



WASTE MANAGEMENT

1550 Balmer Road
Model City, NY 14107
716 286 1550
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June 2, 2017

Mr. David Denk
New York State Department of
Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, New York 14203-2915

Re: Supplement to Air State Facility Permit Modification Application – RMU-2
Air Quality Modeling Report

Dear Mr. Denk:

Most recently, on May 23, 2017, CWM Chemical Services, LLC., (CWM) submitted a revised Air State Facility Permit Modification Application for the addition of Residuals Management Unit No. 2 (RMU-2) to the Model City, New York facility, prepared by Conestoga-Rovers & Associates, Inc. (CRA, now known as GHD). The application was revised in response to a Notice of Incomplete Application (NOIA) issued by the New York State Department of Environmental Conservation (NYSDEC) on December 7, 2016.

As indicated in Section 5.0 of Enclosure No. 2, of the May 23, 2017 revised application, an Air Quality Modeling Report was to be prepared in support of the application. GHD has completed the modeling based on the Air Quality Modeling Protocol, dated February 3, 2017, and the contingent protocol acceptance letter from the NYSDEC, dated March 3, 2017. Please find attached in Enclosure No. 1 one hard copy of the Air Quality Modeling Report and a Compact Diskette (CD) with the all pertinent modeling input and output files.

Please call Mr. Jonathan Rizzo at (716) 286-0354 or myself at (716) 286-0246 if you have any questions or comments.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Sincerely,
CWM CHEMICAL SERVICES, LLC

Jill A. Banaszak
Technical Manager
Model City Facility

June 2, 2017

Mr. David Denk

NYSDEC

Re: Supplement to Air State Facility Permit Modification Application – RMU-2
Air Quality Modeling Report

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JPR/JAB/jpr

Attachment

cc:	T. Mucha	- NYSDEC/Region 9 (e-copy Cover Letter & Report)
	M. Passuite	- NYSDEC/Region 9 (e-copy Cover Letter & Report)
	P. Grasso	- NYSDEC/Region 9 (e-copy Cover Letter & Report)
	B. Rostami	- NYSDEC/Region 9 (e-copy Cover Letter & Report)
	A. Carlacci	- NYSDEC/Region 9 (e-copy Cover Letter & Report)
	M. Cruden	- NYSDEC/Albany, NY (e-copy Cover Letter & Report)
	M. Mortefolio	- NYSDEC/Albany, NY (e-copy Cover Letter & Report)
	On-site Monitors	- NYSDEC/ Model City, NY (e-copy Cover Letter & Report)
	A. Park	- USEPA/Region II (e-copy Cover Letter & Report)
	N. Azzam	- USEPA/Region II (e-copy Cover Letter & Report)
	P. Dicky	- NCHD/Lockport, NY (e-copy Cover Letter & Report)
	M. Mahar	- CWM/Model City, NY (e-copy Cover Letter & Report)
	J. Rizzo	- CWM/Model City, NY (e-copy Cover Letter & Report)
	D. Darragh	- Cohen & Grigsby/Pittsburgh, PA (e-copy Cover Letter & Report)
	EMD Subject File	
	Q & A	

ENCLOSURE NO. 1
AIR QUALITY MODELING REPORT

June 2, 2017



Air Quality Modeling Report

CWM Chemical Services, LLC
Model City, New York

GHD | 2055 Niagara Falls Boulevard Niagara Falls New York 14304 USA
080335 | Report No 10 | June 2017



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1. Introduction

This document details the air quality modeling procedures that were used in order to demonstrate that the CWM Chemical Services, LLC (CWM) Model City Facility (Facility or Site) is in compliance with the provisions of 6 NYCRR Part 212. A modeling protocol was submitted to the New York State Department of Environmental Conservation (NYSDEC) on February 3, 2017. An approval letter, with specified conditions, was subsequently provided by NYSDEC on March 3, 2017.

The CWM facility is an existing commercial hazardous waste treatment, storage, and disposal facility (TSDF) located in Model City, Niagara County, New York. CWM is proposing to expand the facility to include the new RMU-2 area. The area encompassed by the proposed RMU-2 area is approximately 43.5 acres and will contain a total of six cells. The proposed waste area of RMU-2 is approximately 38.5 acres. The RMU-2 project also includes the replacement of existing facultative (Fac) ponds, namely Fac Ponds 3 and 8. Fac Pond 8 has been closed in accordance with the Part 373 Permit. RMU 2 will include the areas currently occupied by Fac Ponds 3 and 8. Proposed Fac Pond 5 will be constructed to replace the storage capacity for treated wastewater lost by the closure of Fac Ponds 3 and 8.

The CWM facility and proposed RMU-2 area are located in an attainment zone for all pollutants with the exception of ozone (since it is located in the Ozone Transport Region), and is currently permitted under NYSDEC Air State Facility Permit No. 9-2934-00022/00233. The facility will continue to hold an Air State Facility Permit since CWM is proposing to cap potential emissions below the Title V thresholds for all pollutants.

The CWM Model City Facility will consist of the following upon expansion:

- CWM Model City Facility: Existing Landfill Areas (SLF1-6, SLF-7, SLF-10, SLF-11, SLF-12, RMU-1) including leachate standpipes, Stabilization Facility, Aqueous Water Treatment Facility (AWTF), Facultative Pond 1/2, and Facultative Pond 3 (to be closed).
- Proposed RMU-2 Area: RMU-2 Area including leachate standpipes and Facultative Pond 5.

NYSDEC has requested that CWM demonstrate compliance with 6 NYCRR Part 212 for the existing facility as well as the proposed RMU-2 area.

The modeling report has been developed based on the following documentation:

- DAR-10/NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis (May 9, 2006)
- Appendix W of 40 CFR Part 51, USEPA (November, 2005)
- Ambient Monitoring Guidelines for PSD, USEPA (May, 1997)
- New Source Review Workshop Manual, USEPA (Draft, October, 1990)



2. Facility Overview

2.1 Facility Description

The CWM Model City Facility is located within the Erie-Niagara Region in the western section of New York State. The facility is situated on the boundary between the Towns of Lewiston and Porter in Niagara County. All hazardous waste management units are located within the Town of Porter. The facility's operations are authorized by a RCRA hazardous waste permit issued by NYSDEC and a TSCA (PCB) Approval issued by USEPA. The facility uses a number of processes for the proper storage, treatment and disposal of a variety of liquid and solid organic and inorganic hazardous waste and industrial non-hazardous waste. Storage, treatment and disposal capabilities include an aqueous waste treatment system, which includes phase separation, oxidation/reduction, neutralization, solids precipitation and filtration, biological treatment and carbon filtration. The treated effluent is stored in a facultative (fac) pond, qualified and discharged pursuant to the facility's State Pollutant Discharge Elimination System (SPDES) Permit. Other operations include waste stabilization; secure landfilling of approved solid waste, including PCBs; solvent and fuel blending processes; RCRA and TSCA container storage and transfer; landfill leachate collection, storage and treatment. As a RCRA permitted TSDF, CWM is subject to the hazardous waste regulations in 6 NYCRR Parts 370-376. This includes several regulations focused on minimizing the release of hazardous waste contaminants to the air: 373-2.28, Air Emission Standards for Equipment Leaks, and 373-2.29, Air Emission Standards for Tanks, Containers and Surface Impoundments.

The Model City Facility began operations in 1971 as ChemTrol Pollution Services, Inc. Activities included fuels blending of waste oils, distillation of spent solvents, aqueous waste treatment, and land disposal. In 1973, the stock of ChemTrol was purchased by SCA Services, Inc. The ChemTrol name was retained until late 1978 at which time the corporate name changed to SCA Chemical Waste Services, Inc., and in 1981, was renamed SCA Chemical Services, Inc.

In October 1984, WM Acquiring Corp., owned jointly by Waste Management, Inc. (WMI), and Genstar, Inc., acquired SCA Services, Inc., of which SCA Chemical Services, Inc. was a subsidiary. Through a corporate reorganization in October 1986, SCA Chemical Services, Inc. became a wholly owned subsidiary of Chemical Waste Management, Inc. (CWM), itself majority-owned by Waste Management, Inc. In July 1988, the corporate name SCA Chemical Services, Inc. was changed to CWM Chemical Services, Inc. CWM Chemical Services, Inc., became a limited liability company in January 1998 and became CWM Chemical Services, LLC. CWM Chemical Services, LLC, is the owner and operator of the Model City Facility.

The fuels blending tanks and solvent distillation operation were eliminated in the 1980s. The Aqueous Treatment facility continues to operate. The following summarizes the closed and active landfill units at the Facility:

Landfill Area	Years of Operation	Status
SLF 1-6	1971-1978	Closed
SLF 7	1978-1983	Closed
SLF 10	1982-1984	Closed



Landfill Area	Years of Operation	Status
SLF 11	1984-1990	Closed
SLF 12	1990-1994	Closed
RMU-1	1994-2015	Closed (Nov. 2016)

It should be noted that the Facility's most recently operated landfill (RMU-1) reached its capacity and received its final volume of hazardous wastes on November 12, 2015. From 1997 through 2013, final cover was constructed over the waste area of RMU-1 (approximately 31.8 acres) in accordance with the Part 373 Permit. A minimum of 12-inches of intermediate soil cover was installed over the remaining active area (approximately 7.7 acres) in 2015. In accordance with the Part 373 Permit, RMU-1 was completely closed by November 6, 2016 through the installation of final cover over the remaining 7.7 acres.

2.2 Land Use Classifications

The Model City Facility is located in a predominantly rural area on the border between the Towns of Lewiston and Porter. The surrounding area is undeveloped and sparsely populated, with an average of one person per 2 acres of land.

The nearest population concentrations are the Village of Lewiston (population 2,701; 2010 census), approximately 7 miles to the southwest; the Village of Youngstown (population 1,935; 2010 census), approximately 3 miles to the northwest and the Hamlet of Ransomville (population 1,419; 2010 census), approximately 2 miles to the east. Land use in the vicinity of the Model City Facility is primarily residential, agricultural, government services and military.

2.3 Topography

The topography around the Proposed Site is relatively flat. The base elevation of the Site is approximately 320 feet AMSL. However, the topography of the surrounding land ranges from approximately 308 feet AMSL to 338 feet AMSL.

3. Modeling Methodology

The modeling was conducted using the most recent executable versions of the USEPA AERMOD modeling system.

- AERMET, version 16216
- AERSURFACE, version 13016
- AERMAP, version 11103
- AERMOD, version 16216r
- BPIP-PRIME, version 04274

Modeling was facilitated using the Lakes Environmental graphical user interface AERMOD View (version 9.3.0).



3.1 Modeled Compounds

CWM is proposing a facility-wide annual emission cap for each of the high toxicity air contaminant (HTAC) compounds listed in Table 2 of 6 NYCRR Part 212-2.2, with the exception of polycyclic organic matter (POM) and polychlorinated biphenyls (PCBs). Therefore, this modeling demonstration includes a comparison of the maximum modeled ground-level concentration (GLC) for POM and PCBs with each of their respective annual guideline concentrations (AGC) presented in the NYSDEC DAR-1 policy document¹. For modeling purposes, PCB emission rates were broken down into two proportions:

- i. PCBs containing an Aroclor number of 1242 or less ($PCB \leq 1242$)
- ii. PCBs containing an Aroclor number of greater than 1242 ($PCB > 1242$)

This modeling demonstration also includes the following non-HTAC compounds that potentially exceed an annual emission rate of 100 lb/year:

- Xylenes
- Toluene
- Methylene Chloride
- Methyl ethyl ketone

VOCs and HAPs that are not considered HTACs under 6 NYCRR Part 212 (not listed in Table 2 of 6 NYCRR Part 212) and that have the potential to emit greater than 100 lb/year from stabilization will be limited to a short-term emission rate of 10 pounds per hour (since they are considered category B compounds). The 10 pound per hour limit is the maximum short-term emission rate that would not require the consideration of air controls (for category B compounds according to Table 4 of 6 NYCRR Part 212). In addition, compounds that are hazardous air pollutants (HAPS) will be limited to an annual emission rate of 10 tons per year (TPY).

The maximum modeled ground-level concentration for the non-HTAC compounds listed above were compared with the short-term guidance concentrations (SGC) and AGC values presented in the NYSDEC DAR-1 policy document.

Emission rates for POM, PCBs, and the aforementioned non-HTAC compounds are presented in Tables 1A (Existing Facility) and Table 1B (RMU-2 Project). The emission rates presented in Tables 1A and 1B were derived from the Emission Inventories submitted for the Existing Facility and the RMU-2 Landfill, respectively, on May 23, 2017.

Since the proposed PM-10 emission increase is less than 15 TPY, in accordance with NYSDEC's CP-33, no further modeling for PM was required.

¹ The NYSDEC DAR-1 document does not list short-term guidance concentration (SGC) values for POM or PCBs.



3.2 Facility Source Inventory

This Section provides a summary of sources included in the modeling evaluation. A summary of the source inventory parameters is provided in Table 2. A plan site view of all emission sources is provided as Figures 1 through 4. It should be noted that the AWTF was not included in the modeling since tanks with the potential to contain > 500 ppm organics are already equipped with carbon canisters to control VOCs and/or PCBs from working and breathing losses.

3.2.1 Existing Landfill Areas

The following closed landfill areas were included in the modeling analysis:

- SLF 1-6
- SLF-7
- SLF-10
- SLF-11
- SLF-12
- RMU-1

Emissions for each of the landfill areas were calculated in the Air State Facility Permit Application and are based on the following:

- Landfill cover diffusion
- Barometric pumping
- Evaporation from leachate collection standpipes

Source inventory parameters for the existing landfill areas are provided in Table 2.

3.2.2 Future Landfill Areas

The following proposed landfill areas were included in the modeling analysis:

- RMU-2

Emissions for the RMU-2 area were calculated in the Air State Facility Permit Application and are based on the following:

- Landfill cover diffusion
- Barometric pumping
- Evaporation from leachate collection standpipes
- Active face emissions

Source inventory parameters for the RMU-2 area are provided in Table 2.



3.2.3 Stabilization Facility

Emissions from the stabilization facility were calculated in the Air State Facility Permit Application and are based on a maximum value of 140,000 tons/year processed material. There are two baghouses that exhaust from the stabilization facility. Source inventory parameters for the stabilization facility are provided in Table 2.

3.2.4 Facultative Ponds

In order to obtain an estimate of emissions from the facultative ponds, one-half of the detection limit was assumed for each compound for a sample collected on December 2, 2015. Emissions from the facultative ponds were calculated using the mass balance approach presented as Equation 5-30 in the USEPA document *Air Emissions Models for Waste and Wastewater*, dated November 1994. PCB emissions from the ponds were conservatively estimated assuming a concentration of 200 nanograms per liter (Draft RMU-2 SPDES permit limit for internal outfall prior to discharge to the pond).

Source inventory parameters for the facultative ponds are provided in Table 2.

3.3 Modeling Input Parameters

The model was run using the "regulatory default" mode, which specified the use of the following options:

- Stack-tip downwash-reduces effective stack height when plume exit velocity is less than 1.5 times the wind speed
- Plume buoyancy induces dispersion-increases the dispersion coefficient to account for the vertical movement of the plume
- Calms processing
- Allow missing meteorological data
- Elevated terrain

Source specific input parameters were entered into the Source Pathway of the model.

3.4 Building Downwash Analysis

Any Site structures that may impact the emission sources, with respect to influencing building downwash, were also considered. Direction specific building dimensions were calculated utilizing BPIP-PRIME.

3.5 Meteorological data

The Site does collect meteorological tower data. However, the 2012-2016 surface and profile meteorological data, as provided by the NYSDEC, was used in the analysis.

The surface and profile meteorological data was processed using the USEPA AERMET version 16216 according to standard USEPA methods for air dispersion modeling.



3.6 Modeled Receptors

For each pollutant, a multi-tier, uniform Cartesian grid centered on the CWM Model City Facility was established.

<i>Distance from CWM Facility</i>	<i>Receptor Node Spacing</i>
Up to 1 km	70 m
1 km to 2 km	200 m
2 km to 10 km	500 m

A property boundary receptor grid was established along the property boundary of the CWM Model City Facility with a spacing of 20 m to capture the maximum property boundary concentration.

All receptors located within the CWM Model City Facility property boundary were removed, as the site is fenced and public access is prohibited.

The need to evaluate elevated receptors within two (2) km of the CWM Model City Facility, such as rooftops, balconies and similar areas with public access, was not required.

3.7 Terrain Considerations

Although the topography of the region is relatively flat, the effects of terrain was considered as part of the modeling analyses. Elevations above mean sea level corresponding to the base elevation of the CWM Model City Facility was assigned to all structures and sources modeled.

At the request of DEC, a site-specific topographical elevation model was developed to include the existing and future onsite landfill features, and features of the Modern Landfill situated south of the Facility. The digital terrain data was constructed from USGS DEM data (10-meter resolution) with the following modifications.

- Elevations within the property of the CWM Model City Facility was replaced with air survey data based on photogrammetric methods
- RMU-1 elevation data was inserted into the CWM Model City Facility to represent its final design, replacing data in the air survey
- RMU-2 elevation data was inserted into the CWM Model City Facility to represent the berm design height of 30 feet, replacing data in the air survey
- Elevations for Modern Landfill to the south were extracted from 1-meter LIDAR data

The above data sources were merged together into a single file using ArcGIS software. Alignment corrections, measurement units and projections systems were addressed during this stage. The resulting merged elevation file was then exported from ArcGIS into a neutral XYZ (x-coordinate, y-coordinate, elevation) file with 10-meter resolution. The XYZ file was further converted into USGS DEM format for use with AERMAP to develop the necessary terrain mesh for AERMOD's terrain following algorithms.

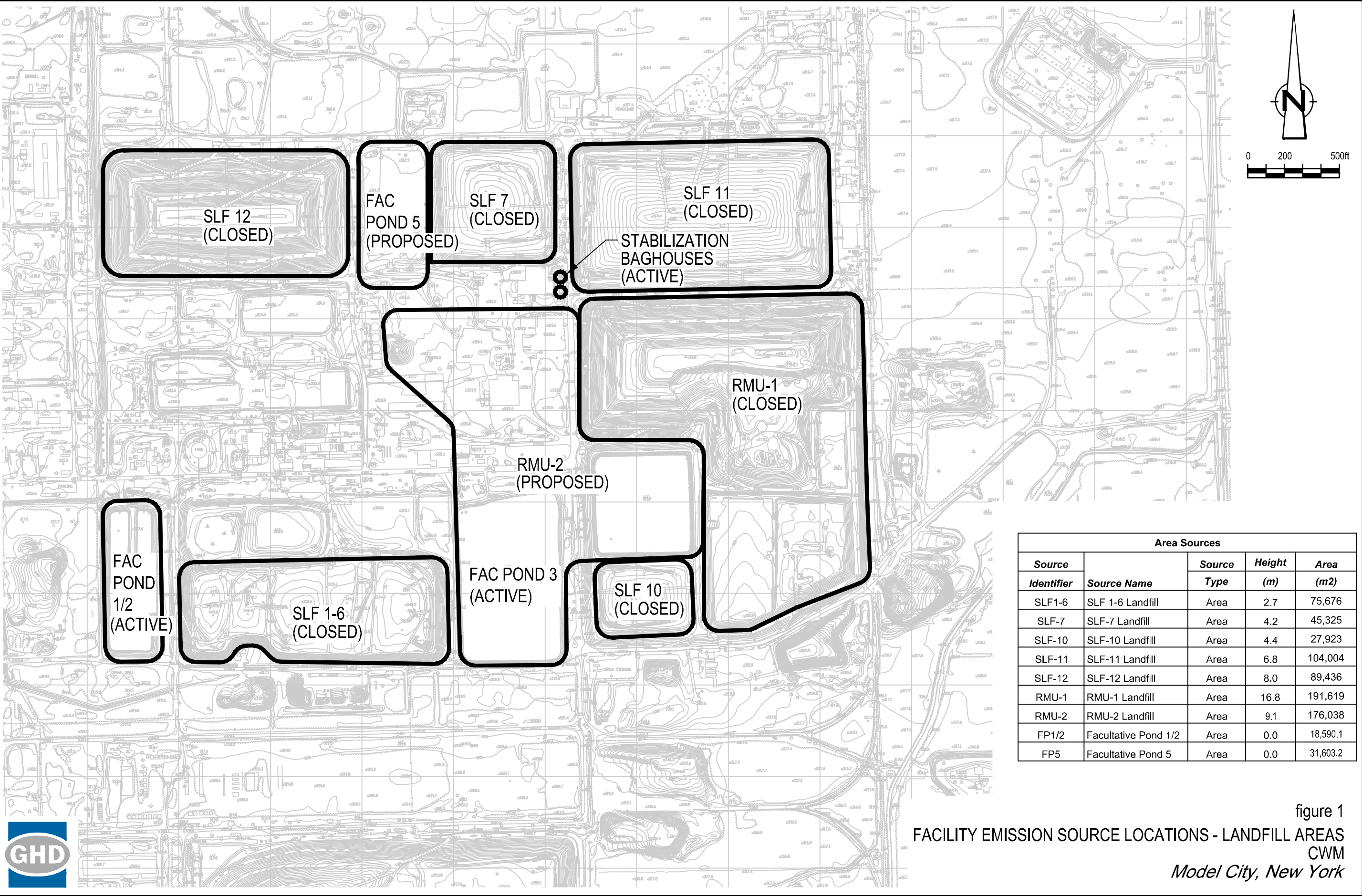
All sources were assigned base elevations calculated from data in the terrain mesh. An examination of the assigned elevations to the landfill area sources indicated that the elevations were too low for their designed final heights. These sources were manually adjusted to their final heights.



4. Conclusion

The results of the modeling analysis are provided in Table 3. All the modeled results are below their respective SGC and/or AGC values at the property boundary.

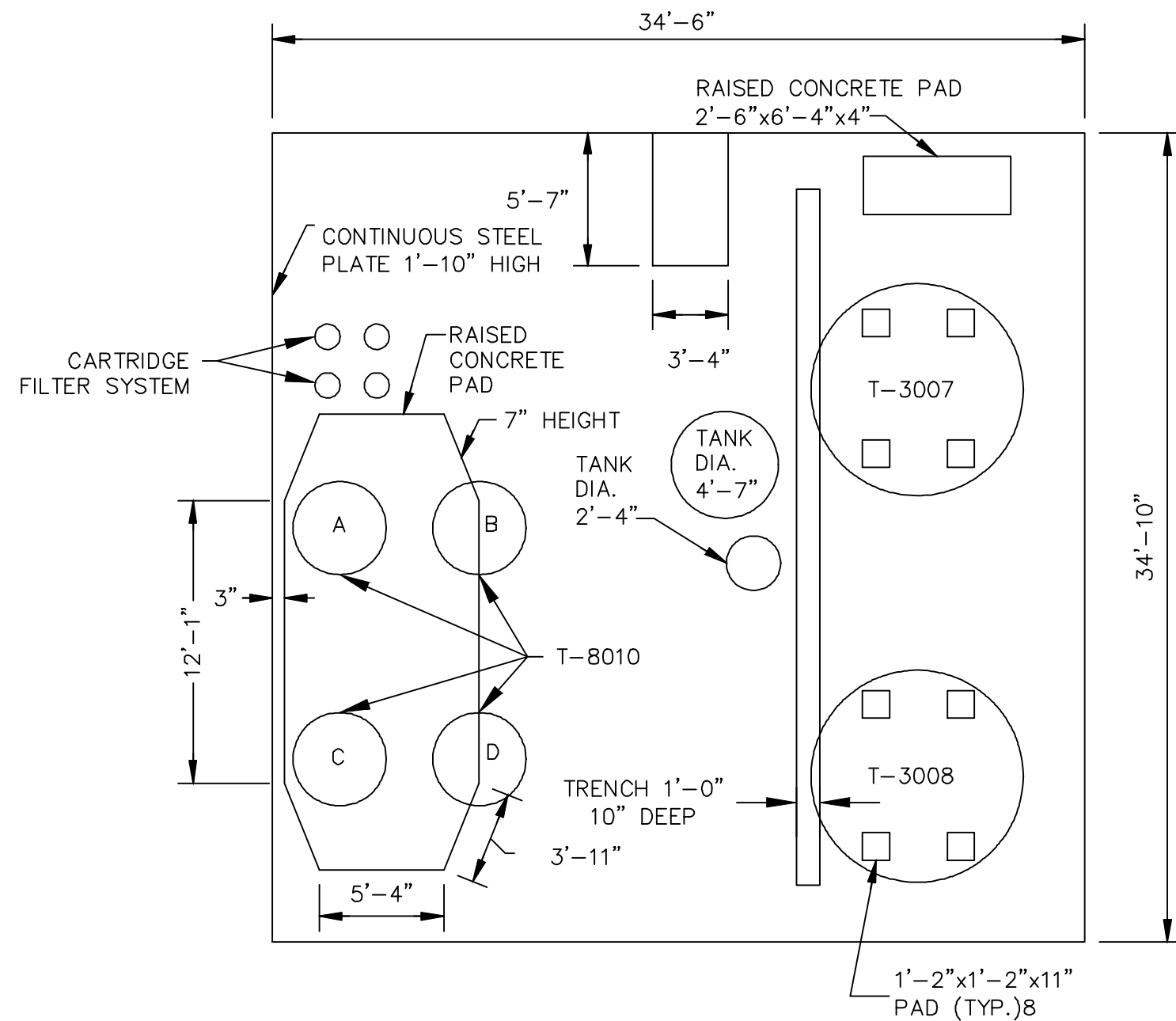
An electronic CD has been provided which contains all pertinent input and output files, as well as all supporting data files and executables necessary to reproduce the modeling results.



Area Sources				
Source	Source Name	Source	Height	Area
Identifier		Type	(m)	(m2)
SLF1-6	SLF 1-6 Landfill	Area	2.7	75,676
SLF-7	SLF-7 Landfill	Area	4.2	45,325
SLF-10	SLF-10 Landfill	Area	4.4	27,923
SLF-11	SLF-11 Landfill	Area	6.8	104,004
SLF-12	SLF-12 Landfill	Area	8.0	89,436
RMU-1	RMU-1 Landfill	Area	16.8	191,619
RMU-2	RMU-2 Landfill	Area	9.1	176,038
FP1/2	Facultative Pond 1/2	Area	0.0	18,590.1
FP5	Facultative Pond 5	Area	0.0	31,603.2

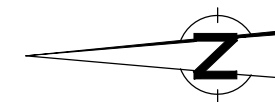
figure 1
 FACILITY EMISSION SOURCE LOCATIONS - LANDFILL AREAS
 CWM
Model City, New York





PLAN
N.T.S.

Modified: Nov. 2013



SOURCE REFERENCE:

WATER TREATMENT BUILDING		
6NYCRR PART 373 PERMIT		
CWM CHEMICAL SERVICES LLC		
TOWN OF PORTER, STATE OF NEW YORK		
EnSol, Inc. Environmental Solutions	861 MAIN STREET NIAGARA FALLS, NY 14301 PHONE (716) 285-3920 FAX (716) 285-3928	FIGURE D-20
8/13/13	PN: 13-7028	

figure 4
FACILITY SOURCE LOCATIONS (WATER TREATMENT BUILDING)
CWM
Model City, New York



Table 1A

Summary of Modeled Emission Rates - Existing Facility
CWM Chemical Services, LLC
Model City, New York

	PCBs	Archolor <=1242 (PCB_1)	Archolor >1242 (PCB_2)	POM	Xylene	Toluene	Methylene Chloride	Methyl ethyl ketone
Emission Source	Emissions (grams per second)							
SLF 1-6 Standpipes	6.30E-05	4.12E-05	2.18E-05	1.18E-05	6.12E-05	8.72E-05	2.59E-03	2.31E-03
SLF 1-6 Cover Diffusion	2.85E-05	1.86E-05	9.85E-06	0.0E+00	2.64E-05	1.46E-04	2.20E-03	3.20E-05
SLF 1-6 Barometric Pumping	4.27E-06	2.79E-06	1.48E-06	0.0E+00	3.96E-06	2.19E-05	3.31E-04	4.80E-06
SLF 1-6 TOTAL	9.57E-05	6.26E-05	3.31E-05	1.18E-05	9.16E-05	2.55E-04	5.13E-03	2.34E-03
SLF 7 Standpipes	8.74E-07	8.74E-07	0.00E+00	0.0E+00	4.37E-05	1.56E-05	5.09E-04	2.35E-04
SLF 7 Cover Diffusion	9.11E-07	9.11E-07	0.00E+00	0.0E+00	4.53E-04	1.45E-04	1.34E-03	8.68E-06
SLF 7 Barometric Pumping	1.37E-07	1.37E-07	0.00E+00	0.0E+00	6.79E-05	2.18E-05	2.01E-04	1.30E-06
SLF-7 TOTAL	1.92E-06	1.92E-06	0.00E+00	0.00E+00	5.64E-04	1.83E-04	2.05E-03	2.45E-04
SLF 10 Standpipes	1.42E-07	1.11E-07	3.14E-08	0.0E+00	0.0E+00	0.0E+00	2.51E-04	4.43E-04
SLF 10 Cover Diffusion	8.55E-08	6.66E-08	1.89E-08	0.0E+00	0.0E+00	0.0E+00	1.23E-04	4.05E-06
SLF 10 Barometric Pumping	1.28E-08	9.99E-09	2.83E-09	0.0E+00	0.0E+00	0.0E+00	1.84E-05	6.08E-07
SLF-10 TOTAL	2.41E-07	1.87E-07	5.32E-08	0.00E+00	0.00E+00	0.00E+00	3.92E-04	4.48E-04
SLF 11 Standpipes	3.95E-05	6.12E-06	3.34E-05	0.0E+00	0.0E+00	0.0E+00	1.06E-05	9.86E-05
SLF 11 Cover Diffusion	2.08E-05	3.22E-06	1.76E-05	0.0E+00	0.0E+00	0.0E+00	3.03E-06	5.53E-07
SLF 11 Barometric Pumping	3.12E-06	4.83E-07	2.64E-06	0.0E+00	0.0E+00	0.0E+00	4.55E-07	8.29E-08
SLF-11 TOTAL	6.34E-05	9.83E-06	5.36E-05	0.00E+00	0.00E+00	0.00E+00	1.41E-05	9.93E-05
SLF 12 Standpipes	1.26E-06	3.83E-07	8.73E-07	0.0E+00	0.0E+00	0.0E+00	6.13E-06	1.18E-08
SLF 12 Cover Diffusion	4.14E-06	1.26E-06	2.87E-06	0.0E+00	0.0E+00	0.0E+00	1.19E-05	3.51E-10
SLF 12 Barometric Pumping	6.20E-07	1.89E-07	4.31E-07	0.0E+00	0.0E+00	0.0E+00	1.78E-06	5.27E-11
SLF-12 TOTAL	6.01E-06	1.83E-06	4.18E-06	0.00E+00	0.00E+00	0.00E+00	1.98E-05	1.22E-08
RMU-1 Standpipes	8.93E-07	1.87E-07	7.07E-07	0.0E+00	0.0E+00	1.76E-05	1.78E-05	2.35E-05
RMU-1 Cover Diffusion	1.12E-08	2.35E-09	8.88E-09	5.51E-10	0.0E+00	6.49E-07	5.00E-07	3.18E-07
RMU-1 Barometric Pumping	1.68E-09	3.52E-10	1.33E-09	8.26E-11	0.0E+00	9.73E-08	7.50E-08	4.77E-08
RMU-1 TOTAL	9.06E-07	1.89E-07	7.17E-07	6.33E-10	0.00E+00	1.84E-05	1.83E-05	2.39E-05
Stabilization Baghouse #1	6.72E-05	1.40E-05	5.32E-05	1.04E-03	1.13E+00	1.13E+00	1.13E+00	1.13E+00
Stabilization Baghouse #2	6.72E-05	1.40E-05	5.32E-05	1.04E-03	1.13E+00	1.13E+00	1.13E+00	1.13E+00
Facultative Pond 1/2	3.60E-07	3.60E-07	3.60E-07	0.0E+00	0.0E+00	3.15E-07	5.85E-07	1.98E-06

Table 1B

Summary of Modeled Emission Rates - RMU-2 Project
CWM Chemical Services, LLC
Model City, New York

	PCBs	Archolor <=1242 (PCB_1)	Archolor >1242 (PCB_2)	POM	Xylene	Toluene	Methylene Chloride	Methyl ethyl ketone
Emission Source	Emissions (grams per second) Open ⁽¹⁾							
Facultative Pond 5	4.97E-07	4.97E-07	4.97E-07	0.00E+00	0.00E+00	4.35E-07	8.08E-07	2.73E-06
RMU-2 Standpipes	6.03E-07	1.26E-07	4.77E-07	0.00E+00	0.00E+00	1.19E-05	1.20E-05	1.68E-05
RMU-2 Cover Diffusion	1.38E-06	2.88E-07	1.09E-06	1.93E-07	4.88E-05	2.27E-04	1.75E-04	1.11E-04
RMU-2 Barometric Pumping	2.06E-07	4.32E-08	1.63E-07	2.90E-08	7.32E-06	3.41E-05	2.63E-05	1.67E-05
RMU-2 Active Face	1.69E-04	3.53E-05	1.34E-04	6.63E-05	2.66E-04	7.28E-04	1.58E-04	1.88E-04
RMU-2 TOTAL	1.71E-04	3.58E-05	1.35E-04	6.65E-05	3.22E-04	1.00E-03	3.72E-04	3.33E-04

Emission Source	Emissions (grams per second) Closed ⁽²⁾							
Facultative Pond 5	4.97E-07	4.97E-07	4.97E-07	0.00E+00	0.00E+00	4.35E-07	8.08E-07	2.73E-06
RMU-2 Standpipes	6.03E-07	1.26E-07	4.77E-07	0.00E+00	0.00E+00	1.19E-05	1.20E-05	1.68E-05
RMU-2 Cover Diffusion	1.38E-06	2.88E-07	1.09E-06	1.93E-07	4.88E-05	2.27E-04	1.75E-04	1.11E-04
RMU-2 Barometric Pumping	2.06E-07	4.32E-08	1.63E-07	2.90E-08	7.32E-06	3.41E-05	2.63E-05	1.67E-05
RMU-2 Active Face	1.55E-07	3.25E-08	1.23E-07	2.18E-08	5.50E-06	2.57E-05	1.98E-05	1.26E-05
RMU-2 TOTAL	2.34E-06	4.89E-07	1.85E-06	2.44E-07	6.16E-05	2.99E-04	2.34E-04	1.58E-04

Emission Source	Variable Emission Rate Ratio Closed							
Facultative Pond 5	1	1	1	1	1	1	1	1
RMU-2 Standpipes	1	1	1	1	1	1	1	1
RMU-2 Cover Diffusion	1	1	1	1	1	1	1	1
RMU-2 Barometric Pumping	1	1	1	1	1	1	1	1
RMU-2 Active Face	9.19E-04	9.19E-04	9.19E-04	3.29E-04	2.07E-02	3.53E-02	1.25E-01	6.68E-02
RMU-2 TOTAL	1.368E-02	1.368E-02	1.368E-02	3.666E-03	1.914E-01	2.987E-01	6.277E-01	4.727E-01

Notes:

- ⁽¹⁾ Emissions rate during the time frame there is active waste placement in the landfill (RMU-2). (8 hrs/day Monday to Saturday)
- ⁽²⁾ Emissions rate during the time frame waste surfaces are covered with final, intermediate, or daily cover. (16 hrs/day Monday-Saturday; 24 hrs/day Sunday)

Table 2

**Summary of Modeling Input Parameters
CWM Chemical Services, LLC
Model City, New York**

Table 2A: Point Sources

Source Identifier	Source Name	Source Type	Exit Height (m)	Exit Diameter	Exit Temperature		Actual Flow Rate		Exit Velocity (m/s)
				Actual (m)	Actual (K)	Modeled (K)	(ACFM)	(Am ³ /s)	
BH1	Stabilization Baghouse #1	Point	15.24	2.44	Ambient	0	9.00E+04	4.25E+01	9.08
BH2	Stabilization Baghouse #2	Point	9.14	1.32	Ambient	0	5.00E+04	2.36E+01	17.24

Table 2B: Area Sources

Source Identifier	Source Name	Source Type	Height (m)	Total Area
				Actual (m ²)
SLF1-6	SLF 1-6 Landfill	Area	2.7	75,676
SLF-7	SLF-7 Landfill	Area	4.2	45,325
SLF-10	SLF-10 Landfill	Area	4.4	27,923
SLF-11	SLF-11 Landfill	Area	6.8	104,004
SLF-12	SLF-12 Landfill	Area	8.0	89,436
RMU-1	RMU-1 Landfill	Area	16.8	191,619
RMU-2	RMU-2 Landfill	Area	9.1	176,038
FP1/2	Facultative Pond 1/2	Area	0.0	18,590.1
FP5	Facultative Pond 5	Area	0.0	31,603.2

Table 3

**Summary of Modeling Results
CWM Chemical Services, LLC
Model City, New York**

Air Contaminant	CAS No.	SGC/AGC Limit (ug/m3)	Averaging Period	Maximum Predicted GLC (ug/m3)	Percent of SGC/AGC Limit (%)
Methyl Ethyl Ketone	00078-93-3	13000	1-hour	551.17	4.24%
		5000	annual	4.56	0.09%
Methylene Chloride	00075-09-2	14000	1-hour	551.70	3.94%
		60	annual	1.07	1.79%
PCBs, Archolor <=1242	various	0.01	annual	0.003	30.47%
PCBs, Archolor >1242	various	0.002	annual	0.00199	99.36%
POM	various	0.02	annual	0.01	37.72%
Toluene	00108-88-3	37000	1-hour	551.26	1.49%
		5000	annual	1.04	0.02%
Xylenes, m, o & p mixture	01330-20-7	22000	1-hour	551.16	2.51%
		100	annual	1.05	1.05%

Note: The NYSDEC DAR-1 document does not list short-term guidance concentration (SGC) values for POM or PCBs.

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