Roy F. Weston, Inc.
1400 Weston Way
P.O. Box 2653
West Chester, Pennsylvania 19380
610-701-3000 • Fax 610-701-3186
www.rfweston.com

GMM

May 31, 2002

Mr. Glenn May
Division of Environmental Remediation
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203

Re: Progress Report – November 1, 2001 to April 30, 2002
3M Tonawanda, New York Facility
Order on Consent # B9-0369-91-04, Site Code #915148

Dear Mr. May:

In accordance with the referenced Order on Consent (Order) and at 3M's direction, I am submitting the progress report for the 3M Tonawanda, NY facility, for the period extending from November 1, 2001 to April 30, 2002. As required under the Order, the next progress report will be submitted to the New York State Department of Environmental Conservation in November 2002 and cover the six-month period ending October 31, 2002. If you have any comments or questions, please call us.

Very truly yours,

ROY F. WESTON, INC.

Thomas A. Drew, P.G.
Principal Project Manager

cc: Division of Environmental Remediation, Albany (w/o enclosure)
Director, Bureau of Environmental Exposure Investigation, Troy (w/o enclosure)
Division of Environmental Enforcement, Buffalo (w/o enclosure)
C. O'Connor - New York State Department of Health, Buffalo (w/ enclosure)
T. Marks, 3M (w/ enclosure)
G. Stubbs, 3M (w/ enclosure)

PROGRESS REPORT

Site Name and Location:	3M Facility, Tonawanda, New York
Registry Number:	915148
Order on Consent:	B9-0369-91-04
3M Project Contacts:	Tim Marks (3M Corporate) Greg Stubbs (3M Tonawanda)
NYSDEC Project Lead:	Glenn May
Reporting Period:	November 1, 2001 to April 30, 2002

Background

The New York State Department of Environmental Conservation (NYSDEC) issued a Record of Decision (ROD) (Registry No. 915148) for the Minnesota Mining and Manufacturing Company (3M) facility in Tonawanda, New York. This ROD presents the selected remedial action for the Tonawanda facility based on the site's Administrative Record and public input. Following ROD issuance, the NYSDEC reclassified the 3M Tonawanda site from "Class 3 – Does not present a significant threat to the public health or environment – action may be deferred", to "Class 4 – Site properly closed – requires continued management."

3M is implementing the selected ROD remedy, No Further Action with Monitoring, under an Order on Consent (Index # B9-0369-91-04) (Order) according to the NYSDEC-approved Operation and Maintenance Work Plan (O&M Work Plan), which was made part of the Order. The O&M Work Plan calls for:

- Filing a Declaration of Covenants and Restrictions with the property deed at the Erie County Clerk's Office. This was completed and was reported in the initial progress report for the period ending March 31, 2001.

- Performing long-term groundwater monitoring. Involves semiannual sampling of site monitor wells MW-1, MW-2, MW-3, and MW-4 and annual sampling of the two site lysimeters, LY-1 and LY-2, with groundwater samples analyzed for CS_2.

- Inspecting the completed interim remedial measures (IRMs)(includes the CS_2 tank system, and the catch basin and associated swale) and maintaining the integrity of the IRMs.

This progress report provides a summary of the project activities that have occurred from November 1, 2001 to April 30, 2002. In compliance with the Order and agreement reached with the NYSDEC, future progress reports will be submitted to the NYSDEC on a semiannual basis.

1.0 Summary of Activities Performed During the Reporting Period

The following is a summary of activities performed by 3M during the reporting period:

- Daily inspections of the CS_2 tank/secondary containment system and associated truck/rail unloading stations were conducted for evidence of spills, leaks, unpermitted discharges of water containing CS_2, and maintenance requirements. None of these were observed during the daily inspections.

- Periodic visual inspections were conducted prior to and during the transfer of CS_2 into the storage tank for evidence of malfunctioning equipment. No deficiencies were noted.

- The annual inspection of the CS_2 system has been scheduled for June 2002. The NYSDEC will be notified at least 10 days in advance of the inspection.

- During this reporting period, the area around the CS_2 tank was enhanced for security. The fence that was previously damaged by a rail car was repaired, new railway gates were installed, and the vegetation along the fence was cut down to improve visibility along the site perimeter. 3M also improved routine security procedures.

- Site groundwater monitoring was conducted on December 4 and 5, 2001 in accordance with procedures specified in the O&M Plan. The monitoring results are summarized in Section 3.0.

2.0 CS_2 Tank System Deficiencies Identified by 3M and Corrective Actions Taken

- No deficiencies were noted during this reporting period.

3.0 Groundwater Monitoring Results

Summary of Carbon Disulfide Groundwater Analytical Results (mg/L)

Date	Sample ID					
	MW-01	MW-02	MW-03	MW-04	LY-01	LY-02
12/4/01& 12/5/01	ND	ND/ND*	ND	ND	ND	560

Notes: ND – Not detected. The reporting limit for CS_2 is 5 µg/L.
* - Duplicate sample result.

As indicated in the above table, CS_2 was not detected in the groundwater samples collected from site monitor wells MW-01 through MW-04 and lysimeter LY-01 in December 2001. CS_2 was detected in soil pore water collected from lysimeter LY-02 at 560 mg/L, which is consistent with historical analytical results. Additionally, CS_2 was not detected in the field blank or trip blank. A copy of the analytical data package is provided in Attachment A.

4.0 Activities Planned for the Next Reporting Period

The activities planned for the next reporting period (May 1 through October 31, 2002) include:

- Daily and periodic inspections of the CS_2 tank system (includes the containment system and unloading stations).
- Maintenance of the drainage swale, catch basins, and CS_2 tank system, as needed.
- Conduct the annual inspection of the CS_2 tank system and catch basin/surrounding area and conduct a regulatory compliance review pursuant to Order requirements. 3M will notify NYSDEC at least 10 days in advance of the annual field inspection.
- Collection of groundwater samples from monitor wells MW-01 through MW-04 for CS_2 analysis. NYSDEC will be notified in advance of sampling.

Attachment A
Groundwater Analytical Data Package – December 2001

SEVERN TRENT SERVICES

STL Buffalo
10 Hazelwood Drive
Suite 106
Amherst, NY 14228

Tel: 716 691 2600
Fax: 716 691 7991
www.stl-inc.com

December 20, 2001

Mr. Tom Drew
Roy F. Weston, Inc.
1400 Weston Way
West Chester, PA 19380

RE: Analytical Results A01-B995

Dear Mr. Drew:

Please find enclosed analytical results concerning the samples recently submitted by your firm. The pertinent information regarding these analyses is listed below:

Quote #:	NY00-307
Project Name:	3M Tonawanda, NY - Semi-Annual Monitoring
Matrix:	Groundwater
Sample Received:	12/05/01
Sample Date:	12/04-05/01

If you have any questions concerning these data, please contact the Project Manager at (716) 691-2600 and refer to the I.D. number listed below. It has been our pleasure to provide Roy F. Weston, Inc. with environmental testing services. We look forward to serving you in the future.

Sincerely,

STL Buffalo

Mark A. Nemec
Program Manager

MAN/cmw
Enclosure

I.D. #A01-B995
#NY1A8679

This report contains 17 pages which are individually numbered.

SEVERN TRENT SERVICES

000001

METHODOLOGY

The specific methodologies employed in obtaining the enclosed analytical results are indicated on the specific data tables. The method numbers presented refer to the following U.S. Environmental Protection Agency references:

- "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846), Third Edition, Update III, December 1996, U.S. Environmental Protection Agency Office of Solid Waste.

COMMENTS

The enclosed data has been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

The cooler was received at a temperature of 4°C, except sample LY-02 which was received at 14°C.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Dilution Log w/Code Information
For Job A01-B995
For Fraction(s): MV,

Client Sample ID	Lab Sample ID	Parameter (Inorganic)/Method (Organic)	Dilution	Code
LY-02 DL	A1B99508DL	8260/5ML	10000.00	008

000002

Dilution Code Definition:

002 - sample matrix effects
003 - excessive foaming
004 - non-target compounds (TICS) exceeded 5X the total response of one of the Internal Standards
005 - sample matrix resulted in method non-compliance for an Internal Standard
006 - sample matrix resulted in method non-compliance for Surrogate
007 - nature of the TCLP matrix
008 - high concentration of target analyte(s)
009 - sample turbidity
010 - sample color
011 - insufficient volume for lower dilution
012 - sample viscosity
013 - other

DATA COMMENT PAGE

000003

ORGANIC DATA QUALIFIERS

ND or U	Indicates compound was analyzed for, but not detected.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS.
B	This flag is used when the analyte is found in the associated blank, as well as in the sample.
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at the secondary dilution factor.
N	Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where the identification is based on the Mass Spectral library search. It is applied to all TIC results.
P	This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the data page and flagged with a "P".
A	This flag indicates that a TIC is a suspected aldol-condensation product.
1	Indicates coelution.
*	Indicates analysis is not within the quality control limits.

INORGANIC DATA QUALIFIERS

ND or U	Indicates element was analyzed for, but not detected. Report with the detection limit value.
J or B	Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
N	Indicates spike sample recovery is not within the quality control limits.
K	Indicates the post digestion spike recovery is not within the quality control limits.
S	Indicates value determined by the Method of Standard Addition.
M	Indicates duplicate injection results exceeded quality control limits.
W	Post digestion spike for Furnace AA analysis is out of quality control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.
E	Indicates a value estimated or not reported due to the presence of interferences.
H	Indicates analytical holding time exceedance. The value obtained should be considered an estimate.
*	Indicates analysis is not within the quality control limits.
+	Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995.

000004

Sample Data Package

Date: 12/20/2001
Time: 20:01:04

3M Tonawanda, NY - Semi-Anual Monitoring
3M Tonawanda, NY - Semi-Annual Monitoring
METHOD 8260 - CARBON DISULFIDE

Rept: AN0326

Client ID		FIELD BLANK		LY-01		LY-02		LY-02 DL	
Job No / Lab ID		A01-B995	A1B99506	A01-B995	A1B99507	A01-B995	A1B99508	A01-B995	A1B99508DL
Sample Date		12/04/2001		12/05/2001		12/05/2001		12/05/2001	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Carbon Disulfide	UG/L	ND	5.0	ND	5.0	16000 E	5.0	560000 D	8000
IS/SURROGATE(S)									
Chlorobenzene-D5	%	63	50-200	68	50-200	64	50-200	83	50-200
1,4-Difluorobenzene	%	61	50-200	66	50-200	67	50-200	84	50-200
1,4-Dichlorobenzene-D4	%	57	50-200	65	50-200	61	50-200	69	50-200
Toluene-D8	%	104	77-115	106	77-115	105	77-115	108	77-115
p-Bromofluorobenzene	%	102	77-112	104	77-112	107	77-112	104	77-112
1,2-Dichloroethane-D4	%	121	84-126	118	84-126	114	84-126	120	84-126

Client ID		MW-01		MW-02		MW-02 DUP		MW-03	
Job No / Lab ID		A01-B995	A1B99501	A01-B995	A1B99502	A01-B995	A1B99503	A01-B995	A1B99504
Sample Date		12/04/2001		12/05/2001		12/05/2001		12/04/2001	
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Carbon Disulfide	UG/L	ND	5.0	ND	5.0	ND	5.0	ND	5.0
IS/SURROGATE(S)									
Chlorobenzene-D5	%	59	50-200	62	50-200	64	50-200	66	50-200
1,4-Difluorobenzene	%	58	50-200	61	50-200	63	50-200	64	50-200
1,4-Dichlorobenzene-D4	%	53	50-200	58	50-200	57	50-200	62	50-200
Toluene-D8	%	104	77-115	104	77-115	106	77-115	106	77-115
p-Bromofluorobenzene	%	98	77-112	103	77-112	102	77-112	103	77-112
1,2-Dichloroethane-D4	%	120	84-126	118	84-126	122	84-126	122	84-126

000005

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 12/20/2001
Time: 20:01:04

3M Tonawanda, NY - Semi-Anual Monitoring
3M Tonawanda, NY - Semi-Annual Monitoring
METHOD 8260 - CARBON DISULFIDE

Rept: AN0326

Client ID		MW-04							
Job No	Lab ID	A01-B995	A1B99505						
Sample Date		12/04/2001							
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Carbon Disulfide	UG/L	ND	5.0	NA		NA		NA	
IS/SURROGATE(S)									
Chlorobenzene-D5	%	68	50-200	NA		NA		NA	
1,4-Difluorobenzene	%	67	50-200	NA		NA		NA	
1,4-Dichlorobenzene-D4	%	63	50-200	NA		NA		NA	
Toluene-D8	%	106	77-115	NA		NA		NA	
p-Bromofluorobenzene	%	101	77-112	NA		NA		NA	
1,2-Dichloroethane-D4	%	121	84-126	NA		NA		NA	

000069

NA = Not Applicable ND = Not Detected

STL Buffalo

Chronology and QC Summary Package

Date: 12/20/2001
Time: 20:01:50

3M Tonawanda, NY - Semi-Anual Monitoring
3M Tonawanda, NY - Semi-Annual Monitoring
METHOD 8260 - CARBON DISULFIDE

Rept: AN0326

Client ID Job No Lab ID Sample Date		VBLK15 A01-B995 A1B99512		VBLK75 A01-B995 A1B99510					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Carbon Disulfide	UG/L	ND	5.0	ND	5.0	NA		NA	
IS/SURROGATE(S)									
Chlorobenzene-D5	%	88	50-200	87	50-200	NA		NA	
1,4-Difluorobenzene	%	92	50-200	86	50-200	NA		NA	
1,4-Dichlorobenzene-D4	%	75	50-200	84	50-200	NA		NA	
Toluene-D8	%	108	77-115	104	77-115	NA		NA	
p-Bromofluorobenzene	%	104	77-112	104	77-112	NA		NA	
1,2-Dichloroethane-D4	%	110	84-126	107	84-126	NA		NA	

NA = Not Applicable ND = Not Detected

Date: 12/20/2001
Time: 20:01:50

3M Tonawanda, NY - Semi-Anual Monitoring
3M Tonawanda, NY - Semi-Annual Monitoring
METHOD 8260 - CARBON DISULFIDE

Rept: AN0326

Client ID Job No Lab ID Sample Date		MSB A01-B995 A1B99511		MSB A01-B995 A1B99513					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Carbon Disulfide	UG/L	ND	5.0	ND	5.0	NA		NA	
IS/SURROGATE(S)									
Chlorobenzene-D5	%	94	50-200	88	50-200	NA		NA	
1,4-Difluorobenzene	%	94	50-200	94	50-200	NA		NA	
1,4-Dichlorobenzene-D4	%	91	50-200	75	50-200	NA		NA	
Toluene-D8	%	104	77-115	104	77-115	NA		NA	
p-Bromofluorobenzene	%	103	77-112	104	77-112	NA		NA	
1,2-Dichloroethane-D4	%	103	84-126	108	84-126	NA		NA	

000009

NA = Not Applicable ND = Not Detected

STL Buffalo

Date: 12/20/2001
Time: 20:01:50

3M Tonawanda, NY - Semi-Anual Monitoring
3M Tonawanda, NY - Semi-Annual Monitoring
METHOD 8260 - CARBON DISULFIDE

Rept: AN0326

Client ID Job No Lab ID Sample Date		TRIP BLANK A01-B995 A1B99509 12/04/2001							
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Carbon Disulfide	UG/L	ND	5.0	NA		NA		NA	
IS/SURROGATE(S)									
Chlorobenzene-D5	%	60	50-200	NA		NA		NA	
1,4-Difluorobenzene	%	59	50-200	NA		NA		NA	
1,4-Dichlorobenzene-D4	%	54	50-200	NA		NA		NA	
Toluene-D8	%	107	77-115	NA		NA		NA	
p-Bromofluorobenzene	%	99	77-112	NA		NA		NA	
1,2-Dichloroethane-D4	%	122	84-126	NA		NA		NA	

000040

NA = Not Applicable ND = Not Detected

STL Buffalo

METHOD 8260 - CARBON DISULFIDE

Client Sample ID Job No & Lab Sample ID	FIELD BLANK A01-B995 A1B99506	LY-01 A01-B995 A1B99507	LY-02 A01-B995 A1B99508	LY-02 DL A01-B995 A1B99508DL	MW-01 A01-B995 A1B99501
Sample Date	12/04/2001 16:55	12/05/2001 08:00	12/05/2001 08:15	12/05/2001 08:15	12/04/2001 17:05
Received Date	12/05/2001 08:40	12/05/2001 08:40	12/05/2001 08:40	12/05/2001 08:40	12/05/2001 08:40
Extraction Date					
Analysis Date	12/12/2001 03:06	12/12/2001 04:07	12/12/2001 04:37	12/18/2001 12:45	12/12/2001 00:32
Extraction HT Met?	-	-	-	-	-
Analytical HT Met?	YES	YES	YES	YES	YES
Sample Matrix	GW	GW	GW	GW	GW
Dilution Factor	1.0	1.0	1.0	10000.0	1.0
Sample wt/vol	0.005 LITERS	0.005 LITERS	0.005 LITERS	0.005 LITERS	0.005 LITERS
% Dry					

000011

NA = Not Applicable

METHOD 8260 - CARBON DISULFIDE

Client Sample ID Job No & Lab Sample ID	MW-02 A01-B995 A1B99502	MW-02 DUP A01-B995 A1B99503	MW-03 A01-B995 A1B99504	MW-04 A01-B995 A1B99505	
Sample Date	12/05/2001 07:45	12/05/2001 07:45	12/04/2001 15:45	12/04/2001 14:25	
Received Date	12/05/2001 08:40	12/05/2001 08:40	12/05/2001 08:40	12/05/2001 08:40	
Extraction Date					
Analysis Date	12/12/2001 01:03	12/12/2001 01:34	12/12/2001 02:04	12/12/2001 02:35	
Extraction HT Met?	-	-	-	-	
Analytical HT Met?	YES	YES	YES	YES	
Sample Matrix	GW	GW	GW	GW	
Dilution Factor	1.0	1.0	1.0	1.0	
Sample wt/vol	0.005 LITERS	0.005 LITERS	0.005 LITERS	0.005 LITERS	
% Dry					

000012

NA = Not Applicable

METHOD 8260 - CARBON DISULFIDE

Client Sample ID Job No & Lab Sample ID	TRIP BLANK A01-B995 A1B99509				
Sample Date	12/04/2001 12:00				
Received Date	12/05/2001 08:40				
Extraction Date					
Analysis Date	12/12/2001 03:36				
Extraction HT Met?	-				
Analytical HT Met?	YES				
Sample Matrix	WATER				
Dilution Factor	1.0				
Sample wt/vol	0.005 LITERS				
% Dry					

NA = Not Applicable

METHOD 8260 - CARBON DISULFIDE

Client Sample ID Job No & Lab Sample ID	MSB A01-B995 A1B99511	MSB A01-B995 A1B99513			
Sample Date					
Received Date					
Extraction Date					
Analysis Date	12/11/2001 22:30	12/18/2001 15:03			
Extraction HT Met?	-	-			
Analytical HT Met?	-	-			
Sample Matrix	WATER	WATER			
Dilution Factor	1.0	1.0			
Sample wt/vol	0.005 LITERS	0.005 LITERS			
% Dry					

NA = Not Applicable

METHOD 8260 - CARBON DISULFIDE

Client Sample ID Job No & Lab Sample ID	VBLK15 A01-B995 A1B99512	VBLK75 A01-B995 A1B99510			
Sample Date					
Received Date					
Extraction Date					
Analysis Date	12/18/2001 10:46	12/11/2001 23:00			
Extraction HT Met?	-	-			
Analytical HT Met?	-	-			
Sample Matrix	WATER	WATER			
Dilution Factor	1.0	1.0			
Sample wt/vol	0.005 LITERS	0.005 LITERS			
% Dry					

000015

NA = Not Applicable

000016

Chain of Custody

Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (0700)

Client: Greg Flasinski / WESTON	Project Manager: Mark Nemec	Date: 12/5/01	Chain of Custody Number: 111997
Address: 1400 WESTON WAY	Telephone Number (Area Code)/Fax Number: (610) 701-7393	Lab Number:	Page ____ of ____
City: WEST CHESTER / State: PA / Zip Code: 19380	Site Contact:	Lab Contact:	
Project Name and Location (State): 3M TONAWANDA, NY	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: 02181-086-009			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres	H2SO4	HNOS	HCl	NaOH	ZnAc/NaOH	Analysis: CS2	Special Instructions/ Conditions of Receipt
MW-01	12/4/01	1705		✓						✓			✓	
MW-02	12/5/01			✓						✓			✓	
MW-02 Dup	12/5/01			✓						✓			✓	
MW-03	12/4/01	1545		✓						✓			✓	
MW-04		1425		✓						✓			✓	
Field Blank		1655		✓						✓			✓	
Trip Blank		1200		✓						✓			✓	
LY-01	12/5/01	800		✓						✓			✓	
LY-02	12/5/01	815		✓						✓			✓	LY-02 HOT

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other ____

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By			1. Received By: C. Myer	12-5-01	8:30 AM
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: CS2 - detection limit 5 ppb

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy