

Interim Operations and Maintenance Plan/Periodic Review Report 2016, Gorham Street Area and Gabion Wall, Former Hampshire Chemical Corp. Facility, Waterloo, New York—Site No. 850001A

PREPARED FOR: Hampshire Chemical Corp.

PREPARED BY: CH2M HILL

DATE: November 15, 2016

Introduction

This technical memorandum presents an interim operations and maintenance (O&M) periodic review for the Gorham Street Area and gabion wall at the former Hampshire Chemical Corp. (HCC) Facility in Waterloo, New York (facility). Evans Chemetics, a wholly owned subsidiary of Bruno Bock, currently owns and operates the facility. At the Gorham Street Area, interim corrective measures (ICMs) were completed in fall 2013, and restoration activities including grading adjustments, erosion repairs, and additional vegetation planting were completed in spring 2014. The gabion wall installation was completed in June 2015. The activities included in this periodic review report will become a part of the Site Management Plan (SMP) after the sitewide corrective measures study (CMS) is completed. This report serves to bridge the gap in time between ICM completion and implementation of the SMP to ensure the cover systems are maintained and performing as designed.

Site Description

The facility is located at 228 East Main Street in Waterloo, New York. The facility is bordered to the north by East Main Street, to the east by residential properties, to the west by East Water Street, and to the south by the Cayuga-Seneca Canal. South of the canal are some residences and warehouses, and further downstream is the Village of Waterloo Wastewater Treatment Plant. The facility also includes property on the eastern side of Gorham Street, where the employee parking lot for the site is located. The area around the parking lot was the subject of the ICM as described in more detail below.

Gorham Street Area Description

The Gorham Street Area is defined as two areas with engineered soil caps and covers; one larger area is located east of Gorham Street and one smaller area is located west of Gorham Street. The portion east of Gorham Street is approximately 1.8 acres of land that extends approximately 365 feet east of Gorham Street and terminates at the adjacent residential parcel (Figure 1). The area extends from the northern property boundary to the canal located to the south. The New York State Canal Corporation owns a thin right-of-way extending along the canal. A thin right-of-way owned by the Village of Waterloo also extends along each edge of Gorham Street. The area on the western side of Gorham Street encompasses approximately 0.04 acre of land that is owned by Evans Chemetics. The Evans Chemetics employee parking lot covers the majority of the portion of the parcel east of Gorham Street. Prior to Gorham Street corrective measures construction activities, the remaining area was wooded or covered by grass/undergrowth (CH2M HILL [CH2M] 2014a).

Gorham Street Area Topography

Prior to Gorham Street corrective measures construction activities, the parcel west of Gorham Street sloped gently southeasterly toward the bridge abutment embankment and south toward the canal. East of Gorham Street, the land surface gently graded eastward across the parking lot and the adjacent wooded area to the eastern boundary of the facility.

The top of the canal bank was approximately 1 to 3 feet below the average grade of the parking lot, and a drainage swale trending west-east was present between the top of the canal bank and the parking lot. Beyond the swale, the grade dropped steeply to the canal where the bank was overgrown by vegetation and trees.

General overland flow from the parking lot and the extension area east of the parking lot was either south toward the canal or to the east. However, the canal bank berm was slightly higher in elevation than the grassy and formerly wooded area to the north and may limit some overland flow moving north to south. Precipitation that fell on the canal bank would potentially flow south toward the canal or north toward the grassy/vegetated area between the canal bank and the parking lot.

Canal Bank - Gabion Wall Description

The gabion wall was constructed on the canal bank south of the Evans Chemetics facility and north of the North Shore Deposit. The gabion wall is constructed with two layers of 3-foot by 3-foot by 6-foot galvanized wire mesh baskets with a polyvinyl chloride coating. The gabion baskets are filled with 3- to 5-inch-diameter stone. An 8-ounce geotextile fabric was placed in the over-excavated area and filled with self-compacting pea stone to provide a more stable subgrade. The canal bank side of the gabion wall was shaped, and an 8-ounce geotextile fabric was placed and filled with pea stone backfill to support the backside of the gabion wall.

Before intrusive work was performed, a comparison with the construction drawings was made and adjustments to the gabion wall alignment were made to compensate for site conditions. Riprap was placed on the canal bank in areas where construction of the gabion wall was determined to not be feasible. These areas include the eastern end of the gabion wall from approximately Station 22+30 to the east and the western end of the gabion wall from approximately Station 20+30 (Figure 2) to the west in an area commonly referred to as the “horseshoe area” located south of the Evans Chemetics facility.

Site Inspections

Inspection Frequency

Inspections are conducted at the frequency specified in the interim O&M plan submitted in 2014 (CH2M 2014b). As indicated in the plan, inspections were to be conducted quarterly for the remainder of 2014 resulting in two inspections (two quarters remained after completion of construction). The 2016 Gorham Street inspection and future inspections will be conducted annually until the SMP is in place as part of the sitewide CMS. The gabion wall inspection is to be conducted biannually.

Inspection Forms, Sampling Data, and Maintenance Reports

As part of the O&M activities for the Gorham Street soil and asphalt cover and gabion wall, inspections were completed on September 15, 2016, as shown on the inspection forms in Attachment 1. Attachment 2 contains photographs of the site taken during the inspection. Deficiencies were noted and reported, and appropriate corrective actions were taken to remedy the deficiency.

Gorham Street

The following areas were inspected for the Gorham Street Area:

- Soil cover
 - Stressed or dead vegetation
 - Observation as to whether mowing of vegetation is being performed at a suitable frequency
 - Erosion, furrows, ruts, penetrations, cracking, or animal burrows
 - Areas of ponding water
 - Evidence of vandalism to the cover
 - Evidence of slope movement along the canal
 - Signs of traffic on the soil cover area other than from mowing equipment
- Asphalt cap
 - Signs of erosion, furrows, ruts, penetrations, cracking, or animal burrows
 - Vegetation growth through the asphalt
 - Areas of ponding water
 - Evidence of vandalism to the cap
- Drainage swales
 - Observation as to whether drainage swales are still allowing for adequate flow toward the canal
 - Signs of erosion, furrows, ruts, penetrations, cracking, or animal burrows
- Perimeter security (fences and gates)
 - Security signs in place
 - Gates are locked
 - Fence condition
 - Signs of vandalism
 - Signs of vegetation growing on fence or gates

Gabion Wall

The following gabion wall areas were inspected:

- Confirm that eroded soil has not built up on the top of the wall; remove materials as necessary.
- Inspect for visual signs on vertical or horizontal alignment changes, bulging, or other changes since the last inspection. Take photographs for similar locations and directions for comparison over time.
- Inspect face of wall for broken or separated sections of the wire gabions and plant growth; large vegetation/trees should be removed.

Attachment 1 contains applicable inspection forms and other records generated for the site during the reporting period.

Corrective Measures Completed

Any deficiencies noted during inspections were corrected as noted in the inspection reports (Attachment 1). In general, the only issues that occurred in 2016 were associated with animal burrowing and vegetation management. Each deficiency was addressed within 90 days as stipulated in the O&M plan (CH2M 2014b). Spraying of the vines along the Gorham Street fence and spraying of the weeds in the parking lot was completed on November 9, 2016.

Report Submission

The periodic review report will continue to be submitted annually in hard copy and electronic format to the New York State Department of Environmental Conservation Central and Region 8 Office and the New York State Department of Health Central Office.

References

CH2M HILL (CH2M). 2014a. *Construction Completion Report, Former Hampshire Chemical Corp., Gorham Street Corrective Measures, Waterloo, New York.*

CH2M HILL (CH2M). 2014b. *Interim Operations and Maintenance Plan for Gorham Street Area, Former Hampshire Chemical Corp. Facility, Waterloo, New York.*

New York State Department of Environmental Conservation. 2011. *Second Amended Order on Consent between Hampshire Chemical Corp. and NYSDEC* (Index Number CO 8-20000218-3281). August 12.

Figures



Legend

-  Monitoring Well
-  AOC C Location
-  Property Boundary
-  Asphalt Cap
-  Institutional Controls
-  No Action
-  Soil Cover
-  Soil cover with Canal Bank Restoration, and Offsite Disposal
-  Soil Excavation, Offsite Disposal and Clean Fill

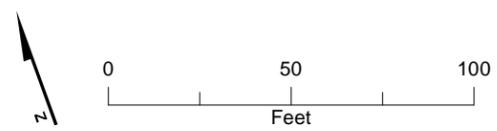


Figure 1
 Interim Operations and Maintenance Plan / Periodic Review Inspection
 Area 2016 Periodic Review Report for Gorham Street Area and Gabion Wall
 Former Hampshire Chemical Corp. Facility
 Waterloo, New York

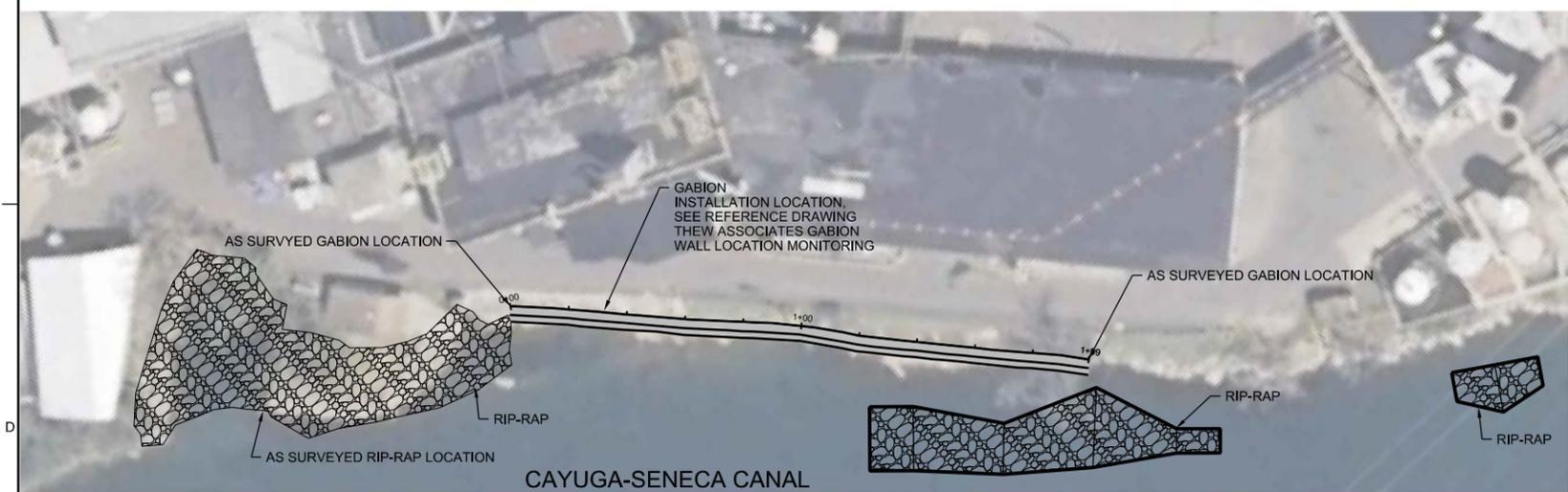
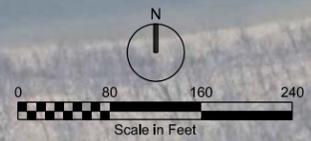


GENERAL SHEET NOTE

- RIPRAP TO BE PLACED AT SELECT LOCATIONS BELOW THE WATERLINE AT TOE OF SLOPE AFTER THE EXCAVATION OF SEDIMENT TO PROVIDE THE STABILITY TO THE CANAL BANK.
- FOR RIPRAP LOCATIONS SEE CROSS SECTIONS IN SHEETS C-301 THROUGH C-315

LEGEND

- GABIONS
- RIPRAP (SEE NOTE 1)



ENLARGED GABION PLAN
1" = 20'

GABION COORDINATE TABLE

STATION	NORTHING	EASTING
0+00.00	1057258.29	747770.49
0+20.00	1057244.05	747784.50
0+40.00	1057229.29	747797.99
0+60.00	1057214.63	747811.60
0+80.00	1057200.41	747825.65
1+00.00	1057185.88	747839.38
1+20.00	1057170.08	747851.63
1+40.00	1057155.06	747864.83
1+60.00	1057140.09	747878.09
1+80.00	1057125.29	747891.54
1+99.28	1057110.72	747904.13

NOTE:
FOR GABION INSTALLATION LOCATION
SEE REFERENCE DRAWING THEW ASSOCIATES
GABION WALL LOCATION MONITORING

Figure 2
Gabion Wall Record Drawing
2016 Periodic Review Report for Gorham Street Area and Gabion Wall
Former Hampshire Chemical Corp. Facility
Waterloo, New York

CH2MHILL®

CIVIL

BANK STABILIZATION PLAN
RESTORED BANK

SEDIMENT REMOVAL CORRECTIVE MEASURES
FORMER HAMPSHIRE CHEMICAL
CORPORATION FACILITY
WATERLOO, NEW YORK

1" = 60'
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE	JULY 2014
PROJ	428287
DWG	C-212
SHEET	14 of 14

NO. DATE DSGN DR REVISION CHK APVD BY APVD

S. RAMAMURTHY D. SCHAUER W. ANDRAE G. COLVIN

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FILENAME: 005-C-2012_428287.dgn PLOT DATE: 2016/01/14 PLOT TIME: 2:24:22 PM

Attachment 1
Inspection Forms

September 2016 Inspection

Former Hampshire Chemical Corp.

AOC A Sediment Removal Project

Gabion Wall Inspections

The gabion wall located on the Cayuga-Seneca Canal should be assessed and inspected bi-annually. The following items will be included in these routine visual inspections:

- Confirm that eroded soil has not built up on the top of the wall; remove materials as necessary
- Inspect for visual signs on vertical or horizontal alignment changes, bulging, or other changes since the last inspection. Take photos for similar locations and directions for comparison over time
- Inspect face of wall for broken or separated sections of the wire gabions and plant growth; large vegetation/trees should be removed.

If during inspections, individual wires or sections of the gabions are found to be broken, they must be repaired as soon as possible because they are structural elements of the wall. Repairs should include gabion wire repair materials (welded wire mesh, binding wire, rings, etc.) recommended by a reputable gabion manufacturer and supplier. All repairs will be performed in strict conformance to gabion manufacturer recommendations.

Inspection	Comments
Erosion at top or back of gabion wall	NONE OBSERVED
Horizontal alignment (bulging)	NOTHING NEW
Vertical alignment (drop or deflection of top of wall)	NONE OBSERVED
Gabion basket wire (damage or breaks)	NONE OBSERVED
Vegetation (on face or top of wall)	NONE OBSERVED EXCEPT EXCEPT 2 WESTERN BASKETS

Inspection Completed by: KURT MATHIAS / BRIAN COLLING

Inspection Date: 9/15/16

Attachment 1: Quarterly Inspection Form
 Interim Operations and Maintenance Plan for Gorham Street
 Former Hampshire Chemical Corp. Facility, Waterloo, New York

Inspection Date: 9/15/16 Inspector Name: KURT METHUEN / DALTON COLLINS

Soil Cover	Yes	No	Comments & Deficiencies Noted (Required if Shaded Area Selected)	CA Completion (Date/Initials)
Are there Signs of Stressed or Dead Vegetation?		X		
Is mowing of vegetation being performed at a suitable frequency?		X	CANAL BANK NEEDS MOWING	
Are there Signs of Erosion, Furrows, Ruts, Penetrations, Cracking or Animal Burrows?	X		RODENT BURROW NEAR LARGE POOL	
Are there any Areas of Ponding Water?		X		
Any evidence of vandalism to the Cover?		X		
Is there evidence of slope movement along the canal?		X		
Are there Signs of traffic on the soil cover area other than from mowing equipment?		X		
Asphalt Cap	Yes	No	Comments & Deficiencies Noted (Required if Shaded Area Selected)	CA Completion (Date/Initials)
Are there Signs of Erosion, Furrows, Ruts, Penetrations, Cracking or Animal Burrows?		X		
Are there any vegetation growth through the asphalt?	X		SEVERAL AREAS W/ WEEDS	
Are there any Areas of Ponding Water?		X		
Any evidence of vandalism to the Cap?		X		
Drainage Swales	Yes	No	Comments & Deficiencies Noted (Required if Shaded Area Selected)	CA Completion (Date/Initials)
Are the drainage swales still allowing for adequate flow towards the canal?	X			
Are there any signs of erosion, furrows, etc?	X			
Perimeter Security (Fences & Gates)	Yes	No	Comments & Deficiencies Noted (Required if Shaded Area Selected)	CA Completion (Date/Initials)
Are Security Signs in Place?		X		
Are all Gates Locked?	X			
Is Fence in Good Condition?	X		SOME DAMAGE FROM SNOW REMOVAL	
Are there Signs of Vandalism?		X		
Is Vegetation growing on Fence or Gates?	X		SEVERAL AREAS IN N. SIDE, E. SIDE & S. SIDE	

Attachment 1: Annual Inspection Form
Interim Operations and Maintenance Plan for Gorham Street
Former Hampshire Chemical Corp. Facility, Waterloo, New York

Inspection Date: 9/15/2016 **Inspector Name:** Kurt Mehigh & Brian Carling

Soil Cover	Yes	No	Comments & Deficiencies Noted (Required if Shaded Area Selected)	CA Completion (Date/Initials)
Are there Signs of Stressed or Dead Vegetation?		X		
Is mowing of vegetation being performed at a suitable frequency?		X	Canal bank needs mowing	Canal bank mowed on 9/16/2016/Steve Brusso (Evans)
Are there Signs of Erosion, Furrows, Ruts, Penetrations, Cracking or Animal Burrows?	X		Rodent burrow near large rock	Burrow filled in on 10/20/2016 (CH2M)
Are there any Areas of Ponding Water?		X		
Any evidence of vandalism to the Cover?		X		
Is there evidence of slope movement along the canal?		X		
Are there Signs of traffic on the soil cover area other than from mowing equipment?		X		
Asphalt Cap	Yes	No	Comments & Deficiencies Noted (Required if Shaded Area Selected)	CA Completion (Date/Initials)
Are there Signs of Erosion, Furrows, Ruts, Penetrations, Cracking or Animal Burrows?		X		
Are there any vegetation growth through the asphalt?	X		Several areas with weeds	Completed on 11/09/2016
Are there any Areas of Ponding Water?		X		
Any evidence of vandalism to the Cap?		X		
Drainage Swales	Yes	No	Comments & Deficiencies Noted (Required if Shaded Area Selected)	CA Completion (Date/Initials)
Are the drainage swales still allowing for adequate flow towards the canal?	X			
Are there any signs of erosion, furrows, etc?	X			
Perimeter Security (Fences & Gates)	Yes	No	Comments & Deficiencies Noted (Required if Shaded Area Selected)	CA Completion (Date/Initials)
Are Security Signs in Place?		X		
Are all Gates Locked?	X			
Is Fence in Good Condition?	X		Some damage from snow removal	No repairs needed.
Are there Signs of Vandalism?		X		
Is Vegetation growing on Fence or Gates?	X		Several areas in north side, east side, and south side.	Weeds trimmed on 9/16/2016/Steve Brusso (Evans) Weeds in fence along Gorham Street removed on 11/09/2016

CA - Corrective Actions

Attachment 2
Photo Logs

September 2016 Inspection



Gorham Street canal bank and fence looking west.



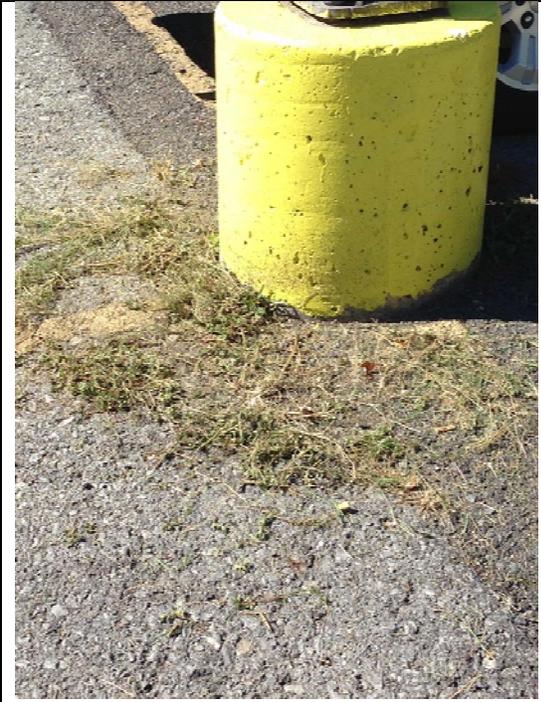
Gorham Street east fence line.



Animal burrow.



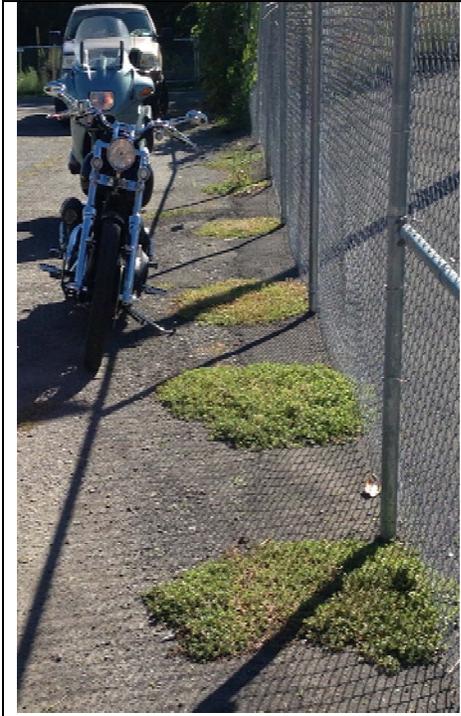
Vegetation in fence.



Vegetation in asphalt.



Vegetation in asphalt.



Vegetation in asphalt.



Vegetation covering fence along Gorham Street.



Gorham Street canal bank looking south toward canal on Evans Chemetics side.



Gabion wall looking east.

GORHAM STREET AREA AND GABION WALL INSPECTION PHOTO LOG
SEPTEMBER 2016



Gabion wall looking east.



Gabion wall looking west.



Lone tree at eastern end of gabion wall.

October 2016 Follow-up Inspection



Eastern end of Gorham Street canal bank after mowing (looking east).



Eastern end of Gorham Street canal bank after mowing (looking west).



Eastern side of Gorham Street upland area after mowing (looking north).



Eastern side of Gorham Street upland area after mowing (looking north).



Animal burrow filled in with concrete.



Animal burrow filled in with concrete. Removal of vegetation underneath power lines is prohibited by electrical utility.



Vegetation in fence line.

Note: Vegetation was treated with herbicide on November 9, 2016



Vegetation in fence line.

Note: Vegetation was treated with herbicide on November 9, 2016



Vegetation in fence line along Gorham Street.

Note: Vegetation was treated with herbicide on November 9, 2016



Vegetation in fence line and asphalt along Gorham Street.

Note: Vegetation was treated with herbicide on November 9, 2016



Western end of Gorham Street canal bank after mowing (looking west).



Western end of Gorham Street canal bank after mowing (looking east).