

Wetlands and Stormwater Regulations For Natural Gas Well Pads and Pipelines

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Photo from NYSDEC Website of reclaimed well site in Chemung County

Presentation Outline

- Wetlands and Waters
 - Defining the Resource
 - Regulation of Resource
 - State Regulation Vertical Pad Sites
 - State Regulations Horizontal Well Pad Sites
 - Pipelines
 - USACE Regulations – Nationwide Permits
 - Associated Regulations
 - Helpful Hints
- Stormwater Regulations

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Wetlands and Waters

- What is a Wetland and Water





- Waters can be streams, ponds, lakes
- Wetlands are transitional ecosystem
- Water drives soils and plants


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Wetlands and Waters


- Defining the Wetland and Water - Assessment



Environmental Resource Mapper
<http://www.dec.ny.gov/imsmaps/ERM/viewer.html>
 NYSDEC wetlands, streams




GIS Map
 NYSDEC wetlands (green),
 NWI wetlands (blue)
 Hydric soils (red)
 Streams (blue)


4 

Wetlands and Waters


- Defining the Wetland and Water – Delineation




Identify boundary based on vegetation, soils, hydrology. Survey points. Agencies approve.




■ Beware of sites that do not show mapped resources. May still contain extensive wetlands. Especially true for fallow flat agricultural fields.



5 

Wetlands and Waters

- Who Regulates The Resource?




NYSDEC

- Wetland if mapped, greater than 12.4 acres, or of unusual local importance. Includes 100' buffer. (Article 24: 6 NYCRR 663, 664).
- Stream and 50 feet, if navigable or has water quality class C(t) or higher. (Article 15, 10: 6 NYCRR 608, 6 NYCRR 649)



US Army Corps of Engineers (USACE)

- Stream and wetland (of any size) if connected to interstate water. (Section 404 CWA, Section 10 33 CFR 320)

6 

Wetlands and Waters

- What is regulated?
 - NYSDEC
 - Wetlands – nearly all activity in a state wetland or its 100 foot adjacent area.
 - Stream – Disturbances within 50 feet of regulated bed or bank (soil disturbance, placement of structures, work in navigable streams).
 - USACE
 - Discharge of dredged or fill material into waters of US including adjacent wetlands. Work and structures in navigable waters.





7

Wetlands and Waters

State Regulations – Vertical Pad Sites

- Controlled by 1988/1992 SGEIS for Oil and Gas Solution Mining Regulatory Program (see Chapter 17)
 - If well or access road is within 50 feet of a protected stream or 100 feet of state freshwater wetland prepare SEQRA Long-Form EAF.
 - For Streams – a Stream Disturbance Permit is Required. Mitigation measures include restriction on location of stream crossing, strict specifications for construction access road and gathering line crossings, erosion control requirements and reclamation requirements.
 - For Wetlands - a NYSDEC Wetland permit needed. Mitigation includes seasonal construction, well site specifications, vehicle movement, brush disposal, pit location, and gathering line placement. Also creation of replacement wetland on 1:1 basis.




8

Wetlands and Waters

State Regulations – Horizontal/High Volume Pad Sites

- Controlled by 2009 Draft SGEIS (High Volume Hydrofrack). See Section 7.1.1.1 for mitigation measures.
- High Volume Hydrofracturing EAF-Addendum requests information about streams and wetlands.
 - For Streams – a Stream Disturbance Permit is required for disturbances to protected surface water bodies such as rivers and streams, for equipment and structures such as standpipes and work such as disturbance of bed or banks or removal of sand, gravel without a permit. NYSDEC permits needed for changes, modifications, or disturbances to streams and are reviewed for potential impacts to aquatic, wetland, terrestrial habitats; unique and significant habitats; rare, threatened and endangered species, water quality, hydrology, water course and water body integrity.



9

Wetlands and Waters

State Regulations – Horizontal/High Volume Pad Sites

- For Wetlands – Actions located within 100 feet of wetlands regulated by Article 24 of the ECL general require a permit from the NYSDEC. The placement of a structure to withdraw surface water or groundwater within 100 feet of the wetland requires a permit. If there is no alternative location, a permit can only be granted if the structure has no impact on the wetland or if the impact is outweighed by an economic and social need.
- The level of impact will be related to the classification of the wetland. The higher the quality of the wetland, the more difficult to demonstrate that impacts are outweighed.

10



Wetlands and Waters

State Regulations - Pipelines

- FERC if Interstate. Applicant obtains all necessary state and federal permits.
- NYSDEC Article 7 if Major Utility; Article 7 incorporates NYSDEC Review. SEQRA Type II.
- See 2009 SGEIS, Section 5.16.8 for good discussion.
 - Major Utility Defined as more than 1,000 feet in length and operated at pressures of 125 pounds per square inch gauge (psig) unless: a) located wholly underground in a city, b) located wholly in the ROW of a state, county or town highway or village street; or c) replacing an existing facility and less than 1 mile long. PSC review typically for projects ≥ 10 miles.
- If not Major Utility, Applicant obtains state permits.
- Boring under wetland/stream. Regulation depends on NYSDEC Region.

11



Wetlands and Waters

Regulations for Drilling and Pipelines – USACE

- Federal permitting concurrent/separate from state review.
- FERC regulates interstate pipelines; USACE undertakes federal aquatic resource review for non-interstate pipelines.
- USACE has discretion to require individual permits:
 - Activities exceeding Nationwide Permit Threshold (>0.5 acre).
 - Crossing large navigable waters.
 - Crossing/impacting important wetland area.
 - Not implementing appropriate avoidance techniques
 - Substantial cumulative impacts (i.e., large pipeline).
 - Individual Permit Pipelines - Millennium, Iroquois, Saranac

12



Wetlands and Waters

Regulations for Drilling and Pipelines – USACE

- Nationwide Permits – authorizes minor activities in wetlands and waters. Typically 0.5 acre threshold.
- Most Nationwide Permits require a Pre-Construction Notice to the USACE prior to starting work. Suppose to be 45 day review. Can be longer (6 months or more).
- All USACE reviews requires compliance with associated federal laws (cultural resources, endangered species) and certifications from NYSDEC (Section 401 Water Quality Certificate).
- USACE does not regulate boring under wetlands and streams, provided stream is not navigable (Section 10).



13

Wetlands and Waters

USACE Nationwide Permit 12

- Construct, maintain, repair, remove utility lines.
- Construct access roads (gravel, at grade) to utility lines of substations.
- Separate topsoil and subsoil and restore area back to original contours.
- Authorizes substations <0.5 acre wetland impacts (needs notification).

PCN needed if:

- Clearing forested wetland (replant)
- Section 10 permit (navigable water)
- >500 foot wetland crossing
- Line in wetland parallel to stream
- More than 0.1 acre permanent loss
- Permanent impervious roads
- Substations with permanent impacts



14

Wetlands and Waters

USACE Nationwide Permit 14 – Linear Transportation

- Authorizes activities for the construction, expansion, modification or improvement of linear transportation projects (roads, highways, railways, trails, runways, taxiways). Cannot be used for non-linear features such as parking lots.
- Notify if impacts are more than 0.1 acre of waters or impacts to a special aquatic site (wetlands).
- Cannot impact >0.5 acre waters.

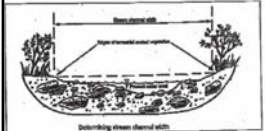


15

Wetlands and Waters

USACE Nationwide Permit 14 – Linear Transportation

- Stream channelization allowed in immediate vicinity of crossing.
 - Allows temporary disturbances/fills, bank stabilization, cofferdams, dewatering.
 - Culvert pipes for fish bearing streams.
- Priorities:
Three-sided box,
Four sided box,
CMP 20% embedded.



Wetlands and Waters

USACE Nationwide Permits – Others

- Difficult to find a specific NWP for oil and gas wells.
- NWP 39 for Commercial / Institutional Development specifically excludes oil and gas wells.
- NWP 33 authorizes Temporary Construction, Access and Dewatering. Following completion of construction, temporary fill must be removed and area restored to original pre-construction conditions. Needs a Pre-Construction Notice.
- NWPs for Oil Spill Clean Up (20).
- Avoid federal wetlands at pad site if possible.



17

Wetlands and Waters

Permit Process

- Joint Permit Application to NYSDEC and USACE.
- Application discusses existing site condition, regulated resources, types of impacts, avoidance and minimization, compliance with state and federal regulatory standards, compliance with associated laws, mitigation if needed.
- Agencies processes permits concurrently but independently.
- Nationwide Permits do not need Public Notice; individual permits do.
- NYSDEC permits processing follows Uniform Procedures Act.



18

Wetlands and Waters

Associated Laws – Cultural Resources

Is site in sensitive area for cultural resources?
 NYSOPRHP Sphinx Website – “Circles Squares” Map
 Phase 1 Assessment – Literature/Site Assessment
 Phase 2 Survey – Identify size/limits and quality of resources
 Consultation with ACOE, SHPO, Tribes, Interested Parties
 Phase 3 – Data Recovery Plan-Develop MOA between Parties

<http://www.ophrp.state.ny.us/nr/main.asp>

<http://www.usace.army.mil/CECW/Pages/cultural.aspx>



See also 33 CFR 325 (go to end), Appendix C

Wetlands and Waters

Associated Laws – Endangered Species

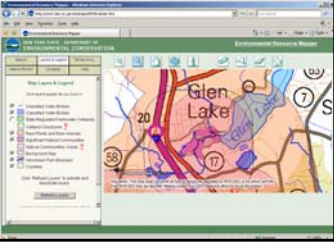
Is species present in region?
 Phase 1 Assessment - Is species known to be present? Letter to NY Heritage Program; check websites. Site visit to look for potential habitat.
 Phase 2 Survey – Is species present?
 Conservation Plan and Mitigation
 US Fish and Wildlife Service Biological Opinion/ NYSDEC Review

<http://www.fws.gov/northeast/nyfo/es/sectiony.htm>

<http://www.dec.ny.gov/imsmaps/ERM/viewer.htm>

<http://www.acris.nynhp.org>


NYSDEC Natural Heritage Program
<http://www.dec.ny.gov/animals/31181.html>



Wetlands and Waters

Helpful Hints

- Delineate wetlands early in the process.
- Assess other ecological, cultural, social resources early.
- Avoid / minimize wetlands. Avoid high quality wetlands.
- Develop good restoration plans for temporary impacts.
- Access roads, minor pipeline crossings “easier” to permit than wetland/stream impacts for well pad sites.
- Permits needed for water withdrawal structures.
- Pro-actively determine approvals necessary and develop regulatory strategy.
- Leave adequate time for approvals; can be lengthy.
- Regardless of permit process, baseline studies are the same. (wetlands, ecological, cultural, etc.)



Not Tired Yet?

Lorman Seminar
Wetland Regulation in New York

Barbara Beall, The Chazen Companies
Terresa Bakner, Whiteman Osterman and Hanna
Todd Mathes, Whiteman Osterman and Hanna

November 12, 2010
Albany, NY

www.lorman.com



22

Stormwater - Outline

- Basis for Regulation in NYS
- Design Manual Changes
- Current Permit Requirements
- Applicability to Drilling/Pipelines
- Helpful Hints



23

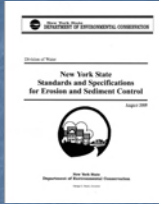
NYS Stormwater Regulations

- Authority - Section 402 of Clean Water Act
 - Certain discharges unlawful unless authorized by NPDES or state equivalent – in New York SPDES is an approved NPDES with permits issued under ECL.
- GP-0-10-001, -002: Effective 2010-2015
 - Design Manual in process of being updated.
- GP-0-06-002 Stormwater Discharges Industrial Activities
 - Will probably be updated for high volume hydraulic fracturing.
- MS-4 Jurisdiction or Local Regulations
 - Unlikely for most drilling sites; additional requirements will apply



24

NYS Stormwater Regulations



"BLUE BOOK"
Basic SWPPP
Soil Erosion Control
< 1 acre Impervious



"DESIGN MANUAL"
Full SWPPP
Soil Erosion Control
Stormwater Management
> 1 acre Impervious



"INDUSTRIAL DISCHARGES"
Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activities
High Volume Hydrofrac
GP-0-06-002



Design Manual

- Design Manual Updates
 - Once manual issued, project has 6 months to obtain coverage under old manual – means receipt of DEC acknowledgement letter.
- Stormwater design is no longer an afterthought and will drive site design.
- Volume control will require creative design approaches; infiltration/soil testing needed early to mitigate volume of runoff.
- Design Manual emphasizes use of green infrastructure.



Design Manual

- Chapter 5 – Green Infrastructure Practices
 - Preservation of natural features and conservation design
 - Preservation of buffers “encouraging” riparian buffers
 - Reduction in clearing & grading
 - Locate projects in less sensitive areas
 - Soil restoration - variety of methods based on intensity of planned activities and soils activity is located in.



Permit Requirements

- Duty To Provide Information
 - NOI, SWPPP and all inspection reports must be provided if requested.
- Keeping The SWPPP Current - modify SWPPP if
 - Provisions are ineffective to minimize pollutants.
 - Site changes effect discharge of pollutants.
 - Needed to address deficiencies identified by qualified inspector.

28



Permit Requirements

- Definition of "Qualified Inspector"
 - Licensed professional (PE, LA, Certified Professional in Erosion Sediment Control (CPESC)).
 - Trained staff working under PE/LA, (need 4 hour certification).
- Definition of "Trained Contractor"
 - An employee of the contractor or subcontractor that, every three years, has received four hours of NYSDEC endorsed training in proper erosion and sediment control principals from a Soil and Water Conservation District or other NYSDEC endorsed entity.

29



Permit Requirements

- Qualified Inspector Reporting Requirements
 - Inspect all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site.
 - Describe condition of all points of discharge.
 - Describe all deficiencies and corrective measures required.
 - Photographs (color digital) of
 - practices requiring repair.
 - condition of practice after repair.
 - Need to be included with reports and submitted w/ in 7 days.

30



Applicability to Drilling

- Wells (Vertical, not High Volume)
 - Requires basic SWPPP for sites with less than 1 acre disturbance.
 - Requires full SWPPP for sites disturbing >1 acre of land. This includes water quality and quantity treatment.
 - Additional monitoring requirements for greater than 5 acres disturbance.

31



Applicability to Drilling

- Wells (Horizontal/High Volume)
 - To Be Determined based on SGEIS. (See Section 7.1.2)
 - Similar to SWPPP requirements for Vertical Wells.
 - May also require compliance with "Industrial Discharges" (GP-0-06-002) (MSGP).
 - NYSDEC amending MSGP to include high volume hydraulic fracturing operations, and to allow for termination of the MGSP after hydraulic fracturing is completed on a site.

32



Applicability to Drilling

- Wells (Horizontal/High Volume)
 - Would include industry-specific BMPs for stormwater management.
 - Would require quarterly visual monitoring, annual dry flow inspection, site inspection and sampling of stormwater during storm event concurrent with well development (hydraulic fracturing).
 - Coverage may be terminated upon completing of hydraulic fracturing, and flowback, and partial site reclamation (all production areas reclaimed and post-construction management practices operational).
 - Spill Plans also discussed in SGEIS (See 7.1.3).

33



Applicability to Pipelines

- Linear / Utility projects
 - Typically only requires a basic SWPPP because new impervious surfaces are not being created.



34

Helpful Hints

- Designing the Site
 - Check if the site is in an MS-4.
 - Check if municipality has any local stormwater regulations. Call municipal building department to understand requirements.
 - Design the site with stormwater management in mind.
 - Keep stormwater flows separate from industrial/hydraulic fracturing activities and waters.
 - Design site construction sequence to avoid amount of time >5 acres is disturbed and not stabilized.
 - Be aware of individual site construction schedule to plan for Design Manual changes.
 - Develop a SWPPP template for use by consultants for developing specific SWPPPs for each site.
 - Developing drawing and construction sequencing templates for use by consultants in providing plans for sites.
 - Update those templates to address issues that arise during permitting and construction.



35

Helpful Hints

- Pre-Construction
 - Ensure you have all necessary permits (local permits, industrial permits, NYSDEC SWPPP NOI) and GP 10 coverage.
 - Check that site not in MS-4.
 - Ensure all firms disturbing soil have trained contractors for daily monitoring, and a "qualified" inspector is retained.
 - All contractors disturbing soil have signed the contractor certification forms.
 - All construction certification forms placed in Site Log Book.
 - Reporting consistency improved with single entity serving as Qualified Inspector in Region.



36

Helpful Hints

- Daily On-Site Work
 - Trained contractor/subconsultant from each company must be on-site at all times soil is disturbed.
 - Consider maintaining a daily contractor inspection log to document day-to-day conditions.
 - Qualified Inspector must maintain Site Log Book and perform weekly inspection (less than 5 acres).
 - Report to Owner/Operator deficiencies noted and necessary corrective measures.
 - Document corrective measures employed with digital color photographs.

37



Helpful Hints

- One Acre Versus Five Acres
 - Have duration of five acres disturbance as short as possible. Requires 2x/week qualified inspections.
 - Additional NYSDEC permit conditions possible if >5 acre impacts disturbed at one time.
 - Stabilized includes gravel, paved, mulched, hydroseeded with or without seed.
 - Gravel and paved area considered impervious and must be treated prior to release.
 - New design manual requires infiltration.
 - Minimize construction travel routes.
 - Hydroseed as much as possible to reduce disturbance below five acres.

38



Questions

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39



Stormwater Pollution Prevention Plan Inspection Report

Project Name

Project Address

Town of X, X County, New York

A Qualified Inspector¹ shall prepare an inspection report subsequent to each and every inspection, as required in Part IV.C of the SPDES General Permit GP-0-08-001. All sections of this report are to be completed.

1. Inspection Information

Inspection number: _____

Date and Time of Inspection: _____

Weather Conditions: _____

Soil Conditions (e.g. dry, wet, saturated): _____

2. Inspector Information

Trained Inspector¹

Printed Name: _____ Date: _____

Signature: _____

Qualified Inspector¹

Printed Name _____ Date: _____

Signature: _____

3. On the included site plan, provide a sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection. Provide additional descriptions below if necessary.

¹ A Qualified Inspector means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), licensed Landscape Architect, or other Department endorsed individual(s). It also means someone working under the direct supervision of the licensed Professional Engineer or licensed Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that an individual performing a site inspection has received four (4) hours of training, endorsed by the Department, from a Soil and Water Conservation District, CPESC, Inc. or other Department endorsed entity in proper erosion and sediment control principles no later than two (2) years from the date GP-0-08-001 was issued. After receiving the initial training, an individual working under the direct supervision of the licensed Professional Engineer or licensed Landscape Architect shall receive four (4) hours of training every three (3) years. Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

4. In the following table, provide a description of the condition of the runoff at all points of discharge from the construction site, including conveyance systems (pipes, culverts, ditches, etc.) and overland flow. Identify any discharges of sediment from the construction site. Use additional sheets if necessary.

Description of Discharge Point	Condition of Runoff	Sediment Discharge Noted
		yes / no Estimated Quantity:
		yes / no Estimated Quantity:
		yes / no Estimated Quantity:
		yes / no Estimated Quantity:

5. For all discharge points where sediment discharge has been noted in the above table, provide detailed corrective actions that are required. Use additional sheets if necessary.

8. In the following table, indicate the current phase of construction of all post-construction stormwater management practices and identify all construction that is not in conformance with the SWPPP and technical standards.

SWM Practice	Current Phase of Construction	Items not in conformance with the SWPPP

9. For all post-construction stormwater management practices which are identified in the above table as including “items not in conformance with the SWPPP”, provide detailed corrective action(s) that are required to correct the deficiencies. Use additional sheets if necessary.
