maximum heave at the center and along the edge for Cells 15 through 20 of RMU-2:

Table 3: Summary of Estimated Heave

Cell	Maximum Heave Along Centerline (inches)	Maximum Heave Along Edge (inches)
15	1.13	0.78
16	1.48	1.04
17	0.89	0.61
18	0.43	0.34
19	0.38	0.30
20	0.67	0.53

The estimated heave for the base is relatively small compared to the depth of the excavation and the average depth from the excavation bottom to the top of the Basal Red Till. This calculation assumes vertical excavation walls, which is the worst case scenario. The anticipated actual heave may be less than the calculated values due to the non-vertical excavation walls of RMU-2. Thus, heave is not expected to have a significant impact on the structural integrity of the excavation base.

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Attachment 1

Reference 3

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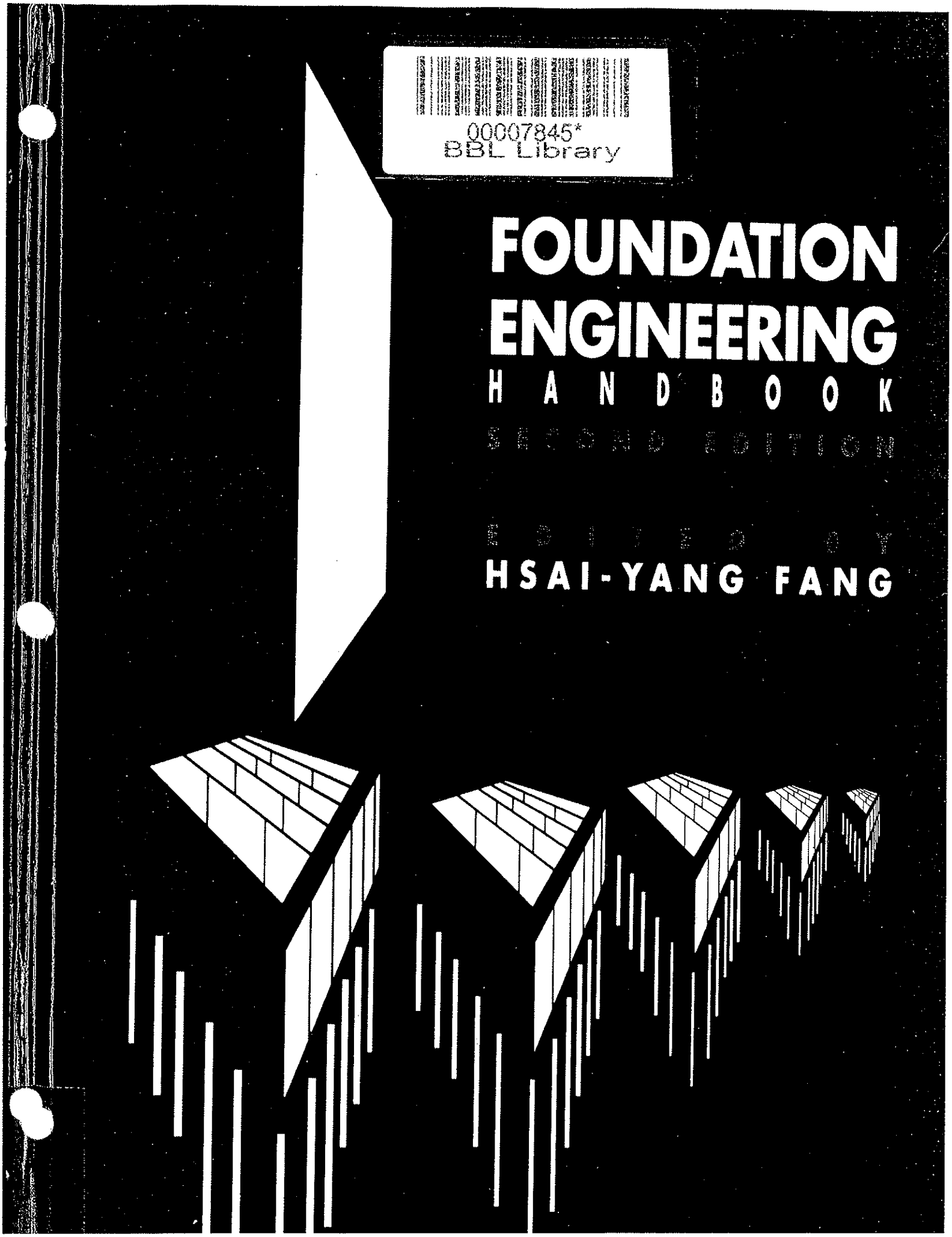

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FOUNDATION ENGINEERING HANDBOOK

Second Edition

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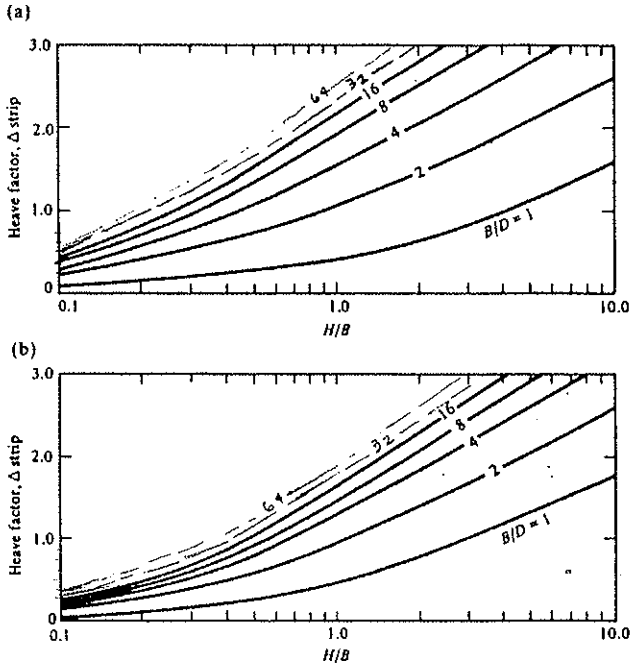

Fig. 5.6 Heave at base of strip excavation in linearly elastic medium of limited thickness. (a) Heave at center line. (b) Heave at edge. (*Based on analysis of Baladi, 1968.*)

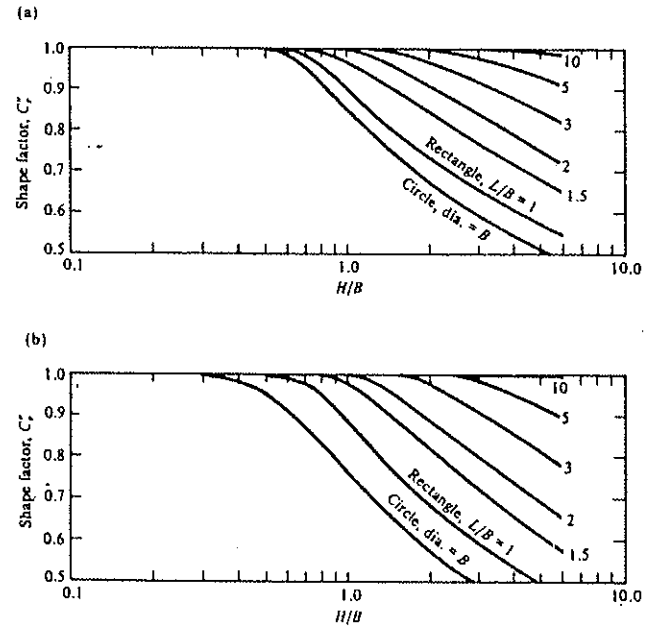

Fig. 5.7 Factors for correcting heave of strip excavation for shape of excavation. (a) Shape factor for heave at center. (b) Shape factor for heave at midpoint of long side. (*Data from Egorov, 1958, as cited by Harr, 1966.*)

from Reference 3

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Attachment 2

Calculations

CWM Chemical Services, LLC
Model City Facility
RMU-2
Appendix C3: Excavation Heave Calculations

Cell	Average Length, L (ft)	Average Width, B (ft)	Average Excavation Depth, D (ft)	Depth to Basal Red Till, H (ft)	H/B	B/D	L/B	Heave Factor Center Line	Heave Factor Edge	Shape Factor Center	Shape Factor Edge	Heave Center (ft)	Heave Center (inches)	Heave Edge (ft)	Heave Edge (inches)
15	490	435	17.2	21.7	0.1	25	1.1	0.51	0.35	1	1	0.09	1.13	0.06	0.78
16	470	325	21.2	22.8	0.1	15	1.4	0.44	0.31	1	1	0.12	1.48	0.09	1.04
17	655	325	15.8	28.7	0.1	21	2.0	0.48	0.33	1	1	0.07	0.89	0.05	0.61
18	645	340	10.1	29.1	0.1	34	1.9	0.56	0.44	1	1	0.04	0.43	0.03	0.34
19	420	300	9.7	27.1	0.1	31	1.4	0.54	0.43	1	1	0.03	0.38	0.03	0.30
20	400	375	13.0	33.8	0.1	29	1.1	0.53	0.42	1	1	0.06	0.67	0.04	0.53

CWM Chemical Services, LLC
Model City Facility
RMU-2
Appendix C3: Excavation Heave Calculations

Cell	Lowest Elevation Excavation Grades[1] (ft)	Average Elevation Existing Grades[2] (ft)	Average Excavation Depth, D (ft)	Basal Till Elevation[3] (ft)	Average Depth to Basal Till[4], H (ft)
15	301.7	318.9	17.2	280.0	21.7
16	300.3	321.5	21.2	277.5	22.8
17	305.5	321.3	15.8	276.8	28.7
18	304.1	314.2	10.1	275.0	29.1
19	304.6	314.3	9.7	277.5	27.1
20	308.3	321.3	13.0	274.5	33.8

Notes:

1. Based on Reference 5.
2. Based on Reference 4.
3. Assumes that the Basal Till is the rigid boundary (Reference 6).
4. Depth is distance between bottom of excavation (i.e., lowest elevation excavation grades) and Basal Till (References 6 and 7).

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Appendix C-4

Hydrostatic Uplift

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Calculation Sheet

Client: CWM Chemical Services, LLC

Project Location: Model City, New York

Project: RMU-2 Design Calculations **Project No.:** B0023725.2009

Subject: Appendix C-4: Hydrostatic Uplift

Prepared By: BMS/RLP **Date:** November 2013

Checked By: BMS **Date:** November 2013

Reviewed By: PHB **Date:** November 2013

OBJECTIVE:

Determine the design subgrade (i.e., bottom of liner system) elevations within the sump and adjacent to the sump in each RMU-2 cell based on anticipated worst-case hydrostatic uplift pressures. Determine the design final grade elevations of the floors (adjacent to the sump) of Fac Pond 5 based on anticipated worst-case hydrostatic uplift pressures. Determine the maximum allowable groundwater elevation to provide required minimum factors of safety during excavation for the fac pond subgrade.

REFERENCES:

1. RMU-2 Permit Drawing No. 4 entitled “Subgrade Grading Plan,” ARCADIS, August 2009 (revised February 2013).

2. Fac Pond 5 Permit Drawing No. 3 entitled “Fac Pond Grading Plan,” ARCADIS, February 2013 (revised November 2013).

3. Figure entitled “Glaciolacustrine Silt/Sand Unit Potentiometric Contour Map May 15, 2001,” prepared by Golder Associates, Inc. (Golder), January 2002 (included as Appendix B-1 to the RMU-2 Engineering Report).

4. Figure entitled “Glaciolacustrine Silt/Sand Unit Potentiometric Surface Contours October 2004,” prepared by Golder, January 2005 (included as Appendix B-2 to the RMU-2 Engineering Report).

5. Figure entitled “Top of Glaciolacustrine Clay Unit Contours,” prepared by Golder, October 25, 2002 (included as Attachment A to this calculation sheet).

6. Figure entitled “Thickness Contours of Glaciolacustrine Clay Unit,” prepared by Golder, October 25, 2002 (included as Attachment B to this calculation sheet).

7. *Engineering Report for CWM Chemical Services, LLC Model City Facility, Residuals Management Unit-1*, Earth Tech.

8. *1993 Hydrogeologic Characterization Update Model City TSDR Facility Model City, New York* prepared by Golder Associates, June 1993.

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ASSUMPTIONS:

1. Hydrostatic uplift pressures are based on the piezometric heads measured in the Glaciolacustrine Silt/Sand unit during May 2001 (Reference 3) and October 2004 (Reference 4). Two sets of data are used because one or the other may represent a more severe groundwater condition, depending on location. In general, these data sets represent the period of greatest piezometric heads since regular recording of sitewide groundwater elevation data began in the early 1980s. The use of these data sets is, therefore, deemed conservative.

2. The unit weight of the in-situ Glaciolacustrine Clay is 125 pcf (Reference 7).

3. Consistent with the RMU-1 hydrostatic uplift calculations, the minimum required factors of safety for the RMU-2 cells are 1.0 for the subgrade (i.e., bottom of liner system) within the sumps and 1.2 for the subgrade adjacent to the sumps (Reference 7).

4. The minimum required factor of safety for Fac Pond 5 is 1.5 for the final grade on the pond floor (adjacent to the sumps).

5. The maximum allowable groundwater elevation is calculated for the fac pond to facilitate construction of the fac pond while preserving the minimum subgrade factors of safety. Similar to the RMU-2 cells (Assumption 3), the minimum subgrade factors of safety are 1.0 for the subgrade within the sump and 1.2 for the subgrade adjacent to the sump. It is noted that the subgrade factors of safety are relevant only at time of construction and that the final grade minimum factor of safety of 1.5 represents the long-term condition.

6. Sump locations for the RMU-2 cells are shown on Reference 1. The sump location for Fac Pond 5 is shown on Reference 2. RMU-2 cell secondary sumps are 3-feet-deep. The fac pond secondary sump is 2-feet-deep.

CALCULATIONS:

1. RMU-2 Cell Lowest Allowable Subgrade Elevations

The lowest allowable elevations for the subgrade of the RMU-2 cells are determined from an equilibrium expression between the upward hydrostatic uplift pressure from the Glaciolacustrine Silt/Sand unit and the downward pressure from the weight of the soil overlying the top of the Glaciolacustrine Silt/Sand unit. The equilibrium expression for these pressures acting on the bottom of the Glaciolacustrine Clay layer is:

$$\gamma_w (H_{GSS} - z_{GSS}) = \frac{\gamma_c (z_{all} - z_{GSS})}{FS}$$

where,

g_w = 62.4 pcf = unit weight of water
H_{GSS} = piezometric head in Glaciolacustrine Silt/Sand unit (References 3 or 4, whichever is greater)
z_{GSS} = top elevation of the Glaciolacustrine Silt/Sand unit (from data provided in References 5 and 6)

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g_c = 125 pcf = unit weight of clay (Reference 7)
z_{all} = allowable elevation (unknown)
FS = minimum required factor of safety (Assumption 3)

At any location, the lowest allowable subgrade elevation is equal to the excavated surface elevation required to resist the hydrostatic uplift pressure with the minimum required factors of safety discussed in Assumption 3.

The following table (Table 1) presents the interpolated top elevation and thickness of the Glaciolacustrine Clay layer at each RMU-2 cell sump location, which is used to determine the top elevation of the Glaciolacustrine Silt/Sand layer. Also presented in the table are the worst case (i.e., greater of the two groundwater data sets) piezometric heads in the Glaciolacustrine Silt/Sand layer at the same locations.

Table 1 – Subsurface Conditions at RMU-2 Cell Sump Locations

Location	GC Top El. (Ref. 5) [ft]	GC Thickness (Ref. 6) [ft]	Calculated GSS Top El., z_{GSS} [ft]	GSS Piezometric Head, H_{GSS} (Ref. 3 or 4) [ft]
Cell 15	293	11	282	315.1
Cell 16	295	17	278	315.3
Cell 17	309	20	289	316.1
Cell 18	307	21	286	316.2
Cell 19	306	19	287	316.3
Cell 20	305	11	294	316.6

Notes:
1. GC=Glaciolacustrine Clay.
2. GSS=Glaciolacustrine Silt/Sand.

The following table (Table 2) presents the lowest allowable subgrade elevations for each RMU-2 cell, both within and adjacent to the cell sump, based on the subsurface conditions determined above.

Table 2 – Lowest Allowable RMU-2 Cell Subgrade Elevations

Location	Lowest Allowable Subgrade Elevation [ft]	
	Within Sump (FS=1.0)	Adjacent to Sump (FS=1.2)
Cell 15	298.5	301.8
Cell 16	296.6	300.3
Cell 17	302.5	305.2
Cell 18	301.1	304.1
Cell 19	301.6	304.5
Cell 20	305.3	307.5

A spreadsheet used in the determination of lowest allowable subgrade elevations is provided as Attachment C to this calculation.

2. RMU-2 Cell Design Subgrade Elevations

Design subgrade elevations for each RMU-2 cell are determined based on the lowest allowable subgrade elevations calculated above and with consideration of the geometry of the cell. For instance, the

Calculation Sheet

secondary sump depth within each RMU-2 cell is assumed to be 3 feet. Therefore, the two design subgrade elevations (within and adjacent to the sump) for a given cell must be 3 feet different in elevation. The design subgrade elevations are established such that they are at or above the lowest allowable values and also satisfy the geometry requirements. The following table (Table 3) summarizes the design subgrade elevations for each RMU-2 cell.

Table 3 – Design RMU-2 Cell Subgrade Elevations

Location	Design Subgrade Elevation [ft]	
	Within Sump	Adjacent to Sump
Cell 15	298.8	301.8
Cell 16	297.3	300.3
Cell 17	302.5	305.5
Cell 18	301.1	304.1
Cell 19	301.6	304.6
Cell 20	305.3	308.3

The cell low points as depicted on Reference 1 have been set equal to the design subgrade elevations presented in the last column in Table 3.

3. Fac Pond Lowest Allowable Final Grade Elevation

The following table (Table 4) presents the interpolated top elevation and thickness of the Glaciolacustrine Clay layer at the fac pond sump location, which is used to determine the top elevation of the Glaciolacustrine Silt/Sand layer. Also presented in the table are the worst case (i.e., greater of the two groundwater data sets) piezometric heads in the Glaciolacustrine Silt/Sand layer at the same locations.

Table 4 – Subsurface Conditions at Fac Pond Sump Location

Location	GC Top El. (Ref. 5) [ft]	GC Thickness (Ref. 6) [ft]	Calculated GSS Top El., z_{GSS} [ft]	GSS Piezometric Head, H_{GSS} (Ref. 3 or 4) [ft]
Fac Pond 5	302	13	289	313.0

Using the same equilibrium expression as above, the following table (Table 5) presents the lowest allowable final grade elevations for the fac pond floor based on the subsurface conditions determined above. Because only one condition is used to evaluate the uplift of the fac pond floor, the design final grade elevation for the fac pond is equal to the lowest allowable elevation (i.e., it is not necessary to consider multiple scenarios and select the controlling condition).

Table 5 – Design Fac Pond Final Grade Elevation

Location	Design Final Grade Elevation [ft] (FS=1.5)
Fac Pond 5	307.0

A spreadsheet used in the determination of the design final grade elevation is provided as Attachment D to this calculation. The fac pond low point as depicted on Reference 2 has been set equal to the design final grade elevations presented in Table 5.

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4. Maximum Allowable Glaciolacustrine Silt/Sand Unit Piezometric Head for Excavation of Fac Pond Subgrade

The design subgrade elevation for Fac Pond 5 can be calculated from the design final grade by subtracting the liner system thickness (4 feet) and, for locations within the sump, the sump depth (2 feet). The following table (Table 6) presents the design subgrade elevations within and adjacent to the sumps.

Table 6 – Design Fac Pond Subgrade Elevation

Location	Design Final Grade El. [ft]	Design Subgrade Elevation [ft]	
		Within Sump	Adjacent to Sump
Fac Pond 5	307.0	301.0	303.0

The following table (Table 7) presents the maximum allowable piezometric head in the Glaciolacustrine Silt/Sand unit at the sump location based on the design subgrade elevations presented above, the force balance equation presented earlier in this calculation sheet, and the minimum required factors of safety (Assumption 5). Also presented in the table are the controlling piezometric heads that satisfy both factor of safety requirements (within and adjacent to sump).

Table 7 – Maximum Allowable GSS Piezometric Head for Excavation of Fac Pond Subgrade

Location	Maximum Allowable GSS Piezometric Head [ft]		
	Within Sump (FS=1.0)	Adjacent to Sump (FS=1.2)	Controlling (Lowest) Piezometric Head
Fac Pond 5	313.0	312.4	312.4

A spreadsheet used in the determination of the maximum allowable Glaciolacustrine Silt/Sand unit heads is provided as Attachment E to this calculation.

SUMMARY:

The subgrade elevations for the RMU-2 cells have been set at or above the lowest allowable elevations calculated for worst-case hydrostatic uplift conditions. The final grade elevation for Fac Pond 5 has been set at the lowest allowable elevations calculated for worst-case hydrostatic uplift conditions. The maximum allowable groundwater elevation for excavation of the fac pond subgrade has been determined based on the need to achieve the specified minimum factors of safety during subgrade construction.

Because of the relatively low factors of safety within the sumps of the RMU-2 cells and the fac pond, monitoring of piezometers near sump locations and/or conducting test pit excavations at sump locations is recommended prior to construction to evaluate whether modifications to the proposed elevations or construction approach are required based on current piezometric data.

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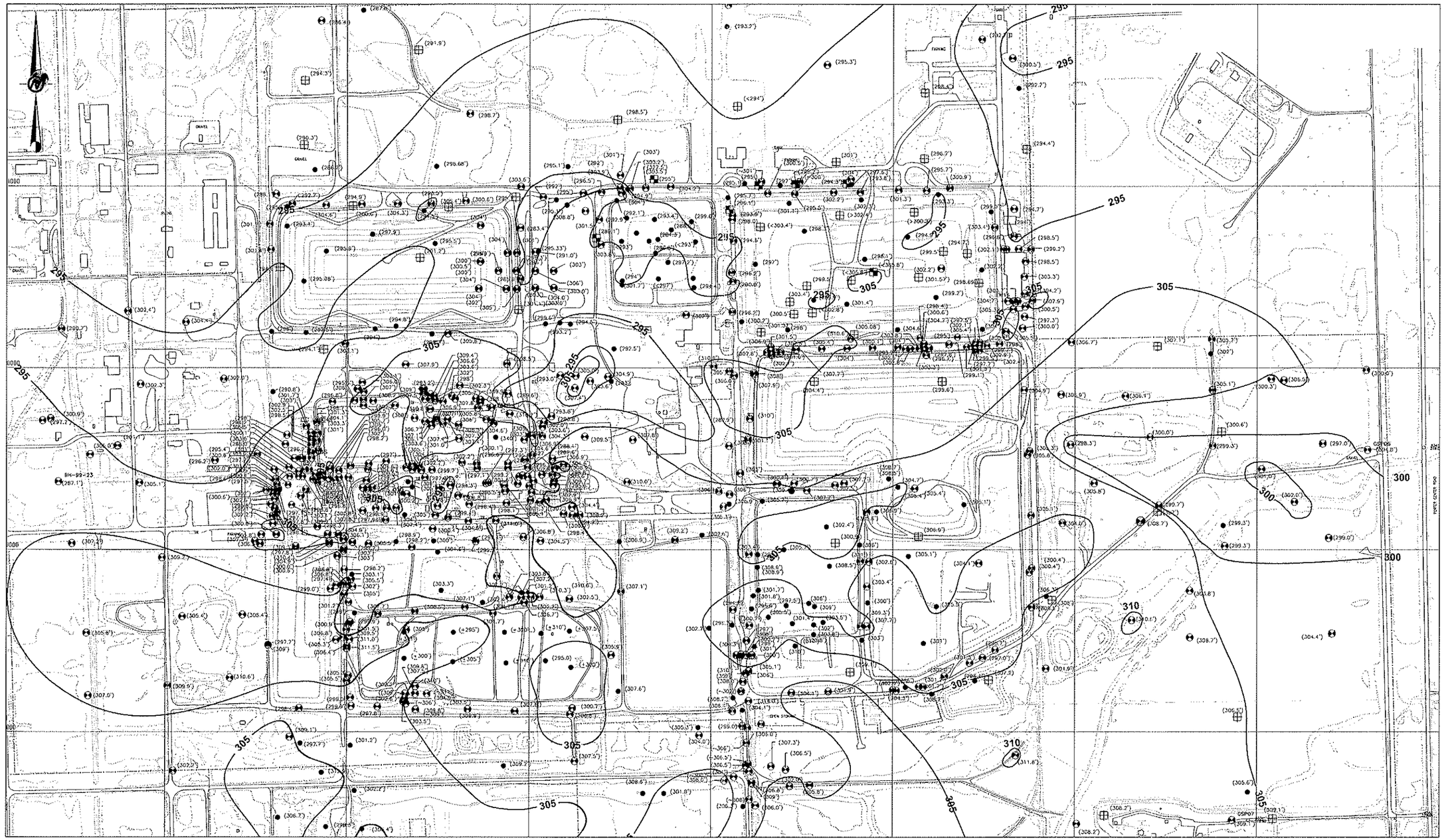
Attachment A

Reference 5



LEGEND

- 280 — ELEVATION CONTOUR IN FEET SITE DATUM
- BW01D (281.2) — BORING/WELL DESIGNATION; TOP OF GLACIOLACUSTRINE CLAY UNIT IN FEET SITE DATUM
- BORINGS BY GOLDER ASSOCIATES
- BORINGS BY OTHERS
- MONITORING TRENCHES BY OTHERS
- TEST PIT BY OTHERS

NOTES

1.) CONTOUR INTERPRETATION IS BASED ON BORING DATA FROM THE 1985 HYDROGEOLOGIC CHARACTERIZATION AND SUBSEQUENT STUDIES AT THE MODEL CITY FACILITY CONDUCTED BY GOLDER ASSOCIATES AND OTHERS.

2.) DATA CONCERNING THE VARIOUS STRATAS HAVE BEEN OBTAINED FROM THE BOREHOLE LOCATIONS ONLY. CONSISTENT WITH GLACIAL ENVIRONMENTS, ABRUPT CHANGES IN SOIL STRATIGRAPHY HAVE BEEN OBSERVED BETWEEN BOREHOLES OVER SHORT DISTANCES. CONSEQUENTLY, ALTHOUGH CONTOUR INTERPRETATION HAVE BEEN INFERRED FROM THE BOREHOLE DATA, THE ACTUAL CONTOURS MAY VARY FROM THAT SHOWN.

3.) DATA WITH A LINE THROUGH THE VALUE ARE NOT USED IN THE INTERPRETATION DUE TO UNCERTAINTY OF DEPTH PICKS OR CONFLICTING LOCAL STRATIGRAPHY INFORMATION.

4.) AN INTERVAL OF FIVE FEET WAS USED TO CONTOUR THE TOP OF GLACIOLACUSTRINE CLAY IN THE EASTERN AREA (EAST OF RMW-1), WHILE A TEN FOOT INTERVAL WAS USED FOR THE REST OF THE SITE.

REFERENCES

1.) BASE MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED MAY 31, 2001 BY AIR SURVEY CORP., DULLES, VIRGINIA.

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	PM

PROJECT

CWM CHEMICAL SERVICES, L.L.C.
MODEL CITY, NEW YORK

TITLE

TOP OF GLACIOLACUSTRINE CLAY UNIT CONTOURS

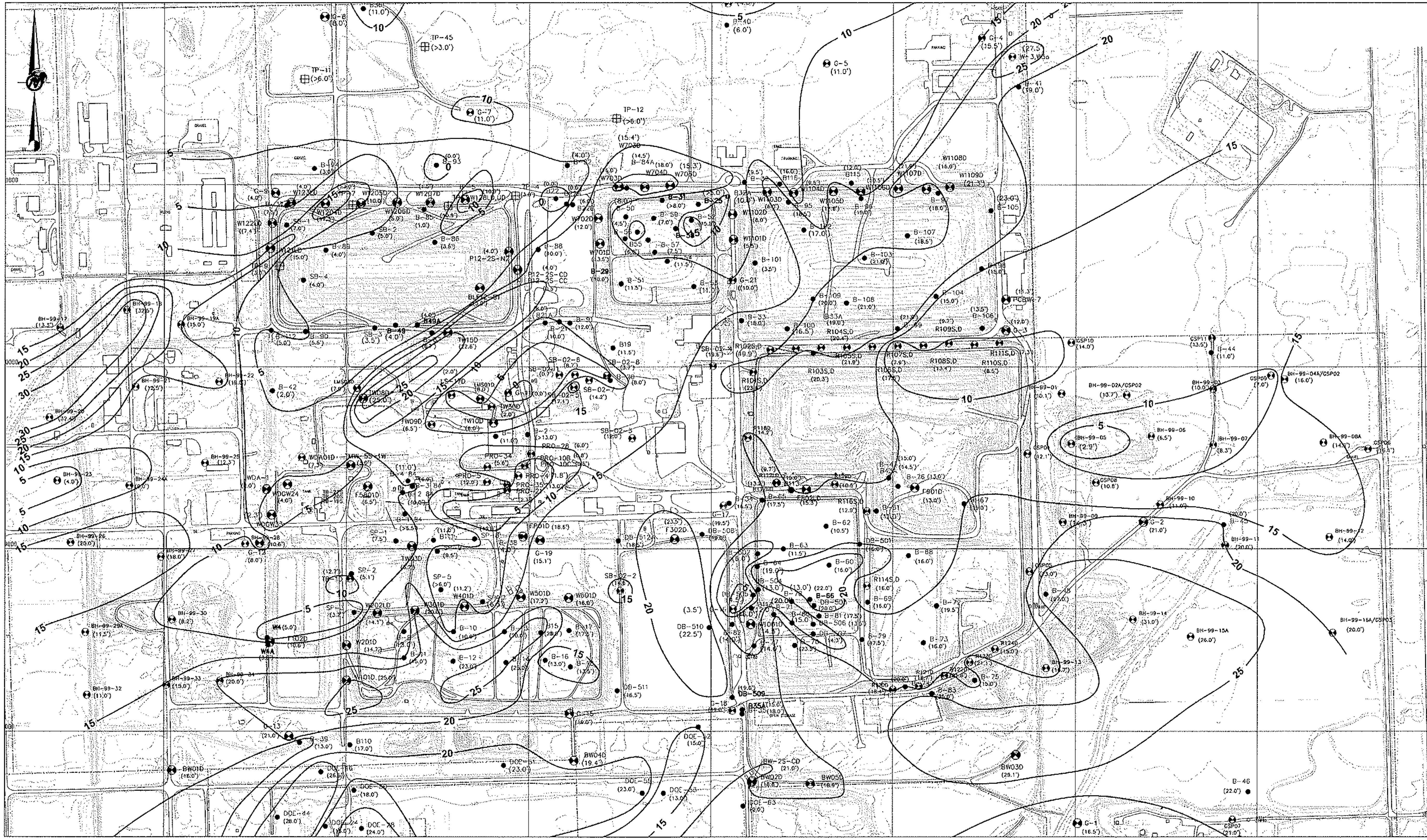
Golder Associates
Buffalo USA

PROJECT No.	013-9309	FILE No.	0139309C153		
DESIGN	JPR	01/07/02	SCALE	AS SHOWN	REV. 0
CADD	AM/JPR	10/03/02			
CHECK	JPR	5/12/03	FIGURE 1		
REVIEW	DCW	05/12/03			

ARCADIS

Attachment B

Reference 6



200 0 200 400
SCALE FEET

LEGEND

—— 10 ——	THICKNESS CONTOUR IN FEET
309.65	GROUND WATER ELEVATIONS
BW01D	BORING/WELL DESIGNATION
(16.0')	THICKNESS OF GLACIOLACUSTRINE CLAY IN FEET
⊕	BORINGS BY GOLDER ASSOCIATES
●	BORINGS BY OTHERS

NOTES

1.) CONTOUR INTERPRETATION IS BASED ON BORING DATA FROM THE 1985 HYDROGEOLOGIC CHARACTERIZATION AND SUBSEQUENT STUDIES AT THE MODEL CITY FACILITY CONDUCTED BY GOLDER ASSOCIATES AND OTHERS.

2.) DATA CONCERNING THE VARIOUS STRATAS HAVE BEEN OBTAINED FROM THE BOREHOLE LOCATIONS ONLY. CONSISTENT WITH GLACIAL ENVIRONMENTS, ABRUPT CHANGES IN SOIL STRATIGRAPHY HAVE BEEN OBSERVED BETWEEN BOREHOLES OVER SHORT DISTANCES. CONSEQUENTLY, ALTHOUGH CONTOUR INTERPRETATION HAVE BEEN INFERRED FROM THE BOREHOLE DATA, THE ACTUAL CONTOURS MAY VARY FROM THAT SHOWN.

3. DATA WITH A LINE THROUGH THE VALUE ARE NOT USED IN THE INTERPRETATION DUE TO UNCERTAINTY OF DEPTH PICKS OR CONFLICTING LOCAL STRATIGRAPHY INFORMATION.

REFERENCES

1.) BASE MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED MAY 31, 2001 BY AIR SURVEY CORP., DULLES, VIRGINIA.

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

CWM CHEMICAL SERVICES, L.L.C.
MODEL CITY, NEW YORK

TITLE

THICKNESS CONTOURS OF GLACIOLACUSTRINE CLAY UNIT

Golder Associates
Buffalo USA

PROJECT No.		013-9309	FILE No.	0139309C152
DESIGN	JPR	01/07/02	SCALE AS SHOWN	REV. 0
CADD	AM/JPR	05/12/03		
CHECK	JPR	05/12/03	FIGURE 2	
REVIEW	DCW	05/12/03		

ARCADIS

Attachment C

RMU-2 Cell Subgrade
Hydrostatic Uplift
Calculations

CWM Chemical Services, LLC
Model City Facility
RMU-2
Lowest Allowable Elevations for Cell Sump Subgrade Based on Hydrostatic Uplift

Location	Allowable Sump Subgrade El. [ft][1]	May 2001 Piezometric Head [ft][2]	October 2004 Piezometric Head [ft][3]	Controlling Piezometric Head [ft]	Top El. of Glaciolacustrine Silt/Sand Unit [ft][4]	Soil Pressure at Top of Silt/Sand [psf][5]	Hydrostatic Uplift Pressure at Sump Subgrade [psf][6]	Uplift Factor of Safety
Cell 15	298.5	315.1	314.6	315.1	282.0	2063	2065	1.00
Cell 16	296.6	315.3	314.7	315.3	278.0	2325	2328	1.00
Cell 17	302.5	316.1	315.5	316.1	289.0	1688	1691	1.00
Cell 18	301.1	316.2	315.9	316.2	286.0	1888	1884	1.00
Cell 19	301.6	316.3	316.3	316.3	287.0	1825	1828	1.00
Cell 20	305.3	316.6	315.6	316.6	294.0	1413	1410	1.00

NOTES:

1. Elevation represents lowest possible elevation for subgrade within sump. The allowable elevation is calculated based on the required factor of safety.
2. Glaciolacustrine Silt/Sand unit piezometric head for proposed sump locations as measured during the May 2001 monitoring event (Reference 4).
3. Glaciolacustrine Silt/Sand unit piezometric head for proposed sump locations as measured during the October 2004 monitoring event (Reference 5).
4. Based on interpolation of Golder-generated contours representing top and thickness of Glaciolacustrine Clay (References 6 and 7).
5. Equal to the thickness of Glaciolacustrine Clay remaining in place beneath subgrade multiplied by the unit weight of clay (125 pcf).
6. Equal to the piezometric head above the top of the Glaciolacustrine Silt/Sand unit multiplied by the unit weight of water (62.4 pcf).

CWM Chemical Services, LLC

Model City Facility

RMU-2

Lowest Allowable Elevations for Cell Floor Subgrade Based on Hydrostatic Uplift

Location	Allowable Floor Subgrade El. [ft][1]	May 2001 Piezometric Head [ft][2]	October 2004 Piezometric Head [ft][3]	Controlling Piezometric Head [ft]	Top El. of Glaciolacustrine Silt/Sand Unit [ft][4]	Soil Pressure at Top of Silt/Sand [psf][5]	Hydrostatic Uplift Pressure at Cell Floor Subgrade [psf][6]	Uplift Factor of Safety
Cell 15	301.8	315.1	314.6	315.1	282.0	2475	2065	1.20
Cell 16	300.3	315.3	314.7	315.3	278.0	2788	2328	1.20
Cell 17	305.2	316.1	315.5	316.1	289.0	2025	1691	1.20
Cell 18	304.1	316.2	315.9	316.2	286.0	2263	1884	1.20
Cell 19	304.5	316.3	316.3	316.3	287.0	2188	1828	1.20
Cell 20	307.5	316.6	315.6	316.6	294.0	1688	1410	1.20

NOTES:

1. Elevation represents lowest possible elevation for floor subgrade. The allowable cell floor subgrade is calculated based on the required factor of safety.
2. Glaciolacustrine Silt/Sand unit piezometric head for proposed sump locations as measured during the May 2001 monitoring event (Reference 4).
3. Glaciolacustrine Silt/Sand unit piezometric head for proposed sump locations as measured during the October 2004 monitoring event (Reference 5).
4. Based on interpolation of Golder-generated contours representing top and thickness of Glaciolacustrine Clay (References 6 and 7).
5. Equal to the thickness of Glaciolacustrine Clay remaining in place beneath subgrade multiplied by the unit weight of clay (125 pcf).
6. Equal to the piezometric head above the top of the Glaciolacustrine Silt/Sand unit multiplied by the unit weight of water (62.4 pcf).

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Attachment D

Fac Pond Final Grade
Hydrostatic Uplift
Calculations

CWM Chemical Services, LLC

Model City Facility

RMU-2

Lowest Allowable Elevation for Pond Floor Final Grade Based on Hydrostatic Uplift

Location	Lowest Allowable (Design) Final Grade El. [ft][1]	May 2001 Piezometric Head [ft][2]	October 2004 Piezometric Head [ft][3]	Controlling Piezometric Head [ft]	Top El. of Glaciolacustrine Silt/Sand Unit [ft][4]	Soil Pressure at Top of Silt/Sand [psf][5]	Hydrostatic Uplift Pressure at Fac Pond Floor Final Grade [psf][6]	Uplift Factor of Safety
Fac. Pond 5	307.0	313.0	310.5	313.0	289.0	2250	1498	1.50

.

NOTES:

1. Elevation represents lowest possible final grade floor elevation. The allowable elevation is calculated based on the required factor of safety and accounts for the weight of the liner system.
2. Glaciolacustrine Silt/Sand unit piezometric head for proposed sump locations as measured during the May 2001 monitoring event (Reference 4).
3. Glaciolacustrine Silt/Sand unit piezometric head for proposed sump locations as measured during the October 2004 monitoring event (Reference 5).
4. Based on interpolation of Golder-generated contours representing top and thickness of Glaciolacustrine Clay (References 6 and 7).
5. Equal to the thickness of Glaciolacustrine Clay remaining in place beneath final grade multiplied by the unit weight of clay (125 pcf).
6. Equal to the piezometric head above the top of the Glaciolacustrine Silt/Sand unit multiplied by the unit weight of water (62.4 pcf).

ARCADIS

Attachment E

Maximum Allowable GSS Piezometric Heads for Excavation of Fac Pond Subgrade

CWM Chemical Services, LLC
Model City Facility
RMU-2
Maximum Allowable Glaciolacustrine Silt/Sand Piezometric Heads for Excavation of Fac Pond Sump Subgrade

Location	Design Sump Subgrade El. [ft][1]	Max. Allowable GSS Piezometric Head [ft][2]	Top El. of Glaciolacustrine Silt/Sand Unit [ft][3]	Soil Pressure at Top of Silt/Sand [psf][4]	Hydrostatic Uplift Pressure at Fac Pond Sump Subgrade [psf][5]	Uplift Factor of Safety
Fac. Pond 5	301.0	313.0	289.0	1500	1500	1.00

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NOTES:

1. Elevation represents design subgrade elevation for sump. The design subgrade elevation equals the design final grade elevation minus the liner system thickness (4 feet) minus the sump depth (2 feet).
2. Glaciolacustrine Silt/Sand unit piezometric head is the maximum allowable value that results in the minimum required factor of safety.
3. Based on interpolation of Golder-generated contours representing top and thickness of Glaciolacustrine Clay (References 6 and 7).
4. Equal to the thickness of Glaciolacustrine Clay remaining in place beneath subgrade multiplied by the unit weight of clay (125 pcf).
5. Equal to the piezometric head above the top of the Glaciolacustrine Silt/Sand unit multiplied by the unit weight of water (62.4 pcf).

CWM Chemical Services, LLC
Model City Facility
RMU-2
Maximum Allowable Glaciolacustrine Silt/Sand Piezometric Heads for Excavation of Fac Pond Floor Subgrade

Location	Design Floor Subgrade El. [ft][1]	Max. Allowable GSS Piezometric Head [ft][2]	Top El. of Glaciolacustrine Silt/Sand Unit [ft][3]	Soil Pressure at Top of Silt/Sand [psf][4]	Hydrostatic Uplift Pressure at Fac Pond Floor Subgrade [psf][5]	Uplift Factor of Safety
Fac. Pond 5	303.0	312.4	289.0	1750	1460	1.20

.

NOTES:

1. Elevation represents design subgrade elevation for pond floor. The design subgrade elevation equals the design final grade elevation minus the liner system thickness (4 feet).
2. Glaciolacustrine Silt/Sand unit piezometric head is the maximum allowable value that results in the minimum required factor of safety.
3. Based on interpolation of Golder-generated contours representing top and thickness of Glaciolacustrine Clay (References 6 and 7).
4. Equal to the thickness of Glaciolacustrine Clay remaining in place beneath subgrade multiplied by the unit weight of clay (125 pcf).
5. Equal to the piezometric head above the top of the Glaciolacustrine Silt/Sand unit multiplied by the unit weight of water (62.4 pcf).

ARCADIS

Appendix C-5

RMU-2 Stability Analysis – Final Buildout

APPENDIX C-5

RMU-2 STABILITY ANALYSIS
FINAL BUILD OUT

PREPARED FOR

CWM

PREPARED BY

P.J. Carey & Associates, PC

September 14 2009
Revised 2-2013

TABLE OF CONTENTS

Figures

Attachments

1 INTRODUCTION

1.1 SCOPE OF APPENDIX C-5

This appendix addresses the stability of final configuration of RMU-2 under static and seismic conditions assuming that the waste materials were placed to final grade and final cover has been applied. It also addresses the condition of the stability of the excavation for the RMU-2 cells adjacent to RMU-1. Conditions relating to the rate of filling fill progression and conditions at the edge of operational cells are addressed in other appendices. The perimeter berm surrounding RMU-2 contains geo-reinforcing. In this appendix the design of the reinforcement and MSE wall face is not addressed. The evaluation and design issues relating to the MSE portion of the perimeter berm are addressed in Appendix C-8. Appendix C-9 addresses the issue of operational fill rates and progression.

The material properties for the subsurface soils, structural fill, liner materials, final cover and waste materials are those presented in the Summary of Shear Strength Properties for Stability Analysis presented in Appendix A-1 and included in this appendix for convenience. Properties specifically relating to the dynamic response of the subgrade, liner and waste such as shear wave velocity, damping behavior, etc. are included in this appendix. It should be noted that the property assignments assume the GC materials consist of the soft to very soft GC encountered in only a few of the test borings in the vicinity of RMU-2. This conservative assumption was made to reflect the distance between borings for some portions of the RMU-2 area. In addition, the presence of the "middle silt" or other non-cohesive alluvium that is present in non-contiguous zones within the GC was also ignored as the extent of such deposits is not well defined. Both of these assumptions represent conservative assumptions from a stability perspective.

Discussion of the assignment of the physical properties of the materials used in the analyses is also presented for each general type of analysis.

This appendix is subdivided into two main parts, the slope stability analysis and the seismic deformation analysis.

2 STABILTY ANALYSIS

2.1 GENERAL

This section addresses the

- selection of cross sections for analysis,
- assignment of material properties
- method of limit equilibrium analysis
    - static
    - pseudo static determination of yield acceleration
- assignment of piezometric heads
- analysis results

2.2 SELECTION OF CROSS SECTIONS FOR ANALYSIS

2.2.1 SURFACE AND SUBSURFACE GEOMETRY

Arcadis supplied PJCA with three dimensional surfaces depicting the limits and grading of the perimeter berm, final grading, baseliner grading and grading close to the exterior of the perimeter berm. These surfaces were imported in a CAD drawing of the CWM site that contained the locations of test borings probes and wells that have been drilled at the CWM site along with the existing topography which included the surrounding RMU's and other facilities. Based on the test borings, wells and soundings that had been performed within the vicinity of RMU-2, PJCA created three dimensional surfaces of the top of , in ascending order,

- Bedrock
- Lower Glacial Till (LGT)
- Glacial Sand and Silt (GSS)
- Glaciolacustrine Clay (GC), both lightly overconsolidated and overconsolidated crust
- Upper Glacial Till (UGT)

The transitional materials (GC transition) were included in the UGT layer for the purpose of stability analysis.

In this fashion a three dimensional model of the entire RMU-2 facility from top of final cover to bedrock was generated, allowing cross sections to be cut at any location with depictions of each surface of

interest. Along each of the sections the nearby boring logs were reviewed to allow the thickness of the overconsolidated GC crust to be determined. The thickness was added to the sections manually.

2.2.2 SELECTION OF SECTIONS FOR ANALYSIS

2.2.2.1 Final Grading Configuration Analyses

Using the CAD program Terramodel, version 10.61, a horizontal alignment from which to reference cross sections was generated at the landfill side edge of the road atop the MSE berm. Cross Sections were generated at 50 foot centers around the perimeter road, a total of 6450 ft ± in length. Each cross section depicted the various layers discussed in Section 2.2.1. The cross sections were visually inspected and those sections that represented areas where the waste height was a maximum, the baseliner was the deepest, the overall GC layer was thickest and most proximate to the ground surface, and the MSE wall was highest we selected for further analysis. In all, a total of 6 cross sections were selected. The locations of the selected cross sections are shown in Figure 1. The beginning or right offset and section station (Sta 00+00) are labeled on each of the cross sections. Right offsets are positive and left offsets are negative. The offsets are consistent with the X axis in the stability analysis figures based on the addition noted in the figures. The addition was made to the offset to avoid negative numbers in the analysis. For example, if the X axis indicates the Offset +1000 then a right offset of 200 ft is equal to the X axis value of 1200 ft and a left offset of 800 ft is equal to an X axis value of 200 ft.

2.2.2.2 Excavation Analysis

A single cross section was selected to represent worst case conditions for the excavation of the RMU-2 berm and baseliner system adjacent to the west boundary of RMU-1. This section, EXC-1, is shown in Figure 1. The chosen section has the highest waste surface in RMU1 proximate to the excavation and the deepest baseliner excavation. At this location the baseliner extends down to the GC so no additional excavation for the cut off trench is included.

2.3 METHOD OF ANALYSIS

The analysis of all sections reported in this appendix was performed using Slope/W as part of the GEOStudio 2012 software package Version 8.0.10.605 under license from GEO-SLOPE International Ltd. This software allows flexibility in the description of shear strength under both drained and undrained conditions and a significant number of analytical methods to be used. Addins were utilized to allow the use of the normalized φ' and SHANSEP models for which parameters are described in Appendix A-1. The software also allows the use of anisotropic modifiers, which were applied to soils as described in Appendix A-1 and re-iterated in 2.3.1

All analyses presented in this report utilized the Morgenstern - Price with half sine side forces. This method places the slide mass in both force and moment equilibrium when obtaining the safety factor. The analyses, with the exception of pseudo-static analyses to determine yield acceleration, were performed allowing the software to optimize the shape of the failure surface to obtain the minimum factor of safety. Selection of this option allows the failure surface to conform to the section conditions as opposed to the rigid conformance to a circular or straight line shape block failure. Both block type and circular type failure searches were utilized as the initial search method from which software optimized automatically in the individual analysis.

For pseudo-static analyses, the failure surface possessing the minimum safety factor with no acceleration applied, using the same soil properties that were to be used for the pseudo-static analysis was entered as a fully defined failure surface. This was accomplished by copying the mid points of the slices from the static analysis into the pseudo-static analysis. No optimization was used for pseudo-static analyses.

The search method, limits of search, and type of search are all documented on the presented stability analysis figures and the text output files in Attachment 1

In addition, search zones were further focused into the areas of weaker soils by use of deflection surfaces. The assignment of a deflection surface to the GSS or LGT for analyses including subgrade failures prevents surfaces from running into these stronger layers which would have higher factors of safety and instead deflects the surface along the upper boundary of the deflection surface. In this fashion the number of trial surfaces within the weaker zone is increased. In the case of RMU-2, the difference between the strength of the GSS and the overlying GC is significant resulting in all critical failure surfaces staying above the GSS. This same technique was utilized to analyze baseliner only failures by assigning materials below the baseliner as deflection surfaces.

Directional modifier functions (Anisotropic Strength) have been utilized for the GC soils to allow the strength of the soils to be defined for steeply oriented failures in general and have the strength reduced as a function of the angle of the failure plane relative to the horizontal. The use of these functions allows the lower shear strength associated with near horizontal failures in soft clays to be included in the analysis. The software applies the reduction factor defined based on the orientation of the bottom of the slice.

Analyses were performed to determine the factor of safety and yield accelerations for potential failures passing through the waste and into subgrade, passing through waste and along the baseliner system, and failures passing through waste, liner and the perimeter berm. All conditions considered represent final configuration of the landfill. Potential failures involving only the perimeter berm are addressed in Appendix C-8.

2.3.1 MATERIAL ASSIGNMENTS BY ANALYSIS TYPE

2.3.1.1 Long Term Drained Conditions

Analyses of this type were performed to determine the long term stability of RMU-2 under static conditions after consolidation of the GC has completed. This is the condition that exists for all but the initial period following filling of a cell or during seismic events. Effective stress parameters are applied to all materials. A listing of the material assignments for these conditions is provided in Table 2-1 at the end of this section. The rationale for choosing these parameters is provided in Appendix A-1.

Effective stress in the analysis was computed including the long term piezometric surface reported by Golder in 2004. The piezometric heads were applied to all materials except the baseliner, side slope liner and waste, which are isolated from the underlying groundwater system by the membrane in the secondary membrane.

Table2.1: Material Properties Used for Drained Long Term Conditions

Material	Total Unit Weight (pcf)	c' (psf)	ϕ' (deg)	Shear Function (if used)	Directional Modifier (if applied)	Section in Appendix A-1
Waste	111	0	30			5.1
Baseliner	120			Baseliner (Shear Normal Function)		5.2
Side Slope Liner	115	0	13			5.3
Compacted Clay Liner (CCL)	120	1000	10			
Compacted Structural Fill	130	195	28.7			4.3.1
UGT	125	150	31			4.2
OGC	125	100	30			4.1.2
GC	118			Normalized Phi $q = n' \cdot Tan28.77° \cdot \frac{100kPa}{n'}^{1-0.853}$	"clay ellipse static shear (0.706 on horizontal)	4.1.2
GSS				Deflection Surface		
LGT				Deflection Surface		

Table 2.2: Material Properties Partially Drained or Consolidated Undrained (where different from Long Term Drained)

Material	Total Unit Weight (pcf)	c' (psf)	ϕ' (deg)	Shear Function (if used)	Directional Modifier (if applied)	Section in Appendix A-1
Compacted Structural Fill (cohesive)	130	363	26.3			4.3.1
OGC	125			SHANSEP S=0.34, m = 0.7 max past press. = 8000 psf	"clay ellipse static shear (0.706 on horizontal)	4.1.2
GC	118			SHANSEP S=0.34, m = 0.7 max past press. = 5000 psf	"clay ellipse static shear (0.706 on horizontal)	4.1.2

2.3.1.2 Determination of Critical Surface for Pseudo-Static and Yield Acceleration Analyses

These types of analyses were performed to facilitate the prediction of performance of RMU-2 under seismic conditions. The application of seismic loads occurs during a relatively short period (seconds or minutes) and the performance of the GC and OCG materials is best described by and undrained strength. The compacted structural fill, if clayey in nature will also respond in a fashion best described by the undrained strength. The remaining materials are best described by their effective stress parameters.

The strength of the GC materials, as described in Appendix A-1, have undrained strengths that are a function of the stress to which they have been consolidated, their maximum past pressure, the amount of shearing stress present during consolidation and the direction in which they are being sheared. Each of these factors has been incorporated in the analysis under the seismic conditions using the SHANSEP formulation with a direction modifier function that reflects the significant static shear present under the consolidated undrained state once the fill has been placed.

The compacted structural fill was assigned an strength envelope based on it the undrained envelope from the CIU triaxial compression tests on the Sully materials (R based -envelope). The material assignments that were different for these types of analyses relative to the long term drained parameters identified in Table 2-1 are presented in Table 2-2.

The strength assignments assumed the permanent deflections during the seismic event would be limited and there was no need to assign residual or significantly degraded strengths to the baseliner or other materials. See Section 4.1.4 of Appendix A-1 for a discussion of the shear strength assignment for the GC materials.

Effective stress in the analysis was computed including the long term piezometric surface reported by Golder in 2004. The piezometric heads were applied to all materials except the baseliner, side slope liner and waste, which are isolated from the underlying groundwater system by the membrane in the secondary membrane.

2.3.1.3 Excavation

The excavation analysis was performed using Long Term Drained parameters and the long term water table. The act of excavation results in overconsolidated soils for which the critical mode of failure is drained. In the worst case presented, the waste burden in RMU-1 have been in place for years and are fully consolidated. Given the resulting high factor of safety no reduction in shear strength for progressive failure considerations was needed. The strength parameters used are those presented in Table 2-1.

2.3.2 YIELD ACCELERATION DETERMINATION

The yield acceleration (k_y), defined as the horizontal acceleration that results in a factor of safety of unity for the potential failure surface having been found to have the lowest factor of safety under static conditions, was determined for each of cross sections analyzed for both failures passing through subgrade and those confined to the liner system and above. The surface having the minimum factor of safety was identified by performing a static analysis assigning consolidated undrained – seismic shear strengths to the

GC materials. Once the failure surface was found, it was imported into a second analysis using the same strength parameters and a non-optimized sensitivity analysis against the horizontal acceleration was performed using the imported failure surface only. The results of the sensitivity to horizontal acceleration were examined and the acceleration resulting in a factor of safety of 1.00 was identified and reported as k_y.

2.3.3 PIEZOMETRIC HEAD ASSIGNMENTS

Long term ground water levels were assigned to the analyzed cross sections using the October 2004 sand and silt groundwater elevations reported by Golder. It should be noted that short term fluctuations in the ground water levels in the sand and silt do not result in changes in shear strength in the critical strength layers at the site, i.e. the GC. This piezometric surface was assigned to all materials below the secondary liner membrane (CCL and below). Piezometric levels are apparent on the stability figures presented in this appendix.

2.4 RESULTS

The results of the stability analyses are presented in Figures 3 through 36. These figures are graphical representations of the stability analyses direct from the Geostudio Software. The figures depict the following:

- Geometry of the section analyzed,
- Material assignment by region number,
- Material properties by material assignment,
- Analysis method,
- Search method and limits,
- Piezometric surface used and assignment to material,
- Horizontal acceleration applied (pseudo-static analyses only) and,
- Factor of safety.

An annotated example identifying symbols and call outs is provided in Figure 2 in the form of a key. In addition, an output file for each analysis created by the software that presents the input parameters and the details of the minimum failure surface and forces, etc. is provided in Attachment 1.

The results are summarized in tabular form below, organized by the condition being analyzed with reference to the figure number it is presented in and the page in Attachment 1 the output file begins on. In addition, for the yield acceleration determination analyses, the Figure presenting the determination of the critical failure surface is referenced. All analyses for final build outs presented in this Appendix assumed the use of compacted structural fill of a cohesive nature. The analysis if the MSE berm system utilizing cohesionless fill is presented in Appendix C-8.

2.4.1 LONG TERM DRAINED CONDITIONS – SUBGRADE FAILURES

The figures listed below represent the results of the stability analyses for long term drained conditions of the final build out the landfill. Figures 8 and 9 include the addition of geo-reinforcement in the exterior berm, but the failure surfaces did not intersect the grids. The intent of these two analyses were to explore failure surfaces that would be closer to the berm but not pass through the MSE Berm itself. Figures 8 and 9 demonstrate that factors of safety are higher as the failure surfaces are forced closer to the berm, as would be expected. The lowest factor of safety, 1.56, was obtained at Station 32+00 for a global failure. This is greater than the required 1.5.

Section Station	Figure #	Factor of Safety
13+50	3	1.62
26+00	4	1.57
26+00	5	1.58
30+50	6	1.62
32+00	7	1.56
32+00	8	1.58
32+00	9	1.62
37+88	10	1.64
39+50	11	1.68
42+50	12	1.58

2.4.2 LONG TERM DRAINED CONDITIONS – BASELINER FAILURES

Failures limited to the baseliner system and overlying waste were analyzed at sections Sta 26+00 and Sta30+50. These locations had the most adverse combination of baseliner slope and waste height. The results are presented below.

Section Station	Figure #	Factor of Safety
26+00	13	1.88
26+00	14	2.41
30+50	15	2.03
30+50	16	2.03

As can be seen in the Table, all potential failures surfaces through the waste and along the baseliner had factors of safety in excess of 1.5.

2.4.3 SEISMIC RESPONSE ANALYSES

Section Station	Search Zone	Figure #	Critical Surface Determination FS	Yield Acceleration	Fig # of Parent Yield Acceleration Failure Surface
13+50	Subgrade	17	1.4		
13+50	Subgrade	18	1.00	0.099	17
26+00	Subgrade	19	1.37		
26+00	Subgrade	20	1.00	0.095	19
30+50	Subgrade	21	1.39		
30+50	Subgrade	22	1.00	0.090	21
32+00	Subgrade	23	1.35		
32+00	Subgrade	24	1.00	0.091	23
32+00	Near Berm	25	1.93		
32+00	Near Berm	26	1.45	> 0.3	25
37+28	Subgrade	27	1.41		
37+28	Subgrade	28	1.00	0.106	27
39+50	Subgrade	39	1.59		
39+50	Subgrade	30	1.00	0.135	29
42+50	Subgrade	31	1.38		
42+50	Subgrade	32	1.00	0.104	31
26+00	Baseliner	33	1.00	0.208	13
30+50	Baseliner	34	1.00	0.216	15

It should be noted that the factor of safety resulting from the consolidated undrained analyses used to the determine the critical failure surface for yield acceleration determination does not represent the factor of safety of the landfill but is just an calculation step required to determine the yield acceleration. It is not subject to the requirement of meeting a factor of safety of 1.5 or higher. The minimum yield acceleration for subgrade related failure surfaces was 0.09 g at Sta 30+50. The minimum yield acceleration for baseliner related failure systems was 0.208 g for shallow failure systems and 0.216 g for deeper baseliner failure shapes.

2.4.4 EXCAVATION ANALYSES

Section Station	Figure #	Factor of Safety
EXC-1	35	2.08
EXC-1	36	2.24

It should be noted that the factor of safety resulting from the consolidated undrained analyses used to the determine the critical failure surface for yield acceleration determination does not represent the factor of safety of the landfill but is just an calculation step required to determine the yield acceleration. It is not subject to the requirement of meeting a factor of safety of 1.5 or higher.

3 SLOPE DEFORMATION ANALYSIS

3.1 GENERAL PROCEDURE

The response for the design seismic event (2% probability of being exceeded in 50 yrs) for the site was used to evaluate the seismically induced permanent deformation of the potential failure masses at RMU-2.

In order to determine the seismically induced deformations, the following procedure was used:

- Determine the target bedrock response spectra, which includes peak ground acceleration for rock (PGA_{rock}) and spectral acceleration (SA) for rock, using site-specific USGS probabilistic seismic hazard analysis (PSHA),
- Determine the seismic design event using the deaggregated hazard,
- Select base acceleration time histories that are comparable to the site (i.e. type of rock, earthquake, magnitude, distance),
- Spectrally match motions to the design SA or scale the motion to site peak ground acceleration (depending on time histories) to result in the input time history,
- Define Soil Column for SHAKE analysis, including unit weights and strata thicknesses,
- Estimate Shear Wave Velocity (Vs) for native and non-native soils,
- Run SHAKE with the outcropping rock spectrally matched or scaled time histories,
- Determine the spectral accelerations at the appropriate horizon (base of failure) for each analysis,
- For potential failures in or below the waste mass, use the yield acceleration determined in the pseudo-static slope stability analysis, estimate slope displacements using the method discussed in "Simplified Procedure for Estimating Earthquake-Induced Deviatoric Slope Displacements" by Bray and Travasarou (2007)[1], and

The following sections describe the procedure and additional details.

3.2 TARGET BEDROCK RESPONSE SPECTRUM

The design event for the project is defined by the site- specific 2% probability of exceedance in 50 years ground motions. The uniform hazard response spectra for rock were determined using site-specific USGS probabilistic seismic hazard analysis (PSHA) Java for 2002. The USGS Java Application can be found at the USGS website[2]. The following table is the resulting USGS target bedrock response spectrum for 2% exceedance in 50 years for 5-percent damping.

[1] Bray, J.D. and T. Travasarou, "Simplified Procedure for Estimating Earthquake-Induced Deviatoric Slope Displacements," Journal of Geotechnical and Geoenvironmental Engineering, ASCE, April 2007, Vol. 133, No. 4, pp. 381-392, doi: 10.1061/(ASCE)1090-0241(2007)133:4(381).

[2] http://earthquake.usgs.gov/research/hazmaps/design/

Period (s)	Spectral Acceleration (g)
0.001	0.161
0.1	0.373
0.2	0.277
0.3	0.196
0.5	0.117
1	0.058
2	0.027

3.2.1 SEISMIC DESIGN EVENT

The seismic design event for the site was selected based on the deaggregated site-specific USGS 2002 update PSHA at the location of the project. The USGS website[3] was used to determine the deaggregated distance, magnitude and ground-motion uncertainty for the specified parameters. A printout of the Probablistic Seismic Hazard deaggregation figure available from the USGS for the site location is presented in Figure 37. Based on the USGS PSHA for 2% probability of exceedance in 50 years, the peak horizontal acceleration is 0.16g. The magnitude (M) of the event is 5.57 located a mean distance of 31.1 km. It should be noted that the USGS 2008 PSHA for 2% exceedance in 50 years is 0.117g. However deaggregation information is not yet available from USGS for 2008 data, so the higher 2002 values were utilized.

3.2.2 BASE ACCELERATION TIME HISTORIES

Three sets of base acceleration time histories were used in the site response analyses. Each set consisted of two horizontal components of ground shaking to make six total ground motions. One set of the acceleration time histories was created using the MCEERs east coast motion software for Strong Ground Motion Simulations[4], created in accordance with the predominate PSHA deaggregated distance and magnitude. The remaining two sets were actual recorded ground motions. Characteristics of the base earthquake and recording station for the three sets of recorded motions are tabulated below.

[3] http://eqint.cr.usgs.gov/deaggint/2002/index.php

[4] Halldorsson, Benedikt and Papageorgiou, Apostolos S. "Synthesis of Strong Ground Motions for Engineering Applications using the Specific Barrier Model", Department of Civil, Structural and Environmental Engineering, University at Buffalo, State University of New York, Buffalo, New York, MCEER Thrust Area 2: Coordination Meeting. University at Buffalo, May 14, 2004.

Earthquake	Station	Recording Date	Component	Peak Horizontal Acceleration (g)	Magnitude	Soil Type at Station	Hypocentral Distance (km)
N/A (MCEER Generated)	N/A	N/A	1	0.119	5.6	Class: B/C	31.1
N/A (MCEER Generated)	N/A	N/A	2	0.102	5.6	Class: B/C	31.1
MIRAMICHI	Mitchell Lake Road	3/31/1982	28	0.202	5.0	Bedrock	6.3
MIRAMICHI	Mitchell Lake Road	3/31/1982	118	0.146	5.0	Bedrock	6.3
Saguenay	Dickey, ME	11/25/1988	0	0.063	5.9	Hard Rock	194.7
Saguenay	Dickey, ME	11/25/1988	90	0.092	5.9	Hard Rock	194.7

The time histories of the original motions are presented in Figures 38 through 40. The response spectra of the original motion along with the target bedrock response spectrum are presented in Figure 41.

3.2.3 INPUT ACCELERATION TIME HISTORIES

Prior to being used as input to the site response analyses, each selected acceleration-time history was modified, to match the target bedrock response spectrum. For that purpose, the time domain spectral matching code RSPMATCH, developed by Abrahamson (1998)[5] was used. The code generally follows the algorithm set forth by Lilhanand and Tseng (1988)[6]. This code calculates the spectral misfit between a response spectrum and a target spectrum and then adds wavelets in the time domain to modify the frequency content on the original time series to match the design spectrum at all spectral periods. The quality of the results is assessed by the tolerance to which the matched motions converge towards the target spectrum and how well the new time-series preserve the non-stationary character of the reference time-history.

In the comparison of the spectrum of the base acceleration time histories and the target bedrock response spectrum, there is great difference in some of the frequency content as can be seen in the spectra presented in Figure 41. This makes the spectral matching very difficult, sometime resulting in motions that are not reasonable. For the purpose of these analyses, the Motions 1-6 listed above were spectrally

[5] Abrahamson, N. A. (1998). "Non-Stationary Spectral Matching Program RSPMATCH." PG&E Internal Report, University of California, Los Angeles.

[6] Lilhanand, K., and Tseng, W.S. (1988). "Development and Application of Realistic Earthquake Time Histories Compatible with Multiple Damping Response Spectra." 9th World Conf. Earthquake Engineering, Tokyo, Japan, Vol. II, pp. 819-824.

matched to the target bedrock response spectrum as best to preserve the integrity of the motion. Figures 38 through 40 present the original time histories and the spectrally matched input time histories. In addition to the spectral matching, Motions 1 and 2 were also scaled by PGA alone to create two additional input acceleration time histories. The response spectra of all 8 input time histories are presented along with the target bedrock spectrum in Figure 42. The table below summarizes the input acceleration time histories used for the site response analyses.

Table 3-2: Input Acceleration Time Histories Used

Input Motion ID	Seed Motion	Component	Type of Matching
1	N/A (MCEER Generated)	1	Spectral
2	N/A (MCEER Generated)	2	Spectral
3	MIRAMICHI	28	Spectral
4	MIRAMICHI	118	Spectral
5	Saguenay	0	Spectral
6	Saguenay	90	Spectral
7	N/A (MCEER Generated)	1	PGA
8	N/A (MCEER Generated)	2	PGA

3.2.3.1 Site Response Model

Free-field site response analyses were conducted using the computer program SHAKE2000 which uses the seed program SHAKE (Schnabel et al., 1972)[7], as modified by Idriss and Sun (1992)[8]. When using SHAKE, the soil profile at the site is modeled as one-dimensional, semi-infinite, horizontally layered strata overlying a uniform half-space. SHAKE uses an equivalent-linear model to simulate the nonlinear hysteretic behavior of soil. The analysis takes a specified (known) acceleration time history (which can be either an outcropping motion or a "within" motion at the top of any specified sublayer within the soil column) and propagates it up to the surface layers using a frequency-domain solution.

[7] Schnabel P.B., Lysmer J., Seed H.B. (1972). SHAKE: A Computer Program for Earthquake Response Analysis of Horizontal Layered Sites, Report No. UCB:EERC-72:12, Earthquake Engineering Research Center, University of California, Berkeley, December, 102p.

[8] Idriss I.M., Sun J.I. (1992). User's Manual for SHAKE91, Center for Geotechnical Modeling, Department of Civil Engineering, University of California, Davis.

3.2.4 INPUT MOTIONS

For this case, bedrock type motions defined as outcropping were used. Eight (8) motions were used, as discussed in Section 3.2.1 above.

3.2.5 IDEALIZED PROFILES

Site response analyses were conducted using the bedrock acceleration time histories described above and idealized soil profiles and dynamic soil properties. The stability sections as discussed in Section 2 of this appendix were reviewed to determine the thicknesses of the strata in the idealized profile at certain locations. These locations included the following:

Table 3-3: Idealized Profiles

Section	Thickness (ft)						General Description
	Waste	Fill	Upper Till	Glaciolacustrine Clay	Glaciolacustrine Sand/Silt	Lower Till	
SA	3 (final cover) 90 (waste) 6 (liner)	NA	NA	20	10	8	within proposed landfill
SB	3 (final cover) 65 (waste) 6 (liner)	NA	NA	20	10	8	within proposed landfill near toe of liner sideslope
SC	3 (final cover) 50 (waste) 5 (liner)	2	10	20	10	8	within proposed landfill on the lower half of liner sideslope
SD	3 (final cover) 35 (waste) 5 (liner)	10	10	20	10	8	within proposed landfill near midpoint of liner sideslope
SE	NA	32	12	20	7	8	near midpoint of proposed berm

The unit weights assigned are presented in Appendix A-1 and in Table 3-4. The modulus reduction (G/Gmax) of the shear modulus with shear strain curves and damping curves were chosen to best match the material properties at the sight and were modeled using those described in the table below.

Table 3-4: Material Property Assignments for SHAKE Analysis

Material	Unit Weight (γ) (pcf)	G/Gmax curve	Damping Curve
Waste	111	Soil with PI=0, OCR=1-15 (Vucetic & Dobry, JGE 1/91)[9]	Soil with PI=0, OCR=1-8 (Vucetic & Dobry, JGE 1/91)
Engineered Fill	135	Soil with PI=0, OCR=1-15 (Vucetic & Dobry, JGE 1/91)[10]	Soil with PI=0, OCR=1-8 (Vucetic & Dobry, JGE 1/91)
Upper Till	125	Soil with PI=0, OCR=1-15 (Vucetic & Dobry, JGE 1/91)	Soil with PI=0, OCR=1-8 (Vucetic & Dobry, JGE 1/91)
Glaciolacustrine Clay	120	Soil with PI=15, OCR=1-15 (Vucetic & Dobry, JGE 1/91)	Soil with PI=15, OCR=1-8 (Vucetic & Dobry, JGE 1/91)
Glaciolacustrine Sand/Silt	125	SAND, Average (Seed & Idriss 1970)[11]	SAND, Average (Seed & Idriss 1970)
Lower Till	130	Soil with PI=0, OCR=1-15 (Vucetic & Dobry, JGE 1/91)	Soil with PI=0, OCR=1-8 (Vucetic & Dobry, JGE 1/91)
Bedrock	N/A	ROCK (Schnabel 1973)[12]	ROCK (Schnabel 1973)

The shear wave velocities for the waste were estimated using the average shear wave velocity with depth data as presented in Matasovic et al (2006)[13] and is attached as Figure 43. The shear modulus for the subgrade materials were estimated using a combination of equations below:

Equation No.5 in SHAKE2000 (Seed, Wong, Idriss, and Tokimatsu, 1986[14]), where:

$G_{max} = 1000[35(N_{60})^{0.34}](\sigma_v')^{0.4}$

G_{max} = maximum shear modulus

[9] Vucetic, M. and Dobry, R. (1991). "Effect of soil plasticity on cyclic response," Journal of Geotechnical Engineering, ASCE, Vol. 117, No. 1, pp. 89-107.

[10] Vucetic, M. and Dobry, R. (1991). "Effect of soil plasticity on cyclic response," Journal of Geotechnical Engineering, ASCE, Vol. 117, No. 1, pp. 89-107.

[11] Seed, H.B. and Idriss, I.M. (1970). "Soil moduli and damping factors for dynamic response analyses," Report No. EERC 70-10, Earthquake Engineering Research Center, University of California, Berkeley.

[12] Schnabel, P.B. (1973). "Effects of local geology and distance from source on earthquake ground motions," Ph.D. Dissertation, Civil Engineering Dept., Univ. of California, Berkeley.

[13] Matasovic, N., Kavazanjian, E., and Dunn, R. J. (2006). "CPT-based Seismic Stability Assessment of a Hazardous Waste Site", Soil Dynamics and Earthquake Engineering, Special Issue, Elsevier, The Netherlands, Vol. 26, No. 2-4, pp. 201-208,.

[14] Seed, H.B., Wong, R.T., Idriss, I.M., and Tokimatsu, K. (1986). "Moduli and damping factors for dynamic analyses of cohesionless soils", Journal of Geotechnical Engineering, ASCE, 112(11): 1016-1032.

N_{60} = N-value measured in SPT test delivering 60% of the theoretical free fall energy of the drill rod
σ_v =effective vertical stress

Equation No. 6 in SHAKE2000 (Seed, Wong, Idriss, and Tokimatsu, 1986[15]), where:

$G_{max} = 1000[20(N_{1,60})^{1/3}](\sigma_m)^{1/2}$
G_{max} = maximum shear modulus
$N_{1,60}$ = N-value measured in SPT test delivering 60% of the theoretical free fall energy of the drill rod, and corrected for an effective overburden pressure of 1 ton/square foot.
σ_m = effective mean principle stress
$\sigma_m = [(1+2K_o)/3]\ \sigma_v'$
K_o = at-rest eat1h pressure coefficient
σ_v =effective vertical stress

Equation No.13 in SHAKE2000 (Imai and Tonouchi, 1982 [16]), where:

$G_{max} = 325(N_{60})^{0.68}$
G_{max} = maximum shear modulus
N_{60} = N-value measured in SPT test delivering 60% of the theoretical free fall energy of the drill rod

Equation as suggested in the EPRI Manual[17], where:

$G_{max} = p_a 120N^{0.77}$
G_{max} = maximum shear modulus
N = N-value measured during SPT test
p_a = atmospheric pressure in desired units

The geometric mean of the blow counts for each stratum were utilized. The geometric mean of the N values are presented in Appendix A-1 (Section 3.3.2 and Attachment 5) Shear Modulus was then converted into shear wave velocity (V_s) using the $G_{max} = \gamma V_s^2/g$, where g is gravity. The idealized shear wave velocity profiles used in the site response analyses are shown in Figures 44 through 48, one for each of the sections analyzed.

3.3 SHAKE RESULTS

Figures 49 through 53 present the peak horizontal acceleration versus depth for the Sections SA through SE, respectively. Each figure contains the results for the idealized profile run for all eight (8) input

[15] Seed, H.B., Wong, R.T., Idriss, I.M., and Tokimatsu, K. (1986). "Moduli and damping factors for dynamic analyses of cohesionless soils", Journal of Geotechnical Engineering, ASCE, 112(11): 1016-1032.

[16]. Imai, T., and Tonouchi, K. (1982)."Correlations of N value with S-wave velocity and shear modulus." Proceedings of the 2nd European Symposium on Penetration Testing, pp 24-27.

[17] Kulhawy, F.H. and Mayne, P.W. (1990). Manual on Estimating Soil Properties for Foundation Design. Report EPRI-EL 6800, Electric Power Research Institute, Palo Alto, 306 p.

motions. The maximum peak horizontal acceleration for the top of any waste was 0.243g, which is utilized in Appendix C-7 for the analysis of the Final Cover System

For the purposes of predicting permanent deformations, we extracted the response spectra at the approximate depth of the base of the critical failure using SHAKE. This was done for Section SB through SE. In addition we extracted the response spectra at the liner for Section SA to predict the permanent deformations in the case of a failure along the liner. The response spectra used for predicting permanent deformations are presented in the Figures as assigned below:

Table 3-5: Response Spectra Figure List for Idealized Profiles

Section	Figure
SA	54
SB	55
SC	56
SD	57
SE	58

3.4 PREDICTION OF PERMANENT DEFORMATIONS

The permanent deformations were evaluated using the procedure described in detail in Bray and Travasarou[18]. This procedure represents an evolutionary improvement over the original case study based charts presented by Makdisi and Seed[19] that are contained in the RCRA Subtitle D (258) (USEPA)[20]. The Bray and Travasarou procedure incorporates the dynamic properties of the embankment (or waste mass), the soil column properties, event magnitude and the frequency content of the earthquake event. This is achieved by utilizing the initial fundamental period of the site and the grounds spectral acceleration (Sa) (as opposed to the peak acceleration) along with yield acceleration to obtain predictions of permanent deformation. The use of more site specific variables than just the ratio of yield acceleration to peak ground acceleration and magnitude, utilized by Makdisi and Seed to develop their displacement chart, results in a better prediction for a given site.

The predicted Sa values at the degraded 1.5Ts (Sa(1.5Ts) values were determined at the base at the layer defining the base of the potential failure mass, e.g. within the Glaciolacustrine clay for failures controlled by the Glaciolacustrine clay and at the baseliner level for baseliner potential failures. They were

[18] Bray, J.D and Travasarou, T, "Simplified Procedure for Estimating Earthquake-Induced Devatoric Slope Displacements", ASCE Journal of Geotechnical and Geoenvironmental Engineering, Volume 133, No.4, April 2007.

[19] Makdisi, F.1.,and Seed,H.B., "Simplified Procedure for Estimating Dam and Embankment Earthquake Induced Defonnations," ASCE Journal of Geotechnical Engineering, Vol. 104, No. GT7, July 1978, pp. 849-867.

[20] United States Environmental Protection Agency, "RCRA Subtitle D (258) Seismic Design Guidance for Municipal Solid Waste Landfill Facilities," April 1995.

taken to be the maximum value resulting from the eight (8) input motions for each of the respective waste heights. The table below summarizes the resulting spectral accelerations.

Table 3-6: Spectral Accelerations at Degraded Period for Idealized Profiles

Section	Waste Height (ft)	Average V_s for the Sliding Mass Soil Column (ft/s) V_s	Height Sliding Mass Soil Column (ft) H	Initial Fundamental Period (s) $T_s = 4H/V_s$	Degraded Fundamental Period (s) $1.5*T_s$	Spectral Acceleration @ Degraded Period[1] (g)
SA (baseliner)	90	774.4	93	0.48	0.72	0.075
SB	65	765.6	74	0.39	0.58	0.125
SC	50	783.1	74	0.38	0.57	0.13
SD	35	845.5	72	0.34	0.51	0.125
SE	Berm	977.5	59	0.24	0.36	0.16

These values along with the yield coefficient (yield acceleration (ky) expressed in g), and the earthquake magnitude were used to predict a seismic displacement. For the cases that are at the base of the critical failure (SB through SE), the minimum value of ky of 0.0.09g was adopted for all the analyses. For the case that is at the base of the liner (SA), the minimum value of ky of 0.208g was adopted for all the analysis. The Bray and Travarasou procedure adopts a probabilistic approach to displacement prediction. A probability 95% that the actual displacements are less than predicted was adopted to represent the predicted displacement. In addition, the probability that the permanent displacement would exceed the design standard of less than 6" of movement under the design seismic event requested by the NYDEC was computed by adopting 6 inches as the "threshold" displacement. Attached Figures 59 through 64 show the calculations and methodology used to calculate the displacements and include the probability of displacments exceeding 6 inches and the displacements associated with a probability of exceedance of 1%, 5% (95% probability of being less than predicted value) and 15%. The resulting table summarizes the predicted displacements based on a 5% probability of exceedance. The normal probability of exceedance deflection is typically based on the mean plus one standard deviation (or the 85% probability of less than limit).

Table 3-7: Predicted Permanent Displacements

Section	Waste Height (ft)	Cross Section	Cross Section k_y (g)	Displacement (cm)	Displacement (in)
SA (baseliner)	90	Sta 26+00	0.208	0	0

SB	65	Sta 30+50	0.090	0.87	0.34
SC	50	Sta 30+50	0.90	1.04	0.41
SD	35	Sta 30+50	0.090	0.77	0.30
SE	Berm[1]	Sta 30+50	0.090	1.91	0.75

1- This result is presented here a conservative demonstration for potential failures that may be closer to the berm. Analysis shows they would have higher k_y values than the critical surface identified at Sta 30+50. The analysis at Sta 32+00 showed that near berm failure surfaces in the MSE wall area have yield accelerations in excess of 0.3 g (see Figure 24) predicting no displacement for berm type centered failures.

For all sections analyzed, the probability that displacements would exceed the threshold displacement of 6 inches was computed to be 0%. The yield acceleration associated with 6 inches of displacements can be estimated by inspecting the graphs on the Bray and Travarasou spreadsheets. Typically the mean value associated with 6 inches is less than 0.03 g for failures passing through the liner into the GC materials. This is considerably less than the 0.09 g minimum value obtained from the stability analyses and underscores the degree to which seismic response is not a controlling factor in the design of the facility.

Input and Output files from the SHAKE analyses are voluminous and are provided in digital form a separate file.

4 CONCLUSIONS

Based on the evaluation of the global and baseliner stability under both static and seismic conditions the following conclusions concerning the design of RMU-2 are presented:

- The proposed facility possesses a long term factor of safety under static conditions of greater than 1.5
- The landfill containment systems are predicted to experience deformations less than1 inch during the design seismic event utilized.

Both of these outcomes represent performance that exceeds the requirements of the regulations.