Appendix 1

Best Management Practices ("BMP") Plan, Cargill, Inc. Cayuga Mine, Lansing

Part 2 of 2

APPENDIX 1 - MINIMUM BMP REFERENCE LOCATIONS

13 Minimum BMP Reference Locations

Required BMPs	BMP Plan Location
1. Formation of a BMP committee and assignment of responsibilities	Section 2.1
2. Reporting of BMP incidents	Section 2.2
3. Risk identification and assessment	Section 3
4. Employee training	Section 4.9
5. Inspections and records	Sections 6 and 8
6. Security	Section 1.3
7. Preventive maintenance	Section 4.3
8. Good housekeeping	Section 4.2
9. Materials/waste handling, storage, and compatibility	Section 4.4
10. Spill prevention and response	Section 4.5
11. Erosion and sediment control	Section 4.6
12. Management of runoff	Section 4.8
13. Street sweeping	Section 4.7

Notes:

See Section 4(a) of "Special Conditions – Industry Best Management Practices" of Cargill's SPDES Permit for additional information regarding the 13 Minimum BMPs.

APPENDIX 2 - PERMIT

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

State Pollutant Discharge Elimination System (SPDES)
DISCHARGE PERMIT
Special Conditions

Industrial Code:	**1479**	SPDES Number:	**NY-0101290**
Discharge Class (CL):	**01**	DEC Number:	**0-9999-00075/00004**
Toxic Class (TX):	**T**	Effective Date (EDP):	**06/30/04**
Major Drainage Basin:	**07**	Expiration Date (ExDP):	**07/01/09**
Sub Drainage Basin:	**05**	Modification Dates:(EDPM)	**12/07/06, 5/21/07**
Water Index Number:	**0-66-12-P296**		
Compact Area:			

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the Clean Water Act, as amended, (33 U.S.C. §1251 et. seq.)(hereinafter referred to as "the Act").

PERMITTEE NAME AND ADDRESS

Name: **Cargill Incorporated** Attention: **Steven Horne**
Street: **191 Portland Point Road**
City: **Lansing** State: **NY** Zip Code: **14882**
is authorized to discharge from the facility described below:

FACILITY NAME AND ADDRESS

Name: **Cargill Incorporated - Cayuga Mine**
Location (C,T,V): **Lansing** County: **Tompkins**
Facility Address: **191 Portland Point Road**
City: **Lansing** State: **NY** Zip Code: **14882**
NYTM -E:**374.213** NYTM - N: **4710.099**

From Outfall No.: **001** at Latitude: **42 ° 32 ′ 02 ″** & Longitude: **76 ° 32 ′ 01 ″**
into receiving waters known as: **Cayuga Lake** Class: **AA (T)**
and; (list other Outfalls, Receiving Waters & Water Classifications)

002, 003, 006, 007, 009, 012, 014 **Cayuga Lake** **Class: AA (T)**
010, 011 **Groundwater** **Class: GA**
in accordance with: effluent limitations; monitoring and reporting requirements; other provisions and conditions set forth this permit; and 6 NYCRR Part 750-1.2(a) and 750-2.

DISCHARGE MONITORING REPORT (DMR) MAILING ADDRESS

Mailing Name: **Cargill Incorporated - Cayuga Mine**
Street: **191 Portland Point Road**
City: **Lansing** State: **NY** Zip Code: **14882**
Responsible Official or Agent: **Steven Horne** Phone: **(607) 533-4221**

This permit and the authorization to discharge shall expire on midnight of the expiration date shown above and the permittee shall not discharge after the expiration date unless this permit has been renewed, or extended pursuant to law. To be authorized to discharge beyond the expiration date, the permittee shall apply for permit renewal not less than 180 days prior to the expiration date shown above.

DISTRIBUTION:
Bureau of Water Permits - Albany
Region 7 DOW - Fred Gillette
Region 7 Water Engineer
USEPA, Reg 2: Attention Jeff Gratz
Tompkins County Health Department

Permit Administrator: John H. Merriman, Jr.
Address: NYS Department of Environmental Conservation
1285 Fisher Ave
Cortland, New York 13045
Signature: J H Merriman Date: 5/21/07

PERMIT LIMITS, LEVELS AND MONITORING DEFINITIONS

OUTFALL	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
	This cell describes the type of wastewater authorized for discharge. Examples include process or sanitary wastewater, storm water, non-contact cooling water.	This cell lists classified waters of the state to which the listed outfall discharges.	The date this page starts in effect. (e.g. EDP or EDPM)	The date this page is no longer in effect. (e.g. ExDP)

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQ.	SAMPLE TYPE
e.g. pH, TRC, Temperature, D.O.	The minimum level that must be maintained at all instants in time.	The maximum level that may not be exceeded at any instant in time.	SU, °F, mg/l, etc.		

PARA-METER	EFFLUENT LIMIT	PRACTICAL QUANTITATION LIMIT (PQL)	ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE
	Limit types are defined below in Note 1. The effluent limit is developed based on the more stringent of technology-based standards, required under the Clean Water Act, or New York State water quality standards. The limit has been derived based on existing assumptions and rules. These assumptions include receiving water hardness, pH and temperature; rates of this and other discharges to the receiving stream; etc. If assumptions or rules change the limit may, after due process and modification of this permit, change.	For the purposes of compliance assessment, the analytical method specified in the permit shall be used to monitor the amount of the pollutant in the outfall to this level, provided that the laboratory analyst has complied with the specified quality assurance/quality control procedures in the relevant method. Monitoring results that are lower than this level must be reported, but shall not be used to determine compliance with the calculated limit. This PQL can be neither lowered nor raised without a modification of this permit.	Type I or Type II Action Levels are monitoring requirements, as defined below in Note 2, that trigger additional monitoring and permit review when exceeded.	This can include units of flow, pH, mass, Temperature, concentration. Examples include µg/l, lbs/d, etc.	Examples include Daily, 3/week, weekly, 2/month, monthly, quarterly, 2/yr and yearly.	Examples include grab, 24 hour composite and 3 grab samples collected over a 6 hour period.

Note 1: DAILY DISCHARGE.: The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for the purposes of sampling. For pollutants expressed in units of mass, the 'daily discharge' is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the 'daily discharge' is calculated as the average measurement of the pollutant over the day.

DAILY MAX.: The highest allowable daily discharge. DAILY MIN.: The lowest allowable daily discharge.

DAILY AVG or 30 DAY ARITHMETIC MEAN (30 day average).: The highest allowable average of daily discharges over a calendar month, calculated as the sum of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

7 DAY ARITHMETIC MEAN (7 day average): The highest allowable average of daily discharges over a calendar week.

30 DAY GEOMETRIC MEAN: The highest allowable geometric mean of daily discharges over a calendar month, calculated as the antilog of : the sum of the log of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

7 DAY GEOMETRIC MEAN: The highest allowable geometric mean of daily discharges over a calendar week.

RANGE: The minimum and maximum instantaneous measurements for the reporting period must remain between the two values shown.

Note 2: ACTION LEVELS: Routine Action Level monitoring results, if not provided for on the Discharge Monitoring Report (DMR) form, shall be appended to the DMR for the period during which the sampling was conducted. If the additional monitoring requirement is triggered as noted below, the permittee shall undertake a short-term, high-intensity monitoring program for the parameter(s). Samples identical to those required for routine monitoring purposes shall be taken on each of at least three consecutive operating and discharging days and analyzed. Results shall be expressed in terms of both concentration and mass, and shall be submitted no later than the end of the third month following the month when the additional monitoring requirement was triggered. Results may be appended to the DMR or transmitted under separate cover to the same address. If levels higher than the Action Levels are confirmed, the permit may be reopened by the Department for consideration of revised Action Levels or effluent limits. The permittee is not authorized to discharge any of the listed parameters at levels which may cause or contribute to a violation of water quality standards. TYPE I : The additional monitoring requirement is triggered upon receipt by the permittee of any monitoring results in excess of the stated Action Level. TYPE II: The additional monitoring requirement is triggered upon receipt by the permittee of any monitoring results that show the stated action level exceeded for four of six consecutive samples, or for two of six consecutive samples by 20 % or more, or for any one sample by 50 % or more.

FINAL PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No./ PARAMETER	DAILY AVERAGE	DAILY MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOT NOTES
001 Bulk Salt Storage/Handling Area Runoff						
Flow	NA	Monitor	GPD	Monthly	Instantaneous	1
Chlorides	NA	40,000	mg/l	Monthly	Grab	1
Cyanides (Free)	NA	1.1	mg/l	Monthly	Grab	1, 2
Total Dissolved Solids	NA	80,000	mg/l	Monthly	Grab	1
Zinc, Total	NA	20	mg/l	Monthly	Grab	1, 3
002, 003 Bulk Salt Storage/Handling Area Runoff						
Flow	NA	Monitor	GPD	Monthly	Grab	
Chlorides	10,000	Monitor	mg/l	Monthly	Grab	
Cyanides (Free)	0.1	Monitor	mg/l	Monthly	Grab	2
Total Dissolved Solids	40,000	Monitor	mg/l	Monthly	Grab	
006, 007, 012 Bulk Salt Storage/Handling Area Runoff						
Flow	NA	Monitor	GPD	Monthly	Grab	
Chlorides	5,000	NA	mg/l	Monthly	Grab	
Cyanides (Free)	0.1	NA	mg/l	Monthly	Grab	2
Total Dissolved Solids	10,000	NA	ml/l	Monthly	Grab	

1. Upper, Middle and Lower Salt Storage Pad Discharges must comply with Drainage Operations Manual - November 1994.
2. Standard Methods 16th Edition #412 "weak and dissociable cyanide."
3. From Electro Dialysis (ED) Plant

	Daily Maximum	30 Day Mean	7 Day Mean	Units			
009 Sewage Treatment Plant							
Flow		6000		GPD	Monthly	Instantaneous	
BOD_5		30	45	mg/l	Monthly	6-hour composite	
TSS		30	45	mg/l	Monthly	6-hour composite	
Settleable Solids	0.3			mg/l	Monthly	Grab	
pH	6 - 9			SU	Monthly	Grab	
Chlorine Residual	NA	NA	1.0	mg/l	Monthly	Grab	
Fecal Coliform, General	NA	200	400	#/100ml	Monthly	Grab	

010 - Office Building Sanitary Wastewater

No monitoring required

011 - Hoist House Sanitary Wastewater

No monitoring required

OUTFALL No./ PARAMETER	MAXIMUM		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOT NOTES
014 Non-Contact Cooling Water						
Flow	500		GPM	Continuous	Recorder	
Temperature, Intake	Monitor		°F	Continuous	Recorder	
Temperature, discharge	75		°F	Continuous	Recorder	

SPECIAL CONDITIONS - INDUSTRY BEST MANAGEMENT PRACTICES

1. **General** - The permittee shall develop, maintain, and implement a revised Best Management Practices (BMP) plan to prevent releases of significant amounts of pollutants to the waters of the State through plant site runoff; spillage and leaks; sludge or waste disposal; and stormwater discharges including, but not limited to, drainage from raw material storage.

   The BMP plan shall be documented in narrative form and shall include the 13 minimum BMPs and any necessary plot plans, drawings, or maps. Other documents already prepared for the facility such as a Safety Manual or a Spill Prevention, Control and Countermeasure (SPCC) plan may be used as part of the plan and may be incorporated by reference. A copy of the current BMP plan shall be submitted to the Department as required in item (2.) below and a copy must be maintained at the facility and shall be available to authorized Department representatives upon request.

2. **Compliance Deadlines** - The completed revised BMP plan shall be submitted within six months of the of the effective date of permit modification to the Regional Water Engineer. The BMP plan shall be implemented within 6 months of submission, unless a different time frame is approved by the Department. The BMP plan shall be reviewed annually and shall be modified whenever: (a) changes at the facility materially increase the potential for releases of pollutants, (b) actual releases indicate the plan is inadequate, or ©) a letter from the Department identifies inadequacies in the plan. The permittee shall certify in writing, as an attachment to the December Discharge Monitoring Report (DMR), that the annual review has been completed. All BMP plan revisions (with the exception of SWPPPs - see item (4.B.) below) must be submitted to the Regional Water Engineer within 30 days. Note that the permittee is not required to obtain Department approval of the BMP plan (or of any SWPPPs) unless notified otherwise. Subsequent modifications to or renewal of this permit does not reset or revise these deadlines unless a new deadline is set explicitly by such permit modification or renewal.

3. **Facility Review** - The permittee shall review all facility components or systems (including but not limited to material storage areas; in-plant transfer, process, and material handling areas; loading and unloading operations; storm water, erosion, and sediment control measures; process emergency control systems; and sludge and waste disposal areas) where materials or pollutants are used, manufactured, stored or handled to evaluate the potential for the release of pollutants to the waters of the State. In performing such an evaluation, the permittee shall consider such factors as the probability of equipment failure or improper operation, cross-contamination of storm water by process materials, settlement of facility air emissions, the effects of natural phenomena such as freezing temperatures and precipitation, fires, and the facility's history of spills and leaks. The relative toxicity of the pollutant shall be considered in determining the significance of potential releases.

   The review shall address all substances present at the facility that are identified in Tables 6-10 of SPDES application Form NY-2C (available at *http://www.dec.state.ny.us/website/dcs/permits/olpermits/form2c.pdf*) or that are required to be monitored for by the SPDES permit.

4. a. **13 Minimum BMPs** - Whenever the potential for a release of pollutants to State waters is determined to be present, the permittee shall identify BMPs that have been established to prevent or minimize such potential releases. Where BMPs are inadequate or absent, appropriate BMPs shall be established. In selecting appropriate BMPs, the permittee shall consider good industry practices and, where appropriate, structural measures such as secondary containment and erosion/sediment control devices and practices. USEPA guidance for development of stormwater elements of the BMP is available in the September 1992 manual *Storm Water Management for Industrial Activities,* EPA 832-R-92-006 (available from NTIS, 703-487-4650, order # PB 92235969). As a minimum, the plan shall include the following BMPs:

   1. BMP Pollution Prevention Team
   2. Reporting of BMP Incidents
   3. Risk Identification & Assessment
   4. Employee Training
   5. Inspections and Records
   6. Security
   7. Preventive Maintenance
   8. Good Housekeeping
   9. Materials/Waste Handling, Storage, & Compatibility
   10. Spill Prevention & Response
   11. Erosion & Sediment Control
   12. Management of Runoff
   13. Street Sweeping

   Note that for some facilities, especially those with few employees, some of the above BMPs may not be applicable. It is acceptable in these cases to indicate "Not Applicable" for the portion(s) of the BMP Plan that do not apply to your facility, along with an explanation.

b. **Stormwater Pollution Prevention Plans (SWPPPs) Required for Discharges of Stormwater From Construction Activity to Surface Waters** - As part of BMP #11, a SWPPP shall be developed prior to the initiation of any site disturbance of one acre or more of uncontaminated area. Uncontaminated area means soils or groundwater which are free of contamination by any toxic or non-conventional pollutants identified in Tables 6-10 of SPDES application Form NY-2C. Disturbance of any size contaminated area(s) and the resulting discharge of contaminated stormwater is not authorized by this permit unless the discharge is under State or Federal oversight as part of a remedial program or after review by the Regional Water Engineer; nor is such discharge authorized by any SPDES general permit for stormwater discharges. SWPPPs are not required for discharges of stormwater from construction activity to groundwaters.

The SWPPP shall conform to the *New York Standards and Specifications for Erosion and Sediment Control* and *New York State Stormwater Management Design Manual,* unless a variance has been obtained from the Regional Water Engineer, and to any local requirements. The permittee shall submit a copy of the SWPPP and any amendments thereto to the local governing body and any other authorized agency having jurisdiction or regulatory control over the construction activity **at least 30 days prior to soil disturbance**. The SWPPP shall also be submitted to the Regional Water Engineer if contamination, as defined above, is involved and the permittee must obtain a determination of any SPDES permit modifications and/or additional treatment which may be required prior to soil disturbance. Otherwise, the SWPPP shall be submitted to the Department only upon request. When a SWPPP is required, a properly completed *Notice of Intent* (NOI) form shall be submitted (available at *www.dec.state.ny.us/website/dow/toolbox/swforms.html*) prior to soil disturbance. Note that submission of a NOI is required for informational purposes; the permittee is not eligible for and will not obtain coverage under any SPDES general permit for stormwater discharges, nor are any additional permit fees incurred. SWPPPs must be developed and submitted for subsequent site disturbances in accordance with the above requirements. The permittee is responsible for ensuring that the provisions of each SWPPP is properly implemented.

5. **Required Sampling For "Hot Spot" Identification** - Development of the BMP plan shall include sampling of waste stream segments for the purpose of pollutant "hot spot" identification. The economic achievability of effluent limits will not be considered until plant site "hot spot" sources have been identified, contained, removed or minimized through the imposition of site specific BMPs or application of internal facility treatment technology. For the purposes of this permit condition a "hot spot" is a segment of an industrial facility (including but not limited to soil, equipment, material storage areas, sewer lines etc.) which contributes elevated levels of problem pollutants to the wastewater and/or stormwater collection system of that facility. For the purposes of this definition, problem pollutants are substances for which treatment to meet a water quality or technology requirement may, considering the results of waste stream segment sampling, be deemed unreasonable. For the purposes of this definition, an elevated level is a concentration or mass loading of the pollutant in question which is sufficiently higher than the concentration of that same pollutant at the compliance monitoring location so as to allow for an economically justifiable removal and/or isolation of the segment and/or B.A.T. treatment of wastewaters emanating from the segment.

6. **Wet Weather Operating Plan** - The permittee shall conform to the approved wet weather operating plan (WWOP). A revised WWOP must be submitted whenever the permittee replace or modify their operation in a manner that impact flows to Cayuga Lake.

ADDITIONAL REQUIREMENTS:

(a) The permittee shall install and operate a wedge wire intake screen for the withdrawal of cooling water from Cayuga Lake. The intake design shall be as described in the submitted plans: "Lake Intake Details, Cargill De-Icing Technology", Project Number 01256-244, dated 8/23/06. The screen slot widths shall be no greater than 3.2mm (1/8 inch), and the through slot cooling water velocity shall be no greater than 0.5 feet per second.

(b) Upon completion of the installation of the cooling water intake system, the permittee shall send written notification to the NYS DEC Steam Electric Unit, Division of Fish, Wildlife and Marine Resources, 5th Floor, 625 Broadway, Albany, New York 12233.

(c) Modification of the facility cooling water intake must not occur without prior Department approval. The permittee must submit written notification, including detailed descriptions and plans, to the NYS DEC Steam Electric Unit; the Director of the Bureau of Water Compliance Program; and both the Regional Permit Administrator and the Regional Water Engineer, Region 7, at least 60 days prior to any proposed change which would result in the alteration of the permitted operation, location, design, construction or capacity of the cooling water intake structure. The permittee must submit with the written notification a demonstration that the change reflects the best technology available for minimizing adverse environmental impacts pursuant to 6 NYCRR 704.5. As determined by NYS DEC, a permit modification application in accordance with 6 NYCRR Part 621 may be required

DISCHARGE NOTIFICATION REQUIREMENTS

(d) Except as provided in (c), (f) and (g) of these Discharge Notification Act requirements, the permittee shall install and maintain identification signs at all outfalls to surface waters listed in this permit. Such signs shall be installed before initiation of any discharge.

(e) Subsequent modifications to or renewal of this permit does not reset or revise the deadline set forth in (a) above, unless a new deadline is set explicitly by such permit modification or renewal.

(f) The Discharge Notification Requirements described herein do not apply to outfalls from which the discharge is composed exclusively of storm water, or discharges to ground water.

(d) The sign(s) shall be conspicuous, legible and in as close proximity to the point of discharge as is reasonably possible while ensuring the maximum visibility from the surface water and shore. The signs shall be installed in such a manner to pose minimal hazard to navigation, bathing or other water related activities. If the public has access to the water from the land in the vicinity of the outfall, an identical sign shall be posted to be visible from the direction approaching the surface water.

The signs shall have **minimum** dimensions of eighteen inches by twenty four inches (18" x 24") and shall have white letters on a green background and contain the following information:

N.Y.S. PERMITTED DISCHARGE POINT

SPDES PERMIT No.: NY_____

OUTFALL No. :____

For information about this permitted discharge contact:

Permittee Name: _____

Permittee Contact: _____

Permittee Phone: ( ) - ### - ####

OR:

NYSDEC Division of Water Regional Office Address :

NYSDEC Division of Water Regional Phone: ( ) - ### -####

(e) For each discharge required to have a sign in accordance with a), the permittee shall, concurrent with the installation of the sign, provide a repository of copies of the Discharge Monitoring Reports (DMRs), as required by the **RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS** page of this permit. This repository shall be open to the public, at a minimum, during normal daytime business hours. The repository may be at the business office repository of the permittee or at an off-premises location of its choice (such location shall be the village, town, city or county clerk's office, the local library or other location as approved by the Department). In accordance with the **RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS** page of your permit, each DMR shall be maintained on record for a period of three years.

(f) If, upon November 1, 1997, the permittee has installed signs that include the information required by 17-0815-a(2)(a) of the ECL, but do not meet the specifications listed above, the permittee may continue to use the existing signs for a period of up to five years, after which the signs shall comply with the specifications listed above.

(g) All requirements of the Discharge Notification Act, including public repository requirements, are waived for any outfall meeting any of the following circumstances, provided Department notification is made in accordance with (h):

(1) such sign would be inconsistent with any other state or federal statute;

(2) the Discharge Notification Requirements contained herein would require that such sign could only be located in an area that is damaged by ice or flooding due to a one-year storm or storms of less severity;

(3) instances in which the outfall to the receiving water is located on private or government property which is restricted to the public through fencing, patrolling, or other control mechanisms. Property which is posted only, without additional control mechanisms, does not qualify for this provision;

(4) instances where the outfall pipe or channel discharges to another outfall pipe or channel, before discharge to a receiving water; or

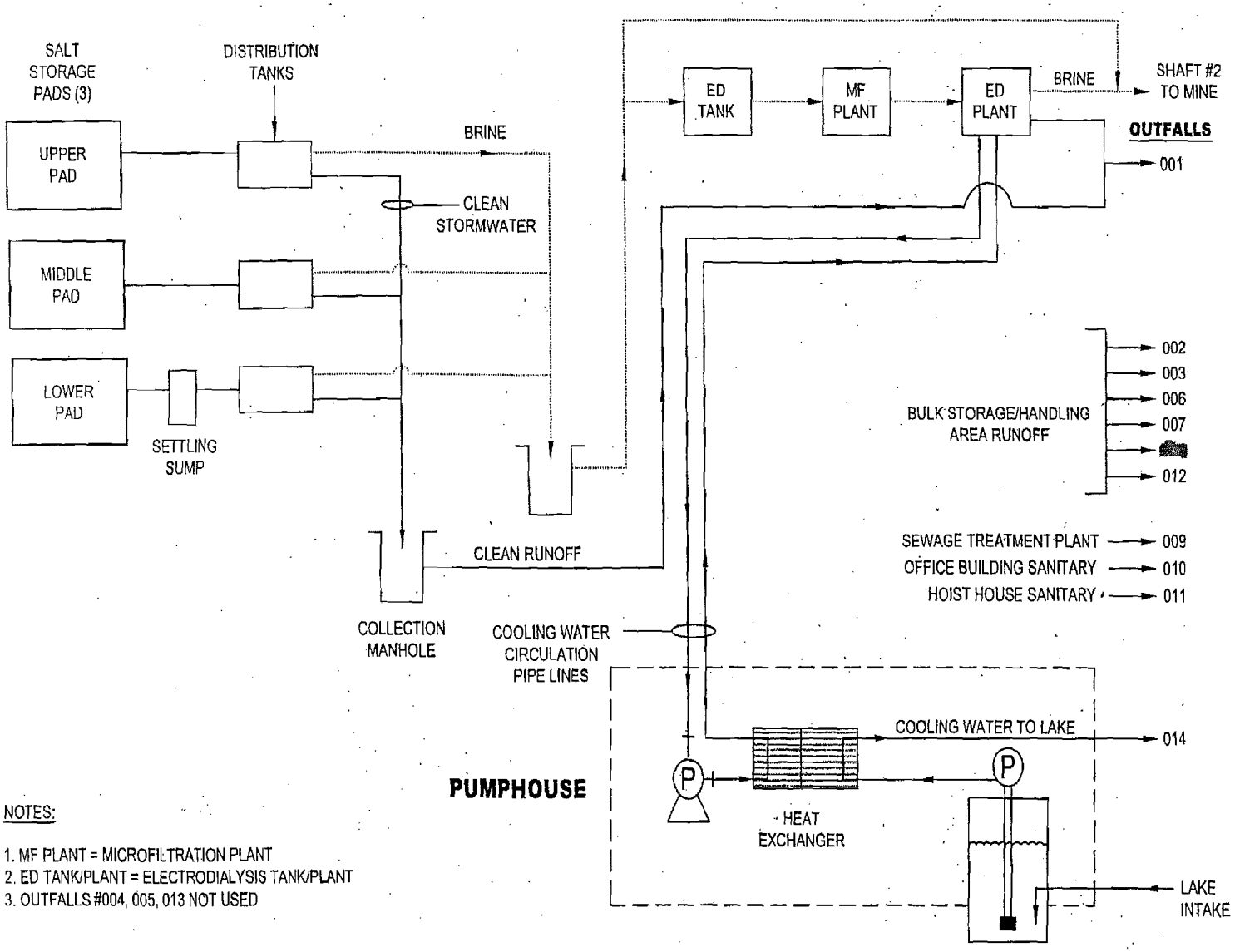
(5) instances in which the discharge from the outfall is located in the receiving water, two-hundred or more feet from the shoreline of the receiving water.

(h) If the permittee believes that any outfall which discharges wastewater from the permitted facility meets any of the waiver criteria listed in (g) above, notification (form enclosed) must be made to the Department's Bureau of Water Permits, Central Office, of such fact, and, provided there is no objection by the Department, a sign and DMR repository for the involved outfall(s) are not required. This notification must include the facility's name, address, telephone number, contact, permit number, outfall number(s), and reason why such outfall(s) is waived from the requirements of discharge notification. The Department may evaluate the applicability of a waiver at any time, and take appropriate measures to assure that the ECL and associated regulations are complied with.

(I) The permittee shall periodically inspect the outfall identification signs in order to ensure that they are maintained, are still visible and contain information that is current and factually correct.

MONITORING LOCATIONS

The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the location(s) specified below:



RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS

a) The permittee shall also refer to 6 NYCRR Part 750-1.2(a) and 750-2 for additional information concerning monitoring and reporting requirements and conditions.

b) The monitoring information required by this permit shall be summarized, signed and retained for a period of three years from the date of the sampling for subsequent inspection by the Department or its designated agent. **Also, monitoring information required by this permit shall be summarized and reported by submitting;**

[X] (if box is checked) completed and signed Discharge Monitoring Report (DMR) forms for each _one_ month reporting period to the locations specified below. Blank forms are available at the Department's Albany office listed below. The first reporting period begins on the effective date of this permit and the reports will be due no later than the 28th day of the month following the end of each reporting period.

[X] (if box is checked) an annual report to the Regional Water Engineer at the address specified below. The annual report is due by February 1 and must summarize information for January to December of the previous year in a format acceptable to the Department.

[ ] (if box is checked) a monthly "Wastewater Facility Operation Report..." (form 92-15-7) to the:
[ ] Regional Water Engineer and/or [ ] County Health Department or Environmental Control Agency specified below

Send the **original** (top sheet) of each DMR page to:

Department of Environmental Conservation
Division of Water
Bureau of Watershed Compliance Programs
625 Broadway
Albany, New York 12233-3506

Phone: (518) 402-8177

Send the **first copy** (second sheet) of each DMR page to:

Department of Environmental Conservation
Regional Water Engineer
615 Erie Boulevard West
Syracuse, New York 13204

Phone: 315-426-7500

Send an **additional copy** of each DMR page to:
Tompkins County Health Department
Division of Environmental Health
1287 Trumansburg Road
Ithaca, NY 14850

c) Noncompliance with the provisions of this permit shall be reported to the Department as prescribed in 6 NYCRR Part 750-1.2(a) and 750-2.

d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

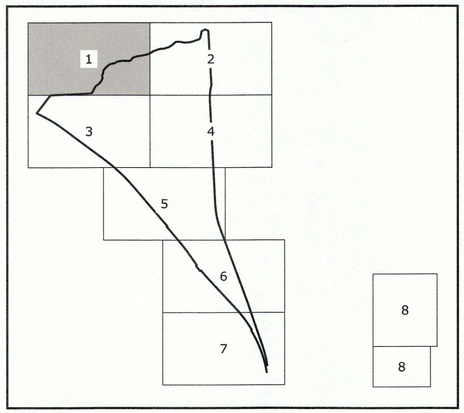
e) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculations and recording of the data on the Discharge Monitoring Reports.

f) Calculation for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

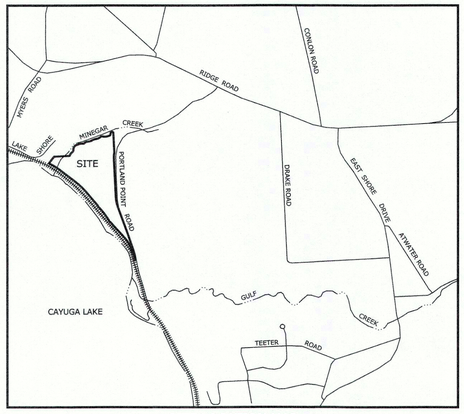
g) Unless otherwise specified, all information recorded on the Discharge Monitoring Report shall be based upon measurements and sampling carried out during the most recently completed reporting period.

h) Any laboratory test or sample analysis required by this permit for which the State Commissioner of Health issues certificates of approval pursuant to section five hundred two of the Public Health Law shall be conducted by a laboratory which has been issued a certificate of approval. Inquiries regarding laboratory certification should be sent to the Environmental Laboratory Accreditation Program, New York State Health Department Center for Laboratories and Research, Division of Environmental Sciences, The Nelson A. Rockefeller Empire State Plaza, Albany, New York 12201.

APPENDIX 3 – SURVEY DRAWINGS



SHEET KEY



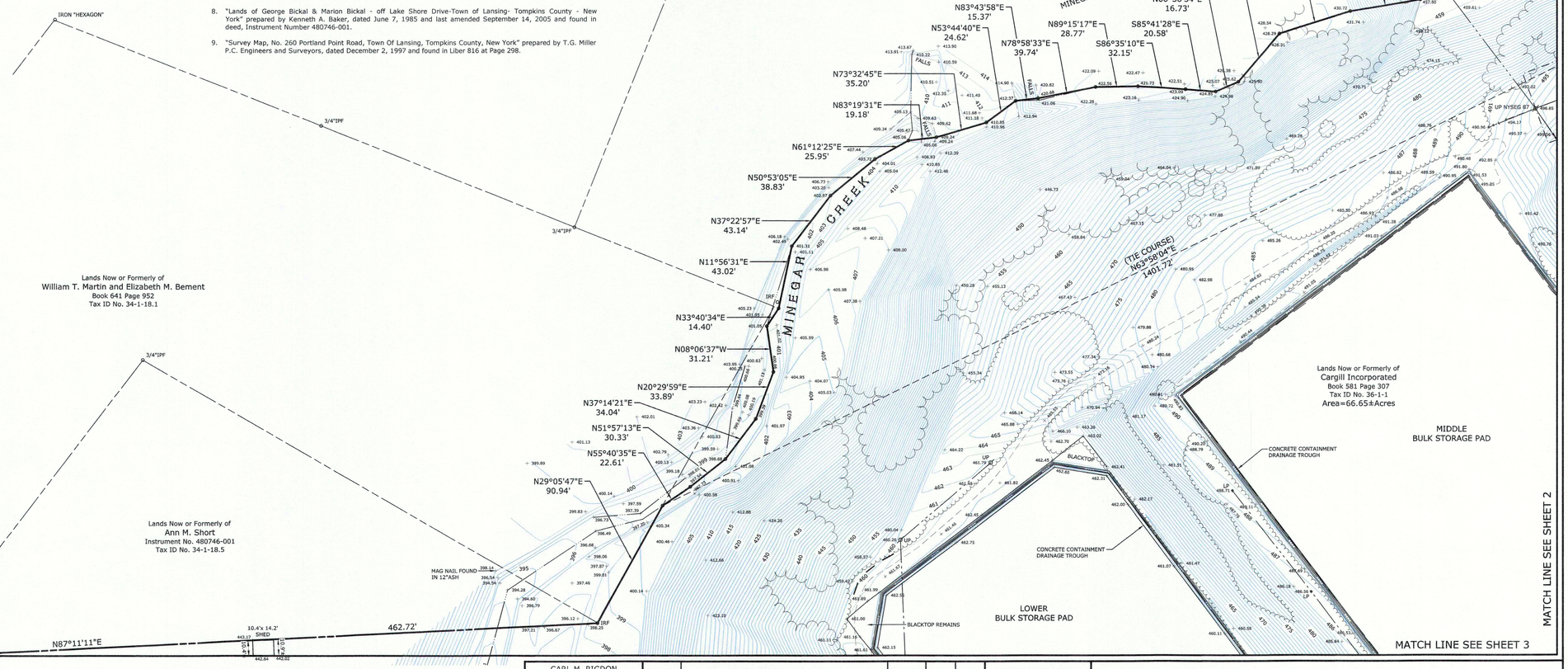
SITE LOCATION MAP

MAP NOTES:

1. Boundary and topographic information shown hereon was compiled from an actual field survey conducted during the months of August and September 2019.
2. Field evidence used to establish the boundary shown hereon also includes additional monumentation not shown due to the scale of the drawing.
3. North orientation and bearings are Grid North based on the New York State Plane Coordinate System, Central Zone, NAD 83/2011 epoch 2010.00 as obtained from GPS observations.
4. Vertical datum shown hereon is NAVD 88 (Geoid 12A) and was obtained from GPS observations.
5. The location of underground improvements or encroachments, if any exist, or as shown hereon, are not certified. There may be underground utilities, the existence of which are not known to the undersigned. Size and location of all underground utilities and structures must be verified by the appropriate authorities. Dig Safely New York must be notified prior to conducting test borings, excavation and construction.
6. This survey does not constitute a record search by C.T. Male Associates Engineering, Surveying Architecture and Landscape Architecture, D.P.C. to determine ownership or easements of record. For all information regarding easements, rights of way and title of record, the surveyor relied upon title search number 8168850, prepared by Stewart Title Insurance Company, not dated (2019).
7. Parcel may be subject to an access easement described in Liber 633 at Page 374 and granted to Cargill, Incorporated from Thomas Besemer, Easement being 20 feet in width extending from the Besemer parcel to the Cargill parcel. (Unplottable)
8. Parcel may be subject to an unplottable easement as described in Liber 622 at Page 387 and granted to the New York State Electric and Gas Corporation, easement is 10 feet in width. (Unplottable)
9. Parcel is subject to an easement as described in Instrument # 477796-005 and granted to the New York State Electric and Gas Corporation, easement is 20 feet in width. (Unplottable)
10. Lands South of the limits of work between the railroad and Portland Point Road are Reputed Lands of Cargill Incorporated. The tax map shows the lot ending where the railroad rights of way and Portland Point Road rights of way come together, however in the field they do not intersect.

MAP REFERENCES:

1. "Topographic Map Cargill, Inc. Plant/Office/Substation Area, Portland Point Road, Town of Lansing, Tompkins County, New York", prepared by T.G. Miller P.C., dated December 30, 1993, Job No. E93-03 and E94-20.
2. Right of Way and Track Map., Auburn and Ithaca Branch, The Lehigh Valley Rail Way Company, Operated by the Lehigh Valley R.R. Station 258+53.2 to Station 369+04.5, dated June 30, 1917. Sheet V 19/88.
3. Right of Way and Track Map., Auburn and Ithaca Branch, The Lehigh Valley Rail Way Company, Operated by the Lehigh Valley R.R. Station 369+04.5 to Station 477+70.5, dated June 30, 1917. Sheet V 19/89.
4. "Survey Map, No. 36 Lake Shore Road, Town of Lansing, Tomp. Co., N.Y." dated September 15, 15, 1988, prepared by T.G. Miller Assoc. P.C. Engineers & Surveyors and filed in the Tompkins County Clerk's Office in Liber 596 and Page 703.
5. "Map of Survey Portion of Lands Owned by Carl Arno, Jr. & Lucy B. Finkeldey, Town of Lansing, Tompkins Co. N.Y.", prepared by R.L. MacDowell, dated March 2, 1977 and filed in the Tompkins County Clerk's Office in Cabinet 1 Envelope 149.
6. "Map Prepared for International Salt Co., Inc. in Town of Lansing, Tompkins Co. N.Y." prepared by Carl Crandall, C.E., dated March 17, 1946 and filed in the Tompkins County Clerk's Office as E-1 Page 13.
7. "Map of Survey Portion of Lands Owned by Dorothy W. Fenner and Lot Owned by David W. Fenner and Dorothy E. Fenner", Town of Lansing, Tompkins County, N.Y., dated June 11, 1973, prepared by R.L. MacDowell, Jr. and filed in the Tompkins County Clerk's Office in Liber 1970 at Page 155 and 156.
8. "Lands of George Bickal & Marion Bickal - off Lake Shore Drive-Town of Lansing- Tompkins County - New York" prepared by Kenneth A. Baker, dated June 7, 1985 and last amended September 14, 2005 and found in deed, Instrument Number 480746-001.
9. "Survey Map, No. 260 Portland Point Road, Town Of Lansing, Tompkins County, New York" prepared by T.G. Miller P.C. Engineers and Surveyors, dated December 2, 1997 and found in Liber 816 at Page 298.



LEGEND

BOL	Bollard	IRF	Iron Rod Found	CIP	Cast Iron Pipe	PVC	Polyvinyl Chloride Pipe
CB	Catch Basin	LP	Light Pole	CONC	Concrete	RCP	Reinforced Concrete Pipe
CBR	Catch Basin Round	SMH	Sanitary Manhole	CBRW	Concrete Block Retaining Wall		
CIRF	Capped Iron Rod Found	SMON	Square Concrete Monument	CF	Concrete Footing		
DMH	Drainage Manhole	UP	Utility Pole	CMP	Corrugated Metal Pipe		
EMTR	Electric Meter		Utility Pole with Light	ER	Electric Riser		
EMH	Electric Manhole	WSO	Water Shut-off	HDPE	High Density Polyethylene Pipe		
— —	Guy Wire	WV	Water Valve	O/H	Overhang		
HYD	Hydrant	AC	Air Conditioner	PS	Pipe Support		
IPF	Iron Pipe Found	BH	Building Height	P	Post		

BAR SCALE
40 0 20 40 80
1 inch = 40 ft.

SEE SHEET 1 FOR MAP NOTES AND REFERENCES

To: Cargill, Incorporated

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Surveys, jointly established and adopted by ALTA and NSPS ,and includes Items 1, 2, 3, 4, 7a, 8, 9, 10, 11, 13, 16, 17, 19 of Table A thereof. The Fieldwork Was Completed on September 23, 2019.

CARL M. RIGDON P.L.S. NO. 50711 Date

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STATE OF NEW YORK · CARL MARSHALL RIGDON · 050711 · LICENSED LAND SURVEYOR

CARL M. RIGDON
P.L.S. NO. 50711

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
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APPROVED: WJN
DRAFTED : GLB
CHECKED : JM
PROJ. NO : 19.9464
SCALE : 1" = 40'
DATE : SEPT. 23, 2019

ALTA/NSPS LAND TITLE SURVEY

Portion of Lands Now or Formerly of

CARGILL INCORPORATED

191 Portland Point Road

TOWN OF LANSING — TOMPKINS COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 518.786.7400
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SHEET 1 OF 8
DWG. NO: 19-659

CAD DWG. FILE NAME: K:\Projects\19946\Survey\BS-TS CARGILL.dwg

CAD DWG. FILE NAME: BS-TS CARGILL.dwg


MATCH LINE SEE SHEET 1
Lands Now or Formerly of
William T. Martin and Elizabeth M. Bement
Instrument No. 2014-13734
Tax ID No. 34-1-18.3
Parcel 1
S60°45'52"E
37.05'
N65°33'51"E
49.22'
N08°54'02"E
62.59'
N19°35'21"E
23.70'
N60°44'01"E
15.74'
N71°06'59"E
65.06'
N73°06'38"E
43.29'
N87°33'11"E
64.85'
S77°47'52"E
30.65'
S79°52'41"E
30.76'
N81°12'40"E
32.18'
N46°59'04"E
39.01'
N56°50'02"E
41.87'
N58°47'13"E
19.13'
N76°59'35"E
24.01'
N71°18'29"E
31.44'
N87°38'04"E
33.97'
N74°30'54"E
27.69'
N61°31'58"E
41.83'
N70°36'44"E
48.87'
1,559'± ALONG CENTERLINE OF THE MINEGAR CREEK AS IT WINDS AND TURNS
MINEGAR
CREEK
(TIE COURSE)
N63°58'04"E
1401.72'
CREEK EMERGES FROM CAVE
Lands Now or Formerly of
Cayuga Crushed
Stone Incorporated
Book 606 Page 1110
Tax ID No. 35-1-1.2
24"OAK W/WIRE
18"OAK W/WIRE
SMON W/IRON ROD
S03°05'57"E
604.73'
"CAYUGA MINE HAS ACHIEVED 3457 DAYS 3,924,769 HOURS SINCE LAST LOST TIME INCIDENT/NO UNAUTHORIZED ENTRY/KEEP OUR LOT CLEAN NO LITTERING, DUMPING, OR CIG BUTTS CARGILL DEICING TECHNOLOGY COMITTED TO: EMPLOYEE'S SAFETY, THE ENVIRONMENT, AND OUR COMMUNITY/ CARGILL" SIGN
LOW AREA
24"INV=580.00
24"INV=585.78
24"CIP
4-GUY WIRES
UP NYSEG 87A
"30 MPH" SIGN
PORTLAND POINT ROAD
(50' WIDE RIGHT OF WAY)
Lands Now or Formerly of
Cargill Incorporated
Book 581 Page 307
Tax ID No. 36-1-1
Area=66.65±Acres
UPPER
BULK STORAGE PAD
CONCRETE CONTAINMENT DRAINAGE TROUGH
LP W/ELEC RISER, METER AND PANEL
UP NYSEG 88 NT
50 FOOT EASEMENT GRANTED TO NEW YORK STATE ELECTRIC AND GAS CORPORATION DESCRIBED IN LIBER 720 AT PAGE 217 FROM POLE 57 TO POLE 92.
GUIDERAIL
6' HIGH CHAIN LINK FENCE
GATE
12"INV=509.60
12"INV=509.76
ROCK OUTCROP
UP NYSEG 89
LP W/ELEC RISER
12"CIP
18"CMP
TOP OF 18"PIPE ELEV=548.71
S05°49'03"W
C=168.92'
L=169.58'
R=556.00'
SHEET KEY
1
2
3
4
5
6
7
8
8
MATCH LINE SEE SHEET 4

MATCH LINE SEE SHEET 4

LEGEND

BOL	Bollard	IRF	Iron Rod Found	CIP	Cast Iron Pipe	PVC	Polyvinyl Chloride Pipe
CB	Catch Basin	LP	Light Pole	CONC	Concrete	RCP	Reinforced Concrete Pipe
CBR	Catch Basin Round	SMH	Sanitary Manhole	CBRW	Concrete Block Retaining Wall		
CIRF	Capped Iron Rod Found	SMON	Square Concrete Monument	CF	Concrete Footing		
DMH	Drainage Manhole	UP	Utility Pole	CMP	Corrugated Metal Pipe		
EMTR	Electric Meter		Utility Pole with Light	ER	Electric Riser		
EMH	Electric Manhole	WSO	Water Shut-off	HDPE	High Density Polyethylene Pipe		
←—	Guy Wire	WV	Water Valve	O/H	Overhang		
HYD	Hydrant	AC	Air Conditioner	PS	Pipe Support		
IPF	Iron Pipe Found	BH	Building Height	P	Post		

BAR SCALE
40 0 20 40 80
1 inch = 40 ft.

SEE SHEET 1 FOR MAP NOTES AND REFERENCES

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CARL M. RIGDON
P.L.S. NO. 50711

STATE OF NEW YORK · CARL MARSHALL RIGDON · 050711 · LICENSED LAND SURVEYOR

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
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APPROVED: WJN
DRAFTED : GLB
CHECKED : JM
PROJ. NO : 19.9464
SCALE : 1" = 40'
DATE : SEPT. 23, 2019

ALTA/NSPS LAND TITLE SURVEY

Portion of Lands Now or Formerly of

CARGILL INCORPORATED

191 Portland Point Road

TOWN OF LANSING
TOMPKINS COUNTY, NEW YORK

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SHEET 2 OF 8
DWG. NO: 19-659

LEGEND

BOL	Bollard	IRF	Iron Rod Found	CIP	Cast Iron Pipe	PVC	Polyvinyl Chloride Pipe
CB	Catch Basin	LP	Light Pole	CONC	Concrete	RCP	Reinforced Concrete Pipe
CBR	Catch Basin Round	SMH	Sanitary Manhole	CBRW	Concrete Block Retaining Wall		
CIRF	Capped Iron Rod Found	SMON	Square Concrete Monument	CF	Concrete Footing		
DMH	Drainage Manhole	UP	Utility Pole	CMP	Corrugated Metal Pipe		
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EMH	Electric Manhole	WSO	Water Shut-off	HDPE	High Density Polyethylene Pipe		
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HYD	Hydrant	AC	Air Conditioner	PS	Pipe Support		
IPF	Iron Pipe Found	BH	Building Height	P	Post		

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1 inch = 40 ft.

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SHEET 3 OF 8
DWG. NO: 19-659

CAD DWG. FILE NAME: BS-TS CARGILL.dwg

LEGEND

BOL	Bollard	IRF	Iron Rod Found	CIP	Cast Iron Pipe	PVC	Polyvinyl Chloride Pipe
CB	Catch Basin	LP	Light Pole	CONC	Concrete	RCP	Reinforced Concrete Pipe
CBR	Catch Basin Round	SMH	Sanitary Manhole	CBRW	Concrete Block Retaining Wall		
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DMH	Drainage Manhole	UP	Utility Pole	CMP	Corrugated Metal Pipe		
EMTR	Electric Meter		Utility Pole with Light	ER	Electric Riser		
EMH	Electric Manhole	WSO	Water Shut-off	HDPE	High Density Polyethylene Pipe		
	Guy Wire	WV	Water Valve	O/H	Overhang		
HYD	Hydrant	AC	Air Conditioner	PS	Pipe Support		
IPF	Iron Pipe Found	BH	Building Height	P	Post		

BAR SCALE
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SHEET 4 OF 8
DWG. NO: 19-659

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XREFS: NONE

PROJECT NUMBER: 19.9464

CAD DWG. FILE NAME: BS-TS CARGILL.dwg

MATCH LINE SEE SHEET 3

MATCH LINE SEE SHEET 4

MATCH LINE SEE SHEET 6

T-4
BULK SALT STORAGE BUILDING

T-3
BAG PRODUCTION/STORAGE

20 FOOT EASEMENT GRANTED TO NEW YORK STATE ELECTRIC AND GAS CORPORATION DESCRIBED IN LIBER 899 AT PAGE 208

BENCH MARK
X-CUT ON HYDRANT
ELEV=418.09

BENCH MARK
X-CUT ON HYDRANT
ELEV=408.10

BENCH MARK
X-CUT ON HYDRANT
ELEV=424.74

BENCH MARK
X-CUT ON HYDRANT
ELEV=487.74

Lands Now or Formerly of
Cargill Incorporated
Book 581 Page 307
Tax ID No. 36-1-1
Area=66.65±Acres

PORTLAND POINT ROAD
(50' WIDE RIGHT-OF-WAY)

Norfolk and Southern Railroad
Revised Center of Operations

CAYUGA LAKE

N46°44'50"W
C=452.15'
L=453.06'
R=2066.00'

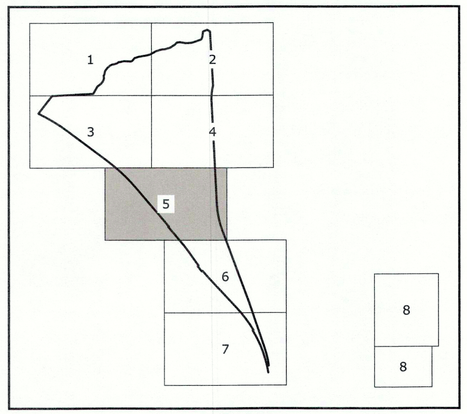
N40°27'54"W
560.54'

N88°31'48"E
10.69'

N40°25'17"W
190.96'

S11°41'47"E
C=297.52'
L=298.69'
R=975.00'

SHEET KEY



LEGEND

BOL	Bollard	IRF	Iron Rod Found	CIP	Cast Iron Pipe	PVC	Polyvinyl Chloride Pipe
CB	Catch Basin	LP	Light Pole	CONC	Concrete	RCP	Reinforced Concrete Pipe
CBR	Catch Basin Round	SMH	Sanitary Manhole	CBRW	Concrete Block Retaining Wall		
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DMH	Drainage Manhole	UP	Utility Pole	CMP	Corrugated Metal Pipe		
EMTR	Electric Meter		Utility Pole with Light	ER	Electric Riser		
EMH	Electric Manhole	WSO	Water Shut-off	HDPE	High Density Polyethylene Pipe		
	Guy Wire	WV	Water Valve	O/H	Overhang		
HYD	Hydrant	AC	Air Conditioner	PS	Pipe Support		
IPF	Iron Pipe Found	BH	Building Height	P	Post		

BAR SCALE
40 0 20 40 80
1 inch = 40 ft.

SEE SHEET 1 FOR MAP NOTES AND REFERENCES

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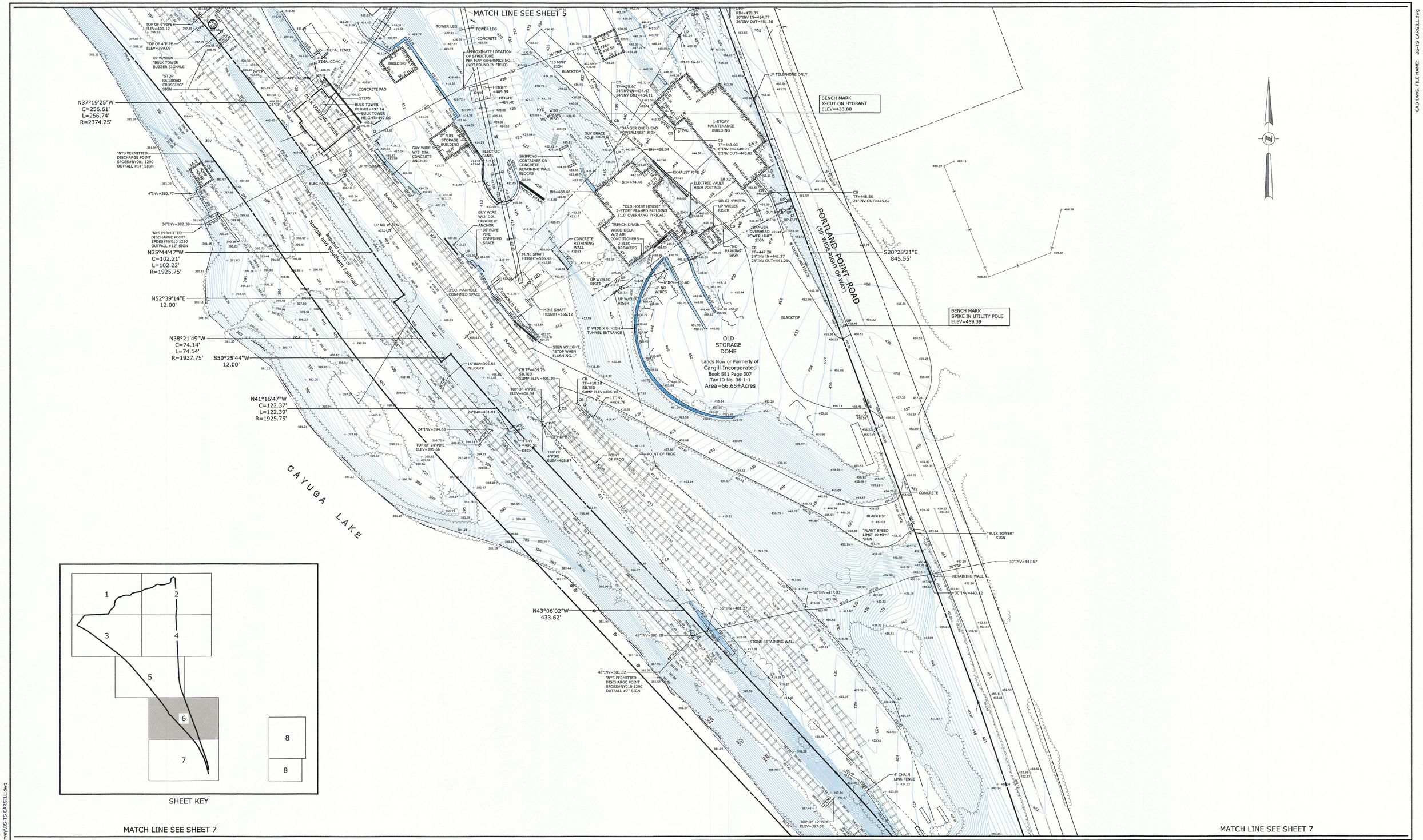
SHEET 5 OF 8
DWG. NO: 19-659



LEGEND

○ BOL	Bollard
☐ CB	Catch Basin
○ CBR	Catch Basin Round
○ CIRF	Capped Iron Rod Found
○ DMH	Drainage Manhole
△ EMTR	Electric Meter
○ EMH	Electric Manhole
←—	Guy Wire
HYD	Hydrant
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UP	Utility Pole
	Utility Pole with Light
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CF	Concrete Footing
CMP	Corrugated Metal Pipe
ER	Electric Riser
HDPE	High Density Polyethylene Pipe
O/H	Overhang
PS	Pipe Support
P	Post
PVC	Polyvinyl Chloride Pipe
RCP	Reinforced Concrete Pipe

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BAR SCALE
40 0 20 40 80
1 inch = 40 ft.

SEE SHEET 1 FOR MAP NOTES AND REFERENCES

CARL M. RIGDON
P.L.S. NO. 50711

CARL MARSHALL RIGDON
050711

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DRAFTED : GLB
CHECKED : JM
PROJ. NO : 19.9464
SCALE : 1" = 40'
DATE : SEPT. 23, 2019

ALTA/NSPS LAND TITLE SURVEY
Portion of Lands Now or Formerly of
CARGILL INCORPORATED
191 Portland Point Road

TOWN OF LANSING
TOMPKINS COUNTY, NEW YORK

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LITTLE FALLS, NY • RED HOOK, NY • SYRACUSE, NY
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SHEET 6 OF 8
DWG. NO: 19-659

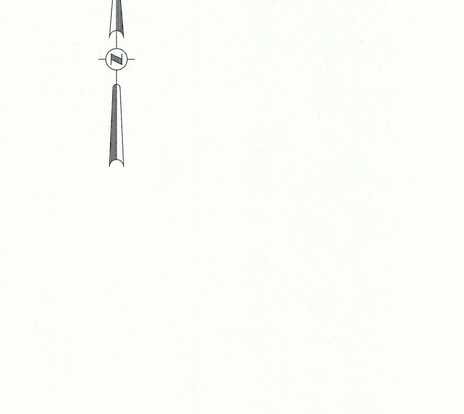
MATCH LINE SEE SHEET 6

DESCRIPTION
PORTION OF LANDS NOW OR FORMERLY OF
CARGILL INCORPORATED
TOWN OF LANSING, COUNTY OF TOMPKINS, STATE OF NEW YORK
TOTAL AREA = 66.65± ACRES OF LAND

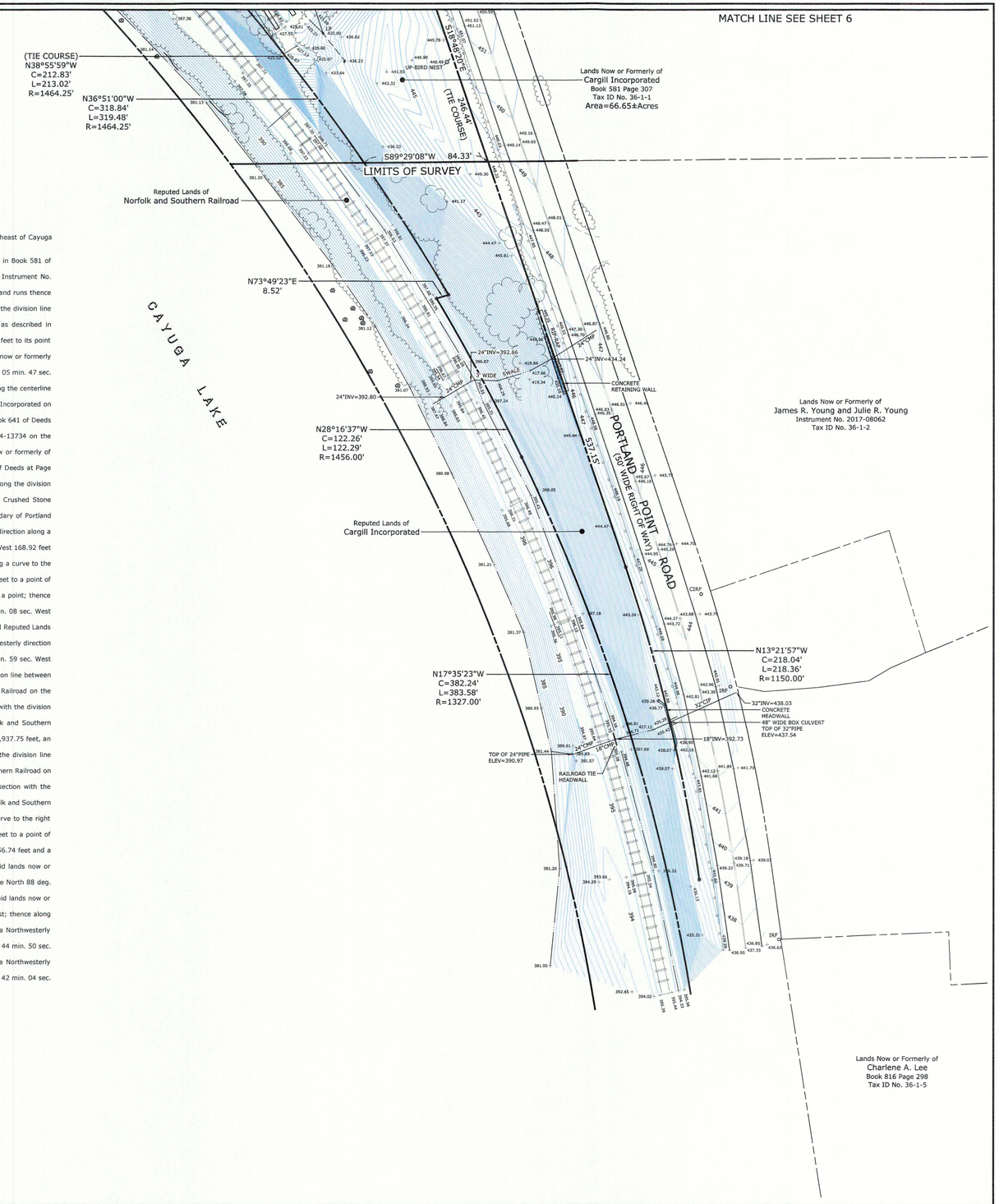
All that certain tract, piece or parcel of land situate in the Town of Lansing, County of Tompkins, State of New York, lying Northeast of Cayuga Lake and West of Portland Point Road, and being more particularly bounded and described as follows:

BEGINNING at the point of intersection of the division line between the lands now or formerly of Cargill Incorporated as described in Book 581 of Deeds at Page 307 on the Southeast and the lands now or formerly of Todd M. Howell and Katherine R. Howell as described in Instrument No. 566762-001 on the Northwest with the Northeasterly railroad boundary of the Reputed Lands of the Norfolk and Southern Railroad and runs thence from said point of beginning along said division line North 37 deg. 45 min. 03 sec. East 249.70 feet to its point of intersection with the division line between the said lands now or formerly of Cargill Incorporated on the South and the lands now or formerly of Ann M. Short as described in Instrument No. 480746-001 on the North; thence North 87 deg. 11 min. 11 sec. East along the last mentioned division line 462.72 feet to its point of intersection with the division line between the said lands now or formerly of Cargill Incorporated on the Southeast and the lands now or formerly of William T. Martin and Elizabeth M. Bement as described in Book 641 of Deeds at Page 952 on the Northwest; thence North 29 deg. 05 min. 47 sec. East along the last mentioned division line 90.94 feet to its point of intersection with the centerline of the Minegar Creek; thence along the centerline of the Minegar Creek as it winds and turns and marking the common division line between the said lands now or formerly of Cargill Incorporated on the Southeast, South, and East and the said lands now or formerly of William T. Martin and Elizabeth M. Bement as described in Book 641 of Deeds at Page 952 and other lands now or formerly of William T. Martin and Elizabeth M. Bement as described in Instrument No. 2014-13734 on the Northwest, North, and West, a distance of 1,559± feet to its point of intersection with the division line between the said lands now or formerly of Cargill Incorporated on the West and the lands now or formerly of Cayuga Crushed Stone Incorporated as described in Book 606 of Deeds at Page 1110 on the East (the tie for the last described meander course being North 63 deg. 58 min. 04 sec. East 1,401.72 feet); thence along the division line between the said lands now or formerly of Cargill Incorporated on the West and the said lands now or formerly of Cayuga Crushed Stone Incorporated on the East, South 03 deg. 05 min. 57 sec. East 604.73 feet to its point of intersection with the Westerly road boundary of Portland Point Road (50-foot-wide right-of-way); thence along said Westerly road boundary the following five (5) courses: 1) in a Southerly direction along a curve to the left having a radius of 556.00 feet, an arc length of 169.58 feet and a chord bearing of South 05 deg. 49 min. 03 sec. West 168.92 feet to a point of tangency; 2) South 02 deg. 55 min. 12 sec. East 1,156.55 feet to a point of curvature; 3) in a Southerly direction along a curve to the left having a radius of 975.00 feet, an arc length of 298.69 feet and a chord bearing of South 11 deg. 41 min. 47 sec. East 297.52 feet to a point of tangency; 4) South 20 deg. 28 min. 21 sec. East 845.55 feet to a point; and 5) South 18 deg. 48 min. 20 sec. East 246.44 feet to a point; thence through the said lands now or formerly of Cargill Incorporated and marking the Southerly limits of this survey South 89 deg. 29 min. 08 sec. West 84.33 feet to a point on the division line between the said lands now or formerly of Cargill Incorporated on the Northeast and the said Reputed Lands of the Norfolk and Southern Railroad on the Southwest; thence along said division line the following two (2) courses: 1) in a Northwesterly direction along a curve to the left having a radius of 1,464.25 feet, an arc length of 213.02 feet and a chord bearing of North 38 deg. 55 min. 59 sec. West 212.83 feet to a point of tangency; and 2) North 43 deg. 06 min. 02 sec. West 433.62 feet to its point of intersection with the division line between the said lands now or formerly of Cargill Incorporated on the Northwest and the said Reputed Lands of the Norfolk and Southern Railroad on the Southeast; thence South 50 deg. 25 min. 44 sec. West along the last mentioned division line 12.00 feet to its point of intersection with the division line between the said lands now or formerly of Cargill Incorporated on the Northeast and the said Reputed Lands of the Norfolk and Southern Railroad on the Southwest; thence along said division line in a Northwesterly direction along a curve to the right having a radius of 1,937.75 feet, an arc length of 74.14 feet and a chord bearing of North 38 deg. 21 min. 49 sec. West 74.14 feet to its point of intersection with the division line between the said lands now or formerly of Cargill Incorporated on the Southeast and the said Reputed Lands of the Norfolk and Southern Railroad on the Northwest; thence North 52 deg. 39 min. 14 sec. East along the last mentioned division line 12.00 feet to its point of intersection with the division line between the said lands now or formerly of Cargill Incorporated on the Northeast and the said Reputed Lands of the Norfolk and Southern Railroad on the Southwest; thence along said division line the following two (2) courses: 1) in a Northwesterly direction along a curve to the right having a radius of 1,925.75 feet, an arc length of 102.22 feet and a chord bearing of North 35 deg. 44 min. 47 sec. West 102.21 feet to a point of reverse curvature; and 2) in a Northwesterly direction along a curve to the left having a radius of 2,374.25 feet, an arc length of 256.74 feet and a chord bearing of North 37 deg. 19 min. 25 sec. West 256.61 feet to its point of intersection with the division line between the said lands now or formerly of Cargill Incorporated on the South and the said Reputed Lands of the Norfolk and Southern Railroad on the North; thence North 88 deg. 31 min. 48 sec. East along the last mentioned division line 10.69 feet to its point of intersection with the division line between the said lands now or formerly of Cargill Incorporated on the Northeast and the said Reputed Lands of the Norfolk and Southern Railroad on the Southwest; thence along said division line the following four (4) courses: 1) North 40 deg. 27 min. 54 sec. West 560.54 feet to a point of curvature: 2) in a Northwesterly direction along a curve to the left having a radius of 2,066.00 feet, an arc length of 453.06 feet and a chord bearing of North 46 deg. 44 min. 50 sec. West 452.15 feet to a point of tangency; 3) North 53 deg. 01 min. 46 sec. West 543.69 feet to a point of curvature; and 4) in a Northwesterly direction along a curve to the left having a radius of 1,966.00 feet, an arc length of 389.22 feet and a chord bearing of North 58 deg. 42 min. 04 sec. West 388.59 feet to the point or place of beginning and containing 66.65 acres of land, more or less.

Subject to any covenants, rights of way, easements, or restrictions of record.



SHEET KEY



LEGEND

BOL	Bollard	IRF	Iron Rod Found	CIP	Cast Iron Pipe	PVC	Polyvinyl Chloride Pipe
CB	Catch Basin	LP	Light Pole	CONC	Concrete	RCP	Reinforced Concrete Pipe
CBR	Catch Basin Round	SMH	Sanitary Manhole	CBRW	Concrete Block Retaining Wall		
CIRF	Capped Iron Rod Found	SMON	Square Concrete Monument	CF	Concrete Footing		
DMH	Drainage Manhole	UP	Utility Pole	CMP	Corrugated Metal Pipe		
EMTR	Electric Meter		Utility Pole with Light	ER	Electric Riser		
EMH	Electric Manhole	WSO	Water Shut-off	HDPE	High Density Polyethylene Pipe		
— —	Guy Wire	WV	Water Valve	O/H	Overhang		
HYD	Hydrant	AC	Air Conditioner	PS	Pipe Support		
IPF	Iron Pipe Found	BH	Building Height	P	Post		

BAR SCALE
40 0 20 40 80
1 inch = 40 ft.

SEE SHEET 1 FOR MAP NOTES AND REFERENCES

"ONLY COPIES OF THIS MAP SIGNED IN RED INK AND EMBOSSED WITH THE SEAL OF AN OFFICER OF C.T. MALE ASSOCIATES OR A DESIGNATED REPRESENTATIVE SHALL BE CONSIDERED TO BE A VALID TRUE COPY".

CARL M. RIGDON
P.L.S. NO. 50711

STATE OF NEW YORK · CARL MARSHALL RIGDON · 050711 · LICENSED LAND SURVEYOR

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				

APPROVED: WJN
DRAFTED : GLB
CHECKED : JM
PROJ. NO : 19.9464
SCALE : 1" = 40'
DATE : SEPT. 23, 2019

ALTA/NSPS LAND TITLE SURVEY
Portion of Lands Now or Formerly of
CARGILL INCORPORATED
191 Portland Point Road

TOWN OF LANSING — TOMPKINS COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 518.786.7400
COBLESKILL, NY · GLENS FALLS, NY · POUGHKEEPSIE, NY · JOHNSTOWN, NY
LITTLE FALLS, NY · RED HOOK, NY · SYRACUSE, NY
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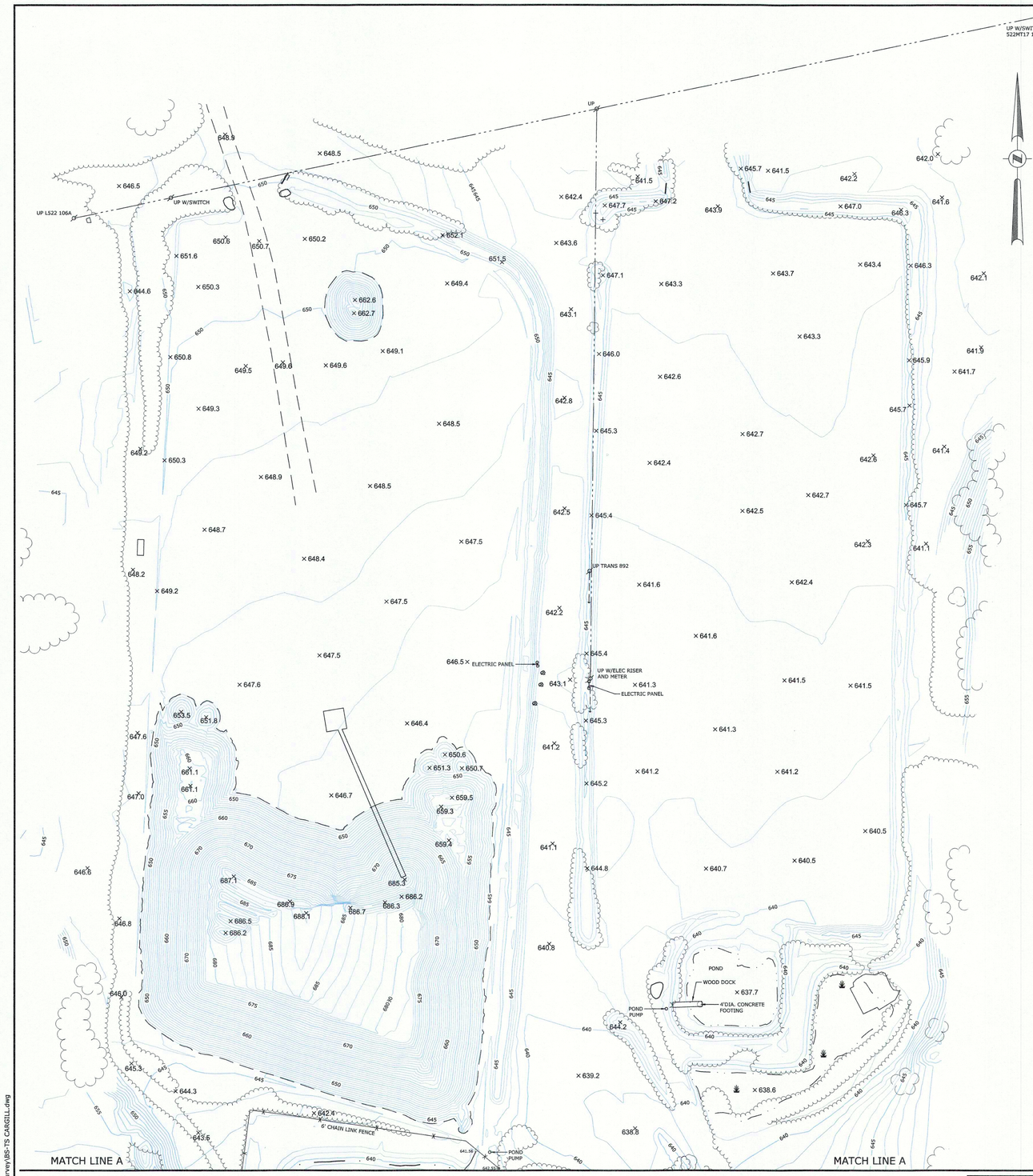
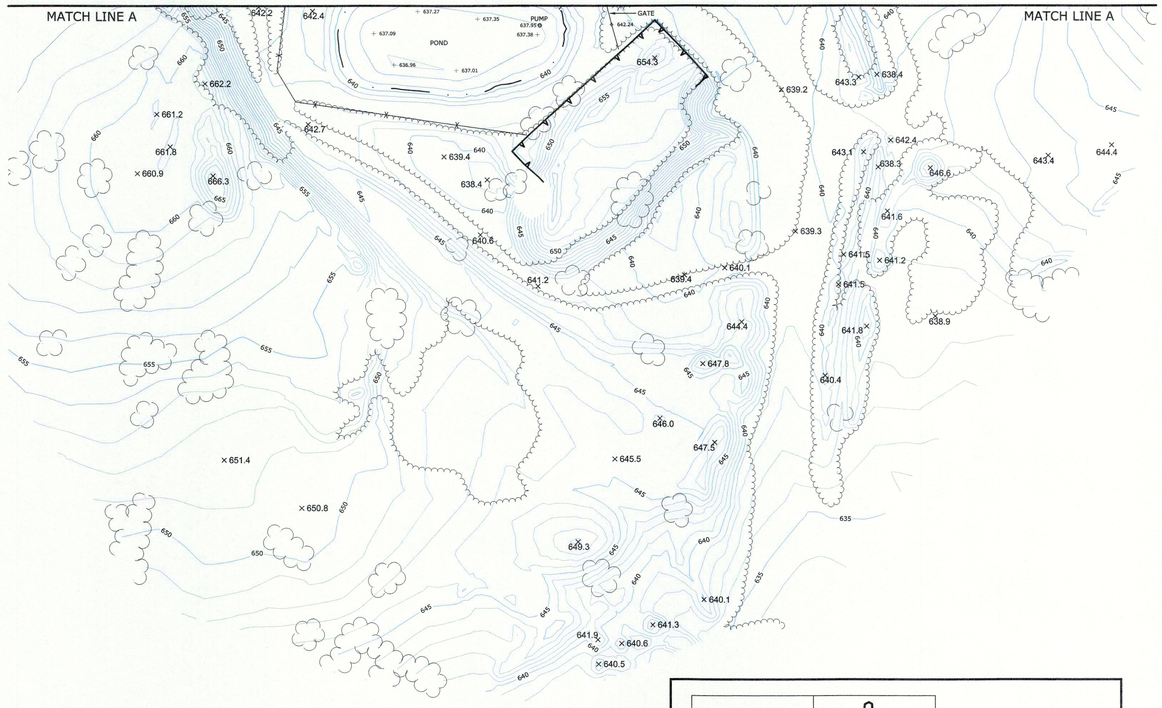
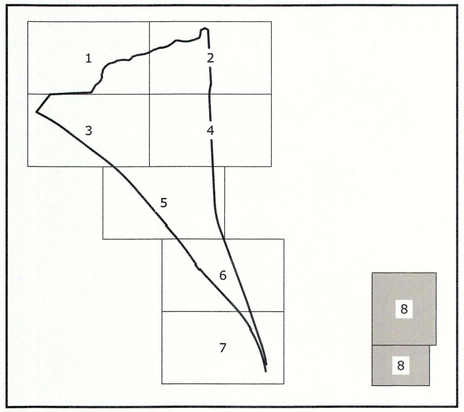
SHEET 7 OF 8
DWG. NO: 19-659

CAD DWG. FILE NAME: K:\Projects\199464\Survey\BS-TS CARGILL.dwg

CAD DWG. FILE NAME: BS-TS CARGILL.dwg







SHEET KEY

LEGEND

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	Guy Wire	WV	Water Valve	O/H	Overhang		
HYD	Hydrant	AC	Air Conditioner	PS	Pipe Support		
IPF	Iron Pipe Found	BH	Building Height	P	Post		

BAR SCALE

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1 inch = 40 ft.

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STATE OF NEW YORK · CARL MARSHALL RIGDON · 050711 · LICENSED LAND SURVEYOR

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
	1				
	2				
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	9				

APPROVED: WJN
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SHEET 8 OF 8
DWG. NO: 19-659

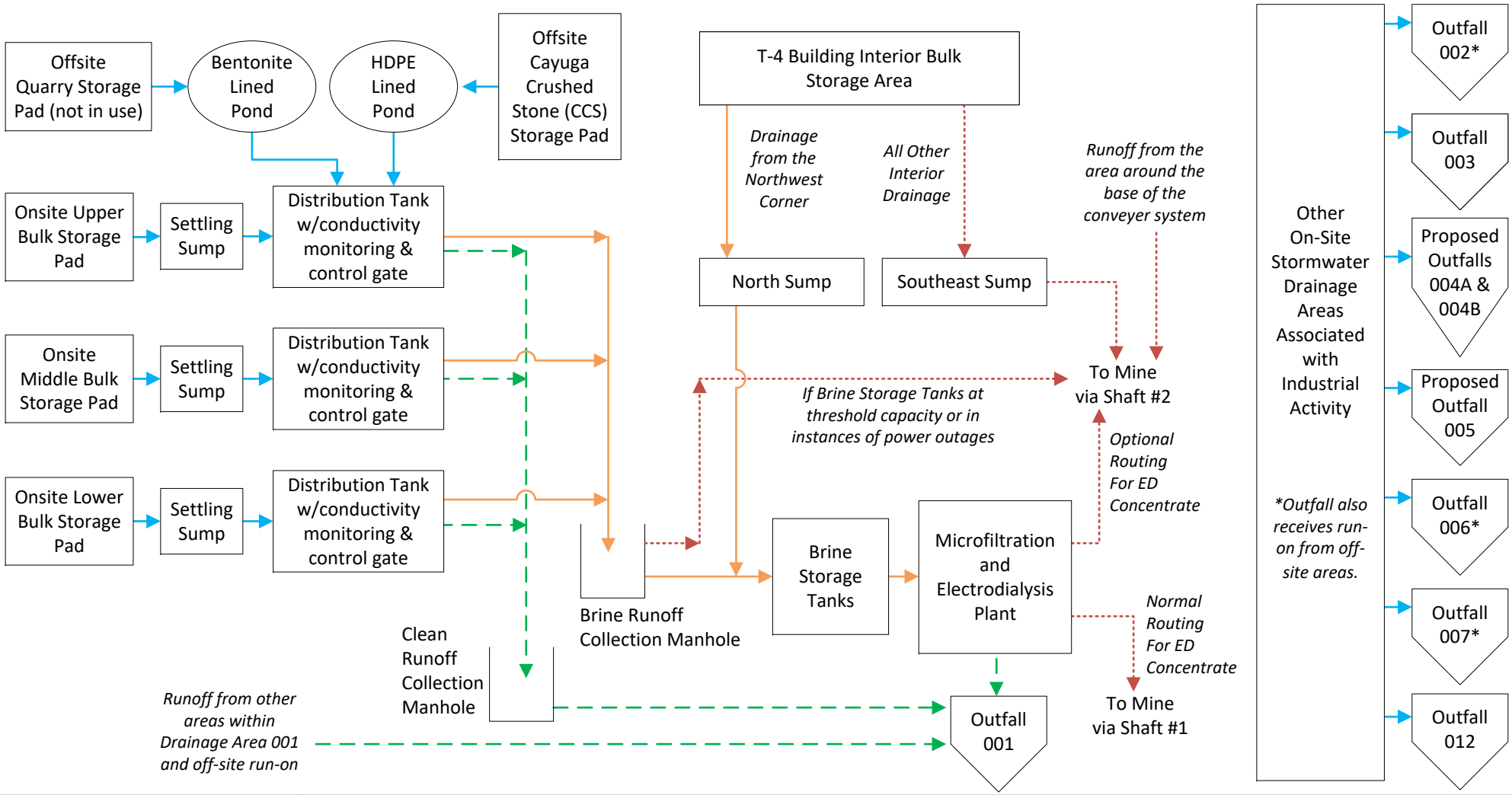
CAD DWG. FILE NAME: K:\Projects\19946\Survey\BS-TS CARGILL.dwg

CAD DWG. FILE NAME: BS-TS CARGILL.dwg

APPENDIX 4 – FLOW DIAGRAM

LINE KEY:
- Stormwater + Runoff
- Brine Runoff to Treatment (MF & ED Plant)
- Runoff / Treated Runoff to Outfall 001
- Brine/Concentrate to Mine

Notes:
1) The Offsite Quarry Storage Pad and the Offsite Cayuga Crushed Stone (CCS) Storage Pad are both located on property leased from CCS. The different pad terminology is due to carry over of historical identification terms.
2) Conductivity monitoring at the catch basins is for internal management (i.e., process control) purposes and is separate from SPDES permit required monitoring of Outfall 001. Outfall 001 monitoring occurs after all discharges are combined.
3) In addition to the stormwater and runoff flows indicated, intermittent flows of public water supply used at the MF & ED Plant (e.g., sinks, hoses, MF flushes, fire protection system) and pumped water from the secondary containment of the brine storage tanks are routed to and treated by the MF & ED Plant.
4) Other permitted SPDES outfalls that do not include stormwater + runoff are not included in this figure. These are Outfall 009 (treated sanitary wastewater) and Outfall 014 (non-contact cooling water from the MF & ED Plant).



RAMBOLL

Stormwater and Runoff Management System

Cargill Incorporated – Cayuga Mine
Lansing, New York 14882

Flow Diagram

DRAFTED BY: JMB | DATE: 12/18/2019 | PROJECT: 1690015568

APPENDIX 5 – INSPECTION FORMS

CORRECTIVE ACTION LOG

Cargill - Cayuga Mine

Corrective Action Log

Instructions: Use this form to document facility corrective actions. This form applies to all corrective actions needed following observations from daily, weekly, quarterly, and annual site inspections. Describe corrective actions initiated, date completed, and note the person that completed the work.

Date (Date corrective action noted)	**Corrective Action Needed** (Identify needed maintenance and repairs, or any failed control measures that need replacement, as well as location on-site)	**Plan to Address** (Describe anticipated corrective measures to be taken)	**Completion Date and Description** (List repairs/modifications made, and date completed)	**Corrective Action Completion Details** (Note the person and/or company that completed the work)

WEEKLY FACILITY INSPECTION FORMS

Cargill - Cayuga Mine

Weekly Facility Inspection Form

Inspector(s): _____

Date: _____

#	Description	Comments/Notes	Corrective Actions Taken
1	Visually inspect outdoor equipment for signs of leaks or spills.		
2	Visually inspect the lake shore for signs of leaks, spills, or other stormwater issues.		
3	Visually inspect the condition and functionality of the bulk salt storage pads		
4	Document Results of YPS Pipeline Pressure Test		

Comments on current conditions and previous recommendations:

Daily Checks

Truck and railcar loading areas inspected daily this week: Yes or No

Comments:

Bulk loading tower area inspected daily this week: Yes or No

Comments:

T-3, bin, and below overland conveyors inspected daily this week: Yes or No

Comments:

MONTHLY FACILITY INSPECTION FORMS

Cargill - Cayuga Mine

Monthly Facility Inspection Form

Housekeeping Report (Surface)

Inspector(s): _____

Area**:** **Hoists (#1, 2, 3)**

Date: _____

#	Description	Comments/Notes	Corrective Actions Taken
5	#1 Hoist House		
6	#1 Hoist Electrical Room		
7	#1 Hoist Switch Gear Room		
8	Generator Room for #2 Hoist		
9	#3 Surface Collar, Headframe and Loading Dock		
10	#3 Substation		
11	#3 Hoist House		
12	Time/Light House and #3 Storage Shed		

Hoist logs being maintained? Circle "Yes" or "No"

Hoist #1	Yes	No
Hoist #2	Yes	No
Hoist #3	Yes	No

Comments on current conditions and previous recommendations addressed:

Cargill - Cayuga Mine

Monthly Facility Inspection Form

Housekeeping Report (Surface)

Inspector(s): _____

Area**:** **Shop Facilities**

Date: _____

#	Description	Comments/Notes	Corrective Actions Taken
1	Direct Charge Parts and Hose Machine Area		
2	Maintenance Bays		
3	Oil Storage Room		
4	Air Compressor Room		
5	Shop Road Area		
6	Old Hoist House (east side) Maint. Shop & Garage Area		
7	Old Hoist House (west side) Shaft Crew Office & Storage/Shop Area		
8	T-3 Forklift Shop		
9	T-3 Bag Maintenance Shop		
10	Tipple #1 Headframe		
11	#1 Surface Collar Area/Headframe		
12	Main Substation		
13	D.O.T. Building		
14	Exposed YBS piping - bulk tower and Lower pad		
15	Exposed $MgCl_2$ piping - bulk tower and Lower pad		

Comments on current conditions and previous recommendations addressed:

Cargill - Cayuga Mine

Monthly Facility Inspection Form

Housekeeping Report (Surface)

Inspector(s): _____

Area**:** **Magnesium Chloride/HydroMelt System**

Date: _____

#	Description	Comments/Notes	Corrective Actions Taken
1	Tankcar Unloading Pump		
2	Carbis Tankcar Access Platform		
3	Magnesium Chloride/HydroMelt MCC Building		
4	T4 Tank Area (Mag Tanks 1 & 2, T4 Transfer Pump)		
5	All Fire Extinguishers Inspected		

Comments on current conditions and previous recommendations addressed:

Cargill - Cayuga Mine

Monthly Facility Inspection Form

Housekeeping Report (Surface)

Inspector(s): _____

Area**:** **Conveyor Systems & Loading Facilities**

Date: _____

#	Description	Comments/Notes	Corrective Actions Taken
1	Skip dump		
2	M-11 conveyor and drive area/vertical take up		
3	Top and bottom 200 Ton Bin		
4	M-13 conveyor and drive area/vertical take up		
5	M-12 conveyor		
6	T-3 Transfer		
7	M-15 conveyor and drive area/vertical take up		
8	M-15a conveyor		
9	14B conveyor and T-4 Transfer		
10	M-16 conveyor and drive area		
11	Jacobs ladder area		
12	14-C conveyor and drive area/vertical take up		
13	750 Ton Bin MCC Building		
14	Upper rail siding		
15	Lower rail siding		
16	Bulk Tower		
17	Premix conveyor area		

Comments on current conditions and previous recommendations addressed:

Cargill - Cayuga Mine

Monthly Facility Inspection Form

Housekeeping Report (Surface)

Inspector(s): _____

Area**:** **Bulk Storage & Truck Scales**

Date: _____

#	Description	Comments/Notes	Corrective Actions Taken
1	T-4 area		
2	Bulk truck roadways - north of T-3 building		
3	Lower Pad		
4	Middle Pad		
5	Upper Pad		
6	Bulk Storage Pad's asphalt surface integrity		
7	Truck scales/tarping area		
8	In-bound roadway		
9	Scalehouse building		
10	Cayuga Crushed Stone Pad and pond		
11	Quarry Pad and pond		
12	Are any roofs showing signs of leaks?		

Comments on current conditions and previous recommendations addressed:

Additional Observations – circle "Yes" or "No"

Do the truck scales need to be cleaned?	Yes No
Do the tanks need to be pumped?	
200 Ton Bin	Yes No
T-4 Transfer	Yes No
T-4 Building	Yes No
Fuel Dispensing Bldg.	Yes No
Are pad drains (fresh & brine) clear of debris?	
Lower Pad	Yes No
Middle Pad	Yes No
Upper Pad	Yes No

Cargill - Cayuga Mine

Monthly Facility Inspection Form

Housekeeping Report (Surface)

Inspector(s): _____

Area**:** **General Surface Grounds**

Date: _____

#	Description	Comments/Notes	Corrective Actions Taken
1	Fuel station		
2	Dome area		
3	#2 Shaft area		
4	Catch basins and drainage ditches		
5	All spill kits in place and stocked (see locations on Figure 2).		

Comments on current conditions and previous recommendations addressed:

Cargill - Cayuga Mine

Monthly Facility Inspection Form

Housekeeping Report (Surface)

Inspector(s): _____

Area**:** **T-3 Bagging Facility**

Date: _____

#	Description	Comments/Notes	Corrective Actions Taken
1	Compressor room		
2	Upper bag storage floor including loading docks		
3	Bag line area		
4	Bin & bucket elevator area		
5	Lower bag storage floor including loading docks		
6	Bag salt storage bay & roadway area		
7	Old/new pallet storage area		
8	Tunnel		
9	Forklift storage area		
10	YPS room		

Comments on current conditions and previous recommendations addressed:

Cargill - Cayuga Mine

Monthly Facility Inspection Form

Housekeeping Report (Surface)

Inspector(s): _____

Area**:** **ED Plant**

Date: _____

#	Description	Comments/Notes	Corrective Actions Taken
1	Large 600,000-gal. Brine Tank Area		
2	Acid Room Area		
3	Plant Pumping Area		
4	Outside Perimeter of Plant		

Comments on current conditions and previous recommendations addressed:

QUARTERLY FACILITY INSPECTION FORMS

QUARTERLY VISUAL INSPECTION FORM				
Name of Inspector:	Date:			
Instructions: On a quarterly basis, visually inspect all stormwater outfall drainage areas for evidence of potential stormwater pollution sources	Status			
Items to inspect	Yes	No	Action needed	Action completed
Are outdoor surface areas free of spilled salt?				
Are the facility bulk loading areas neat and orderly?				
Are there any areas that have an accumulation of salt/YPS?				
Are there areas of past spilled/leaked salt, YPS, or petroleum products on the ground surface? If so, describe where:_____				
Are there areas that generate excessive dust from salt handling operations? If so, describe where:				
Is there any evidence of past or current leaks from outdoor machinery or equipment?				
Are employees regularly reminded of the importance of good housekeeping?				
Do catch basins associated with storm water drainage systems need to be cleaned out or repaired?				
Is there a buildup of oil stains on outdoor paved surfaces?				
Are good housekeeping procedures and reminders posted in appropriate locations around the facility?				
Is there a buildup of salt on the railroad tracks from leaking railcars?				
Is salt or other materials "creeping" out onto loading dock areas?				
Are appropriate spill containment and cleanup materials kept on-site and in convenient locations?				
Are cleanup procedures for spilled materials (including salt) regularly followed and correctly performed?				
Are employees regularly informed regarding proper procedures for spill cleanup?				
Is equipment (that may be exposed to storm water) regularly inspected and maintained to ensure that no conditions could contribute to discharges of pollutants to storm water?				
Are unpaved areas located on the property free of erosion?				
Comments:				

COMPREHENSIVE ANNUAL FACILITY EVALUATION AND ANNUAL REPORT

COMPREHENSIVE ANNUAL FACILTIY EVALUATION – ANNUAL REPORT	
Name of Inspector:	Date:
Instructions: Evaluate the effectiveness of each of the BMPs listed below in terms of controlling or minimizing contaminated stormwater runoff.	
Cargill BMPs	**Comments**
1. Outdoor areas around the facility will be cleaned (swept free of salt) on a regular basis	
2. Garbage, waste materials, and used parts will be regularly picked up and properly disposed	
3. Waste containers *(i.e.,* dumpsters) will be kept covered at all times	
4. Any waste oils generated on-site will be stored in appropriate containers	
5. All ditches and storm sewer catch basins must be clear of debris	
6. Buildings hatches and doors should be kept closed or slightly open during rain events	
7. Loading and unloading docks will be kept clean at all times.	
8. Salt spilled during loadout or by trucks will be cleaned up as soon as practicable	
9. Spilled salt will be mixed back in with bulk salt (if appropriate) or disposed of into Mine Shaft #2.	
10. Identified leaks associated with the YPS transfer pipes are contained and repaired immediately	
11. Equipment and areas that have the potential for failures or spills will be identified	
12. Regularly scheduled maintenance and repair of equipment will be performed (e.g. front-end loaders)	
13. Equipment will be operated according to manufacturer's recommendations 14. Regular housekeeping inspections shall be conducted once per month.	
15. Processing area equipment *(i.e.,* conveyors) will be cleaned on a regular basis.	
16. Swales and catch basins will be cleaned out twice a year; or as conditions dictate, accumulated sediment and debris will be removed and properly disposed.	
17. Preventive maintenance will be performed on equipment (with potential of spills/leaks) to ensure proper operation and detection of potential spills/leaks before they occur.	
18. Catch basins and drains shall be maintained and inspected frequently.	
19. Storm water catch basins, swales and outdoor areas draining storm water runoff shall be inspected on a monthly basis	
20. Regular housekeeping inspections shall be conducted once per month.	
21. Brine water storage tanks are to be pumped out on regular basis (but not less than once every quarter).	
22. Brine water to be conveyed to Mine Shaft #2 or the ED Plant.	

COMPREHENSIVE ANNUAL FACILTIY EVALUATION – ANNUAL REPORT	
Name of Inspector:	Date:
Instructions: Evaluate the effectiveness of each of the BMPs listed below in terms of controlling or minimizing contaminated stormwater runoff.	
Cargill BMPs	**Comments**
23. Regular visual inspections will be performed to identify signs of wear on containers, containment devices, or equipment that may contribute to a spill or leak	
24. Inspect the maintenance areas regularly for proper implementation of spill control measures	
25. Inspect storage and parking areas for signs of truck leakage (salt or petroleum products) or other potential problems	
26. Salt processing related equipment *(i.e.,* conveyors) will be inspected on a routine basis	
27. Paints, oils and other maintenance fluids for on-site equipment will be maintained indoors within a contained area	
28. Proper bulk salt transfer procedures will always be used to prevent spills	
29. Equipment resulting in a leak or spill of fluids shall be immediately reported to the Surface Plant Superintendent	
30. Emergency spill equipment will be maintained in appropriate locations around the facility	
31. Employees will be trained regarding the components and goals of the BMP Plan	
32. Employees will be property trained in good housekeeping practices	
33. Employees will be properly trained in material handling practices	
34. Employees will be trained in the proper inspection procedures	
35. Employees will be properly trained in spill prevention and response practices	
36. Housekeeping and preventive maintenance inspections will be documented	
37. Training attendance will be documented	
List others as necessary	

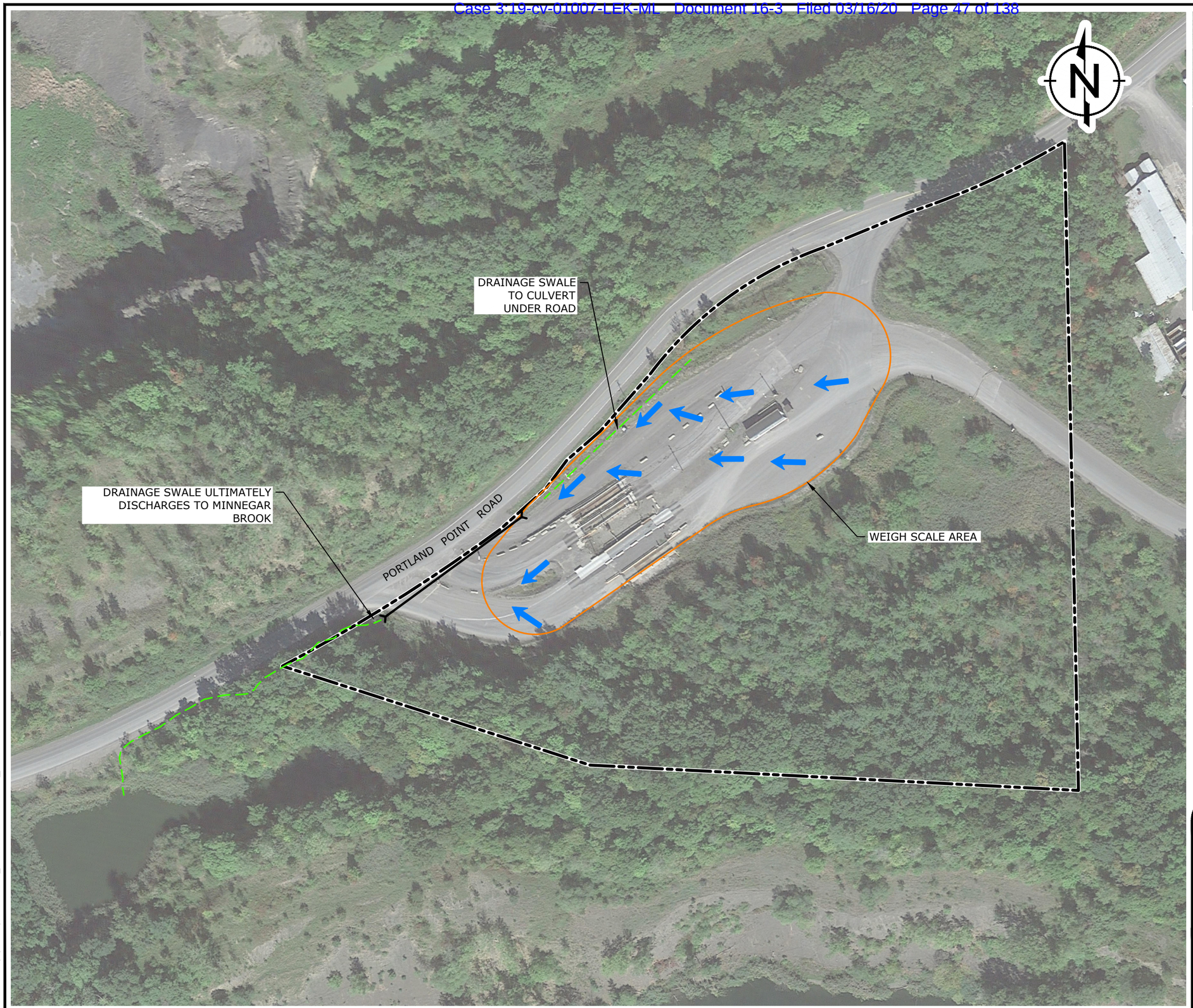
Review of Daily, Weekly, Monthly, and Quarterly Inspections throughout year, Comments:
Summary of Areas for Improvement/Action or Change in Procedures:

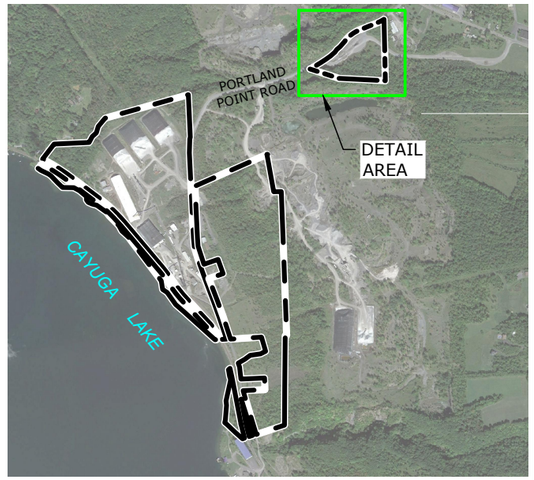
CERTIFICATION OF DOCUMENT

I,_____(responsible corporate official), certify under penalty of law that this document and all attachments were prepared under my supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information provided herein. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information provided herein is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting, providing, presenting, and/or certifying false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: _____

APPENDIX 6 – WEIGHT SCALE/SCALE HOUSE





KEY MAP
1" = 2000'

LEGEND:

- PROPERTY BOUNDARY (APPROXIMATE)
- WEIGH SCALE AREA
- DRAINAGE SWALE
- CULVERT
- DRAINAGE FLOW DIRECTION

SOURCE:
AERIAL IMAGERY: Google Earth. IMAGE DATE: 9/24/2016.

0 120
SCALE IN FEET

WEIGH SCALE SITE PLAN

CARGILL, INC.
191 PORTLAND POINT ROAD
LANSING, NEW YORK

RAMBOLL

FIGURE 1

DRAFTED BY: DLB | DATE: 12/13/2019 | PROJECT: 1690015568

PMASCARO 1/8/20 F:\1690015568_CARGILL-LANSING NY_CLIENT SUBMITTAL < SITE PLAN_WEIGH SCALE >

APPENDIX 7 – STANDARD OPERATING PROCEDURES

GENERAL BULK MATERIAL LOADING/UNLOADING PROCEDURES

Required Safety Equipment/Precautions

A MSDS for the product(s) being loaded/unloaded shall be reviewed. The recommended safety precautions shall be followed and personnel shall wear the appropriate personal protective equipment at all times during the loading/unloading procedure.

Protective equipment may only be removed after a final inspection as performed by the vendor and Cargill personnel. The final inspection will ensure that all valves are closed and the transfer hose is disconnected and replaced on the trailer.

For flammable materials, no flame of any kind should be permitted near the loading/unloading area. Smoking is strictly forbidden.

Procedure

1. Vendor shall check in with shipping/receiving personnel and review shipping papers for special instructions or contacts to be made prior to loading/unloading. All scheduled deliveries/ pickups will be coordinated and approved by the Plant Manager or his designee.

2. Shipping personnel shall contact the appropriate personnel to have them meet the delivery vehicle at the designated loading/unloading location. Cargill personnel shall provide a copy of this procedure to the vendor for their review. Vendor shall set the brakes and chock the wheels.

3. Vendor and Cargill personnel shall locate the closest telephone and fire extinguishers and ensure that they are in good working order. If an extinguisher is not immediately available, request that an extinguisher be made available in case of an emergency. If a telephone is not readily available, obtain a two-way radio.

4. Vendor shall inspect gasket and transfer hose for any signs of defects or deterioration. The gasket shall be replaced if it is defective or damaged. If the transfer hose is defective or damaged, vendor shall obtain a replacement hose. Vendor shall not proceed until a replacement is obtained.

5. Vendor shall hook up hose to proper unloading line. If the hook-up location is not conspicuously marked, vendor shall not begin loading/unloading without approval by Cargill personnel. All bolts shall be tightened on the flange.

6. Vendor shall ensure that there is room in the tank/truck to hold the delivered load.

7. Vendor shall open all product discharge valves on trailer, open the appropriate receiving valve, and ensure that all valves are open prior to activating the pump.

8. Vendor and Cargill personnel shall visually inspect the hook-up location and hose to ensure that product is flowing safely and no leaks are present.

9. Vendor shall remain in the immediate truck area (within 25 feet) with an unobstructed view of the loading/unloading system until all valves are closed and the hose is disconnected.

10. If leaks or other problems are detected, or if the vendor must leave the area, the loading/unloading process must be shut down, the discharge valve must be closed, and the trailer must be de-pressurized.

11. If the tank gauge is visible from the driver's location, the driver shall watch the gauge to help eliminate the chance for overfilling the tank. If the tank and/or gauge are not visible from the unloading area, Cargill personnel shall observe the gauge and be in two-way radio communication with the driver.

12. When the desired amount of product has been loaded/unloaded, the vendor shall:

    a. Turn off air or pump;

    b. Close valve on trailer;

    c. Blow the line clear or drain the line;

    d. Close the receiving valve; and

    e. Disconnect and recap hose and place hose on the trailer.

13. Vendor and Cargill personnel shall make a final visual inspection of the loading/unloading area to ensure that all valves are tightly closed and that no product has spilled or leaked.

14. **If a leak or spill has occurred, immediately contact the Emergency Response Coordinator and refer to the Initial Response Procedures in Section 1.0 of the Cargill Deicing Technology SPCC Plan.**

15. Vendor shall remove wheel chocks and release the brakes. Vendor shall exit the loading/unloading location.

16. Cargill personnel shall complete the material deliver/pickup log.

LOADING AND UNLOADING PROCEDURES FOR FIFTY-FIVE GALLON DRUMS AND TOTES

1. Fifty-five gallon drums and totes are delivered to the loading docks and various storage areas around the plant.

2. Cargill personnel shall monitor loading and unloading operations to ensure that all drums and totes are properly handled, and to facilitate proper spill response (if needed). Loading/unloading operations shall be monitored to ensure that the integrity of the drums and totes is not compromised. Only properly trained personnel should perform loading/unloading operations.

3. Drums and totes being transferred shall be inspected to ensure that they are properly secured and show no signs of deterioration, and are closed to prevent spillage.

4. Spill response equipment shall be available when loading/unloading drums and totes.

5. If there are any minor leaks or spills of material, a cleanup effort must begin immediately, provided that it poses no threat to employee safety.

If a leak or spill has occurred, immediately contact the Emergency Response Coordinator and refer to the Initial Response Procedures in Section 1.0 the Cargill Deicing Technology SPCC Plan.

GENERIC MATERIAL STORAGE AND HANDLING PROCEDURES

Proper Storage and Handling

1. Periodically inspect incoming trucks for leaks.
2. Locate chemical and waste storage and handling areas for flammable and combustible materials at a safe distance from operations that produce sparks or flames. Use intrinsically safe tools.
3. Designate and separate chemical and waste storage areas for flammable materials, if possible, from operations. Maintain ventilation to prevent accumulation of flammable or explosive vapors.
4. Separate incompatible materials (i.e., aqueous-based materials and water reactive materials, acids and bases) and store in areas isolated from each other to prevent mixing of incompatible materials.
5. Close all containers for virgin or waste materials when not in use.
6. Ground all containers and equipment during transfer of flammable materials to diminish the likelihood of a transmitted static charge that could result in a fire or explosion.
7. Store oxidizers such as chlorine away from any organic greases, oils, and fuels.
8. Separate chlorinated solvents and their corresponding wastes from all non-chlorinated solvents and their wastes.

Proper Use

1. Chemicals and their wastes should only be used in designated areas following safety precautions outlined by facility management, the product MSDS/label, and Standard Operating Procedures. Wear appropriate personal protective equipment (PPE).
2. Only use chemicals for their intended proper use.
3. Proper spill control equipment should always be available and in proper working order, especially in transfer areas, when in use.
4. Drums, portable containers, and transfer equipment must be stored securely so that they are not tipped, moved, or otherwise accidentally spilled.

Proper Transfer

1. Take the following precautions prior to transfer of any chemicals:

2. Review SDS, Standard Operating Procedures, and use good common sense for safety precautions and PPE recommendations.

3. If material is being transferred from one container to another, ensure that both the container and material are compatible with the material being transferred. For tank trailer deliveries, this can be achieved by comparing the trailer number with that on the shipping papers in order to verify the description of the contents.

4. Always use grounded containers when transferring flammable materials.

5. Have spill control equipment available when transferring any materials.

6. Verify that the receiving container has sufficient capacity for the material being transferred and overfilling does not occur.

7. Verify that all lines, connections and valves are in good operating condition. Notify facility management or supervisor if something is not working properly and do not perform transfer procedure.

8. Take the following precautions during and after transfer:

9. Transfer materials from one container to another using funnels, hoses, etc. as a means of preventing spills.

10. Monitor loading and transfer operations, even with auto control HI/LO sensors, to ensure that chemical containers are appropriately handled, and to facilitate proper spill response (if needed). In the case of tank trailers, the driver shall remain with the vehicle during the entire loading or unloading operation.

11. Ensure that containers are closed before moving in order to prevent spills.

12. Ensure the integrity of chemical containers and transfer equipment is not compromised during storage or use.

13. Equipment should never be left unattended during transfer operations.

14. Make sure transfer equipment is in good condition and stored securely.

PROCEDURES FOR PUMPING $MgCl_2$ RAIL TANK CAR TO NORTH OR SOUTH TANK

1. Follow all procedures 1-6 for pumping tank car to $MgCl_2$ tank 1 or 2
2. Check valve on North end of T4 building to ensure it is in the open position
3. Close valves above tank 1 and 2 deadheading $MgCl_2$
4. Select destination to North or South tank and open or close appropriate valves located on top of tanks
5. At this point you may begin pumping tank car through the HMI
    a. Area 6 $MgCl_2$ handling
    b. Configure batch
    c. Source – tank car
    d. Destination – North or South
    e. Select method – fill destination
    f. Start system
6. When system starts visually check the MgCl is going to designated location
7. When tank car is done pumping take note of any fluid/ material remaining in the bottom of tank car. Remove arm, secure top manhole lid, raise Carbis loading platform and lock in the upright position.

PROCEDURE FOR TRANSFERRING $MgCl_2$ FROM SOUTH TANK TO NORTH TANK

1. Stick tanks to make sure there is room for $MgCl_2$ to be transferred
2. Check large valve at bottom of tank to make sure it is in the open position
3. Shut all valves leading from pump except for valve labeled to North tank
4. Go to HMI and manually start transfer pump
5. Visually check that $MgCl_2$ is going to designated area

*With pump in 'manual' be aware the chance of overflowing tank exists along with the risk of running the pump dry

**Calculation of pumping time must be made, see chart

PROCEDURES FOR PUMPING $MGCL_2$ FROM RAIL TANK CAR TO TANK 1 OR 2

1. Check destination to ensure contents of tank car (18,000 gal) will fit
2. Make sure tank car brake is set and wheel chock is in place (front and back of wheel)
3. Lower Carbis loading platform
4. Loosen nuts on manhole and, using proper lifting technique, flip lid open on top of car
5. Lower arm to the bottom of the car and secure in place with locking mechanism
6. Check pump that is in the AUTO position
7. Check valve on the North end of T4 to ensure it is in the closed position forcing $MgCl_2$ to tank 1 or 2
8. Open desired valve on top of designated pumping location
9. Close valve deadheading $MgCl_2$ on other tank
10. At this point you can begin pumping rail car through the HMI
    a. Area 6 $MgCl_2$ handling
    b. Configure batch
    c. Source – tank car
    d. Destination – select tank
    e. Select method – fill destination
    f. Start system
11. When system starts pumping go back and visually check that $MgCl_2$ is going to desired location
12. When tank car is done pumping take note of any fluid/ material remaining in bottom of tank. Then remove arm, secure top manhole lid, raise Carbis loading platform and lock in the upright position.

PROCEDURES FOR PUMPING $MGCL_2$ FROM TANK 1 OR 2 TO NORTH OR SOUTH TANK

1. Go to area behind T-4 warehouse and position the proper valve to choose either Tank #1or tank #2 as the source.

2. Check overhead valves for the proper position to isolate the pipe leading to the North or South tanks and position them to feed that pipe only.

3. Go to the North/South tank location and position the top valves on these tanks to choose the proper destination.

4. Use the measuring stick to determine the level of the material in that tank and confirm that the tank has the capacity left to accept the amount of $McCl_2$ to be pumped into it.

5. Access area 6 $MgCl_2$ handling PLC screen on a surface HMI. Proceed to program the desired batch.

6. After the pumping has begun ALWAYS go back to the desired location of destination to confirm the liquid being pumped is going where you want it to.

7. If it is not, STOP THE BATCH IMMEDIATELY. Check for spills, and follow clean-up procedure (Spill Response Plan, Section 1.1 of the SPCC plan) if necessary. Recheck the position of all valves before proceeding, confirm the destination upon resumption of pumping.

YPS System - Pressure Test For leaks. (Weekly PM)

TEST SYSTEM UTILIZING AIR PRESSURE.

WITH ONE PERSON IN MIXING ROOM - CLOSE VALVE FOR BRANCH CIRCUIT TO BULK TOWER.

ANOTHER PERSON IN BULK TOWER WILL CHARGE THE LINE WITH MINE AIR PRESSURE.
- THEN THAT PERSON CLOSES THE VALVE AT THE AIR CONNECTION AND MONITORS PRESSURE GAUGE FOR 10 MINUTES.

TYPICAL PRESSURE IS 110 PSI.

PLEASE NOTE ANY LOSS OF PRESSURE.

IF PRESSURE LOSS IS FOUND VERIFY NO LEAKS AT CONNECTIONS WHERE AIR HOSE CONNECTS TO YPS PLUMBING- IF NO LEAKS AT AIR LINE CONNECTION AND STILL HAVE PRESSURE LOSS NOTIFY MANAGEMENT IMMEDIATELY.

REPEAT PROCESS AT 14C TO TEST FOR PRESSURE LEAKS.

REPORT ALL FINDINGS.

DRAFT Pad Water Collection System Inspection

**Based on an existing Reference Preventive Maintenance procedure that will be updated as a Near-Term BMP.*

Materials Needed:

- Flashlight
- General tools carried in a tool pouch or tote bag

Review Current System Status:

At an appropriate HMI, review the surface pad overview for the existing water flow path. Note the positions of gates for each sump in relation to the conductivity or percentage of salt.

UPPER PAD SUMP	*MIDDLE PAD SUMP*	*LOWER PAD SUMP*
GATE OPEN _____	GATE OPEN _____	GATE OPEN _____
GATE CLOSED_____	GATE CLOSED_____	GATE CLOSED_____
CONDUCTIVITY _____ MS/cm	CONDUCTIVITY _____ MS/cm	CONDUCTIVITY _____MS/cm

Note the level of the Brine Storage Tanks. If the combined tank levels are is less than 64 percent of the overall capacity, the water is sent to the tanks. If levels are at or above 64 percent of capacity, incoming water is sent to Shaft #2.

TANK LEVEL _____

Checks & Inspections Performed For Each On-Site Pad Sump:

- At the Sump
  - Ensure the Float is upright.
  - Check and ensure the Ropes are attached to the Float and preventing it from being drawn into the outlet of the sump.
  - Note the Position of the Gate
    - GATE OPEN _____
    - GATE CLOSED _____
  - Inspect the Hydraulic Cylinder Fittings and Hoses for Leaks
    - CONDITION AS FOUND _____
    - CONDITION AS LEFT _____
  - Document the Rosement sondes meter reading taking care to note the units (milli-siemens = MS; micro-siemens = µS; 1 MS = 1,000 µS). A reading below 92 MS/cm indicates that the gate would be open allowing water to go directly to Outfall 001. A reading of 92 MS/cm or above indicates that the gate would be closed sending water to the MF/ED Plant for treatment.
    - READING _____MS/cm
    - READING _____µS/cm
- At the Hydraulic Power Pack – open the dog house enclosure.
  - Check the oil level and if needed top it off with DTE Excel 32. Inspect the general condition.

        - CONDITION AS FOUND _____
        - CONDITION AS LEFT _____
    - Inspect the following for leaks, deterioration, and corrosion: Hydraulic Hoses, Fittings and Valve Body. Note discrepancies found.
        - CONDITION AS FOUND _____
        - CONDITION AS LEFT _____
- At the Control Panel
    - Note which indicator lamps are illuminated. Red = Gate is Closed; Green = Gate is Open; Amber = PLC Fault.
        - Red ON _____
        - Red OFF _____
        - Green ON _____
        - Green OFF _____
        - Amber ON _____
        - Amber OFF _____
    - Inspect wires for proper bushing where they enter the control panel enclosure.
        - CONDITION AS FOUND _____
        - CONDITION AS LEFT _____
- At the Main Disconnect
    - Inspect wires for proper bushing where they enter the disconnect enclosure.
        - CONDITION AS FOUND _____
        - CONDITION AS LEFT _____
- Testing the System.
    - Re-note the gate position and the sondes meter reading. The remaining steps are only be carried out if the gate is Open and the meter reading is < 92 MS/cm. This indicates the sump water is at an acceptable level for discharge directly to Outfall 001. If both of these are not the case, note as such and STOP.
        - GATE CLOSED AND METER ≥ 92 MS/cm _____ STOP
        - GATED OPEN AND METER < 92 MS/cm _____ PROCEED
    - At the control panel locate the rotary control switch and rotate the switch to the MANUAL position.
    - Push the CLOSED switch to activate the gate. It should cycle from the open position to the closed position. Visually check for leakage through the gate.
        - GATE CLOSED UPON ACTIVATION _____
        - GATE DID NOT CLOSE UPON ACTIVATION _____
        - VISUAL LEAKS _____
        - NO VISUAL LEAKS _____
    - Push the OPEN switch to activate the gate. It should cycle from the closed position to the open position. Visually check for leakage through the gate
        - GATE OPENED UPON ACTIVATION _____
        - GATE DID NOT OPEN UPON ACTIVATION _____
        - VISUAL LEAKS _____
        - NO VISUAL LEAKS _____

- Return the rotary control switch to the AUTO Position. Note the final position of the gate and document any needed adjustments or repairs.
  - GATE OPEN _____
  - GATE CLOSED _____

DRAFT

Sump Sondes Conductivity Calibration Procedures

Scope and Application:

The purpose of this Standard Operating Procedure (SOP) is to outline the protocols used to verify the reliability, accuracy, and functionality of the facility's online conductivity meters (sondes) that are part of the Bulk Salt Pad Stormwater Distribution System. Described herein are the procedures for calibrating the conductivity sondes against a standard solution and for performing a calibration check on the conductivity sondes, as well as descriptions of the instances and timeframes these procedures are to be performed, the required supplies needed, and recordkeeping/data retention requirements. This SOP was developed in keeping with the guidance provided in the manufacturers reference manual for the Rosemount 228™ Sonde (Document Number 00809-0100-3228, Rev AA, August 2018) and the instruction manual for the Hanna HI 9033 Handheld Meter.

Background:

The Bulk Salt Pad Stormwater Distribution System is an integral component of the stormwater management system for the bulk salt storage pads. Stormwater from the bulk salt storage pads (3 on-site and 2 off-site at the nearby quarry) is directed to 3 sumps (one at each of the on-site pads) equipped with online conductivity meters (sondes). When the system is under automated control and based on the conductivity measured by the sondes, a flow gate responds to route the stormwater to be discharged directly through NPDES Outfall 001 or to the MF/ED plant for treatment prior discharge to NPDES Outfall 001. The conductivity setpoint (92 mS/cm) for the flow gate response is based a 6% Sodium Chloride solution: stormwater with conductivity equal to (or above) the threshold is routed to the ED plant and stormwater with conductivity below this threshold[1] is routed to NPDES Outfall 001. Proper operability of these components is key to maintaining compliance with the NPDES Outfall 001 permit limits.

Record Keeping and Data Retention:

Calibration and other information associated with these procedures will be recorded using the Recordkeeping Log Sheets provided as attachments. Each procedure has a separate Recordkeeping Log Sheet. Records of all monitoring information, including all calibration and maintenance records, will be maintained for a period of at least 5 years from the date of the sample, measurement, report or application.

DRAFT Procedure A: Sonde Calibration Check Against a Referee

When to Perform:

[1] If one assumes all the conductivity in the effluent is due to sodium chloride, the stormwater routed to NPDES Outfall 001 should have approximately 36,400 mg/L chloride which is about 9% below the permit limit of 40,000 mg/L chloride.

1. On a quarterly basis
2. After sump maintenance
3. Anytime instrument accuracy/reliability is in question.

Required supplies:

- Procedure A Recordkeeping Log Sheet
- Referee Handheld conductivity meter
- 1,000-mL beaker
- Deionized water
- Sonde to be calibration checked
- Commercially acquired conductivity standards
    - Low-level Standard
    - Mid-level Standard
    - High-level Standard

Procedure:

1. Calibrate and Check the Referee: Handheld Conductivity Meter (Hanna HI 9033)
    a. Fill a beaker with 8 cm (3¼") of the mid-level calibration standard solution.
    b. Rinse the probe with deionized water and shake dry.
    c. Immerse the probe into the beaker. The level of solution must be higher than the holes on the PVC sleeve.
    d. Turn the instrument on by pressing the ON/OFF key and select the appropriate range (*e.g.,* 0 to 199.9 mS/cm).
    e. Tap the probe repeatedly on the bottom of the beaker and stir it to ensure that no air bubbles are trapped inside the sleeve.
    f. If the temperature of the probe is close to that of the solution, the display will stabilize quickly and provide you with temperature compensated conductivity measurements. However, allow a few minutes if there is a temperature difference of 5°C (9°F) or more for the ATC circuitry to compensate completely.
    g. When the reading stabilizes, turn the calibration trimmer until the display reads the proper conductivity value of the mid-level conductivity calibration solution. Record both the pre-adjusted value and the adjusted value on the Procedure A Recordkeeping Log Sheet.
    h. Check the calibration of the Referee meter by performing the following steps twice: once with the low-level standard and again with the high-level standard.
        i. Rinse the probe with deionized water. Shake dry.
        ii. Immerse the rinsed probe into the standard solution following the same precautions and instructions as in step 1.c – 1.f above.
        iii. Once the temperature has reached thermal equilibrium, record the conductivity reading in the Procedure A Recordkeeping Log Sheet.
        iv. Calculate the percent error[2] of the readings and record it on the Procedure A Recordkeeping Log Sheet. If either of the readings differ from the calibration

[2] In this instance, Percent Error = 100*(Referee Reading minus Standard value)/Standard value).

check standard by >10%, re-perform this procedure starting with step b above. Record all information for the repeat procedure in the Procedure A Recordkeeping Log Sheet.

v. If after repeating the procedure either reading is still >10% different, perform troubleshooting measures associated with the probe and meter in accordance with the manufacturer's recommendations.

2. Perform Calibration Check on the Sonde
    a. Rinse the calibrated Referee meter with deionized water and shake dry.
    b. Immerse the calibrated Referee meter into the stormwater sump so that the two instruments are as close as possible without touching. Orient the Referee sensor in the same direction as the in-sump sonde, and ensure any trapped air bubbles have escaped, as to not interfere with the instrument reading.
    c. Allow the handheld sensor to equilibrate temperature. Confirm that temperature measurements in both instruments are within +-1°C. Record both temperatures and temperature difference on the Procedure A Recordkeeping Log Sheet.
    d. Once the Referee sensor has stabilized, compare the conductivity of both instruments. Record the conductivity readings from both instruments in the Procedure A Recordkeeping Log Sheet.
    e. Calculate the percent error[3] of the readings and record it on the Procedure A Recordkeeping Log Sheet. If the readings differ by >10%, perform the standard solution calibration procedure described in Procedure B (Sonde Calibration Against a Standard Solution).
    f. Repeat steps 2.a. through 2.e. for each Bulk Salt Pad Sump.

DRAFT Procedure B: Calibrating a Sonde Against a Standard Solution

When to perform:

1. Prior to use of a new conductivity sonde
2. After a calibration check (Procedure A) results in >10% difference between in-sump sonde and referee sensor

Required supplies:

- Procedure B Recordkeeping Log Sheet
- Sonde to be calibrated
- Pre-calibrated, NIST traceable digital thermometer with increments of 0.1°C or less.
- 1,000-mL glass beaker
- Deionized water
- Commercially acquired conductivity standards
    - Low-level Standard
    - Mid-level Standard

[3] In this instance, Percent Error = 100*(Sonde Reading minus Referee Reading)/Referee Reading).

- High-level Standard
- Deionized water

Procedure:

1. First ensure the associated sump gate control is switched from auto to manual control. This will prevent the flow gate from automatically opening and/or closing during the calibration procedure.
2. Once in manual control, manually close the gate if not already in the closed position.
3. Fill a 1,000-mL clean beaker with the mid-level calibration standard solution of NaCl. (For the Rosemount™ 228 toroidal conductivity meter, the recommended standard solution is at the mid-point of the operational range of the sonde.)
4. Rinse the sonde and calibrated thermometer with deionized water. Shake dry.
5. Immerse the rinsed sonde and thermometer into the calibration standard solution.
    a. Note: Be sure air bubbles are not adhering to the sonde. An air bubble trapped in the toroid opening has a particularly severe effect on the reading.
    b. To avoid wall effects, avoid moving the thermometer to close to the sonde and keep the sonde near the center of the beaker.
6. Allow adequate time (approximately 5-10 minutes, minimum) for the solution to reach thermal equilibrium. The temperature difference between the conductivity sonde and the thermometer should be less than ±1°C. Record both temperatures and temperature difference on the Procedure B Recordkeeping Log Sheet.
    a. Note: Ensure the automatic temperature compensation in the transmitter is turned off. This eliminates error in the cell constant.
7. Once the temperature has reached thermal equilibrium, adjust the sonde reading to match the conductivity of the standard. Record both the pre-adjusted value and the adjusted value on the Procedure B Recordkeeping Log Sheet.
8. Check the calibration of the sonde by performing the following steps twice: once with the low-level standard and again with the high-level standard.
    a. Rinse the sonde with deionized water. Shake dry.
    b. Immerse the rinsed sonde into the standard solution using the same precautions as in step 5 above.
    c. Allow adequate time (approximately 5-10 minutes, minimum) for the solution to reach thermal equilibrium. Once the temperature has reached thermal equilibrium, record the conductivity reading in the Procedure B Recordkeeping Log Sheet.
    d. Calculate the percent error[4] of the readings and record it on the Procedure B Recordkeeping Log Sheet. If either of the readings differ from the calibration check standard by >10%, re-perform this procedure starting with step 2. Record all information for the repeat procedure in the Procedure B Recordkeeping Log Sheet.
    e. If after repeating the procedure either reading is still >10% different, perform troubleshooting measures associated with the sonde in accordance with the manufacturer's recommendations.

[4] In this instance, Percent Error = 100*(Sonde Reading minus Standard value)/Standard value).

9. Replace the sonde to the original position in the sump and allow adequate time (5-10 minutes, minimum) for re-equilibrium.
10. Return the gate system to automatic control.

Attachments – Recordkeeping Templates

- Procedure A Recordkeeping Log Sheet – Sonde Calibration Check Against a Referee
- Procedure B Recordkeeping Log Sheet - Sonde Calibration Against a Standard Solution

Cargill – Cayuga Salt Mine **DRAFT Procedure A Recordkeeping Log Sheet** **Sonde Calibration Check Against a Referee**	**Date:** **Personnel:**

Instruments	***Conductivity Standards - EXACT STDS TBD***
Hanna HI 9033 (Handheld Referee Meter) Rosemount™ 228 toroidal conductivity meter (In-Sump Sonde)	Low Std: XX mS/cm conductivity solution Mid Std: XXX mS/cm conductivity solution High Std: XXX mS/cm conductivity solution

Hanna HI 9033 – Handheld Referee Meter Calibration Log:

	Run 1	Run 2**		Run 1	Run 2**
Referee Meter Serial Number			**Low Std Reading (mS/cm)**		
Start Time			***Low Std Check Percent Error***		
Mid Std Pre-Adjustment Reading (mS/cm)			**High Std Reading (mS/cm)**		
Mid Std Post-Adjustment Reading (mS/cm)			***High Std Check Percent Error***		

- **A second run through the calibration procedure is required if the Percent Error for either the Low or High Std checks is >10% for Run 1. If Run 2 also yields a Percent Error >10% for either check, perform troubleshooting measures in accordance with the manufacturer's recommendations.
- Percent Error = 100*(Referee Meter Reading minus Std Value)/Standard Value

Rosemount 228™ Toroidal Conductivity Sonde Calibration Check Log:

	Upper Pad Sump	Middle Pad Sump	Lower Pad Sump
Referee Meter Model and Serial Number			
Start Time			
Referee Temperature Reading(°C)			
Sonde Temperature Reading (°C)			
Temperature Difference within ±1°C? ***If no, wait longer for stabilization & recheck.***			
Referee Conductivity Reading (mS/cm)			
Sonde Conductivity Reading (mS/cm)			
Percent Error for Conductivity Readings			
Percent Error within ±10%?			

- If Percent Error is >10% for any Sonde, that Sonde should be calibrated against a standard solution per Procedure B.
- Percent Error = 100*(Sonde Reading minus Referee Meter Reading)/Referee Meter Reading

Notes:

Cargill – Cayuga Salt Mine **DRAFT Procedure B Recordkeeping Log Sheet** **Sonde Calibration Against a Standard Solution**	**Date:** **Personnel:**

Instruments	***Conductivity Standards – EXACT STDS TBD***
Rosemount™ 228 toroidal conductivity meter (In-Sump Sonde) Digital Thermometer (Pre-calibrated NIST traceable with 0.1°C or less increments	Low Std: XX mS/cm conductivity solution Mid Std: XXX mS/cm conductivity solution High Std: XXX mS/cm conductivity solution

Rosemount 228™ Toroidal Conductivity Sonde Calibration Log:

	Run 1	Run 2**
Sonde Serial Number		
Pre-Calibration Sonde Install Location (if applicable)		
Post-Calibration Sonde Install Location (if applicable)		
Start Time		
Digital Thermometer Temperature Reading (°C)		
Sonde Temperature Reading (°C)		
Temperature Difference within ±1°C? ***If no, wait longer for stabilization & recheck.***		
Mid Std Pre-Adjustment Conductivity Reading (mS/cm)		
Mid Std Post-Adjustment Conductivity Reading (mS/cm)		
Low Std Reading (mS/cm)		
Low Std Check Percent Error		
Low Std Percent Error within ±10%?		
High Std Reading (mS/cm)		
High Std Check Percent Error		
High Std Percent Error within ±10%?		

- **A second run through the calibration procedure is required if the Percent Error for either the Low or High Std checks is >10% for Run 1. If Run 2 also yields a Percent Error >10% for either check, perform troubleshooting measures in accordance with the manufacturer's recommendations.
- Percent Error = 100*(Sonde Reading minus Std Value)/Standard Value

Notes:

APPENDIX 8.1 – MATERIALS INVENTORY

Instructions: List all materials used, stored, or produced on-site. Assess the potential of exposure to storm water. Also, complete Table 2 if the material has been exposed during the last three years. *Based on Storm Water Management Fact Sheet: Materials Inventory, EPA 832-F-99-021.*

TABLE 8.1

SIGNIFICANT MATERIALS INVENTORY								
Material (Product)	**Location**	**Quantity (Units)**				**Likelihood of Contact with Storm Water**	**Past Significant Spill or Leak?**	
		Used	**Produced**	**Amount**	**Exposed in past 3 years? If so, list quantity.**		**Yes**	**No**
Bulk Salt	Lower, Middle, Upper Bulk Salt Storage Pads, Conveyor Belts M-11, M12, M-13, M-14A, M-14B, M-14C, M-15, M-15a, and M-16	N/A	N/A	600,000 tons/y (total)	Yes exposed. Quantity unknown.	*Possible exposure scenarios*: (1) Direct contact with bulk salt while loading trucks during precipitation events; (2) Small spillage of bulk salt from loaded trucks onto facility access roadways and Portland Point Road during exit from site due to side spillage or incomplete closure of tailgate; (3) Unclogging/cleaning of the loading chutes on the bulk loading tower causing spillage of bulk salt; (4) Open air loading of bulk salt into haulage trucks as described in footnote below (see *), or by stacking salt with bulk stacker machine.		*X*
Airborne Bulk Salt Dust	Facility-wide	N/A	Unknown	N/A	Yes exposed. Quantity unknown.	See note below*		X
Screened Bulk Salt**	T-3 Bag Production Building	N/A	varies	50,000 tons/y	Yes exposed. Quantity unknown.	Spillage of screened bulk salt from loaded transfer trucks, which could occur in front of the T-3 building.		*X*
Diesel Fuel	Fuel Storage/Dispensing Building	50,000 gal/y	N/A	2,000 gal	No	Storage tank and dispensing area are located within secondary containment.		*X*
Hydraulic Oil	Maintenance Shop Oil Room	500 gal/y	N/A	275 gal	No	Storage tank is indoors within secondary containment.		*X*
Hydraulic Oil	Hydraulic power packs in transfer points, an on ends of 14B, and 15 belts.	N/A	N/A	20-30 gal (each)	No	Potential spillage during switchgear changeouts or during filling of reservoirs, or leaks from the hydraulic pack reservoir tanks.		*X*
Hydraulic Oil (miscellaneous)	Within haulage trucks and front-end loaders (located at Bulk Storage Pads, T-3 and T-4 warehouse areas, maintenance shop, #1 and #4 Hoist Areas, and potentially facility access roadways	N/A	N/A	Varies	Yes, 10-20 gallons.	Possible leaks or spills from haulage trucks and front-end loaders (due to mechanical breakdown).		*X*
Used Oil	Maintenance Shop Oil Room	N/A	1,000 gal/y	275 gal	No	Storage tank is indoors within secondary containment.		*X*
Epoxy Paints	Maintenance Shop storage area - used at various locations around the facility.	20 gal/y	N/A	10-gal (1-gal cans)	No	Possible rupture of paint cans during handling and the transfer of paint cans during unloading - spillage could also occur during painting operations.		*X*
Antifreeze	Maintenance Shop and mobile equipment (unused antifreeze is stored in Maintenance Shop)	50 gal/y	N/A	12-20 (1-gal each)	No	Possible spillage or leaks from mobile equipment.		*X*
Used Antifreeze	Stored in Maintenance Shop	N/A	?	50-gal drum	No	Possible spillage or leaks from container during transfer activities or during the transfer for recycling.		*X*
Glidex Rail Slide Lube	Stored in Fuel Storage/Dispensing Building (used to oil railroad switches)	52 gal/y	N/A	1-gal jugs	No	Possible spillage or leaks from container or spillage may occur during application to rail switch.		*X*
Brine Water	Generated by washing aboveground conveyor belt	3,000 gal/y	3,000 gal/y	N/A	No	Aboveground conveyor belt transfers are washed on a quarterly basis. Brine water is collected and treated.		*X*

Instructions: List all materials used, stored, or produced on-site. Assess the potential of exposure to storm water. Also, complete Table 2 if the material has been exposed during the last three years. *Based on Storm Water Management Fact Sheet: Materials Inventory, EPA 832-F-99-021.*

TABLE 8.1

SIGNIFICANT MATERIALS INVENTORY								
Material (Product)	**Location**	**Quantity (Units)**				**Likelihood of Contact with Storm Water**	**Past Significant Spill or Leak?**	
		Used	**Produced**	**Amount**	**Exposed in past 3 years? If so, list quantity.**		**Yes**	**No**
	transfers							
Hydrochloric Acid	Microfiltration and Electrodialysis Plant	2,000-gal/y	N/A	1000-gal (within two tanks)	No	Possible spillage or leakage during bulk transfer activities		X
Sulfuric Acid	Microfiltration and Electrodialysis Plant	varies	N/A	5 gal	No	Possible spillage during transfer into ED Plant		*X*
Sodium Metabisulfate	Microfiltration and Electrodialysis Plant	40 gal/month	N/A	300 gal/y	No	Possible spillage during transfer into ED Plant		*X*
Magnesium Chloride	Magnesium Chloride Tanks (9 total)	varies	N/A	209,500 gal	No	Possible spillage or leakage during bulk transfer activities		*X*
YPS (solution)	Lower, Middle, Upper Storage Pads, Bulk loading tower, and within YPS Transport pipe	varies	varies	varies	Yes, quantity unknown	Possible exposure when storm water comes into contact with bulk salt, and possibly in the event that a rupture or leak were to occur in the YPS transfer pipe.	*X***	
Sodium Hydroxide	Microfiltration and Electrodialysis Plant	2,000-gal/y	N/A	400-gal tank	No	Possible spillage during transfer into the ED-MF Plant		*X*
Sodium Hypochlorite	Microfiltration and Electrodialysis Plant	50-gal/y	N/A	30-gal container	No	Possible spillage during transfer into the ED-MF Plant		*X*
Zinc Sulfate	Microfiltration and Electrodialysis Plant	2,500 gal/y	N/A	2000 lbs.	No	Possible spillage during transfer into the ED-MF Plant		*X*

Notes:

* Bulk salt may become airborne through one or more of the following: (1) during loading of salt from the bulk tower into railcars or haulage trucks; (2) loading of haulage trucks; (3) loading of bulk salt by a front-end loader into haulage trucks, which occurs on the storage pads; (4) vehicle traffic on roads where salt has been spilled; (5) placing salt into the T-4 warehouse using the retractable spout; and (6) stockpiling bulk salt utilizing the stackers.
** Screened bulk salt does not contain YPS.
*** As indicated in the October 10, 2019 inspection report (for 6/25/2019) from NYSDEC, Cargill has addressed all agency requirements related to a February 2019 release of YPS.

APPENDIX 8.2 – DESCRIPTION OF MATERIALS INVENTORY

Instructions: Based on the results of completing Table 1, describe the significant materials that were exposed during the past 3 years and/or that are currently exposed. *Based on Storm Water Management Fact Sheet: Materials Inventory, EPA 832-F-99-021.*

TABLE 8.2

DESCRIPTION OF EXPOSED SIGNIFICANT MATERIALS					
Description of Exposed Significant Material	**Period of Exposure**	**Quantity Exposed (Units)**	**Location and Affected Outfall (as indicated on Figure 2)**	**Method of Storage or Disposal (*e.g* ., pile, drum, tank)**	**Description of Material Management Practice (*e.g* ., containment, covered, drip pans)**
Bulk Salt	Unknown	Unknown	Conveyor belts: M-11, M-13, M-14A, M-14B, M-14C, M-15, and M-16 (Outfalls 001, 002, 003, 004, 005, and 012.)	N/A	1.) Overland conveyor belts are covered to maintain salt dry and to minimize exposure to precipitation. 2.) Concrete conveyance drainage systems have been constructed below the conveyor belts to collect any spilled salt and to convey any brine that may be generated from precipitation to one of the brine storage tanks leading to the ED plant.
Airborne salt dust	Unknown	Unknown	Facility-wide (All outfalls affected)	N/A	1.) Extendable loading shoots are provided at the Bulk Loading Tower. 2.) Conveyors are covered.
YPS (powder residual in product bags)	Unknown	Unknown	At the rear of Building T-3 (North End) (Outfall 002)	Bags of dry (powder) YOS are stored in the T-3 Building, whereby YPS is mixed with water in the YPS Mixing Room.	1.) Bags of YPS are maintained under roof within Building T-3. 2.) Mixing of YPS solution is performed in the YPS mixing room, which is an enclosed room within Building T-3. 3.) Floor sweepings and empty YPS product bags are placed into garbage bags, secured, and disposed of into a covered dumpster. 4.) Automatic shutoff of YPS mixing system is provided in the event of mixing system malfunction.
Conveyor belt wash waters*	Unknown	Unknown	Conveyor belts: M-11, M-13, M-12, M-14B, M-14C, M-15, M-15a, and M16 (Outfalls 001, 002, 003, 004, 005, and 012.)	Wash waters are collected and either disposed of into Mine Shaft #2 or treated by the ED Plant.	1.) Concrete conveyance drainage systems have been constructed below the conveyor belts to collect any spilled salt and to convey any brine that may be generated from precipitation to one of the brine storage tanks. 2.) The various brine storage tanks are routinely pumped out and discharged into the Mine Shaft #1 or conveyed to the ED Plant for treatment prior to discharge via Outfall 001.
Bulk Salt and YPS	365 days per year	Varies	Upper, Middle, Lower, and Cayuga Crushed Stone Bulk Salt Storage Pads (Outfall 001)	Bulk storage piles	1.) Storage pad surfaces are resealed every three years. 2.) Salt spillage over curbing is cleaned up on a regular basis and is mixed back in with bulk salt. 3.) Curbing installed around perimeter of storage pads to prevent storm water run-on and salt spillage from pad. 4.) Perimeter channels constructed around storage pads to convey storm water away from salt piles. 5.) Containment drains provided to collect storm water, which is then gravity conveyed to either Mine Shaft #1 or to the ED Plant for treatment prior to discharging via Outfall 001. 6.) Haulage trucks are loaded on the pads to contain any salt spillage during truck loading activities. 7.) Storage piles are covered with tarps (with the exception of the working face)
Bulk Salt and YPS	Unknown	Unknown	Bulk Loading Tower (Outfalls 005 and 006)	Loading Tower	1.) Spills that occur are as a result of loading rail cars and trucks or occur as a result of cleaning out clogged chutes, and are cleaned up and mixed back in with salt. 2.) Leaks associated with the YPS transfer pipe are repaired immediately upon detection.
Bulk Salt and YPS	Unknown	Unknown	Salt Storage Pads (Outfall 001)	Storage and loading	1.) Salt spills that occur as result of loading haulage trucks or occur as a result of cleaning out clogged chutes are cleaned up and mixed back in with the bulk salt. 2.) Leaks associated with the YPS transfer pipe are repaired immediately upon detection.
Bulk Salt and YPS	Unknown	Unknown	All facility access roadways and Portland Point Road (All facility outfalls affected)	N/A	1.) Salt spills from haulage trucks are cleaned up and mixed back in with the bulk salt.
Bulk Salt and YPS	Unknown	Unknown	Building T-4 (Outfalls 001 and 002)	CLED storage	1.) The bulk storage pad is covered with a roof to prevent exposure to precipitation. 2.) Haulage trucks are loaded within the building to maintain any spilled salt confined to the indoor area. 3.) A brine collection drain is provided to convey brine runoff to a sump and then to a storage tank for further processing/treatment. 4.) Spilled salt from haulage trucks around the outside of the building is cleaned up and properly re-used or disposed.

APPENDIX 9 – REPORTABLE QUANTITIES OF SPILLED OR HAZARDOUS MATERIALS

Reportable Quantities of Spilled or Hazardous Materials

Spill Ref. No.	Date	Product / Quantity	Source	Comments
1611125	3/10/2017	Hydraulic oil / ~ 20 gallons	CAT loader	Spill occured on Asphalt loading pad, with a liner beneath it. Cleanup was swift.
Unknown	2/7/2019	YPS/Unknown	Buried YPS pipeline repair began to leak near bulk tower.	NYSDEC present during discovery. NOV issued by NYSDEC following event. JMT Consulting hired to assist with spill cleanup. YPS pipeline was dug up and repaired the day it was discovered. Remediation commenced including soil removal/disposal. Weekly YPS pipeline pressure check now implemented.
1812144	3/11/2019	Petroleum /Unknown	Unknown	Historical petroleum spill discovery during YPS spill cleanup.
1907503	10/26/2019	Hydraulic Oil / ~ 7 gallons	CAT loader	Transmission line was not tightened completely following repair, leading to a leaking hydraulic line. Spill cleanup commenced immediately following event.

Notes:

Comments column should include method of recovery, contractor (if applicable), quantity of material released to navigable water, notifications (if required), enforcement (if applicable), effectiveness of monitoring equipment (if applicable), and steps to reduce reoccurrence.

APPENDIX 10 – SPDES PERMIT STORMWATER OUTFALL SAMPLING AND REPORT PROCEDURE

SPDES Permit Stormwater Outfall Sampling & Reporting Procedure

Scope and Application:

The purpose of this Standard Operating Procedure (SOP) is to outline the protocols used to collect representative stormwater outfall samples[1] in accordance with SPDES Permit NY0101290, and the New York State Department of Environmental Conservation's (NYSDEC) DMR Manual[2]. This procedure describes sample timing, pre-sampling preparations, sample collection methodology, post-collection procedures, quality control considerations, monitoring results evaluation, reporting procedures, and recordkeeping/data retention.

Sample Timing:

- Outfall sampling is required once per month based upon the availability of a suitable stormwater event.
- The permit does not specify precisely when sampling is to occur, however for consistency and in order to allow for re-sampling as needed, sampling should be conducted as early as possible during each month.

Pre-Sampling Preparations:

- Pre-labeled sampling bottles are delivered to the facility by the contract laboratory (Life Science Laboratories Inc.) prior to the 1st of each month. Designated monitoring personnel verify the required bottle ware has been delivered, and that labeling (*i.e.,* sampling location identifiers, parameters and associated analytical methods) are accurate. The following monitoring locations and parameters are required per the SPDES Permit:

Outfall	Flow	Chloride	Free Cyanide (measured as WAD Cyanide)	Total Dissolved Solids (TDS)	Total Zinc
001	X	X	X	X	X
002, 003, 006, 007, 012	X	X	X	X	

[1] Monitoring of Outfall 009 (treated sanitary wastewater) and Outfall 014 (non-contact cooling water) is not currently addressed in this document. Outfall 014 temperature data is retrieved from the facility's PI Data Historian System; therefore, no physical sample is obtained. In addition, Outfall 009's wastewater sampling procedure is inherently different than the stormwater sampling procedure described herein, and therefore is not addressed.

[2] https://www.dec.ny.gov/docs/water_pdf/dmrmanual.pdf and attached as Appendix A.

- Designated monitoring personnel will monitor weather forecasts to track patterns that are likely to result in a suitable stormwater event.

Sampling Collection Methodology:

- Once a suitable stormwater event has occurred, designated monitoring personnel wearing all appropriate PPE, should walk along the salt storage pad sump locations in order to inspect them for anything out of the ordinary (*i.e.*, damage, improper functioning waste water gates, excessive yellowing in the water, etc.).
- If everything seems to be functioning as designed, the designated monitoring personnel should proceed outfall 001 to initiate the sampling protocol.
- Bring the following materials to each outfall location to assist with the sample collection:
    - Pre-labeled sampling bottle ware
    - Plastic 1000-mL beaker
    - Note pad
    - Pen
    - Stop-watch or equivalent time-keeping device
    - Paper towels
    - Powder-free disposable nitrile or latex gloves
- Conduct outfall inspection, taking notes of any damage to outfall infrastructure or anything else that's out of the ordinary
- Determine the flow rate:
    - Hold a clean 1000-mL beaker beneath discharge pipe.
    - Using the stop watch, record the amount of time that it takes to fill the beaker to the 1,000-mL graduation line.
    - Calculate the number of gallons per day (GPD) that the outfall is discharging and record this value in field book. 1,000 mL/second is equivalent to 22,820 gallons/day.
- Collecting the samples
    - Stage each of the appropriate sampling bottles for the outfall being sampled, based upon the table above.
    - Rinse the 1,000-mL beaker.
    - Fill the 1,000-mL beaker with water, and subsequently fill each required sample bottle to the appropriate level, being careful not to overfill any bottles containing preservative.
    - Tightly cap each bottle, so there are no leaks.
    - Dry each sample bottle using a paper towel, and record the date, time of sampling, and samplers' initials on each bottle.
    - Once all appropriate sample bottles are filled, beaker is cleaned out, and notes are taken, move onto the next location and repeat your sampling steps until all outfalls are sampled.
    - If no discharge is observed at any of the outfall locations, verify that there are no obstructions upstream of the sampling point. If no obstructions are observed, note that no discharge was present, and record the date/time of observation.

Post-collection Procedures:

- Place the samples in a sturdy cooler partially filled with double-bagged ice. Samples should be kept at approximately 39°F (4°C) until the cooler is delivered to the lab.
- Complete the chain-of-custody (COC) form provided by the laboratory
  - Ensure that the sample labels are properly filled in.
  - Complete the chain of custody form with the date, time, parameter and sample locations for each sample, and sign the form.
  - During the transfer of custody of the samples, both the persons relinquishing and receiving the cooler (including lab personnel) must record the date and time on the chain of custody form and sign it.
  - Record the shipping method, courier name(s), and other pertinent information as remarks on the chain of custody form.
  - The original chain of custody form should remain with the samples and a copy should be provided to the facility for their records.
  - Enclose COC in a re- sealable plastic bag and place inside the cooler.
- Deliver the samples to the lab (*e.g.* drive, arrange same-day pick-up by the lab, or use an express /overnight service) as soon as possible, bearing in mind the holding times for each parameter sampled.

Quality Assurance Considerations:

- Samples that cannot be delivered to the lab on the same day may need to be preserved, often by cooling to 4°C (i.e., in an ice bath) and/or with added chemical preservatives (laboratory-supplied bottles may already include preservatives).
- Be aware of the maximum holding time allowed for a particular parameter before which the sample must be analyzed. Following is a table with the test method, typical preservation and holding requirements for each parameter sampled.

Parameter	Test Method	Preservative	Holding Requirements
Flow	Described above	Not applicable	Not applicable
Chloride	EPA 300.0	None required	28 days
Free Cyanide (measured as WAD Cyanide)	SM 4500 CN	≤6°C, NaOH to pH>10	14 days
Total Dissolved Solids (TDS)	SM 2540 C	≤6°C, NaOH to pH>10	7 days
Total Zinc	EPA 200.7	≤6°C, HNO3 to pH>2	6 months

- Whenever possible, minimize the amount of lead time sample containers are outside of the laboratory. Extended storage of pre-preserved containers for some analytes may present opportunity for contamination, even under ideal storage conditions.

Evaluating Monitoring Results:

- The analysis of your monitoring results can yield valuable information about the characteristics of your runoff and how well your control measures are working.
- Once you have received your lab results for your samples, compare these concentrations to the permit limits that apply to the facility, as shown in the following table:

Outfall	Flow	Chloride	Free Cyanide (measured as WAD Cyanide)	Total Dissolved Solids (TDS)	Total Zinc
001	Monitor (report max)	40,000 mg/L (max)	1.1 mg/L (max)	80,000 mg/L (max)	20 mg/L (max)
002; 003	Monitor (report max)	10,000 mg/L (avg) report (max)	0.1 mg/L (avg) report (max)	40,000 mg/L (avg) report (max)	Monitoring not required
006; 007; 012	Monitor (report max)	5,000 mg/L (avg)	0.1 mg/L (avg)	10,000 mg/L (avg)	Monitoring not required

- If the concentration of your samples exceeds the permit limits, then you need to consider if the results are representative of the outfall conditions. Ask yourself the following questions:
  - Did you sample correctly?
  - Did you start with clean sample collection jars and were the samples preserved and submitted to the lab within the allotted time frame?
  - Was anything atypical going on at the site prior to or during the sampling? Atypical activities could include:
    - A leak or spill that was not adequately cleaned up.
    - Construction, painting and paving activities.
    - Having a large amount of material (raw materials, wastes or products) recently delivered or being prepared for shipment.
  - If any of the above were identified, resampling of the outfall may be warranted.
- If you cannot identify anything atypical in your sampling methodology or facility operations, then you are required under the permit to evaluate whether changes to your control measures are necessary.
- Work with the production and maintenance team to assess such operations and make changes as appropriate.

<u>Reporting Procedures:</u>

- Once the monitoring evaluation is completed, and you are confident with the accuracy of the results, the designated reporting personnel shall report monitoring results through the Environmental Protection Agency's (EPA) NetDMR online system prior to the 28th day of the month following the end of the monitoring period month (e.g., data for the January monitoring period are due by February 28th). The following general procedures should be used when completing the NetDMR report:
- Completing Heading Information (Verify Information is Correct)

- Permittee Name and Address: Cargill Inc.
- Facility Location191 Portland Point Rd. Lansing, NY 14882
- Contact Person: Shawn Wilczynski
- Permit Number: NY0101290
- Discharge Number (Outfall Number) and Designator: 001-M, 002-M, 003-M, 006-M, 007-M, 012-M
- Monitoring Period: MM DD YY format for the particular DMR period
- Permit Information:
  - Classification: Minor
  - Effluent Limits: See table above
- No Discharge Reporting: Should there be no discharge during the entire monitoring period, "No Discharge" will be selected
  - In the event that a facility has permanently ceased discharges, notify the NYSDEC Region 7 Office using the contact information below, so action can be taken to modify the SPDES Permit. You must continue to submit the DMRs, and indicate "no discharge", until receiving written notice that the facility is no longer required to submit.

- Data handling.
  - If any pollutants are tested more frequently than required by the Permit (currently 1/month) using an approved test method, the results of this monitoring shall be included in the calculations and reporting of data. In the case of more than one result (same location and same parameter) for the same monitoring period, the following approach for reporting is used:
    - For reporting of monthly maximum results, the highest of all results shall be reported.
    - For reporting of monthly average results, the average of all results shall be reported.
  - Non-detect results. For results that are non-detect, the less than "<" symbol should be included when reporting results. In the case of averaging, the "<" should only be carried through to the final result if all values being averaged were non-detect.
  - Detailed guidance with examples for proper handling of significant figures, rounding, and precision are found in Section 4.3 of New York State Department of Environmental Conservation's (NYSDEC) DMR Manual. This section of the DMR Manual should be consulted as needed especially when averaging of results is required.
- Non-compliances. When data result in an exceedance of permit limits, the NYSDEC Division of Water "Report of Noncompliance Event" form (included as Appendix B) must also be filled out and filed.
- Contact the NYSDEC Region 7 Office using the information below if problems are encountered during the reporting process.

NYSDEC Region 7
Regional Water Engineer

615 Erie Boulevard West
Syracuse, NY 13204-2400
315-426-7500

Record Keeping and Data Retention:

- Records of all monitoring information, including all calibration and maintenance records, will be maintained for a period of at least 5 years from the date of the sample, measurement, report or application. Records of monitoring information will include:
  - (i) the date, exact place, and time of sampling or measurements;
  - (ii) the individual(s) who performed the sampling or measurements;
  - (iii) the date(s) analyses were performed;
  - (iv) the individual(s) who performed the analyses;
  - (v) the analytical techniques or methods used; and
  - (vi) the results of such analyses.
- All records must be available to regulatory staff during business hours with reasonable notice.

Training and Associated Resources:

All Cargill staff involved with SPDES sampling and reporting of results are required to review the NYSDEC DMR Manual (Appendix A) on an annual basis. Training records are filed in Appendix C which includes a blank training form.

In addition to the DMR Manual, other NYSDEC resources can be found online[3], and EPA provides a NetDMR Support Portal[4] and periodic webinar training courses that may be helpful.

[3] https://www.dec.ny.gov/chemical/8461.html
[4] https://netdmr.zendesk.com/hc/en-us

Appendix A

NYSDEC (Division of Water) DMR Manual (2002)

DEC
PUBLICATION

Erin M. Crotty
Commissioner

Division of Water

DMR MANUAL

For Completing the Discharge Monitoring Report for the State Pollutant Discharge Elimination System (SPDES)

2002

New York State Department of Environmental Conservation

DMR MANUAL

for

Completing the Discharge Monitoring Report

for the

State Pollutant Discharge Elimination System (SPDES)

New York State

Department of Environmental Conservation

Division of Water

Bureau of Water Compliance Programs

625 Broadway

Albany, New York 12233-3506

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special recognition in memory of Richard (Dick) Cukrovany, who was a valuable member of the team which prepared this DMR Manual. His 26 year career with the New York State Department of Environmental Conservation was devoted to the protection of the State's water resources.

TABLE OF CONTENTS

1.0 INTRODUCTION

This manual has been developed for use by individuals responsible for completing and submitting the Discharge Monitoring Report (DMR) form (sample DMR form in Appendix J) required by the New York State Pollutant Discharge Elimination System (SPDES). It is intended to complement, but not supercede, either the SPDES Permit or applicable SPDES Regulations (Parts 750-1 and 750-2) which are the legal documents to which the permittee will be held responsible. If ever there is a conflict between this guidance and either the SPDES permit or the applicable regulations, the permit or regulations will supercede this guidance.

This DMR manual supercedes the guidance contained in the "General Instructions" printed on the back of each DMR form. Those instructions were intended for use by EPA in the national permit program.

Inquiries and questions regarding the Permit, the Discharge Monitoring Report or guidance contained in this manual should be directed to the appropriate NYSDEC Regional Office, Division of Water (see Appendix A for address). This information is also available on the NYSDEC website.

2.0 GENERAL GUIDANCE

This section contains general guidance for filling out and submitting a Discharge Monitoring Report form. Specific instructions can be found in Sections 3.0 - 6.0 of this manual. Sections are identified on the sample DMR in Appendix J.

2.1 Pre-Printed DMRs

The permittee, as required by their permit, shall report any wastewater or ambient monitoring results using the pre-printed DMR form. Permittees whose permit requires monthly or more frequent monitoring of their discharge will receive pre-printed DMRs on a monthly basis (usually mid-month of the monitoring period). Those who are required by their permit to sample and submit less frequently, such as quarterly, semi-annually, or annually, will receive DMRs during the last month of the monitoring period.

The pre-printed information contained on these forms are: Permittee Name/Address, Permit Number, Discharge Number, Monitoring Period, and Limit Information. If the pre-printed forms are not received by the permittee, or the permittee's designated representative, reprints can be requested from the Bureau of Water Compliance Programs, (see Appendix A or the NYSDEC website for the address). Should the pre-printed form(s) be unavailable to be submitted within the appropriate time period, blank DMR form(s) may be handwritten and submitted, on a temporary basis. Blank forms may be obtained from the appropriate Regional Office (see Appendix A for addresses). Permittees are responsible for submitting their DMR in a timely manner (within 28 days following the last day of the monitoring period, unless otherwise specified by the Department) regardless of whether or not a pre-printed DMR is received.

2.2 Attachments to DMRs

All correspondence and DMR attachments must contain the appropriate SPDES permit number, outfall and monitoring period information. The permit may contain additional reporting provisions with specific reporting requirements. These additional reports should not be attached to the DMR unless specifically required by the permit.

2.3 Sampling

The permittee should have a facility monitoring program that addresses both process control monitoring and permit compliance monitoring. Process control monitoring should be performed to optimize treatment system operations. Permit compliance monitoring is performed to verify compliance with permit limits, and must be reported on the DMR.

Permit compliance monitoring must meet conditions specified by SPDES Regulations which include, but are not limited to, the following:

1.) must be routine and representative of wastewater discharged.
2.) must be conducted using test procedures specified in 40 CFR Part 136[1] except when the permit specifies an alternative procedure; or the Department approves an alternative

[1]To obtain a copy of 40 CFR Part 136, please contact the GPO Order Desk, toll-free at 1-866-512-1800 or browse online at: http://www.access.gpo.gov/nara/cfr/waisidx_01/40cfrv19_01.html

test method.

3.) must be conducted by a laboratory certified by the NYS Health Department under the National Environmental Laboratory Approval Program (NELAP) for tests or sample analyses which require NELAP certificates of approval.[2]

4.) must periodically calibrate and perform maintenance on instrumentation.

2.4 Record Keeping and Data Retention

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation and copies of all reports required by a SPDES permit, for a period of at least 5 years[3] from the date of the sample, measurement, report or application. Records of monitoring information shall include:

(i) the date, exact place, and time of sampling or measurements;
(ii) the individual(s) who performed the sampling or measurements;
(iii) the date(s) analyses were performed;
(iv) the individual(s) who performed the analyses;
(v) the analytical techniques or methods used; and
(vi) the results of such analyses.

When records are stored electronically, the records must be preserved in a manner that reasonably assures their integrity and are acceptable to the department. All records must be accessible to DEC/regulatory staff during business hours with reasonable notice.

2.5 Failure to Comply

Failure to submit a completed DMR is a violation of the SPDES permit, Article 17 of the New York State Environmental Conservation Law, and the Federal Clean Water Act. Should such violation(s) necessitate follow-up action by NYSDEC, such actions may lead to applicable penalties under the Law. Willful failure to comply could result in criminal sanctions including fines and imprisonment. Certified wastewater treatment plant operators found responsible for failure to comply could be subject to revocation or suspension of their certificate to operate, pursuant to 6NYCRR 650.10.

Failure to comply with the guidance, as outlined in this manual, for properly completing the DMR may necessitate the return of the submitted information (e.g. DMR, correspondence, etc.) to permittee for correction(s). This could put the permittee in jeopardy of failure to submit the completed DMR within the appropriate time period, which could also result in enforcement.

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[2] Certain specific operation tests are exempted from the requirements of this program, and therefore, do not have to be performed in an approved laboratory. These tests are pH (except monitoring at neutralization treatment processes), temperature (except monitoring of cooling treatment processes), residual chlorine, fluoride (for process control where fluoridation is practiced), settleable solids and dissolved oxygen.

[3] This requirement reflects proposed pending regulations.

3.0 COMPLETING HEADING INFORMATION

See Appendix J for a Sample DMR with specific areas of the form noted to align with the following sub-headings:

3.1 Permittee Name and Address

This is identifying information for the permittee and the facility. The permittee should verify that all information contained on the pre-printed DMR agrees with the SPDES permit. If you believe that the pre-printed DMR is in error, submit a request for a change to the Regional Water Office and attach a copy of the letter with an explanation to each copy of the submitted DMR. Do not alter, line out or highlight any pre-printed items that appear on the DMR.

3.2 Facility Location/Contact Person

This is location information for the facility and sometimes a contact person at the facility. The permittee should verify that all information contained on the pre-printed DMR agrees with the SPDES permit. If you believe that the pre-printed DMR is in error, attach a cover letter with an explanation to each copy of the submitted DMR. Do not alter, line out or highlight any pre-printed items that appear on the DMR.

3.3 Permit Number

Each facility has a unique number consisting of the prefix NY followed by 7 characters (alpha or numeric) which is used by the Department to identify SPDES permitted facilities.

3.4 Discharge Number (Outfall Number) and Designator

The Discharge Numbers are three character fields (alpha or numeric) identifying specific discharge points within the facility. These will correspond to specific sampling points detailed in the SPDES permit. These numbers will be followed by another character (alpha or numeric) which is used to further define specific aspects of the discharge. Different submission frequencies for parameters of the same outfall will be printed on separate DMRs, each with a unique outfall number designator. For example, all parameters requiring monthly monitoring for outfall 001 will appear as outfall 001M, all parameters for outfall 001 with quarterly requirements would print on 001Q, and those with annual requirements on 001A. The outfall designators may also be used in other ways unique to each permit.

3.5 Monitoring Period

Monitoring period (in YY MM DD format) for which the particular DMR is applicable, is from the first day of the period to the last day of the period. Monitoring frequency and cycle are spelled out in the permit and monitoring periods will correspond to those frequencies and cycles.

Example:

		YYMMDD to YYMMDD
Monthly	-	02 01 01 to 02 01 31, etc.
Quarterly	-	02 01 01 to 02 03 31, etc.
Semi-annual	-	02 01 01 to 02 06 30, etc.
Annual	-	02 01 01 to 02 12 31, etc.

3.6 Permit Information and No Discharge Reporting

This area contains information regarding classification of the permit (major/minor), DEC region, the effluent limits type (initial, interim or final) outfall description, and an area to report a “No Discharge” situation.

Should there be no discharge from a particular outfall during the entire monitoring period, the permittee shall check the pre-printed "No Discharge" box located in the upper right-hand corner of each DMR page. The permittee shall also sign, date and submit each page of the DMR and provide an explanation at the bottom for “No Discharge”.

In the event that the facility has permanently ceased discharges, and no longer requires a SPDES permit, notify the appropriate Regional Water Office (See Appendix A for addresses) so that action may be taken to delete the SPDES permit. As required by the ECL, the permittee must continue to submit the DMRs, and indicate “no discharge”, for each outfall until the permittee receives written notice from the Department that they are no longer required to submit DMRS.

4.0 COMPLETING PARAMETER INFORMATION

See Appendix J for a Sample DMR with specific areas of the form noted to align with the following sub-headings.

For the purposes of clarification the following will apply:

Permit Requirement :	A limit and/or monitoring requirement imposed by a SPDES Permit
Sample Measurement :	The value which is reported on the DMR for a parameter
observed/analytical value :	A single observed measurement or analyzed sample result

4.1 Parameter and Monitoring Location

All parameter and monitoring location requirements for each unique discharge number (outfall and designator) are printed on an individual page or multiple pages, as necessary. The parameters are sorted numerically by 5-digit parameter code number, and within that, by monitoring location.

The parameter data is located in the open box(es) along the left side column of the form designated as “Parameter”. The name of the parameter is printed on the first and possibly second line(s). The eight digit number printed on the next (second or third) line in the same box is for internal DEC use only. The description of the monitoring location is printed on the last (third or fourth) line in the same box. These parameters and monitoring locations will correspond with the permit requirements.

4.2 Sample Measurement/Permit Requirement

Unless otherwise specified in the permit or directed by the Regional Water Engineer, actual measured values of all analytical results obtained above the Method Detection Limit (MDL) for all monitored parameters shall be recorded and reported, as required by the permit

Sample Measurement:

The Sample Measurement box is located on the horizontal rows across the DMR form to the right of the Parameter section (box) above the shaded “Permit Requirement” row. Data must be entered in the open boxes labeled Sample Measurement.

- Data must be entered in blue or black ink.
- Do not enter data in boxes that contain a series of asterisks. Only numeric data may be entered, except as noted in Section 4.4. Data must be reported in the same units required by the SPDES permit and as pre-printed on the DMR.
- Do not enter the reporting units, commas or comments, etc. in the Sample Measurement boxes.
- Do not enter symbols or words such as "Trace", "None", "NA", "Not Applicable", etc., on the DMR, except as noted in Section 4.4.
- No more than 8 characters (including decimals) can be entered in each open Sample Measurement box.

Failure to report data as required by a SPDES permit is a violation of the permit. If you do not report certain data, leave that Sample Measurement box blank and attach a note of explanation (See Section 6.1 Comments and Explanation of any Violations).

Example: Permit Requirement: 25000 GPD Actual Flow is 15,000 GPD
In the Sample Measurement box enter 15000 (no comma and no units)

Permit Requirement:
Permit limits and the corresponding statistical bases are pre-printed in the shaded horizontal boxes labeled Permit Requirement. These are located to the right of the "Parameter" box on DMR form. For an explanation of statistical base frequencies and guidance for performing calculations see Section 4.4.

DMR/Permit Discrepancies:
If the pre-printed parameter information on the DMR does not match that required by the SPDES permit, report as required by the SPDES permit (See Section 1.0). Enter on a blank line of the DMR: the correct parameter description, Permit Requirements (include units, frequency of analysis and sample type), and the reported Sample Measurement information (include number of excursions, frequency of analysis and sample type). Should a blank line not be available use a blank DMR form. Attach an explanation of the discrepancy to each copy of the DMR report. Do not alter, line out or highlight any pre-printed items that appear on the DMR.

4.3 Data Reporting Conventions

In reporting data it is important to follow a number of conventions in order to properly report Sample Measurement information. The following rules for significant figures, rounding and precision apply to measured values, such as concentration and not to counted values, such as number of days or conversion factors. Data reporting examples which include these principals can be found in Appendix D.

Significant Figures:
Regardless of the measuring device there is always some uncertainty in a measurement. Significant figures include all the digits in a measurement that are known with certainty as well as the last digit which is an approximation.

> For any parameter, Sample Measurements shall be reported in the same number of significant digits as the limits or action level for that parameter as set forth in the permit. If the permit does not clarify the number of significant digits, Sample Measurements shall be reported in two significant digits, except in the cases of effluent TSS or BOD where single digit effluents are achieved. In these cases, single digits can be reported.

Rules for Significant Figures:
1.) All non-zero digits (1-9) are to be counted as significant.
2.) All zeros between non-zero digits are always significant. Both 4308 and 40.05 contain four significant digits.
3.) For numbers that do not contain decimal points, the trailing zeros may or may not be significant. The number 470,000 may have two to six significant digits.
4.) For numbers that do contain decimal points, the trailing zeros are significant. Both .360 and 4.00 have three significant digits.
5.) If a number is less than 1, zeros that follow the decimal point **and** are before a non-zero digit are not significant. Both 0.00253 and .0670 contain three significant digits.

Rounding:
Rounding may be necessary in order to report in the same number of significant figures as the permit limit. All calculations (i.e. averaging and multiplying) are performed prior to any rounding that is done.

Rules for Rounding:
1.) If the digit being dropped is 1, 2, 3, or 4, leave the preceding number as it is.
20.3 rounded to the nearest whole number, gives you 20.
2.) If the digit being dropped is 5, 6, 7, 8, or 9, increase the preceding digit by one.
26.5 and 26.9, rounded to the nearest whole number, gives you 27 in both cases.

Precision:

In addition to using the correct unit of measurement and applying the appropriate statistical base interval, Sample Measurements must be reported with the same degree of precision that was achieved in the analysis/measurement of the value. This means that numbers resulting from calculations cannot be more precise than the raw data used in the calculations.

Rules for Precision:

1.) For addition or subtraction, the answer can contain no more decimal places than the least precise measurement.
13.681 - 0.5 = 13.181 should be rounded off to the tenths place, with a correct answer of 13.2

2.) For multiplication or division, the least number of significant digits in any of the measurements determines the number of significant digits in the answer.
2.5 x 3.42 = 8.55 should be rounded off to two significant digits, with a correct answer of 8.6

3.) Numbers such as conversion factors or number of days, are counted numbers and are not considered when determining the number of significant digits or decimal places in the calculation.

4.) If both addition/subtraction and multiplication/division are used in a calculation, follow the rules for multiplication/division.

Example: Report the annual total mass loading for phosphorous. Permit Limit: 3125 lbs/yr
Monthly mass loadings:
250.2+ 101+ 135+ 180+ 159+ 225.9+ 258+ 237+ 202.5+ 210+ 246.3+ 236.4 = 2441.3 lbs/yr

Precision rule # 1 applies.
The number 3 (in the tenths place) in the result, is rounded down. Leave preceding number as is.
Enter 2441 in the Sample Measurement Box.

Example: Calculate the suspended solids mass loading.
Permit limit: 75 lbs/day, Q = .67 MGD, C = 10.5mg/L
8.34 lbs/MG = Unit conversion for weight of one gallon of water in pounds.
mg/L

Q x C x Unit Conversion = Mass Loading
0.67 x 10.5 x 8.34 = 58.6719 lbs/day

Precision rule # 2 applies.
The numbers 5 and 8 in the result, are the two significant digits.
The number 6 (in the tenths place) in the result, is rounded up. Increase the preceding digit by one.
Enter 59 in the Sample Measurement Box

Example: Calculate the 7-day average for ammonia
Permit Limit: 4.5 mg/L, sampled 4 times a week
C= 0.56, 0.93, 2.53, 6.92 mg/L

$$\frac{0.56 + 0.93 + 2.53 + 6.92}{4} = 2.735 \text{ mg/L}$$

Precision rules # 3 and # 4 apply (Note: The 4 in the denominator is a counted number).
The numbers 2 and 7 in the result, are the two significant digits.
The number 3 (in the hundredths place) in the result, is rounded down. Leave preceding number as is.
Enter 2.7 in the Sample Measurement Box

Example: Report the 30-day average total suspended solids. Permit Limit: 22 lbs/day
Weekly averages:

$$\frac{11.71 + 6.69 + 4.52 + 3.33}{4} = 6.5625 \text{ lbs/day}$$

Precision rules # 3 and # 4 apply (Note: The 4 in the denominator is a counted number).
The numbers 6, 5 and 6 in the result are the three significant digits.
The number 2 (in the thousandths place) in the result, is rounded down, leaving 6.56 as the result.
The permit limit of 22 lbs/day requires that the result be reported to 2 significant digits. Round 5 up.
Enter 6.6 in the Sample Measurement Box.

Statistical Base Intervals:

Daily
A daily time period is considered as a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.

Seven (7) Day
A 7-day period is considered as 7 consecutive days generally beginning on Sunday and ending on Saturday. When used in average calculations, divide the monitoring period, typically a period of one calendar month (30 days), into 7-day periods. If part of a 7 day period falls partially in one month (monitoring period) then that portion shall be combined with the data for the remaining portion of that 7-day period at the beginning of the following monitoring period. This 7-day period (part in one month and the remainder in the next month) is used to calculate the 7-day average for the following monitoring period. This data carryover is used only for calculating 7-day averages.

Thirty (30) Day
A 30-day period is considered as 30 consecutive days or a calendar month generally beginning on the first day of the calendar month and ending on the last day of the month.

Quarterly, Semi-annually, Annual
Monitoring periods in excess of 30 days generally require one observed/analytical value per designated interval

Units of Measure:
Data must be reported in the units required by the SPDES permit and as pre-printed on the DMR. Consistent and appropriate units of measure must be used in all calculations/formulas. Conversion information can be found in Appendix C - Conversion Tables

Example:
a) Flow - The pre-printed required unit on the DMR is MGD (Million Gallons per Day). The measured average daily flow is 155,000 GPD (Gallons per Day). The flow data must be converted to MGD (155000/1000000) and then reported as 0.155

b) Zinc - The pre-printed required unit on the DMR is mg/L (Milligrams per Liter). The analytical data provided by the laboratory is 200 ug/L (Micrograms per Liter). The data must be converted to mg/L, (200/1000) and then reported as 0.2

4.4 How to Calculate and Report Data

This section contains general guidance on how to report observed/analytical value information and the calculations that may be required in order to report that information on the DMR. Check for specific requirements in your permit or call your NYSDEC Regional Office for clarification. Report all letter and symbols that are required to the left of the numeric value entered in the Sample Measurement box. Data reporting examples which include these principals can be found in Appendix D.

All calculations (i.e. averaging and multiplying) are performed prior to any rounding off that is done.

Annual Total:
The annual total is the total cumulative mass loading for an entire monitoring year.

Average/Arithmetic Mean:
The average or arithmetic mean is equal to the sum of the measurements divided by the number of measurements.

Example: Set of measurements: 2, 9, 8, 5, 6

$$\text{Arithmetic Mean} = \frac{2+9+8+5+6}{5} = \frac{30}{5} = 6$$

Daily Discharge
For pollutants expressed in units of mass loading (lbs/day or kg/day):
Calculate the total mass loading of the pollutant discharged over the day by using the formula for mass loading found on page 10.
For pollutants with limitations expressed in other units of measurement:
Calculate the average observed/analytical value of the pollutant over the day (except for pH).

Daily Average or Monthly Average
This is the average of daily discharges over a calendar month. Find by calculating the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Concentration:
Seven (7) Day Average Concentration (Quality):
Report in the Sample Measurement box under the maximum column.
Calculate the average of all daily discharges for each 7 days in the monitoring period. The Sample Measurement is the highest of the 7-day averages calculated during the monitoring period.

Thirty (30) Day Average Concentration (Quality):
Report in the Sample Measurement box under the average column.
Calculate the average of all daily discharges during the 30-day monitoring period. The Sample Measurement is the average of all samples measured during the 1 month (30-day) monitoring period. When the SPDES permit requires only 1 observed/analytical value per monitoring period and only one sample was taken, the 30-day and 7-day Sample Measurements are the same. See **Repeated Single Values**, page 16.

Mass Loading:
Mass loading is determined by multiplying the daily flow in million gallons per day (MGD), first by the concentration (mg/L), and then by the unit conversion 8.34 $\frac{\text{lbs/MG}}{\text{mg/L}}$

$$\text{Mass Loading (lbs/day)} = Q\ (\text{MGD}) \times C\ (\text{mg/L}) \times 8.34\ \frac{\text{lbs/MG}}{\text{mg/L}}$$

Q = Daily flow in MGD for each day observed/analytical values are taken.
C = Parameter concentration in mg/L
8.34 $\frac{\text{lbs/MG}}{\text{mg/L}}$ = unit conversion for weight of one gallon of water in pounds.

Seven (7) Day Average Mass Loading (Quantity):
Report in the Sample Measurement box under the maximum column.
Calculate the average of all observed/analytical values for each 7 days in the monitoring period. The Sample Measurement is the highest of the 7-day averages calculated during the monitoring period.

Thirty (30) Day Average Mass Loading (Quantity):
Report in the Sample Measurement box under the average column.
Calculate the average of all observed/analytical values during the 30-day monitoring period. The Sample Measurement is the average of all samples measured during the 1 month (30-day) monitoring period. When the SPDES permit requires only 1 observed/analytical value per monitoring period and only 1 sample was taken, the 30-day and 7-day Sample Measurements are the same. See **Repeated Single Values**, page 16.

Example: Calculate mass loading (lbs/day) as follows:

$$\text{Mass Loading} = \frac{[(Q_{1(MGD)} \times C_{1\,(mg/L)} \times \frac{8.34}{\text{mg/L}}_{(lbs/\,MG)}) + (Q_2 \times C_2 \times \frac{8.34}{\text{mg/L}}_{(lbs/\,MG)}) + \ldots + (Q_N \times C_N \times \frac{8.34}{\text{mg/L}}_{(lbs/\,MG)})]}{N}$$

$Q_1, Q_2, \ldots Q_N$ = Daily Flow in MGD for each day 1, 2, ... N, observed/analytical values are taken
$C_1, C_2, \ldots C_N$ = Parameter concentration(s) in appropriate units (mg/L) for days 1, 2, ... N
8.34 $\frac{\text{lbs/MG}}{\text{mg/L}}$ = Unit conversion for weight of one gallon of water in pounds.
N = Number of observed/analytical value days in the monitoring period

Moving/Rolling Average:
A rolling average is calculated by using data results from the current date and the respective designated interval prior to the current date.

Example: 12 month rolling average
Calculate the current monthly average and the previous 11 monthly averages and divide the total by 12.

$$\frac{MA_C + MA_1 + MA_2 + \ldots + MA_{11}}{12} = 12\ \text{MRA}$$

MA_C = Current monthly average
MA_1 = First prior month's monthly average
MA_2 = Second prior month's monthly average
MA_{11} = Eleventh prior month's monthly average

Estimated Value (Flow Only):
Use the letter E to indicate estimated value.

Example: Flow is estimated to be 150,000 GPD Permit Limit is 250000 GPD
Enter E150000 in the Sample Measurement box

Extra Sampling:
Permit compliance monitoring shall be scheduled to be routine and representative of the normal discharge and set prior to collection. The permittee may decide to sample and analyze more frequently than required by the permit. This extra sample collection must be incorporated into the facility's monitoring schedule prior to collection and obtained as outlined in Section 2.3 **Sampling**, page 2. The extra sample observed/analytical values must be used in calculations for reporting on the DMR.

Geometric Mean:
(Applicable to Fecal Coliform and Total Coliform, only)

The geometric mean is calculated by multiplying each of the N values together and taking the Nth root of the product.

$$\text{Geometric Mean} = \sqrt[N]{C_1 \text{ x } C_2 \text{ x } \ldots C_N}$$

N = Number of observed/analytical values during the monitoring period.
C_1, C_2,...C_N = Concentration observed/analytical values during the monitoring period.

Example: Wk 1 = 3.0/100 ml, Wk 2 = 36/100 ml, Wk 3 = 24/100ml, Wk 4 = 14/100ml, Permit Limit: 20

geo. mean = $\sqrt[4]{3.0x36x24x14}$ = 13.8/100ml

Precision rule # 2 applies (Note: Exponentials follow the same precision rules as multiplication/division).
The numbers 1 and 3 in the result, are the two significant figures.
The number 8 (in the tenths place) in the result, is rounded up. Increase the preceding digit by one.
Enter 14 in the Sample Measurement Box.

Or, calculate a geometric mean by taking the antilog of the log average.

$$\text{Geometric Mean} = \text{Log}^{-1} \frac{[\text{Log}C_1 + \text{Log}C_2 + \ldots + \text{Log}C_N]}{N}$$

N = Number of observed/analytical values during the monitoring period.
C_1, C_2, ...C_N = Concentration of observed/analytical value during the monitoring period.

Seven (7) Day Geometric Mean (7 DA GEO):
Report in the Sample Measurement box under the maximum column.
Calculate the geometric mean of all observed/analytical values for each 7 days in the monitoring period. The Sample Measurement is the highest of the 7-day geometric means calculated during the monitoring period. See **Too Numerous To Count (TNTC)**, page 16.

Thirty (30) Day Geometric Mean (30 DA GEO):
Report in the Sample Measurement box under the average column.
Calculate the geometric mean of all observed/analytical values during the 30 day monitoring period. The Sample Measurement is the geometric mean of all samples measured during the 1 month (30-day) monitoring period. If only one sample is taken during the monitoring period the Sample Measurement for the 7-day geometric mean will be the same for the 30-day geometric mean. See **Repeated Single Values** and **Too Numerous To Count (TNTC)**, page 16.

Instantaneous Maximum:
Report the Sample Measurement as the highest observed/analytical value during the monitoring period for a specified parameter regardless of the number of samples taken. Report the number of samples collected in the frequency of analysis box.

Instantaneous Minimum:
Report the Sample Measurement as the lowest observed/analytical value during the monitoring period for a specified parameter regardless of the number of samples taken. Report the number of samples collected in the frequency of analysis box.

Invalid Sample (Invalid Quality Control / Lab Accident):
There are a number of conditions when a sample or sample result is considered invalid. These include:

- if a sample is subject to a lab accident and a valid analysis cannot be performed,
- the quality control during sample analysis is not within analytical standards,
- sample preparation results in insufficient dilutions and the result is reported with a greater than symbol >. (Typically occurs with BOD and coliform analysis)

Regardless of the source of error all invalid samples shall be treated as follows:

For one observed/analytical value:
Leave the Sample Measurement box blank.
When sufficient time remains in the statistical base interval (Section 4.3), an additional sample can be collected and reported. When an additional sample is collected and results are not available in time to submit the DMR, submit the DMR on time leaving the Sample Measurement box blank, notify DEC of the situation and submit an amended DMR when the data becomes available.

For more than one observed/analytical value:
Invalid sample results are not to be used in performing calculations. Omit the invalid result from the calculation and report with either a greater than > symbol for maximum or average or the less than < symbol for minimum in the Sample Measurement box.

For all invalid samples:
The permittee shall provide an explanation as to why the sample was invalid and from which if any calculations it was omitted from in the "Comment and Explanation of any Violations" section of the DMR or by attaching an explanation to each copy of the DMR. Documentation from the lab and/or a written explanation from the operator must be retained with lab records for inspection.

Less than:
Use the symbol < to indicate Less Than.
To calculate a Sample Measurement (concentration, mass loading, etc) in which one or more of the reported observed/analytical values are preceded by the “less than” symbol, use the reported value in the calculation. At the end of the calculation add the less than symbol < to the left of the calculated value. The Sample Measurement is then reported as less than the calculated value. When the analytical laboratory performing analysis for the permittee completes the annual MDL study for NELAP certification, the permittee shall submit the results of the study with the next DMR. The submission shall list the parameter certified, method used, and the MDL achieved.

Example: Calculate daily average for ammonia (sample once/week).
Permit Limit: 0.9 mg/L The raw data in mg/L: 0.9, 1.0,< 0.1, 0.5

$$\text{Average concentration} = \frac{0.9+ 1.0+ 0.1+ 0.5}{4} = 0.625 \text{ mg/L}$$

Precision rules # 3 and # 4 apply (Note: The 4 in the denominator is a counted number).
The number 2 in the result, is rounded down. Leave the preceding digit as it is.
Enter < 0.6 in the Sample Measurement Box

Exception - "Less than Method Detection Limit" (MDL)
When the most sensitive approved analytical method for a parameter as described in the NYSDEC document entitled Analytical Detectability and Quantitation Guidelines For Selected Environmental Parameters[4] is used and the MDL was achieved, substitute zero for the "less than MDL value" in calculating a Sample Measurement. When the analytical laboratory performing analysis for the permittee completes the annual MDL study for NELAP certification, the permittee shall submit the results of the study with the next DMR. The submission shall list the parameter certified, method used, and the MDL achieved.

Example: Calculate the average Zinc Concentration.
The most sensitive analytical method listed in the DEC Analytical Guidelines for zinc is GFAA (digestion followed by graphite furnace atomic absorption).

Zinc data: 0.06 mg/L, 0.10 mg/L, 0.02 mg/L, < 0.05 ug/L (where 0.05 ug/L = MDL by GFAA)
Permit Limit: .05mg/L

In the calculation substitute 0 for < 0.05 ug/L.

Average Zinc Conc. = $\frac{0.06+0.10+0.02+0}{4}$ = 0.045 mg/L

Precision rules # 3 and # 4 apply.
After applying rounding rules, the number 5 (in the thousandths place) is rounded up.
Increase the preceding digit by one. Enter 0.05 in the Sample Measurement Box

Maximum/Daily Maximum:
For one observed/analytical value per day:
The maximum or daily maximum Sample Measurement is the highest observed/analytical value during the monitoring period for a specified parameter.

For more than one observed/analytical value per day:
Calculate the daily discharge for each day in the reporting period. Report the Sample Measurement as the highest of the daily discharges calculated.

For pH do not average - report the highest value in the reporting period.

Median:
The median value of a set of measurements is the observed/analytical value that falls in the middle when the values are arranged in order from the lowest to the highest. If there are an even number of values, the median is the arithmetic average of the 2 values which have an equal number of values greater and less than both of them. Should there be only 1 value, that value is the median.

Example:
a. Six Values: 22, 43, 63, 87, 102, 127
The median is the average of 63 and 87, or 75.
b. Five Values: 29, 44, 67, 82, 105
The median is 67.
c. One Value: 20
The median is 20

[4]To obtain a copy of this document, please contact the Bureau of Watershed Assessment & Research at 625 Broadway, Albany NY 12233-3502 or by phone at: (518) 402-8179

Minimum/Daily Minimum:
For one observed/analytical value per day:
The minimum, or daily minimum Sample Measurement is the lowest observed/analytical value observed during the monitoring period for a specified parameter.

For more than one observed/analytical value per day:
Calculate the daily discharge for each day in the monitoring period. Report the Sample Measurement as the lowest of the daily discharges calculated .

For pH do not average - report the lowest value in the reporting period.

Monthly Average Minimum (Percent Removal):
Report the Sample Measurement as the average influent concentration for the month minus the average effluent concentration of the month all divided by the average influent concentration, all multiplied by 100. This is limited as a minimum and is reported in the minimum concentration column of the DMR. (See **Percent (%) Removal**, page 16)

Net Value Limits:
When an analytical value is reported as a concentration, and the limit is a mass loading limit, convert the concentration to mass loading, using the average flow for the day the sample was taken, before doing the calculation for the net value limit.

When either the intake or effluent observed/analytical value is reported as “less than”, substitute the reported value without the less than symbol or negative sign in the calculation unless otherwise directed by the Department.

To report a singular negative net observed/analytical value, report by entering a “0" in the Sample Measurement box. When negative observed/analytical values are involved in a calculation substitute zero “0" for the negative net observed/analytical value.

Example:		Net value	Net calculation (Enter 0 for negative values), lbs/day
Intake (lbs/day)	Effluent (lbs/day)	Effluent-Intake (lbs/day)	
1630	1751	121	121
2335	1635	-700	0
1460	1693	233	233
Avg. net value = [121 + 0 + 233] ÷ 3 = 118 lbs/day Enter 118 in the Sample Measurement box.			

No Discharge of a Single Parameter:
If there is no discharge of a certain parameter during the entire monitoring period, the permittee shall enter "NODI 9" anywhere on the line in the appropriate Sample Measurement reporting box(es) area. This communicates that there was no discharge of that specific parameter. The permittee shall provide an explanation of the "NODI 9" notation in the "Comment and Explanation of any Violations" section of the DMR or by attaching an explanation to each copy of the DMR.

Percent (%) Removal:
Percent removal is reported in the "quality or concentration" minimum column. Calculate the % removal for a given monitoring period as follows:

$$\%\text{Removal} = \left(\frac{[C_{\text{Influent}} - C_{\text{Effluent}}]}{C_{\text{Influent}}} \right) X\ (100)$$

$C_{Influent}$ = Average influent concentration for a given monitoring period

$C_{Effluent}$ = Average effluent concentration for a given monitoring period

Repeated Single Values:
If only one sample is analyzed during a monitoring period, the daily minimum/daily average/daily maximum or 30-day average/7-day average, respectively are the same for reporting purposes. In this particular situation do not leave any of the Sample Measurement boxes blank. Enter the same value in each Sample Measurement box.

Example: Sampling is required once per month for pH. The observed/analytical value is 7.3 units. Enter 7.3 in the Minimum and Maximum Sample Measurement Boxes.

Split Samples:
The permittee may decide for various reasons, to split a sample. This split sample must be incorporated into the facility's monitoring schedule prior to collection and must be obtained as outlined in Section 2.3 **Sampling**. Split sample observed/analytical values are to be averaged and must be used in calculations for reporting on the DMR. In addition, split samples must:

1.) be split on the collection site (not in the lab).
2.) be considered a representative sample and consistent with the facility's monitoring program.
3.) be independent of any selection process for analysis.

Too Numerous to Count (TNTC):
(Applicable to Fecal Coliform and Total Coliform, only).

For one observed/analytical value per monitoring period:
Report the observed/analytical value by entering the letter T in the Sample Measurement box and attach an explanation to the DMR.

For more than one observed/analytical value per monitoring period:
Use all numeric values in the calculation. At the end of the calculation, add the greater than symbol > to the left of the calculated value and attach an explanation to the DMR.

When determining the highest of the 7-day/30-day Averages to report, any value with a greater than symbol (>) will be considered the highest and must be reported.

Example: Calculate the 7-day and 30-day Geometric Means.
Observed/analytical values: Wk 1 = 3.0/100 ml, Wk 2 = 36/100 ml, Wk 3 =T, Wk 4=14/100 ml

7-day geometric mean for Wk 3 = T Enter T in the Sample Measurement box

30-day geometric mean = $\sqrt[3]{3.0 \times 36 \times 14}$ = 11.47/100 ml

Precision rule # 2 applies (Note: Exponentials follow the same precision rules as multiplication/division).
After applying rounding rules, round 4 down. Leave preceding number as is.
Enter > 11 in the Sample Measurement Box .

4.5 Action Levels and Sludge Reporting

Action Levels:
Action Levels are thresholds for parameters that have been reported present in the discharge, but at levels that currently do not require water quality or technology based limits. Action levels are assigned a separate outfall designator (usually "V") for each monitoring frequency. These frequencies are specified in the permit similar to the way effluent limits are (monthly, quarterly, semi-annually and/or annually). Should action levels be exceeded, see the SPDES Permit for necessary action to be taken by the permittee.

Sludge Reporting:
Some permittees meet Federal and State criteria that requires them to report sludge sampling information on the DMR forms (see 40 CFR 501.13, Tables 1-4, 503.18, and 503.32). The DMR forms will have preprinted fields for the sludge parameters for which sampling is required. The permittee must fill out these sections, even though the word "optional" is printed on the DMR form. The word "optional" is necessary for DEC purposes, as there are no numerical limits for the sludge parameters at this time. See Appendix C for information on converting sludge gallons to metric tons.

4.6 Number of Excursions (No. Ex.)
The unshaded areas in this column are where the number of excursions (if any) for each parameter are to be reported.

The value reported in the No. Ex column on the pre-printed DMR shall be the number of days that daily discharge values observed during a specified monitoring period are either lower than the minimum quality (concentration) and/or higher than the maximum quality(concentration) or maximum quantity (mass loading) permit requirements. Number of excursions are not reported for Sample Measurements reported in either of the two "Average" columns.

7-day Averages used to determine the Sample Measurement which exceed the permit limit or contain a greater than symbol (>) should be reported in the Number of Excursions column, as representative of the number of days the sample represents (i.e. 7, 14, 21, 28). Sample Measurements of the 30-day average, daily average, or 12-month rolling average which exceed the permit limit should not be reported in the "No. Ex." column. However, any Sample Measurement which exceeds a 30-day average, daily average, or 12-month rolling average Permit Requirement must be explained and reported on a Report of Non-Compliance Event form (see Appendix B for form, Section 2.5 for instructions) and attached to each copy of the submitted DMR.

Example: The Plainville municipal wastewater treatment facility is required to monitor effluent BOD once per week. During the first and second weeks of the month, there was a plant upset and the effluent BOD concentrations and mass loadings exceeded the 7-day average Permit Requirement. The 30-day average BOD concentrations and mass loadings also exceeded the 30-day average Permit Requirement. The correct number of excursions to be reported in the "No.Ex." box for effluent BOD is

When the SPDES Permit requires continuous monitoring of a parameter, all excursions shall be reported on an attachment, to include the duration, magnitude, and cause of the excursion. The total number of days in which an excursion occurred should be reported in the "No. Ex." column. In the case of continuously monitored pH, each excursion exceeding a 1 hour duration should be footnoted or underlined for emphasis on the attachment. The total number of days that an excursion exceeding 1 hour occurred should be entered in the "No. Ex" column. If pH is monitored more than once per day, the total number of days which had one or more excursions shall be reported in the "No.Ex." column.

Example: An industrial facility adds chemicals to control pH. They measure pH six times per day. During the first three days of the month, the chemical feed equipment malfunctioned. During the first two days of the malfunction, two pH measurements on the first day and three on the second day exceeded the maximum Permit Requirement. On the third day, one measurement exceeded the maximum Permit Requirement, and one measurement was less than the minimum Permit Requirement. The number of excursions that must be reported for the month, is three (3 days).

4.7 Frequency of Analysis

Information in the shaded area of this column reflects the permit requirement for the frequency with which samples are to be taken. Enter the actual frequency of analysis used during the monitoring period in the blank area above the requirement. Appendix E contains the appropriate abbreviations to be used in this space. These abbreviations do not match the information in the shaded area but are in a numerical format for ease of data entry. The left-hand column contains the abbreviation most likely found in the shaded area of the DMR and the next column contains the abbreviation the permittee is required to enter. A written explanation must be attached to each submitted copy of the DMR if the actual frequency of analysis is different than the permit specification.

4.8 Sample Type

Information in the shaded area of this column reflects the permit requirement for the type of sample to be taken. Enter the actual sample type used during the monitoring period in the unshaded area above the requirement. The left column in Appendix F contains the abbreviation most likely found in the shaded area of the DMR and the right column contains the appropriate PCS codes to be entered by the permittee in the unshaded area. A written explanation must be attached to each submitted copy of the DMR if the actual sample type is different than the permit requirement.

5.0 COMPLETING SIGNATURE INFORMATION

See Appendix J for a Sample DMR with specific areas of the form noted to align with the following sub-headings:

5.1 Name/Title Principal Executive Officer or Auth. Agent

The name and title of the person who is authorized to sign the DMR. See Appendix G for clarification of who may sign the DMR.

5.2 Signature and Certification

All DMRs shall be signed (use only black or blue ink) by the person who is authorized to sign the DMR. Each page of the DMR must have an original legible signature. If the principal executive officer authorizes another person to sign the DMRs an authorization form must be signed by the principal executive officer and submitted to the Bureau of Water Compliance Programs (see Appendix A for address). Authorization forms must be submitted and approved prior to DMR submission. See Appendix G for Authorization Form.

The signature box is to the right of the pre-printed certification statement. By signing the DMR, the principal executive officer or his/her authorized agent are acknowledging their agreement with the certification statement which certifies, under penalty of law, that to the best of their knowledge, the data on the DMR was properly collected and evaluated and is true, accurate, and complete. False information entered on the DMR by a permittee, or the permittee's designated representative, may be punishable as a Class A misdemeanor pursuant to Section 210.45 of the State Penal Law. Falsification of a DMR by a certified wastewater treatment plant operator could result in revocation or suspension of the operator's certification pursuant to 6NYCRR 650.10.

Disclaimers and Unsigned DMRs:
The permittee shall not use disclaimers on the DMR. SPDES regulations requires that the DMR be sworn to, "In respect to all statements of fact herein." The DMR form requires certification that, "... the submitted information is true, accurate, and complete." The use of a disclaimer(s) clearly contravenes these requirements. Therefore, any DMR submitted with a disclaimer will not be accepted by NYSDEC and will immediately be returned to the permittee. DMRs which lack a signature are not acceptable and will also be immediately returned to the permittee. No portion of a returned DMR will be accepted by DEC and this could result in penalties for late filing or failure to file.

5.3 Telephone

Telephone number of person signing DMR.

5.4 Date

Date of signature.

6.0 COMPLETING COMMENT INFORMATION

See Appendix J for a Sample DMR with specific areas of the form noted to align with the following sub-heading:

6.1 Comments and Explanation of any Violations

This area may contain pre-printed permit-related clarifying information from the Agency or may be used by the Permittee to communicate to the Agency. Any specific comments regarding a specific discharge number may be printed in this area. If necessary, additional specific comments may be made on a separate sheet (with SPDES permit number, outfall and monitoring period dates referenced) and attached to the DMR.

The permittee is required to report all instances of non-compliance with permit effluent limitations or monitoring requirements. These reports must be attached to each submitted copy of a Discharge Monitoring Report until such non-compliance ceases. These non-compliance reports shall contain each of the following:

- a description of the non-compliance and its cause;
- the period of the non-compliance, including exact dates and times,
- if the non-compliance has not been corrected, the anticipated time it is expected to continue; and
- steps taken or planned to reduce, eliminate, and prevent the non-compliance and its recurrence.

The Report of Non-Compliance Event form (Appendix B) or an equivalent written explanation containing the information requested above shall be used to report all instances of non-compliance.

7.0 SUBMISSION INFORMATION

7.1 Preprinted (paper) Discharge Monitoring Reports (DMRs)

Copies:
Copies of the completed DMR shall be returned to the following offices no later than the 28th of the month following the end of each reporting period (unless otherwise specified in the SPDES permit or a consent order).

The original (top sheet) completed DMR shall be submitted to the Bureau of Water Compliance Programs (see Appendix A for address).
The first copy (second sheet) of the completed DMR shall be submitted to the NYSDEC Regional Office specified in the SPDES permit (see Appendix A for Regional Water Office addresses).

The second copy (third sheet) of the completed DMR shall be submitted to the local County Health Department, if required by the SPDES permit.

The third copy (fourth sheet) shall be retained by the facility for their records. The monitoring information required by the SPDES permit (or a consent order, if appropriate) shall be summarized, signed and retained as required by regulations, for subsequent inspection by the New York State Department of Environmental Conservation (NYSDEC) or its designated agent.

Additional copies of the completed DMR, not otherwise mentioned above, but required by the SPDES permit, must be provided by the permittee and submitted as required.

Attachments to DMRs. Please remember, all correspondence and DMR attachments must contain the appropriate SPDES permit number, outfall and monitoring period information

7.2 Amended DMRs
To revise reported information previously submitted on a DMR, submit a revised copy of the affected pages conspicuously marked “Amendment” in the upper right corner and initial and date the amended areas. The permittees initialing of the amended DMR form shall be subject to the same certification requirements as the original DMR. Attach explanations for the amendments to the DMR.

7.3 Computer Generated DMRs
The DEC will accept computer generated DMRs as long as the permittee receives prior DEC approval. This means that a facility does not have to fill out the paper DMR, rather they can send their monitoring information on a form that they designed. In order to do this, the permittee must submit a formal letter to DEC, requesting permission to use their own form. Along with the letter, they must send in a completed copy of their pre-printed DMR as well as a copy of their computer generated DMR, which closely resembles the preprinted one. DEC will review the form and provide input back to the facility on acceptability. Facilities cannot submit computer generated DMRs until they have received DEC approval. It is the facilities’ responsibility to account for any changes in their computer generated DMR if the preprinted one changes at all. The preprinted DMR will still be sent to the facility, even if they are submitting their own computer generated form.

7.4 Alternative Methods
DEC is developing alternative options to file DMRs, including developing a web site that will allow the submission of DMRs via the Internet. For more information on these programs, please contact the Bureau of Water Compliance Programs at (518) 402-8154 or via email at: cshaugh@gw.dec.state.ny.us.

8.0 TIPS FOR SUCCESSFUL DMR REPORTING

1. Enter data legibly in blue or black ink. Make decimals look like decimals. Do not use commas.

2. Report all data as required by the SPDES permit on the pre-printed DMR.

3. For monthly pH reporting requirement, complete both the maximum and the minimum columns (same value should be entered in both boxes reflecting the one measurement).

4. Enter data in open boxes only (not shaded box(es) or boxes containing asterisks).

5. Do not alter, line out or highlight items appearing on the pre-printed DMR(s).

6. Do not enter units or other extraneous information (such descriptive words or symbols as Trace, Not Applicable, None, etc) in Sample Measurement value boxes.

7. Make sure the reporting units are the same as those that appear in the permit. Special attention should be given when reporting: Flow Data; Temperature; and Concentrations. Use consistent units in calculations.

8. Report values that are less than the detection limit by entering "< MDL" where MDL is the numeric value of the Method Detection Limit. Do not enter "Not Detectable", "Non-Detectable". "ND", "BDL", etc.

9. For no discharge during the entire monitoring period, check the No Discharge box (upper right-hand corner of DMR). Submit all pages marked "No Discharge" for all outfalls.

10. For no discharge of a single parameter during the monitoring period, enter "NODI 9". However, do not use "NODI 9" to report "less than (<)" values.

11. Date and sign all pages of the pre-printed DMR prior to submission.

12. For each instance of non-compliance with a permit requirement, provide a written report.

13. For modifications to permits, make requests in writing to the Regional Permit Administrator. Do not make requests on the DMR form.

14. Send proper copies and attachments to appropriate offices.

List of Appendices

Appendix A

NYS Department of Environmental Conservation Regional Offices

NYSDEC Region 1 Regional Water Engineer 50 Circle Road Stony Brook, NY 11790-2356	(631) 444-0405	Nassau, Suffolk
NYSDEC Region 2 Regional Water Engineer 1 Hunter's Point Plaza 47-40 21st Street Long Island City, NY 11101-5407	(718) 482-4933	Bronx, Kings, New York City, Queens, Richmond
NYSDEC Region 3 Regional Water Engineer 21 South Putt Corners Road New Paltz, NY 12561-1696	(845) 255-3000	Sullivan, Ulster
NYSDEC Region 3 Sub-Office Regional Water Engineer 100 Hillside Avenue, Suite 1W White Plains, NY 10603-2860	(914) 428-2505	Dutchess Orange, Putnam, Rockland, Westchester
NYSDEC Region 4 Regional Water Engineer 1130 North Westcott Rd. Schenectady, NY 12306-2014	(518) 357-2045	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schoharie, Schenectady
NYSDEC Region 5 Regional Water Engineer 1115 NYS Route 86 PO Box 296 Ray Brook, NY 12977-0296	(518) 897-1241	Clinton, Essex, Franklin, Hamilton
NYSDEC Region 5 Sub-Office Regional Water Engineer 232 Golf Course Road Warrensburg, NY 12885-0220	(518) 623-1212	Fulton, Saratoga, Warren, Washington
NYSDEC Region 6 Regional Water Engineer 317 Washington Street Watertown, NY 13601-3787	(315) 785-2513	Jefferson, Lewis, St. Lawrence
NYSDEC Region 6 Sub-Office Regional Water Engineer State Office Bldg. 207 Genesee Street Utica, NY 13501-2885	(315) 793-2554	Herkimer, Oneida
NYSDEC Region 7 Regional Water Engineer 615 Erie Boulevard West Syracuse, NY 13204-2400	(315) 426-7500	Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga, Tompkins
NYSDEC Region 8 Regional Water Engineer 6274 Avon-Lima Road Avon, NY 14414-9519	(585) 226-5450	Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne, Yates
NYSDEC Region 9 Regional Water Engineer 270 Michigan Avenue Buffalo, NY 14203-2999	(716) 851-7070	Allegany, Cattaraugus, Chautauqua, Erie, Niagara, Wyoming
NYSDEC Central Office Bureau of Water Compliance SPDES Compliance Information Section 625 Broadway Albany, New York 12233-3506 (518) 402-8177		

Note: See list of current addresses on NYSDEC Website

Appendix B

SECTION 1

New York State Department of Environmental Conservation
Division of Water

Report of Noncompliance Event

To: DEC Water Contact _____ ***DEC Region:*** _____

Report Type: ___ *5 Day* ___ *Permit Violation* ___ *Order Violation* ___ *Anticipated Noncompliance* ___ *Bypass/Overflow* ___ *Other*

SECTION 2

SPDES #: NY-_____ **Facility:**_____

Date of noncompliance:___/___/___ **Location (Outfall, Treatment Unit, or Pump Station):**_____

Description of noncompliance(s) and cause(s):_____

_____

_____

_____

Has event ceased? (Yes) (No) **If so, when?** _____ **Was event due to plant upset?** (Yes) (No) **SPDES limits violated?** (Yes) (No)

Start date, time of event:___/___/___, ___:___ (AM) (PM) **End date, time of event:** ___/___/___, ___:___ (AM) (PM)

Date, time oral notification made to DEC? ___/___/___, ___:___ (AM) (PM) **DEC Official contacted:** _____

Immediate corrective actions:_____

_____

_____

_____

Preventive (long term) corrective actions:_____

_____

_____

_____

SECTION 3

Complete this section if event was a bypass:

Bypass amount: _____ Was prior DEC authorization received for this event? (Yes) (No)

DEC Official contacted: _____ Date of DEC approval: ___/___/___

Describe event in "Description of noncompliance and cause" area in Section 2. Detail the start and end dates and times in Section 2 also.

SECTION 4

Facility Representative: _____ **Title:**_____ **Date:** ___/___/___

Phone #: (_____) _____ - _____ **Fax #:** (_____) _____ - _____

I Certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with 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.

X _____

Signature of Principal Executive Officer or Authorized Agent

The Division of Water developed this standardized form to simplify the reporting of noncompliance events. The SPDES Permit General Conditions, require that certain discharges of untreated or partially treated sewage must be reported orally within either 2 hours or 24 hours and also in writing within five (5) days as required by the appropriate regulation. All other permit noncompliance shall be reported as attachments to the Discharge Monitoring Report (DMR). This form should be used for these events as well as to report noncompliance relating to consent orders, scheduled events and bypass events.

All necessary information can readily be reported to DEC on this form. Additional information required to describe the event can be attached. **Please make additional copies of this form and use as needed**. Instructions are provided below. For questions on form use please contact the appropriate office listed below for the county where your permitted facility is located.

Instructions to complete and submit Noncompliance Report

1. Provide facility information and all applicable event details in Sections 1 through 3. Dates should be completed in month/day/year format.

2. Provide your name, title, business phone number, and date report was completed in Section 4. Use additional sheets as needed to provide full detail of the event in Section 2.

3. For 5-day written reports, mail or fax the completed form to the appropriate DEC Regional Office listed below. Attach all other noncompliance reports to the DMR submittal (be sure to attach to each set of DMR copies) or mail separately if related to consent order/scheduled event noncompliance. After hours and weekend reporting of unusual discharge events or other noncompliance must be reported through the DEC Telephone Hotline, which is 1-800-457-7362.

DEC Regional Offices:

REGION 1 Regional Water Engineer 50 Circle Road Stony Brook, NY 11790-2356 Phone: 631-444-0405 Fax: 631-444-0424 **Counties:** Nassau Suffolk	**REGION 2** Regional Water Engineer 1 Hunters Point Plaza 47-40 21st St. Long Island City, NY 11101-5407 Phone: 718-482-4933 Fax: 718-482-6516 **Counties:** Queens Bronx New York Richmond Kings	**REGION 3 **** Regional Water Engineer 21 So. Putt Corners Rd New Paltz, NY 12561-1696 Phone: 845-256-3000 Fax: 845-255-3414 **REGION 3 Suboffice** 100 Hillside Avenue, Suite 1W White Plains, NY 10603-2860 Phone: 914-428-2505 Fax: 914-428-0323 **Counties:** Rockland Dutchess Sullivan Orange Ulster Putnam Westchester
REGION 4 Regional Water Engineer 1130 North Westcott Rd. Schenectady, NY 12306-2014 Phone: 518-357-2045 Fax: 518-357-2460 **Counties:** Montgomery Albany Otsego Rensselaer Columbia Delaware Schoharie Greene Schenectady	**REGION 5 **** Regional Water Engineer 1115 Route 86, P.O. Box 296 Ray Brook N.Y. 12977-0296 Phone: 518-897-1241 Fax: 518-897-1245 **REGION 5 Suboffice** 232 Golf Course Road Warrensburg, NY 12885-0220 Phone: (518) 623-1212 Fax: 518-623-1311 **Counties:** Clinton Hamilton Franklin Essex Saratoga Warren Fulton Washington	**REGION 6 **** Regional Water Engineer 317 Washington Street Watertown, NY 13601-3787 Phone: (315) 785-2513 Fax: 315-785-2422 **REGION 6 Suboffice** State Office Bldg. 207 Genesee Street Utica, NY 13501-2885 Phone: 315-793-2554 Fax: 315-793-2748 **Counties:** Lewis Jefferson Herkimer Oneida St. Lawrence
REGION 7 Regional Water Engineer 615 Erie Blvd West Syracuse, NY 13204-2400 Phone: 315-426-7500 Fax: **Counties:** Madison Cayuga Broome Onondaga Oswego Chenango Tioga Tompkins Cortland	**REGION 8** Regional Water Engineer 6274 Avon-Lima Rd Avon, NY 14414-9519 Phone: 585-226-5450 Fax: 585-226-2830 **Counties:** Orleans Genessee Chemung Schuyler Seneca Livingston Steuben Ontario Monroe Wayne Yates	**REGION 9** Regional Water Engineer 270 Michigan Avenue Buffalo, NY 14203-2999 Phone: 716-851-7070 Fax: 716-851-7009 **Counties:** Allegany Erie Cattaraugus Niagara Wyoming Chautauqua

Appendix C

Conversion Tables

1 Million Gallons Per Day (MGD) = 1,000,000 GPD To convert MGD to GPD multiply by 1,000,000

1 Gallons Per Day (GPD) = 0.000001 MGD To convert GPD to MGD divide by 1,000,000

1 gallon of water = 8.34 pounds

1 part per million (ppm) = 1 milligrams per Liter (mg/L)

1 part per billion (ppb) = 1 micrograms per liter (ug/L)

1 ppm = 1 mg/L = 1,000 ppb = 1,000 ug/L

1 ppb = 0.001 ppm = 0.001 mg/L

1 ppm = 1 gallon per 1,000,000 gallons (1gal/MG)

Temperature (EF) = [1.8 x TEMP(EC)]+ 32

Temperature (EC) = [TEMP(EF) - 32] x (5/9)

Converting Sludge Gallons to Metric Tons

$$\text{Dry Metric Tons} = \frac{\text{gallons hauled} \times 0.00417 \text{ tons/gal} \times \%\text{ total solids in decimal form}}{1.1 \text{ tons/metric ton}}$$

$$.00417 \text{ tons/gal} = \frac{8.34 \text{ lbs/gallon}}{2000 \text{ lbs/ton}} \qquad \text{Total Solids (in decimal form)} = \frac{\%\text{ Total Solids}}{100}$$

Example: Sludge hauled = 100,000 gals Total Solids = 5.0% or .05

$$\text{Dry Metric Tons} = \frac{100{,}000 \text{ gals} \times 0.0147 \text{ tons/gal} \times .05}{1.1 \text{ tons/metric ton}} = 18.9 \text{ metric tons}$$

Precision rule # 2 applies.
After applying rounding rules, the number 9 is rounded up. Increase the preceding digit by one.
Dry Metric Tons = 19

Appendix D

Data Reporting Examples

Precision:

Rules for Precision:
1.) For addition or subtraction, the answer can contain no more decimal places than the least precise measurement.
13.681 - 0.5 = 13.181 should be rounded off to the tenths place, with a correct answer of 13.2
2.) For multiplication or division, the least number of significant digits in any of the measurements determines the number of significant digits in the answer.
2.5 x 3.42 = 8.55 should be rounded off to two significant digits, with a correct answer of 8.6
3.) Numbers such as conversion factors or number of days, are counted numbers and are not considered when determining the number of significant digits or decimal places in the calculation.
4.) If both addition/subtraction and multiplication/division are used in a calculation, follow the rules for multiplication/division.

Addition:

3.5682	Rule # 1
2.164	
+7.**02**	
12.7522	Rounding –> 12.75

Subtraction:

3.**0486**	Rule # 1
- 0.76358	
2.28502	Rounding –> 2.2850

Multiplication:

1.6843	Rule # 2
x **2.6**	
4.37918	Rounding –> 4.4

Division:

38.2	Rule # 2
÷ 4.1458	
9.2141444	Rounding –> 9.21

Daily Discharge Computation:

Example One: How to calculate a daily discharge involving units of mass loading.
The 5-day BOD concentration is 18 mg/L. The flow on the day the sample was taken was .15 MGD

Step 1: Determine the daily discharge, by finding the total mass loading discharged over the day, using the following formula:

Total Mass Loading (lbs/day) = Q (MGD) x C (mg/L) x 8.34 $\frac{\text{lbs/MG}}{\text{mg/L}}$

Q = Daily flow in MGD for day observed/analytical values are taken.
C = Parameter concentration in mg/L
8.34 $\frac{\text{lbs/MG}}{\text{mg/L}}$ = unit conversion for weight of one gallon of water in pounds.

= 18 x .15 x 8.34 = 22.518 lbs/day

Step 2: Precision rule # 2 applies. The daily discharge is 23 lbs/day.

Example Two: How to calculate a daily discharge involving units other than mass loading.
The chlorine residual concentrations from grab samples collected throughout the day are:

Sample One:	1.8 mg/L	Sample Four:	2.0 mg/L
Sample Two:	1.9 mg/L	Sample Five:	1.1 mg/L
Sample Three:	1.6 mg/L	Sample Six:	1.5 mg/L

Step 1: Determine the daily discharge by taking the average of the 6 samples.

$$\frac{1.8+1.9+1.6+2.0+1.1+1.5}{6} = \frac{9.9}{6} = 1.65 \text{ mg/L}$$

Step 2: Precision rules # 3 and # 4 apply. The daily discharge is 1.7 mg/L.

Daily Average Computation:

Example Three: How to calculate a daily average at a facility which operates 4 days a week and discharges 4 days a week.

The measured 5-day BOD daily discharges are:

Week One: 12.4mg/L, 16.5mg/L, 11.1mg/L, 14.8mg/L;
Week Two: 15.2mg/L, 10.8mg/L, 10.1mg/L, 12.7mg/L;
Week Three: 11.6mg/L, 10.7mg/L, 13.3mg/L, 14.0mg/L;
Week Four: 14.5mg/L, 16.8mg/L, 17.2mg/L, 20.1mg/L;

Step 1: Determine the daily average. This is accomplished by adding all of the daily discharges and dividing by the number of daily discharges.

$$\frac{12.4+16.5+11.1+14.8+15.2+10.8+10.1+12.7+11.6+10.7+13.3+14.0+14.5+16.8+17.2+20.1}{16} = \frac{221.8}{16} = 13.8625 \text{ mg/L}$$

Step 2: Precision Rules # 3 and 4 apply (Note: The 16 in the denominator is a counted number)
Enter 13.8 in the Sample Measurement Box.

Concentration Computations:

Example Four: How to calculate and report a 30-day and 7-day average 5-day BOD concentration when the sampling frequency requires only one sample per monitoring period.

The measured 5-day BOD concentration of a 24-hour effluent composite is 31 mg/L.

Step 1: Enter 31 in the Sample Measurement Boxes under the "Quantity or Concentration" column. (Since only one sample was collected, the "Average" and "Maximum" Sample Measurements are identical).

Example Five: How to calculate and report a 30-day and 7-day average 5-day BOD concentration when the sampling frequency requires only one sample per week.

The measured 5-day BOD concentrations are:

Week One: 5-day BOD = 31 mg/L;
Week Two: 5-day BOD = 37 mg/L;
Week Three: 5-day BOD = 12 mg/L;
Week Four: 5-day BOD = 27 mg/L;

Step 1: Determine the maximum 7-day average 5-day BOD concentration to be reported. This occurs in Week Two, where 37 mg/L is the highest concentration. Enter 37 in the Sample Measurement Box under the "Maximum" column in the "Quantity or Concentration" section.

Step 2: Determine the 30-day average 5-day BOD concentration. This is calculated, by averaging the 4 concentrations:

$$\frac{31+37+12+27}{4} = \frac{107}{4} = 26.75 \text{ mg/L}$$

Step 3: Precision rules # 3 and # 4 apply.
Enter 27 in the Sample Measurement Box under the "Average" column in the "Quantity or Concentration" section.

Example Six: How to calculate and report a 30-day and 7-day average 5-day BOD concentration when more than one sample per week is collected.

The measured 5-day BOD concentrations are:

Week One:	Day One:	5-day BOD = 28 mg/L;
	Day Two:	5-day BOD = 30 mg/L;
Week Two:	Day One:	5-day BOD = 27 mg/L;
	Day Two:	5-day BOD = 25 mg/L;
Week Three:	Day One:	5-day BOD = 30 mg/L;
	Day Two:	5-day BOD = 29 mg/L;
Week One:	Day One:	5-day BOD = 28 mg/L;
	Day Two:	5-day BOD = 32 mg/L;

Step 1: Compute concentrations for each week:

Week One: Average Concentration = $\frac{28+30}{2} = \frac{58}{2}$ = 29 mg/L

Week Two: Average Concentration = $\frac{27+25}{2} = \frac{52}{2}$ = 26 mg/L

Week Three: Average Concentration = $\frac{30+29}{2} = \frac{59}{2}$ = 29.5 mg/L

Week Four: Average Concentration = $\frac{28+32}{2} = \frac{60}{2}$ = 30 mg/L

Step 2: Determine the maximum 7-day average 5-day BOD concentration to be reported. This occurs in Week Four, where 30 mg/L is the highest concentration. Enter 30 in the Sample Measurement Box under the "Maximum" column in the "Quantity or Concentration" section.

Step 3: Determine the 30-day average 5-day BOD concentration. This is calculated, by averaging the eight 5-day BOD concentrations:

$$\frac{28+30+27+25+30+29+28+32}{8} = \frac{229}{8} = 28.625 \text{ mg/L}$$

Step 4: Precision rules # 3 and # 4 apply.
Enter 29 in the Sample Measurement Box under the "Average" column in the "Quantity or Concentration" section.

Mass Loading Computations:

Example Seven: How to calculate and report a 30-day and 7-day average 5-day BOD mass loading when the sampling frequency requires only one sample per monitoring period.

The measured 5-day BOD concentration of a 24-hour effluent composite is 28 mg/L. The daily flow on the day the sample was collected was 120,000 gallons.

Step 1: Convert flow to Million Gallons: 120,000 gal/day = 0.12 MGD
Step 2: Compute mass loading in lbs/day:

Mass Loading (lbs/day) = Q (MGD) x C (mg/L) x 8.34 $\frac{\text{lbs/MG}}{\text{mg/L}}$

Q = Daily flow in MGD for each day observed/analytical values are taken.
C = Parameter concentration in mg/L
8.34 $\frac{\text{lbs/MG}}{\text{mg/L}}$ = unit conversion for weight of one gallon of water in pounds.

= 0.12 x 28 x 8.34 = 28.0224 lbs/day

Step 3: Precision rule # 2 applies.
Enter 28 in both of the Sample Measurement Boxes under the "Quantity or Loading" column. (Since only one sample was collected, the "Average" and "Maximum" Sample Measurement are identical).

Example Eight: How to calculate and report 30-day average and 7-day average 5-day BOD mass loadings when the sampling frequency requires only one sample per week:

The weekly 5-day BOD concentrations and daily flows on the days samples were collected were:

Week One:	5-day BOD = 25 mg/L;	daily flow = 0.13 MGD
Week Two:	5-day BOD = 30 mg/L;	daily flow = 0.14 MGD
Week Three:	5-day BOD = 35 mg/L;	daily flow = 0.12 MGD
Week Four:	5-day BOD = 27 mg/L;	daily flow = 0.15 MGD

Step 1: Compute Mass Loadings for each week:

$$\text{Mass Loading (lbs/day)} = Q \text{ (MGD)} \times C \text{ (mg/L)} \times 8.34 \frac{\text{lbs/MG}}{\text{mg/L}}$$

Q = Daily flow in MGD for each day observed/analytical values are taken.
C = Parameter concentration in mg/L
8.34 $\frac{\text{lbs/MG}}{\text{mg/L}}$ = unit conversion for weight of one gallon of water in pounds.

Week One (L_1):	Mass Loading = 25 x 0.13 x 8.34 = 27.105 lbs/day
Week Two (L_2):	Mass Loading = 30 x 0.14 x 8.34 = 35.028 lbs/day
Week Three (L_3):	Mass Loading = 35 x 0.12 x 8.34 = 35.028 lbs/day
Week Four (L_4):	Mass Loading = 27 x 0.15 x 8.34 = 33.777 lbs/day

Step 2: The highest of the 7-day averages should be reported . This occurs in both Weeks Two and Three, where 35.028 lbs/day is the highest mass loading. After applying precision rule # 3 and the rounding rules, enter 35 in Sample Measurement Box under the “Maximum” column in the “Quantity or Loading” section.

Step 3: Compute 30-day average (monthly average) mass loading =

$$MA = [(L_1 + L_2 + \ldots + L_N) / N)]$$

MA = Current Monthly Average
$L_1, L_2, \ldots L_N$ = Daily mass loading in lbs/day for each day 1, 2, ...N, observed/analytical values are taken
N = Number of observed/analytical value days in the monitoring period.

$$\frac{27.105+35.028+35.028+33.777}{4} = \frac{130.938}{4} = 32.7345 \text{ lbs/day}$$

Step 4: Precision rules # 3 and # 4 apply.
Enter 33 in the Sample Measurement Box under the “Average” column in the “Quantity or Loading” section.

Example Nine: How to calculate and report the 30-day average and 7-day average 5-day BOD mass loadings when more than one sample per week is collected:

The daily 5-day BOD concentrations and daily flows on the days that samples were collected were:

Week One:	Day One:	5-day BOD = 25 mg/L; daily flow = 0.13 MGD
	Day Two:	5-day BOD = 23 mg/L; daily flow = 0.12 MGD
Week Two:	Day One:	5-day BOD = 30 mg/L; daily flow = 0.14 MGD
	Day Two:	5-day BOD = 29 mg/L; daily flow = 0.15 MGD
Week Three:	Day One:	5-day BOD = 35 mg/L; daily flow = 0.12 MGD
	Day Two:	5-day BOD = 33 mg/L; daily flow = 0.13 MGD
Week Four	Day One:	5-day BOD = 27 mg/L; daily flow = 0.15 MGD
	Day Two:	5-day BOD = 29 mg/L; daily flow = 0.14 MGD

Step 1: Compute mass loadings for each day:

$$\text{Mass Loading (lbs/day)} = Q \text{ (MGD)} \times C \text{ (mg/L)} \times 8.34 \frac{\text{lbs/MG}}{\text{mg/L}}$$

Q = Daily flow in MGD for each day observed/analytical values are taken.
C = Parameter concentration in mg/L

8.34 $\frac{\text{lbs/MG}}{\text{mg/L}}$ = unit conversion for weight of one gallon of water in pounds.

Week One: Day One (L_1): Mass Loading = 25 x 0.13 x 8.34 = 27.105 lbs/day
Day Two (L_2): Mass Loading = 23 x 0.12 x 8.34 = 23.0184 lbs/day
Week Two: Day One (L_3): Mass Loading = 30 x 0.14 x 8.34 = 35.028 lbs/day
Day Two (L_4): Mass Loading = 29 x 0.15 x 8.34 = 36.279 lbs/day
Week Three: Day One (L_5): Mass Loading = 35 x 0.12 x 8.34 = 35.028 lbs/day
Day Two (L_6): Mass Loading = 33 x 0.13 x 8.34 = 35.7786 lbs/day
Week Four: Day One (L_7): Mass Loading = 27 x 0.15 x 8.34 = 33.777 lbs/day
Day Two (L_8): Mass Loading = 29 x 0.14 x 8.34 = 33.8604 lbs/day

Step 2: Compute average mass loadings for each week:

Week One: Average mass loading = $\frac{27.105 + 23.0184}{2} = \frac{50.1234}{2}$ = 25.0617 lbs/day

Week Two: Average mass loading = $\frac{35.028 + 36.279}{2} = \frac{71.307}{2}$ = 35.6535 lbs/day

Week Three: Average mass loading = $\frac{35.028 + 35.7786}{2} = \frac{70.8066}{2}$ = 35.4033 lbs/day

Week Four: Average mass loading = $\frac{33.777 + 33.8604}{2} = \frac{67.6374}{2}$ = 33.8187 lbs/day

Step 3: The highest of the 7-day averages should be reported. This applies in Week Two, where 35.6535 lbs/day is the highest mass loading. After applying precision and rounding rules, enter 36 in the Sample Measurement Box under the "Maximum" column in the "Quantity or Loading" section.

Step 4: Compute 30-day average (monthly average) mass loading =

$$MA = [(L_1 + L_2 + \ldots + L_N) / N)]$$

MA = Current Monthly Average
$L_1, L_2, \ldots L_N$ = Daily mass loading in lbs/day for each day 1, 2, ...N, observed/analytical values are taken
N = Number of observed/analytical value days in the monitoring period.

$$\frac{27.105+23.0184+35.028+36.279+35.028+35.7786+33.777+33.8604}{8} = \frac{259.8744}{8} = 32.4843 \text{ lbs/day}$$

Step 5: Precision rules # 3 and # 4 apply.
Enter 32 in the Sample Measurement Box under the "average" column in the "Quantity or Loading" section.

Example Ten: How to calculate and report the 30-day average nitrogen mass loadings when one sample per day is collected:

The different component parameters of nitrogen have the following concentrations:

Nitrate=0.5 mg/L Nitrite=0.06 mg/L Ammonia=20.25 mg/L TKN = 22.55 mg/L
Organic Nitrogen = Total Kjehldal Nitrogen (TKN) - Ammonia = 22.55mg/L - 20.25mg/L = 2.30 mg/L

Step 1: Sum the concentrations of the different component parameters of nitrogen.
Nitrate + Nitrite + Ammonia + Organic Nitrogen
0.5 mg/L + 0.06 mg/L + 20.25 mg/L + 2.30 mg/L = 23.11 mg/L
Apply precision rule #1. Nitrogen concentration = 23.1 mg/L.

Step 2: Compute the daily mass loading of nitrogen with a daily flow of 100MGD.

Mass Loading (lbs/day) = Q (MGD) x C (mg/L) x 8.34 $\frac{\text{lbs/MG}}{\text{mg/L}}$

Q = Daily flow in MGD for each day observed/analytical values are taken.
C = Parameter concentration in mg/L
8.34 $\frac{\text{lbs/MG}}{\text{mg/L}}$ = unit conversion for weight of one gallon of water in pounds.

Day One (L_1) : Mass Loading = 100 x 23.1 x 8.34 = 19265.4 lbs/day

Step 3: Compute mass loadings for each day of the month using the methods in Step 2.

Step 4: Compute the 30-day (or monthly) average Nitrogen mass loading, using the formula below:

$$MA = [(L_1 + L_2 + ... + L_N) / N)]$$

MA = Current Monthly Average
$L_1, L_2, ... L_N$ = Daily mass loading in lbs/day for each day 1, 2, ...N, observed/analytical values are taken
N = Number of observed/analytical value days in the monitoring period.

Step 5: Apply precision rules # 3 and # 4. Round number and enter in Sample Measurement Box.

Rolling Average Computation:

Example Eleven: How to calculate 12-month rolling average phosphorus mass loadings from collected sample data.

Step 1: Follow the steps 1 - 4, for calculating the 30-day average mass loadings as seen in the 30-day average 5-day BOD mass loadings above (Examples Seven - Nine).

Step 2: Calculate the 12-month rolling average by using the following equation:

$$\frac{MA_C + MA_1 + MA_2 + \ldots + MA_{11}}{12} = 12 \text{ MRA}$$

MA_C = Current monthly average
MA_1 = First prior month's monthly average
MA_2 = Second prior month's monthly average
MA_{11} = Eleventh prior month's monthly average

MA_1 = 2.7 mg/L	MA_7 = 3.0 mg/L
MA_2 = 3.2 mg/L	MA_8 = 3.6 mg/L
MA_3 = 6.0 mg/L	MA_9 = 2.7 mg/L
MA_4 = 6.0 mg/L	MA_{10} = 2.5 mg/L
MA_5 = 3.2 mg/L	MA_{11} = 1.9 mg/L
MA_6 = 2.9 mg/L	MA_{12} = 2.2 mg/L

$$\frac{2.7+3.2+6.0+6.0+3.2+2.9+3.0+3.6+2.7+2.5+1.9+2.2}{12} = \frac{39.9}{12} = 3.325 \text{ mg/L}$$

Step 3: Precision rules # 3 and # 4 apply. Enter 3.3 in the Sample Measurement Box.

Step 4: For the following month, use the current monthly average as well as the previous 11 months.
Current month = MA_{13} = 3.9 mg/L

$$\frac{3.2+6.0+6.0+3.2+2.9+3.0+3.6+2.7+2.5+1.9+2.2+3.9}{12} = \frac{41.1}{12} = 3.425 \text{ mg/L}$$

Step 5: Precision rules # 3 and # 4 apply. Enter 3.4 in the Sample Measurement Box.

Geometric Mean Example:

Example Twelve: How to calculate a 7-day and 30-day geometric mean when the sampling frequency requires only one sample per week.

The measured fecal coliform concentrations for each week are:

Week One:	4 MPN/100ml
Week Two:	6 MPN/100ml
Week Three:	1,100 MPN/100ml
Week Four:	80 MPN/100ml

Step 1: Determine the 7-day geometric mean. This occurs in Week Three, where 1,100 MPN/100ml is the highest concentration. Enter 1100 in the Sample Measurement Box under the "Maximum" column in the "Quality or Concentration" section.

Step 2: Determine the 30-day geometric mean.

Either using:

$$\text{Geometric Mean} = \sqrt[N]{C_1 x C_2 x \ldots x C_N}$$

N = Number of observed/analytical values during the monitoring period.
C_1, C_2, ...C_N = Concentration of observed/analytical value during the monitoring period.

$$\text{Geometric Mean} = \sqrt[4]{4 \times 6 \times 1100 \times 80} = \sqrt[4]{2112000} = 38 \text{ MPN/100ml}$$

or:

$$\text{Geometric Mean} = \text{Log}^{-1}\frac{[\text{Log}C_1 + \text{Log}C_2 + \ldots + \text{Log}C_N]}{N}$$

N = Number of observed/analytical values during the monitoring period.
C_1, C_2, ...C_N = Concentration of observed/analytical value during the monitoring period.

$$\text{Geometric mean} = 10^{\frac{[\text{Log}\,4 + \text{Log}\,6 + \text{Log}\,1100 + \text{Log}\,80]}{4}} = 38 \text{ MPN/100ml}$$

Enter 38 in the Sample Measurement Box under the "Average" column in the "Quality or Concentration" section.

Appendix E

Frequency of Analysis

If the permittee does sampling at a frequency which is not on the list, then he/she should use the following guidelines to determine how to report it: The denominator of the code denotes the sampling period in the permit. For instance, 07 stands for a week, 30 for a month, YR for a year. Choose the appropriate denominator and then insert the number of samples taken in that time as the numerator. The numerator and denominator may not exceed two places.

FREQUENCY OF ANALYSIS	
DESCRIPTION	PCS CODE
INSTNT	01/99
EVERY ½ HR	48/01
HOURLY	24/01
DAILY and/or ONCE/ DSCHDAY and/or DLY WHNDISCHARG	01/01
TWICE/ DAY	02/01
WEEKLY and/or ONCE/DSCHWK and/or WKLY WHN DISCHARG	01/07
TWICE/ WEEK	02/07
ONCE/ 8 DAYS	01/08
ONCE/ 2WEEKS	01/14
ONCE/ MONTH	01/30
ONCE/2 MONTHS	01/60
QTRLY and/or ONCE/ DSCHQTR	01/90
SEMI- ANNUAL	02/YR
ANNUAL	01/YR
THREE/ YEAR	03/YR
CONTINUOUS	99/99
ONCE/ DISCHG	01/DS
ONCE/ BATCH	01/BA
ALTERNTRUN	AL/RN
SEE PERMIT	02/99

Appendix F

Sample Type

The table contains the sample types most often used in New York State SPDES permits. If the exact description of the sample type used is not in the table, the permittee should simply follow the conventions for PCS codes that are in the table.

SAMPLE TYPE	
DESCRIPTION	PCS CODE
GRAB	GR
GRAB-4	G4
GRAB-6	G6
COMPOS	CP
COMP-4 (hour)	04
COMP-6	06
COMP-8	08
COMP24	24
BATCH	22
CALCULATED	CA
CHECK REQUIREMENTS	CR
ESTIMATED	ES
FLOW IND	FI
INSTANTANEOUS	IN
MEASURED	MS
METER	MT
RECORDER	RC
TOTALZ	TM
VISUAL	VI

Appendix G

Discharge Monitoring Report (DMR) Signature Authorization

Your SPDES permit may require you to periodically submit a Discharge Monitoring Report (DMR). The reports must be signed as follows:

1. for a corporation: by a responsible corporate officer. For the purposes of this section, a responsible corporate officer means:
   (i) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making function for the corporation, or

   (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures, or

2. for a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

3. for a municipality, state, federal, or other public agency: by either a principal or executive officer or ranking elected official. A principal executive officer of a federal agency includes:

   (i) the chief executive officer of the agency, or

   (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency; or

4. a duly authorized representative of the person described in items (1), (2), or (3). A person is a duly authorized representative only if
   (i) the authorization is made in writing by a person described in paragraph (1), (2), or (3);

   (ii) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duty authorized representative may thus be either a named individual or any individual occupying a named position);

   (iii) the written authorization is submitted to the Department.

Initial authorization or changes to authorization: If an authorization under paragraph (4) is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (4) must be submitted to the Department prior to, or together with, any reports to be signed by an authorized representative.

THE ATTACHED FORM MUST BE COMPLETED AND SUBMITTED TO THE DEPARTMENT. The person identified on the first line must be person described in paragraph (1), (2), or (3). The form may be used to designate an authorized representative as described in paragraph (4). The permittee must notify the department of any change in the information on the attached form during the life of the permit. We strongly recommend at least two people be identified to sign DMRs to cover such absences as vacations, illness, retirements, etc.

Discharge Monitoring Report (DMR) Signature Authorization Form

Permittee Name________________________ SPDES NO.________________

Facility Name________________________ Date________________

Name of person described in paragraph (1), (2) or (3):	Title:
Signature of person described in paragraph (1), (2), or (3):	Date:

THE PERMITTEE MUST NOTIFY THE DEPARTMENT OF ANY CHANGE IN THIS INFORMATION DURING THE LIFE OF THE PERMIT

Name and/or Title of person responsible for signing and submitting DMR's:	Phone: ( )		
Mailing Name:			
Mailing Address:	City:	State:	Zip Code:

Name and/or Title of person responsible for signing and submitting DMR's:	Phone: ( )		
Mailing Name:			
Mailing Address:	City:	State:	Zip Code:

Name and/or Title of person responsible for signing and submitting DMR's:	Phone: ( )		
Mailing Name:			
Mailing Address:	City:	State:	Zip Code:

Name and/or Title of person responsible for signing and submitting DMR's:	Phone: ( )		
Mailing Name:			
Mailing Address:	City:	State:	Zip Code:

Return To: SPDES Compliance Information Section
Bureau of Water Compliance Programs
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-3506

Appendix H

Glossary

Ambient Monitoring - The collection of information on the physical, chemical and/or biological characteristics of the receiving water in order to describe the current environmental condition.

Annually - Pertaining to an event that occurs one time per year.

Contact Person - Person within the permittee's organization that DEC can call to obtain more information about the DMR.

Cumulative - The accumulation of, or the addition of successive elements.

Daily Discharge - The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass loading, the 'daily discharge' is calculated as the total mass loading of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the 'daily discharge' is calculated as the average measurement of the pollutant over the day.

Discharge Monitoring Report (DMR) - A report submitted by a permittee to the department summarizing the parametric values of the effluent as sampled by the permittee over periods of time as specified in the SPDES permit.

EPA - United States Environmental Protection Agency

Flow Weighted Average - An average calculated to account for the effect of flow.

General Instructions - Instructions printed on the back of each DMR. These instructions are the guidelines set forth by EPA for use in their National permit program. The DMR Manual supercedes these instructions.

Least Precise Number - The observed/analytical value with the fewest significant figures used in a calculation.

Mass Loading - The weight of the pollutant/parameter measured in either lbs/day or kg/day.

Maximum Daily Discharge Limitation - The highest allowable daily discharge.

Method Detection Limit (MDL) - The level at which an analytical procedure is capable of determining with a 99 % probability that the substance is present. The precision at this level is +/- 100%. See the Analytical Detectability and Quantitation Guidelines For Selected Environmental Parameters for further information.

Moving Average - See Rolling Average

NELAP (National Environmental Laboratory Approval Program) - A program legislated under Section 502 of the Public Health Law and administered by the New York State

Department of Health which is responsible for the certification of laboratories performing environmental analyses on samples originating from New York State to ensure the accuracy and reliability of these analyses.

NELAP Certified Laboratory - An environmental laboratory certified under the National Environmental Laboratory Approval Program. All environmental laboratories analyzing samples from the State of New York must be NELAP certified if certification is offered for said analyses. A certified laboratory must be directed by an individual who is qualified through education and experience, performed satisfactorily in at least semi-annual proficiency testing and an annual on-site inspection. Certified laboratories are required to use state-approved analytical methods and adhere to a program of mandated quality assurance/quality control procedures.

Net Value - The net amount of pollutant discharged to the receiving water after deducting the contribution of the pollutant from untreated water taken from the same waterbody for process use.

No Discharge - Absence of the pollutant/parameter referenced to, discharged into waters of the State through an outlet or point source.

Notice of Deletion - An official notice sent to the permittee by the Department, notifying the permittee that the permit has been discontinued.

NYSDEC - New York State Department of Environmental Conservation

Observed/Analytical Values - A single analyzed sample or observed measurement.

Parameter - A characteristic required by the permit to be monitored and reported on a Discharge Monitoring Report.

Parts 750-1 and 750-2 - SPDES regulations which are the legal documents to which the permittee is held responsible for compliance.

Percent (%) Removal - The amount of a substance that is removed by whatever processes, from the influent to the effluent. Expressed as a percent.

Permit Compliance Monitoring - Monitoring and reporting which is required by a SPDES permit.

Permit Requirement - A limit and/or monitoring requirement imposed by a SPDES Permit.

Permittee - A person or entity to which a SPDES permit is issued.

Process Control Monitoring - Internal monitoring conducted to control process performance. Does not require use of an NELAP Certified Laboratory.

Quarterly - Pertaining to an event that occurs four times a year.

Regional Water Engineer - An employee of the Department, one for each of the Department's nine regions, designated to act on the Commissioner's behalf in carrying

out the provisions of Article 17 and rules and regulations adopted pursuant thereto, or the Regional Water Engineer's designated representative. When used in this manual, the Regional Water Engineer is the one designated for the DEC Region in which the permitted facility discharges.

Regional Water Office - The New York State Department of Environmental Conservation is divided into 9 Regions, each having their own Water Office. The appropriate Regional Water Office for a permittee is listed on the SPDES Permit. Each Regional Water Office is supervised by a Regional Water Engineer.

Report of Non-Compliance Event - The written explanation for each instance of non-compliance with SPDES permit requirements. A form or equivalent written explanation containing the information requested in Section 2.5 which is required to be submitted to NYSDEC. Attached as Appendix B.

Rolling Average - An average which is calculated for a moving time period rater than a specific calendar time period.

Sample Measurement - The value which is reported on the DMR for a parameter.

Semi-Annually - Pertaining to an event that happens two times per year.

SPDES - New York State Pollutant Discharge Elimination System

SPDES Permit - A permit to discharge to either the surface waters or ground waters of New York State.

Split Samples - A single sample that is divided into two containers and analyzed separately.

Statistical Base Interval - An interval of time used to calculate a Sample Measurement.

TNTC - Too Numerous To Count, used by laboratories in reporting Fecal and Total Coliform when insufficient dilutions are performed and therefore analysis cannot quantify the result.

Units of Measure - Units used to specify effluent quality, such as milligrams per liter, parts per billion, standard units, etc.

Appendix I

Index

Appendix B

NYSDEC (Division of Water) Report of Noncompliance Event Form

Appendix B

SECTION 1

New York State Department of Environmental Conservation
Division of Water

Report of Noncompliance Event

To: DEC Water Contact _____ ***DEC Region:*** _____

Report Type: ___ *5 Day* ___ *Permit Violation* ___ *Order Violation* ___ *Anticipated Noncompliance* ___ *Bypass/Overflow* ___ *Other*

SECTION 2

SPDES #: NY-_____ **Facility:**_____

Date of noncompliance:_____ **Location (Outfall, Treatment Unit, or Pump Station):**_____

Description of noncompliance(s) and cause(s):_____

Has event ceased? No **If so, when?** _____ **Was event due to plant upset?** No **SPDES limits violated?** No

Start date, time of event:_____, _____ am **End date, time of event:** _____ _____ am

Date, time oral notification made to DEC? _____, _____ am **DEC Official contacted:** _____

Immediate corrective actions:_____

Preventive (long term) corrective actions:_____

SECTION 3

Complete this section if event was a bypass:

Bypass amount: _____ Was prior DEC authorization received for this event? No

DEC Official contacted: _____ Date of DEC approval: _____

Describe event in "Description of noncompliance and cause" area in Section 2. Detail the start and end dates and times in Section 2 also.

SECTION 4

Facility Representative: _____ **Title:**_____ **Date:** _____

Phone #: (_____)_____ **Fax #:** (_____)_____

I Certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with 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.

X _____

Signature of Principal Executive Officer or Authorized Agent

INSTRUCTIONS

The Division of Water developed this standardized form to simplify the reporting of noncompliance events. The SPDES Permit General Conditions, require that certain discharges of untreated or partially treated sewage must be reported orally within either 2 hours[1] or 24 hours and also in writing within five (5) days as required by the appropriate regulation. All other permit noncompliance shall be reported as attachments to the Discharge Monitoring Report (DMR). This form should be used for these events as well as to report noncompliance relating to consent orders, scheduled events and bypass events.

All necessary information can readily be reported to DEC on this form. Additional information required to describe the event can be attached. **Please make additional copies of this form and use as needed**. Instructions are provided below. For questions on form use please contact the appropriate office listed below for the county where your permitted facility is located. Thank you for your cooperation.

Instructions to complete and submit Noncompliance Report

1. Provide facility information and all applicable event details in Sections 1 through 3. Dates should be completed in month/day/year format.

2. Provide your name, title, business phone number, and date report was completed in Section 4. Use additional sheets as needed to provide full detail of the event in Section 2.

3. For 5-day written reports, mail or fax the completed form to the appropriate DEC Regional Office listed below. Attach all other noncompliance reports to the DMR submittal (be sure to attach to each set of DMR copies) or mail separately if related to consent order/scheduled event noncompliance. After hours and weekend reporting of unusual discharge events of other noncompliance must be reported through the DEC Telephone Hotline, which is 1-800-457-7362.

DEC Regional Offices:

REGION 1 Regional Water Engineer NYS SUNY , Bldg. 40 Loop Road Stony Brook, NY 11790-2356 Phone: 631-444-0405 Fax: 631-444-0373 **Counties:** Nassau Suffolk	**REGION 2** Regional Water Engineer One Hunters Point Plaza 47-40 21st St. Long Island City, NY 11101-5407 Phone: 718-482-4900 Fax: 718-482-6516 **Counties:** Queens Bronx New York Richmond Kings	**REGION 3** ** Regional Water Engineer 21 So. Putt Corners Rd New Paltz, NY 12561-1696 Phone: 845-256-3000 Fax: 845-255-0714 **Counties:** Rockland Dutchess Sullivan Orange Ulster Putnam Westchester
REGION 4 Regional Water Engineer 1150 North Westcott Rd. Schenectady, NY 12306-2014 Phone: 518-357-2045 Fax: 518-357-2398 **Counties:** Montgomery Albany Otsego Rensselaer Columbia Delaware Schoharie Greene Schenectady	**REGION 5** ** Regional Water Engineer Route 86, P.O. Box 296 Ray Brook N.Y. 12977-0296 Phone: 518-897-1241 Fax: 518-897-1245 **Counties:** Clinton Hamilton Franklin Essex Saratoga Warren Fulton Washington	**REGION 6** ** Regional Water Engineer Region 6 Suboffice State Office Bldg. 207 Genesee St. Utica, NY 13500 Phone: 315-793-2554 Fax: 315-793-2748 **Counties:** Lewis Jefferson Herkimer Oneida St. Lawrence
REGION 7 Regional Water Engineer 615 Erie Blvd West Syracuse, NY 13204-2400 Phone: 315-426-7506 Fax: 315-426-7402 **Counties:** Madison Cayuga Broome Onondaga Oswego Chenango Tioga Tompkins Cortland	**REGION 8** Regional Water Engineer 6274 East Avon-Lima Rd Avon, NY 14414-9519 Phone: 585-226-2466 Fax: 585-226-2830 **Counties:** Orleans Genessee Chemung Schuyler Seneca Livingston Steuben Ontario Monroe Wayne Yates	**REGION 9** Regional Water Engineer 270 Michigan Avenue Buffalo, NY 14203-2999 Phone: 716-851-7070 Fax: 716-851-7009 **Counties:** Allegany Erie Cattaraugus Niagara Wyoming Chautauqua

** **REGION 3 Suboffice**
Regional Water Staff
200 White Plains Rd.., 5th Floor
Tarrytown, NY 10591-5805
Phone: 914-332-1835
Fax: 914-332-4670

REGION 5 Suboffice
Regional Water Staff
Box 220, Hudson St Extension
Warrensburg, NY 12885-0220
Phone: 518-623-1200
Fax: 518-623-4193

REGION 6 Suboffice
Regional Water Staff
317 Washington St.
Watertown, NY 13601-3787
Phone: 315-785-2513
Fax: 315-785-2422

[1] This requirement reflects proposed pending regulations.

Appendix C

Training Records

Employee Training Log

Training Description:

Review of NYSDEC DMR Manual.

Training Date:

Employee Name:

Employee Signature:

APPENDIX 11 – STORMWATER SAMPLING DATA

Available at the facility