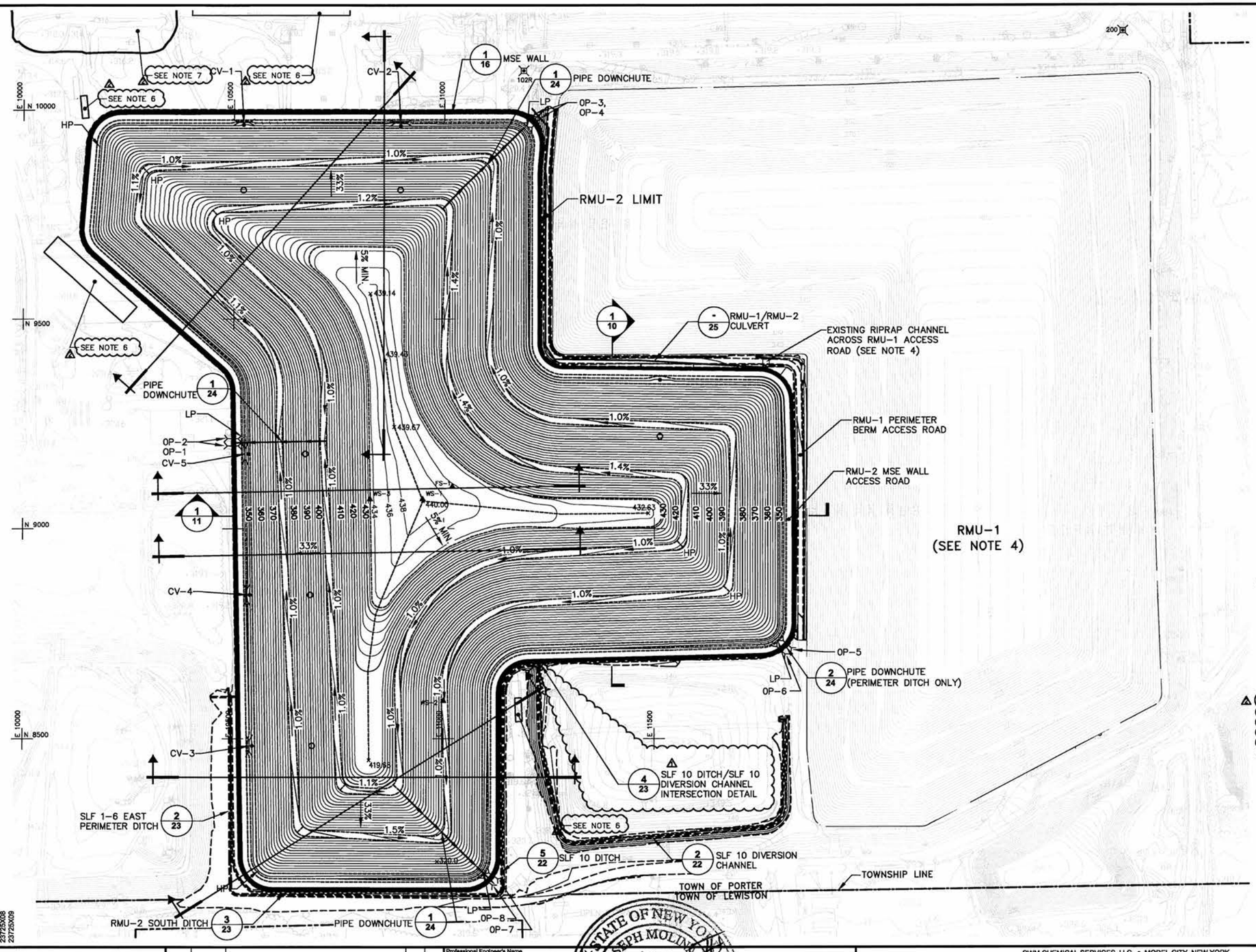


LEGEND:

- APPROXIMATE PROPERTY LINE
- 310 PROPOSED INDEX ELEVATION CONTOUR
- 428 PROPOSED INTERMEDIATE ELEVATION CONTOUR
- PROPOSED GRADE BREAK
- PROPOSED RISER MANHOLE 3/20
- PROPOSED LEACHATE RISER VAULT
- SLOPE STABILITY SECTION
- CV-1 PROPOSED PERIMETER DITCH CULVERT AND ID 1/23
- OP-3 PROPOSED PERIMETER DITCH CULVERT AND ID 1/24
- ×320.0 PROPOSED SPOT ELEVATION
- LP PROPOSED PERIMETER DITCH LOW POINT
- HP PROPOSED PERIMETER DITCH HIGH POINT
- FS-1 SETTLEMENT CALCULATION POINT
- 200 PERMANENT CONTROL MONUMENT
- E 12500 N 10000 COORDINATE GRID
- 2/14 DETAIL REFERENCE NUMBER / DRAWING REFERENCE NUMBER
- 1/10 SECTION REFERENCE

NOTES:

1. REFER TO DRAWING NO. 2 FOR ADDITIONAL BASE MAP INFORMATION.
2. PROPOSED GRADES SHOWN INSIDE OF PERIMETER DITCH ARE TOP OF WASTE GRADES. PROPOSED GRADES WITHIN AND OUTSIDE PERIMETER DICTH ARE FINAL GRADES.
3. MSE WALL ACCESS RAMPS TO BE DESIGNED/CONSTRUCTED AS NEEDED DURING LANDFILL OPERATION..
4. EXISTING RIPRAP CHANNEL ACROSS RMU-1 PERIMETER BERM ACCESS ROAD CONVEYS RUNOFF FROM RMU-1 PERIMETER CHANNEL TO NEW RMU-1/RMU-2 PERIMETER CHANNEL.
5. PROPOSED TOP OF WASTE GRADES DO NOT REFLECT LOCAL GRADING PROXIMATE TO PIPE DOWNCHUTES. PROPOSED TOP OF WASTE GRADES DO NOT REFLECT EXISTENCE OF INFILTRATION CHANNEL AT LANDFILL PERIMETER.
6. REFER TO DRAWINGS IN ATTACHMENT D-1 OF THE OVERALL SITE/RMU-1 PERMIT FOR FURTHER DETAIL.
7. REFER TO DRAWNGS IN ATTACHMENT D-2 OF THE OVERALL SITE/RMU-1 PERMIT FOR FURTHER DETAIL.

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: K. DAVIS G. STOWELL L. FORAKER LD: PIC: W. POPHAM PM: W. RANKIN TM: B. STONE LYR: ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIVE\B0023725\2011\B0023725G011.dwg LAYOUT: 7 SAVED: 2/19/2013 3:50 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: M-LD2B-PDF PLOTSTYLETABLE: PLTCONT1.CTB PLOTTED: 2/25/2013 1:12 PM BY: SARTORI, KATHERINE
XREFS: IMAGES: PROJECTNAME: —
23725X02 23725X01 23725X00 23725X08 23725X09

1"=120' (120' 0 120' 240')

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd
2	2/2013	REVISED CALLOUTS AND NOTES	GNG	BMS
1	1/2012	ADDITIONAL CALLOUT	NWF	BMS

Professional Engineer's Name: JOSEPH MOLINA
Professional Engineer's No.: 072644
State: NY
Date Signed: 2/27/13
Project Mgr: WAR
Designed by: BMS/PTO
Drawn by: SJK
Checked by: BMS

STATE OF NEW YORK JOSEPH MOLINA 072644 PROFESSIONAL ENGINEER

ARCADIS
ARCADIS OF NEW YORK, INC.

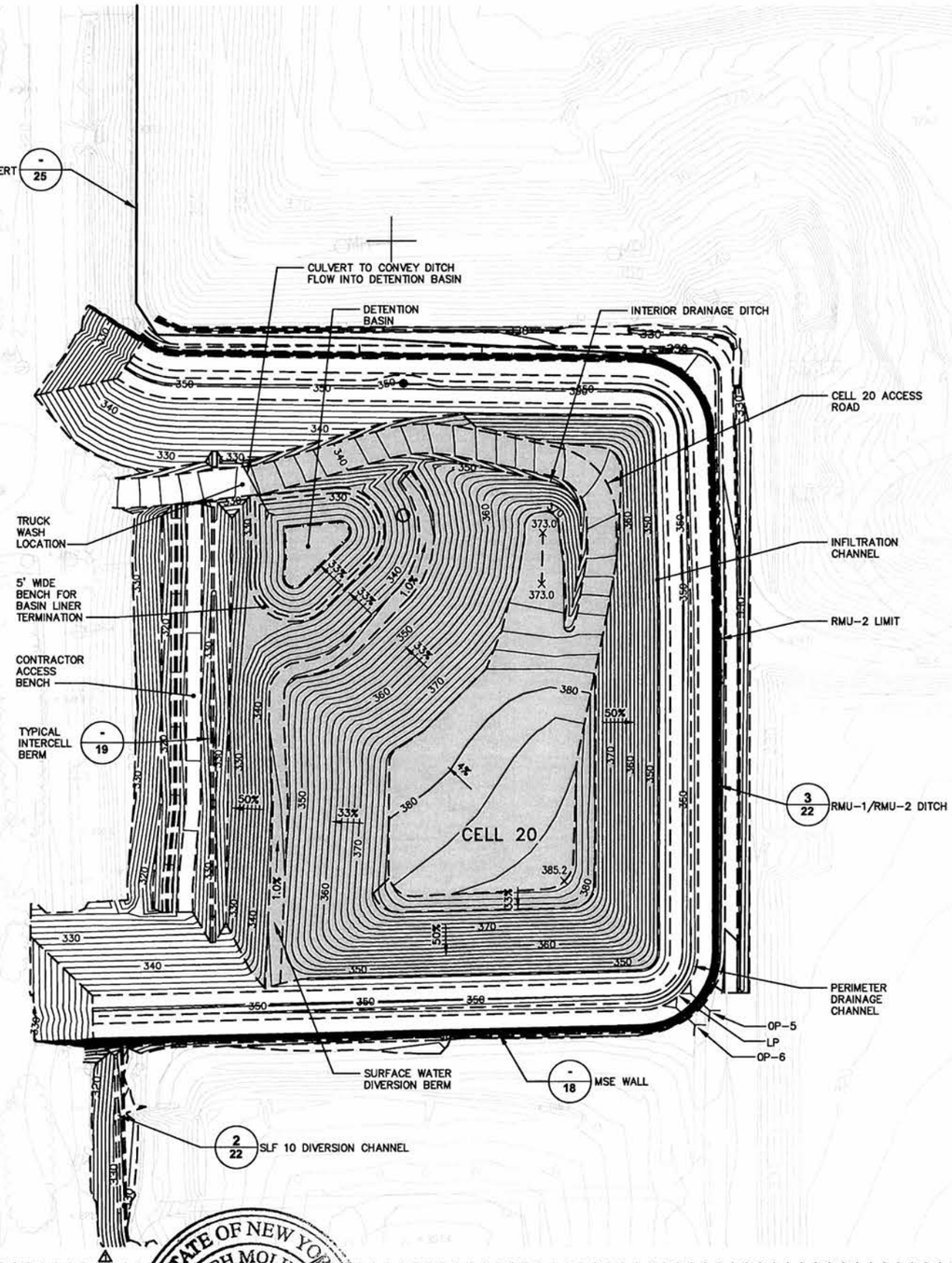
CWM CHEMICAL SERVICES, LLC • MODEL CITY, NEW YORK
RESIDUALS MANAGEMENT UNIT 2 PERMIT DRAWING

TOP OF VEGETATIVE COVER GRADES

GENERAL

ARCADIS Project No.: B0023725.2009.00006
Date: AUGUST 2009
ARCADIS of New York, Inc.
6723 Towpath Road
P.O. Box 66
Syracuse, New York
TEL. 315.446.9120

7



LEGEND:

- APPROXIMATE PROPERTY LINE
- 310 PROPOSED INDEX ELEVATION CONTOUR
- 308 PROPOSED INTERMEDIATE ELEVATION CONTOUR
- PROPOSED GRADE BREAK
- PROPOSED RISER MANHOLE (2/13)
- PROPOSED LEACHATE RISER VAULT
- CV-1 PROPOSED PERIMETER DITCH CULVERT AND ID (1/23)
- OP-3 PROPOSED PERIMETER DITCH CULVERT AND ID (1/24)
- X 320.0 PROPOSED SPOT ELEVATION
- LP PROPOSED PERIMETER DITCH LOW POINT
- HP PROPOSED PERIMETER DITCH HIGH POINT
- 200 PERMANENT CONTROL MONUMENT
- E 12500 N 10000 COORDINATE GRID
- 2/14 DETAIL REFERENCE NUMBER / DRAWING REFERENCE NUMBER
- WASTE PLACEMENT AREA

NOTES:

1. REFER TO DRAWING NO. 2 FOR ADDITIONAL BASE MAP INFORMATION.
2. PROPOSED GRADES SHOWN REPRESENT A COMBINATION OF FINAL AND INTERIM MSE WALL GRADES, OPERATIONS LAYER GRADES, AND INTERIM WASTE GRADES.
3. ACCESS ROAD TO BE CONSTRUCTED OVER CELL SEPARATION BERM.

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: K. DAVIS G. STOWELL L. FORAKER LD: PIC: W. POPHAM PM: W. RANKIN TM: B. STONE LYR: ON="OFF="REF"
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XREFS: IMAGES: PROJECTNAME: —
23725X02
23725X01
23725X00
23725X16

1"=70' (70' 0 70' 140')

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd
1	2/2013	CHANGED INITIAL OPERATING CELL FROM 15 TO 20 AND MISCELLANEOUS REVISIONS	NWF	BMS

Professional Engineer's Name: JOSEPH MOLINA
Professional Engineer's No.: 072644
State: NY | Date Signed: 2/27/13 | Project Mgr: WAR
Designed by: BMS/PTO | Drawn by: SJK | Checked by: BMS

STATE OF NEW YORK JOSEPH MOLINA 072644 LICENSED PROFESSIONAL ENGINEER

ARCADIS
ARCADIS OF NEW YORK, INC.

CWM CHEMICAL SERVICES, LLC • MODEL CITY, NEW YORK
RESIDUALS MANAGEMENT UNIT 2 PERMIT DRAWING

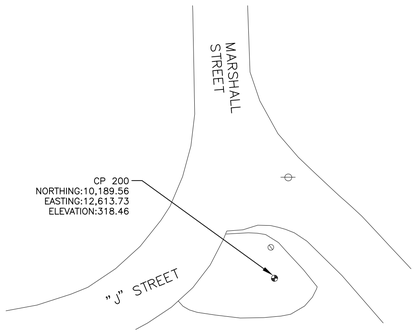
CELL 20 INITIAL FILL PROGRESSION

GENERAL

ARCADIS Project No. B0023725.2009.00006
Date AUGUST 2009

ARCADIS of New York, Inc.
6723 Towpath Road
P.O. Box 66
Syracuse, New York
TEL. 315.446.9120

8



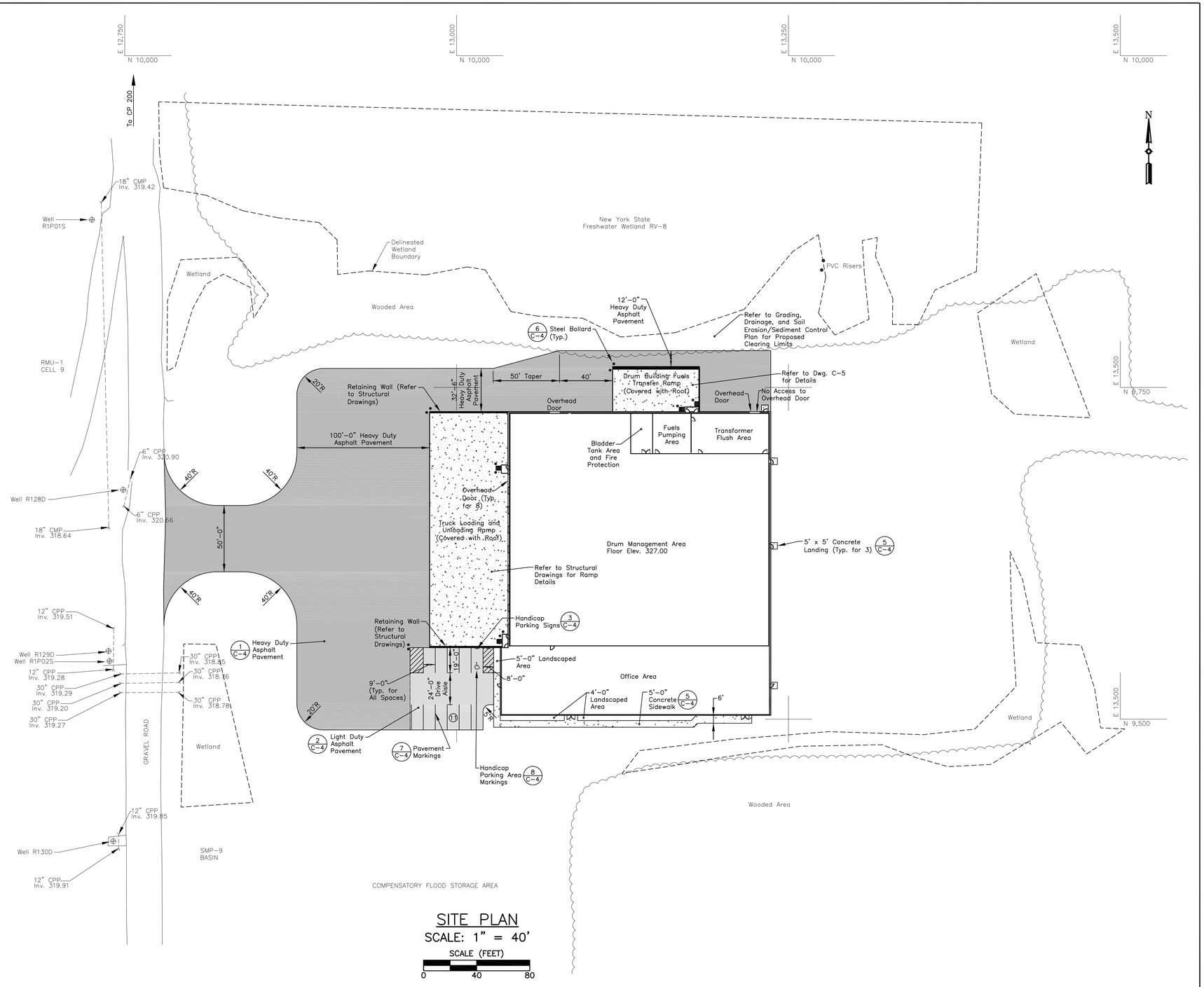
SITE CONTROL POINT 200
SCALE: 1" = 40'

PROJECT INFORMATION

Owner:	Chemical Waste Management 1550 Balmer Road Youngstown, New York 14174 716-286-0325
Tax Account Nos.:	61.00-2-1
Parcel Size:	482.53 acres
Project Area:	5.0 acres
Proposed Development:	45,596 s.f. Drum Management Building

ZONING INFORMATION

District:	M-3 Heavy Industrial	
Zoning Requirements:	Required	Proposed
Min. Lot Size	2.5 acres	482.53 acres
Max. Building Height	50 l.f.	?? l.f.
Parking Requirements:	1 space per 100 s.f. net floor area (office, professional, or business) Must be a minimum of 80% and a maximum of 110% of required spaces 45,596 s.f./100 s.f. = 456 parking spaces 80% x 456 spaces = 365 parking spaces	
Proposed Parking:	11 spaces	



SITE PLAN
SCALE: 1" = 40'

SCALE (FEET)
0 40 80

NO.	DATE	APPR.	REVISION
1	06/10/12	GFT	REVISIONS TO ADDRESS 04/23/12 NYSDEC REVIEW COMMENTS
2	05/30/13	GFT	REVISIONS TO INCORPORATE WETLAND DELINEATION

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.
50 RIDGE ROAD
BUFFALO, NEW YORK 14218
716-827-0700

WASTE MANAGEMENT

DRUM MANAGEMENT BUILDING RELOCATION PROJECT
CWM CHEMICAL SERVICES, LLC.
MODEL CITY FACILITY
MODEL CITY, NEW YORK

CHECKED		DATE	
DESIGN ENGINEER	GFT		
PROJECT ENGINEER	GFT		
PROJECT MANAGER			
APPROVED		DRAWN	HKT
APPROVED		SCALE	1" = 40'
		DATE	6-20-12
		JOB NO.	11-406
		REVISION DATE	MAY 30, 2013
		FILE NAME	SITE PLAN.DWG

SITE PLAN

DRAWING NO. C-2

REV. NO.

SHEET OF

WELL ELEVATIONS (FOR USE AS BENCHMARKS)		
	ELEVATIONS (FT.)	
WELL ID	TOP OF INNER PVC RISER	TOP OF OUTER METAL CASING
R1P01S	323.898	324.525
R128D	326.807	327.169
R129D	327.378	327.764
R1P02S	327.248	327.806
R130D	325.543	325.925

NOTE

Construction activities may warrant the installation of additional erosion and sedimentation control devices on a temporary or permanent basis. The Contractor is responsible for recognizing these situations and for providing necessary erosion and sedimentation control devices to prevent transmission of sediments from the site. The Contractor should be aware that the site and offsite areas contain wetland areas which should not be disturbed or impacted. Extreme caution should be exercised near wetland areas to prevent deposition of sediments within or near the wetland boundaries.

SOIL EROSION/SEDIMENTATION CONTROL NOTES

1. Contractor shall install erosion and siltation control measures during construction to prevent off-site transport and deposition of materials. All erosion and siltation control measures shall be in place and approved by the Town or their duly noted representative prior to any construction activities, including mowing.
2. The temporary erosion/sedimentation control measures depicted on the site plan shall be supplemented with additional controls if found necessary during construction. Contractor is responsible for establishing the controls during construction, and removing the controls following re-establishment of ground cover.
3. All sedimentation control structures shall remain in effective operating condition.
4. No erosion or sediment control measures may be removed until the upland areas are stabilized and/or approval of their removal has been granted by the Town.
5. All access to and from the site shall be via the stabilized construction entrance, which shall be kept clean and free of debris and sediment. Any debris or sediment which makes its way to the public highway shall be immediately removed.
6. Any erosion or sediment control measure shall be immediately cleaned, repaired, and/or replaced upon notice of any damage.
7. All disturbed areas where construction activities have temporarily or permanently ceased shall be stabilized within 14 days.
8. All erosion and sediment control methods are to be designed and installed in accordance with the latest edition of the New York State Standards and Specifications for Erosion and Sediment Control.
9. Seed Mixes:

Temporary (50 lbs. per acre)
Annual Ryegrass 50% by Weight (90% Purity)
Tall Fescue 50% by Weight (90% Purity)

Permanent
Apply lawn seed mix at a rate of 5 lbs. per 1,000 s.f. of lawn area using the following proportions by weight:

Lawn Areas

% by Weight in Mixture	Species or Variety
45	Kentucky Bluegrass
40	Red Fescue (commercial)
15	Common Ryegrass

Rate of lawn fertilizer to be 25 lbs. per 1,000 s.f.

CONSTRUCTION SEQUENCE

Step 1 Install silt fence at the locations indicated on the plan. Install a double row of silt fence near wetland areas.

Step 2 Install stabilized construction entrance.

Step 3 Remove trees and brush within the proposed work areas and dispose of trunks, stumps, and branches at an onsite disposal area.

Step 4 Strip topsoil from the proposed pavement areas, drainage swales, lawn areas, and building areas and place it within the designated storage area.

Step 5 Construct the building pad using imported embankment material.

Step 6 Stabilize exposed ground areas with temporary seed mix.

Step 7 Install underground utility services to the buildings.

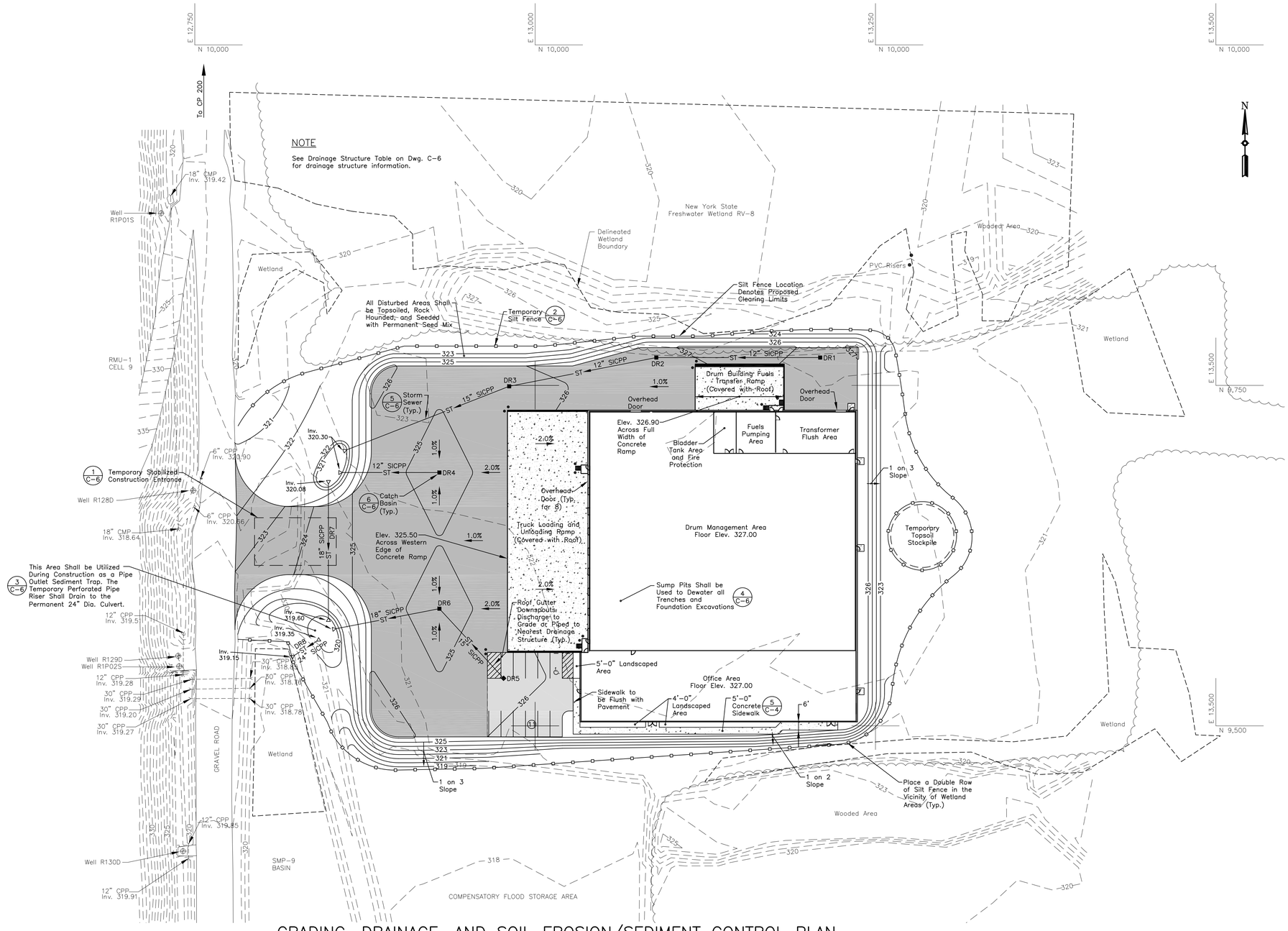
Step 8 Prepare building pads, construct foundations, and immediately place crushed stone subbase material for the floor slabs.

Step 9 Boxout pavement area and immediately place geotextile fabric and crushed stone base material.

Step 10 Fine grade, topsoil, seed, and mulch all areas that will not require future disturbance.

Step 11 Following construction of pavements, remove accumulated sediment from the drainage swales and topsoil, seed, and mulch all remaining disturbed areas.

Step 12 Following establishment of a healthy growth of turf within all disturbed areas, remove the silt fence.



GRADING, DRAINAGE, AND SOIL EROSION/SEDIMENT CONTROL PLAN

SCALE: 1" = 40'

SCALE (FEET)
0 40 80

NO.	DATE	APPR.	REVISION
1	06/10/12	GFT	REVISIONS TO ADDRESS 04/23/12 NYSDEC REVIEW COMMENTS
2	05/30/13	GFT	REVISIONS TO INCORPORATE WETLAND DELINEATION

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.
50 RIDGE ROAD
BUFFALO, NEW YORK 14218
716-827-0700

WASTE MANAGEMENT

DRUM MANAGEMENT BUILDING RELOCATION PROJECT
CWM CHEMICAL SERVICES, LLC.
MODEL CITY FACILITY
MODEL CITY, NEW YORK

CHECKED		DATE	
DESIGN ENGINEER	GFT		
PROJECT ENGINEER	GFT		
PROJECT MANAGER			
APPROVED			
APPROVED			

GRADING, DRAINAGE, AND SOIL EROSION/SEDIMENT CONTROL PLAN

DRAWN	HKT	DATE	6-20-12	REVISION DATE	MAY 30, 2013
SCALE	1" = 40'	JOB NO.	11-406	FILE NAME	GRADING PLAN.DWG

DRAWING NO. C-3
REV. NO.
SHEET OF

WASTE MANAGEMENT

CWM CHEMICAL SERVICES, LLC
1550 Balmer Road
Model City, NY 14107
(716) 286-1550
(716) 286-0211 Fax

September 25, 2013

Ms. Kathleen Buckler
U.S. Army Corp of Engineers
1776 Niagara Street
Buffalo, New York 14207-3199

Re: Additional Information Department of the Army Application No. 2000-01534, New York State Department of Environmental Conservation No. 9-2934-00022/00230

Dear Ms. Buckler:

On July 8, 2013, CWM Chemical Services, LLC (CWM) submitted a Section 401/401 Joint Application including New York State Article 24 Application for impacts associated with the development of a new landfill, designated Residuals Management Unit No. 2 (RMU-2) at our Model City Facility. In a letter dated August 26, 2013, the United States Army Corps of Engineer requested additional information be provided so that the USACE could continue processing the application.

Attached please find CWM's response to the request for additional information and additional information requested by the USACE.

CWM appreciates your timely review of the July 8, 2013 Joint Application would appreciate an expeditious review of the attached information and permit issuance to enable CWM to meet the construction schedule.

If you have any questions, please contact myself at (716) 286-0246 or Mr. Jonathan Rizzo at (716) 286-0354.

"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

JPR/JAB/jpr

Mr. Kathleen Buckler
USACE
September 25, 2013
Re: Additional Information Department of the Army Application No. 2000-01534, New York State Department of Environmental Conservation No. 9-2934-00022/00230
Page - 2 -

Attachments

cc: D. Denk - NYSDEC/Region 9
C. Rosenburg - NYSDEC/Region 9
B. Rostami - NYSDEC/Region 9
J. Strickland - NYSDEC/Region 9
M. Cruden - NYSDEC/Albany, NY
G. Burke - NYSDEC/Albany, NY
M. Mortefolio - NYSDEC/Albany, NY
On-site Monitors- NYSDEC/ Model City, NY
A. Park - USEPA/Region II
P. Flax - USEPA/Region II
N. Azzam - USEPA/Region II
J. Devald - NCHD/Lockport, NY
M. Mahar - CWM/Model City, NY
J. Rizzo - CWM/Model City, NY
S. Rydzyk - CWM/Model City, NY
J. Hecklau - EDR/Syracuse, NY
EMD Subject File
Q & A

ENCLOSURE 1
CWM Response to USACE August 26, 2013 Request for Additional Information

CWM RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
JOINT APPLICATION FOR PERMIT
FOR RESIDUALS MANAGEMENT UNIT NO. 2
USACE REQUEST (dated August 26, 2013)

USACE Comment a.

Please identify the areas (if any) that will be used as soil borrow/stockpile areas.

CWM Response:

Appendix H of the Draft Environmental Impact Statement (DEIS) for the RMU-2 Project provides a soil management plan. Figure 1 from Appendix H of the DEIS is attached (Attachment 1) which shows current and potential soil stockpile locations that may be utilized during the development of RMU-2. A portion of the required soil materials for construction will be obtained from on-site excavation for RMU-2 and Fac Pond 5. Soils not available on site will be obtained from off-site sources on a contract basis. Section 2.6.6.5 and Appendix C of the DEIS provides details of potential off-site permitted borrow sources that may be utilized for the RMU-2 project. Also attached is a map showing the location of potential off-site soil borrow sources.

USACE Comment b.

Please overlay the wetland delineation map on the proposed site plan (page 2).

CWM Response:

Drawing No. 2 (Site Plan) is located in Appendix D of the Joint Application for Permit submitted on July 8, 2013. The outline of the wetlands in the RMU-2 area and associated facility development areas was overlain on the drawing by Arcadis. The revised drawing is attached (Attachment 2).

USACE Comment c.

Please provide an outline of past permitted impacts associated with the CWM Facility. The past impacts shall be presented in a table format and should include all associated permit numbers, year permits were issued, type of permitted impact, size of impact, and any mitigation that was completed in association with each permit.

CWM Response:

The attached table (Attachment 3) provides a summary of past permitted impacts at the CWM Facility with associated permit numbers, year permits were issued, type of permitted impact, size of impact, and mitigation that was completed in association with each permit.

USACE Comment d.

The six cells of RMU-2 will be constructed in phases. Please provide an estimated construction timeline for the development each phase of the landfill. Also, are the wetland impacts to be impacted in phases along with the construction of each cell, or will the wetland impacts occur at once?

CWM Response:

An estimated construction timeline for the development of RMU-2 is attached (Attachment 4). The attached provides a conceptual phasing schedule for the construction of RMU-2 through Year 6. It is anticipated that the last three cells will be constructed beyond Year 8. The

attached table also provides an indication of the federally regulated wetlands that will be impacted with each phase.

USACE Comment:

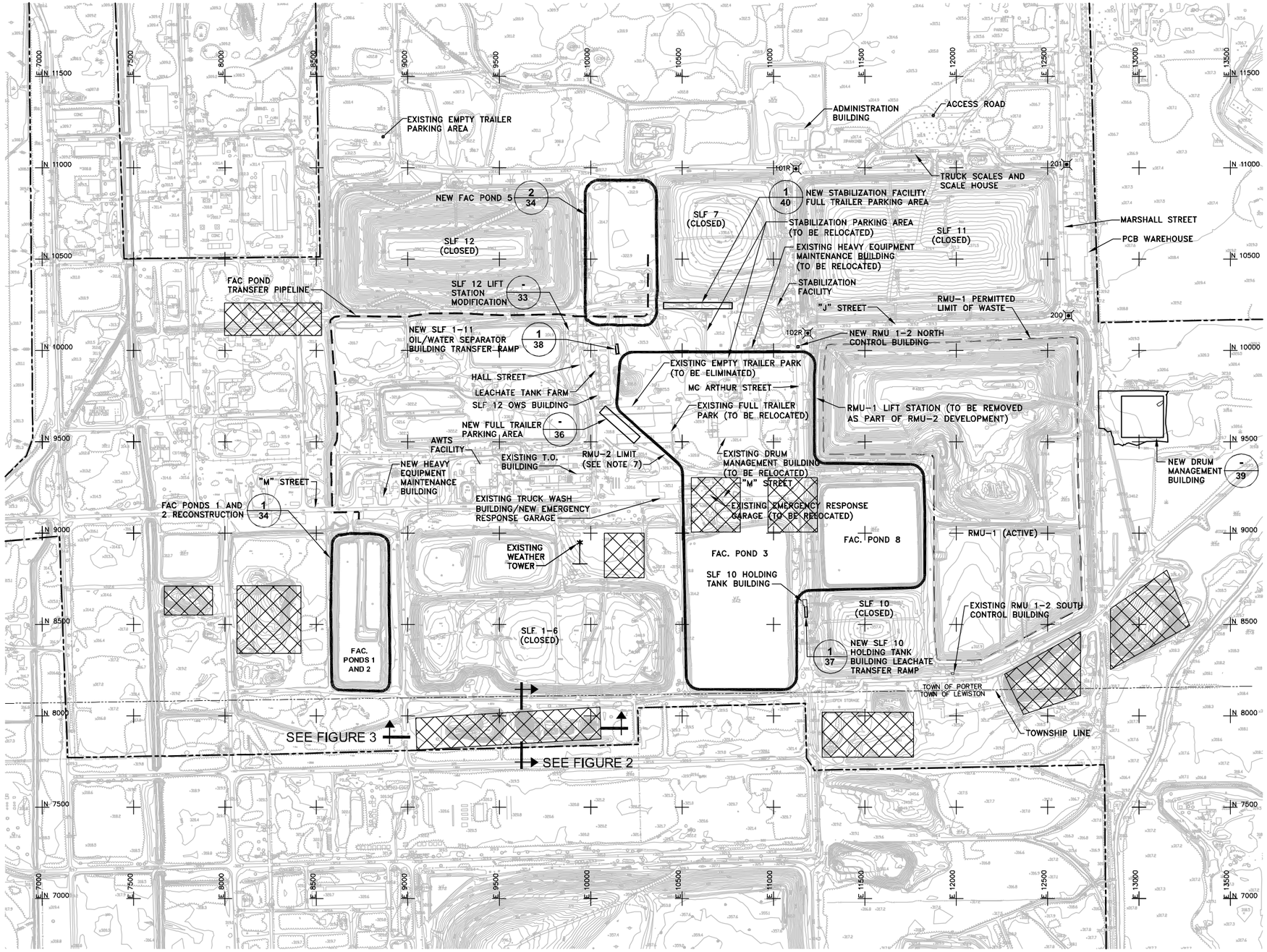
During our preliminary examination of the application materials, we noted that other information will be needed during the evaluation process. Although there is no requirement that this supplemental information be provided to issue a Public Notice, it would benefit us in the evaluation process for a permit:

- *A further analysis of alternatives to the work proposed. This information will aid us in determining whether or not the proposed work complies with the United States Protection Agency Guidelines at Title 40 of the Code of Federal Regulations Part 230.*
- *Create a table that outlines the site life and wetland impact acreages for each of the CWM Facility alternatives and sub-alternatives, including the proposed RMU-2 footprint. Please include all associated impacts to Waters of the U.S. Finally, please include representative plans for each alternative with associated impacts.*

CWM Response:

An analysis of alternatives is included in the Draft Environmental Impact Statement (DEIS) (Arcadis, 2013) for the RMU-2 Project with portions included in the Joint Application. Additional details of the analysis are included in Attachment 5. Attachment 5 includes a discussion of the various alternatives evaluated including a table which outlines the site life and impacted wetland acreages per alternative. Attachment 5 also includes figures showing the location of the onsite alternatives analyzed and associated wetlands in each area.

ATTACHMENT 1
Arcadis Drawing "Stockpile Locations: Existing and Potential"
Arcadis Drawing "Potential Clay Borrow Sources"



LEGEND:

- BRUSHLINE
- CABLE MARKER
- CATCH BASIN
- DROP INLET
- FENCE
- FIRE HYDRANT
- GUARD RAIL
- LIGHT POLE
- MISCELLANEOUS POLE
- MONUMENT
- POST
- RAILROAD TRACKS
- SIGN
- SWAMP
- TRAFFIC LIGHT
- TREE
- TREELINE
- UNIDENTIFIED OBJECT
- UTILITY POLE
- VALVE
- WATER LINE
- EXISTING CONTOUR
- EXISTING GRADEBREAK
- PROPERTY LINE
- NEW FAC POND TRANSFER PIPELINE -/41 -/42 -/43

200 CONTROL MONUMENT (SEE TABLE BELOW)

2/33 DETAIL REFERENCE NUMBER / DRAWING REFERENCE NUMBER

E 13500 N 7000 COORDINATE GRID (SEE NOTE 3)

STOCKPILE AREA

RMU-1/RMU-2 CONTROL MONUMENTS

MONUMENTS	ELEVATION	CWM PLANT GRID		RMU-1 GRID		NY STATE PLANE COORDINATES (NAD-27)		NGVD-29 ELEVATION
		NORTHING	EASTING	NORTHING	EASTING	NORTHING	EASTING	
102R	319.72	100+94.55	111+87.56	100+94.65	11+87.56	1,175,430.46	396,380.12	319.66
200	318.33	101+89.56	126+13.77	101+89.56	26+13.77	1,175,488.28	397,808.18	318.27
101R	316.01	109+94.28	111+23.09	---	---	1,176,331.436	396,339.034	315.92
201	316.62	110+17.82	126+3.49	---	---	---	---	---

CONTROL MONUMENTS NOTE:

1. RMU-1 EASTING GRID COORDINATES ARE SIMPLIFIED PLANT GRID COORDINATES. SUBTRACTING 10,000 FROM THE CWM PLANT GRID EASTING COORDINATE WILL CONVERT THE CWM PLANT GRID TO THE RMU-1 GRID. NOTE THAT NO CONVERSION IS REQUIRED FOR NORTHING COORDINATES.

NOTES:

1. TOPOGRAPHIC BASE MAP CONSISTS OF COMBINATION OF DATA COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 5/31/01 BY AIR SURVEY CORP. (PROJECT NO.71010503). AND AN AUGUST 2008 SURVEY BY ENSOL, INC.
2. VERTICAL DATUM BASED ON NGS MEAN SEA LEVEL.
3. GRID COORDINATES SHOWN ARE CWM PLANT GRID.
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 VERIFICATION.
6. PROPERTY LINE IS APPROXIMATE. EASEMENTS AND RIGHT-OF-WAYS NOT SHOWN.
7. RMU-2 LIMIT REPRESENTS TOE OF PERIMETER MSE WALL.

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: K. DAVIS K. WOOD N.SMITHGALL LD: PIC: W. POPHAM PM: W. RANKIN TM: B. STONE LYR: ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIVE\B0023725\2009\00006\DWG\CONTRACT\IMPACT\23725G01.DWG LAYOUT: 1 SAVED: 11/10/2009 11:33 AM ACADVER: 17.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 11/10/2009 4:46 PM BY: SMITHGALL, NANCY
XREFS: 23725X02 23725X01 23725X00 IMAGES: PROJECTNAME: ---

1"=300' (300' 0 300' 600')

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING. USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: JOSEPH MOLINA
Professional Engineer's No.: 072644

State	Date Signed	Project Mgr.
NY		WAR
Designed by	Drawn by	Checked by
BMS/PTO	LAF	BMS

ARCADIS OF NEW YORK, INC.

CWM CHEMICAL SERVICES, LLC • MODEL CITY, NEW YORK

RESIDUALS MANAGEMENT UNIT 2 DRAFT ENVIRONMENTAL IMPACT STATEMENT

STOCKPILE LOCATIONS: EXISTING AND POTENTIAL

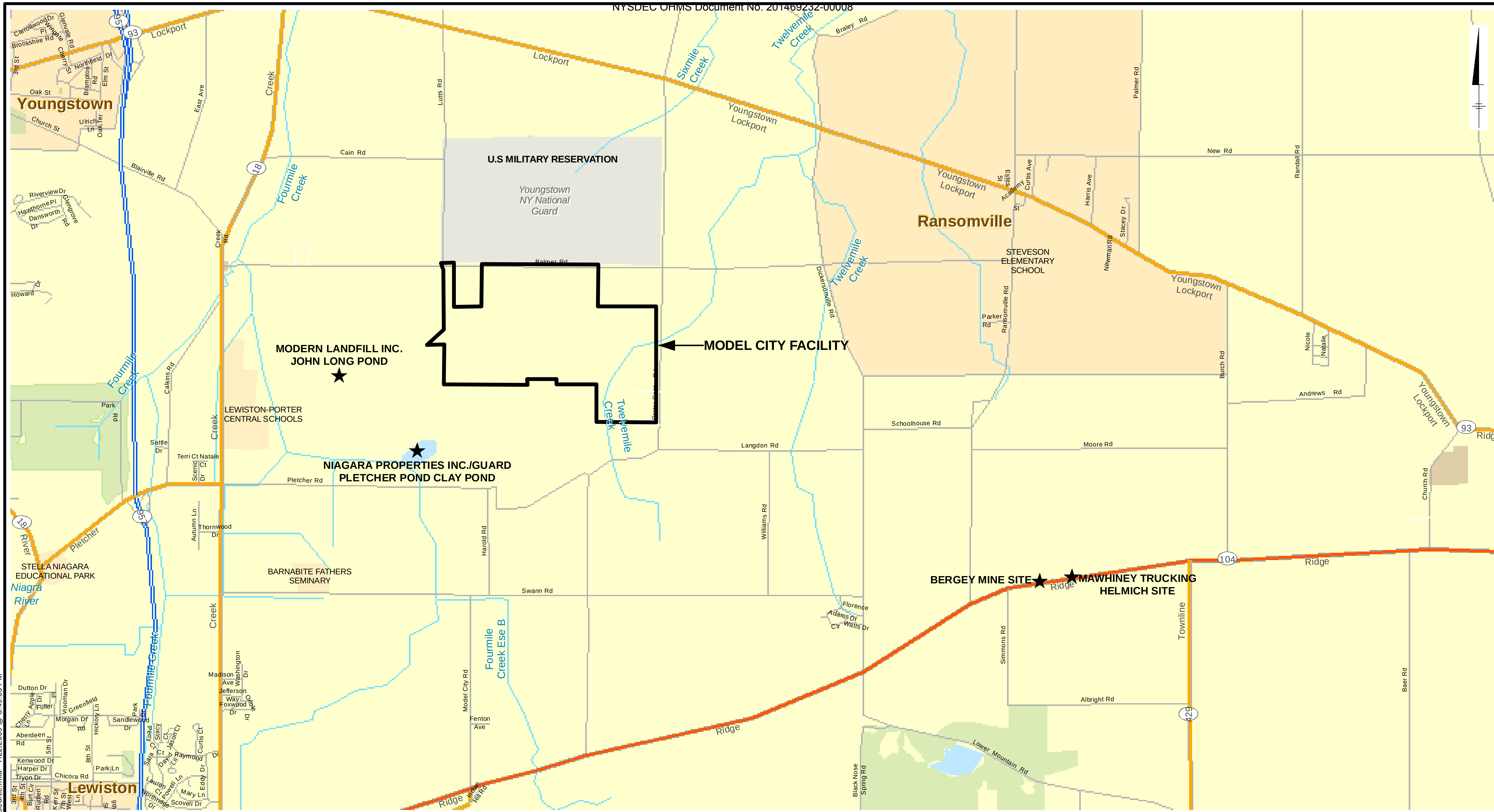
GENERAL

ARCADIS Project No. B0023725.2009.00006

Date OCTOBER 2009

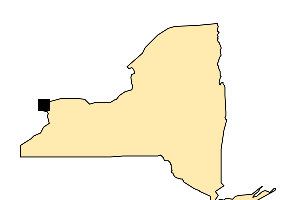
ARCADIS of New York, Inc.
6723 Towpath Road
P.O. Box 66
Syracuse, New York
TEL: 315.446.91220

1



LEGEND:

★ POTENTIAL CLAY BORROW SOURCE



AREA LOCATION

0 3,500 7,000 Feet

GRAPHIC SCALE

DRAFT

CWM CHEMICAL SERIVCES, LLC
MODEL CITY, NEW YORK
DRAFT ENVIRONMENTAL IMPACT STATEMENT

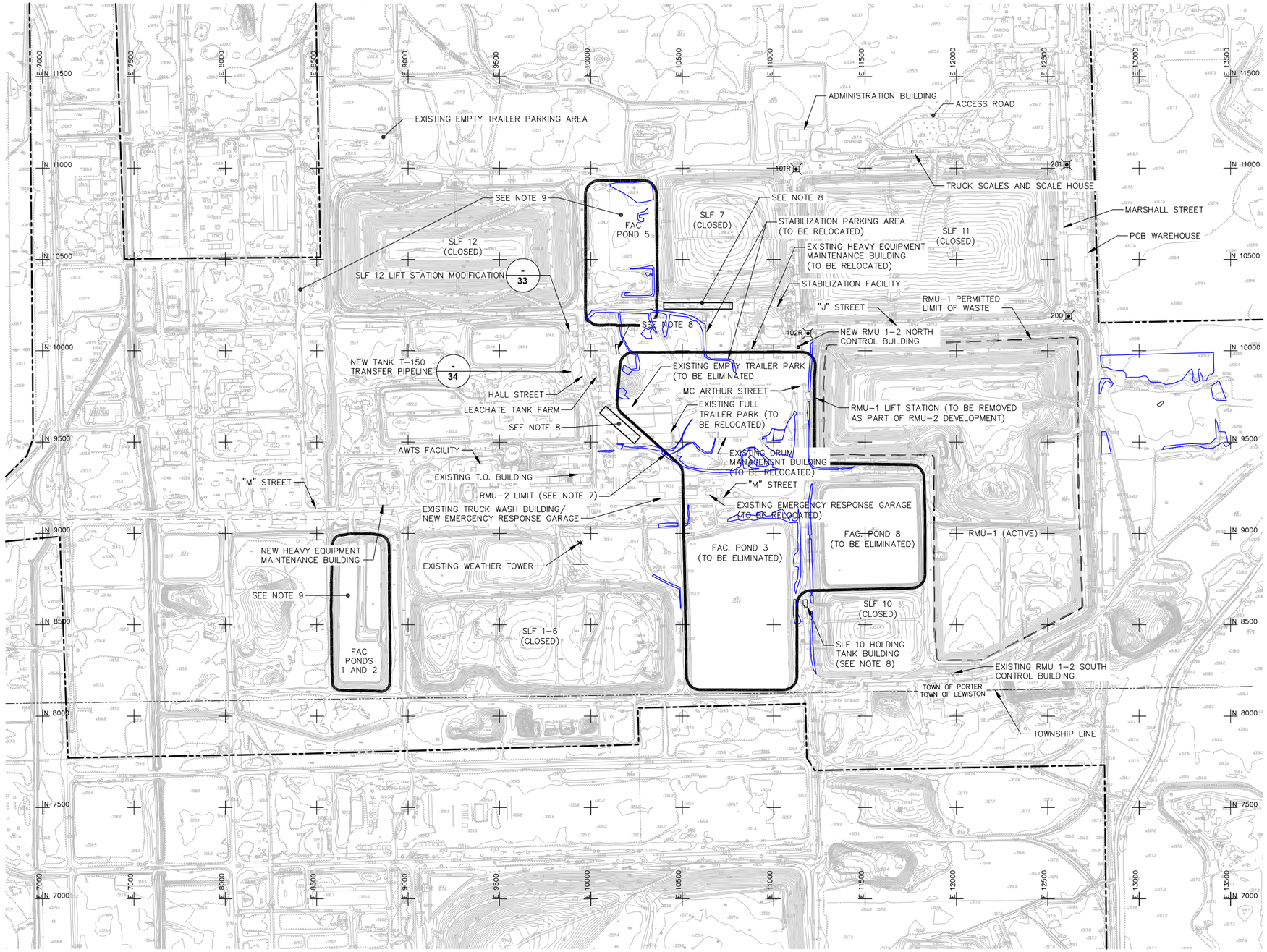
POTENTIAL CLAY BORROW SOURCES

ARCADIS

FIGURE 1

CITY: ROCH DIV/GROUP: 40 DB: LD: EAL PIC: WP PM: TM: GNG TR:
MODEL CITY 23725.003
Q:\CWM\ModelCity\RevisionsToDEIS\mxd\ClaySource.mxd - 7/22/2009 @ 3:49:05 PM

ATTACHMENT 2
Arcadis Drawing "Site Plan"
(with wetlands overlay)



LEGEND:

- BRUSHLINE
- CABLE MARKER
- CATCH BASIN
- DROP INLET
- FENCE
- FIRE HYDRANT
- GUARD RAIL
- LIGHT POLE
- MISCELLANEOUS POLE
- MONUMENT
- POST
- RAILROAD TRACKS
- SIGN
- SWAMP
- TRAFFIC LIGHT
- TREE
- TREELINE
- UNIDENTIFIED OBJECT
- UTILITY POLE
- VALVE
- WATER LINE
- EXISTING CONTOUR
- EXISTING GRADEBREAK
- PROPERTY LINE
- WETLAND DELINEATION

200 CONTROL MONUMENT (SEE TABLE BELOW)

2/33 DETAIL REFERENCE NUMBER / DRAWING REFERENCE NUMBER

E 13500 / N 7000 COORDINATE GRID (SEE NOTE 3)

RMU-1/RMU-2 CONTROL MONUMENTS

MONUMENTS	ELEVATION	CWM PLANT GRID		RMU-1 GRID		NY STATE PLANE COORDINATES (NAD-27)		NGVD-29 ELEVATION
		NORTHING	EASTING	NORTHING	EASTING	NORTHING	EASTING	
102R	319.72	100+94.55	111+87.56	100+94.65	11+87.56	1,175,430.46	396,380.12	319.66
200	318.33	101+89.56	126+13.77	101+89.56	26+13.77	1,175,488.28	397,808.18	318.27
101R	316.01	109+94.28	111+23.09	---	---	1,176,331.436	396,339.034	315.92
201	316.62	110+17.82	126+3.49	---	---	---	---	---

CONTROL MONUMENTS NOTE:

1. RMU-1 EASTING GRID COORDINATES ARE SIMPLIFIED PLANT GRID COORDINATES. SUBTRACTING 10,000 FROM THE CWM PLANT GRID EASTING COORDINATE WILL CONVERT THE CWM PLANT GRID TO THE RMU-1 GRID. NOTE THAT NO CONVERSION IS REQUIRED FOR NORTHING COORDINATES.

NOTES:

1. TOPOGRAPHIC BASE MAP CONSISTS OF COMBINATION OF DATA COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 5/31/01 BY AIR SURVEY CORP. (PROJECT NO.71010503). AND AN AUGUST 2008 SURVEY BY ENSOL, INC.
2. VERTICAL DATUM BASED ON NGS MEAN SEA LEVEL.
3. GRID COORDINATES SHOWN ARE CWM PLANT GRID.
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 VERIFICATION.
6. PROPERTY LINE IS APPROXIMATE. EASEMENTS AND RIGHT-OF-WAYS NOT SHOWN.
7. RMU-2 LIMIT REPRESENTS TOE OF PERIMETER MSE WALL.
8. REFER TO DRAWINGS IN ATTACHMENT D-1 OF THE OVERALL SITE/RMU-1 PERMIT FOR FURTHER DETAIL.
9. REFER TO DRAWINGS IN ATTACHMENT D-2 OF THE OVERALL SITE/RMU-1 PERMIT FOR FURTHER DETAIL
10. WETLAND DELINEATION PROVIDED BY CWM VIA EMAIL ON 9/16/13 BASED ON DELINEATIONS PERFORMED BY EDR COMPANIES IN JUNE 2008, APRIL 2011, AND JULY 2012.

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: K. DAVIS K. DAVIS K. WOOD K.SARTORI PIC: W. POPHAM PM: W. RANKIN TM: B. STONE LYR: ON=*OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIB0023725\2013\000003\DWG\RMU_2\23725G02.dwg LAYOUT: 1 SAVED: 9/23/2013 4:08 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: -
XREFS: IMAGES: PROJECTNAME: --
23725X02
23725X01
23725X00
23725X03

300' 0 300' 600'
1"=300'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name		
Professional Engineer's No.		
State	Date Signed	Project Mgr.
Designed by	Drawn by SJK	Checked by

ARCADIS OF NEW YORK, INC.

CWM CHEMICAL SERVICES, LLC • MODEL CITY, NEW YORK
RESIDUALS MANAGEMENT UNIT 2

RMU-2 SITE PLAN

GENERAL

ARCADIS Project No. B0023725.2013.00003
Date SEPTEMBER 2013

ARCADIS of New York, Inc.
6723 Towpath Road
P.O. Box 66
Syracuse, New York
TEL. 315.446.9120

1

ATTACHMENT 3
CWM Chemical Services, LLC
Wetland Permit Listing

WETLAND PERMIT LISTING

CWM Chemical Services, LLC ~ Model City, NY
September 2013

Description	*Permit No.*	*Effective Date*	*Comments*	*Permitted Impact*	*Size Impacted*	*Mitigation*
Wetlands	92-986-72	2/24/93	Construction of RMU-1; Authorized under Nationwide Permit 33CFR330.5, Appendix A, Section B, No. 26, by U.S. Army Corps of Engineers (USACOE)	Filling of 7.1 acres of federal wetlands for the construction of RMU-1 waste facility. No impacts to State wetlands.	7.1 acres	7.2 acres wetlands construction. Deed restrictions on wetlands and old growth beech/maple forest.
Wetlands	2000-01534(0)	8/30/00	Construction of compensatory flood water storage area (CFSA) (USACOE)	Discharge Soil Associated with Land clearing Activities Resulting In An Impact On About 0.7 Acre Of Federal Wetland In Connection With The Construction of a Compensatory Flood Storage (CFSA) Basin	0.7 acres	1.4 acres wetland creation required within the CFSA. 4.5 acres wetland actually created within the CFSA.
Wetlands	2000-01534(3)	2/21/03	Construction of RMU-1 East Stormwater Retention Basin (USACOE)	Impact approximately 0.33 acres of federal wetland in connection with the development of a 2.45 acre flood storage basin. No impacts to State wetlands.	0.33 acres	Purchase and preservation and/or purchase and transfer to an approved Federal, state, or local agency or an environmentally beneficial project. CWM donated $15,000 to the Buffalo Audubon Society, Inc. for the construction of Birds of Prey exhibit. Birds of Prey exhibit not built, however, Corps approved use of funds for Audubon natural resource education opportunities.
Wetlands – NYS Article 24	9·2934-00022/00229	4/29/13	Removal of portion of soil stockpile located in 100-adjacent area to state freshwater wetland. The project area is located southeast of the existing RMU-1 landfill.	The project will impact approximately 0.85 acres of the 100-foot adjacent area of NYS Freshwater Wetland RV-1. No impacts to federal wetlands.	0.85 acres	Removal of a soil stockpile approximately 3.27 acres in size and restoration/ revegetation of the project site.
Wetlands Section 401/401 Article 24 Application	2000-01534(6) (pending)	N/A	Joint Application submitted 7/8/13 for RMU-2 impacts and draft mitigation plan, (USACOE)	Proposed filling of 2.567 acres of federal wetlands for the construction of RMU-2 waste facility and associated units. No impacts to State wetlands. Impact to 0.74 acres of 100-foot adjacent area of state freshwater wetland.	2.567 acres	Proposed construction of 4.37 acres of successional wetlands and deed restrictions (conservation easements) on 15.94 acres of constructed and existing wetlands and upland areas.

ATTACHMENT 4
RMU-2 Conceptual Phasing Schedule

August 25, 2013

CWM Chemical Services, LLC.
Model City Facility
Niagara County, New York

RMU-2 Conceptual Construction Phasing Schedule
Impact to Wetlands Summary by Phase

Phase ID#	Construction/Closure Description	Federal Wetland Impacts (Yes or No)	Wetland Impacted (1)	Partial or Entire Wetland Impacted (2) (P or E)	Direct Impacts to Wetlands (4) (acres)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	>Year 8
1	Complete FP8 Berm Remediation & Closure	**No**	**-**	**-**	**-**	**X**							
2	Construction of Cell 20	**Yes**	**J**	**P**	**0.232**	**X**	**X**						
3	Demo Existing SLF-10 Loading Ramp Construct New SLF-10 Loading Ramp	**No**	**-**	**-**	**-**	**X**							
4	Construction of Fac Pond 5	**Yes**	**G, H, I, K**	**E, E, E, P**	**0.823**	**X**							
5	Construct New Stabilization Access Road	**Yes**	**K**	**E**	**0.290**	**X**							
6	Upgrade Fac Ponds 1/2	**No**	**-**	**-**	**-**		**X**						
7	Remove/Close Fac Pond 3	**No**	**-**	**-**	**-**			**X**					
8	Construct Cell 18	**Yes**	**N, O**	**P, P**	**0.050**			**X**					
9	Construct West Forcemain Transfer Line	**Yes**	**M**	**P**	**0.306**			**X**					
10	Demo/Close Existing Full Trailer Parking Construct New Full Trailer Parking Area	**No** **Yes**	**-** **M**	**-** **E**	**0.306**			**X**					
11	Construct Cell 19	**No**	**-**	**-**	**-**					**X**			
12	Build New Drum Building	**No (3)**	**-**	**-**	**-**					**X**	**X**		
13	Construct Cell 17	**Yes**	**J**	**E**	**0.560**								**X**
14	Demo/Close Stab Full Trailer Parking Construct New Stab Full Trailer Parking	**No** **No**	**-** **-**	**-** **-**	**-** **-**								**X**
15	Construct Cell 16	**No**	**-**	**-**	**-**								**X**
16	Construct Cell 15	**No**	**-**	**-**	**-**								**X**
					2.567								

Notes: The above schedule is a conceptual schedule based on the anticipated sequencing of construction and closure of permitted units and may change based on the timing of the modification to the Sitewide Part 373 Permit.
(1) Wetland designations as delineated by EDR Companies, June 2009, April 2011, and July 2012.
(2) Partial Wetland Impact = is defined as a partial filling of federal jurisdictional wetlands within the proposed phase area.
Entire Wetland Impact = is defined as a complete filling of federal jurisdictional wetlands within the proposed phase area. Portions of delineated wetlands outside the project area (portions of Wetlands N and O) will not be filled.
(3) Construction of the New Drum Management Building will impact the 100-foot adjacent area to New York State Freshwater Wetland RV-8.
(4) Approximate size of impacts per phase.

ATTACHMENT 5
RMU-2 Alternatives Analysis

Residuals Management Unit No. 2 (RMU-2) Alternatives Analysis

The following sections provide details of CWM Chemical Services, LLC (CWM) evaluation of various alternatives during the design phase for proposed new landfill Residuals Management Unit No. 2 (RMU-2) at the Model City, New York Facility. Additional details of the alternatives analysis are provided in the Draft Environmental Impact Statement (DEIS) prepared in accordance with 6NYCRR Part 671 (Arcadis, August 2013).

Introduction

CWM Chemical Services, LLC (CWM) is proposing a 43.5-acre expansion of the existing CWM Model City Hazardous Waste Management Facility (Model City Facility), located in the Town of Porter, Niagara County, New York (see Figure 1). This expansion is needed in order to allow continued disposal of hazardous and industrial nonhazardous waste at the Model City Facility because the currently active landfill (Residuals Management Unit 1, or RMU-1), the only commercial land disposal facility in the northeast United States, is approaching full capacity. The proposed expansion will occur within a currently developed/disturbed portion of the Model City Facility, and will be designated Residuals Management Unit 2 (RMU-2).

The proposed Project requires excavation and development of large contiguous areas of land, which limits opportunities for minimizing/avoiding wetland impacts. However, most of the wetlands on-site are man-made drainage features which are characterized by surface water hydrology and/or vegetation that have been historically altered to such an extent that limited wetland functions and values have been retained. No previously undisturbed wetlands or wetlands providing significant ecological functions and values will be impacted by the proposed Project. Based upon Project design and engineering completed to date, construction activities will result in permanent loss of 2.567 acres of federally-jurisdictional wetlands. No temporary disturbance to wetlands or conversion of forested wetlands to other wetland communities will occur. No NYSDEC freshwater wetlands will be impacted; however a portion of the 100' Adjacent Area Buffer for NYSDEC Wetland RV-8 will be impacted due to the relocation of the Drum Management Building. Therefore, the Applicant has submitted a Joint Application for Permit to the USACE in accordance with the conditions of Nationwide Permit Program (NWP) and to the NYSDEC in accordance with Section 401 of the Clean Water Act and New York State Environmental Conservation Law (ECL) Article 24 (Freshwater Wetlands).

ALTERNATIVES ANALYSIS

The Applicant looked at the following alternatives to the proposed action:

- No action;

- Action at a different location within the Model City Facility;
- Action at a different site;
- Different technological approach; and
- Design sub-alternatives.

These alternatives, along with the no action alternative, are described below.

No Action Alternative

Under the No Action Alternative, hazardous waste processing and disposal operations presently conducted at the Model City Facility would continue with no further commitments to modify the Model City Facility's existing capabilities. Implementation of this alternative would exhaust land disposal capacity at the Facility by approximately 2015 based on current waste receipt rates. While this alternative would eliminate all on-site wetland impacts, there are several drawbacks to this alternative. Some likely impacts of the No Action Alternative would include:

- Hazardous waste generated in NYS and requiring land disposal would need to be shipped out-of-state.
- Decreased competition in the waste land disposal market and added transportation costs will result in increased disposal costs to NYS companies, placing an additional economic burden on those companies.
- With increased transportation and disposal costs, there may be an increase in illegal disposal of hazardous wastes.
- Disposal at facilities outside of NYS would result in longer hauling distances, increased fuel consumption and larger greenhouse gas emissions.
- Denial could jeopardize New York's status as a RCRA-delegated state because of 40 CFR 271.4(f).
- The majority of economic benefits associated with the Model City Facility (over $13 million per year to state and local economies through various taxes, fees and expenditures) would be eliminated or significantly reduced.

Furthermore, the No Action Alternative would fail to achieve the Project's purpose and need.

Action at a Different Location within the Model City Facility

Locating a new landfill and other hazardous waste units within the existing Model City Facility would be limited to the property that is currently zoned for such activity (i.e., M-3 zone in the Town of Porter). Existing M-3 areas are largely utilized by active and closed waste management units. The proposed location for RMU-2 represents the only feasible area within the central portion of the Model City Facility meeting the zoning requirements. On October 10, 2001, the Town of Porter Town Board approved the rezoning of 75 acres of CWM's property east of RMU-1, known as the

"Eastern Area," from zone M-2 to M-3. Although the Eastern Area could be used for RMU-2, this area is further from the site infrastructure and would result in increased wetland impacts, as well as increased visual impacts. Other disadvantages of this alternative include:

- Overall costs would be increased to the point of being significantly less economical;
- This alternative would require the need to relocate existing facilities more critical to Model City waste handling operations (e.g., aqueous waste treatment system, stabilization) to be closer to the new landfill location;
- The current land use of another area would need to be modified or rezoned, requiring the need to evaluate the potential environmental impacts associated with this land disposal facility, which, given the less developed/disturbed character of this land, would likely be greater than the Proposed Action; and
- Due to the smaller landfill size potentially necessitated by land or zoning restrictions, this alternative would not adequately address the projected deficit in regional hazardous waste disposal.

Use of other property at the Model City Facility for this project (i.e., property in the Town of Porter not currently zoned M-3 and all property in the Town of Lewiston) would require Siting Board approval to override current zoning restrictions. In addition, these areas are currently undeveloped and would have additional potential impacts, such as loss of vegetation and disturbance of wetlands. For the above reasons, action at a different location within the Model City Facility is not considered a reasonable alternative.

Three areas of the CWM facility were evaluated for development of RMU-2 and are designated as the Eastern, Western, and Central Areas. Findings of these evaluations are discussed below:

- Western Area: The Western Area of the Facility was evaluated in 1999 for suitability for landfill expansion. A geotechnical investigation and a wetlands delineation were performed. The area is currently not permitted for RCRA activity and is zoned M-2 Light Industrial which prohibits land disposal facilities. The USACE is currently performing a remedial investigation of this area under the DERP-FUDS program. Based on the history of the area, the current investigation being performed by the USACE, and the zoning this area was determined to not be suitable for landfill expansion at this time.
- Eastern Area: The Eastern Area of the Facility was evaluated in 1999 for suitability for landfill expansion. A geotechnical investigation and a wetlands delineation were performed. The area was rezoned from M-2 Light Industrial to M-3 Heavy Industrial by the Town of Porter. M-3 zoning allows for the development of land disposal facilities. Based on the initial wetlands delineation and subsequent re-delineations performed with input from the USACE, greater than >37 acres of federal wetlands would be impacted and approximately 1,575 linear feet of Twelve Mile Creek would have to be relocated for landfill development. A

sub-alternative was evaluated which would reduce the amount of wetlands impacted (>19 acres) and not impact Twelve Mile Creek. However, these alternatives were found to be not viable due to impacts to wetlands and stream and the overall costs would be increased to the point of being significantly less economical.

- Central Area: The Central Area of the Facility was evaluated in 2002 for suitability for landfill expansion. A geotechnical investigation and a wetlands delineation were performed. The area is in a current operational area of the Facility. Based on the 2002 wetlands delineation approximately 2 acres of wetlands would be impacted. However, based on the discovery of chemical contamination within the footprint of the initial design, the landfill was redesigned. Supplemental delineations were performed in 2009, 2011, and 2012 for the redesigned landfill footprint and areas for additional facilities required for development of the landfill. Based on the Jurisdictional Determination by the USACE, 2.567 acres of federally regulated wetlands are located with the RMU-2 development area. The Central Area was selected to be the most suitable area for landfill development at the Facility at this time based on the project areas location within an active area of the Facility, the location of key infrastructure, and minimal impacts to low quality federal wetlands.

Action at a Different Site Alternative

An alternative to the Proposed Action would be construction and operation of a hazardous and industrial non-hazardous waste landfill at a location other than the existing Model City Facility. This alternative would require construction of the proposed landfill at another WMI owned facility or at some other location.

The Model City Facility is the location of 11 hazardous and industrial non-hazardous waste landfills (10 closed landfills and the currently active RMU-1). The Model City Facility has invested millions of dollars in the infrastructure that is necessary to support and maintain a state-of-the-art hazardous waste TSDF. That infrastructure includes a fully integrated wastewater treatment plant that is used to treat, among other things, the leachate from the active and closed landfills and a stabilization facility necessary to treat hazardous waste to LDR standards prior to land disposal. Extensive groundwater, surface-water and air monitoring systems, with a well-developed database, an exhaustive hydrogeologic study of the site, a comprehensive on-site analytical laboratory and well established utilities and security systems would also be needed. In addition, the Model City Facility has in place a well-qualified management team and well trained employees familiar with the operation of the facility.

Any alternative site would require the duplication of the infrastructure systems, support and monitoring systems and the management and operating personnel. At the same time, closure and post-closure care at the current Model City Facility would be required. Any such alternative would be cost prohibitive. Thus, locating the proposed unit at a new

location elsewhere in NYS or within Niagara County, but outside the boundaries of the existing CWM facility, has several disadvantages: overall costs would be increased and the current land use of another area would need to be modified, adding to the potential for the environmental impacts associated with a land disposal facility. The time required for permitting the facility would be lengthy, causing an increased deficit in regional hazardous waste land disposal capacity.

In addition, prior permit and siting certificate applications at the Model City Facility have demonstrated that the facility's hydrogeologic characteristics are well suited for a hazardous and industrial non-hazardous waste landfill facility and previous siting boards have concluded that the siting criteria are satisfied at this location. As per 6 NYCRR Part 361, a certificate of environmental safety and public necessity is required for construction and operation of a new industrial hazardous waste management facility. Additionally, 6 NYCRR Part 617.14(f)(5) provides that the discussion of site alternatives "may be limited to parcels owned by, or under option to, a private applicant." CWM does not own or have under option any other property in NYS of adequate size and appropriately zoned for hazardous waste facility siting. Although WMI, CWM's parent company, does own other property in NYS, none of these properties are currently permitted or equipped for hazardous waste disposal, and historically, NYSDEC has been opposed to permitting hazardous waste disposal units at an existing solid waste disposal site. Also, CWM is not aware of any other company currently pursuing the development of commercial TSDFs within NYS. For the above reasons, CWM does not believe that the "action at a different site alternative" is a reasonable alternative.

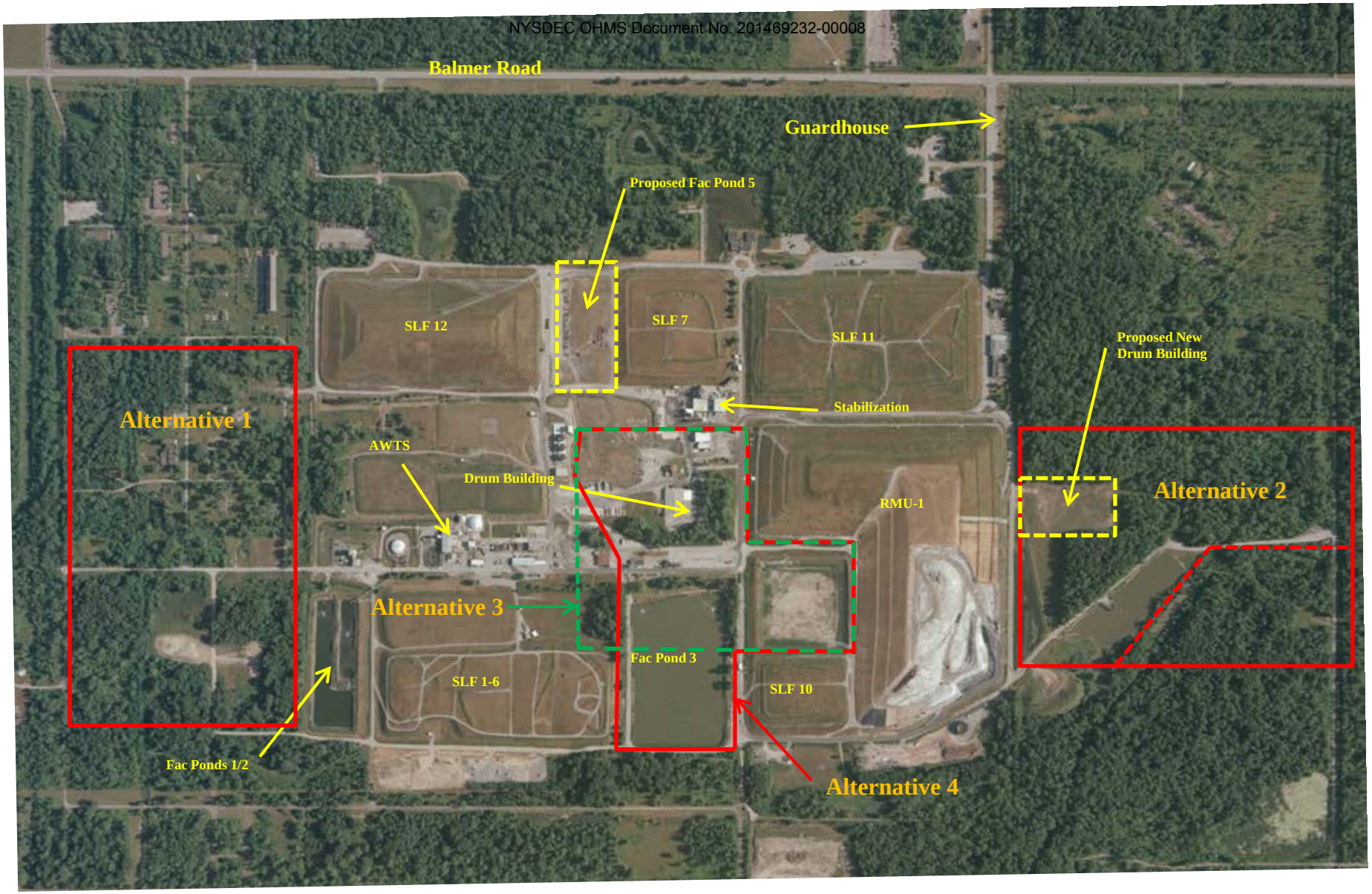
Secure Residuals Management Alternatives

Different technological approaches and Design sub-alternatives were evaluated during the design of RMU-2. The current RMU-2 design includes current technological advances and maximizes the capacity while minimizing the footprint. The current design technological approaches and sub-alternatives were found to achieve the Project's purpose and need.

Summary of Alternatives
Residuals Management Unit No. 2
CWM Chemical Services, LLC
Model City, New York

Alternatives [1]		Landfill Footprint Acreage [2]	Potential Disturbance Acreage [3]	Volume of Potential Useable Disposal Capacity [4] (cubic yards)	Site Life [5] (years)	Pass/ Fail Criteria	Direct Impacts to Wetlands [7] (acres)	Decision Notes
No Action Alternative		0.0	0.0	0	0	Fail[6]	0.0	Current site landdfill capacity exhausted in approx. 2 years. Alternative would fail to achieve the Project's purpose and need
Site Alternative 1	***West*** [10]	~~40	66.0	4,000,000	12	Fail[6]	2.23 acres [8] 2290 LF Tributary to Four-Mile Creek Relocation	Not a RCRA Permitted Area. Alt. not viable due to LOOW (DERP-FUDS) investigation/remediation by the USACE. Overall costs would be increased to the point of being significantly less economical
Site Alternative 2	***Full East*** [10]	64.0	75.0	7,244,300	22	Fail[6]	> 37 acres [9] 1575 LF 12-Mile Creek Relocation	Alt. not viable due to impacts to wetlands and stream. Overall costs would be increased to the point of being significantly less economical
	Reduced East [10]	41.0	50.0	4,200,000	12	Fail[6]	> 19 acres [9]	Alt. not viable due to impacts to wetlands. Overall costs would be increased to the point of being significantly less economical
Site Alternative 3	***Central***	42.0	63.0	4,400,000	13	Fail[6]	2.0	Alt. 3 originally selected in 2003. Footprint redesigned due to chemical contamination along the western boundary.
Site Alternative 4	***Central***	43.5	70.0	4,030,700	12.0	Pass	2.567 [11]	Preferred Alternative. Alternative achieves the Project's purpose and need
Action at a Different Site Alternative		UK	UK	UK	UK	Fail[6]	UK	Atl. Considered not viable due to cost of locating new facility infrastructure and time for land acquisition and permitting.

1 - Locations of alternatives are shown on attached Figure
2 - Liner acreage is the footprint area of the limits of waste, additional area will be disturbed for supporting facilities as outlined in Note 3.
3 - Potential disturbance acreage includes additional area for landfill supporting facilities (perimeter roads, landfill berms, stormwater detention basins and mining areas) but does not include any acreages that may be used to provide mitigation for potential wetland impacts.
4 - Volume calculations for alternatives 1, 2, and 3 are based on conceptual designs.
5 - Site life was estimated from the site's historical density of 1.487 tons/cy and an acceptance rate of 500,000 tons/year tons per year or 336,247 cubic yards/year
Site life calculated at the current maximum waste acceptance rate. With annual waste inflow less than the assumed maximum, a longer site life will result.
6 - Fails to satisfy need for a minimum useful life of ten (10) years, minimize impacts to natural resources, and achieve the project's purpose and need.
7 - All direct wetland impacts are based upon the disturbance area for each alternative.
8 - Western Area delineation performed in September 1999
9 - Eastern Area delineation performed in September/October 1999 and re-delineated in May 2002
10 - Site Alternatives 1 and 2 were not pursued further, therefore, design area, capacity, and site life are estimates.
11 - Central Area delineation performed June 2009, April 2011, and July 2012 and includes impacts to wetlands from development of additional permitted facilities relocated/constructed for the development of RMU-2.



Alternative 1 – Western Area
Alternative 2 – Eastern Area w/ sub-alternative
Alternative 3 – Central Area
Alternative 4 – Central Area Redesign (includes Fac Pond 5 and New Drum Building)

RMU-2 SITE ALTERNATIVES

Note: Not to scale and boundaries are approximate

Water Resources
Delineated Area
Photo Location
Wetland Data Point ▲1W
Upland Data Point ■1U

Figure 5 – Sheet 1

N

Delineated Wetlands

Scale 1"=250'-0"

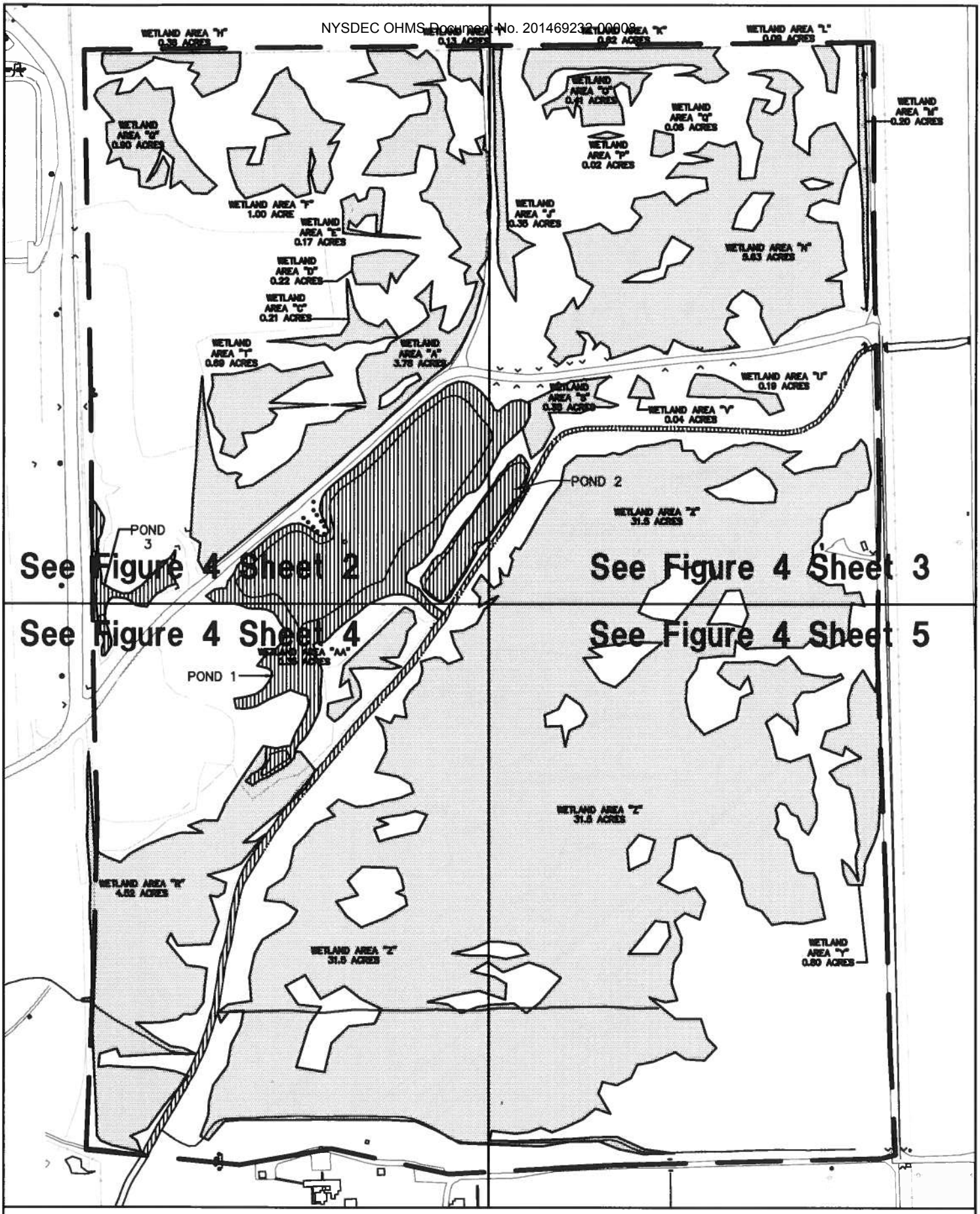


Figure 4 Sheet 1
Redelineated Wetland Boundaries - Key Plan
Scale 1"=300'