

December 29, 2009

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

Tayung of Longing and Hlysgag, County of Tompkins

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 13.a through 13.g) of DEC permit number 0-9999-00075/00001. This report will address each reporting requirement separately (13a.1, 13.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 second copy of the report is in the mail to Steve Army, the Region 7 Mined Land Reclamation Specialist.

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

With Best Regards,

Russell Givens

Mine Manager - Cargill Deicing Technology

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### Reporting, Monitoring, and Notifications

### 13.a.1 - Cargill Cayuga Mine Manager Certification:

I, Russell S. Givens, Mine Manager – Cargill Deicing Technology, certify that all mining activities, to the best of my knowledge, conducted during the reporting period from January 1, 2009 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:

Date: 12-29-09

### 13.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

On occasion, the underground production crews encounter rock structures that delay or hinder our mining plan. A floor rock roll was encountered in the U-60 panel and it was successfully mined over. A massive rock intrusion was encountered in the E-4 panel so mining was stopped and relocated to the E-5 panel. The U-61 panel was stopped due to floor rock rolls and poor roof conditions.

### 13.a.3 - 3 Year Mining Plan

Attached are maps depicting the current and proposed mining for the next three years.

The Cayuga Mine is currently operating in two different regions of the mine. There are two crews mining south (S-3) along the west shoreline of Cayuga Lake and east (E-5 and E-6) from S-3 toward the east shore. The rest of the mining is located in the northern region of the mine where production crews continue to mine panels (U-58, U-60,) to the west. Upon completion of U-58, panel U-63 will be started. When U-60 mining is completed panel U-62 will be started.

### 13.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 and annually. Currently, there are approximately 180 quarterly and 460 annual convergence stations being monitored. In addition, about 30 closure stations in the abandoned "east workings" are read about every 2 – 5 years. Those were not read during the past year. Once all of the data from the annual convergence stations have been collected it is evaluated both internally and externally for trends to ensure that each panel and the mine is behaving properly.

Evaluation of weekly, quarterly, and annual convergence data indicate that no unusual trends have been identified and the mine is behaving as expected, with the exception of the U-40B area. It has been previously noted that this area is squeezing faster than other areas of the mine of similar layout and age. The closure data indicates that the area is stable, however those rates are higher than desired. Monitoring of this area continues at an increased frequency. The salt "fines" backfilling operation was relocated to U-40B to help further stabilize this region. The purpose of the backfill is to limit the total amount of closure that is possible, thus reducing the total possible surface subsidence. That panel is about 80% backfilled at this time and connecting panels are being backfilled as well. Microseismic monitoring of this region continues as well.

### 13.a.5 - Summary of Subsidence Monitoring:

Surface subsidence measurements continue to be performed in accordance with the Mined Land Use Plan. No subsidence surveys were conducted this year. The results of the last survey were evaluated by RMA and have been presented to John T. Boyd's Dr. Vincent Scovazzo for his review last year. The measurements indicate that the mine is behaving as expected with no anomalous subsidence zones.

# 13.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 on 4-level. Recent volume calculations indicated that at our current rate (about 11,000,000 gallons per year) we have approximately 24 years of disposal life remaining on 4-level. The underground storage pond levels have not been checked this year, so the pond limits are estimated based on the measured flow rates. See the attached underground (4 level) pond map.

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 but is not yet operational awaiting installation of the piping in the shaft. The piping should be completed by April 2011. This should result in a reduction of an additional 6 gpm of inflow (about 3,000.000 gpy).

### 13.a.7 - Summary of SPDES Monitoring Data:

The following is a summary of the past year's outfall results (December 2008 – November 2009) and waste water treatment plant results (December 2008 – November 2009). All outfall exceedances are 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. Several years ago, outfalls 004 and 005 were physically routed into outfall 003 so there is no longer any data from them.

# Outfall results:

# Exceedances are noted in red

# CHLORIDE

Limit	40K	10K	10K	5K	5K	5K	5K	5K		5K	
Outfall Number	001	002	003	004	005	006	007	800		012	
Month/Year											
Dec 2008	7,500	2,500	1,600	Combine w/3&5	Combine w/4&3	2,200	470	Eliminate	ed	1,4	do
Jan 2009	22,000	3,700	2,700	Control of the Contro		2,000	940			<b>5</b> ,0	dρ
Feb	66,000	3,100	2,700			3,790	1,300				<b>V</b> F
March	13,000	2,200	1,100			3,000	460			1,0	<b>d</b> o
April	13,000	1,300	1,100			1,500	380			1,3	do
May	21,000	2,200	410			1,300	370				۱F
June	8,000	2,300	1,200			1,700	640			5,0	do
July	12,000	220	1,300			2,100	350			1,1	<b>d</b> o
August	21,000	NF	1,000			NF	870				<b>V</b> F
Sept	35,000	NF	910			NF	NF			5,9	do
Oct	15,000	3,600	660			1,600	790				<b>V</b> F
Nov	19,000	4,100	4,900			4,600	650			2	40

# CYANIDE

Limit	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		0.1
Outfall Number	001	002	003	004	005	006	007	008		012
Month/Year							· · · · · · · · · · · · · · · · · · ·			
Dec 2008	<.01	<.01	<.01	Combine w/3&5	Combine w/4&3	<.01	<.01	Eliminate	ed	0.024
Jan 2009	0.25	0.022	<.01			<.01	<.01			<.01
Feb	0.42	0.85	0.025			0.03	0.01			NF
Feb (2 <sup>nd</sup> sample)		0.44								
March	0.61	0.021	<.01			<.01	<.01			<.01
April	0.089	0.010	<.01			<.01	<.01			<.01
May	0.081	0.02	<.01			0.013	<.01			NF
June	0.10	<.01	<.01			0.017	<.01			0.01
July	0.031	<.01	<.01			0.074	<.01			<.01
August	0.20	NF	0.01			NF	<.01			NF
Sept	0.28	NF	0.014			NF	NF			0.013
Oct	0.07	0.024	<.01			0.014	<.01			NF
Nov	0.51	0.037	<.01			0.013	<.01			<.01

# Outfall Results Continued:

# TOTAL DISSOLVED SOLIDS

Limit	80K	40K	40K	10K	10K	10K	10K	10K	1014
Outfall Number	001	002	003	004	005	006	007	008	010
Month/Year						-	007	000	U 12
Dec 2008	14,000	5,100	3,400	Combine w/3&5	Combine w/4&3	4,500	1,300	Eliminated	3 300
Jan 2009	46,000	6,600	5,400	SHEED AND THE PARTY OF THE PART		4,100	1,800		8 100
Feb	110,000	13,000	5,600			7,150	3,200		NF
March	23,000	4,200	2,400			5,600	990		2 100
April	23,000	3,000	2,700			3,500	710		2 600
May	34,000	4,100	1,100			2,600	1,200		NF
June	15,000	4,900	2,900			3,700	1,100		9,000
July	21,000	440	3,000			4,000	1,000		2400
August	37,000	NF	2,900			NF	2,000		NE
Sept	55,000	NF	2,500			NF	NF		2 500
Oct	29,000	7,100	2,000			3,600	1,800		NF
Nov	32,000	7,600	8,900			8,500	1,600		160

ZINC	Outfall #001					
Limit	20 mg/l					
Month/Year	001					
Dec 2008	0.03					
Jan 2009	0.3					
Feb.	0.094					
March	0.026					
April	0.43					
May	2.5					
June	0.025					
July	0.063					
August	<.01					
Sept	0.11					
Oct	0.032					
Nov	5.9					

### Outfall Results Continued:

### **NON-CONTACT COOLING WATER Outfall #014**

Limit	NA	75 deg. Max	500 GPM Max
Month/Year		Min/75 Max Effluent Water Temp. deg. F.	500 Max Gpm. Flow Rate Effluent Gross
Dec 2008	35/38	38/40	350
Jan 2009	45/45	55/55	350
Feb.	40/42	42/45	350
March	50/52	52/55	350
April	61/61	62.8/62.8	300
May	59.8/59.8	62/62	300
June	67/67	69/69	360
July	70/70	73/73	350
August	70/73	73/75	350
Sept			
Oct	Pump House turned off for month		
Nov	45/47	45/48	350

Waste Water Treatment Plant Outfall #009

				3					Total Resi	d.	Fecal	Coliform
	Flow Rate	Flow Rate BOD		PH. Tot. Su		sp. Solids	Settleable	Chlorine		# Pe	er 100 ml	
	Ave.	Ave.	Max.	Min.	Max.	Ave.	Max.	Solids	Max.		Ave.	Max.
		30 Day	7 Day Ave			30 Day	7 Day Ave	Daily Max.	Daily Ave	Ш	30 Day	7 Day Ave
Permit Limit		30	45	6.0	9.0	30	45	0.3 mg/l	1.0 mg/l	Ш	Report	Report
Dec. '08	1119	1	1	6.5	7.0	30	30	<0.1	0.5	Ш	25	25
Jan. '09	1495	2	2	6.5	7.8	32	32	<0.1	1.0	Ш	389	389
Feb.	1514	1	1	6.6	7.6	14	14	<0.1	1.2	Ш	65	<b>6</b> 5
March	1110	19	19	7.0	8.1	28	28	<0.1	0.6	Ш	86	86
April	875	22	22	6.5	7.4	30	30	<0.1	0.5		30	30
May	1391	1	1	7.2	7.8	21	21	<0.1	0.7		1	1
June	1295	4	4	6.5	6.9	13	13	<0.1	0.5		1	1
July	833	0	0	6.6	7.2	1	1	<0.1	0.5	Ш	1	1
August	1221	2	2	6.5	7.2	30	30	<0.1	1.5		5	5
Sept	1040	10	10	6.8	7.7	16	16	<0.1	0.6		8	8
Oct	1269	1	1	6.9	7.5	2	2	<0.1	0.9		3	3
Nov	1209	26	26	6.5	7.9	12	12	<0.1	0.9		30	30

13.b - <u>Notification of Non-routine Mining Incidents:</u> See section 13.a.2.

### 13.c. - MSHA Correspondence Involving Non-routine Mining Incidents:

The Cayuga Mine has not received any citations from MSHA regarding non-routine mining Incidents.

#### 13.d. - Changes in Mining Method:

There have been no changes to the Cayuga Mine layout in the past year.

### 13.e. - Surface Subsidence:

Surface subsidence surveys continue to be done in accordance with the Mined Land Use Plan. See section 13.a.5 of this report.

### 13.f. - In-situ Rock Mechanics Measurements:

See section 13.a.4 of this report.

### 13.g. - Written Citizen Complaints:

There have been no written citizen complaints received by Cargill concerning the Cayuga Mine