Cargill

November 27, 2013

Cargill Deicing Technology
Cayuga Mine
P.O. Box B
191 Portland Point Road
Lansing, NY 14882

Mr. Matthew Podniesinski
Chief, Resource Development Section
Bureau of Resource Management & Development
Division of Mineral Resources
New York State Department of Environmental Conservation
625 Broadway, Third Floor
Albany, New York 12233-6500

RE: Annual Report for Mine File #709-3-29-0052; Cayuga Salt Mine
Permit ID#0-9999-00075-00001
Towns of Lansing and Ulysses, County of Tompkins
Town of Covert, County of Seneca

Dear Mr. Podniesinski:

Enclosed is an annual report required in accordance with the Special Conditions section (item numbers 12.a through 12.g) of DEC permit number 0-9999-00075/00001. This report will address each reporting requirement separately (12a.1, 12.a.2, etc.) and drawings are attached as required. As requested, all technical data associated with monitoring of mine stability will be sent to J.T. Boyd and Associates with attention to Dr. Vincent Scovazzo. A copy of this report is in the mail to Lucas Mahoney, the Region 7 Mined Land Reclamation Specialist and to Steven Army, the Region 8 Mined Land Reclamation Specialist.

If any questions arise please bring them to my attention at your earliest convenience.

With Best Regards,

Shawn G. Wilczynski

Shawn G. Wilczynski
Mine Manager – Cargill Deicing Technology

Cargill Deicing Technology
191 Portland Point Road
Lansing, New York 14882

Mail Address:
PO Box B
Lansing, New York 14882

Tel (607) 533-4221
Fax (607) 533-4501

Annual Reporting, Monitoring, and Notifications

12.a.1 - Cargill Cayuga Mine Manager Certification:
I, Shawn G. Wilczynski, Mine Manager – Cargill Deicing Technology, certify that all mining activities, to the best of my knowledge, conducted during the reporting period from November 1, 2012 to present were in conformance with the DEC Permit # 0-9999-00075/00001 and the approved plans. No variances occurred and none were reported.

Signed: Shawn G. Wilczynski Date: 11/27/13

12.a.2 - Summary of all non-routine mining incidents:
The Cayuga Mine is not aware of any non-routine incidents associated with the mining, processing, or other mine related activities that would have adversely affected any of the following;

- Mine stability
- Ground and surface water
- Natural resources
- Health, safety, welfare or property of the general public

12.a.3 - 3 Year Mining Plan
A map is attached depicting the current and proposed mining for the next three years.

The Cayuga Mine is currently operating in the northern region of the mine. Active mining is located in panels U-62 and U-68 to the west, and NW-3 to the north. As can be seen on the map, mining is proposed to continue east from U-63 under the land, pending acquisition of mineral rights there. No mining will be done where Cargill does not own the mineral rights or where the Mined Land Reclamation Permit does not allow.

12.a.4 - Summary of In-situ Measurements of Rock Mechanics:
The Cayuga Mine continues to collect mine convergence data in accordance with the guidelines previously established in the Mined Land Use Plan. Convergence stations are typically installed at the "face" of active tunnels in mining panels with a profile of three stations located in the center and edges of the panel. The convergence stations are usually read daily during the first week and then shifted to a weekly schedule until the next profile is installed. The initial profile will then be monitored on a monthly or quarterly schedule for the duration of mining of the panel. After abandonment of the panel, specific convergence stations are monitored quarterly. Currently, there are over 300 convergence stations being monitored. Once the data from the convergence stations has been collected it is evaluated both internally and externally for trends to ensure that each panel and the mine are behaving properly.

Roof sag, measured with extensometers, is also monitored as conditions warrant. This data is reviewed internally and externally as well.

Evaluations of weekly and quarterly convergence data indicate that no unusual trends have been identified and the mine is behaving as expected, with the exception of the U-40B and U12 areas. Since backfill placement in the U40B area has been completed the convergence rates have slowed and are trending back toward historical rates. The U-12 panel also shows higher than normal closure near the breakthrough with SW-2 and near the U-12A sub-panel. These areas are being monitored more

frequently as we try to understand why the rates are increased. Both of these areas in U-12 were backfilled during the 1990's and both areas show a decreasing rate trend at this time.

12.a.5 - Summary of Subsidence Monitoring:
Surface subsidence measurements continue to be performed in accordance with the Mined Land Use Plan. Plans are being made to conduct subsidence surveys of the east shore line in the 2014 calendar year. Past measurements indicate that the mine is behaving as expected with no anomalous subsidence zones.

12.a.6 Source and Volume of Water Inflow Into the Mine and Disposition of Such Water:
The following is a list of sources and associated flow rates of water into the Cayuga Mine:

- Production Shaft (#1 shaft) – 16 gallons per minute
- Ventilation Shaft (#2 shaft) – 4 gallons per minute
- ED Plant Concentrate discharge – 7 gallons per minute

- Total Water Inflow = 27 gallons per minute

All of the water is directed to a settling pond located on the 4-level of the mine. The water is then pumped from the settling pond to abandoned areas at the far east end of 4-level as well as to various areas of the active mine for dust control. Recent volume calculations indicated that at our current rate of storage (about 12,000,000 gallons per year) we have approximately 13 years of storage life remaining on 4-level.

Action plans are in place to continue to reduce the inflow into the mine over the next year. A system for collecting the #1 shaft water inflow and for pumping it to surface for processing has been installed and is now operational. It is being optimized now. Once the processing system is fully operational it is expected to reduce inflow by an additional 6 gpm (~3,000,000 gpm).

12.a.7 - Summary of SPDES Monitoring Data:
There were no exceedances of the SPDES limits for the outfalls or the Waste Water Treatment Plant to report during the time of this report. The data is included here as an attached spreadsheet. If an exceedance occurs it is reported to the DEC in two ways. Once an exceedance has been identified the DEC is informed via telephone of the occurrence. Each event is also captured in the monthly Report of Non-Compliance, which also lists corrective action taken.

12.b - Notification of Non-routine Mining Incidents:
There were no incidents meeting the guidelines for notification as identified in section 12.a.2.

12.c. - MSHA Correspondence Involving Non-routine Mining Incidents:
The Cayuga Mine has not received any citations or correspondence from MSHA regarding non-routine mining incidents as identified in section 12.a.2.

12.d. - Changes in Mining Method:
There have been no changes to the Cayuga Mine layout in the past year.

12.e. - Surface Subsidence:
Surface subsidence surveys continue to be done in accordance with the Mined Land Use Plan. See section 12.a.5 of this report.

12.f. - In-situ Rock Mechanics Measurements:
See section 12.a.4 of this report.

12.g. - Written Citizen Complaints:
No written complaints from citizens were received since the last report (November 2012).

Water Volume Calculation

Ultimate Pond Potential Volume

15-Nov-13

Area	Total Area	Pillar Area	Fillable Area Ft2	Roof Height	Volume	Gallons
Far East Pond	6,598,278	2,831,750	3,766,528	12	45,198,336	338,083,553
Overflow Basin	832,750	64,788	767,962	10	7,679,620	57,443,558
Small Pond #2	128,409	0	128,409	7	898,863	6,723,495
Bowl Edge Pond	Not planned					
Small Pond #1	Not planned					
Southern Pond	Not planned					

Total Gallons	402,250,606
Incoming gallons per year @ 40gpm	21,021,000
Ultimate Pond Life (yrs) as of 6 Feb2001	19
Water added = (46 months/12 mo.) X 21,024,000 = (6 Feb 2001 - 1 Jan 2005)	80,592,000
Water added during 2005 (measured)	16,030,800
Water added during 2006 (measured)	18,272,329
Water added during 2007 (measured)	13,507,200
Water added during 2008 (measured)	10,886,400
Water added during 2009 (estimated)	10,401,624
Water added during 2010 (estimated)	8,894,769
Water added during 2011 (estimated)	10,669,680
Water added during 2012 (flow meter)	11,861,287
Water added during 2013 (flow meter)	15,102,252
Mar 2010 Adjustment (Final fill -1520 elevation to -1540 elevation)	55,753,706
Volume remaining	150,278,559
Remaining Pond Life @ 11861287 gal/yr.	12.7

Pond volumes are calculated by using the "area" function of Auto Cad. A polygon is drawn around the perimeter of the entire pond and Auto Cad is used to calculate the area of the polygon (in square feet). A polygon is drawn around each individual pillar within the pond limits and an area is calculated using Auto Cad. The pillar area's are subtracted from the total area to give the total pond area. Roof heights are determined by visual inspection, historical information where available, and the use of raw estimates. Water added values are estimates from the mine pumping system.

2012 DEC Report Outfall Results (Nov 2012 through Oct 2013)

Red = exceedance

CYANIDE

	OUTFALLS								
	001	002	003	004	005	006	007	008	012
Permit Limit	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Month/Year				Eliminated	Eliminated			Eliminated	
November	0.12	<.01	<.01			<.01	<.01		<.01
December 2012	0.26	<.01	<.01			<.01	<.01		<.01
January 2013	0.11	<.01	<.01			<.01	<.01		<.01
February	0.42	<.01	<.01			<.01	<.01		<.01
March	0.057	<.01	<.01			<.01	<.01		<.01
April	0.05	<.01	<.01			<.01	<.01		<.01
May	0.21	<.01	<.01			<.01	<.01		<.01
June	0.13	<.01	<.01			NF	<.01		<.01
July	0.45	0.031	<.01			<.01	<.01		<.01
August	0.33	<.01	<.01			NF	<.01		<.01
September	0.95	<.01	<.01			<.01	<.01		<.01
October	0.87	<.01	<.01			<.01	<.01		<.01

CHLORIDE

	OUTFALLS								
	001	002	003	004	005	006	007	008	012
Permit Limit	40,000 mg/l	10,000 mg/l	10,000 mg/l			5,000 mg/l	5,000 mg/l		5,000 mg/l
Month/Year				Eliminated	Eliminated			Eliminated	
November	28,000	9,900	3,000			3,100	560		2500
December 2012	35,000	7,700	560			4,100	610		4,600
January 2013	15,000	1,700	1,300			1,300	300		1,800
February	36,000	1,700	1,300			1,700	380		2,800
March	10,000	910	800			1,000	260		1,600
April	26,000	970	810			1,500	350		1,800
May	8,600	910	700			1,100	240		1,200
June	28,000	1,400	650			NF	390		4,300
July	37,000	990	730			1,700	390		4,900
August	31,000	590	720			NF	760		4,367
September	18,000	1,000	570			740	230		1,200
October	25,000	1,700	620			1,000	340		1,500

TDS

	OUTFALLS								
	001	002	003	004	005	006	007	008	012
Permit Limit	80,000 mg/l	40,000 mg/l	40,000 mg/l			10,000 mg/l	10,000 mg/l		10,000 mg/l
Month/Year				Eliminated	Eliminated			Eliminated	
November	40,000	1,500	4,900			4,800	1,100		3,900
December 2012	49,000	12,000	1,800			6,400	1,400		6,800
January 2013	24,000	3,000	2,900			2,400	870		3500
February	5,700	3,300	3,000			3,000	1,000		4,900
March	20,000	2,200	2,400			2,400	840		3,500
April	41,000	2,000	2,000			2,600	1,000		3,100
May	16,000	2,100	2,200			2,300	890		2,500
June	50,000	3,000	2,000			NF	1,400		7,100
July	60,000	2,300	2,400			3,100	1,100		8,200
August	46,000	1,200	1,800			NF	1,600		7,767
September	32,000	2,400	2,000			1,900	890		2,900
October	38,000	3,400	1,900			2,000	1,000		3,000

ZINC **OUTFALL**

	001
Permit Limit	20 mg/l
Month/Year	
November	1.8
December 2012	1.5
January 2013	0.61
February	0.59
March	0.87
April	2.4
May	0
June	0.24
July	0.2
August	0.67
September	0.2
October	0.2

NON CONTACT COOLING WATER

Outfall #014

Permit Limit	Min/Max Intake Water Temp. deg. F.		Min/75 Max Effluent Water Temp. deg. F		500 Max Gpm. Flow Rate Effluent Gross
Month/Year	Maximum 5 degree Increase Intake to Effluent				
November	58.3/58.3		60.3/60.3		282
December 2012	45./45.		50.7/50.7		123
January 2013	42.4/42.4		45.6/45.6		271
February	39.7/39.7		42.1/42.1		83
March	38.4/38.4		40./40.		84.4
April	40.9/40.9		41.8/41.8		327
May	46.4/46.4		47.9/47.9		304
June	65/67.6		65/37.8		303
July	69.5/70.1		70.1/72.0		375
August	71.3/71.3		72.9/72.9		23
September	68.2/68.2		69/69		36
October	67.7/67.7		69/69		36

WASTE WATER TREATMENT PLANT

Outfall #009

Item	**Flow Rate** Avg	**BOD** Avg 30 Day	Max 7 Day	**pH** Min	Max	**Total Suspended Solids** Avg 30 Day	Max 7 Day	**Settleable Solids** Daily max	**Total Residual Chlorine** Max Daily Avg	**Fecal Coliform # per 100 ml** Avg 30 Day	Max 7 Day
Permit Limit Month/Year	Report	30	45	6	9	30	45	3.0 ml/l	1.0 mg/l	Report	Report
November	861	16	16	6.6	7	20	20	<0.1	0.3	0.6	0
December 2012	592	10	10	6.6	6.9	16	16	<0.1	0.8	6	6
January 2013	829	10	10	6.5	8	30	30	<0.1	0.6	6	6
February	1080	11	11	6.6	7.6	14	14	<0.1	0.8	4	4
March	1067	5.4	5.4	6.8	7.2	19	19	<0.1	0.6	10	10
April	1320	22.8	22.8	6.9	7.6	13	13	<0.1	0.5	4	4
May	1169	4.8	4.8	6.9	7.6	28	28	<0.1	0.5	4	4
June	956	11.4	11.4	6.7	7	19	19	<0.1	0.5	4	4
July	1900	9.3	9.3	6.9	7.6	24	24	<0.1	0.6	4	4
August	1008	13.8	13.8	6.8	7.3	15	15	<0.1	0.6	4	4
September	951	19.8	19.8	6.9	7	19	19	<0.1	0.5	48	48
October	547	12	12	6.5	7.1	11	11	<0.1	1.3	48	48