WETLAND ASSESSMENT REPORT

BLUESTONE GATHERING SYSTEM
SANFORD TOWNSHIP
BROOME COUNTY, NEW YORK

Prepared for:
Bluestone Gas Corporation of New York, Inc.

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SECTION ONE  Introduction

A wetland and stream delineation was performed by URS Corporation staff on behalf of Bluestone Gas Corporation of New York, Inc. in support of a new natural gas gathering pipeline. Approximately nine miles of proposed pipeline right-of-way (ROW) within Sanford Township, Broome County, New York were delineated for construction of the proposed pipeline. See Figure 1 for a Site Location Map.

From June 2010 through October 2011 the URS Corporation environmental survey team conducted a wetland and stream delineation of approximately nine miles of the pipeline corridor. Wetland and stream boundaries were clearly marked and labeled with flagging tape or stake flags. Fifty-four (54) wetlands and forty-eight (48) streams were identified within the survey area for the project. The locations of these wetland and stream boundaries were then surveyed using a Global Positioning System (GPS) unit, specifically Trimble’s Geo XT™ GPS CE handheld with sub-meter accuracy. The locations of these stream and wetland boundaries were also surveyed by Holland Engineering using professional survey equipment. The surveyed streams and wetlands were overlaid onto available maps of the proposed project area. Figure 3 is included as the Wetland Delineation Map. Photographs of the wetlands are included in Appendix A. Photographs of the streams are included in Appendix B. Additional details of the vegetation, hydrology, and soils within the study area are available in the attached Field Data Sheets in Appendix C and Appendix D.

The wetland delineation was completed using guidance manuals and procedures set forth by the New York State Department of Environmental Conservation (NYSDEC) and the United States Army Corps of Engineers (USACE). A permit is required for any dredging, draining, filling, or maintained use or development activities within regulated wetlands as defined by the Freshwater Wetlands Act (Article 24 of the NY Environmental Conservation Law) and Section 404 of the Clean Water Act.
2.1 MAP RESOURCE INVESTIGATION

Soil surveys, aerial photographs, topographic maps, NYSDEC’s Environmental Resources Mapper, and National Wetlands Inventory (NWI) maps were reviewed prior to conducting the field work for indications of surface water, wetlands, physical features, and hydric soils within the study areas.

2.2 CRITERIA FOR WETLAND INVESTIGATION

The wetland investigation was performed in accordance with the USACE Wetlands Delineation Manual (Environmental Laboratory, 1987), the USACE Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (USACE, 2009), and the New York State (NYS) Freshwater Wetlands Delineation Manual (NYSDEC, 1995). The USACE Manual follows a three-parameter approach to making wetland determinations and generally requires that one positive wetland indicator from each parameter (vegetation, soil, and hydrology) be found on the site to make a wetland determination. The NYS Manual generally requires one of the four positive indicators for hydrophytic vegetation. If none of the four vegetation indicators of wetland is found, but more than 50 percent of the dominant species of all strata are Facultative Plants (FAC) and wetter species, then investigation and verification of hydrology and/or hydric soils is required to locate a wetland boundary. A summary of the vegetation, soils, and hydrology within the study area are discussed in Section 3.2.

Wetlands were classified in accordance with the U.S. Fish and Wildlife Service based on Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979). Although procedures for making wetland determinations in the field are standardized, wetlands are often transitional areas between aquatic and upland habitats. Wetland delineations were made using the parameters as defined in the USACE Manual and NYS Manual and the best professional judgment of the field personnel at the time of the delineation. The wetland boundaries may be subject to final field delineation and verification by the USACE.

2.2.1 Hydrophytic Vegetation

Dominant plant species observed in the wetlands within the study area were identified and the wetland indicator status for each species was determined from the National List of Plant Species
that Occur in Wetlands: Northeast-Region 1 (USFWS, 1988). The indicator status designates the probability of a given plant species to occur in regional wetlands. According to the USACE Regional Supplement Manual, an area has hydrophytic vegetation when one of the below criteria are met:

- Based on a visual assessment, all dominant species across all strata are rated OBL or FACW, or a combination of both.
- More than 50 percent of the dominant plant species present across all strata have a wetland indicator status of OBL, FACW, or FAC. Use the 50/20 rule to select dominant plant species.
- The prevalence index is 3.0 or less.
- The plant community passes either the dominance test or the prevalence index after reconsideration of the indicator status of certain plant species that exhibit morphological adaptations for life in wetlands.

2.2.2 Hydric Soils

A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation. A hydric soil may either be drained or undrained, although a drained hydric soil may not continue to support hydrophytic vegetation. According to USACE 2009, hydric soil indicators are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds in a saturated and anaerobic environment. Hydric soils are typically determined by soil colors at diagnostic depths. Soil pits are excavated to a depth of approximately 20 inches with a sharpshooter shovel. Soils are then visually analyzed using the Munsell® Soil Color Charts (USDA, 2000). Munsell chroma values of two or less with mottles or inclusions and/or gleyed colors commonly indicate the presence of hydric soils. Other field indicators of hydric soils include, but are not limited to, histosols, histic epipedons, thick dark surface, stripped matrix in sandy soils, sandy gleyed matrix, sandy redox, and depleted matrix, depleted dark surface, or redox depressions in loamy and clayey soils.
2.2.3 Hydrologic Indicators

Indicators of wetland hydrology are usually present in areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas that are inundated or saturated for sufficient duration tend to develop hydric soils and support vegetation typically adapted for life in anaerobic conditions. These indicators of wetland hydrology include, but are not limited to, water-stained leaves, drift deposits, sediment deposits, water marks, hydrogen sulfide odor and visual observation of saturated soils, high water table, or inundation. Water supply to the wetlands in the study area depends on precipitation, runoff, and groundwater discharge. Hydrologic indicators observed in the study area were noted during the field investigation.

2.3 WETLAND FUNCTION AND VALUE

In an effort to describe the existing wetland resources and to qualitatively assess impacts and determine mitigation goals and requirements, methodology from the manual *Wetland Functions and Values, A Descriptive Approach* (USACE New England District, 1999) was used. This approach evaluates each wetland qualitatively based on the following characteristics:

- Groundwater recharge/discharge
- Floodflow alteration
- Fish and shellfish habitat
- Sediment/toxicant/pathogen retention
- Nutrient removal/retention/transformation
- Production Export (Nutrient)
- Sediment/Shoreline Stabilization
- Wildlife Habitat
- Recreation
- Educational/Scientific Value
- Uniqueness/Heritage
- Visual Quality/Aesthetics
- Threatened or Endangered Species Habitat

2.4 CRITERIA FOR STREAM INVESTIGATION

The stream investigation was performed in accordance with the United States Environmental Protection Agency (EPA) *Rapid Bioassessment Protocol for Use in Streams and Wadeable Rivers; Periphyton, Benthic Macroinvertebrates, and Fish*. 
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3.1 MAP RESOURCE INVESTIGATION

According to the *Broome, New York* 7.5-minute United States Geological Survey (USGS) quadrangle (USGS, 2002), elevations along the proposed Project route, range from 1350 to 1760 feet above sea level. Topography in the Project area ranges from rolling hills to steep slopes. The slope ranges from 0 to 60 percent. The topographic map is included as Figure 1.

NWI maps (USDA, 2006) were reviewed for the presence of wetlands within the survey area for the project. The NWI map includes two wetland complexes within 100 feet of workspace, which are classified as freshwater forested/shrub wetlands. One of these wetland complexes is located at milepost 3.11 and was field verified and identified by URS delineations as Wetland U. The other wetland is located at milepost 6.31 and was field verified and identified by URS delineations at Wetland II. The NWI map is included as Figure 4. The NYSDEC Environmental Resources Mapper was reviewed for the presence of NYSDEC regulated wetlands within 500 feet of the survey corridor and no NYSDEC wetlands were identified. The NYSDEC Wetlands Map is included as Figure 5.

There are no floodplains located within the project area. The floodplain map is included as Figure 6.

Soil survey data, as described in the *Web Soil Survey Geographic (SSURGO) Database for Broome County, New York* (USDA, 2010), was reviewed for the presence of hydric soils within the study area. A summary of the soil types located within the proposed project area is included in Table 1 and the Soil Survey Map is included as Figure 7. There are 21 soil types mapped to the project area and three of those soils are listed on the Hydric Soils List from *Web Soil Survey Geographic (SSURGO) Database for Broome County, New York*.

3.2 FIELD INVESTIGATION

Fifty-four (54) wetlands and 48 streams were delineated within the survey area. The delineated streams and wetland areas and their associated positive wetland indicators are described in the following paragraphs. Additional details regarding the wetlands and streams are available in the Field Data Sheets (*Appendix B*). The location, area and type of wetlands and streams are depicted in Figure 2.
3.2.1 Description of Wetlands

**Wetland A** is a scrub-shrub wetland (PSS) located east of the compressor station site. This wetland is associated with intermittent Stream 01. There is a potential for pollutants to enter this wetland due to the logging activity in the area and the logging road that goes through the wetland. Dominant vegetation within this wetland includes eastern hemlock (*Tsuga canadensis*, FACU), red maple (*Acer rubrum*, FAC), ironwood (*Carpinus caroliniana*, FAC), American beech (*Fagus grandifolia*, FACU), tussock sedge (*Carex stricta*, OBL), ostrich fern (*Matteuccia struthiopteris*, FACW), soft rush (*Juncus effusus*, FACW), sedge (*Carex sp.*), goldenrod species (*Solidago sp.*), water dock (*Rumex orbiculatus*, OBL), and blackberry (*Rubus sp.*). Hydrology indicators in Wetland A include flowing surface water and inundation in logging road ruts approximately 8 inches deep, as well as a high water table, soil saturation, algal mats, water-stained leaves, oxidized rhizospheres, and drainage patterns. Hydric soil indicators within this wetland are silty loam from 0 to 12 inches, color 10 YR 4/2 with mottles color 10YR 5/1. This wetland will not be impacted by project construction.

**Wetland B** is an isolated, emergent wetland (PEM) located within the ruts of a logging road in the southwest corner of the compressor station site. There is a potential for pollutants to enter this wetland due to the logging activity in the area and the logging road. Dominant vegetation within this wetland includes soft rush and tussock sedge. Hydrology indicators within Wetland B include inundation, a high water table, saturated soils, water-stained leaves, and oxidized rhizospheres on living roots. Hydric soil indicators within this wetland are silty loam from 0 to 12 inches, color 10 YR 3/2, with mottles color 10YR 3/1. This wetland will not be impacted by project construction.

**Wetland C** is a scrub-shrub and emergent wetland (PSS/PEM) complex located along the pipeline connection from the compressor station site to the point of interconnect with the Millennium Pipeline. This is an isolated wetland and not connected with any streams or tributaries. There is a potential for pollutants to enter this wetland due to the logging activity in the area. Dominant vegetation in this wetland includes ironwood, soft rush, ostrich fern, and broadleaf cattail (*Typha latifolia*, OBL). Hydrologic indicators in Wetland C are inundation, a high water table, soil saturation, water-stained leaves and drainage patterns within the wetland. Soils are silty loam from 0 to 12 inches, color 10YR 2/2 in the PSS portion of the wetland which is not hydric. The PEM portion of the wetland soils are a silty loam from 0 to 8 inches with
color 10YR 5/1 with a restrictive layer below. This is a hydric soil. This wetland will not be impacted by project construction.

**Wetland D** is an emergent wetland (PEM) located within the ruts of a logging road southeast of the compressor station site and north of William Law Road at Milepost 0.20. This wetland will be crossed by the pipeline and is isolated, since it is located only within the logging road. There is a potential for pollutants to enter this wetland due to the logging road and associated logging activity. Dominant vegetation within this wetland includes soft rush and ostrich fern. Hydrology indicators within Wetland D include inundation, a high water table, saturated soils, and water-stained leaves. Soil indicators within this wetland are loam soils from 0 to 2 inches with color 10 YR 3/2A restrictive layer of rock is found at 2 inches of depth. This soil is not hydric, field verification is needed. This wetland occurs within the pipeline right-of-way and 0.02 acres will be impacted.

**Wetland D1** is an emergent wetland (PEM) located west of Pazzelli Road at the Millennium Pipeline right of way. This is an isolated wetland that is not associated with any streams. There is a potential for pollutants to enter this wetland due to ATV activity in the area and the Millennium Pipeline access road. Dominant vegetation within this wetland includes dark green bulrush (*Scirpus atrovirens*, OBL), soft rush, rice cutgrass (*Leersia oryzoides*, OBL), broom sedge (*Carex scoparia*, FACW), and shallow sedge (*Carex lurida*, OBL). Hydrology indicators within Wetland D1 include saturated soils, drainage patterns, and a shallow aquitard. Hydric soil indicators within this wetland are stony silt loam soils from 0 to 10 inches, color 10 YR 4/2, with mottles color 10 YR 4/3 and 10 YR 5/8. A restrictive layer of rock is found at 10 inches of depth. This wetland will be crossed by ARD 01 and 0.008 acre of wetland will be temporarily impacted by the access road.

**Wetland D2** is an emergent wetland (PEM) located west of Pazzelli Road at the Millennium Pipeline right of way. This is an isolated wetland that is not associated with any streams. There is a potential for pollutants to enter this wetland due to ATV activity in the area and the Millennium Pipeline access road. Dominant vegetation within this wetland includes dark green bulrush, soft rush, and broom sedge. Hydrology indicators within Wetland D2 include inundation, saturated soils, drainage patterns, and a shallow aquitard. Hydric soil indicators within this wetland are stony silt loam soils from 0 to 10 inches, color 10 YR 4/2, with mottles color 10 YR 4/3 and 10 YR 5/8. A restrictive layer of rock is found at 10 inches of depth. This
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Wetland will be crossed by ARD 01 and 0.05 acre of wetland will be temporarily impacted by the access road.

**Wetland D3** is an emergent wetland (PEM) located west of Pazzelli Road at the Millennium Pipeline right of way. This is an isolated wetland that is not associated with any streams. There is a potential for pollutants to enter this wetland due to ATV activity in the area and the Millennium Pipeline access road. Dominant vegetation within this wetland includes dark green bulrush, and soft rush. Hydrology indicators within this wetland include water marks, algal mats, water-stained leaves, sparsely vegetated concave surfaces, and a shallow aquitard. Hydric soil indicators within this wetland are stony silt loam soils from 0 to 8 inches, color 10 YR 4/1, with mottles color 10 YR 5/6 and 7.5 YR 4/2. A restrictive layer of rock is found at 8 inches of depth. This wetland will be crossed by ARD 01 and 0.04 acre of wetland will be temporarily impacted by the access road.

**Wetland D4** is an emergent wetland (PEM) located west of Pazzelli Road at the Millennium Pipeline right of way. This wetland is adjacent to an intermittent stream, and may be hydrologically connected during certain times of the year. There is a potential for pollutants to enter this wetland due to ATV activity in the area and the Millennium Pipeline access road. Dominant vegetation within this wetland includes dark green bulrush, reed canary grass (*Phalaris arundinacea*, FACW), shallow sedge, and soft rush. Hydrology indicators within Wetland D4 include water marks, sparsely vegetated concave surfaces, surface soil cracks, and a shallow aquitard. Hydric soil indicators within this wetland are silt loam soils from 0 to 6 inches, color 10 YR 4/2, with mottles color 7.5 YR 4/6. A restrictive layer of rock is found at 6 inches of depth. This wetland will be crossed by ARD 01 and 0.05 acre of wetland will be temporarily impacted by the access road.

**Wetland D5** is an emergent wetland (PEM) located west of Pazzelli Road at the Millennium Pipeline right of way. This is an isolated wetland that is not associated with any streams. There is a potential for pollutants to enter this wetland due to runoff from adjacent Pazzelli Road. Dominant vegetation within this wetland includes dark green bulrush, reed canary grass, shallow sedge, and soft rush. Hydrology indicators within Wetland D4 include water marks, sparsely vegetated concave surfaces, surface soil cracks, and a shallow aquitard. Hydric soil indicators within this wetland are silt loam soils from 0 to 6 inches, color 10 YR 4/2, with mottles color 7.5 YR 4/6. A restrictive layer of rock is found at 6 inches of depth. This wetland will be crossed by ARD 01 and 0.005 acre of wetland will be temporarily impacted by the access road.
Wetland E is an emergent wetland (PEM) located north of William Law Road at Milepost 0.30. This is an isolated wetland that is not associated with any streams. A large portion of the wetland has been impacted by a logging road. There is a potential for pollutants to enter this wetland due to the logging activity in the area and nearby logging road. Dominant vegetation within this wetland includes ostrich fern and tussock sedge. Hydrology indicators within Wetland E include inundation, a high water table, saturated soils, water-stained leaves, and algal mats. Hydric soil indicators within this wetland are loamy from 0 to 3 inches color 10 YR 2/1. A restrictive layer of rock is found at 3 inches of depth. This wetland is within the workspace for the project and 0.02 acres of Wetland E will be temporarily impacted.

Wetland F is an emergent wetland (PEM) located west of the pipeline around Milepost 0.30. This wetland is adjacent to a perennial stream, and may be hydrologically connected during certain times of the year. There is a potential for pollutants to enter this wetland due to the logging activity in the area. Dominant vegetation within this wetland includes eastern hemlock, ostrich fern, sphagnum species (*Sphagnum sp.*), wood fern (*Dryopteris carthusiana, FAC*), and sedge species. Hydrology indicators within this wetland include inundation with a depth of 2 inches, high water table, saturation, algal mat or crust, water-stained leaves, oxidized rhizospheres on living roots, moss trim lines, and drainage patterns. Hydric soil indicators within this wetland included an organic layer from 0 to 2 inches of color 10 YR 2/1 and loamy clay from 2 to 6 inches color 10 YR 6/1. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.

Wetland G is an emergent wetland (PEM) located north of William Law Road around Milepost 0.30. This is an isolated wetland that is not associated with any streams. It has been previously impacted by a logging road. There is a potential for pollutants to enter this wetland due to the logging road and associated logging activity. Dominant vegetation within this wetland includes tussock sedge. Hydrology indicators within Wetland G include inundation, a high water table, saturated soils, water-stained leaves, oxidized rhizospheres on living roots, and algal mats. Soil indicators within this wetland are loamy soils from 0 to 4 inches, color 10 YR 4/2 and loamy soils from 4 to 8 inches, color 10 YR 6/2. This soil is not hydric, field verification is needed. This wetland will be crossed by the pipeline and 0.05 acres will be impacted.

Wetland H is a large scrub-shrub (PSS) wetland located north of William Law Road around Milepost 0.54. This wetland is directly associated with perennial Stream 07. This wetland lies at the base of a hill from a cattle pasture/farmland, so there is potential for pollutants to enter the
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wetland. Dominant vegetation within this wetland includes ironwood, tussock sedge, New York fern (*Thelypteris noveboracensis*, FAC), and cinnamon fern (*Osmunda cinnamomea*, FACW). Hydrology indicators within Wetland H include inundation, a high water table, saturated soils, water-stained leaves, and oxidized rhizospheres on living roots. Hydric soil indicators within this wetland are silty loam soils from 0 to 2 inches, color 10 YR 3/1, with mottles, color 10 YR 5/6. Followed by silty loam soils from 2 to 5 inches, color 10 YR 4/1, with mottles, color 10 YR 5/6, and silty loam soils from 5 to 12 inches, color 10 YR 4/1, with mottles, color 10 YR 5/6. This wetland will be crossed by the pipeline and 0.60 acres will be impacted.

Wetland I is a forested wetland (PFO) located north of William Law Road at Milepost 0.65. This wetland is directly associated with ephemeral Stream 07a. This wetland lies at the base of a hill from a cattle pasture/farmland, so there is potential for pollutants to enter the wetland. Dominant vegetation within this wetland include yellow birch (*Betula alleghaniensis*, FAC), mannagrass (*Glyceria sp.*, OBL), and jewelweed (*Impatiens capensis*, FACW). Hydrology indicators within Wetland I include inundation, a high water table, and saturated soils. Hydric soil indicators within this wetland are silty loam soils from 0 to 3 inches, color 10 YR 3/2 and clay loam soils from 3 to 9 inches, color 10 YR 5/1, with mottles, color 10 YR 5/8. A restrictive layer of rock is found at 9 inches of depth. This wetland is located adjacent to the ROW and will not be impacted by project construction.

Wetland J is a forested wetland (PFO) located at Milepost 0.85. This is an isolated wetland and not directly connected to any streams. There is potential for pollutants to enter this wetland from the cattle pasture/farmland which lies adjacent and upslope from it. This wetland complex is dominated by eastern hemlock, red maple, American beech, American red raspberry (*Rubus idaeus*, FAC), jewelweed, mannagrass, sedge species, water dock, and sensitive fern (*Onoclea sensibilis*, FACW). Hydrologic indicators within the wetland include inundation 1 inch deep, a high water table, soil saturation, algal mat or crust, and drainage patterns. Hydric soil indicators within this wetland are silty-loam from 0 to 4 inches color 10YR 3/2 and silt-loam from 4 to 20 inches color 7.5YR 4/2 with mottles color 7.5 YR 4/4. This wetland is located adjacent to the ROW and will not be impacted by project construction.

Wetland K is an emergent wetland (PEM) located at Milepost 0.95 adjacent to the pipeline ROW. This is an isolated wetland and not directly connected to any streams. There is potential for pollutants to enter this wetland from the cattle pasture/farmland which lies adjacent and upslope from it. This wetland complex is dominated by soft rush, arrow-leaved tearthumb.
(Polygonum sagittatum, OBL), needle spikerush (Eleocharis acicularis, OBL), sphagnum species, and sensitive fern. Hydrologic indicators within the wetland include inundation to 1 inch in depth and soil saturation. Hydric soil indicators within this wetland area are a clay loam from 0 to 3 inches color 10 YR 3/2 with common, medium, distinct mottles color 7.5YR 5/8. Followed by a clay loam from 3 to 10 inches color 10YR 5/2 with mottles color 7.5 YR 5/8. This wetland is located adjacent to the ROW and will not be impacted by project construction.

Wetland L is an emergent and open water wetland (PEM/POW) located north of William Law Road at Milepost 1.13, adjacent to the above-mentioned cattle pasture, and also heavily disturbed by cattle. This is an isolated wetland, not directly connected to any streams. A small cattle pond was created within the wetland. There is potential for pollutants to enter this wetland from the cattle pasture/farmland. Dominant vegetation within this wetland includes sphagnum moss, soft rush, and arrow-leaved tearthumb. Hydrology indicators within Wetland L include saturated soils and oxidized rhizospheres on living roots. Hydric soil indicators within this wetland are silty clay soils from 3 to 8 inches, color 7.5 YR 3/1, with many, coarse-sized mottles, color 5YR 4/4. This wetland is located within the workspace of the project and 0.04 acre of wetland will be temporarily impacted during construction.

Wetland M is an emergent wetland (PEM) complex located at Milepost 1.25. This wetland complex has been disturbed by cattle. This is an isolated wetland, not directly connected to any streams. There is potential for pollutants to enter this wetland from the cattle pasture/farmland. Vegetation within the wetland is dominated by sphagnum moss, jewelweed, soft rush, and common blue violet (Viola papilionacea, FAC). Hydrologic indicators found within the wetland include inundation to 0.5 inch in depth, soil saturation and drainage patterns. Hydric soil indicators within this wetland are organic layer from 0 to 1 inches and from 1 to 8 inches of silty clay color 10YR 2/1. This wetland is located adjacent to the ROW and will not be impacted by project construction.

Wetland N is an emergent wetland (PEM) located in a heavy-use pasture south of William Law Road at Milepost 1.68. This is an isolated wetland, not directly connected to any streams. There is potential for pollutants to enter this wetland from the cattle pasture/farmland. It also is located near a road, which could contribute possible pollutants. Dominant vegetation within this wetland include soft rush and tall buttercup (Ranunculus acris, FAC). The plant community is impacted by intensive cattle grazing. Hydrology indicators within Wetland N include a high water table, saturated soils, and oxidized rhizospheres on living roots. Hydric soil indicators within this
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Wetland are silty loam soils from 0 to 4 inches, color 10 YR 4/1 and silty loam soils from 4 to 14 inches, color 10 YR 4/1, with mottles, color 10 YR 5/8. A restrictive layer of rock is found at 14 inches of depth. This wetland is located adjacent to the ROW and will not be impacted by project construction.

Wetland O is an emergent wetland (PEM) located in a pasture south of William Law Road at Milepost 1.71. This emergent wetland is dominated by mowed and/or grazed grass and appears to have been seeded with grass in previous years. A small intermittent agricultural drainage ditch follows into the wetland and an intermittent stream drains out of the wetland. There is potential for pollutants to enter this wetland via this agricultural drainage. Wetland vegetative species present include soft rush, tall buttercup, shallow sedge, and fox sedge (Carex vulpinoidea, OBL). Hydrology indicators include 2 inches of inundation, saturated soils, high water table, and drainage patterns. Hydric soil indicators in the wetland are clay loam from 0-5 inches, color 10 YR3/2 with medium-sized, common mottles, color 10 YR 3/6. A restrictive layer of rock is found at 5 inches of depth. This wetland will be crossed by the pipeline and 0.03 acre will be impacted.

Wetland P is an emergent wetland (PEM) located in a heavy-use pasture south of William Law Road at Milepost 1.77. This wetland may be hydrologically connected to nearby streams during wet seasons, due to seeps, but does not directly connect to any streams. There is potential for agricultural pollutants to enter this wetland from the nearby pasture/farm. Dominant vegetation within this wetland include soft rush and reed canary grass. Hydrology indicators within Wetland P include inundation, a high water table, and saturated soils. Hydric soil indicators within this wetland are silty loam soils from 0 to 5 inches, color 10 YR 4/1, with mottles, color 10 YR 5/8. A restrictive layer of rock is found at 5 inches of depth. This wetland is located adjacent to the ROW and will not be impacted by project construction.
Wetland Q is a scrub-shrub and emergent (PSS/PEM) wetland complex located at Milepost 1.80. This wetland is associated with an intermittent stream (stream 2). There is potential for pollutants to enter this wetland via this stream, which runs from a nearby farm. Dominant vegetation within this wetland includes white meadowsweet (*Spiraea alba*, FACW), jewelweed, common marsh bedstraw (*Galium palustre*, OBL), fringed sedge (*Carex crinita*, FACW), cinnamon fern, and sensitive fern. Hydrology indicators within Wetland Q include inundation approximately 2 inches deep, soil saturation and a water table at the surface. Hydric soil indicators within the wetland are clay loam from 0 to 16 inches with color 10 YR 3/2 and coarse, permanent mottles color 5YR 5/8. This wetland is located adjacent to the ROW and will not be impacted by project construction.

Wetland R is an emergent wetland (PEM) located in a depression within an eastern hemlock forest south of William Law Road at Milepost 2.40. This wetland is directly connected to a perennial stream. This stream could potentially carry runoff from the nearby farm, which may add pollutants to the wetland. Dominant vegetation within this wetland includes sphagnum moss, cinnamon fern, and wood fern. Hydrology indicators within Wetland R include surface water, saturated soils, algal mats, and water-stained leaves. Hydric soil indicators within this wetland are organic soils from 0 to 2 inches, color 10 YR 2/1 and loam soils from 2 to 12 inches, color 10 YR 3/1, with mottles, color 10 YR 5/2. This wetland will be crossed by the pipeline and 0.04 acre will be impacted.

Wetland S is an emergent wetland (PEM) located along both banks of a perennial tributary to Marsh Creek at Milepost 2.60. It is possible that pollutants could enter this stream/wetland through one of the tributaries leading into it, or the nearby residence. Vegetation within this wetland includes fringed sedge, smooth black sedge (*Carex nigra*, FACW), and sensitive fern. Hydrology indicators include 1 inch of surface water in pools within wetland, saturated soils, and oxidized rhizospheres. Hydric soil indicators within the wetland from 2-16 inches are loam, color 10 YR 3/2 with few, medium-sized mottles, color 2.5 YR 3/6. Wetland S continues to the east on the north shore of the stream into a no access property. This wetland will be crossed by the pipeline and 0.07 acre will be impacted.
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Wetland T is a scrub-shrub wetland (PSS) located south of William Law Road adjacent to a braided stream channel at Milepost 2.60. It appears there has been some logging activity upslope, which may cause some pollutants to enter the wetland/stream complex. Dominant vegetation within this wetland includes sedge, goldenrod, red maple, American beech, and ironwood. Hydrology indicators within Wetland T include inundation, a high water table, saturated soils, water-stained leaves, and oxidized rhizospheres on living roots. Hydric soil indicators within this wetland are silty loam soils from 0 to 12 inches, color 10 YR 4/1. This wetland will be crossed by the pipeline and 0.09 acre will be impacted.

Wetland U is a forested wetland (PFO) located north of Rector Road at Milepost 3.11. It is connected to a larger wetland complex, which includes a pond and roadside ditch. It is possible that pollutants could enter this wetland complex from the roadside ditch or one of the logging roads near the wetland. Dominant vegetation within this wetland includes ostrich fern and sphagnum moss. Hydrology indicators within Wetland U include inundation, a high water table, and saturated soils. Hydric soil indicators within this wetland are organic soils from 0 to 4 inches, color 10 YR 2/1. A restrictive layer of rock is found at 4 inches of depth. This wetland is located adjacent to the ROW and will not be impacted by project construction.

Wetland V is an emergent wetland (PEM) located north of Tennent Road, adjacent to an access road. Dominant vegetation within this wetland includes netted chain fern (*Woodwardia areolata*, FACW), jewelweed, and bog goldenrod (*Solidago uliginosa*, OBL). Hydrology indicators within Wetland G include soil saturation and drainage patterns. Hydric soil indicators within the wetland are clay loam from 0 to 16 inches, color 5 YR 4/2, with mottles, color 5 YR 3/4. This wetland is located adjacent to the ROW and will not be impacted by project construction.
Wetland W is a scrub-shrub/emergent wetland (PSS/PEM) located north of Tennent Road at Milepost 4.64. The wetland is associated with two stream channels. It is possible that pollutants could enter this wetland via the stream channels or from adjacent land uses, including cattle pasture and logging. Dominant vegetation within this wetland includes red maple, green ash (*Fraxinus pennsylvanica*, FACW), ironwood, horsetail (*Equisetum arvense*, FAC), sensitive fern, tussock sedge, and wild strawberry (*Fragaria virginiana*, FACU). Hydrology indicators within Wetland W include surface water with a depth of 1 to 2 inches, water table at the surface, soil saturation, water-stained leaves, oxidized rhizospheres on living roots, and drainage patterns. Hydric soil indicators within the wetland are sandy silty loam from 0 to 5 inches color 10 YR 3/1 and from 5+ inches sandy, silty loam color 10YR 5/2. This wetland will be crossed by the pipeline and 0.11 acre will be impacted.

Wetland X is a scrub-shrub/emergent wetland (PSS/PEM) located north of Tennent Road adjacent to a stream at Milepost 4.61. It is possible that pollutants could enter this wetland via the stream channels or from adjacent land uses, including cattle pasture and logging. Dominant vegetation within this wetland includes ironwood, white meadowsweet, sensitive fern, cinnamon fern, jewelweed, mannagrass, and sedge. Hydrology indicators within Wetland X include inundation, a high water table, saturated soils, and drift deposits. Hydric soil indicators within this wetland are loam muck soils from 0 to 5 inches, color 7.5 YR 3/1 and loam muck soils from 5 to 12 inches, color 7.5 YR 3/1, with mottles, color 7.5 YR 5/6. A restrictive layer of rock is found at 12 inches of depth. This wetland is located adjacent to the ROW and will not be impacted by project construction.

Wetland Y is a forested/emergent wetland (PFO/PEM) located north of Tennent Road encompassing a stream channel at Milepost 4.70. It is possible that pollutants could enter this wetland via the stream, or from the driveway and lawn that lie adjacent. Dominant vegetation within this wetland includes sensitive fern, white meadowsweet, goldenrod, and American red raspberry. Hydrology indicators within Wetland Y include a high water table and saturated soils. Hydric soil indicators within this wetland are mucky loam soils from 0 to 6 inches, color 7.5 YR 3/1. A restrictive layer of rock is found at 6 inches of depth. This wetland is located adjacent to the ROW and will not be impacted by project construction.
Wetland Z is a scrub-shrub wetland (PSS) to the south of Tennent Road at Milepost 4.90. This wetland has a perennial stream flowing into and out of the wetland and portions of the wetland is fringing these streams. Because of the stream, and its close proximity to Tennent Road, it is possible for pollutants to enter this wetland. It is dominated by broadleaf meadowsweet, black willow \((Salix nigra, \text{ FACW})\), netted chain fern, soft rush, shallow sedge, and fringed sedge. Hydrology indicators include 1 inch of surface water, high water table, saturated soils, and drainage patterns. Soils are loam, color 10 YR 3/2 with no mottles. The soil in this wetland is a histosol, which is a hydric soil indicator. This wetland will be crossed by the pipeline and 0.09 acres will be impacted.

Wetland AA is an emergent wetland (PEM) located within the construction ROW for the pipeline south of Schoolhouse Road at milepost 4.90. Wetland AA is an isolated, marginal emergent wetland complex. It is possible that pollutants could enter this wetland from the nearby lawn and residence. This emergent wetland is dominated by sphagnum, bog goldenrod, fringed sedge, shallow sedge, and sensitive fern. Hydrology indicators include saturated soils to the surface. From 0 to 4 the soil horizon is sphagnum moss, 4 to 10 inches soils are clay-loam, color 10 YR 3/2 with prominent medium mottles, color 5 YR 4/6. This soil is hydric. This wetland will be crossed by the pipeline and 0.02 acres will be impacted.

Wetland BB is a scrub-shrub, emergent wetland (PSS/PEM) located adjacent to ARD 05 at Tennant Road, Milepost 4.89. This wetland is connected to stream 16. Dominant vegetation within this wetland includes netted chain fern, fowl bluegrass \((Poa palustris, \text{ FACW})\), and black willow. Hydrology indicators within Wetland BB include, surface water, soil saturation, and drainage patterns. Soils are organic from 0 to 4 inches and clay loam from 4 to 16 inches color 10 YR 3/2. This soil is not hydric, field verification is needed. This wetland will not be crossed by the proposed access road and will not be impacted by construction.
Wetland CC is an emergent wetland (PEM) located on the north bank of a perennial stream. Pollutants may enter this wetland from the stream or Route 17, which is less than 300 feet from the wetland. Vegetation within this wetland includes broadleaf meadowsweet, speckled alder (*Alnus* rugosa, FACW), black willow, shallow sedge, bog goldenrod, and sphagnum moss. Additionally, fern fronds were observed within the wetland. Hydrology indicators within this wetland include 2 inches of frozen surface water and the assumption of saturated soils to the surface beneath the frozen surface water. Hydric soil indicators within this wetland are clay loam, color 10 YR 2/1, with common, fine mottles, color 5 YR 4/6. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.

Wetland DD is an emergent wetland (PEM) located on the south bank of Fly Creek at Milepost 5.70. Pollutants may enter this wetland from the stream or Route 17, which is less than 200 feet from the wetland. Vegetation within this wetland includes a shallow sedge, bog goldenrod, and sphagnum moss. Emergent vegetation identification was difficult at the time of survey due to winter conditions and snow cover. Hydrology indicators within this wetland include 2 mm of surface water in portions of wetland and water table and saturated soils to the surface within the soil pit. Additionally, algae was noted in areas of surface water. Hydric soil indicators within this wetland are clay loam, color 10 YR 2/1, with common, fine mottles, color 5 YR 4/6. This wetland will be crossed by the pipeline workspace and 0.003 acre will be temporarily impacted.

Wetland EE is a forested/emergent wetland (PFO/PEM) complex, located at milepost 5.90 south of Route 17. This is an isolated wetland, not directly connected to any streams. Pollutants may enter the wetland due to the logging road that is within the wetland. Vegetation includes birch (*Betula sp.*), ash (*Fraxinus sp.*), grass-leaved goldenrod (*Euthamia graminifolia*, FAC), rough-stemmed goldenrod (*Solidago rugosa*, FAC) and late goldenrod (*Solidago gigantea*, FACW). Hydrology indicators include saturation and shallow aquitard. Hydric soil indicators within this wetland are loam from 0-6 inches, color 7.5YR 4/1, with mottles from 5 to 6 inches, color 7.5YR 5/8. This wetland will be crossed by the pipeline workspace and 0.01 acre will be temporarily impacted.
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Wetland FF is a forested/emergent wetland (PFO/PEM) complex, located at milepost 5.95, south of Route 17. This is an isolated wetland, not directly connected to any streams. Pollutants may enter the wetland due to the logging road that is within the wetland. Vegetation includes spruce (Picea sp.), sensitive fern, shallow sedge, broom sedge, dark green bulrush, grass-leaved goldenrod, late goldenrod and rough-stemmed goldenrod. Hydrology indicators include saturation, oxidized rhizospheres and shallow aquitard. Hydric soil indicators within this wetland are loam from 0 to 5 inches, color 10YR 4/1, with many oxidized root channels, and from 5 to 6 inches soils are sandy loam, color 7.5YR 6/1, with mottles, color 7.5YR 5/8. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.

Wetland GG is an emergent wetland (PEM), located at milepost 6.01. The wetland is along a hillside and is fed by several seeps and springs. Pollutants may enter the wetland via logging road. Dominant vegetation includes sensitive fern, jewelweed and grass-leaved goldenrod. Hydrology indicators include saturation, high water table, surface water up to 3 inches, drift deposits, water stained leaves and drainage patterns. Hydric soils indicators within this wetland are silt-loam, color from 0 to 4 inches 10YR 4/1.5 and from 4 to 7 inches, 10YR 4/1, with mottles, color 10YR 5/8. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.

Wetland HH is a scrub-shrub/forested wetland (PSS / PFO) complex at milepost 6.20. This is an isolated wetland, not directly connected to any streams. The wetland sits in a flat depression on top of a hill. Because it is so isolated, it is not likely that pollutants would enter this wetland. Vegetation is dominated by white meadowsweet, sphagnum moss and red maple. Hydrology indicators include surface water of 6 inches, high water table, saturation, water-stained leaves and geomorphic position. Hydrology is supplied by direct precipitation, limited runoff and a shallow bedrock. Hydric soil indicators within this wetland are silt-loam from 0 to 9 inches, with bedrock at 9 inches. Soil colors are Gley 1 2.5/N from 0 to 5 inches, with a high organic content and with mottles, color 7.5YR 5/2. From 5 to 9 inches, soil color is 10YR 6/2, with mottles, color 10YR 5/6. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.
Wetland II is a forested wetland (PFO) on a hillslope at milepost 6.31. This is an isolated wetland, not directly connected to any streams. It is possible that pollutants could run into the wetland from the nearby pasture land. Vegetation includes red maple, gray birch (*Betula populifolia*, FAC), highbush blueberry (*Vaccinium corymbosum*, FACW), soft rush, sphagnum moss, cinnamon fern and wool grass (*Scirpus cyperinus*, FACW). Hydrology indicators include saturation and water-stained leaves. Hydric soil indicators within this wetland are organic from 0 to 3 inches and silty-clay-loam from 3 to 8 inches; color 10YR 2/1. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.

Wetland II-1 is an emergent wetland (PEM) located on the edge of a pasture at milepost 6.44. This is an isolated wetland, not directly connected to any streams. It is possible that pollutants could run into the wetland from the nearby pasture land. Vegetation includes broadleaf cattail, panicled aster (*Aster simplex*, FACW), green bulrush (*Scirpus atrovirens*, OBL), Wool grass (*Scirpus cyperinus*, FACW), flat-top goldentop, poverty rush, tussock sedge, cone-cup spikerush (*Eleocharis tuberculosa*, OBL). Hydrology indicators include surface water with 3” depth, high water table, saturation, aquatic fauna, and shallow aquitard. Soils were saturated. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.

Wetland II_2 is an emergent wetland (PEM) located north of Laurel Lake Road in a pasture at milepost 6.50. This is an isolated wetland, not directly connected to any streams. It is possible that pollutants could run into the wetland from the nearby pasture land. Vegetation found within this wetland included arrowleaf tearthumb, creeping jenny (*Lysimachia nummularia*, OBL), common boneset, nodding beggartick (*Bidens cernua*, OBL), threepetal bedstraw (*Gallium trifidum*, FACW), and American water horehound (*Lycopus americanus*, OBL). Soils were silt loam from 0 to 4 inches, color 7.5 YR 4/1, oxidized root channels were present. Below 4 inches was a restrictive rock layer. Hydrology indicators include high water table, saturation, and oxidized rhizospheres on living roots. This wetland will be crossed by the workspace and 0.02 acre will be temporarily impacted.
Wetland II-3 is an emergent wetland (PEM) located north of Laurel Lake Road in a pasture at milepost 6.57. This is an isolated wetland, not directly connected to any streams. It is possible that pollutants could run into the wetland from the nearby pasture land. Dominant vegetation within this wetland includes reed canary grass, common rush, and arrowleaf tearthumb. Soils were silt loam from 0 to 3 inches color 7.5 YR 4/1. Hydrology indicators include saturation, oxidized rhizospheres on living roots, and geomorphic position. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.

Wetland II-4 is an emergent wetland (PEM) located north of Laurel Lake Road in a pasture at milepost 6.60. This is an isolated wetland, not directly connected to any streams. It is possible that pollutants could run into the wetland from the nearby pasture land. Dominant vegetation within this wetland includes reed canary grass, wool grass, lance leaf goldenrod and an unknown goldenrod species. Soils were silt loam from 0 to 12 inches color 10YR 4/1, with few prominent mottles color 7.5YR 5/6. Below 12 inches is a restrictive rock layer. Hydrology indicators within this wetland include saturation, hydrogen sulfide odor, oxidized rhizospheres on living roots, and drainage patterns. This wetland is crossed by the pipeline and will be crossed with the use of a bore and 0.16 acre of wetland will be crossed.

Wetland II-5 is a scrub-shrub wetland (PSS) located south of Laurel Lake Road at milepost 6.74. This wetland is connected to stream 33. It is possible that pollutants could run into the wetland from the nearby pasture land. Vegetation within this wetland includes woolgrass, flat-top goldenrod, sensitive fern, and yellow nutsedge (*Cyperus esculentus*, FACW). Soils within this wetland were silt loam from 0 to 4 inches color 10 YR 4/1, below 4 inches is a restrictive rock layer. Hydrology indicators within this wetland include surface water with a depth of 8 inches, high water table, saturation, water marks, drift deposits, water-stained leaves, aquatic fauna, drainage patterns, and geomorphic position. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.
Wetland II-6 is a small emergent wetland (PEM) located south of Laurel Lake road at milepost 6.70. This wetland is connected to stream 33. It is possible that pollutants could run into the wetland from the nearby pasture land. Dominant vegetation within this wetland includes white pine (Pinus strobus, FACU), silky willow (Salix sericea, OBL), white meadowsweet, and sensitive fern. Soils within this wetland were too saturated to determine texture and were 0 to 3 inches deep color 7.5 YR 4/1. Hydrology indicators within this wetland include surface water less than 1 inch deep, high water table, and saturation. This wetland is crossed by the workspace and 0.002 acre will be impacted by project construction.

Wetland JJ is an emergent wetland (PEM) located north of Laurel Lake Road at milepost 6.74. This wetland is hydrologically connected to other resources, including streams. The wetland sits near a road and pasture, and there are large amounts of trash in the area, so it is quite possible for this wetland to become polluted. Dominant vegetation includes soft rush, bog goldenrod, jewelweed, shallow sedge and boneset (Eupatorium perfoliatum, FACW). Hydrology indicators include saturation and oxidized rhizospheres on living roots. Soils are organic from 0 to 2 inches, and clay-loam from 2 to 8 inches, color 10YR 3/3, with prominent, medium mottles, color 2.5YR 4/8. This soil is not hydric, field verification is needed. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.

Wetland KK is an emergent/scrub-shrub wetland (PEM / PSS) complex located north of Laurel Lake Road at milepost 6.75. This wetland is adjacent to streams and Wetland JJ. The wetland sits near a road and pasture, and there are large amounts of trash in the area, so it is quite possible for this wetland to become polluted. Dominant vegetation includes black willow, soft rush, jewelweed and broad-leaved cattail. Hydrology indicators include saturation and oxidized rhizospheres. Soils are clay loam from 0 to 10 inches, color 10YR 3/3, with prominent medium mottles, color 2.5YR 4/8. This soil is not hydric, field verification is needed. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.
Wetland LL is a scrub-shrub wetland (PSS) located north of Laurel Lake Road at milepost 6.75. This wetland is connected to a stream, located along the roadside. The wetland sits near a road and pasture, and there are large amounts of trash in the area, so it is quite possible for this wetland to become polluted. Dominant vegetation includes black willow, jewelweed and boneset. Saturation at the surface is the only hydrology indicator. Hydric soil indicators within this wetland are sandy clay from 0 to 16 inches, with color 10YR 4/2, and some prominent, coarse mottles, of color 5YR 4/6. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.

Wetland MM is an emergent wetland (PEM), associated with an intermittent stream, located between Laurel Lake Road and Vale Road at milepost 7.40. It is possible that pollutants could enter this wetland from the stream. The dominant vegetation within this wetland consists of jewelweed and marsh bedstraw. Hydrology in this wetland included saturation and drainage patterns. Hydric soil indicators within this wetland are loam from 0 to 8 inches, color 10 YR 3/2, with common, medium-sized mottles color 5 YR 5/8. This wetland will be crossed by the workspace and 0.006 acre will be temporarily impacted.

Wetland NN is located north of Vale Road adjacent to the construction ROW at milepost 7.56. Wetland NN is a forested, shrub-scrub wetland (PFO/PSS) complex. This is an isolated wetland, not associated with any streams. Because it is so isolated, it is not likely that pollutants would enter this wetland. Vegetation in this wetland includes fringed sedge, shallow sedge, smooth black sedge, sphagnum moss, highbush blueberry, soft rush, sensitive fern and red maple. Hydrology indicators include saturation at the surface, drainage patterns, and microtopographic relief. Hydric soil indicators within this wetland are clay loam from 0 to 12 inches color 7.5 YR 3/1 with many distinct, medium sized mottles color 5YR 4/4. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.
Wetland NN-1 is an emergent wetland (PEM) associated with intermittent stream (S-39) located east of Lawrence Road at milepost 8.10. It is possible that pollutants could enter this wetland from the stream. The dominant vegetation within this wetland consists of blue flag iris, spotted jewelweed, tussock sedge, and late goldenrod. Hydrology in this wetland included saturation, inundation visible on aerial imagery, water-stained leaves, oxidized rhizospheres on living roots, moss trim lines, microtopographic relief, and drainage patterns. Hydric soil indicators within this wetland are silt loam from 0 to 3 inches, color 10 YR 3/2, from 3 to 6 inches, color 10 YR 5/2 with common, medium-sized mottles color 10 YR 5/6. This wetland will be crossed by the pipeline and 0.043 acre will be impacted.

Wetland OO is an emergent/forested wetland (PEM / PFO) complex. It is located near the state line at milepost 8.90. This wetland is associated with a stream. There is a potential for pollutants to enter this wetland due to the logging road, which goes through the wetland. Vegetation in this wetland includes fringed sedge, jewelweed, fox sedge, shallow sedge, bristlebract sedge (*Carex tribuloides*, FACW) and sensitive fern. The PFO portion of the wetland contained mainly eastern hemlock. Hydrology indicators include surface water up to 2 inches in portions of the wetland, high water table, saturation and drainage patterns. Soils are organic in the top inch, and silty loam from 1 to 6 inches, color 10YR 3/2. This soil is not hydric, field verification is needed. This wetland will be crossed by the pipeline and 0.17 acre will be impacted.

Wetland PP is a forested, scrub-shrub wetland (PFO / PSS) complex. This is an open-ended wetland, and it is not known if it is associated with any streams. It is possible that pollutants could enter this wetland from a nearby road. It is located near the state line at milepost 8.95. Vegetation in this wetland includes eastern hemlock, highbush blueberry, sphagnum moss, rough-leaved goldenrod and ostrich fern. Hydrology indicators include a high water table, saturation and oxidized rhizospheres. Hydric soil indicators within this wetland are organic in the top 2 inches, and silty loam from 3 to 6 inches, color 10YR 4/1, with mottles, color 10YR 4/6. This wetland is located adjacent to the right-of-way and will not be impacted by project construction.
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#### 3.2.2 Description of Streams

Stream 01 is an intermittent, warm water stream located west of the compressor station site. The stream emerges from a seep in open woods, flows onto and is captured briefly by a logging trail, and then flows through scrub-shrub Wetland A. The stream has an estimated width of 2.5 feet. The substrate is composed of cobble, gravel, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to logging activity in the area and the logging trail that crosses through the stream. This stream will not be crossed by the pipeline, but will be crossed by fencing for the compressor station and will be temporarily impacted for 68.0 feet.

Stream 02 is a perennial, warm water stream located east of the compressor station site at milepost 0.01. The stream has an estimated width of 3.0 feet. The substrate is composed of cobble, gravel, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to logging activity in the area. This stream will be crossed by the pipeline by open cut with a crossing width of 77.0 feet.

Stream 02A is a perennial, cold water stream located west of Pazzelli Road at the Millennium Pipeline right of way at milepost 0.15. The stream has an estimated width of 6 feet. The substrate is composed of boulders, cobble, gravel, sand, and silt. There is a potential for pollutants to enter this stream due to runoff from Pazzelli Road and the Millennium Pipeline access road. This stream has an existing culvert under ARD 01 and will not be impacted by construction.

Stream 03 is a perennial, cold water stream located north of William Law Road at milepost 0.40. The stream has an estimated width of 5 feet. The substrate is composed of boulders, cobble, gravel, sand, and silt. There are no potential pollutant sources to this stream. This stream will be crossed by the pipeline by open cut with a crossing width of 83.0 feet.

Stream 04 is an intermittent, warm water stream located north of William Law Road at milepost 0.50. The stream has an estimated width of 0.8 feet. The substrate is composed of cobble, gravel, sand, silt, and clay. There are no potential pollutant sources to this stream. This stream will be crossed by the pipeline by open cut with a crossing width of 78.0 feet.

Stream 05 is an intermittent, warm water stream located north of William Law Road at milepost 0.50. The stream has an estimated width of 0.8 feet. The substrate is composed of boulders,
cobble, gravel, sand, silt, and clay. There are no potential pollutant sources to this stream. This stream will be crossed by the pipeline by open cut with a crossing width of 83.0 feet.

Stream 06 is a perennial, cold water stream located north of William Law Road at milepost 0.50. The stream has an estimated width of 3.3 feet. The substrate is composed of boulders, cobble, gravel, sand, silt, and clay. There are no potential pollutant sources to this stream. This stream will be crossed by open with a crossing width of 80.0 feet.

Stream 07 is a perennial, cold water stream located north of William Law Road at milepost 0.50. This stream is directly associated with scrub-shrub Wetland H. The stream has an estimated width of 1.6 feet. The substrate is composed of boulders, cobble, gravel, silt, and clay. There are no potential pollutant sources to this stream. This stream will be crossed by the pipeline by open cut with a crossing width of 78.0 feet.

Stream 07a is a small ephemeral, warm water stream located north of William Law Road at milepost 0.60. This stream emerges from the outflow of forested Wetland I. The stream has an estimated width of 1 foot. The substrate is composed of cobble, gravel, silt, and detritus. There is a potential for pollutants to enter this stream due to a logging two-track that crosses immediately upslope of the stream. This stream is located adjacent to the ROW and will not be impacted by project construction.

Stream 08 is an intermittent, warm water stream located north of William Law Road at milepost 0.89. This stream flows from open woods and pasture into a quarry and emerges downslope from the quarry rubble, flowing steeply down into mixed woods. The stream has also been excavated and impounded immediately upslope of the quarry. The stream has an estimated width of 3.2 feet. The substrate is composed of boulders, cobble, gravel, and detritus. There is a potential for pollutants to enter this stream due to a light-use two-track that crosses through the stream, from the cattle pasture/farmland upslope, and from activities associated with the quarry. This stream will be crossed by the pipeline by open cut with a crossing width of 130.45 feet.

Stream 09 is an intermittent, warm water stream located north of William Law Road at milepost 1.16. The stream has an estimated width of 3.2 feet. The substrate is composed of cobble, gravel, silt, clay, and detritus. There is a potential for pollutants to enter this stream due to the cattle pasture/farmland upslope. This stream is located adjacent to the ROW and will not be impacted by project construction.
Stream 10 is an ephemeral, warm water stream located north of William Law Road at milepost 1.40. The stream flows through an open woods; however, the landowner has clear-cut along the stream. The stream has an estimated width of 5 feet. The substrate is composed of cobble, gravel, clay, detritus, and muck-mud. There is a potential for pollutants to enter this stream due to the nearby cattle pasture/farmland. This stream will be crossed by the pipeline by open cut with a crossing width of 84.0 feet.

Stream 11 is an intermittent, warm water stream, at milepost 1.60, that flows under William Law Road via a culvert. The stream has an estimated width of 4 feet. The substrate is composed of boulders, cobble, gravel, and silt. There is a potential for pollutants to enter this stream due to runoff from the William Law Road and the adjacent cattle pasture/farmland. This stream is located within the workspace of the pipeline and will be temporarily impacted by project construction with a crossing width of 7.5 feet.

Stream 12 is an intermittent, cold water stream located south of William Law Road at milepost 1.68. Stream 12 is a tributary to Marsh Creek and is classified as a C(T) stream. It is directly associated with emergent Wetland O and an intermittent agricultural drainage and flows into forested Wetland Q. The stream has an estimated width of 5 feet. The substrate is composed of cobble, gravel, clay, and detritus. There is a potential for pollutants to enter this stream due to runoff from the William Law Road and the adjacent cattle pasture/farmland. Stream 12 is located adjacent to the ROW and will not be impacted by project construction.

Stream 13 is an ephemeral, warm water stream located south of William Law Road at milepost 2.20. The stream flows through an open woods; however, the landowner has clear-cut along the stream. The stream has an estimated width of 1.5 feet. The substrate is composed of cobble, gravel, clay, and detritus. There is a potential for pollutants to enter this stream due to logging activity in the area and the nearby pasture land. This stream is located within the workspace of the pipeline and will be temporarily impacted by project construction with a crossing width of 50.5 feet.

Stream 14 is an intermittent, warm water stream located south of William Law Road at milepost 2.40. This stream is directly associated with emergent Wetland R. Stream 14 has an estimated width of 6 feet. The substrate is composed of cobble, gravel, clay, detritus, and muck-mud. There is a potential for pollutants to enter this stream due to logging activity in the area. This stream will be crossed by open cut with a crossing width of 118.0 feet.
Stream 15 is a perennial, cold water, C(T) stream located south of William Law Road at milepost 2.60. Stream 15 is a tributary to Marsh Creek and is directly associated with emergent Wetland S. The stream has an estimated width of 6 feet. The substrate is composed of cobble, gravel, silt, clay, detritus, and muck-mud. There are no potential pollutant sources to this stream. This stream will be crossed by open cut with a crossing width of 98.0 feet.

Stream 16 is a perennial, cold water stream located south of William Law Road at milepost 2.60. This stream is directly associated with emergent Wetland T. The stream has an estimated width of 6 feet. The substrate is composed of cobble, gravel, silt, clay, detritus, and muck-mud. There are no potential pollutant sources to this stream. This stream will be crossed by open cut with a crossing width of 105.0 feet.

Stream 17 is an ephemeral, warm water stream located south of William Law Road at milepost 2.60. This stream is directly associated with emergent Wetland T. The stream has an estimated width of 6 feet. The substrate is composed of boulders, cobble, gravel, silt, and detritus. There are no potential pollutant sources to this stream. This stream will be crossed by open cut with a crossing width of 97.5 feet.

Stream 18 is an ephemeral, warm water stream located south of William Law Road adjacent to ARD 05 at milepost 4.0. The stream has an estimated width of 5 feet. The substrate is composed of gravel, sand, silt, clay, and detritus. There are no potential pollutant sources to this stream. This stream is adjacent to an access road and will not be impacted by project construction.

Stream 19 is an intermittent, warm water stream located north of Tennent Road at milepost 4.54. This stream is directly associated with emergent Wetland X and emergent Wetland Y. The stream has an estimated width of 10 feet. The substrate is composed of boulders, cobble, gravel, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to logging activity in the area and the residential driveway that crosses the stream. The stream will be located in the pipeline workspace and will be temporarily impacted with a crossing width of 26.5 feet.

Stream 20 is an intermittent, warm water stream located north of Tennent Road at milepost 4.65. This stream is directly associated with emergent Wetland X and emergent Wetland Y. The stream has an estimated width of 2.0 feet. The substrate is composed of boulders, cobble, gravel, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to logging
activity in the area and the residential driveway that crosses the stream. This stream is located adjacent to the ROW and will not be impacted by project construction.

Stream 21 is an intermittent, warm water stream located north of Tennent Road at milepost 4.65. The stream has an estimated width of 3.2 feet. The substrate is composed of cobble, gravel, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to logging activity upslope. This stream is located adjacent to the ROW and will not be impacted by project construction.

Stream 22 is an ephemeral, warm water stream located north of Tennent Road at milepost 4.78. The stream has an estimated width of 4.3 feet. The substrate is composed of boulders, cobble, gravel, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to logging activity upslope. This stream is located adjacent to the ROW and will not be impacted by project construction.

Stream 23 is a perennial, cold water stream located north of Tennent Road at milepost 4.81. The stream is directly associated with a scrub-shrub wetland and Stream 24 and has an estimated width of 6.5 feet. The substrate is composed of cobble, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to an access road and residential property upslope. This stream is located adjacent to the ROW and will not be impacted by project construction.

Stream 24 is a perennial, cold water, B(T) stream located north of Tennent Road at milepost 4.90. Stream 24 is a tributary to Fly Creek and has an estimated width of 20 feet. The substrate is composed of boulders, cobble, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to runoff from Tennent Road. Stream 24 will be crossed by the pipeline through the use of a bore and by ARD 04 by an existing culvert; this stream will not be impacted by the pipeline crossing.

Stream 25 is a perennial, cold water stream located south of Tennent Road at milepost 4.90. The stream has an estimated width of 4.0 feet. The substrate is composed of boulders, cobble, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to runoff from Tennent Road. This stream will be bored for the pipeline crossing and will not be impacted.

Stream 26 is a perennial, cold water stream located south of Tennent Road a milepost 4.91. Stream 26 is crossed by ARD 05 with an existing culvert. This stream is directly associated with
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scrub-shrub Wetland Z. The stream has an estimated width of 2.5 feet. The substrate is composed of boulders, cobble, gravel, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to runoff from the access road. This stream already has an existing culvert and will not be impacted by pipeline construction.

Stream 27 is a perennial, warm water stream located north of Highway 17 at milepost 5.67. The stream has an estimated width of 8 feet. The substrate is composed of cobble, sand, silt, detritus, and muck-mud. There is a potential for pollutants to enter this stream due to runoff from the adjacent highway. This stream will be crossed by open cutting with a crossing width of 82.0 feet.

Stream 28 (Fly Creek) is a perennial, cold water, B(T) stream located south of Highway 17 at milepost 5.74. The stream has an estimated width of 30 feet. The substrate is composed of boulders, cobble, gravel, sand, and detritus. There is a potential for pollutants to enter this stream due to runoff from the adjacent highway or from the upslope railroad. This stream will be bored for the pipeline crossing and will be impacted by the travel path with a crossing width of 53.0 feet.

Stream 29 is an intermittent, warm water stream located south of Highway 17 at milepost 5.75. The stream emerges from a seep at the toe of a slope beneath a railroad and flows into Fly Creek, Stream 28. The stream has an estimated width of 3 feet. The substrate is composed of gravel, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to runoff from the upslope railroad. This stream is located adjacent to the ROW and will not be impacted by project construction.

Stream 29A is an intermittent, cold water stream located south of Highway 17 that flows under Norfolk Southern Railroad via a 2 foot wide stone culvert at milepost 5.80. The south side of the culvert under the railroad is almost entirely blocked by sediment and debris. The stream has an estimated width of 3.3 feet. The substrate is composed of boulders, cobble, gravel, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to runoff from the upslope railroad. Stream 29A will be crossed by ARD 07 through an existing culvert and will not be impacted by pipeline construction.

Stream 29B is an intermittent, cold water stream located south of Highway 17 that flows under Norfolk Southern Railroad via a 2 foot wide stone culvert at milepost 5.80. The stream has an estimated width of 3.3 feet. The substrate is composed of boulders, cobble, gravel, sand, and
Stream 29C is a perennial, warm water stream located south of Highway 17 that flows under Norfolk Southern Railroad via an open-bottomed 8 foot wide arched stone culvert at milepost 5.94. The stream has an estimated width of 10 feet. The substrate is composed of boulders, cobble, gravel, sand, and detritus. There is a potential for pollutants to enter this stream due to runoff from the upslope railroad. This stream will be crossed by ARD 07 through an existing culvert and will not be impacted by pipeline construction.

Stream 29D is a perennial, warm water stream located east of Gulf Summit Road that flows under Norfolk Southern Railroad via an open-bottomed 6 foot wide arched stone culvert at milepost 6.55. The stream has an estimated width of 6.0 feet. The substrate is composed of boulders, cobble, gravel, sand, silt, and detritus. There is a potential for pollutants to enter this stream due to runoff from the upslope railroad. This stream will be crossed by ARD 07 through an existing culvert and will not be impacted by pipeline construction.

Stream 30 is an intermittent, warm water stream located north of Laurel Lake Road at milepost 6.52. This stream is directly associated with emergent Wetland JJ. The stream has an estimated width of 3.2 feet. The substrate is composed of boulders, cobble, sand, silt, and clay. There is a potential for pollutants to enter this stream due to runoff from the adjacent pasture land. This stream is located adjacent to the ROW and will not be impacted by project construction.

Stream 31 is a perennial, warm water stream located north of Laurel Lake Road at milepost 6.64 connecting a pond and emergent Wetland JJ. The stream has an estimated width of 4.2 feet. The substrate is composed of boulders, cobble, sand, silt, and clay. There is a potential for pollutants to enter this stream due to runoff from the adjacent pasture land. This stream is located adjacent to the ROW and will not be impacted by project construction.

Stream 31-1 is an ephemeral, warm water stream located north of Laurel Lake Road at milepost 6.50. The stream has an estimated width of half a foot. The substrate is composed of gravel, cobble, and sand. There is a potential for pollutants to enter this stream due to runoff from the adjacent farm road. This stream is crossed by the pipeline and workspace and will be open cut with a crossing width of 587.0 feet.
Stream 32 is a perennial, cold water, B(T) stream located north of Laurel Lake Road at milepost 6.70. Stream 32 is a tributary to Fly Creek and has an estimated width of 20 feet. The substrate is composed of boulders, cobble, gravel, sand, and silt. There is a potential for pollutants to enter this stream due to runoff from the adjacent road and residential properties. This stream will be crossed by the pipeline with the use of a bore. Stream 32 will also be crossed by ARD 08 through an existing culvert and will not be impacted by the access road.

Stream 32-1 is an ephemeral, warmwater stream located on the south side of Laurel Lake Road at milepost 6.70. Stream 32-1 is approximately one foot wide and its substrate is composed of gravel, cobble, sand, silt and clay. There is a potential for pollutants to enter this stream due to runoff from the adjacent road. This stream will be crossed by the pipeline with the use of a bore.

Stream 33 is a perennial, cold water stream located south of Laurel Lake Road at milepost 6.74. The stream has an estimated width of 4 feet. The substrate is composed of sand, silt, and clay. There is a potential for pollutants to enter this stream due to runoff from the adjacent road and residential properties. This stream will be crossed by the pipeline with the use of a bore.

Stream 35 is an intermittent, warm water stream located at milepost 7.40. This stream is directly associated with emergent Wetland MM. The stream has an estimated width of 3.0 feet. The substrate is composed of cobble, gravel, sand, silt, clay, and detritus. There are no potential pollutant sources to this stream. This stream will be crossed by open cut with a crossing width of 75.0 feet.

Stream 36 is an intermittent, warm water stream located east of Lawrence Road at milepost 7.99. The stream has an estimated width of 1 foot. The substrate is composed of boulders, cobble, gravel, silt, clay, and detritus. There are no potential pollutant sources to this stream. This stream is located adjacent to the ROW and will not be impacted by project construction.

Stream 37 is an intermittent, warm water stream located east of Lawrence Road at milepost 8.00. The stream has an estimated width of 2.6 feet. The substrate is composed of boulders, cobble, gravel, silt, clay, and detritus. There are no potential pollutant sources to this stream. This stream is located adjacent to the ROW and will not be impacted by project construction.

Stream 38 is an intermittent, warm water stream located east of Lawrence Road at milepost 8.07. The stream has an estimated width of 2.6 feet. The substrate is composed of silt, clay, and...
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detritus. There are no potential pollutant sources to this stream. This stream is located adjacent to the ROW and will not be impacted by project construction.

Stream 39 is an intermittent stream located east of Lawrence Road at milepost 8.08. The stream has an estimated width of 3.2 feet. The substrate is composed of cobble, gravel, silt, clay and detritus. There are no potential pollutant sources to this stream. This stream will be crossed by open cut with a crossing length of 80.5 feet.

Stream 40 is a perennial, cold water stream located east of Lawrence Road at milepost 8.91. The stream has an estimated width of 1.6 feet. The substrate is composed of cobble, gravel, sand, and detritus. There is a potential for pollutants to enter this stream due to an adjacent logging road. This stream will be crossed by open cut with a crossing width of 65.0 feet.
3.3 WETLAND FUNCTION AND BENEFIT ASSESSMENT

Based on the USACE New England District, Wetland Functions and Values, A Descriptive Approach method, each wetland was rated qualitatively for individual functions and values. A total of fifty-four (54) wetlands were surveyed within the project area.


Multiple wetlands were ranked suitable for Wildlife Habitat (wetlands A, B, D4, D5, E, F, G, H, I, J, L, Q, R, S, T, U, W, X, Y, Z, AA, BB, CC, DD, II-5, and NN-1). Many of the wetlands in the project area were adjacent to undeveloped upland habitat and contained wildlife food or cover sources, such as highbush blueberry, soft rush, bedstraw, and cattails. Only three wetlands were found suitable for fish and shellfish habitat (Wetlands S, T and LL), as few wetlands contained standing water at the time of survey or evidence that standing water is present for a majority of the year.

Wetlands MM and NN were ranked suitable for Recreation and Educational Scientific Value, as these wetlands were located on property owned by the Boy Scouts of America. Wetland NN-1 was also ranked suitable for Educational Scientific Value because of its potential for scientific study. Wetland A was the only wetland that ranked for uniqueness/heritage and no wetlands ranked as suitable for visual quality/aesthetics or threatened or endangered species habitat. See Table 2 for a summary of each wetland’s suitability for these functions and values.
3.4 CONCLUSIONS

From June 2010 through October 2011, the environmental survey team for URS Corporation conducted a wetland and stream delineation of approximately 9 miles of the pipeline corridor in Broome County, New York. Wetland and stream boundaries were clearly marked and labeled with flagging tape or stake flags. Fifty-four (54) wetlands were identified within the survey area for the project. Stream boundaries were clearly marked and labeled with pink or blue flagging tape. Forty-eight (48) streams were identified within the survey area for the project.

Please be advised that the physical characteristics of the project area can change and are dependent on factors such as weather, drainage alterations, and the time of the year the wetland delineation was performed.

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


Wetland Assessment Report
Bluestone Gathering System

SECTION FIVE

Corporate and Professional Qualifications

URS has been a worldwide provider of comprehensive environmental and other specialized consulting and engineering services for more than 100 years. The Corporate Headquarters for URS is in San Francisco, California. The company has more than 200 offices in 20 countries, and is staffed by over 30,000 professional and support personnel.

Mr. Brendan Earl, Environmental Scientist, Ms. Sara Wade, Environmental Specialist, Ms. Debora Endriss, Biologist, Mr. Jeremy Trexel, Biologist, Mr. Jeremy Spires, Biologist, Mr. Brent Crafton, Biologist, Mr. William Trembath, Biologist, Ms. Nicole Olson, Environmental Scientist, Ms. Kate Gaglio, Biologist, Mr. Derek Murray, Field Technician, and Mr. Josh Zylstra, Environmental Scientist for URS Corporation performed the wetland delineation, data acquisition, and reporting. These individuals are qualified environmental professionals with extensive environmental experience and training from URS offices located in Southfield and Grand Rapids, Michigan, Buffalo, New York, St. Louis, Missouri, Franklin, Tennessee, and Pittsburgh, Pennsylvania.

Sincerely,

URS Corporation Great Lakes

Sherry Slocum
Manager, Ecological Services Group