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Interim Corrective Measures Completion Report

SWMU 12 Soil Area

Cohoes, New York

April 2013

Certification

I, Daniel J Loewenstein, a current NYS registered professional engineer, certify that the work completed for construction of the ICM was observed by representatives of the Norlite Corporation and that the extent, minimum thickness, and type of asphalt used for the SWMU 12 Interim Corrective Measures conform to the DER-approved SWMU 12 Interim Corrective Measures Work Plan.

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Andrew R. Vitolins, P.G.
Principal Scientist

Interim Corrective Measures Completion Report
SWMU 12 Soil Area
Cohoes, New York Rail Yard

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April 2013

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1. Introduction

As part of a Resource Conservation and Recovery Act (RCRA) 6NYCRR Part 373 Permit Application, the Norlite Corporation (Norlite) conducted a RCRA Facility Investigation (RFI) of its facility in Cohoes, New York (Figure 1). During the RFI, nine surface soil samples were collected from the Solid Waste Management Unit (SWMU) 12 area. SWMU 12 covers the transformer pad area located to the south of the rotary kilns in the central portion of the facility. Access to the transformer pad area is extremely limited due to the presence of surrounding structures and buried high-voltage utilities, therefore only surface soil samples could be collected in the area surrounding the concrete transformer pad. The analytical results for surface soil samples collected during the RFI showed that concentrations of RCRA-listed metals were present at concentrations greater than Commercial and, in some case, Industrial Soil Cleanup Objectives (SCOs). The analytical results for the soil samples collected during the RFI are presented in Table 1.

In accordance with the approved Work Plan, a supplemental RFI was conducted to confirm the results from the RFI. During the supplemental RFI, additional surface soil samples were collected from the SWMU 12 area. Two rounds of sampling were conducted. The first sampling event was conducted in August 2012, and the second event was conducted in September 2012 to complete the delineation of areas with surface soil concentrations greater than the Part 375 Industrial SCOs.

Eleven surface soil samples were collected in the SWMU 12 area during the supplemental RFI (Figure 2). Soil samples collected from one of the locations (SWMU 12 SB-19) contained mercury at a concentration of 8.28 mg/kg, which is greater than the Industrial SCO (5.7 mg/kg). A blind field duplicate sample collected from SWMU 12 SB-25 contained arsenic at a concentration of 17.5 mg/kg, which is greater than the Industrial SCO of 16 mg/kg; however, the arsenic concentration for the sample SWMU SB-25 (5.11 mg/kg) did not exceed the SCO. Analytical results for soil samples collected during the Supplemental RFI are summarized in Table 2.

Based on the results of the sampling, an Interim Corrective Measure (ICM) was conducted to minimize the migration of surface soil in the SWMU 12 transformer pad area. The ICM was conducted in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved Work Plan (ARCADIS 2012). This ICM Completion Report summarizes the ICM activities conducted.

1.1. Site Description

The Norlite facility (site) consists of six parcels with a total land area of approximately 220 acres, located in the southern portion of the City of Cohoes and the eastern portion of the Town of Colonie. The majority of the site consists of a shale quarry and undeveloped land, which are located in the Town of Colonie. Most of the manufacturing at the site occurs in the approximately 40 acres in the City of Cohoes. The main entrance to the site is on Saratoga Street (New York State Route 32).

Property use in the vicinity of the site includes agriculture, residential, and commercial uses. The site is bordered to the north by undeveloped land and residential areas, to the east by active Canadian Pacific (CP) railroad track, residential houses and some commercial businesses, to the south by residential and commercial areas, and to the west by undeveloped land, agricultural areas, and a few houses.

The site has been operating as an expanded shale lightweight aggregate plant since the early 1950s. Manufacturing activities conducted at the site include aggregate crushing, screening, conveying, operation of two aggregate kilns equipped with air pollution control systems (APCS), and low grade fuel (LGF) processing. Additional facilities at the site include a wastewater treatment facility, an LGF storage area, maintenance buildings, facilities for laboratory analysis, and office space.

2. Interim Corrective Measure Objective and Implementation

2.1. Interim Corrective Measure Objective

The objective of the SWMU 12 ICM was to minimize the migration of surface soil in the SWMU 12 transformer pad area through the installation of an asphalt cap. The Work Plan for the SWMU 12 ICM was approved by the NYSDEC on October 24, 2012.

2.2. Interim Corrective Measure Implementation

The corrective measures for the SWMU 12 soil area consisted of capping the area containing RCRA-listed metals at concentrations greater than the NYSDEC Industrial SCOs. On November 19, 2012, the area was covered with a 2.5-inch impermeable asphalt cap, constructed of New York State-approved Type 6 Top Course. This cap extended beyond the area of concern and covered 3,070 square feet. Minimal site preparation was required prior to installation of the asphalt cap. No soil excavation was necessary to implement the ICM. The capped area is shown on Figure 2. The coordinates for the boundaries of the capped area are presented in Table 3. Photographs of the ICM are included in Appendix A.

3. Conclusion

The SWMU 12 ICM successfully capped the area where surface soil samples exceeded the Part 375 Industrial SCOs. However, since the ICM involves an engineering control, an institutional control and site management plan will be needed in the future as part of the final corrective action for the site.

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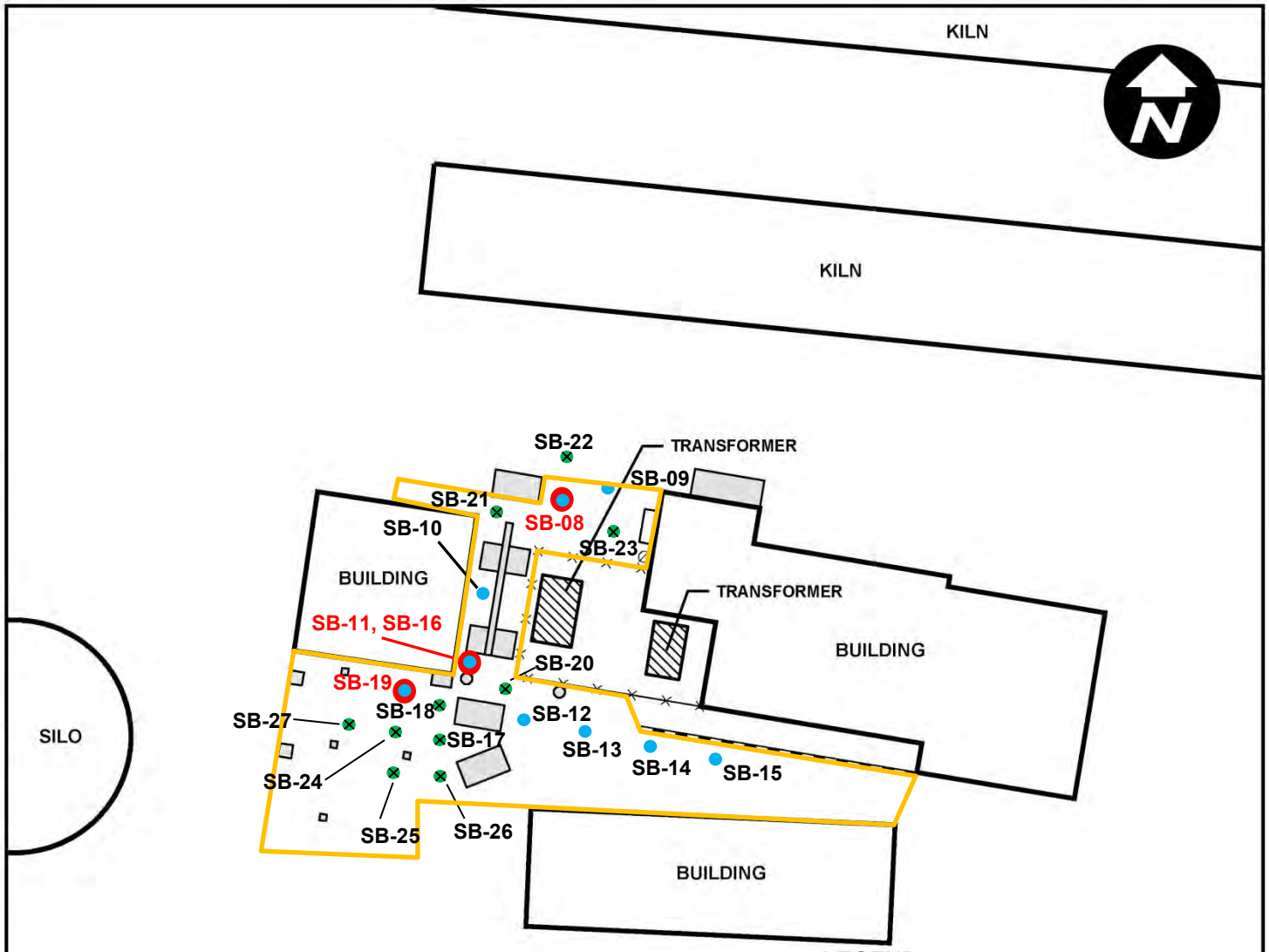
COHOES, NEW YORK

RCRA FACILITY INVESTIGATION

SITE MAP

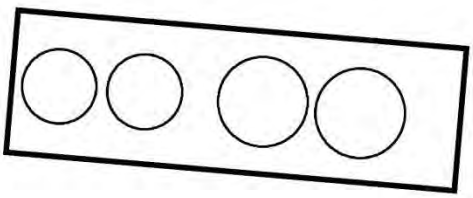
ARCADIS-US

JUNE 2012
FIGURE 1



Note: **Red** highlighted locations exceeded the 6 NYCRR Park 375 Industrial Soil Cleanup Objective for either Mercury or Arsenic.

Asphalt Cap Area



LEGEND

- ADDITIONAL SURF. SOIL LOCATION
- RFI SURFACE SOIL LOCATION
- UTILITY POLE
- FENCE LINE
- SHEETPIPE WALL
- TANK
- TRANSFORMER
- BUILDING
- CONCRETE FOOTING

0 25 50

SCALE IN FEET

NORLITE CORPORATION
628 SARATOGA STREET
COHOES, NEW YORK

SWMU 12 – TRANSFORMER AREA
INTERIM CORRECTIVE MEASURES
ASPHALT CAP LIMITS

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FIGURE
2

G:\PROJECT\02475019.0000\RFI Supplemental\Transformer Area SMWU 12\SWMU 12 Site Figure w new locations
CITY: KNOXVILLE DIV: ENV DB: A.SMITH PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane New York East FIPS 3101 Feet
G:\GIS\NoriteCorporation\MapDocs\SiteMap.mxd PLOTTED: 5/2/2012 5:15:26 PM BY: ASmith

Table 1 (RFI Table 5-7.1)
Summary of SWMU 12 RFI Soil Analytical Results
Metals
Norlite Corporation, Cohoes, New York

Client Sample ID: Lab Sample ID: Date Sampled: Matrix:	Units	Part 375 Residential SCO	Part 375 Industrial SCO	NF-SWMU12-SB-01(0-1) M97349-12 40563 Soil	NF-SWMU12-SB-01(1-3) M97349-13 40563 Soil	NF-SWMU12-SB-01(3-5) M97349-14 40563 Soil	NF-SWMU12-SB-01(5-7) M97349-15 40563 Soil	NF-SWMU12-SB-02(0-1) M97349-16 40563 Soil
Arsenic	mg/kg	16	16	7.3	7.3	8	7.4	9.6
Barium	mg/kg	350	10000	181	115	145	85.3	147
Cadmium	mg/kg	2.5	60	0.16 B	0.16 B	0.10 B	0.15 B	0.22 B
Chromium	mg/kg	36	6800	21.3	19.4	21.4	18.4	22.9
Lead	mg/kg	400	3900	17	16	15.4	15.6	21.5
Mercury	mg/kg	0.81	5.7	0.036	0.030 B	0.026 B	0.034 B	0.029 B
Selenium	mg/kg	36	6800	0.30 B	0.29 B	0.22 B	0.35 B	0.37 B
Silver	mg/kg	36	6800	0.077 B	0.055 B	0.093 B	0.091 B	0.11 B

Notes:
Table reproduced from RFI Report (EBI 2012)

Table 1 (RFI Table 5-7.1)
Summary of SWMU 12 RFI Soil Analytical Results
Metals
Norlite Corporation, Cohoes, New York

Client Sample ID: Lab Sample ID: Date Sampled: Matrix:	Units	Part 375 Residential SCO	Part 375 Industrial SCO	NF-SWMU12-SB-02(1-3) M97349-17 40563 Soil	NF-SWMU12-SB-02(3-5) M97349-18 40563 Soil	NF-SWMU12-SB-03(0-1) M97350-5 40564 Soil	NF-SWMU12-SB-03(1-3) M97350-6 40564 Soil	NF-SWMU12-SB-03(3-5) M97350-7 40564 Soil
Arsenic	mg/kg	16	16	9.4	10	11.2	9.1	8.5
Barium	mg/kg	350	10000	173	159	167	152	163
Cadmium	mg/kg	2.5	60	0.17 B	0.21 B	0.15 B	0.19 B	0.20 B
Chromium	mg/kg	36	6800	20.9	24.4	21.2	20.7	22.6
Lead	mg/kg	400	3900	19.1	19.9	18.8	20.7	22.6
Mercury	mg/kg	0.81	5.7	0.033	0.035	0.034	0.047	0.074
Selenium	mg/kg	36	6800	0.28 B	0.28 B	0.47 B	0.35 B	0.38 B
Silver	mg/kg	36	6800	0.072 B	0.10 B	0.17 B	0.17 B	0.12 B

Notes:
Table reproduced from RFI Report (EBI 2012)

Table 1 (RFI Table 5-7.1)
Summary of SWMU 12 RFI Soil Analytical Results
Metals
Norlite Corporation, Cohoes, New York

Client Sample ID: Lab Sample ID: Date Sampled: Matrix:	Units	Part 375 Residential SCO	Part 375 Industrial SCO	NF-SWMU12-SB-03(5-7) M97350-8 40564 Soil	NF-SWMU12-SB-03(7-9) M97350-9 40564 Soil	NF-SWMU12-SB-04(0-1) M97327-1 40563 Soil	NF-SWMU12-SB-04(1-3) M97327-2 40563 Soil	NF-SWMU12-SB-04(3-5) M97327-3 40563 Soil
Arsenic	mg/kg	16	16	8.3	6.8	13.5	10.1	10.6
Barium	mg/kg	350	10000	153	170	151	97.8	138
Cadmium	mg/kg	2.5	60	0.19 B	0.18 B	0.30 B	0.21 B	0.23 B
Chromium	mg/kg	36	6800	22.1	21.4	21.8	20.5	20.9
Lead	mg/kg	400	3900	22.7	15.7	30.3	22	21.2
Mercury	mg/kg	0.81	5.7	0.056	0.037	0.074	0.091	0.67
Selenium	mg/kg	36	6800	0.40 B	0.21 B	0.54 B	0.32 B	0.15 U
Silver	mg/kg	36	6800	0.16 B	0.12 B	0.049 U	0.050 U	0.049 U

Notes:
Table reproduced from RFI Report (EBI 2012)

Table 1 (RFI Table 5-7.1)
Summary of SWMU 12 RFI Soil Analytical Results
Metals
Norlite Corporation, Cohoes, New York

Client Sample ID:	Units	Part 375 Residential SCO	Part 375 Industrial SCO	NF-SWMU12-SB-05(0-1)	NF-SWMU12-SB-05(1-3)	NF-SWMU12-SB-05(3-5)	NF-SWMU12-SB-05(5-7)	NF-SWMU12-SB-06(0-1)
Lab Sample ID:				M97350-1	M97350-2	M97350-3	M97350-4	M97327-4
Date Sampled:				40564	40564	40564	40564	40563
Matrix:				Soil	Soil	Soil	Soil	Soil
Arsenic	mg/kg	16	16	8.8	9.2	9.9	10.6	9.1
Barium	mg/kg	350	10000	111	85.7	101	94.2	143
Cadmium	mg/kg	2.5	60	0.15 B	0.18 B	0.17 B	0.17 B	0.24 B
Chromium	mg/kg	36	6800	20.8	22.9	21.3	22.5	20.3
Lead	mg/kg	400	3900	17.9	17.8	19.5	22.8	14.9
Mercury	mg/kg	0.81	5.7	0.049	0.055	0.068	0.07	0.026 B
Selenium	mg/kg	36	6800	0.19 B	0.32 B	0.26 B	0.33 B	0.35 B
Silver	mg/kg	36	6800	0.12 B	0.076 B	0.094 B	0.17 B	0.051 B

Notes:
Table reproduced from RFI Report (EBI 2012)

Table 1 (RFI Table 5-7.1)
Summary of SWMU 12 RFI Soil Analytical Results
Metals
Norlite Corporation, Cohoes, New York

Client Sample ID:	Units	Part 375 Residential SCO	Part 375 Industrial SCO	NF-SWMU12-SB-06(1-3)	NF-SWMU12-SB-06(3-5)	NF-SWMU12-SB-07(0-1)	NF-SWMU12-SB-07(1-3)	NF-SWMU12-SB-07(3-5)
Lab Sample ID:				M97327-5	M97327-6	M97327-7	M97327-8	M97327-9
Date Sampled:				40563	40563	40563	40563	40563
Matrix:				Soil	Soil	Soil	Soil	Soil
Arsenic	mg/kg	16	16	10.2	10.3	9.4	7.8	6
Barium	mg/kg	350	10000	123	108	186	132	137
Cadmium	mg/kg	2.5	60	0.24 B	0.26 B	0.57	0.23 B	0.15 B
Chromium	mg/kg	36	6800	20.4	21.8	20.6	19.6	20.7
Lead	mg/kg	400	3900	19.4	30.5	17	17.6	14.1
Mercury	mg/kg	0.81	5.7	0.058	0.24	0.026 B	0.029 B	0.035 B
Selenium	mg/kg	36	6800	0.16 U	0.52 B	0.20 B	0.23 B	0.22 B
Silver	mg/kg	36	6800	0.051 U	0.053 U	0.048 U	0.050 U	0.055 U

Notes:
Table reproduced from RFI Report (EBI 2012)

Table 1 (RFI Table 5-7.1)
Summary of SWMU 12 RFI Soil Analytical Results
Metals
Norlite Corporation, Cohoes, New York

Client Sample ID: Lab Sample ID: Date Sampled: Matrix:	Units	Part 375 Residential SCO	Part 375 Industrial SCO	NF-SWMU12-SB-07(5-7) M97327-10 40563 Soil	NF-SWMU12-SB-08(0-0.5) M97502-32 40545 Soil	NF-SWMU12-SB-09(0-0.5) M97502-33 40545 Soil	NF-SWMU12-SB-10(0-0.5) M97502-34 40545 Soil	NF-SWMU12-SB-11(0-0.5) M97502-35 40545 Soil
Arsenic	mg/kg	16	16	9.9	17.1	12.6	15.9	19.5
Barium	mg/kg	350	10000	155	312	269	347	432
Cadmium	mg/kg	2.5	60	0.26 B	2.4	0.78	1.8	3.4
Chromium	mg/kg	36	6800	21.3	41	30.7	39.9	50.9
Lead	mg/kg	400	3900	22.1	48.8	29.7	76.4	98.6
Mercury	mg/kg	0.81	5.7	0.030 B	1.2	0.47	2.6	6.9
Selenium	mg/kg	36	6800	0.49 B	1	0.24 B	1.2	2.1
Silver	mg/kg	36	6800	0.052 U	1.7	0.54	2.7	6.6

Notes:
Table reproduced from RFI Report (EBI 2012)

Table 1 (RFI Table 5-7.1)
Summary of SWMU 12 RFI Soil Analytical Results
Metals
Norlite Corporation, Cohoes, New York

Client Sample ID: Lab Sample ID: Date Sampled: Matrix:	Units	Part 375 Residential SCO	Part 375 Industrial SCO	NF-SWMU12-SB-16(0-0.5) M97502-36 40545 Soil	NF-SWMU12-SB-12(0-0.5) M97502-37 40545 Soil	NF-SWMU12-SB-13(0-0.5) M97502-38 40545 Soil	NF-SWMU12-SB-14(0-0.5) M97502-39 40545 Soil	NF-SWMU12-SB-15(0-0.5) M97502-40 40545 Soil
Arsenic	mg/kg	16	16	22	11.9	14.4	15.3	14.3
Barium	mg/kg	350	10000	475	259	182	216	172
Cadmium	mg/kg	2.5	60	4.1	0.97	0.65	0.71	0.64
Chromium	mg/kg	36	6800	54.6	27.2	31.4	48.7	38.2
Lead	mg/kg	400	3900	124	33.3	32.5	33.3	33.5
Mercury	mg/kg	0.81	5.7	4.9	0.78	0.31	0.53	0.52
Selenium	mg/kg	36	6800	2.7	0.16 B	0.17 B	0.18 U	0.18 U
Silver	mg/kg	36	6800	7.7	0.54	0.44	0.7	0.59

Notes:
Table reproduced from RFI Report (EBI 2012)

Table 2
Summary of Analytical Results for SWMU 12 Supplemental RFI Soil Sampling
Norlite Corporation
Cohoes, New York

Sample ID Depth (ft) Sampling Date Matrix Units	6 NYCRR Part 375 Industrial Soil Cleanup Objective mg/kg	SWMU 12 SB-17 0-0.5 8/10/2012 soil mg/kg	SWMU 12 SB-18 0-0.5 8/10/2012 soil mg/kg	SWMU 12 SB-19 0-0.5 8/10/2012 soil mg/kg	SWMU 12 SB-20 0-0.5 8/10/2012 soil mg/kg	SWMU 12 SB-21 0-0.5 8/10/2012 soil mg/kg	SWMU 12 SB-X dup of SB-21 0-0.5 8/10/2012 soil mg/kg	SWMU 12 SB-22 0-0.5 8/10/2012 soil mg/kg	SWMU 12 SB-23 0-0.5 8/10/2012 soil mg/kg	SWMU 12 SB-24 0-0.5 9/24/2012 soil mg/kg	SWMU 12 SB-25 0-0.5 9/24/2012 soil mg/kg	SWMU 12 SB-X2 dup of SB-25 0-0.5 9/24/2012 soil mg/kg	SWMU 12 SB-26 0-0.5 9/24/2012 soil mg/kg	SWMU 12 SB-27 0-0.5 9/24/2012 soil mg/kg
Metals														
Arsenic	16	8.65	1.98	1.38	6.78	4.77	4.67	4.04	10.3	6.48	5.11	17.5 MR	4.84	5.13
Barium	10,000	557 M	334	331	353	332	399	339	370	393	242	272	242	268
Cadmium	60	2.60 M	1.09 U	1.78	1.07 U	1.09 U	2.34	1.05 U	1.09 U	1.16	1.06 U	1.09 U	1.60	3.97
Chromium*	6,800	48.5 M	78.7	203	54.4	65.3	41.9	41.4	48.5	50.0	34.6	77.8 MR	35.6	36.1
Lead	3,900	76.4	32.4	48.8	40.3	32.8	52.0	25.8	36.7	51.1	32.7	43.8 MR	43.6	43.4
Selenium	6,800	1.10 U	1.09 U	1.09 U	1.07 U	1.09 U	1.1 U	1.05 U	1.09 U	1.1 U	1.08 U	1.09 UM	1.08 U	1.08 U
Silver	6,800	4.41 US	4.36 U	4.35 U	4.29 U	4.36 U	4.41 U	4.19 U	4.36 U	4.39 U	4.3 U	4.35 U	4.32 U	4.3 U
Mercury	5.7	2.54	5.02	8.28	4.22	3.05	3	1.5	2.93	4.4	1.09	1.55	0.757	2.14

Notes:
*SCO is for trivalent chromium; total chromium results are reported.
U - Compound not detected, practical quantitation limit provided.
M - Matrix Spike outside acceptable laboratory limits.
R - Duplication outside acceptable laboratory limits.
S - LCS Spike outside acceptable laboratory limits.
- Exceeds 6 NYCRR Part 375 Industrial SCOs.

Table 3
Capped Area Boundary Corner Coordinates
SWMU 12 Interim Corrective Measure
Norlite Corporation, Cohoes, New York

X Coordinate	Y Coordinate
705875.4955	1429125.853
705875.4955	1429128.77
705899.0372	1429126.27
705900.7039	1429130.853
705916.7455	1429129.811
705915.0789	1429118.561
705898.1044	1429119.622
705915.5405	1429093.542
705949.0372	1429087.311
705944.8705	1429079.811
705880.4955	1429086.686
705879.8161	1429080.136
705856.4827	1429079.603
705861.3289	1429105.645
705885.2872	1429103.145
705888.4122	1429124.811
705896.1205	1429101.895
705910.9307	1429099.827

Note:
Coordinates are in New York State Plane - NY East.

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Appendix A

ICM Photographs

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Project Photos

Supplemental RFI
Interim Corrective Measures
SWMU 12
Norlite Corporation, Cohoes, New York

SWMU 12

Pre-capping conditions (facing south).

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Project Photos

Supplemental RFI
Interim Corrective Measures
SWMU 12
Norlite Corporation, Cohoes, New York

SWMU 12
Asphalt Cap, facing west.

SWMU 12
Asphalt Cap, facing northeast.

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Project Photos

Supplemental RFI
Interim Corrective Measures
SWMU 12
Norlite Corporation, Cohoes, New York

SWMU 12
Asphalt Cap, facing southwest.

SWMU 12
Asphalt Cap, facing northwest.