The Dow Chemical Company
PO Box 8361
3200/3300 Kanawha Turnpike
South Charleston, WV 25303
U.S.A.

August 22, 2011

Mr. Steve Metivier
U.S. Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, NY 14207

Re: Former Hampshire Chemical Corp. Facility
228 East Main Street
Waterloo, Seneca County, New York

Dear Mr. Metivier,

Hampshire Chemical Corp. (HCC) is proposing remediation for area of concern (AOC) A – Seneca-Cayuga Canal at the former HCC facility located at 228 East Main Street, Waterloo, Seneca County, New York (Figure 1). HCC is a wholly owned subsidiary of The Dow Chemical Company (Dow). Evans Chemetics LP, a wholly owned subsidiary of Bruno Bock (the current owner), operates the site.

The Project Area is depicted on the attached Figure 1 and is approximately centered on the following coordinates: 42.900366^0 North, 76.852241^0 West. The Project Area consists primarily of the Seneca-Cayuga Canal, approximately 1,200 feet upstream of the Gorham Street Bridge to approximately 1,800 feet downstream of the Gorham Street Bridge. There is also a forested area just east of Gorham Street Bridge along the north bank of the canal that will be used for a staging area.

A wetland delineation was conducted on June 24, 2010. The wetland delineation report is attached. Along with the Seneca-Cayuga Canal, a small jurisdictional emergent wetland is located on the eastern portion of the Project Area.

HCC requests a jurisdictional determination that you concur with the boundaries of the identified wetland and the ordinary high water mark of the canal. If you need any additional information or would like to schedule a site visit, please contact Matthew Nechvatal/CH2M HILL at matthew.nechvatal@ch2m.com or (608) 987-3123.

Sincerely,

Jerome E. Cibrik, P.G.
Remediation Leader

Enclosure

Wetland Delineation Report, Area of Concern A – Seneca-Cayuga Canal Remediation Project, Former Hampshire Chemical Corp. Facility, Waterloo, New York

PREPARED FOR: The Dow Chemical Company

PREPARED BY: CH2M HILL

DATE: August 2011

Project Description

Hampshire Chemical Corp. (HCC), a wholly owned subsidiary of The Dow Chemical Company, is conducting a Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) pursuant to an Amended Administrative Consent Order (AACO) executed between HCC and New York State Department of Environmental Conservation (NYSDEC) (Index Number 8-20000218-3281, June 1, 2004). HCC is proposing sediment remedial activities for Area of Concern (AOC) A – Seneca-Cayuga Canal at the former HCC facility located at 228 East Main Street, Waterloo, Seneca County, New York (project area; Figure 1). HCC has retained environmental liabilities for the facility in accordance with the terms described in the purchase agreement between HCC and Bruno Bock, the current property owner. Evans Chemetics LP, a wholly owned subsidiary of Bruno Bock, operates the site.

The facility is bordered to the north by East Main Street, to the south by the Seneca-Cayuga Canal, to the east by Gorham Street, and to the west by East Water Street. A small parking lot owned by the facility is located east of Gorham Street. Residential properties (north, east, and southwest), and commercial businesses (west) surround the facility. Some residential properties are present beyond the southern side of the canal.

The project area is depicted on Figure 1 and is approximately centered on the following coordinates: 42.900366° North, 76.852241° West. The project area consists primarily of the Seneca-Cayuga Canal, approximately 1,200 feet upstream of the Gorham Street Bridge to approximately 1,800 feet downstream of the Gorham Street Bridge. A forested area is just east of the Gorham Street Bridge along the northern bank of the canal that is proposed for use as a staging area.

Methods

On June 14, 2011, CH2M HILL conducted a wetland survey of the project area. Before the wetland delineation, CH2M HILL reviewed available secondary source information to investigate site conditions and identify potential locations of wetlands and other regulated waterbodies. Based on a review of U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, one freshwater, forested/shrub wetland was apparent along the southern shore of the Seneca-Cayuga Canal along the westernmost portion of the

project area (USFWS 2011). The location of the NWI wetland was surveyed for wetland characteristics from the bank to 15 feet inland within the project area. This area did not exhibit wetland characteristics. The National Resources Conservation Service (NRCS) identified four hydric soils within the project area: Alluvial Land, Schoharie Silty Clay Loam, Cazenovia Silt Loam, and Sloan Silt Loam (NRCS 2011).

Delineations of wetlands and other jurisdictional waters of the United States (U.S.) were conducted using the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: North-Central and Northeast Region* (U.S. Army Corps of Engineers [USACE] 2011). USACE and the U.S. Environmental Protection Agency jointly define wetlands as, "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory 1987).

Soils, vegetation, and hydrological indicators of the wetlands and adjacent uplands were recorded on wetland data sheets pursuant to the regional supplement. Wetlands were classified according to Cowardin et al. (1979).

Wetlands and other jurisdictional waters of the U.S. were surveyed using a sub-meter global positioning system. Wetland boundaries were determined by the presence/absence of wetland soils, vegetation, and hydrological indicators. Boundaries for other jurisdictional waters of the U.S. were determined by identifying the ordinary high water mark (OHWM). According to USACE, the OHWM is defined as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (Code of Federal Regulations [CFR] 1986). In areas where access to the canal banks was not possible because the land was not owned by Dow or the Canal Authority, the boundary of the OHWM was estimated based on known upstream and downstream locations of the OHWM.

Within the project area, one small wetland area (Wetland 1) and one waterbody (Seneca-Cayuga Canal) were identified (Figure 2). Wetland and upland characteristics for representative data points in and near Wetland 1 were observed and recorded as well as waterbody and riparian characteristics for Seneca-Cayuga Canal. Figure 2 is a map of the wetland and waterbody areas and soil data points. Wetland and waterbody data sheets are provided in Attachment 1. A photograph log is included in Attachment 2.

Wetlands and Other Waters of the United States Assessment

Wetland 1

Wetland 1 is an approximately 0.2-acre palustrine emergent wetland (PEM) along the northern bank of Seneca-Cayuga Canal on the eastern edge of the project area (Figure 2; Attachment 1). Wetland 1 receives overland sheet flow from the surrounding upland areas and would be inundated via overbank flow from Seneca-Cayuga Canal during high water events. During lower water periods, water would discharge from Wetland 1 to Seneca-Cayuga Canal. At the time of the field investigation, small areas of standing water were

within Wetland 1. The wetland was dominated by hydrophytic vegetation consisting primarily of silky dogwood *(Cornus amomus)* (Facultative Wetland + [FACW]), lizard's tail *(Saururus cernuus)* (Obligate), jewelweed *(Impatiens capensis)* (FACW), and reed canary grass *(Phalaris arundinacea)* (FACW). A soil boring was taken within Wetland 1 during the field investigation. Soils were characterized as a dark brown 10 YR 2/1 from 0 to 16 inches deep with a silt loam texture.

Seneca-Cayuga Canal

Seneca-Cayuga Canal is a perennial waterbody that connects Cayuga and Seneca Lakes. A portion of the canal comprises the AOC A Seneca-Cayuga Canal Remediation Project (Figure 2; Attachment 1). Seneca-Cayuga Canal is approximately 130 feet wide and 12 feet deep in the center. The primary substrate within the canal consists of silt, sand, and clay. Bank heights along the shoreline are nearly vertical and approximately 2 to 4 feet high. Aquatic habitat observed during the field survey consisted of overhanging vegetation, submergent vegetation, bank root systems, and one fringing wetland (Wetland 1). During the field survey, fish and waterfowl were observed within the Seneca-Cayuga Canal. Dominant vegetation observed along the banks of the canal consisted of Virginia creeper *(Parthenocissus quinquefolia)*, silky dogwood, multiflora rose *(Rosa multiflora)*, staghorn sumac *(Rhus typhina)*, Eastern cottonwood *(Populus deltoides),* and black walnut *(Juglans nigra)*.

Regulatory Overview

The NYSDEC Freshwater Wetlands Act (NYSDEC 1997) defines freshwater wetlands as lands and waters of the state as shown on the freshwater wetlands maps containing any or all of the following:

- (a) Lands and submerged lands commonly called marshes, swamps, sloughs, bogs, and flats supporting aquatic or semiaquatic vegetation of the following types: wetland trees; wetland shrubs; emergent vegetation; rooted, floating leaved vegetation; free-floating vegetation; wet meadow vegetation; bog mat vegetation; and submergent vegetation;
- (b) Lands and submerged lands containing remnants of any vegetation that is not aquatic or semiaquatic that has died because of wet conditions over a sufficiently long period, provided that such wet conditions do not exceed a maximum seasonal water depth of 6 feet and provided further that such conditions can be expected to persist indefinitely, barring human intervention;
- (c) Lands and waters substantially enclosed by aquatic or semi-aquatic vegetation as set forth in paragraph (a) or by dead vegetation as set forth in paragraph (b) the regulation of which is necessary to protect and preserve the aquatic and semiaquatic vegetation as set forth in paragraph (a) or by dead vegetation as set forth in paragraph (b) the regulation of which is necessary to protect and preserve the aquatic and semiaquatic vegetation; and
- (d) The waters overlying the areas set forth in (a) and (b) and the lands underlying.

NYSDEC defines navigable waters as all lakes, rivers, streams, and other bodies of water in the state that are navigable in fact or upon which vessels with a capacity of one or more persons can be operated notwithstanding interruptions to navigation by artificial structures, shallows, rapids or other obstructions, or by seasonal variations in capacity to support

navigation. It does not include waters that are surrounded by land held in single private ownership at every point in their total area.

Activities within streams, rivers, lakes, or wetlands in the state of New York require a Freshwater Wetlands Permit, Protection of Waters Permit, Section 401 of the Clean Water Act Water Quality Certification, and Section 404 of the Clean Water Act Permit.

Jurisdictional Determination

Jurisdictional waters are those waters, including wetlands, that are subject to regulation under Section 404 of the Clean Water Act or navigable waters, as defined under the Rivers and Harbors Act. A jurisdictional determination can only be made by USACE. Each identified feature is discussed below with regard to whether it is likely to be considered jurisdictional upon review by USACE.

Wetland 1

Wetland 1 is likely to be classified as jurisdictional because it abuts a traditionally navigable waterway (TNW), Seneca-Cayuga Canal.

Seneca-Cayuga Canal

Seneca-Cayuga Canal is likely to be classified as jurisdictional because it is a TNW.

Therefore, Wetland 1 and Seneca-Cayuga Canal likely will be regulated under Section 404 of the Clean Water Act.

Waters of the State Determination

Wetland 1 meets the definition of a freshwater wetland as defined NYSDEC because the wetland contains emergent vegetation. Therefore, this wetland area is subject to regulation by the state of New York.

Seneca-Cayuga Canal meets the definition of a navigable waterway because the channel is large enough for one or more persons to navigate upstream and downstream. Therefore, the Seneca-Cayuga Canal is subject to regulation by the state of New York.

Conclusion

HCC is proposing remedial activities for AOC A – Seneca-Cayuga Canal at the former HCC facility located at 228 East Main Street, Waterloo, Seneca County, New York. CH2M HILL conducted a survey of the project area to determine if wetlands or other waters of the U.S. occurred within the project area. One waterbody (Seneca-Cayuga Canal) and one wetland (Wetland 1) were identified within the project area. Seneca-Cayuga Canal would be considered federally jurisdictional because it is a TNW. Wetland 1 would be considered federally jurisdictional because it abuts a TNW.

Wetland 1 would meet the NYSDEC definition of a freshwater wetland; therefore, this wetland area would be subject to regulation by the State of New York. Seneca-Cayuga Canal meets the NYSDEC definition of a navigable waterway; therefore, Seneca-Cayuga Canal would be subject to regulation by the State of New York.

References

Code of Federal Regulations (CFR). 1986. *33 CFR Part 328: Definition of Waters of the United States.* November 13.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, Biological Services Program. USFWS/OBS-79/31. 103pp.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Natural Resources Conservation Service (NRCS). 2011. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm. Web site accessed on June 23, 2011.

New York State Department of Environmental Conservation (NYSDEC). 1997. Article 24, Freshwater Wetlands, Title 23 of Article 71 of the Environmental Conservation Law. May.

New York State Department of Environmental Conservation (NYSDEC). 2004. *Amended Administrative Consent Order between Hampshire Chemical Corp. and NYSDEC (Index Number CO 8-20000218-3281).* June 1.

U.S. Army Corps of Engineers (USACE). 2011. *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: North-Central and Northeast Region*, ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-06-11. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Fish and Wildlife Service (USFWS). 2011. National Wetlands Inventory. http://www.fws.gov/wetlands/Data/Mapper.html. Web site accessed on June 21, 2011.

Figures

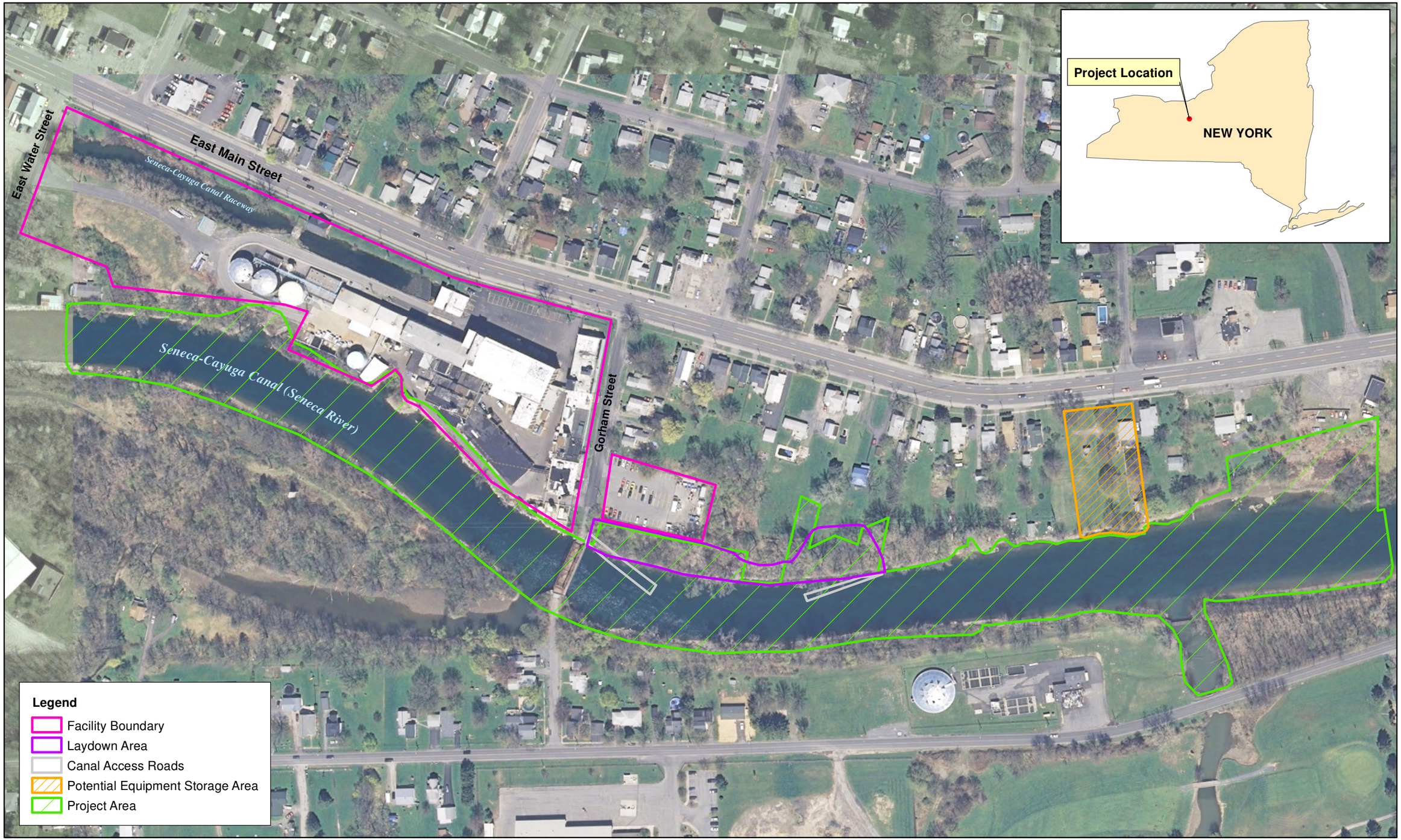


Figure 1
Site Location Map
Former Hampshire Chemical Corp. Facility
Waterloo, New York

Figure 2
Water Resources Map
Former Hampshire Chemical Corp. Facility
Waterloo, New York

Attachment 1
Data Sheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Waterloo/Former Hampshire Chemical Corp. facility City/County: Waterloo/Seneca Sampling Date: 06/14/11

Applicant/Owner: Hampshire Chemical Corp. State: NY Sampling Point: Upland 1

Investigator(s): M. Nechvatal & L. Carr Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None

Slope (%): ------ Lat: 42.900975 degrees N Long: 76.846086 degrees W Datum: ------

Soil Map Unit Name: Schoharie Silty Clay Loam NWI classification: NAD 1983

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes _____	No X	

Remarks: (Explain alternative procedures here or in a separate report.)
No hydrophytic vegetation, hydric soils, or hydrology present; therefore, the data point is within an upland area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	15	Y	FACU
2.			
3.			
4.			
5.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Parthenocissus quinquefolia	5	N	FACU
2. Toxicodendron radicans	80	Y	FAC
3. Asarum canadense	20	Y	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	20	x 4 =	80
UPL species	20	x 5 =	100
Column Totals:	120 (A)		420 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

___ Rapid Test for Hydrophytic Vegetation

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Upland 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/3	100					silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3) **(except MLRA 143)**
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(MLRA 149B of LRR S)**
- ___ Polyvalue Below Surface (S8) **(LRR R, S)**
- ___ Thin Dark Surface (S9) **(LRR R, S)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, S)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12)
- ___ Piedmont Floodplain Soils (F19)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Waterloo/Former Hampshire Chemical Corp. facility City/County: Waterloo/Seneca Sampling Date: 06/14/11

Applicant/Owner: Hampshire Chemical Corp. State: NY Sampling Point: Wetland 1

Investigator(s): M. Nechvatal & L. Carr Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None

Slope (%): ------ Lat: 42.900969 degrees N Long: 76.846305 degrees W Datum: NAD 1983

Soil Map Unit Name: Schoharie Silty Clay Loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____

Hydric Soil Present? Yes X No _____

Wetland Hydrology Present? Yes X No _____

Is the Sampled Area within a Wetland? Yes X No _____

If yes, optional Wetland Site ID: Wetland 1

Remarks: (Explain alternative procedures here or in a separate report.)

PEM wetland adjacent to canal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix sp.	10	N	OBL
2.			
3.			
4.			
5.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. Cornus amomum	30	Y	FACW
2.			
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Saururus cernuus	40	Y	OBL
2. Symplocarpus foetidus	5	N	OBL
3. Impatiens capensis	25	Y	FACW
4. Typha angustifolia	10	N	OBL
5. Phalaris arundinacea	15	Y	FACW
6. Peltandra virginica	5	N	OBL
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	70	x 2 =	140
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	140 (A)		210 (B)

Prevalence Index = B/A = 1.5

Hydrophytic Vegetation Indicators:

X Rapid Test for Hydrophytic Vegetation

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100					silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- [X] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3) **(except MLRA 143)**
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Dark Surface (S7) **(MLRA 149B of LRR S)**
- [ ] Polyvalue Below Surface (S8) **(LRR R, S)**
- [ ] Thin Dark Surface (S9) **(LRR R, S)**
- [ ] Loamy Mucky Mineral (F1) **(LRR K, L)**
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- [ ] 2 cm Muck (A10) **(LRR K, L, S)**
- [ ] Coast Prairie Redox (A16) **(LRR K, L, R)**
- [ ] 5 cm Mucky Peat or Peat (S3)
- [ ] Dark Surface (S7) **(LRR K, L)**
- [ ] Polyvalue Below Surface (S8) **(LRR K, L)**
- [ ] Thin Dark Surface (S9) **(LRR K, L)**
- [ ] Iron-Manganese Masses (F12)
- [ ] Piedmont Floodplain Soils (F19)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): At 16"

Hydric Soil Present? Yes [X] No [ ]

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [X] Surface Water (A1)
- [X] High Water Table (A2)
- [X] Saturation (A3)
- [X] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [X] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [X] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [X] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes [X] No [ ] Depth (inches): 2

Water Table Present? Yes [X] No [ ] Depth (inches): 16

Saturation Present? (includes capillary fringe) Yes [X] No [ ] Depth (inches): Surface

Wetland Hydrology Present? Yes [X] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

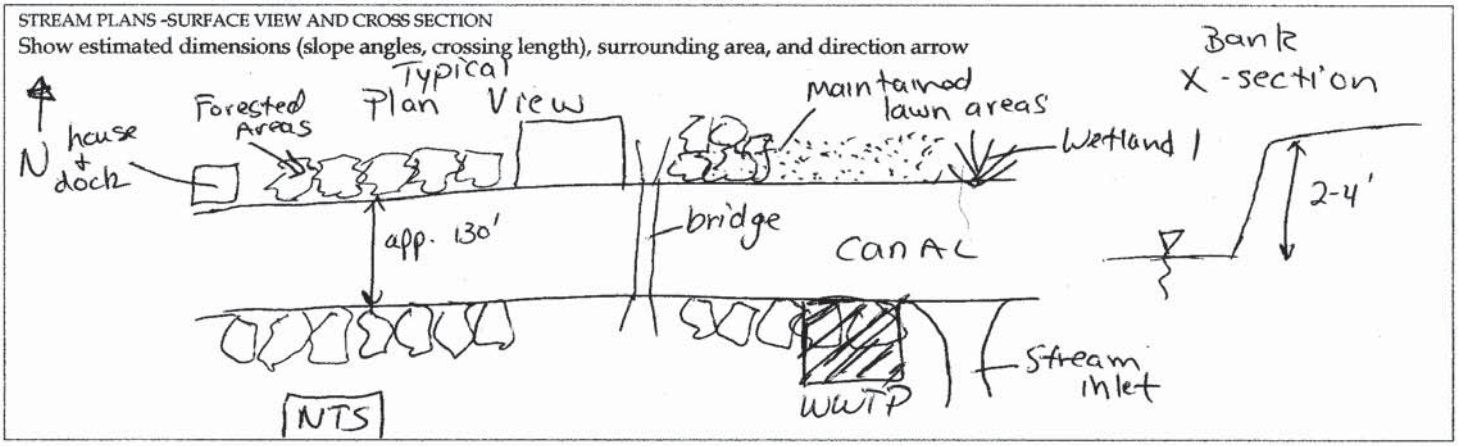
PEM is adjacent to Seneca Canal. Receiving influence from canal and is in low lying area. Inundated near canal edge (surface water) approximately 25 feet up the shoreline, surface water is not present, however, it is still saturated.

Stream Name: Seneca-Cayuga Canal	Stream No.:
Plot No.:	Assoc. Wetland No.: **Wetland 1**

Date: 06/14/11	County/State: Seneca, NY	
Investigator: M. Nechvatal, L. Carr	Team No.:	Landowner/Tract No.:

STREAM PLANS -SURFACE VIEW AND CROSS SECTION

Show estimated dimensions (slope angles, crossing length), surrounding area, and direction arrow



Stream Flow	Fast ___	Moderate ___	Slow ___	Very Slow _X_	None ___
	Perennial ___	Intermittent ___	Direction:_____		

Stream Depth (in.)	0-3 ___	3-6 ___	6-12 ___	12-18 ___	18-24 ___	24-36 ___	36-48 ___	48-60 ___	60+ _X_

Stream Width (ft.)	Top of Banks: 130	Water Surface: **130**

Stream Substrate %	Bedrock_____	Gravel_____	Sand_X___	Silt/Clay_X___	Organic_____

Bank Height (ft.)						
	Left	0-2 ___	2-4 _X_	4-6 ___	6-8 ___	8+ ___
	Right	0-2 ___	2-4 _X_	4-6 ___	6-8 ___	8+ ___

Bank Slope (°)						
	Left	0-20 ___	20-40 ___	40-60 ___	60-80 ___	80+ _X_
	Right	0-20 ___	20-40 ___	40-60 ___	60-80 ___	80+ _X_

Water Clarity	Clear ___	Slightly Turbid ___	Turbid _X_	Very Turbid ___	Color:

Aquatic Habitat	Sand Bar ___	Gravel Bar ___	Mud Bar ___	Gravel Riffles ___	Deep Pools ___
	Overhanging trees/shrubs _X_	In-stream emergent plants ___	In-stream submergent plants _X_	Bank root systems _X_	Fringing Wetlands _X_

Aquatic Organisms	Waterfowl _X_	Fish (adult) X___	Fish (juvenile) _X_	Frogs ___	Turtles ___
	Snakes ___	Invertebrates ___	Other:		

T/E SPECIES / SUITABLE HABITAT (briefly describe potential/occurrence)

Federal species: bog turtle, Indiana bat. State species: short eared owl. No suitable habitat for T&E species.

RIPARIAN VEGETATION DESCRIPTION

Wooded riparian areas as well as maintained residential lawn areas

COMMENTS (construction constraints, erosion potential, existing disturbances, and meanders)

Some areas of the shoreline have rip rap along the bank

STREAM QUALITY (indicate)	High ___	Moderate _X_	Low ___

Rationale for selected rank (explain):
The canal does get dredged, however, it does provide fair fish and wildlife habitat

High Quality - no indication of stress or disturbance in stream or adjacent area - diverse and mature fringing shrub-dominated cover - diverse and stable fish & wildlife habitat - gravel beds, submerged logs, undercut banks, riffles and pools - no channelization

Moderate Quality - mild to moderate disturbances result in minor recognizable alterations - pipeline, road, railroad, other ROWs - provides fair fish and wildlife habitat - some erosion potential - some habitat diversity - fine sediment deposition predominate - flow and depth variation restricted - some channelization - trees, grass, or forbes dominate bank vegetation

Low quality - disturbances cause significant changes affecting plant species - mechanical alteration of plant species and/or soils - intense grazing activities - stream course channelization or ditching - exotic, nuisance, or invasive species - habitat diversity lacking - high erosion potential - flow and depth variation lacking - does not provide suitable wildlife habitat - grass or forbes dominate bank vegetation

Attachment 2

Site Photographs

Photograph 1: Wetland 1 looking north from Seneca-Cayuga Canal

Photograph 2: Wetland 1 looking northwest along eastern boundary of wetland

Photograph 3: Upland area east of Wetland 1 looking northeast

Photograph 4: Wetland 1 looking west, east of Gorham Street Bridge

Photograph 5: Wetland 1 looking east, east of Gorham Street Bridge

Photograph 6: Wetland 1 looking west along the western portion of the Project Area