SOIL SCIENTIST REPORT

FOR THE CONNECTICUT PORTION

OF THE

CONNECTICUT EXPANSION PROJECT

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1.0 INTRODUCTION

The Proposed Connecticut Expansion Project (the "Project") involves the construction of two sections of new 36-inch outside diameter ("OD") pipeline looping totaling 1.35 miles in Albany County, New York and 3.81 miles in Massachusetts, and one section of new 24-inch OD pipeline looping totaling 8.1 miles in Berkshire and Hampden Counties, Massachusetts and Hartford County, Connecticut ("Connecticut Loop"). The Project occurs primarily within or adjacent to the right-of-way ("ROW") associated with the Tennessee Gas Pipeline Company, L.L.C. ("Tennessee") existing pipeline designated as the 200 and 300 Lines.

AECOM soil and wetland scientists identified wetlands and watercourses during the fall of 2013 along the Connecticut Loop that are subject to state or federal jurisdiction, based on the Connecticut Inland Wetlands and Watercourses Act (Section 22a-36 through 45 of the Connecticut General Statutes) and the Federal Clean Water Act ([CWA]; 33 U.S.C. 1344). Detailed descriptions of employed methodologies are described in AECOM's report "*Inventory and Delineation of Wetlands and Watercourses along the Connecticut Portion of the Connecticut Expansion Project, April 2014*". Connecticut defines a wetland based on the presence of poorly drained, very poorly drained, alluvial and floodplain soils as defined by the National Cooperative Soils Survey. Therefore, this Soil Scientist Report was developed as an addendum to the AECOM wetland report and identifies, describes, and lists in greater detail the soil characteristics and soil-based constraints associated with the construction and operation of the proposed Connecticut Loop and its associated facilities for both wetland and upland portions of the Project. Soil characteristics traversed by the Project are based on U.S. Department of Agriculture ("USDA") Natural Resource Conservation Service ("NRCS") information for Hartford County, Connecticut. This includes information available from the NRCS Web Soil Survey (USDA-NRCS 2014).

2.0 SOILS ANALYSIS

In general, soils that exhibit similar horizon composition, thickness, and arrangement make up a Soil Series. The layout of these series on the landscape provides useful information, such as drainage class and geologic origin. Series can be subdivided into map units, or phases, with similar physical and chemical properties that can affect the management of a soil. These properties can include slope, stoniness, acidity, wetness, and depth to bedrock. Series and phases are used together to classify and map specific soil types on a landscape.

In the following sections, each soil series map unit crossed by the Connecticut Loop alignment, Access Roads and Pipe Yards are described in detail, and summarized for the entire project. This information was obtained from the USDA-NRCS's Web Soil Survey information for the Hartford County Soil Survey Area available on-line (USDA-NRCS 2014). In addition, Tables in Attachment A display characteristics of each soil series map unit, including erosion potential, capability class, drainage class, wind erodibility group and depth to water table. This information is important for directing Best Management Practices ("BMPs") that will minimize impacts associated with erosion of important soils such as prime farmlands and preventing transport of those soils into adjacent wetlands and watercourses. Figures of the proposed pipeline corridor, access roads and contractor/pipeyards in relation to field delineated wetlands and NRCS Soil Series' are included in Attachment B.

2.1 SOIL SERIES SUMMARY

The Connecticut Loop is located within the New England Uplands Section of the New England physiographic province (Figure 1). The Connecticut Loop lies within the Central Valley of the New England Uplands, a north-south trending area between the Western and Eastern Uplands (Fenneman 1938). It is a broad, flat valley developed on fairly weak, tilted, stratified rocks, which are Triassic in age. The topography in the area is the product of continental glaciers moving through the region. As these glaciers melted, they dropped sediments resulting in a large amount of till remaining throughout the Connecticut Valley. The Connecticut Valley consists of flood plains along the Connecticut and Farmington Rivers, with nearly level to sloping terraces, low glacial upland hills, and narrow ridges of basalt. Elevations in the region range from 10 feet above sea level on the flood plain of the Connecticut River to 500 feet on the highest basalt ridges (USDA 2008).

Pipeline Corridor

Soils along the Project route in Hartford County (Figures 2 and 3; Table 2-1) formed within a variety of parent materials. However, fine-silty and clayey glaciolacustrine deposits are the most prevalent along the pipeline corridor making up approximately 70% of the corridor. These soils tend to be moderately well drained when silty, but the clayey Scitico, Shaker and Maybid soils, which make up approximately 46% of the pipeline corridor alone, are poorly drained hydric soils. Other soils within the pipeline corridor formed in eolian (wind-blown) deposits over till, sandy to gravelly glaciofluvial material (including outwash plains, and terraces on valleys, and kames) and clayey glaciolacustrine deposits account for approximately 17% of the pipeline corridor. The glaciofluvial deposits were laid down by melt water from retreating glaciers and the texture of this material generally ranges from fine to coarse sand to gravel due to the relatively high energy of the melt water from glaciers. Only about 2% of the corridor soils formed in a coarse-loamy lodgment till (e.g., Wethersfield loam) that were smeared beneath the glacier as it advanced or deposited in place as the glacier wasted. These soils can be highly variable in texture and drainage class, although till soils in the pipeline corridor are primarily well drained except for the poorly drained Wilbraham silt loam.

Approximatley 58% of the pipeline corridor is mapped as poorly and very poorly drained wetland soils, of which approximately 4% is considered alluvial-floodplain by the NRCS. Although alluvial and floodplain soils may sometimes be excessively drained, they do not occur on this alignment (i.e., all soils mapped by the NRCS along the alignment as alluvial/floodplain soils are poorly drained or wetter). NRCS has not mapped any poorly drained to very poorly drained hydric soils within the corridor that were formed in organic material (i.e., Histic Epipedons [8-16 inches thick] or Histosols [16-32 inches thick]) among various stages of decomposition (i.e., sapric, hemic or fibric). Poor drainage is more associated with landscape position, and a predominance of fine-textured soils that can result in restrictive layers and perched water tables.

Table 2-2 tabulates soils-specific information for each of the delineated wetland areas along the Project ROWs, identifying each in terms of Project-specific number, location, wetland classification, mapped soil and drainage classification (per the NRCS data), and hydric soil indicators observed during the delineations. As a result of the mapping scale used in creating NRCS maps (typically 1:25,000), more than one NRCS mapping unit is usually associated with an individual wetland. However, field information generally supported that information previously determined by the NRCS, coninciding with soils mapped as poorly drained and very poorly drained.

Prime farmland and farmland of statewide importance are identified for their high soil quality, adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season,

acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks, which results in high productivity of food, feed, fiber, forage, and oil seed crops. Due to the depositional nature and parent material of soils located within the pipeline corridor, nearly 95% of the lands are designated as prime farmland and farmland of statewide importance.

Access Roads

While public roads and the construction ROW will be used for primary access to the pipeline loop segments during construction, access roads have been identified for potential use during construction of the Project. Proposed access roads, if utilized, will require minor improvements to allow for passage of construction vehicles, the Project will not require any modification of existing land use associated with the identified access roads during construction.

As with the pipeline alignment, the dominant soil encountered adjacent to (or beneath) the existing access roads is the poorly drained Scitico, Shaker and Maybid complex (approximately 30% of the total access road length; Table 2-3) followed by the poorly drained Raynham silt loam (~12%) and the very poorly drained Saco silt loam (~9%). The remaining soils are moderately well drained to excessively drained upland soils (approximately 48% of the total access road length).

Pipe Yards

There are two site locations which have been identified for use as contractor/pipe yards within Hartford County. One is located within both Agawam, MA and Suffield, CT at the beginning of the Connecticut Loop (straddling the state boundaries), and the other is located in East Granby (Figures 2 and 3). Based on the NRCS soils data, pipe yards are situated on portions of poorly drained and very poorly drained wetland soils (Table 2-4). However, based on field delineated hydric soil boundaries, the pipe yards are proposed only on moderately well, to well drained upland soils and will not result in any wetland impacts. Soil conditions observed adjacent to both pipe yards are consistent with NRCS soils data.

2.2 SOIL SERIES DESCRIPTIONS

Agawam fine sandy loam, 0 to 3 percent slopes (29A)

The Agawam component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on outwash plains on valleys, terraces on valleys. The parent material consists of coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

Amostown fine sandy loam, 0 to 6 percent slopes (258B)

The Amostown component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of friable sandy glaciofluvial deposits over hard silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation

is at 21 inches during December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Bancroft silt loam, 0 to 3 percent slopes (25A)

The Brancroft component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on terraces on lake plains. The parent material consists of fine-silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is very high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, April, October, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Bancroft silt loam, 3 to 8 percent slopes (25B)

The Brancroft component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on terraces on lake plains. The parent material consists of fine-silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is very high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, April, October, November, and December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Belgrade silt loam, 0 to 5 percent slopes (27A)

The Belgrade component makes up 80 percent of the map unit. Slopes are 0 to 5 percent. This component is on terraces on lake plains. The parent material consists of silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, November, and December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Broadbrook silt loam, 3 to 8 percent slopes (82B)

The Broadbrook component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands, till plains on uplands. The parent material consists of eolian deposits over coarse-loamy lodgment till derived from gneiss and/or schist and/or sandstone and/or basalt. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during March and and April. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Cheshire-Holyoke complex, 3 to 15 percent slopes, very rocky (77C)

The Cheshire component makes up 45 percent of the map unit. Slopes are 3 to 15 percent. This component is on hills on uplands, till plains on uplands. The parent material consists of coarse-loamy melt-out till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

The Holyoke component makes up 35 percent of the map unit. Slopes are 3 to 15 percent. This component is on hills on uplands, ridges on uplands. The parent material consists of loamy eolian deposits over melt-out till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Elmridge fine sandy loam, 0 to 3 percent slopes (28A)

The Elmridge component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on terraces on lake plains. The parent material consists of coarse-loamy eolian sands over clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, and December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Elmridge fine sandy loam, 3 to 8 percent slopes (28B)

The Elmridge component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on terraces on lake plains. The parent material consists of coarse-loamy eolian sands over clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, and December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Fluvaquents-Udifluvents complex, frequently flooded (109)

The Fluvaquents, Frequently Flooded component makes up 50 percent of the map unit. Slopes are 0 to 3 percent. This component is on floodplains. The parent material consists of alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 4 inches during January, February, March, April, May, October, November, and December. Organic

matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria.

The Udifluvents, Frequently Flooded component makes up 35 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood plains. The parent material consists of alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 72 inches all year. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6w. This soil does not meet hydric criteria.

Haven and Enfield Soils, 3 to 8 percent slopes (32B)

The Haven component makes up 60 percent of the map unit. Slopes are 3 to 8 percent. This component is on outwash plains on valleys, terraces on valleys. The parent material consists of coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

The Enfield component makes up 25 percent of the map unit. Slopes are 3 to 8 percent. This component is on outwash plains on valleys, terraces on valleys. The parent material consists of coarse-silty eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Haven and Enfield soils, 8 to 15 percent slopes (32C)

The Haven component makes up 60 percent of the map unit. Slopes are 8 to 15 percent. This component is on outwash plains on valleys, terraces on valleys. The parent material consists of coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

The Enfield component makes up 25 percent of the map unit. Slopes are 8 to 15 percent. This component is on outwash plains on valleys, terraces on valleys. The parent material consists of coarse-silty eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water

saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Limerick and Lim soils (107)

The Limerick component makes up 50 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood plains. The parent material consists of coarse-silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, June, September, October, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

The Lim component makes up 30 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions on flood plains. The parent material consists of coarse-loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, June, September, October, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Ludlow silt loam, 0 to 3 percent slopes (40A)

The Ludlow component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, and December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Merrimac sandy loam, 0 to 3 percent slopes (34A)

The Merrimac component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on kames on valleys, outwash plains on valleys, terraces on valleys. The parent material consists of sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

Pollux fine sandy loam 3 to 8 percent slopes (250B)

The Pollux component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of friable coarse-loamy glaciofluvial deposits over hard silty glaciolacustrine deposits derived from

granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric critera.

Rainbow silt loam, 3 to 8 percent slopes (43B)

The Rainbow component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of eolian deposits over coarse-loamy lodgment till derived from gneiss and/or schist and/or sandstone and/or basalt. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Raynham silt loam (10)

The Raynham component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions on lake plains, drainageways on lake plains. The parent material consists of coarse-silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, November, and December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 1 percent.

Rippowam fine sandy loam (103)

The Rippowam component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood plains. The parent material consists of coarse-loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, June, September, October, November, and December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Saco silt loam (108)

The Saco component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains. The parent material consists of coarse-silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches all year.

Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria.

Scantic Variant silt loam, 0 to 3 percent slopes (736A)

The Scantic Variant component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions. The parent material consists of soft silty and clayey glaciolacustrine deposits. Depth to a root restrictive layer, strongly contrasting textural stratification, is 20 to 40 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, June, October, November, and December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Scitico, Shaker, and Maybid (9)

The Scitico component makes up 40 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions on lake plains, drainageways on lake plains, terraces. The parent material consists of clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, June, October, November, and December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

The Shaker component makes up 30 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions on lake plains, drainageways on lake plains, terraces on lake plains. The parent material consists of coarse-loamy eolian deposits over clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, June, October, November, and December. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

The Maybid component makes up 15 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions on lake plains, drainageways on lake plains, terraces on lake plains. The parent material consists of clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is high. Shrink-swell potential is high. This soil is not flooded. It is occasionally ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, October, November, and December. Organic matter content in the surface horizon is about 7 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria.

Sudbury sandy loam, 0 to 5 percent slopes (23A)

The Sudbury component makes up 80 percent of the map unit. Slopes are 0 to 5 percent. This component is on outwash plains on valleys, terraces on valleys. The parent material consists of sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is

greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, and December. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Wilbraham silt loam (5)

The Wilbraham component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions on uplands, drainageways on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 36 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, and December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Windsor loamy sand, 0 to 3 percent slopes (36A)

The Windsor component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on kames on valleys, outwash plains on valleys, terraces on valleys. The parent material consists of eolian sands over sandy glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Windsor loamy sand, 3 to 8 percent slopes (36B)

The Windsor component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on kames on valleys, outwash plains on valleys, terraces on valleys. The parent material consists of eolian sands over sandy glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Wethersfield loam, 3 to 8 percent slopes (87B)

The Wethersfield component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during February, March, and April. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Wethersfield loam, 8 to 15 percent slopes (87C)

The Wethersfield component makes up 80 percent of the map unit. Slopes are 8 to 15 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during February, March, and April. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Wethersfield loam,15 to 25 percent slopes (87D)

The Wethersfield component makes up 80 percent of the map unit. Slopes are 15 to 25 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during February, March, and April. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Udorthents, smothed (308)

The Udorthents component makes up 80 percent of the map unit. Slopes are 0 to 35 percent. This component is on fills, leveled land. The parent material consists of drift. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 39 inches during January, February, March, April, November, and December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

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Attachment A – Tables

TABLE 2-1
SOIL SERIES MAP UNITS CROSSED BY THE CONNECTICUT EXPANSION PROJECT
CONNECTICUT LOOP

Mapping ID	Soil Series Map Unit	% of Total Line	Erosion Potential[1]	Capability Class[2]	Drainage Characteristics	Wind Erodibility Group[3]	Depth to Water Table (cm)
5	Wilbraham silt loam	0.36	Slight	4w	Poorly drained	8	23
9	Scitico, Shaker, and Maybid	45.83	Very Severe	4w	Poorly drained-very poorly drained	5	8
10	Raynham silt loam	7.73	Very Severe	4w	Poorly drained	5	15
103	Rippowam fine sandy loam*	0.44	Very Severe	4w	Poorly drained	3	23
107	Limerick and Lim soils*	0.77	Very Severe	4w	Poorly drained	5	23
108	Saco silt loam*	1.64	Very Severe	6w	Very poorly drained	8	8
109	Fluvaquents-Udifluvents complex, frequently flooded*	0.92	Very Severe	6w	Poorly drained	8	10
308	Udorthents, smothed	2.20	Severe	4e	Moderately well drained	5	100
23A	Sudbury sandy loam, 0 to 5 percent slopes	1.97	Very Severe	2w	Moderately well drained	3	69
25A	Bancroft silt loam, 0 to 3 percent slopes	4.17	Very Severe	2w	Moderately well drained	6	53
25B	Bancroft silt loam, 3 to 8 percent slopes	5.49	Very Severe	2e	Moderately well drained	6	53
27A	Belgrade silt loam, 0 to 5 percent slopes	6.72	Very Severe	2w	Moderately well drained	5	77
28A	Elmridge fine sandy loam, 0 to 3 percent slopes	7.23	Very Severe	2w	Moderately well drained	3	61
28B	Elmridge fine sandy loam, 3 to 8 percent slopes	4.93	Very Severe	2w	Moderately well drained	3	61
32B	Haven and Enfield Soils, 3 to 8 percent slopes	0.11	Very Severe	2e	Well drained	5	>200
32C	Haven and Enfield soils, 8 to 15 percent slopes	0.54	Very Severe	3e	Well drained	5	>200
34A	Merrimac sandy loam, 0 to 3 percent slopes	2.78	Very Severe	1	Somewhat excessively drained	3	>200
36A	Windsor loamy sand, 0 to 3 percent slopes	0.89	Very Severe	2s	Excessively drained	2	>200
36B	Windsor loamy sand, 3 to 8 percent slopes	0.88	Very Severe	2s	Excessively drained	2	>200
40A	Ludlow silt loam, 0 to 3 percent slopes	0.43	Very Severe	2w	Moderately well drained	5	61
82B	Broadbrook silt loam, 3 to 8 percent slopes	2.43	Moderate	2e	Well drained	5	61
87B	Wethersfield loam, 3 to 8 percent slopes	0.62	Moderate	2e	Well drained	5	61

TABLE 2-1
SOIL SERIES MAP UNITS CROSSED BY THE CONNECTICUT EXPANSION PROJECT
CONNECTICUT LOOP

Mapping ID	Soil Series Map Unit	% of Total Line	Erosion Potential[1]	Capability Class[2]	Drainage Characteristics	Wind Erodibility Group[3]	Depth to Water Table (cm)
87C	Wethersfield loam, 8 to 15 percent slopes	0.48	Severe	3e	Well drained	5	61
87D	Wethersfield loam,15 to 25 percent slopes	0.43	Severe	4e	Well drained	5	61

1: The erosion potential for each of the soils was determined by reviewing the erosion properties provided by the NRCS's Web Soil Survey. The NRCS has evaluated soils based on slope and soil erosion factor K.

- A rating of "slight" indicates that erosion is unlikely under ordinary climatic conditions.
- A rating of "moderate" indicates that some erosion is likely and that erosion control measures may be needed.
- A rating of "severe" indicates that erosion is very likely and that erosion control measures, including revegetation of bare areas are advised.
- A rating of "very severe" indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion control measures are costly and generally impractical.

2: Capability class refers to the suitability of soils for most kinds of field crops. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. Soil Capability Subclasses are designated by adding e, w, or s to the Capability Class designation. The letter "e" shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; the letter "s" denotes that the soil is limited mainly because it is shallow, droughty, or stony' "w" indicates that water in or on the soil interferes with plant growth or cultivation.

- Capability Class 1: Soils have slight limitations that restrict their use.
- Capability Class 2: Soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.
- Capability Class 3: Soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.
- Capability Class 4: Soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.
- Capability Class 5: Soils are not likely to erode but have other limitations, impractical to remove, that limit their use.
- Capability Class 6: Sols have severe limitations that make them generally unsuitable for cultivation.
- Capability Class 7: Soils have very severe limitations that make them unsuitable for cultivation.
- Capability Class 8: Soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

3: The wind erodibility group classification for each of the soils was determined by reviewing the physical soil properties data provided by the NRCS's Web Soil Survey. The NRCS has grouped soils that have similar properties affecting their susceptibility to wind erosion. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

* Denotes alluvial-floodplain soil

Farmland of Statewide Importance

All Areas are Prime Farmland

TABLE 2-2
SOIL SERIES MAP UNITS ASSOCIATED WITH FIELD DELINEATED WETLANDS
CONNECTICUT EXPANSION PROJECT CONNECTICUT LOOP

Approx. Milepost	Wetland Number[1]	Wetland Class[2]	Drainage Class	Soil Units Mapped	Hydric Soil Indicator[3]
0.14 – 0.17	WMA2	PEM	Moderately well drained Well drained Poorly Drained	Brancroft silt loam, 3 to 8 percent slopes Broadbrook silt loam, 8 to 15 percent slopes Scitico, Shaker, and Maybid soils	F3
0.18 – 0.31	WCT01	PEM PSS	Moderately well drained Poorly Drained Well drained	Brancroft silt loam, 3 to 8 percent slopes Scitico, Shaker, and Maybid soils Wethersfield loam, 3 to 8 percent slopes	F3
0.33 – 0.38	WCT02	PEM PFO	Moderately well drained Poorly Drained	Brancroft silt loam, 3 to 8 percent slopes Scitico, Shaker, and Maybid soils	F3,S5
0.94 – 1.23	WCT03	PEM PSS	Moderately well drained Well drained Poorly Drained	Brancroft silt loam, 3 to 8 percent slopes Broadbrook silt loam, 3 to 8 percent slopes Scitico, Shaker, and Maybid soils	S5
1.19 – 1.24	WCT04	PFO PSS	Moderately well drained Poorly Drained	Elmridge fine sandy loam, 3 to 8 percent slopes Scitico, Shaker, and Maybid soils	A2, A11
1.25 – 1.26	WCT05	PFO	Moderately well drained Poorly Drained Excessively drained	Elmridge fine sandy loam, 3 to 8 percent slopes Scitico, Shaker, and Maybid soils Windsor loamy sand, 3 to 8 percent slopes	A2, A11
1.26 – 1.34	WCT06	PEM PFO	Poorly Drained Excessively drained	Scitico, Shaker, and Maybid soils Windsor loamy sand, 3 to 8 percent slopes	A11
1.36 – 1.40	WCT07	PEM PFO	Moderately well drained	Sudbury sandy loam, 0 to 5 percent slopes	A2, A11
1.37 – 1.38	WCT08	PFO	Moderately well drained	Sudbury sandy loam, 0 to 5 percent slopes	A3, A11, A12
1.39 – 1.47	WCT09	PEM PFO	Moderately well drained	Sudbury sandy loam, 0 to 5 percent slopes	A11, S5, S6
1.47 – 1.47	WCT10	PFO	Moderately well drained	Sudbury sandy loam, 0 to 5 percent slopes	A3, A11, A12

TABLE 2-2
SOIL SERIES MAP UNITS ASSOCIATED WITH FIELD DELINEATED WETLANDS
CONNECTICUT EXPANSION PROJECT CONNECTICUT LOOP

Approx. Milepost	Wetland Number[1]	Wetland Class[2]	Drainage Class	Soil Units Mapped	Hydric Soil Indicator[3]
1.46 – 1.60	WCT11	PEM PFO PSS	Moderately well drained Somewhat excessively drained Poorly Drained Moderately well drained	Brancroft silt loam, 3 to 8 percent slopes Merrimac sandy loam, 3 to 8 percent slopes Scitico, Shaker, and Maybid soils Sudbury sandy loam, 0 to 5 percent slopes	A1
1.60 – 1.98	WCT12	PEM PFO PSS	Moderately well drained Moderately well drained Poorly Drained	Brancroft silt loam, 3 to 8 percent slopes Ludlow silt loam, 0 to 3 percent slopes Scitico, Shaker, and Maybid soils	F3
1.98 – 2.00	WCT13	PFO	Moderately well drained Moderately well drained	Brancroft silt loam, 0 to 3 percent slopes Ludlow silt loam, 0 to 3 percent slopes	A2
1.99 – 2.01	WCT14	PEM	Moderately well drained	Brancroft silt loam, 0 to 3 percent slopes	F3,S5
2.01 – 2.13	WCT15	PEM	Moderately well drained Moderately well drained Poorly Drained	Brancroft silt loam, 0 to 3 percent slopes Ludlow silt loam, 0 to 3 percent slopes Scitico, Shaker, and Maybid soils	F3,S5
2.12 – 2.59	WCT16	PEM PFO PSS	Moderately well drained Moderately well drained Well drained Moderately well drained Poorly Drained Well drained	Brancroft silt loam, 0 to 3 percent slopes Brancroft silt loam, 3 to 8 percent slopes Broadbrook silt loam, 3 to 8 percent slopes Ludlow silt loam, 3 to 8 percent slopes Scitico, Shaker, and Maybid soils Wethersfield loam, 8 to 15 percent slopes	F3
2.57 – 2.60	WCT17	PEM	Poorly Drained	Scitico, Shaker, and Maybid soils	F3
2.63 – 3.02	WCT18	PEM PFO PSS	Moderately well drained Moderately well drained Moderately well drained Poorly drained Poorly drained	Brancroft silt loam, 0 to 3 percent slopes Brancroft silt loam, 3 to 8 percent slopes Elmridge fine sandy loam, 0 to 3 percent slopes Fluvaquents-Udifluvents complex, frequently flooded Scitico, Shaker, and Maybid soils	F3
3.06 – 3.11	WCT19	PSS	Moderately well drained Poorly drained	Elmridge fine sandy loam, 0 to 3 percent slopes Fluvaquents-Udifluvents complex, frequently flooded	A5
3.10 – 3.14	WCT20	PSS	Moderately well drained	Elmridge fine sandy loam, 0 to 3 percent slopes	A5

TABLE 2-2
SOIL SERIES MAP UNITS ASSOCIATED WITH FIELD DELINEATED WETLANDS
CONNECTICUT EXPANSION PROJECT CONNECTICUT LOOP

Approx. Milepost	Wetland Number[1]	Wetland Class[2]	Drainage Class	Soil Units Mapped	Hydric Soil Indicator[3]
3.18 – 3.46	WCT21	PEM PFO	Moderately well drained Moderately well drained Poorly drained Poorly drained	Elmridge fine sandy loam, 0 to 3 percent slopes Elmridge fine sandy loam, 3 to 8 percent slopes Rainbow silt loam, 3 to 8 percent slopes Scitico, Shaker, and Maybid soils	F3
3.46 – 3.65	WCT22	PEM PSS	Moderately well drained Well drained Poorly drained Poorly drained	Belgrade silt loam, 0 to 5 percent slopes Broadbrook silt loam, 3 to 8 percent slopes Raynham silt loam Scitico, Shaker, and Maybid soils	F3
3.62 – 3.65	WCT23	PEM	Moderately well drained Poorly drained	Belgrade silt loam, 0 to 5 percent slopes Raynham silt loam	F3
3.68 – 3.79	WCT24	PEM PFO PSS	Moderately well drained Poorly Drained Well drained	Belgrade silt loam, 0 to 5 percent slopes Raynham silt loam Udorthents, smoothed	F3
3.86 – 4.02	WCT25	PEM PFO	Moderately well drained Poorly Drained Well drained Well drained	Belgrade silt loam, 0 to 5 percent slopes Raynham silt loam Udorthents, smoothed Urban land	F3
4.02 – 4.4	WCT26	PEM PFO	Moderately well drained Poorly Drained	Belgrade silt loam, 0 to 5 percent slopes Raynham silt loam	F3
4.03 – 4.12	WCT27	PEM PFO	Moderately well drained Poorly Drained	Belgrade silt loam, 0 to 5 percent slopes Raynham silt loam	F3
4.11 – 4.16	WCT28	PEM PFO	Moderately well drained Poorly Drained	Belgrade silt loam, 0 to 5 percent slopes Raynham silt loam	F3
4.17 – 4.26	WCT29	PEM	Moderately well drained Poorly Drained	Belgrade silt loam, 0 to 5 percent slopes Raynham silt loam	F3
4.40 – 4.48	WCT30	PEM	Moderately well drained Poorly Drained	Belgrade silt loam, 0 to 5 percent slopes Raynham silt loam	F3

TABLE 2-2
SOIL SERIES MAP UNITS ASSOCIATED WITH FIELD DELINEATED WETLANDS
CONNECTICUT EXPANSION PROJECT CONNECTICUT LOOP

Approx. Milepost	Wetland Number[1]	Wetland Class[2]	Drainage Class	Soil Units Mapped	Hydric Soil Indicator[3]
4.56 – 4.67	WCT31	PEM PFO	Moderately well drained Moderately well drained Poorly Drained Poorly Drained	Belgrade silt loam, 0 to 5 percent slopes Elmridge fine sandy loam, 0 to 3 percent slopes Raynham silt loam Scitico, Shaker, and Maybid soils	F3
4.75 – 4.84	WCT32	PEM PFO	Poorly Drained Poorly Drained	Raynham silt loam Scitico, Shaker, and Maybid soils	F3
4.86 – 5.19	WCT33	PEM PFO	Poorly Drained	Scitico, Shaker, and Maybid soils	F3
5.19 – 5.22	WCT34	PEM PSS	Poorly Drained	Scitico, Shaker, and Maybid soils	F3
5.22 – 5.25	WCT35	PFO	Poorly Drained	Scitico, Shaker, and Maybid soils	F3
5.23 – 5.43	WCT36	PEM PFO PSS	Moderately well drained Poorly Drained	Elmridge fine sandy loam, 0 to 3 percent slopes Scitico, Shaker, and Maybid soils	F3
5.50 – 5.68	WCT37	PEM PFO	Moderately well drained Moderately well drained Poorly Drained Very Poorly Drained Poorly Drained	Elmridge fine sandy loam, 0 to 3 percent slopes Elmridge fine sandy loam, 3 to 8 percent slopes Limerick and Lim soils Saco silt loam Scitico, Shaker, and Maybid soils	F3
5.68 – 5.87	WCT38	PEM PFO	Moderately well drained Moderately well drained Moderately well drained Very Poorly Drained Poorly Drained	Brancroft silt loam, 3 to 8 percent slopes Elmridge fine sandy loam, 0 to 3 percent slopes Elmridge fine sandy loam, 3 to 8 percent slopes Saco silt loam Scitico, Shaker, and Maybid soils	A11, F2
5.92 – 5.95	WCT39	PEM PFO	Moderately well drained Poorly Drained	Brancroft silt loam, 3 to 8 percent slopes Scitico, Shaker, and Maybid soils	A11
5.96 – 6.00	WCT40	PEM PFO	Poorly Drained	Scitico, Shaker, and Maybid soils	A11
6.01 – 6.00	WCT41	PEM PFO	Very Poorly Drained Poorly Drained	Saco silt loam Scitico, Shaker, and Maybid soils	F3

TABLE 2-2
SOIL SERIES MAP UNITS ASSOCIATED WITH FIELD DELINEATED WETLANDS
CONNECTICUT EXPANSION PROJECT CONNECTICUT LOOP

Approx. Milepost	Wetland Number[1]	Wetland Class[2]	Drainage Class	Soil Units Mapped	Hydric Soil Indicator[3]
6.14 – 6.24	WCT41 A	PFO	Moderately well drained Poorly Drained	Brancroft silt loam, 0 to 3 percent slopes Scitico, Shaker, and Maybid soils	F3
6.18 – 6.33	WCT41B, 41C, 41D	PFO	Poorly Drained	Scitico, Shaker, and Maybid soils	F3
6.34 – 6.37	WCT42	PEM PFO	Poorly Drained	Scitico, Shaker, and Maybid soils	F3
6.40 – 6.43	WCT43	PEM PFO	Moderately well drained Poorly Drained	Elmridge fine sandy loam, 0 to 3 percent slopes Scitico, Shaker, and Maybid soils	S5, F3
6.44 – 6.47	WCT44	PEM PFO	Moderately well drained Poorly Drained	Elmridge fine sandy loam, 0 to 3 percent slopes Scitico, Shaker, and Maybid soils	F3
6.47 – 6.58	WCT45	PFO	Moderately well drained Poorly Drained	Elmridge fine sandy loam, 0 to 3 percent slopes Scitico, Shaker, and Maybid soils	A11, A12
6.61 – 7.08	WCT46	PEM PFO	Moderately well drained Poorly Drained	Elmridge fine sandy loam, 0 to 3 percent slopes Scitico, Shaker, and Maybid soils	F3
7.10 – 7.13	WCT47	PFO	Moderately well drained Poorly Drained	Elmridge fine sandy loam, 0 to 3 percent slopes Scitico, Shaker, and Maybid soils	A11, A12
7.18 – 7.19	WCT48	PFO	Moderately well drained	Elmridge fine sandy loam, 0 to 3 percent slopes	S5, F3
7.15 – 7.21	WCT48 A	PEM PFO	Moderately well drained	Elmridge fine sandy loam, 0 to 3 percent slopes	S5, F3
7.22 – 7.24	WCT49	PSS	Moderately well drained	Elmridge fine sandy loam, 0 to 3 percent slopes	F3
7.24 – 7.41	WCT50	PEM PFO	Moderately well drained Very Poorly Drained Poorly Drained	Elmridge fine sandy loam, 0 to 3 percent slopes Saco silt loam Scitico, Shaker, and Maybid soils	F3
7.29 – 7.32	WCT50 A	PEM PFO	Moderately well drained Moderately well drained Very Poorly Drained Poorly Drained	Brancroft silt loam, 3 to 8 percent slopes Elmridge fine sandy loam, 3 to 8 percent slopes Saco silt loam Scitico, Shaker, and Maybid soils	F3
7.16 – 7.18	WCT50B	PFO	Moderately well drained	Elmridge fine sandy loam, 0 to 3 percent slopes	F3
7.19 – 7.19	WCT50C	PSS	Moderately well drained	Elmridge fine sandy loam, 0 to 3 percent slopes	F3

TABLE 2-2
SOIL SERIES MAP UNITS ASSOCIATED WITH FIELD DELINEATED WETLANDS
CONNECTICUT EXPANSION PROJECT CONNECTICUT LOOP

Approx. Milepost	Wetland Number[1]	Wetland Class[2]	Drainage Class	Soil Units Mapped	Hydric Soil Indicator[3]
7.20 – 7.21	WCT50 D	PSS	Moderately well drained	Elmridge fine sandy loam, 0 to 3 percent slopes	F3
7.32 – 7.37	WCT51	PEM PFO	Moderately well drained	Elmridge fine sandy loam, 3 to 8 percent slopes	F3
7.40 – 7.44	WCT52	PEM	Moderately well drained	Elmridge fine sandy loam, 3 to 8 percent slopes	F3
7.45 – 7.71	WCT53	PEM PFO	Moderately well drained Very Poorly Drained Poorly Drained Moderately well drained Well Drained Well Drained	Elmridge fine sandy loam, 3 to 8 percent slopes Saco silt loam Scitico, Shaker, and Maybid soils Sudbury sandy loam, 0 to 5 percent slopes Udorthents, smoothed Udorthents-Urban land complex	F3
7.74 – 7.90	WCT54	PEM PFO	Moderately well drained Somewhat excessively drained Poorly Drained Excessively drained	Elmridge fine sandy loam, 0 to 3 percent slopes Merrimac sandy loam, 0 to 3 percent slopes Rippowam fine sandy loam Windsor loamy sand, 3 to 8 percent slopes	S5
7.90 – 7.93	WCT55	PSS	Well Drained Excessively drained	Urban land Windsor loamy sand, 3 to 8 percent slopes	A12
0.38 – 0.78	WCT56	PEM PFO PSS	Moderately well drained Poorly Drained	Brancroft silt loam, 3 to 8 percent slopes Scitico, Shaker, and Maybid soils	F3

1. Wetland series number generated by AECOM to identify wetlands within and adjacent to the Project corridor;
2. Wetlands classification according to Cowardin et al 1979; PEM = Palustrine Emergent Wetland; PFO = Palustrine Forested Wetland; PSS = Palustrine Scrub-Shrub Wetland; POW = Palustrine Open Water.
3. Hydric Soil Indicators from ACOE Regional Supplement (January 2012). A1: Histosol, A2: Histic Epipedon, A3: Black Histic, A5: Stratified Layers, A11: Depleted Below Dark Surface, A12: Thick Dark Surface, F2: Loamy Gleyed Matrix, F3: Depleted Matrix, S5: Sandy Redox, S6: Stripped Matrix.

TABLE 2-3
SOIL SERIES MAP UNITS CROSSED BY THE CONNECTICUT EXPANSION PROJECT
CONNECTICUT LOOP ACCESS ROADS

Mapping ID	Soil Series Map Unit	Length Crossed (feet)b	Access Road Name	Erosion Potential[1]	Capability Class	Drainage Characteristics	Wind Erodibility Group	Depth to Water Table (cm)
40A	Ludlow silt loam, 0 to 3 percent slopes	58.59	CT-1	Very Severe	2w	Moderately well drained	5	61
40A	Ludlow silt loam, 0 to 3 percent slopes	171.13	CT-2	Very Severe	2w	Moderately well drained	5	61
82B	Broadbrook silt loam, 3 to 8 percent slopes	89.45	CT-2	Moderate	2e	Well drained	5	61
87B	Wethersfield loam, 3 to 8 percent slopes	16.73	CT-2	Moderate	2e	Well drained	5	61
25B	Bancroft silt loam, 3 to 8 percent slopes	118.54	CT-3	Very Severe	2e	Moderately well drained	6	53
9	Scitico, Shaker, and Maybid	461.77	CT-3	Very Severe	4w	Poorly drained	5	8
28A	Elmridge fine sandy loam, 0 to 3 percent slopes	34.61	CT-4A	Very Severe	2w	Moderately well drained	3	61
82B	Broadbrook silt loam, 3 to 8 percent slopes	232.77	CT-4A	Moderate	2e	Well drained	5	61
9	Scitico, Shaker, and Maybid	570.36	CT-4A	Very Severe	4w	Poorly drained	5	8
28B	Elmridge fine sandy loam, 3 to 8 percent slopes	397.6	CT-4A	Very Severe	2w	Moderately well drained	3	61
9	Scitico, Shaker, and Maybid	570.36	CT-4A	Very Severe	4w	Poorly drained	5	8
28B	Elmridge fine sandy loam, 3 to 8 percent slopes	397.6	CT-4A	Very Severe	2w	Moderately well drained	3	61
9	Scitico, Shaker, and Maybid	570.36	CT-4A	Very Severe	4w	Poorly drained	5	8
43B	Rainbow silt loam, 3 to 8 percent slopes	304.04	CT-4A	Moderate	2e	Moderately well drained	5	61
9	Scitico, Shaker, and Maybid	126.13	CT-4	Very Severe	4w	Poorly drained	5	8

TABLE 2-3
SOIL SERIES MAP UNITS CROSSED BY THE CONNECTICUT EXPANSION PROJECT
CONNECTICUT LOOP ACCESS ROADS

Mapping ID	Soil Series Map Unit	Length Crossed (feet)b	Access Road Name	Erosion Potential[1]	Capability Class	Drainage Characteristics	Wind Erodibility Group	Depth to Water Table (cm)
82B	Broadbrook silt loam, 3 to 8 percent slopes	97.33	CT-4	Moderate	2e	Well drained	5	61
43B	Rainbow silt loam, 3 to 8 percent slopes	18.48	CT-4	Moderate	2e	Moderately well drained	5	61
43B	Rainbow silt loam, 3 to 8 percent slopes	25.54	CT-4	Moderate	2e	Moderately well drained	5	61
43B	Rainbow silt loam, 3 to 8 percent slopes	133.76	CT-4	Moderate	2e	Moderately well drained	5	61
82B	Broadbrook silt loam, 3 to 8 percent slopes	199.71	CT-4	Moderate	2e	Well drained	5	61
9	Scitico, Shaker, and Maybid	273.36	CT-4	Very Severe	4w	Poorly drained	5	8
10	Raynham silt loam	245.56	CT-4	Very Severe	4w	Poorly drained	5	15
10	Raynham silt loam	53.04	CT-5	Very Severe	4w	Poorly drained	5	15
10	Raynham silt loam	30.24	CT-5	Very Severe	4w	Poorly drained	5	15
10	Raynham silt loam	429.93	CT-5	Very Severe	4w	Poorly drained	5	15
27A	Belgrade silt loam, 0 to 5 percent slopes	83.68	CT-5	Very Severe	2w	Moderately well drained	5	77
10	Raynham silt loam	429.93	CT-5	Very Severe	4w	Poorly drained	5	15
27A	Belgrade silt loam, 0 to 5 percent slopes	277.5	CT-5	Very Severe	2w	Moderately well drained	5	77
10	Raynham silt loam	429.93	CT-5	Very Severe	4w	Poorly drained	5	15
28A	Elmridge fine sandy loam, 0 to 3 percent slopes	560.61	CT-6	Very Severe	2w	Moderately well drained	3	61
23A	Sudbury sandy loam, 0 to 5 percent slopes	439.16	CT-6	Very Severe	2w	Moderately well drained	3	69

TABLE 2-3
SOIL SERIES MAP UNITS CROSSED BY THE CONNECTICUT EXPANSION PROJECT
CONNECTICUT LOOP ACCESS ROADS

Mapping ID	Soil Series Map Unit	Length Crossed (feet)b	Access Road Name	Erosion Potential[1]	Capability Class	Drainage Characteristics	Wind Erodibility Group	Depth to Water Table (cm)
23A	Sudbury sandy loam, 0 to 5 percent slopes	439.16	CT-6	Very Severe	2w	Moderately well drained	3	69
29A	Agawam fine sandy loam, 0 to 3 percent slopes	163.79	CT-6	Very Severe	1	Well drained	3	>200
82B	Broadbrook silt loam, 3 to 8 percent slopes	167.1	CT-7	Moderate	2e	Well drained	5	61
87B	Wethersfield loam, 3 to 8 percent slopes	566.76	CT-7	Moderate	2e	Well drained	5	61
9	Scitico, Shaker, and Maybid	1170.69	CT-7	Very Severe	4w	Poorly drained	5	8
28A	Elmridge fine sandy loam, 0 to 3 percent slopes	446.57	CT-7A	Very Severe	2w	Moderately well drained	3	61
108	Saco silt loam*	586.25	CT-7A	Very Severe	6w	Very poorly drained	8	8
9	Scitico, Shaker, and Maybid	269.54	CT-7A	Very Severe	4w	Poorly drained	5	8
108	Saco silt loam*	586.25	CT-7A	Very Severe	6w	Very poorly drained	8	8
34A	Merrimac sandy loam, 0 to 3 percent slopes	658.3	CT-8	Very Severe	1	Somewhat excessively drained	3	>200
306	Udorthents-Urban land complex	4.37	CT-8A	Severe	3e	Well drained	5	150
34A	Merrimac sandy loam, 0 to 3 percent slopes	81.14	CT-8A	Very Severe	1	Somewhat excessively drained	3	>200
36A	Windsor loamy sand, 0 to 3 percent slopes	67.73	CT-8A	Very Severe	2s	Excessively drained	2	>200

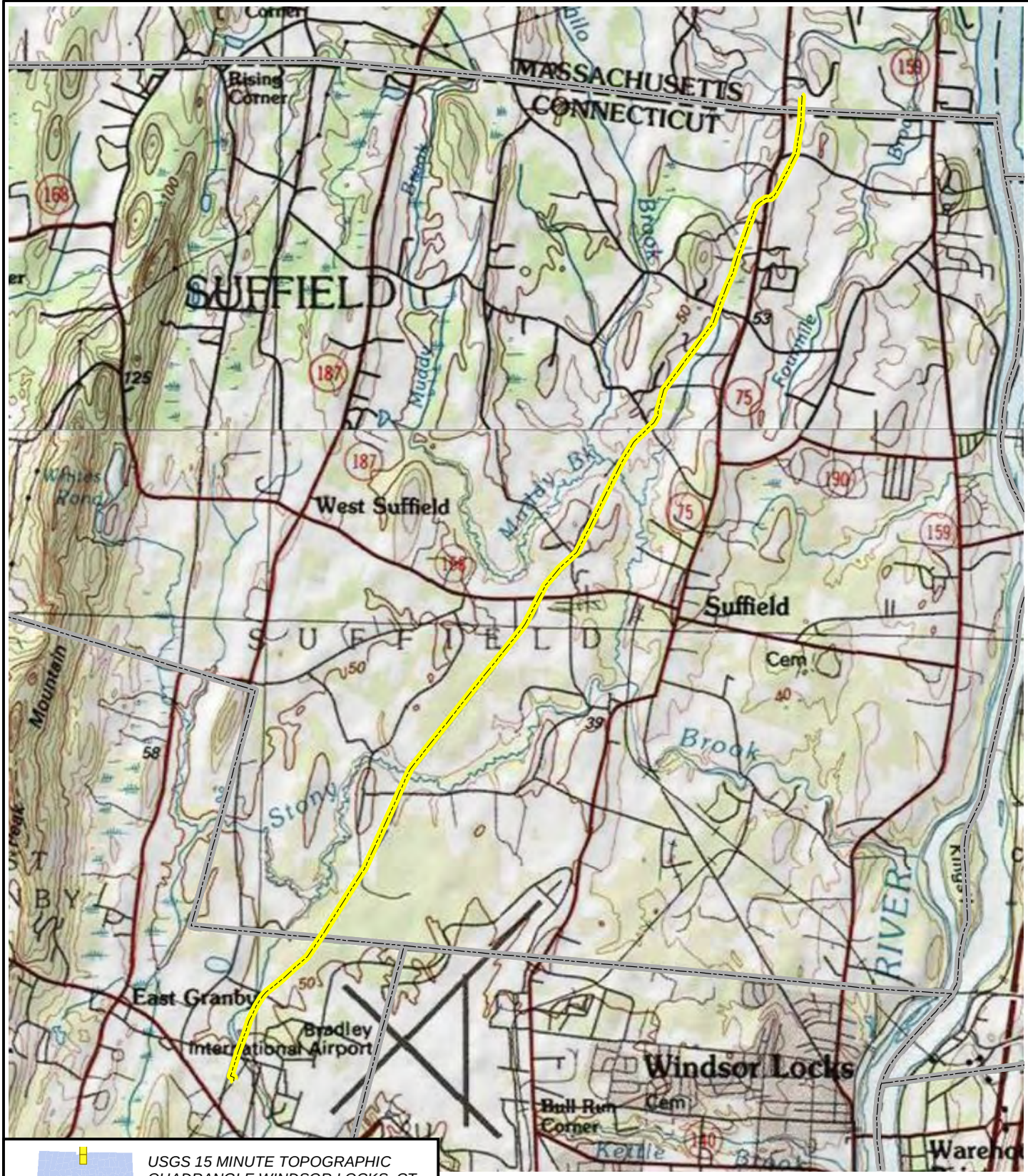
1: See footnotes at theend of Table 2-1.

TABLE 2-4
SOIL SERIES MAP UNITS CROSSED BY THE CONNECTICUT EXPANSION PROJECT
CONNECTICUT LOOP CONTRACTOR/PIPE YARDS

Pipe Yard Name	Mapping ID	Soil Series Map Unit	Erosion Potential[1]	Capability Class	Drainage Characteristics	Wind Erodibility Group	Depth to Water Table (cm)
Agawam, MA/Suffield, CT Pipe Yard	250B	Pollux fine sandy loam 3 to 8 percent slopes	Moderate	2e	Well drained	3	>200
	258B	Amostown fine sandy loam, 0 to 6 percent slopes	Moderate	2w	Moderately well drained	3	53
	736A	Scantic Variant silt loam, 0 to 3 percent slopes	Slight	4w	Poorly drained	8	23
	25B	Bancroft silt loam, 3 to 8 percent slopes	Very Severe	2e	Moderately well drained	6	53
	28A	Elmridge fine sandy loam, 0 to 3 percent slopes	Very Severe	2w	Moderately well drained	3	61
	77C	Cheshire-Holyoke complex, 3 to 15 percent slopes, very rocky	Moderate	6s	Well drained	3	>200
	82B	Broadbrook silt loam, 3 to 8 percent slopes	Moderate	2e	Well drained	5	61
	9	Scitico, Shaker, and Maybid	Very Severe	4w	Poorly drained	5	8
East Granby Pipe Yard	108	Saco silt loam*	Very Severe	6w	Very poorly drained	8	8
	28A	Elmridge fine sandy loam, 0 to 3 percent slopes	Very Severe	2w	Moderately well drained	3	61

1: See footnotes at theend of Table 2-1.

Attachment B – Figures



CT

USGS 15 MINUTE TOPOGRAPHIC QUADRANGLE WINDSOR LOCKS, CT AND WEST SPRINGFIELD, MA

Legend

Proposed Project Centerline

Town Boundary

0 2,000 4,000 8,000

Feet

N

SITE LOCUS

Tennessee Gas Pipeline Company
CT Expansion Project

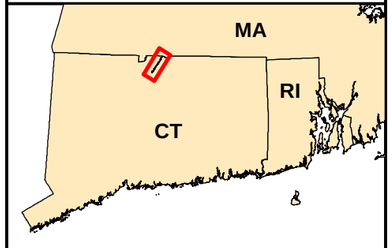
SCALE	DATE	PROJECT NO.
1:60,000	07/14	

Tennessee Gas Pipeline Company, L.L.C.
a Kinder Morgan company

Figure Number

1

Site Location



Legend

- Town Boundary
- Mileposts
- Proposed Project Centerline
- Proposed Access Roads
- Proposed Contractor/Pipeyards
- Field Delineated Wetland Boundaries
- Alluvial and Floodplain Soils
- Poorly Drained and Very Poorly Drained Soils
- SSURGO Soils Area

Tennessee Gas Pipeline Company

CT Expansion Project

SSURGO Soils, Hydric Soils and Alluvial Floodplain Soils

0 750 1,500 3,000 Feet

1 inch = 1,500 feet

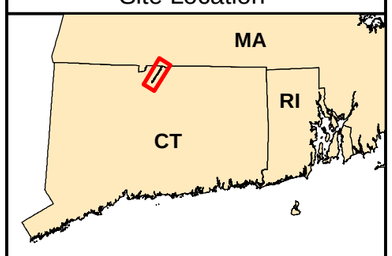
Tennessee Gas Pipeline Company, L.L.C.
a Kinder Morgan company

June 2014

Figure 2

MP 4
MP 4.5
MP 5
MP 5.5
MP 6
MP 6.5
MP 7
MP 7.5
MP 8

Site Location



Legend

- Town Boundary
- Mileposts
- Proposed Project Centerline
- Proposed Access Roads
- Proposed Contractor/Pipeyards
- Field Delineated Wetland Boundaries
- Alluvial and Floodplain Soils
- Poorly Drained and Very Poorly Drained Soils
- SSURGO Soils Area

N W E S

0 750 1,500 3,000 Feet

1 inch = 1,500 feet

Tennessee Gas Pipeline Company

CT Expansion Project

SSURGO Soils, Hydric Soils and Alluvial Floodplain Soils

Tennessee Gas Pipeline Company, L.L.C.
a Kinder Morgan company

June 2014

Figure 3