TETRA TECH

October 09, 2015

Gary Smith
PA Fish & Boat Commission
Bureau of Wildlife Habitat Management
Division of Environmental Services
450 Robinson Lane
Bellefonte PA 16823

Subject: **PFBC SIR # 41856**
Request for a No Impact Determination for Mussel Species, Fish Species, and Eastern Red Belly Turtle
Sunoco Pipeline, L.P. - Pennsylvania Pipeline Project (Previously Part of the Mariner East 2 Pipeline Project)

Dear Mr. Smith:

Tetra Tech, Inc. (Tetra Tech) has been retained by Sunoco Pipeline, L.P. (SPLP) to conduct environmental field surveys and permitting services for the proposed Pennsylvania Pipeline Project (PPP) formerly part of the Mariner East 2 Pipeline Project (ME2). On behalf of SPLP, Tetra Tech is requesting a no impact determination from the Pennsylvania Fish & Boat Commission (PFBC) for the PPP.

A Large Project Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Request including a large project form, project description, and preliminary project USGS topographic mapping was initially provided to the PGC under the preliminary project name "Mariner East 2 Pipeline - Trans-Pennsylvania" on December 12, 2013. We received a response letters dated January 27, 2014 and May 21, 2014 from PFBC. Those letters are included for reference as Attachment 1. The Mariner East 2 Project was originally going to encompass all of the project activities within the state of Pennsylvania (PA). After field activities began, the project was split into two separate and independent projects; the Ohio Pipeline Project (OPP) and the PPP. Initially, a 20-inch diameter pipeline would be installed within a 50-foot-wide right-of-way (ROW) from Houston, PA to Marcus Hook, PA (306 miles) and a second, up to 20-inch diameter pipeline, would be installed in the same ROW. The second line is proposed to be installed from SPLP's Delmont Station, Westmoreland County, Pennsylvania to the Marcus Hook facility, paralleling the initial line for approximately 255 miles (Attachment 2).

PFBC identified freshwater mussel species: yellow lampmussel (*Lampsilis cariosa*), rainbow mussel (*Villosa iris*), elktoe (*Alasmidonta marginata*), and triangle floater (*Alasmidonta undulata*); fish species: ghost shiner (*Notropis buchanani*) and brook stickleback (*Culaea inconstans*), and the eastern red belly turtle (*Pseudemys rubriventris*) as potentially occurring within the Project area. PFBC also indicated that the timber rattlesnake (*Crotalus horridus*) was located within the vicinity of the Mariner East 2 Project. The timber rattlesnake was addressed in a separate submittal and a no impact determination for the Project was received on September 22, 2015 for this species.

Tetra Tech
661 Anderson Drive, Foster Plaza VII, Pittsburgh, PA 15220
Tel 412.921.7090 **Fax** 412.921.7090 www.tetratech.com

PFBC indicated that mussel species could potentially occur within the Project area within Aughwick Creek (yellow lampmussel and rainbow mussel), Tuscarora Creek (rainbow mussel), and Conodoguinet Creek (yellow lampmussel, elktoe, and triangle floater, and rainbow mussel). PFBC indicated that fish species could potentially occur within the Project area within the Monongahela River (ghost shiner) and Little Conemaugh River (brook stickleback). PFBC recommended directional boring rather than open cutting these creeks and rivers to avoid potential impacts to these species and that any other in-stream be avoided, strict erosion and sedimentation control measures are maintained, and best management practices be employed. Additionally, PFBC indicated that the following contingencies be implemented for drilling/boring operations:

- Have a designated environmental inspector on site for the duration of the entire crossing operation.
- Stop the bore/drill immediately if anyone on site observes an Inadvertent Return.
- Have a Vac Truck on site or on call (within three hours) to begin clean-up of the release in the stream channel to prevent downstream migration of drilling fluids
- Notify PFBC Bureau of Law Enforcement Regional Office within 24 hours

SPLP plans to drill/bore Aughwick Creek, Tuscarora Creek, Conodoguinet Creek, Monongahela River, and Little Conemaugh River. SPLP will also avoid any in-stream work, implement and maintain strict erosion and sedimentation control measure, and employ best management practices during construction and restoration activities. SPLP has completed geotechnical surveys at drilling/boring locations to aid in the prevention of inadvertent returns. SPLP has also developed an Inadvertent Return Contingency Plan for the PPP (Attachment 3) that outlines the sequence of events should an inadvertent return occur during drilling/boring on the Project. In addition, SPLP will also implement the PFBC requested contingencies which include having an environmental inspector present, stopping the drill/bore immediately if an inadvertent return is observed, having a Vac truck on call (within 3 hours), and providing notification to PFBC within 24 hours of an inadvertent return. Given these measures, potential impacts to yellow lampmussel, rainbow mussel, elktoe, triangle floater; ghost shiner, and brook stickleback will be avoided.

PFBC identified that the eastern red belly turtle could potentially occur within areas of the Project in Chester and Delaware counties. PFBC requested a habitat assessment to determine presence/absence of potential redbelly turtle habitat and/or nesting habitat at the proposed project in areas with large, deep streams, rivers, ponds, lakes and wetlands with permanent water or the area within 300ft of these water features. As a result of this request, eastern redbelly turtle habitat assessments were completed by PFBC approved biologists on August 25, 27 & 29, 2014, September 2, 4, 5, 9, 10 & 12, 2014 and June 29, 2015 for these areas. The results of these surveys are presented in the attached Habitat Assessment Report (Attachment 4).

Overall, 201 properties within the Study Area were evaluated to determine if there was suitable habitat (aquatic or nesting) for the eastern redbelly turtle within or adjacent to the pipeline right-of-way. Of those areas surveyed, only two areas identified as suitable nesting habitat and one area identified as suitable aquatic habitat would be disturbed by the construction of the Project, as all other suitable habitat areas would be outside of the Project limits of disturbance or would be crossed via drilling/boring. These include areas near Pond-A4 (Attachment 4, Figure 2b), Wetland I2 (Attachment 4, Figure 2i), and Stream H52 near Wetland Q75 (Attachment 4, Figure

TETRA TECH

2d). For these suitable nesting habitat areas, SPLP proposes to have a PFBC approved biologist complete pre-construction surveys for nesting eastern redbelly turtles should land disturbance be necessary during the nesting season (late May through mid-July). Prior to crossing the area near stream H52, SPLP would have a PFBC approved biologist complete pre-construction presence/absence surveys for eastern redbelly turtles in this area. Given these measures, impacts to eastern redbelly turtle are expected to be avoided.

On behalf of SPLP, Tetra Tech would like to request the PFBCs review of and concurrence with our no impacts determination for the yellow lampmussel, rainbow mussel, elktoe, triangle floater; ghost shiner, brook stickleback, and eastern redbelly turtle. Thank you for your assistance in this matter. If you have any questions regarding this request, please feel free to contact me at 412.921.8167 or preston.smith@tetratech.com.

Sincerely,

Preston R. Smith
Manager, Wetlands and Ecological Services Department

Attachments:
PA Fish & Game Commission PNDI Response Package (Attachment 1)
Pennsylvania Pipeline Project Map (Attachment 2)
Inadvertent Return Contingency Plan for PPP (Attachment 3)
Eastern Redbelly Turtle Habitat Assessment Survey Report (Attachment 4)

CC: Chris Embry, Sunoco Logistics
Monica Styles, Sunoco Logistics
Matt Gordon, Sunoco Logistics
Brad Schaffer, Tetra Tech
Sandy Lare, Tetra Tech
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File 112IC05958

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ATTACHMENT 1

PA Fish & Game Commission PNDI Response Package

Pennsylvania Fish & Boat Commission
established 1866

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

January 27, 2014

IN REPLY REFER TO
SIR# 41856

TETRA TECH
Preston Smith
661 Andersen Drive
Pittsburgh, Pennsylvania 15220

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No.
Sunoco Mariner East 2 Pipeline
ALLEGHENY County: - BERKS County: - BLAIR County: - CAMBRIA County: - CHESTER County: - CUMBERLAND County: - DAUPHIN County: - DELAWARE County: - HUNTINGDON County: - INDIANA County: - JUNIATA County: - LANCASTER County: - LEBANON County: - PERRY County: - WASHINGTON County: - WESTMORELAND County: - YORK County:

Dear Preston Smith:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish & Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish & Boat Code (Chapter 75), or the Wildlife Code.

Timber Rattlesnake (*Crotalus horridus*, PA Candidate)

Timber rattlesnakes occur in the forested, mountainous regions of the Commonwealth. They prefer forested areas to forage for small mammals (e.g., mice and chipmunks) and southerly-facing slopes for hibernating and other thermoregulatory activities. The timber rattlesnake is threatened by habitat loss/alteration, wanton killing, and poaching.

Based on the review of this information and the proximity of the project to known critical habitat of the Timber Rattlesnake, we recommend completion of a **habitat assessment** to determine presence/absence of potential habitat at the proposed project areas:

County	Potential Conflict	Western End of Habitat Assessment		Eastern End of Habitat Assessment		Comment
		Latitude	Longitude	Latitude	Longitude	
Cambria	Timber Rattlesnake	40.423856	-78.918485	40.419370	-78.884942	Laurel Ridge South Exposure
Blair	Timber Rattlesnake	40.465277	-78.489083	40.464433	-78.444829	West of Altoona
Huntingdon	Timber Rattlesnake	40.348146	-77.953475	40.337198	-77.912710	Jacks Mountain, SGL 71
Huntingdon	Timber Rattlesnake	40.329852	-77.820093	40.312663	-77.745830	Blacklog Mountain, Shade Mountain
Perry	Timber Rattlesnake	40.289980	-77.635604	40.284410	-77.612818	Conococheague Mountain, Tuscarora State Forest
Perry	Timber Rattlesnake	40.266702	-77.508005	40.262470	-77.491688	Bowers Mountain, Tuscarora State Forest
Cumberland	Timber Rattlesnake	40.256799	-77.469902	40.251875	-77.448899	Blue Mountain
Cumberland	Timber Rattlesnake	40.246850	-77.428032	40.245663	-77.385058	Wildcat Ridge, Tuscarora State Forest

We have included a list of qualified surveyors and habitat assessment protocol for your convenience. This list is not an exhaustive list of qualified rattlesnake surveyors in Pennsylvania as there may be qualified surveyors who have not asked to be placed on this list. It is not mandatory that you use someone on this list.

Freshwater Mussels

The following rare freshwater mussel species are known from the vicinity of the project area:

County	Potential Conflict	Latitude	Longitude	Water Name
Huntingdon	Yellow Lampmussel (*Lampsilis cariosa*)	40.342806	-77.853210	Aughwick Creek
Huntingdon	Rainbow Mussel (*Villosa iris*)	40.342806	-77.853210	Aughwick Creek
Juniata	Rainbow Mussel (*Villosa iris*)	40.301386	-77.696168	Tuscarora Creek
Cumberland	Rainbow Mussel (*Villosa iris*)	40.239506	-77.176329	Conodoguinet Creek
Cumberland	Elktoe (*Alasmidonta marginata*)	40.239506	-77.176329	Conodoguinet Creek
Cumberland	Triangle Floater (*Alasmidonta undulata*)	40.239506	-77.176329	Conodoguinet Creek
Cumberland	Yellow Lampmussel (*Lampsilis cariosa*)	40.239506	-77.176329	Conodoguinet Creek

Freshwater mussels are the most imperiled taxonomic group in North America. Nearly 20% of the species historically known to occur in the Commonwealth are now extirpated (locally extinct). Additionally 60% of Pennsylvania's remaining species are of conservation concern. We are concerned about direct and indirect (i.e., runoff) effects that the proposed project may have on the species of concern. The freshwater mussel species known from the project area are especially vulnerable to physical (dredging, rip-rap, etc.) and chemical (pH, dissolved oxygen, temperature, heavy metals and organic contaminants) changes to their aquatic environment. Therefore, **we recommend using directional boring** rather than open cutting for the Aughwick Creek, Tuscarora Creek, and Conodoguinet Creek crossings. Open cutting will most likely adversely impact the species of concern. Work should be conducted from the bank (e.g., no in-stream disturbance). Likewise, no erosion or sediment should be allowed to enter into the river (e.g., strict erosion and sedimentation control measures need to be employed).

Provided that directional boring methodology is used, in-stream work is avoided, strict E&S control measures are maintained, and best management practices are employed, we do not foresee any significant adverse impacts from the proposed activity to the mussel species of special concern. The **applicant should implement the following contingencies to prevent impacts to water quality from drilling/boring operations:**

• Have a designated environmental inspector on site for the duration of the entire crossing operation

• Stop the bore/drill immediately if anyone on site observes an Inadvertent Return.

• Have a Vac Truck on site or on call (within three hours) to begin clean-up of the release in the stream channel to prevent downstream migration of drilling fluids

• Notify PFBC Bureau of Law Enforcement Regional Office within 24 hours http://fishandboat.com/dir_regions.htm (NC 814-359-5250; NE 570-477-5717; NW 814-337-0444; SW 814-445-8974)

Additionally, any release of sediment to the stream should be reason to initiate contact with the PFBC Bureau of Law Enforcement to address these issues. Any unauthorized disturbance, unpermitted discharge, or release of sediment(s) that is determined to be a pollution event (generally described http://www.fish.state.pa.us/fishpub/summary/reporting.html) per the Pennsylvania Fish and Boat Code will be subject to the appropriate legal enforcement action.

If, however, the work will necessitate any direct (e.g. equipment intrusion) or indirect impacts (e.g. runoff) to Aughwick Creek, Tuscarora Creek, and Conodoguinet Creek, a mussel survey & relocation should be conducted to avoid potential impacts to these rare mussel species. It is recommended that a qualified malacologist complete a mussel survey to identify any mussel species present and determine their abundance. Additionally, if mussels are encountered it is recommended that the mussels in the area of direct impact be relocated to suitable habitat outside of the disturbance area.

A list of qualified malacologists and a Pennsylvania Fish & Boat Commission approved mussel survey protocol is enclosed for your convenience when arranging for a mussel survey. Prior to conducting a survey, qualified malacologist should submit a proposed survey and relocation plan to this office. Upon completion of the mussel survey and relocation, please send a copy of the final report to this office for further evaluation.

Fish

The following rare or protected fish species are known from the vicinity of the project area:

County	Potential Conflict	Latitude	Longitude	Water Name
Washington / Allegheny	Ghost Shiner (*Notropis buchanani*, PA Endangered)	40.230011	-79.971321	Monongahela River
Cambria	Brook Stickleback (*Culaea inconstans*, PA Candidate)	40.449661	-78.605685	Little Conemaugh River

The fish species known from the project area are especially vulnerable to physical (dredging, substrate modification, etc.) and chemical (turbidity, pH, dissolved oxygen, temperature, heavy metals and organic contaminants) changes to their aquatic environment. Although the mobile adults of these protected fish species may be capable of moving from the project area, their spawning grounds (including eggs, fry, and immature fish) are vulnerable to burial, crushing by equipment, and siltation from in-stream construction projects. We are concerned about potential impacts to the fish, eggs and the hatching fry from any instream work.

Provided that directional boring is used for the Monongahela River and Little Conemaugh River crossings, in-stream work is avoided, strict E&S control measures are maintained, and best management practices are employed, we do not foresee any significant adverse impacts from the proposed activity to the fish species of special concern.

If, however, the Monongahela River work will necessitate any direct impacts such as instream work or open cut stream crossings, we will need more information to allow for a more thorough evaluation of potential adverse impacts from the proposed project. Items such as a detailed narrative accurately describing the crossing including possible instream work, sequence of activities, basic site plans and map, aerial maps of the general area, project alternatives, acreage to be impacted, general habitat descriptions or onsite color photographs (keyed to a site map) would expedite our review process. Pending the review of this information a survey for the species of concern may be warranted.

If, however, the Little Conemaugh River work will necessitate any direct impacts such as instream work or open cut stream crossings, we request that all in-stream activity be avoided from April 1 to June 15 in order to avoid adverse impacts during the spawning season for the Brook Stickleback. Likewise, all work should be done during low flow periods, and strict erosion and sedimentation control measures need to be employed. Provided that these recommendations are followed, as well as best management practices and an approved erosion and sedimentation control plan is maintained, then we do not anticipate the proposed activity to have any significant adverse impacts to the fish species of special concern.

Eastern Redbelly Turtle (*Pseudemys rubriventris*, PA Threatened)

The eastern redbelly turtle is one of Pennsylvania's largest native aquatic turtles. This turtle species is known to inhabit relatively large, deep streams, rivers, ponds, lakes, and marshes with permanent water and ample basking sites. Redbelly turtles are restricted to the southcentral and southeastern regions of the Commonwealth. The existence of this turtle species is threatened by habitat destruction, poor water quality and competition with aggressive non-native turtle species that share its range and habitat (e.g. red-eared slider).

If large, deep streams, rivers, ponds, lakes and wetlands with permanent water or the area within 300ft of these water features in Chester and Delaware counties are to be disturbed from the

project activity, we request completion of a habitat assessment to determine presence/absence of potential redbelly turtle habitat and/or nesting habitat at the proposed project area.

A qualified biologist, who possesses the necessary Scientific Collector's Permit issued by the Pennsylvania Fish and Boat Commission, must conduct this habitat/nesting habitat assessment. A list of biologists recognized as qualified by the Pennsylvania Fish and Boat Commission to perform redbelly turtle surveys is enclosed. Following completion of the assessment, a report of the qualified redbelly turtle biologist's observations and conclusions must be submitted to this office for further review and consultation.

However, if permanent water wetlands, vernal pools, or water bodies or the area within 300ft of these water features in Chester and Delaware counties are not to be disturbed in any way by the proposed activity, and provided that best management practices are employed and strict erosion and sedimentation measures are maintained, I do not foresee any adverse impacts to the Eastern Redbelly Turtle from the proposed project.

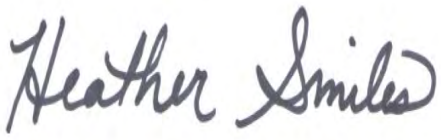
Bog Turtle (*Glyptemys muhlenbergii*, PA Endangered, Federal Threatened)

In an effort to streamline our threatened and endangered species environmental review process, reduce the redundancy in project reviews and ease our staff workload, the Pennsylvania Fish and Boat Commission has delegated coordination/consultation of joint state/federally listed species impact reviews to the PA Field Office of the U.S. Fish and Wildlife Service (USFWS). Please send your project materials *if you have not already done so* to them at: **U.S. Fish and Wildlife Service, Endangered Species Section, 315 South Allen St, Suite 322, State College, PA 16801-4851.**

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Gary Smith at 814-279-3080 and refer to the SIR # 41856. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,



Heather A. Smiles, Chief
Natural Gas Section

HAS/GAS/dn

Pennsylvania Fish & Boat Commission
established 1866

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

May 21, 2014

IN REPLY REFER TO
SIR# 41856 – Addition to January 27, 2014 letter

TETRA TECH
Preston Smith
661 Andersen Drive
Pittsburgh, Pennsylvania 15220

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No.
Sunoco Pennsylvania Pipeline
ALLEGHENY County: - BERKS County: - BLAIR County: - CAMBRIA County: - CHESTER County: - CUMBERLAND County: - DAUPHIN County: - DELAWARE County: - HUNTINGDON County: - INDIANA County: - JUNIATA County: - LANCASTER County: - LEBANON County: - PERRY County: - WASHINGTON County: - WESTMORELAND County: - YORK County:

Dear Preston Smith:

Based on further review of the project, additional Timber Rattlesnake (*Crotalus horridus*) habitat besides those areas identified in our January 27, 2014 letter could be present within the proposed disturbance area. These are in addition to the search areas we previously provided and do not overlap any of the areas we previously recommended. We apologize for not bringing these additional Timber Rattlesnake habitat assessment areas to your attention in our earlier review; it was an omission on our part. Therefore, we recommend additional Timber Rattlesnake habitat assessment in the areas listed in Table 2 along with the areas listed in Table 1 from our January 27, 2014 letter to confirm whether or not the project site contains Timber Rattlesnake habitat and to determine the potential for adverse impacts to this species.

Table 1. Original Timber Rattlesnake Habitat Assessments Areas on the Pennsylvania Pipeline as listed in our January 27, 2014 letter.

County	Potential Conflict	Western End of Habitat Assessment		Eastern End of Habitat Assessment		Comment
		Latitude	Longitude	Latitude	Longitude	
Cambria	Timber Rattlesnake	40.423856	-78.918485	40.419370	-78.884942	Laurel Ridge South Exposure
Blair	Timber Rattlesnake	40.465277	-78.489083	40.464433	-78.444829	West of Altoona
Huntingdon	Timber Rattlesnake	40.348146	-77.953475	40.337198	-77.912710	Jacks Mountain, SGL 71
Huntingdon	Timber Rattlesnake	40.329852	-77.820093	40.312663	-77.745830	Blacklog Mountain, Shade Mountain
Perry	Timber Rattlesnake	40.289980	-77.635604	40.284410	-77.612818	Conococheague Mountain, Tuscarora State Forest
Perry	Timber Rattlesnake	40.266702	-77.508005	40.262470	-77.491688	Bowers Mountain, Tuscarora State Forest
Cumberland	Timber Rattlesnake	40.256799	-77.469902	40.251875	-77.448899	Blue Mountain
Cumberland	Timber Rattlesnake	40.246850	-77.428032	40.245663	-77.385058	Wildcat Ridge, Tuscarora State Forest

Table 2. Additional Timber Rattlesnake Habitat Assessments Areas on the Pennsylvania Pipeline:

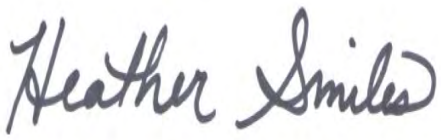
County	Potential Conflict	Western End of Habitat Assessment		Eastern End of Habitat Assessment		Comment
		Latitude	Longitude	Latitude	Longitude	
Indiana / Cambria	Timber Rattlesnake	40.43147	-78.96987	40.42383	-78.91892	Laurel Ridge
Blair	Timber Rattlesnake	40.44429	-78.58242	40.46527	-78.48908	South of Gallitzin
Blair	Timber Rattlesnake	40.43944	-78.29419	40.43324	-78.26747	Lock Mountain
Blair / Huntingdon	Timber Rattlesnake	40.41387	-78.18891	40.40363	-78.16306	Tussey Mountain
Huntingdon	Timber Rattlesnake	40.36880	-78.06593	40.36017	-78.02839	Terrace Mountain
Huntingdon	Timber Rattlesnake	40.35668	-78.00744	40.34815	-77.95347	Sideling/Jacks Mountains
Juniata / Perry	Timber Rattlesnake	40.29864	-77.68276	40.29433	-77.65788	Tuscarora Mountain
Perry	Timber Rattlesnake	40.29291	-77.65075	40.28998	-77.63560	Conococheague Mountain
Perry	Timber Rattlesnake	40.27856	-77.57443	40.26670	-77.50800	Schultz/Bowers Mountains
Perry	Timber Rattlesnake	40.26247	-77.49168	40.25679	-77.46990	Blue Mountain

We provided a list of qualified surveyors and habitat assessment protocol for your convenience with our January 27, 2014 letter. This list is not an exhaustive list of qualified rattlesnake surveyors in Pennsylvania as there may be qualified surveyors who have not asked to be placed on this list. It is not mandatory that you use someone on this list.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Gary Smith at 814-279-3080 and refer to the SIR # 41856. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,



Heather A. Smiles, Chief
Natural Gas Section

HAS/GAS/dn

ATTACHMENT 2

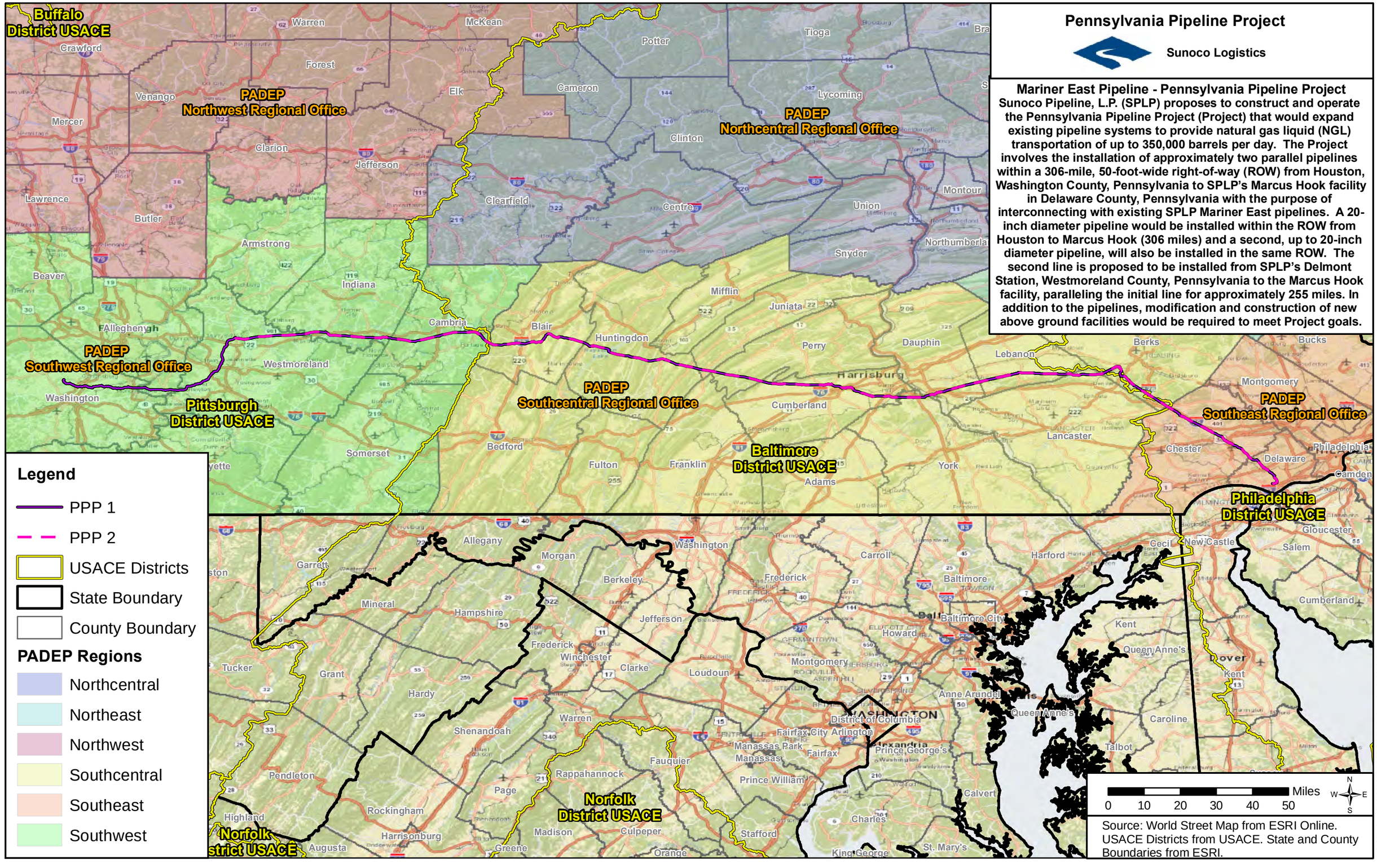
Pennsylvania Pipeline Project Map

Pennsylvania Pipeline Project

Sunoco Logistics

Mariner East Pipeline - Pennsylvania Pipeline Project

Sunoco Pipeline, L.P. (SPLP) proposes to construct and operate the Pennsylvania Pipeline Project (Project) that would expand existing pipeline systems to provide natural gas liquid (NGL) transportation of up to 350,000 barrels per day. The Project involves the installation of approximately two parallel pipelines within a 306-mile, 50-foot-wide right-of-way (ROW) from Houston, Washington County, Pennsylvania to SPLP's Marcus Hook facility in Delaware County, Pennsylvania with the purpose of interconnecting with existing SPLP Mariner East pipelines. A 20-inch diameter pipeline would be installed within the ROW from Houston to Marcus Hook (306 miles) and a second, up to 20-inch diameter pipeline, will also be installed in the same ROW. The second line is proposed to be installed from SPLP's Delmont Station, Westmoreland County, Pennsylvania to the Marcus Hook facility, paralleling the initial line for approximately 255 miles. In addition to the pipelines, modification and construction of new above ground facilities would be required to meet Project goals.



Legend

- PPP 1
- PPP 2
- USACE Districts
- State Boundary
- County Boundary

PADEP Regions

- Northcentral
- Northeast
- Northwest
- Southcentral
- Southeast
- Southwest

Source: World Street Map from ESRI Online. USACE Districts from USACE. State and County Boundaries from ESRI.

P:\GIS\Projects\112\C05958-PPP\MXD\PPP_Overview04302015

ATTACHMENT 3

Inadvertent Return Contingency Plan for PPP

Sunoco Pipeline, L.P. HDD Inadvertent Return Contingency Plan with Special Bog Turtle Area Procedures -Pennsylvania Pipeline Project-

Revision - August 11, 2015

Introduction

This document has been prepared to minimize potential for impacts to sensitive environmental resources from inadvertent releases associated with the horizontal directional drill (HDD) method. This plan will be followed during construction of Sunoco Pipeline, L.P.'s (SPLP's) Pennsylvania Pipeline Project where the HDD construction method is planned under streams, rivers, wetlands, special areas, and transportation features. This plan also contains a specific section outlining the procedures to be implemented to avoid potential impacts to the bog turtle (*Glyptemys muhlenbergii*), a federally threatened species, at some of the HDD locations. A listing of HDD sites is provided in Attachment A with the special bog turtle HDDs highlighted. Construction personnel will be provided detailed constructions plans for each HDD, and will be required to implement all erosion and sedimentation control and this contingency plan.

Horizontal directional drilling is used to install pipeline crossings on construction projects, depending on site-specific conditions. HDD is a widely used trenchless construction method which accomplishes the installation of pipelines and buried utilities with minimal disturbance to the ground surface, including streams and wetlands. The primary potential environmental impact associated with HDD revolves around the use of drilling fluids. An inadvertent return of drilling lubricant is a potential concern when the HDD method is used. The purpose of this document is to present SPLP's plan for minimizing the risk for inadvertent returns and potential environmental impacts associated with drilling fluids that do inadvertently escape to the ground surface.

The purpose of this contingency plan is to:

- Provide an overview of the HDD process;
- Minimize the potential for inadvertent returns associated with horizontal drilling activities;
- Provide for the timely detection of inadvertent returns;
- Protect areas that are considered environmentally sensitive (streams, wetlands, other biological resources, cultural resources);
- Ensure an organized and timely response in the unlikely event an inadvertent release of drilling mud would occur; and,
- Ensure that all appropriate notifications are made to SPLP's Environmental Compliance Coordinator, the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), Pennsylvania Department of Environmental Protection (PADEP), and other applicable regulatory agencies in a timely manner, and that all required documentation is completed as identified in this document.

Background

An awareness of the function and composition of HDD drilling fluids (also referred to as drilling mud) is imperative in producing a permittable and constructable HDD crossing design. The principal functions of drilling fluid in HDD pipeline installation are listed below.

- **Transportation of Spoil.** Drilled spoil, consisting of excavated soil or rock cuttings, is suspended in the fluid and carried to the surface by the fluid stream flowing in the annulus between the bore hole and the pipe.

- **Cooling and Cleaning of Cutters.** Build-up of drilled spoils on bit or reamer cutters is removed by high velocity fluid streams directed at the cutters. Cutters are also cooled by the fluid.

- **Reduction of Friction.** Friction between the pipe and the hole wall is reduced by the lubricating properties of the drilling fluid.

- **Hole Stabilization.** Stabilization of the drilled hole is accomplished by the drilling fluid building up a "wall cake" which seals pores and holds soil particles in place. This is critical in HDD pipeline installation as holes are often in soft soil formations and are uncased.

- **Transmission of Hydraulic Power.** Power required to turn a bit and mechanically drill a hole is transmitted to a downhole motor by the drilling fluid.

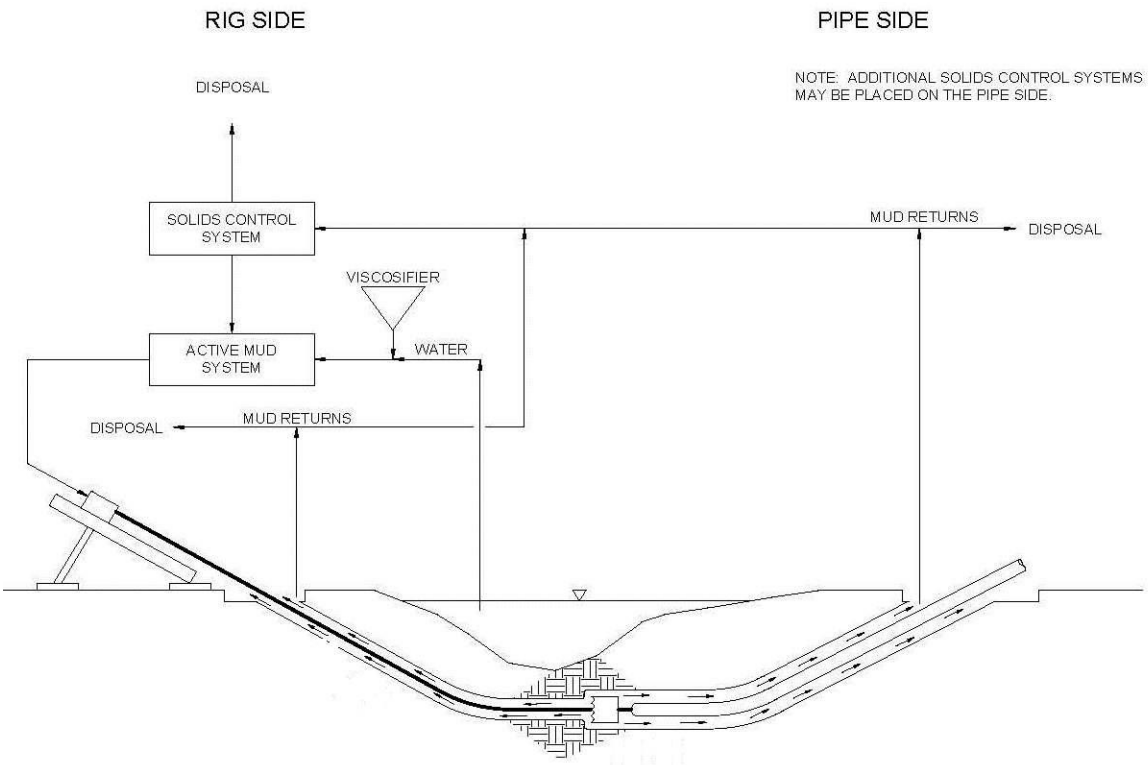
- **Hydraulic Excavation.** Soil is excavated by erosion from high velocity fluid streams directed from jet nozzles on bits or reaming tools.

- **Soil Modification.** Mixing of the drilling fluid with the soil along the drilled path facilitates installation of a pipeline by reducing the shear strength of the soil to a near fluid condition. The resulting soil mixture can then be displaced as a pipeline is pulled into this formation.

The major component of drilling fluid used in HDD pipeline installation is fresh water, typically obtained at the crossing location. To increase the hydraulic properties of the water, it is generally necessary to modify it by adding a viscosifier. The viscosifier used almost exclusively in HDD drilling fluids is naturally occurring bentonite clay, which is principally sodium montmorillonite. It is not a listed hazardous material/substance as defined by the U.S. Environmental Protection Agency's (USEPA) Emergency Planning and Community Right-to-know Act (EPCRA) or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulatory criteria. If the product becomes a waste, it does not meet the criteria of a hazardous waste, as defined by the USEPA. Bentonite is non-toxic and commonly used in farming practices, but has the potential to impact plants, fish and their eggs if discharged to waterways in significant quantities.

All stages of HDD involve circulating drilling fluid from equipment on the surface, through a drill pipe, and back to the surface through a drilled annulus. Drilling fluid returns collected at the entry and exit points are stored in a steel tank and processed through a solids control system which removes spoil from the drilling fluid, allowing the fluid to be recycled. The cleaned fluid is trucked back to the entrance point for reuse. The basic method used by the solids control system is mechanical separation using shakers, desanders, and desilters. The excess spoil and drilling fluid

are transported to, and disposed of, at an approved and permitted solid waste landfill. A typical HDD drilling fluid flow circuit is illustrated schematically below.



Drilling fluid expended downhole will flow in the path of least resistance. In the drilled annulus, the path of least resistance may be an existing fracture or fissure in the soil or rock substrate. When this happens, circulation can be lost or reduced. This is a common occurrence in the HDD process, but does not prevent completion. However, the environment may be impacted if the fluid inadvertently returns to the surface at a location on a waterway's banks or within a waterway or wetland.

Inadvertent Return Minimization Practices

The risk of an inadvertent return can be mitigated through profile design and implementation of specific measures throughout the installation process.

The HDD profile is designed to minimize the potential for the release of drilling fluid in sensitive areas. Cohesive soils, such as clays, dense sands, and competent rock are considered ideal materials for containment of drilling fluids. Case by case analysis of the overburden will be conducted to determine the depth of the bore necessary to provide a margin of safety against returns in a sensitive area. In non-cohesive soils, such as gravel, a greater depth of cover will be used. If substrate test bores are required during the design phase, they should be a minimum of 20 feet from the HDD centerline where practical. The bore holes should be properly sealed by filling with concrete prior to the HDD process.

Key preventive measures implemented during installation are geared toward keeping the drill fluid contained in the borehole and preventing its escape to the surface. This is accomplished through monitoring and management of drill fluid pressures and drill fluid volumes. The most effective ways of containing and controlling an inadvertent return are early detection and quick response by the HDD crew.

Minimization of Environmental Impact

The major key to minimize environmental impacts associated with HDD drilling fluids is to maintain fluid circulation to the extent practical. Maintenance of fluid circulation is the responsibility of the HDD contractor. Monitoring of drilling mud volumes, pressures, and pump rates/returns will be monitored to assist in determining if significant drill mud loss occurs signaling a possible inadvertent return.

It should be recognized that restoration of circulation may not be practical or possible, and that environmental impact will be minimized by completing construction as soon as possible.

Drilling fluid is easily contained by standard erosion and sedimentation control measures. Drilling fluid is controlled within the boundaries of the worksite through the use of pits at the crossing entry and exit points and typical fluid handling equipment such as vac trucks.

The environmental impacts of a release of drilling fluid into a water body include a temporary increase in local turbidity until drilling fluid dissipates with the current and/or settles to the bottom. In the immediate vicinity of a release, benthic organisms may be impacted if sufficient quantities of bentonite settle upon them.

SPLP will ensure that the HDD contractor will closely monitor fluid circulation to detect potential inadvertent returns at the earliest possible time.

SPLP does not expect that HDD will alter, disturb, or otherwise impact subsurface hydrology of associated streams and wetlands, including subsurface pressurized waters. As such, the surfacing of groundwater is not expected. The HDD engineer is able to monitor pressure releases which would signify a potential return or the surfacing of ground water. Such pressure releases would result in the inspection of the HDD alignment and adjacent areas for releases. If a groundwater discharge is identified, it will be photographed, characterized (i.e., location, size, limits, flow rate, flow direction, clarity, etc.) and reported to the chain of command which will follow the proper agency notification procedures. The inspection and early detection of any discharge will allow the HDD engineer to stop or adjust the HDD to reduce the potential for secondary impacts.

Response to Inadvertent Returns

The HDD contractor shall immediately notify the lead Construction Inspector (CI) and Environmental Inspector (EI) of any sudden losses in returns or any inadvertent return to the surface. If a return is observed, the HDD contractor will take reasonable measures to eliminate, reduce, or control the release. The actions to be taken will depend on the location and time of release, site specific geologic conditions, and the volume of the release. The EI or CI will notify the SPLP's Environmental Compliance Coordinator (ECC) with the initial details of the return upon discovery.

Inadvertent Returns in Uplands

If a release is identified within or nearby the HDD alignment, but outside of wetland areas and within the adjacent uplands, notification, containment, and clean-up will be carried out as necessary. The EI will be required to be present as these activities may need to be conducted outside of pre-approved limits of disturbance. The CI and EI will work closely to determine the best course of action for inadvertent returns occurring within upland areas. The EI will be responsible for notification of the return to SPLP's ECC. The PADEP/USACE/USFWS will not be notified in these cases. The HDD contractor will take appropriate reasonable actions to reduce, eliminate, or control the release. The actions may include:

- Constructing a small pit or sandbag coffer around the release point, installing a section of silt fence and/or straw bales to trap as much drilling fluids as possible, and placing a pump hose in the pit to pump the drilling fluid back to the bore site or temporary holding area or vessels (i.e.: vac truck);
- Reducing drilling fluid pressures;
- Thickening drilling fluid mixture; and/or
- Adding pre-approved loss circulation materials to the fluid mixture, such as wood fibers or shredded paper.

Drilling fluid may be recovered, recycled, and reused to the extent practical. All waste drilling fluid will be properly managed.

Inadvertent Returns in Wetlands/Streams

If the release is identified within wetlands and/or streams, drilling operations will be temporarily suspended to allow the EI to appropriately quantify the release, document its location, photograph the release, assess the potential to impact to the resource(s), and report the incident to SPLP's ECC. Information about the return will be recorded and updated as necessary as a running report on the data form provided in Attachment B. SPLP's ECC is responsible for completion of the data form with the assistance of the EI and environmental compliance contractor. Each form will be updated as new information is learned about the return and as activities to restore the area occur. The general reporting will be "Initial", "Interim", and then "Final". The initial, interim, and final reports will comprehensively document the return from initial discovery/notification through final restoration. **ALL inadvertent returns in wetlands and streams, regardless of size, are to be reported to the appropriate agencies in accordance with the notification section below.**

Containment, clean-up, and restoration activities that would require the installation of construction matting or the entry of construction vehicles and equipment are not allowed without PADEP/USACE approval. If upon reporting the incident, and under further consultation with the agencies, the return is determined to be significant enough to warrant containment, clean-up, and restoration via mechanical methods, then the following procedures will be followed:

- Draft containment and restoration plan, outlining the limits, types, and duration of disturbances, will be submitted to the PADEP/USACE for review and approval.
- Appropriate aquatic resource encroachment permits will be applied for depending on levels and types of disturbances required to clean up the material.
- Approved activities would only be implemented under the close, full-time supervision of the assigned EI.

- Drilling operations will resume when the return is contained and successfully remediated. The return area will continue to be monitored during the daily inspection.

One exception to ceasing drilling operations would be a release of drilling fluids during the pipe pullback process. Ceasing operations would pose significant risk of causing the pulled pipe to be stuck and not able to resume.

Containment & Clean-up Material and Equipment

The HDD contractor will be required to have the necessary containment and clean-up equipment on-site and/or readily available for use. At a minimum, a combination of some or all of the following material and equipment should be on site and in ample supply depending on the extent of sensitive areas:

- Spill sorbent pads and booms
- Compost filter socks
- Straw bales (certified weed-free)
- Wood stakes
- Sand bags
- Silt fence
- Plastic sheeting
- Corrugated plastic pipe
- Shovels
- Push brooms
- Centrifugal, trash and sump pumps
- Vacuum truck
- Rubber tired or wide track back hoe
- Bobcat (if needed)
- Storage tanks (if needed)
- Floating turbidity curtain (may be considered for use on large streams)Timber (enough to cross 50% of the wetland length need to be readily available)

If necessary, a 24-hour outside emergency response company may be called in for assistance (such as Enviroserve – 1-800-642-1311).

Notifications

No agency notifications are required for returns occurring in and contained in upland areas. SPLP's ECC will be responsible for notifying the PADEP/USACE of all returns occurring in or flowing into aquatic resources. SPLP's ECCs are identified as Chris Embry (610-670-3237) and Matt Gordon (610-670-3284). The notifications will initially be via phone to the PADEP Emergency Response numbers listed below and then to the appropriate agency personnel via submittal of an initial inadvertent return data form located in Attachment B.

The Pennsylvania Clean Streams Law regulations require that when any pollutant is discharged into surface or groundwater, including sewers, drains and ditches, the person spilling the substance or the person owning the premises from which the substance is spilled must notify PADEP

immediately. Therefore all returns in aquatic resources SPLP will notify the appropriate PADEP regional emergency number within 24 hours of return discovery:

- PADEP Southcentral Regional Office: 717-705-4802
- PADEP Southeast Regional Office Waters and Wetlands: 484-250-5160

In addition, SPLP will notify the appropriate USACE regulatory office numbers within 24 hours of return discovery:

- U.S. Army Corps of Engineers
  Baltimore District: 410-962-3670
  Philadelphia District: 215-656-6728

Following notification to the appropriate emergency/regulatory numbers, SPLP's ECC will notify the following individuals via e-mail submittal of the inadvertent return form located in Attachment B. This will consist of the initial reporting of the return and open consultation and further reporting to the PADEP/USACE in regards the return. The further consultations will be regards to remediation approval, restoration approval, and the need for appropriate approval/permits. The inadvertent return data form will be used to document the consultation and approvals and report final remediation/restoration.

- PADEP Southcentral Regional Permit Reviewer (TBD)
- USACE Baltimore District Permit Reviewer (TBD)
- USACE Philadelphia District Permit Reviewer (TBD)

SPECIAL BOG TURTLE AREA PROCEDURES

All crossings occurring within known or potential bog turtle habitats, as identified and approved by the U.S Fish and Wildlife Service (USFWS) and listed in Attachment A (highlighted in yellow), will be HDD, rather than open trenched, to minimize impact to this species and their habitat. In addition, the drilling activities will only occur at known or potential sites between the dates of April 1 and October 31 to further minimize the potential impact. This plan includes pre-construction and during construction procedures to ensure no bog turtles are negatively impacted at the HDD sites listed in Attachment A (and highlighted in yellow), and outlines a contingency plan for inadvertent releases at these special concern areas.

As discussed, the primary potential environmental impact associated with HDD revolves around the use of drilling fluids. Inadvertent return of drilling lubricant is a potential environmental concern in general and is of particular concern to the USFWS and SPLP in regards to potential impacts to bog turtles where they occur or have the potential to occur. In addition, the increased construction activity in the area of known or potential habitats has the potential for unintentional disturbance to individuals and their habitats. Although implementation of the HDD crossing method represents one of the highest levels of avoidance of impacts (by minimizing/avoiding open trench excavation and the operation of construction equipment in the wetland), the purpose of this document is to present SPLP's plan to further minimize potential impacts to bog turtles associated with all phases of the HDD process and in particular in the event of an inadvertent release.

The objectives of this section of this contingency plan are:

- Avoid impacts to the bog turtle.
- List known or potential bog turtle habitats.
- Ensure project work areas and wetlands are clearly defined on engineer approved project plans.
- Ensure all construction contractors are appropriately trained on the identification of this species and its biology, the notification procedures, and implementation of this contingency plan.
- Ensure bog turtle wetlands/areas are marked prior to construction and that all work areas are appropriately defined (e.g., staked) according to project plans.
- Ensure bog turtle wetlands/areas are sealed off/protected from construction activities.
- Provide daily inspection of contractor activities to ensure compliance with project work plans.
- Provide daily inspection of the HDD alignment and adjacent areas for timely detection of inadvertent returns.
- Ensure all appropriate notifications are made to the USFWS, United States Army Corps of Engineers (USACE) and PADEP, and all other applicable regulatory agencies in a timely manner and that all required documentation is completed as identified in this document.

Pre-construction Activities

All construction, including professional survey personnel will be trained on implementation of this plan, the identification of this species and its biology, and the location of the areas of particular concern. All construction personnel, Environmental Inspector (EI), and on-site bog turtle Specialist (BT Specialist) will be provided with the necessary project plans, mapping, permits, authorized impacts, clearance letters, and this contingency plan prior to the start of construction activities.

To reduce the risk of unintentional damage to bog turtles and their habitats, a BT Specialist will inspect the surveyed (e.g. staked) entrance and exit locations and access roadways associated with the HDD prior to disturbance to ensure that they are not sited in bog turtle habitat and in accordance with project plans (A BT Specialist is defined as an individual holding a Pennsylvania Fish and Boat Commission a Scientific Collector's Permit, and a Special Permit to survey for and handle bog turtles species pursuant to 58 PA Code 75.4). In addition, the boundary of the bog turtle habitat nearest the work areas will be temporarily marked to ensure no activities are unintentionally conducted within bog turtle wetlands and work is restricted to approved work-spaces. Under the direction of the BT Specialist, silt fence will be installed between wetlands and work areas to also prevent bog turtles from entering construction work spaces. Under the direction of the BT Specialist, some areas of herbaceous vegetation may require clearing so that inspection of the area for bog turtles can be made easier.

Construction Activities

No HDDs identified as bog turtle HDDs in Attachment A will occur between November 1 and March 30 to protect hibernating turtles from potential returns. Some pre-construction activities that do not include ground disturbance within the wetland areas, such as drill rig set-up and equipment staging may occur before April 1.

All procedures implemented by the drilling contractor discussed previously in this contingency plan to reduce the potential for, identification, and notification of inadvertent returns will be implemented at all HDDs. At the bog turtle HDDs listed in Attachment A, inspection of the work areas and compliance with the project plans will be carried out daily by the BT Specialist. In addition, when drilling commences the BT Specialist will inspect all disturbed upland areas and silt fencing multiple times for bog turtles and inadvertent returns. In addition, each wetland will be inspected once-daily for the occurrence of inadvertent returns, including the surfacing of ground water by the BT Specialist. Multiple, daily inspections for inadvertent returns within the wetlands areas were determined unnecessary and a one-time daily inspection would reduce the direct disturbance of normal behaviors if turtles are present. These inspections will continue until drilling is completed and the inadvertent return risk in the wetlands has been removed. Only if the drilling contractor suspects an inadvertent return as determined from the drilling progress and monitoring of the drilling fluids would more than one daily inspection of the wetlands for returns be performed.

Bog Turtle Observations and Handling

Construction personnel will be trained to report all turtle observations to the EI immediately upon siting. All bog turtle observations that are not in harm's way will be documented within project logs and reported to the USFWS/USACE/PADEP within the final report. Documentation will

include dates, times, photographs, and behavior. Additional, protection measures should be considered depending on where bog turtles are observed in relation to project areas.

Bog turtles observed in harm's way shall be handled by the bog turtle Specialist assigned to the area and only if handling is determined necessary to remove the risk of injury or death. Other project personnel are allowed to move turtles small distances but only in cases of immediate danger. Otherwise steps to passively remove the threat and allow the turtles to continue normal behavior may be determined to be the best course of action. Bog turtles will only be moved to an area within the same wetland, only to a distance necessary to remove the threat. Additional silt fence installation may be required in the area to prevent turtles from returning to areas that presented the threat. Removal or relocation of the construction activity in that particular area will also be considered if practicable to completing the drill. Any bog turtles found within harm's way will be reported to the USFWS immediately as an incident and how it was handled.

Response to Inadvertent Returns

The HDD contractor shall immediately notify the lead Construction Inspector (CI) and Environmental Inspector (EI) of any sudden losses in returns or any inadvertent return to the surface. If a return is observed, the HDD contractor will take reasonable measures to eliminate, reduce, or control the release. The actions to be taken will depend on the location and time of release, site specific geologic conditions, and the volume of the release. The EI or CI will notify the SPLP's Environmental Compliance Coordinator (ECC) with the initial details of the return upon discovery.

Inadvertent Returns in Bog Turtle Wetlands/Streams

If the release is identified within bog turtle wetlands and/or streams, drilling operations will be temporarily suspended to allow the EI and BT Specialist to appropriately quantify the release, document its location, photograph the release, assess the potential to impact to the resource(s), and report the incident to SPLP's ECC. Information about the return will be recorded and updated as necessary as a running report on the data form provided in Attachment B. SPLP's ECC is responsible for completion of the data form with the assistance of the EI, BT Specialist, and environmental compliance contractor. Each form will be updated as new information is learned about the return and as activities to restore the area occur. The general reporting will be "Initial", "Interim", and then "Final". The initial, interim, and final reports will comprehensively document the return from initial discovery/notification through final restoration.

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- Straw bales (certified weed-free)
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- Sand bags
- Silt fence
- Plastic sheeting
- Corrugated plastic pipe
- Shovels
- Push brooms
- Centrifugal, trash and sump pumps
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- Storage tanks (if needed)
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Notifications

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- PADEP Southcentral Regional Permit Reviewer (TBD)
- USACE Baltimore District Permit Reviewer (TBD)
- USACE Philadelphia District Permit Reviewer (TBD

HDDs under bog turtle wetlands will also require additional notification to the USFWS/USACE/ PADEP personnel. The contact information for the identified points of contacts for bog turtles for these agencies is provide below (note: these may overlapped with other notifications points of contact):

<table>
<tr><td colspan="2">Kayla Easler
U.S. Fish and Wildlife Service
Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801
814- 234-4090 Ext. 234
kayla_easler@fws.gov</td></tr>
<tr><td>Cumberland County
Debby Nizer
U. S. Army Corps of Engineers
Baltimore Dist., Regulatory Branch, PA Section
P. O. Box 1715
Baltimore, MD 21203-1715
Phone: 410-962-6085
DEBBY.NIZER@usace.army.mi</td><td>Berks (Baltimore District), York Counties
Mike Danko
U. S. Army Corps of Engineers
Carlisle Regulatory Field Office
401 Louther Street, Suite 205
Carlisle, PA 17013
Phone: 717-249-8730</td></tr>
</table>

Berks (Philadelphia District), Chester (Philadelphia District), Delaware, Counties Bill Jenkins, Chief, Applications Section U. S. Army Corps of Engineers Wanamaker Building 100 Penn Square East Philadelphia, PA 19107-3390 Phone: 215-656-6726	**Chester (Baltimore District), Lancaster, Lebanon Counties** Pat Strong U. S. Army Corps of Engineers Baltimore Dist., Regulatory Branch, PA Section P. O. Box 1715 Baltimore, MD 21203-1715 Phone: 410-962-1847

Summary Report

A summary report will be prepared at the end of the project to document the implementation of the drilling method and this special section of the contingency plan. Number of drills, duration of drills, number of returns, return characteristics, inspection results and observations, lessons learned, and recommendations will all be discussed within this report.

ATTACHMENT A

HDD Table

ATTACHMENT B

Inadvertent Return Data Form

ATTACHMENT 4

Eastern Redbelly Turtle Habitat Assessment Survey Report

Habitat Assessment Report

Eastern Redbelly Turtle
Pennsylvania Pipeline – Section 3
Chester and Delaware Counties, Pennsylvania

Tetra Tech, Inc.

410 Eagelview Boulevard Suite 110 Exton Pennsylvania 19341

085220 | 01 | *** | Report No 1 | September 4, 2015

Table of Contents

Figure Index

Appendices

1. Introduction

GHD Services, Inc. (GHD) (formerly CRA) was retained by Tetra Tech, Inc. (TT) to conduct a habitat assessment for the eastern redbelly turtle (*Pseudemys rubriventris*) in anticipation of the proposed Pennsylvania Pipeline – Section 3 within Chester and Delaware Counties, Pennsylvania. The proposed project involves a new pipeline within a defined 200-foot wide environmental study corridor (Study Area) including the limits of disturbance and access routes.

GHD conducted a habitat assessment within the Study Area to determine the presence or absence of habitat suitable to support the eastern redbelly turtle, including both aquatic habitats and terrestrial habitats. The results of GHD's habitat assessment are provided in the following sections.

2. Project Description and Study Area

Sunoco Pipeline, LP (SPLP) proposes to construct and operate the Pennsylvania Pipeline Project (Project) that would expand existing pipeline systems to provide natural gas liquid (NGL) transportation of up to 350,000 barrels per day. The location of the Overall Project Area is shown on the map provided as Figure 1. The overall project involves the phased installation of approximately 561 miles of two parallel pipelines within a 306-mile, 50-foot-wide right-of-way (ROW) from Houston, Washington County, Pennsylvania to SPLP's Marcus Hook facility in Delaware County, Pennsylvania with the purpose of interconnecting with existing SPLP Mariner East pipelines. Initially, a 20-inch diameter pipeline would be installed within the ROW from Houston to Marcus Hook (306 miles) and a second, up to 20-inch diameter pipeline, would be installed in the same ROW within 5 years. The second line is proposed to be installed from SPLP's Delmont Station, Westmoreland County, Pennsylvania to the Marcus Hook facility, paralleling the initial line for approximately 255 miles. An extensive project description is included in Appendix A.

The location of the Study Area is shown on the map provided as Figure 2. The eastern redbelly turtle habitat assessment focused on Section 3 of the Pennsylvania Pipeline as it traverses through Chester and Delaware Counties. Section 3 of the Pennsylvania Pipeline is an approximately 35 mile segment that begins at the northwestern limits of Chester County in the Borough of Elverson and runs in a southeasterly direction where it terminates at the Sunoco Refinery in Chester Township, Delaware County. The habitat assessment focused on the Brandywine and Chester Creek Watersheds which are known to support eastern redbelly turtles in the vicinity of the Study Area.

3. Methodology of the Habitat Assessment

GHD conducted field visits and observed the physical and biological conditions occurring within the Study Area to determine if suitable eastern redbelly turtle habitat is present or absent. Mr. Scott Bush, agency approved surveyor, Ms. Christine Miller and Mr. Christopher Andes, agency approved assistants conducted the eastern redbelly turtle habitat assessment. Prior to any site inspections within the Study Area, GHD contacted Percheron (three days in advance of the inspection) to gain access to individual properties that are located within right of way easement of the proposed pipeline. If access was denied to a private parcel of land, if feasible GHD viewed the property from an adjacent property or road right of way.

The aquatic and terrestrial habitats within the Study Area were inventoried, characterized, and assessed for their suitability to provide feeding, basking, brumation, and nesting habitat for eastern redbelly turtles. The aquatic habitats within the Study Area were assessed for the presence of suitable basking structures and areas of likely aquatic vegetation that could provide significant foraging, cover, and general habitats for eastern redbelly turtles. GHD's habitat assessment also included the identification of potential nesting areas within the entire Study Area. Upland portions of the Project Area were assessed for suitable nesting habitat based on substrate texture and drainage, solar exposure, and accessibility from suitable aquatic habitats. The findings of the eastern redbelly turtle were recorded on a survey form developed by GHD for this project.

3.1 Habitat Requirements for the Eastern Redbelly Turtle

The eastern redbelly turtle (*Pseudemys rubriventris*) is a state-listed threatened species known to occur in Pennsylvania in the lower Delaware River and Susquehanna River drainages. The redbelly turtle is a large, aquatic species, which primarily inhabits open water, such as ponds, lakes, relatively large, deep, and slow-moving creeks, rivers, and canals, as well as large marshes. This species is known to frequent brackish water at the mouth of a river or canal, but is primarily a fresh water turtle. Ample basking sites, sufficient aquatic vegetation for foraging activities, and a soft sandy or muddy substrate for overwintering are important components of eastern redbelly turtle habitat. Suitable nesting sites in upland areas are also an important habitat requirement.

Suitable nesting sites are typically located in sandy or loamy soils with a relatively open canopy to allow sunlight to warm the soil and aid in development of the embryos within the eggs. Nest sites are located at higher elevations than the water body in generally well-drained areas to keep the eggs from becoming submersed or water-logged. Nests have been observed in areas with and without ground vegetation. The nesting season is generally from late May through mid-July. A gravid female may travel up to 800 feet (250m) from water to locate a suitable nesting site. However, nests are usually located much closer to suitable aquatic habitats (Hulse et al. 2001) where suitable habitat is present.

Suitable brumation (over-wintering) habitat for redbelly turtles generally consists of permanent open water areas having a soft muddy, silty, or sandy bottom in quieter backwater areas. Aquatic habitats that are intermittently exposed or that are shallow enough to freeze to the bottom are generally not suitable brumation habitats..

4. Result of the Habitat Assessment

GHD conducted the eastern redbelly turtle habitat assessment on August 25, 27 & 29, 2014, September 2, 4, 5, 9, 10 & 12, 2014 and June 29, 2015. Overall, 201 properties within the Study Area were evaluated to determine if there was suitable habitat (aquatic or nesting) for the eastern redbelly turtle within or adjacent to the pipeline right-of-way. A description of the properties that contained suitability to provide habitat for the eastern redbelly turtle are included in Appendix B. Figures 2a through 2l depict the limits of habitats that were identified as confirmed habitat for the eastern redbelly turtle or habitat that could potentially support the eastern redbelly turtle within the vicinity of the right-of-way of the pipeline. The properties that were evaluated within the Study Area but that did not contain suitable habitat for the eastern redbelly turtle are included in Appendix C. Color photographs of the Project Area are provided as Appendix D.

Eastern redbelly turtles were observed within two properties within the Study Area during our field investigation:

• On September 10, 2014, multiple (2-3) eastern redbelly turtles were observed basking on a log along the banks of a pond within parcel PA-DE-0104.0001 located in Middletown Township, Delaware County. In addition to the eastern redbelly turtles, a red-eared slider (*Trachemys scripta elegans*), and eastern painted turtles (*Chrysemys picta picta*) were observed basking on multiple logs throughout the pond. The pond is located approximately 175 feet outside the right of way and contains suitable nesting habitat along the edges of the pond berm.

• On June 10, 2015, multiple (10+) eastern redbelly turtles were observed basking on logs and swimming in Marsh Creek Lake within parcels PA-CH-0089.000 and PA-CH-0090.000 located in Upper Uwchlan Township, Chester County. In addition to the eastern redbelly turtles, eastern painted turtles were also observed basking on multiple logs throughout the lake.

During the habitat assessment, GHD also observed common snapping turtles (Chelydra serpentina), eastern painted turtles, green frogs (*Lithobates clamitans*), American toads (*Anaxyrus americanus*), bullfrogs (*Lithobates catesbeianus*) and wood frogs (*Lithobates sylvaticus*) within in the ponds and wetlands throughout the Study Area.

5. Conclusions

As described above, GHD conducted a habitat assessment for the eastern redbelly turtle within the Study Area for the Segment 3 of the Pennsylvania Pipeline Project. GHD observed the physical and biological conditions occurring within the Study Area to determine if potential suitable habitat (aquatic and nesting) for the eastern redbelly turtle is present within the Study Area. Eastern redbelly turtles were observed within two locations and potential habitat was observed within multiple locations throughout the proposed pipeline.

FIGURES

Mariner East System

Sunoco Logistics

Mariner East Pipeline - Pennsylvania Pipeline Project

Sunoco Pipeline, L.P. (SPLP) proposes to construct and operate the Pennsylvania Pipeline Project (Project) that would expand existing pipeline systems to provide natural gas liquid (NGL) transportation of up to 350,000 barrels per day. The Project involves the phased installation of approximately 561 miles of two parallel pipelines within a 306-mile, 50-foot-wide right-of-way (ROW) from Houston, Washington County, Pennsylvania to SPLP's Marcus Hook facility in Delaware County, Pennsylvania with the purpose of interconnecting with existing SPLP Mariner East pipelines. Initially, a 20-inch diameter pipeline would be installed within the ROW from Houston to Marcus Hook (306 miles) and a second, up to 20-inch diameter pipeline, would be installed in the same ROW within 5 years. The second line is proposed to be installed from SPLP's Delmont Station, Westmoreland County, Pennsylvania to the Marcus Hook facility, paralleling the initial line for approximately 255 miles.

Buffalo District USACE

PADEP Northwest Regional Office

PADEP Northcentral Regional Office

PADEP Southwest Regional Office

Pittsburgh District USACE

PADEP Southcentral Regional Office

Baltimore District USACE

PADEP Southeast Regional Office

Philadelphia District USACE

Norfolk District USACE

Legend

- PPP1
- PPP2
- USACE Districts
- State Boundary
- County Boundary

PADEP Regions

- Northcentral
- Northeast
- Northwest
- Southcentral
- Southeast
- Southwest

Miles

0 10 20 30 40 50

N W E S

Source: World Street Map from ESRI Online. USACE Districts from USACE. State and County Boundaries from ESRI.

P:\GIS\Projects\T29725-Sunoco\MXD\Phase\PPP_Overview\12112014

LEHIGH

BUCKS

BERKS

MONTGOMERY

Begining of Study Area

LANCASTER

CHESTER

DELAWARE

End of Study Area

Legend

Pennsylvania Counties

Pennsylvania Pipeline Limits of Disturbance

Source: ESRI Data.

0 5,000 10,000 15,000 20,000

Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania
South FIPS 3702 Feet

SUNOCO PIPELINE, L.P.
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT
OVERALL SURVEY HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Overall Map.mxd

Pond-A3

Wetland A46

Directional Drill Segment

Wetland B13

Wetland B14

Wetland B12

Wetland B14

Legend

- Pennsylvania Pipeline Limits of Disturbance
- Centerline of Pipeline
- Access Roads
- Parcels
- Stream
- Drainage Feature
- Wetland
- Suitable RBT Aquatic Habitat
- Suitable RBT Nesting Habitat

Source: ESRI Data.

0 200 400
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

TETRA TECH, INC.
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2a

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Figure 2a - Habitat Map.mxd

Source: ESRI Data.

0 200 400
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania
South FIPS 3702 Feet

TETRA TECH, INC,
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT
HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2b

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Figure 2b - Habitat Map.mxd

Directional Drill Segment

Wetland B15

Pond-B2

Directional Drill Segment

Legend

- Pennsylvania Pipeline Limits of Disturbance
- Centerline of Pipeline
- Access Roads
- Parcels
- Stream
- Drainage Feature
- Wetland
- Suitable RBT Aquatic Habitat
- Suitable RBT Nesting Habitat

Source: ESRI Data.

0 200 400
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania
South FIPS 3702 Feet

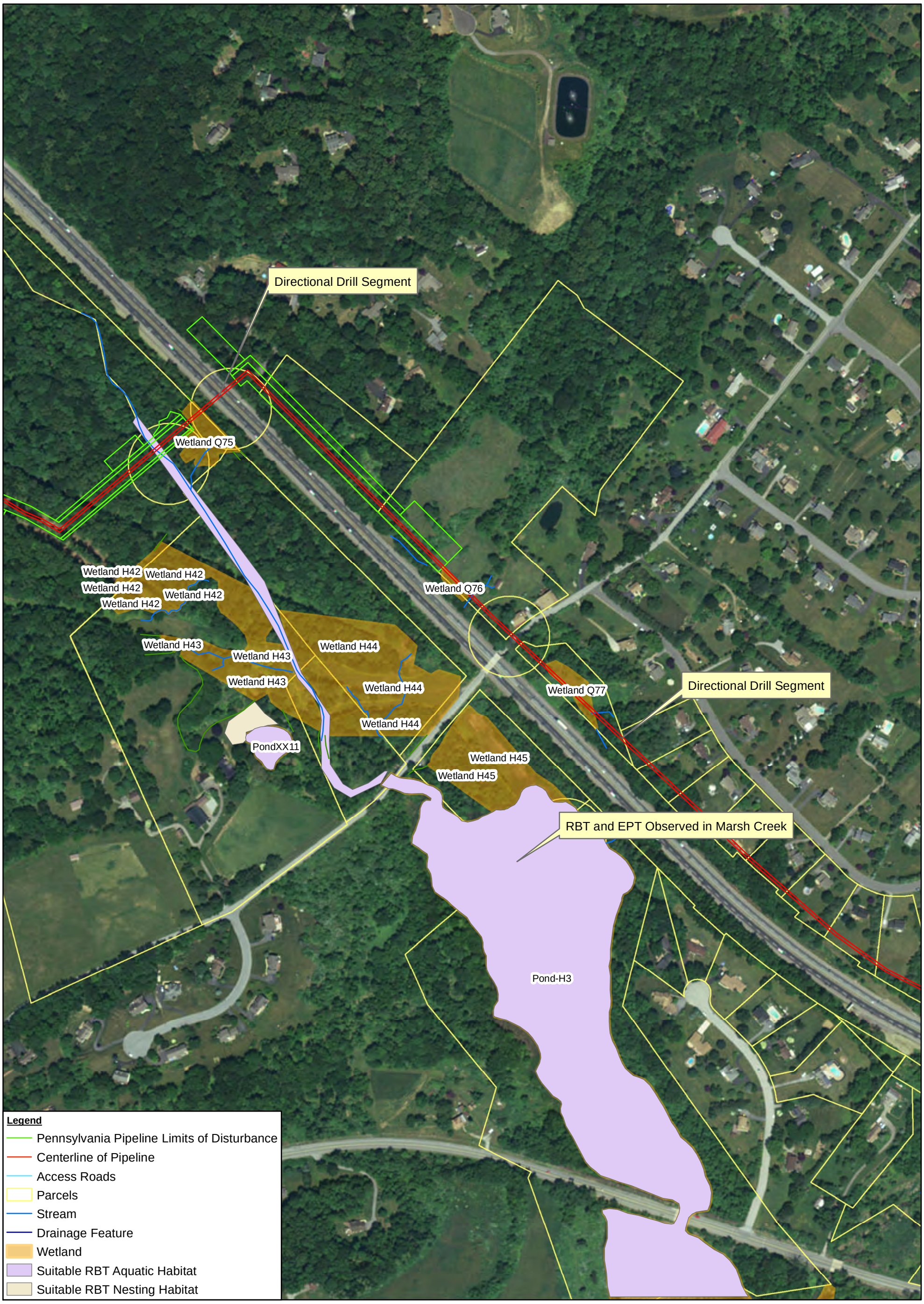
TETRA TECH, INC.
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2c

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Figure 2c - Habitat Map.mxd



Source: ESRI Data.

0 200 400
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

N

GHD

TETRA TECH, INC.
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2d

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Figure 2d - Habitat Map.mxd

Source: ESRI Data.

0 200 400
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania
South FIPS 3702 Feet

N

GHD

TETRA TECH, INC.
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT
HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2e

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Figure 2e - Habitat Map.mxd

Source: ESRI Data.

0 200 400
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania
South FIPS 3702 Feet

TETRA TECH, INC.
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT
HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2f

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Figure 2f - Habitat Map.mxd

Wetland B37
PondXX10
Wetland B50
Wetland B51
Wetland B51
Wetland B51
Directional Drill Segment
Wetland B52

Legend

- Pennsylvania Pipeline Limits of Disturbance
- Centerline of Pipeline
- Access Roads
- Parcels
- Stream
- Drainage Feature
- Wetland
- Suitable RBT Aquatic Habitat
- Suitable RBT Nesting Habitat

Source: ESRI Data.

0 200 400
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania
South FIPS 3702 Feet

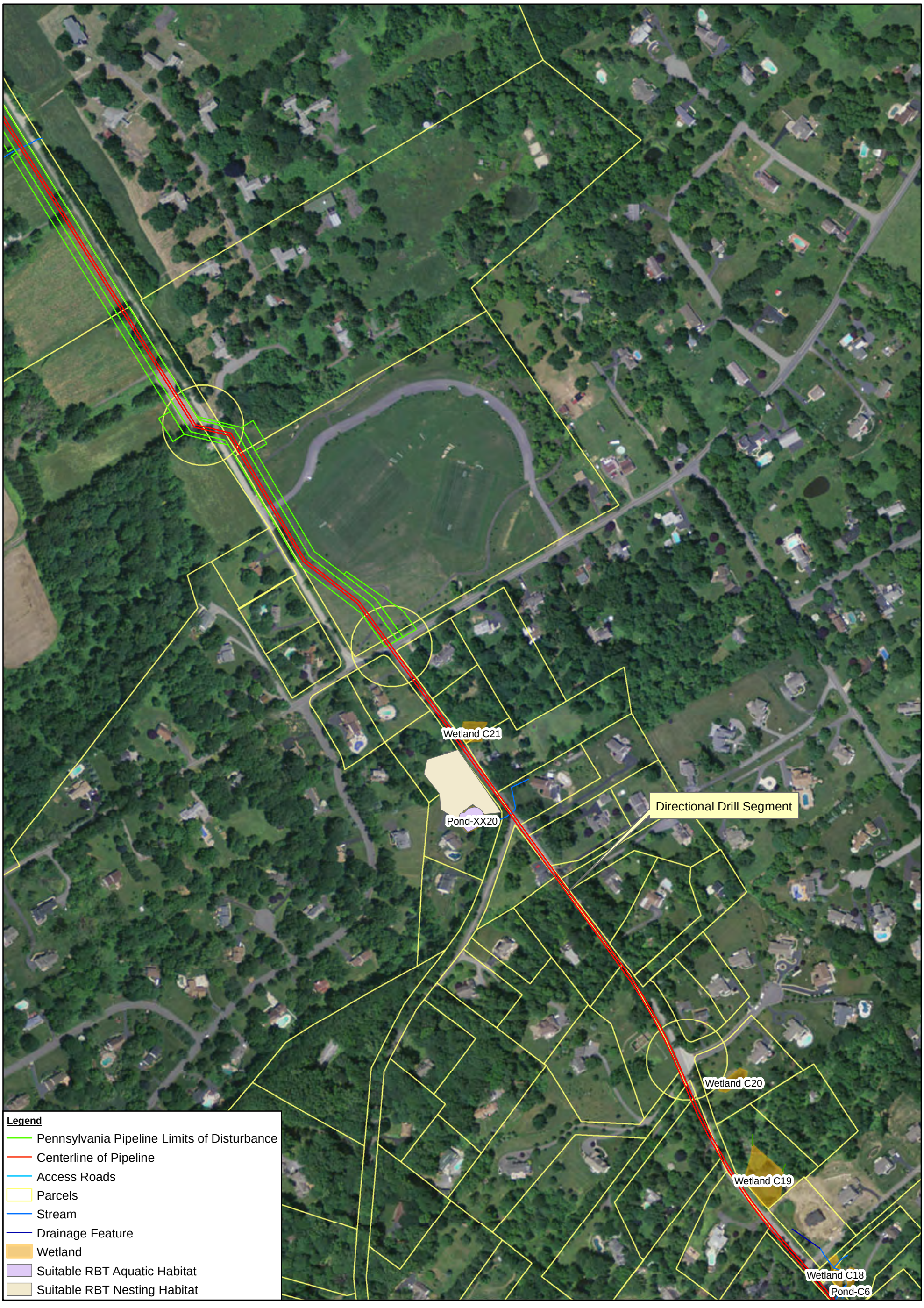
SUNOCO PIPELINE, L.P.
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT
HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2g

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Figure 2g - Habitat Map.mxd



Source: ESRI Data.

0 200 400
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

SUNOCO PIPELINE, L.P.
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT
HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2h

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Figure 2h - Habitat Map.mxd

Directional Drill Segment

Wetland I1

Wetland I1

Wetland I1

Wetland I2

Chester Creek (Entire Lenght)

Wetland H34

Wetland H34

RBT, RES and EPT Observed in Pond

Legend

- Pennsylvania Pipeline Limits of Disturbance
- Centerline of Pipeline
- Access Roads
- Parcels
- Stream
- Drainage Feature
- Wetland
- Suitable RBT Aquatic Habitat
- Suitable RBT Nesting Habitat

Source: ESRI Data.

0 200 400

Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania
South FIPS 3702 Feet

N

GHD

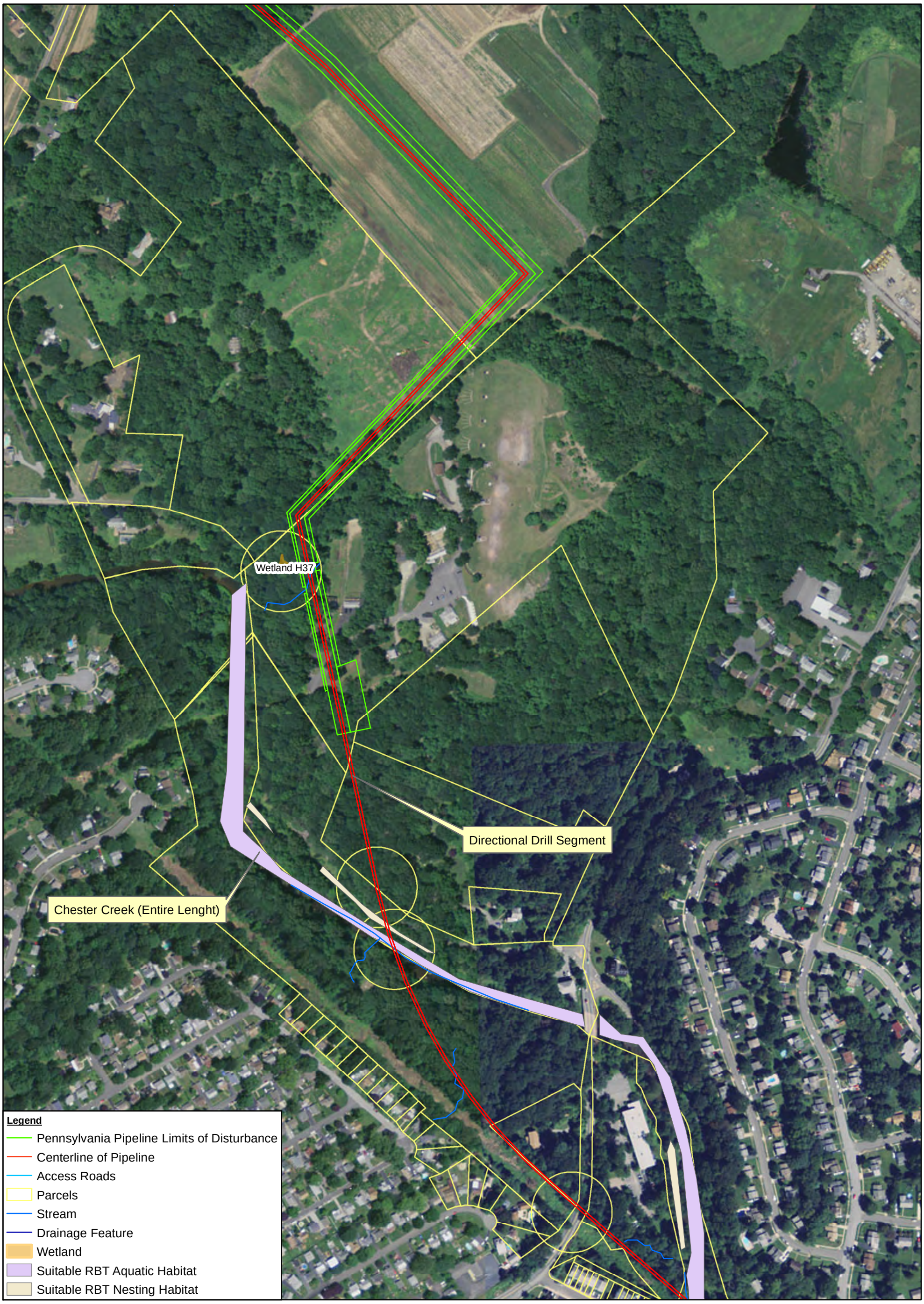
SUNOCO PIPELINE, L.P.
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT
HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2i

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Figure 2i - Habitat Map.mxd



Source: ESRI Data.

0 200 400
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania
South FIPS 3702 Feet

SUNOCO PIPELINE, L.P.
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT
HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2j

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Figure 2j - Habitat Map.mxd

Source: ESRI Data.

0 200 400
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

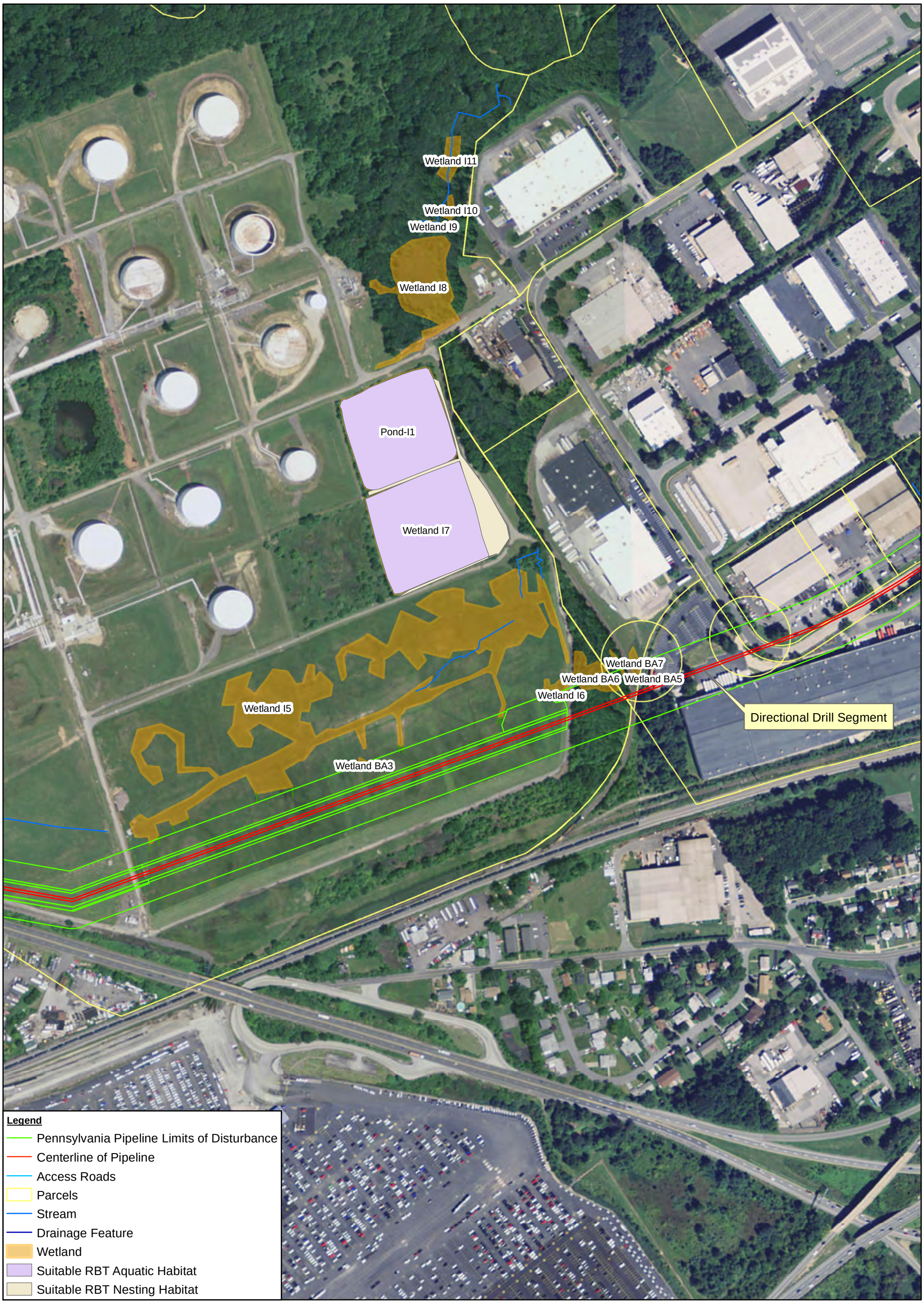
SUNOCO PIPELINE, L.P.
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT
HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2k

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Figure 2k- Habitat Map.mxd



Source: ESRI Data.

0 200 400
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania
South FIPS 3702 Feet

SUNOCO PIPELINE, L.P.
PENNSYLVANIA PIPELINE PROJECT
CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

EASTERN REDBELLY TURTLE HABITAT ASSESSMENT
HABITAT MAP

085220-01
Sep 4, 2015

FIGURE 2I

GIS File: I:\Project Work Area\Scott Bush\085220 TetraTech\RBT Report\GIS\Figure 2I- Habitat Map.mxd

APPENDIX A

PROJECT DESCRIPTION

PENNSYLVANIA PIPELINE PROJECT

"PROJECT DESCRIPTION"

Sunoco Pipeline, L.P. (SPLP) proposes to construct and operate the Pennsylvania Pipeline Project (Project) that would expand existing pipeline systems to provide natural gas liquid (NGL) transportation of up to 350,000 barrels per day. The Project involves the phased installation of approximately 561 miles of two parallel pipelines within a 306-mile, 50-foot-wide right-of-way (ROW) from Houston, Washington County, Pennsylvania to SPLP's Marcus Hook facility in Delaware County, Pennsylvania with the purpose of interconnecting with existing SPLP Mariner East pipelines. Initially, a 20-inch diameter pipeline would be installed within the ROW from Houston to Marcus Hook (306 miles) and a second, up to 20-inch diameter pipeline, would be installed in the same ROW within 5 years. The second line is proposed to be installed from SPLP's Delmont Station, Westmoreland County, Pennsylvania to the Marcus Hook facility, paralleling the initial line for approximately 255 miles.

PURPOSE AND NEED

The Project will provide transportation service for up to 700,000 barrels per day of NGL's per pipeline from the Utica and Marcellus Shale formations for both domestic and international markets. This Project will transport propane, butane and ethane. SPLP's upstream customers currently extract natural gas in the form of methane from the aforementioned geologic formations for distribution to the community. The natural gas will provide fuel for power generation, heating and cooking. NGLs are separated from the natural gas stream before it is shipped on the natural gas piping network. Upstream shippers are currently limited by the shortage of NGL transport systems. The Project will supply additional transportation services to ship these NGLs to an existing port facility. In addition, the Project will provide along its route across Pennsylvania various exit points for supply of desperately needed propane supplies, at affordable prices, to local Pennsylvania distributors for use as heating and/or cooking fuel by consumers in Pennsylvania and neighboring states, especially during peak demand periods when supplies would otherwise become short.. In addition, when completed, the Pennsylvania Pipeline Project will promote sustained economic development and jobs-creation throughout multiple regions in Pennsylvania.

FACILITIES AND SUPPORT SITES

Pipeline Facilities

The Project includes approximately 561 miles of new, up-to 20-inch diameter pipeline with a maximum operating pressure (MOP) of 1,480 pounds per square inch gauge (psig) installed within or adjacent to 306 miles of existing ROW corridors. The majority of the new pipeline will be co-located adjacent to existing utility corridors, including approximately 500 miles of pipeline that will be co-located in the existing SPLP Mariner East pipeline system that is currently used for the transportation of NGL's. This is a multi-phase project that will see the Phase 2 pipeline installed, should favorable market forces exist, following the completion of the initial 20-inch propane/butane pipeline.

- Phase 1: Houston, Pennsylvania to Marcus Hook, Pennsylvania – This is an incremental expansion of the capacities of Sunoco Logistics to transport NGL's to the Marcus Hook facility. This Phase of the Project will include a 20 inch diameter steel pipeline and pump stations. The route of the pipeline is either inside or adjacent to the existing Sunoco pipeline corridor and is approximately 306 miles long.
- Phase 2: Delmont, Pennsylvania to Marcus Hook, Pennsylvania – The second phase of the project will be completed should customer demand prove that additional transport capacity for ethane is required. The pipeline route for Phase 2 will include 255 miles of pipeline that will be inside the existing Sunoco corridor.

Table 1. Pennsylvania Pipeline Project Pipeline Facilities

Type of Facility	Description	State	Phase 1 Length (miles)	Phase II Length (miles)	County
Pipeline	Installation of a 20-inch new butane/propane line and Future 20-inch new ethane line in parallel from Delmont, PA to Marcus Hook, PA	PA	**19.9** **9.1** **37.8** **18.8** **23.3** **23.5** **26.2** **3.0** **10.4** **33.1** **6.5** **11.5** **19.7** **7.5** **20.4** **24.0** **11.7**	**0.0** **0.0** **15.0** **18.8** **23.3** **23.5** **26.2** **3.0** **10.4** **33.1** **6.5** **11.5** **19.7** **7.5** **20.4** **24.0** **11.7**	Washington Allegheny Westmoreland Indiana Cambria Blair Huntingdon Juniata Perry Cumberland York Dauphin Lebanon Lancaster Berks Chester Delaware
	Project Total		**306.4**	**254.6**	

Aboveground Facilities

Aboveground facilities in **Pennsylvania**:

- Houston, Pennsylvania has an existing facility which will connect to the pipeline. This Project will install meters on the outlets from existing storage, injection pumps, control valves, associated piping and accessory structures.

- Delmont, Pennsylvania has an existing site and this Project will expand the pump station with added booster pumps, associated piping and accessory structures.

- Ebensburg, Pennsylvania has an existing site and this Project will expand the pump station with added booster pumps, leak detection metering, associated piping and accessory structures.

- Middletown, Pennsylvania has an existing pump station and this Project will expand the pump station with added booster pumps, associated piping and accessory structures.

- Beckersville, Pennsylvania has an existing pump station and this Project will add to the pump station with leak detection metering, associated piping and accessory structures.

- Twin Oaks, Pennsylvania is an existing site and this Project will install custody transfer meters and control valves.

- There are 50 Mainline Valve sets planned for this Project, which will be placed at as many existing valve sites as possible

Table 2. Pennsylvania Pipeline Project - Aboveground Facilities

Type of Facility	New/ Modification	Description	State	County
Pump Station	Modification	Houston	PA	Washington
Pump Station	Modification	Delmont	PA	Westmoreland
Pump Station	Modification	Ebensburg	PA	Cambria
Pump Station	Modification	Middletown	PA	Dauphin
Pump Station	Modification	Beckersville	PA	Berks
Meter Site	Modification	Twin Oaks	PA	Delaware

Support Sites (Pipe / Contractor Yards and Access Roads)

SPLP is in the initial phases of project design and site selection and as such exact locations to be utilized for contractor and pipe yards have not been determined. The contractor and pipe yards will be used for equipment, pipe, and material storage, as well as temporary field offices and pipe preparation/field assembly areas during construction. Site selection and acquisition will continue throughout the planning and permitting stages of the Project. In most cases, contractors will be required to site pipe and contractor yards in previously developed areas that will require no new land disturbance.

Support Sites (Access Roads)

To the extent possible, SPLP will use existing public and private roads for temporary construction access to the mainline pipeline Right-of-Ways (ROWs) and aboveground facilities. SPLP is currently in the process of identifying potential temporary and permanent access roads and will provide detailed information relative to access road location, length, and land acreage requirements within all agency filings. SPLP will seek and obtain the necessary property rights and approvals from landowners and government agencies prior to the use or construction of such roads.

LAND REQUIREMENTS

The proposed Project would result in temporary access during construction of the proposed facilities. In general, during construction of the new pipeline, the width of the construction ROW would typically be 75 feet. The 75-feet would consist of a 50-foot-wide post-construction, permanently maintained ROW and 25-feet of temporary workspace to facilitate installation of the pipelines. The 25-feet would be restored and allowed to revert back to its pre-construction condition unless it is co-located with an existing permanently maintained ROW. Additional temporary work space (ATWS) would be needed at some areas to facilitate construction and would depend on site-specific requirements. All Workspaces would be clearly defined within project mapping and within agency and municipality applications. In the post-construction phase, ATWS's will be allowed to revert, or be restored to, pre-construction conditions.

Construction of the Project's aboveground facilities and the use of non-public access roads would have land requirements. Typically, new pump stations require approximately 3-4 acres of land and modifications to existing pump stations may require 2-3 acres of additional land. Support sites, such as pipe/contractor yards, are to be sited on previously disturbed areas and typically range from 5-15 acres in size. Temporary use would primarily be limited to existing non-public roads, driveways, and farm lanes that would require nothing or minor improvements. Permanent access roads to stations or valve settings may also be required. All proposed temporary and permanent access roads would be clearly defined within project mapping and within agency and municipality applications. In the post-construction phase, temporary workspaces will be allowed to revert, or be restored to, pre-construction conditions.

APPENDIX B

PARCELS EVALUATED WITH REDBELLY TURTLE HABITAT

Parcel Number	County	Municipality	Date Completed	Stream Segment	Wetland Segment	Pond	Aquatic Habitat Present	Turtles Observed	RBT Observed	Suitable RBT Aquatic Habitat?	Suitable RBT Nesting Habitat?	Notes
PA-CH-0019.0000	Chester	Elverson Borough & West Nantmeal	June 29, 2015	A66	A46	A3	Yes	Yes - CST	No	Yes	Yes	Large stormwater management basin that is controlled by a CMP riser; suitable aquatic habitat and nesting habitat (marginal) within the maintained grass area adjacent to pond; fish and a CST were observed within the pond.
PA-CH-0022.0000	Chester	West Nantmeal	June 29, 2015	B14	B12, B14	Yes	Yes	No	No	Yes	Yes	Two man-made connected ponds; suitable (marginal) nesting habitat within the maintained grass area adjacent to pond
PA-CH-0032.0000	Chester	West Nantmeal	August 25, 2014	A67, A68, A69	A47	A4	Yes	No	No	Yes	Yes	Swales and erosional features in agricultural fields; small man-made isolated bermed agricultural pond dominated by duckweed; suitable (marginal) nesting habitat within the maintained grass area adjacent to pond
PA-CH-0042.0000-WX	Chester	East/West Nantmeal	August 25, 2014	B15	B15	B2	Yes	No	No	Yes	Yes	Small shallow medium gradient cobble dominated stream channel with adjacent emergent wetlands; large pond immediately outside the ROW that contains suitable RBT habitat
PA-CH-0085.0000	Chester	Upper Uwchlan	June 29, 2015	H52	H42	No	Yes	No	No	Yes	No	Wooded/emergent wetlands and a low gradient stream that drains to Marsh Creek;
PA-CH-0086.0000	Chester	Upper Uwchlan	June 29, 2015	H49, H50, H51, H52	H42, H43	XX11	Yes	Yes - EPT	No	Yes	Yes	Wooded/emergent wetlands associated with a low gradient stream that drains to Marsh Creek; a small pond is located adhacent to the ROW; the pond contains suitable foraging and brumation habitat; suitable (marginal) nesting habitat within the adjacent upland mowed lawns
PA-CH-0087.0000	Chester	Upper Uwchlan	June 29, 2015	H52	H43, H44	H3 (Marsh Creek)	Yes	No	No	Yes	No	Wooded/emergent wetlands associated with a low gradient stream that drains to Marsh Creek; possible movement corridor from pond to Marsh Creek.
PA-CH-0087.0000-WX	Chester	Upper Uwchlan	June 29, 2015	H52	H43, H44	No	Yes	No	No	Yes	No	Wooded/emergent wetlands associated with a low gradient stream that drains to Marsh Creek; possible movement corridor from pond to Marsh Creek.
PA-CH-0088.0000	Chester	Upper Uwchlan	June 29, 2015	H53, H54	H43, H44	No	Yes	No	No	Yes	No	Wooded/emergent wetlands associated with a low gradient stream that drains to Marsh Creek; possible movement corridor from pond to Marsh Creek.
PA-CH-0089.0000	Chester	Upper Uwchlan	June 29, 2015	No	H45	H3 (Marsh Creek)	Yes	Yes - EPT, RBT	Yes	Yes	No	Marsh Creek, no suitable nesting habitat in the vicinty of the ROW due to heavily forested uplands and emergent wetlands that are saturated throughtout the nesting season; multiple RBT were observed with Marsh Creek during the habitat assessment
PA-CH-0090.0000	Chester	Upper Uwchlan	June 29, 2015	H55	H45	H3 (Marsh Creek)	Yes	YES - EPT, RBT	Yes	Yes	No	Marsh Creek, no suitable nesting habitat in the vicinty of the ROW due to heavily forested uplands and emergent wetlands that are saturated throughtout the nesting season; multiple RBT were observed with Marsh Creek during the habitat assessment
PA-CH-0109.0000	Chester	Upper Uwchlan	August 27, 2014	H10, H11	H17	H2	Yes	Yes - EPT	No	Yes	Yes	Wooded/emergent wetlands associated with a small low gradient stream; a small pond is located within an portion of the ROW; the pond contains suitable foraging and brumation habitat; suitable (marginal) nesting habitat within the adjacent upland mowed lawns

Parcel Number	County	Municipality	Date Completed	Stream Segment	Wetland Segment	Pond	Aquatic Habitat Present	Turtles Observed	RBT Observed	Suitable RBT Aquatic Habitat?	Suitable RBT Nesting Habitat?	Notes
PA-CH-0235.0000-WX	Chester	West Whiteland	September 2, 2014	B80	B71	B11	Yes	No	No	Yes	Yes	Low gradient stream channel within forested wetlands; large pond surrounded by maintained lawn and residential homes immediately outside the ROW; suitable RBT foraging and brumation habitat present; suitable (marginal) nesting habitat within the adjacent upland mowed lawns
PA-CH-0247.0000	Chester	West Whiteland	September 2, 2014	No	No	B10 (Iron Lake)	Yes	Yes - EPT	No	Yes	Yes	Small pond (immediately outside ROW) surrounded by woods and maintained grass; basking EPTs were observed; suitable RBT foraging, nesting and brumation habitat
PA-DE-0017.0000-ABTN	Delaware	Edgemont	September 5, 2014	B53, B54	B5	XX10	Yes	No	No	Yes	Yes	Small low gradient streams with floodplain wetlands; small man-made pond located approximately 115 feet outside of the ROW; portions surrounded by maintained grass; suitable (marginal) RBT nesting habitat
PA-DE-0049.0000-ABTS	Delaware	Middletown	September 5, 2014*	C42	No	XX20	Yes	No	No	Yes	Yes	Dry headwaters channel; small pond with maintained lawn; suitable aquatic habitat present for basking turtles outside ROW; suitable (marginal) nesting habitat within maintained lawns
PA-DE-0051.0000-RD	Delaware	Middletown	September 5, 2014*	C41, C42	No	Yes	Yes	No	No	Yes	Yes	Dry headwaters channel; small pond with maintained lawn; suitable aquatic habitat present for basking turtles outside ROW; suitable (marginal) nesting habitat within maintained lawns
PA-DE-0103.0000	Delaware	Middletown	September 10, 2014	H1, I1, I2	I1, I2	No	Yes	No	No	No	Yes	Small medium gradient stream and wooded/emergent wetlands; maintained grass within existing easement; suitable (marginal) RBT nesting within maintained grass area
PA-DE-0103.0002	Delaware	Middletown	September 10, 2014	I4, I5, I6	No	No	Yes	No	No	Yes	No	Small low to medium gradient streams adjacent to Chester Creek; suitable aquatic habitat present outside ROW
PA-DE-0104.0000	Delaware	Middletown	September 10, 2014*	Chester Creek	No	No	Yes	No	No	Yes	Yes	Chester Creek outside the ROW; suitable aquatic habitat present outside ROW; suitable (marginal) RBT nesting within maintained grass area
PA-DE-0104.0000-WX	Delaware	Middletown	September 10, 2014*	I2, I4	No	No	Yes	No	No	Yes	Yes	Chester Creek outside the ROW; suitable aquatic habitat present outside ROW; suitable (marginal) RBT nesting within maintained grass area
PA-DE-0104.0001	Delaware	Middletown	September 10, 2014	H29	H34	Yes	Yes	Yes - EPT, RBT. RES	Yes	Yes	Yes	Medium sized low gradient stream that may provide a travel corridor for RBT; emergent and forested wetlands; large pond outside of ROW that RBT were observed basking
PA-DE-0104.0001-RD	Delaware	Middletown	September 10, 2014	H29	No	No	Yes	No	No	Yes	No	Medium sized low gradient stream that may provide a travel corridor for RBT
PA-DE-0104.0007	Delaware	Middletown	September 10, 2014	Chester Creek	No	No	Yes	No	No	No	Yes	Chester Creek outside the ROW; suitable RBT nesting habitat
PA-DE-0104.0007-ABTS	Delaware	Middletown	September 10, 2014	H34	No	Yes	Yes	No	No	No	Yes	Adjacent to Chester Creek outside the ROW; small medium gradient stream; suitable RBT nesting habitat
PA-DE-0104.0008	Delaware	Middletown	September 10, 2014	Chester Creek	No	No	Yes	No	No	Yes	Yes	Chester Creek; suitable RBT nesting habitat
PA-DE-0104.0008-RD	Delaware	Middletown	September 10, 2014	H37, Chester Creek	No	No	Yes	No	No	No	Yes	Chester Creek; suitable RBT nesting habitat
PA-DE-0104.0008-WX	Delaware	Middletown	September 10, 2014	H37	No	No	Yes	No	No	Yes	Yes	Chester Creek; suitable RBT nesting habitat
PA-DE-0104.0009	Delaware	Aston	September 10, 2014	H38, H39 Chester Creek	No	No	Yes	No	No	No	Yes	Chester Creek outside the ROW; dry erosional channel; suitable RBT nesting habitat
PA-DE-0104.0010	Delaware	Aston	September 10, 2014	H40, H41	No	No	Yes	No	No	Yes	Yes	Chester Creek; dry erosional channel; suitable RBT nesting habitat

Parcel Number	County	Municipality	Date Completed	Stream Segment	Wetland Segment	Pond	Aquatic Habitat Present	Turtles Observed	RBT Observed	Suitable RBT Aquatic Habitat?	Suitable RBT Nesting Habitat?	Notes
PA-DE-0104.0012	Delaware	Aston	September 10, 2014	H41	No	No	Yes	No	No	Yes	Yes	Chester Creek; suitable RBT nesting habitat
PA-DE-0104.0013	Delaware	Aston	September 10, 2014	H41	H39	No	Yes	No	No	Yes	No	Chester Creek; steep banks; wooded
PA-DE-0104.0016	Delaware	Chester	September 12, 2014	H43, H44, H45, H46, H47, H48	I12, I13, H40, H41	Yes	Yes	No	No	Yes	Yes	Medium sized low gradient rocky bottom stream within a wooded area; a large open water stormwater management basin (immediately outside ROW); suitable RBT habitat in basin; suitable nesting habitat along the upland portions of the basin
PA-DE-0150.0000	Delaware	Chester	September 12, 2014	I7, I10, I11, I13	I3, I4, I5, I6, I7, I8, I11, I12	I1	Yes	Yes - EPT	No	Yes	Yes (evidence of turtle nesting observed)	Small low gradient streams within wooded wetlands associated with former detention basins, emergent wetlands within fields; two open water features within former tanks areas surrounded by berms; suitable RBT habitat in basin; suitable nesting habitat along the upland portions of the berm.

Notes

* Access to parcel denied; parcel view from an adjacent tract; did not enter property

RBT = Eastern Redbelly Turtle (*Pseudemys rubriventris*)

EPT = Eastern Painted Turtle (Chrysemys picta picta)

RES = Red-Eared Slider (*Trachemys scripta elegans*)

APPENDIX C

PARCELS EVALUATED WITH REDBELLY TURTLE HABITAT ABSENT

Parcel Number	County	Municipality	Date Completed	Stream Segment	Wetland Segment	Pond	Aquatic Habitat Present	Turtles Observed	RBT Observed	Suitable RBT Aquatic Habitat?	Suitable RBT Nesting Habitat?	Notes
PA-CH-0022.0000-WX	Chester	West Nantmeal	August 25, 2014	B14	B12, B13, B14	No	Yes	No	No	No	No	Low gradient stream through fringe emergent wetlands
PA-CH-0030.0000-WX	Chester	West Nantmeal	August 25, 2014	C56, C57	C33	No	Yes	No	No	No	No	Low gradient stream through pasture with fringe emergent wetlands
PA-CH-0031.0000	Chester	West Nantmeal	August 25, 2014	C57	C33	No	No	No	No	No	No	Small area of emergent wetlands in pasture
PA-CH-0031.0000-WX	Chester	West Nantmeal	August 25, 2014	C57	C34, C35	No	Yes	No	No	No	No	Low gradient stream through pasture with fringe emergent wetlands
PA-CH-0032.0000-RD	Chester	West Nantmeal	August 25, 2014	A69	No	No	No	No	No	No	No	Dry channel is pasture
PA-CH-0034.0000	Chester	West Nantmeal	August 25, 2014	A70		No	No	No	No	No	No	Drainage ditch (dry); agricultural BMP for manure
PA-CH-0034.0000-RD	Chester	West Nantmeal	August 25, 2014	A71	A48	No	Yes	No	No	No	No	Low gradient shallow stream with fringe wetlands in pasture
PA-CH-0035.0000	Chester	West Nantmeal	August 25, 2014	A71	No	No	Yes	No	No	No	No	Low gradient shallow stream in pasture
PA-CH-0065.0000	Chester	Wallace	August 25, 2014	C99	C49	XX3	Yes (Pond outside ROW)	No	No	No	No	Emergent wetland within ROW; wooded wetlands between pond (approximately 160 feet outside ROW) and easement; absence of RBT nesting habitat within and adjacent to the ROW
PA-CH-0072.0000	Chester	Wallace	August 27, 2014	B18, B19, B20	B19, B20	No	Yes	No	No	No	No	Small low gradient stream with fringe wetlands
PA-CH-0073.0000-RD	Chester	Wallace	August 27, 2014	No	B19	No	No	No	No	No	No	Emergent wetland
PA-CH-0074.0000	Chester	Wallace	August 27, 2014	No	No	No	No	No	No	No	No	Access
PA-CH-0075.0000	Chester	Wallace	August 27, 2014	H9	H15, H16	No	Yes	No	No	No	No	Small medium gradient stream with fringe wetlands
PA-CH-0076.0000	Chester	Wallace	August 27, 2014	No	H16	No	No	No	No	No	No	Emergent wetlands along Turnpike
PA-CH-0077.0000	Chester	Wallace	August 27, 2014	No	H16	No	No	No	No	No	No	Emergent wetlands along Turnpike
PA-CH-0078.0000	Chester	Wallace	August 27, 2014	No	H16	No	No	No	No	No	No	Emergent wetlands along Turnpike
PA-CH-0088.0000-RD	Chester	Upper Uwchlan	June 29, 2015		H44, H45	No	No	No	No	No	No	Emergent wetlands.
PA-CH-0099.0000	Chester	Upper Uwchlan	August 27, 2014	C72, C73	C38, C39, C40	No	Yes	No	No	No	No	Emergent wetlands along a medium size low gradient rocky bottom stream; small low gradient stream rocky bottom stream with emergent wetlands along floodplain
PA-CH-0099.0000-WX	Chester	Upper Uwchlan	August 27, 2014	C73	C40	No	Yes	No	No	No	No	Emergent wetlands along a medium size low gradient rocky bottom stream
PA-CH-0110.0000	Chester	Upper Uwchlan	August 27, 2014	C96, C97, C98	C47, C48	No	Yes	No	No	No	No	Wooded/emergent wetlands associated with a small low gradient streams
PA-CH-0111.0000	Chester	Upper Uwchlan	August 27, 2014	C93 thru C98	C44, C46	No	Yes	No	No	No	No	Wooded/emergent wetlands associated with a small low gradient streams
PA-CH-0111.0000-WX	Chester	Upper Uwchlan	August 27, 2014	C93, C94	C44	No	Yes	No	No	No	No	Wooded/emergent wetlands associated with a small low gradient streams
PA-CH-0116.0000	Chester	Upper Uwchlan	August 29, 2014	C87 thru C92	C46	No	Yes	No	No	No	No	Wooded/emergent wetlands associated with a small low gradient streams

Pennsylvania Pipeline Project - Segment #3,
Chester and Delaware Counties

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PA-CH-0117.0000	Chester	Upper Uwchlan	August 29, 2014*	C87, C88	C41, C46	No	Yes	No	No	No	No	Wooded/emergent wetlands associated with a small low gradient streams
PA-CH-0118.0000	Chester	Upper Uwchlan	August 29, 2014*	No	C41, C42	C41	No	No	No	No	No	Emergent wetlands within ROW; Stormwater Management Pond
PA-CH-0122.0000-RD	Chester	Uwchlan	August 29, 2014	H1	H1	No	No	No	No	No	No	Wooded/emergent wetlands associated with a small low gradient streams
PA-PA-CH-0123.0000	Chester	Uwchlan	August 29, 2014*	H1, H2	H1	No	No	No	No	No	No	Wooded/emergent wetlands
PA-CH-0123.0000-RD	Chester	Uwchlan	August 29, 2014	No	No	No	No	No	No	No	No	Wooded/emergent wetlands associated with a small low gradient streams
PA-CH-0124.0000	Chester	Uwchlan	August 29, 2014	H3, H4	No	No	Yes	No	No	No	No	Medium grade rocky bottom stream within woods
PA-CH-0124.0000-ABTS	Chester	Uwchlan	August 29, 2014*	H3	No	No	Yes	No	No	No	No	Medium grade rocky bottom stream within woods
PA-CH-0125.0000	Chester	Uwchlan	August 29, 2014*	H3, H3, H4, C67	C37	No	Yes	No	No	No	No	Medium grade rocky bottom stream within woods; wooded/emergent wetlands
PA-CH-0125.0000-ABTN	Chester	Uwchlan	August 29, 2014*	C67	C37	No	Yes	No	No	No	No	Small medium grade rocky bottom stream within woods; wooded/emergent wetlands
PA-CH-0126.0000	Chester	Uwchlan	August 29, 2014*	C67	C36, C37	No	Yes	No	No	No	No	Small medium grade rocky bottom stream within woods; wooded/emergent wetlands
PA-CH-0127.0000	Chester	Uwchlan	August 29, 2014	67, C68, C69	C37	No	Yes	No	No	No	No	Small medium grade rocky bottom stream within woods; wooded/emergent wetlands
PA-CH-130.0000-WX	Chester	Uwchlan	August 29, 2014	H5, H6	H2	C9	Yes	No	No	No	No	Small medium grade rocky bottom stream within woods; small emergent wetlands associated with an outfall; dry stormwater management pond
PA-CH-0129.0000	Chester	Uwchlan	August 29, 2014	H5	No	No	Yes	No	No	No	No	Small medium grade rocky bottom stream within woods
PA-CH-141.0000	Chester	Uwchlan	August 29, 2014	C70, C71	No	No	No	No	No	No	No	Dry channels in a stormwater management basin
PA-CH-0155.0000-ABTS	Chester	Uwchlan	September 2, 2014	C64	No	No	Yes	No	No	No	No	Small low grade rocky bottom stream within residential development
PA-CH-0156.0000-ABTS	Chester	Uwchlan	September 2, 2014	C64, C65	No	No	Yes	No	No	No	No	Small low grade rocky bottom stream within residential development
PA-CH-0157.0000	Chester	Uwchlan	September 2, 2014	C64	No	No	Yes	No	No	No	No	Small low grade rocky bottom stream within residential development
PA-CH-0158.0000	Chester	Uwchlan	September 2, 2014	C64	No	No	Yes	No	No	No	No	Small low grade rocky bottom stream within residential development
PA-CH-0158.0000-ABTS	Chester	Uwchlan	September 2, 2014	C64	No	No	Yes	No	No	No	No	Small low grade rocky bottom stream within residential development
PA-CH-0171.0000	Chester	Uwchlan	September 2, 2014	C63	No	No	Yes	No	No	No	No	Small low grade rocky bottom stream within residential development
PA-CH-0172.0000	Chester	Uwchlan	September 2, 2014	C63	No	No	Yes	No	No	No	No	Small low grade rocky bottom stream within residential development
PA-CH-0172.0000-ABTS	Chester	Uwchlan	September 2, 2014	C63	No	No	Yes	No	No	No	No	Small low grade rocky bottom stream within residential development
PA-CH-0211.0000-WX	Chester	West Whiteland	September 2, 2014	C61, C62	No	No	Yes	No	No	No	No	Small low grade rocky bottom stream within wooded portion of a residential development

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PA-CH-0212.0000	Chester	West Whiteland	September 2, 2014	C60	No	No	Yes	No	No	No	No	Stormwater outfall pipe
PA-CH-0212.0000-WX	Chester	West Whiteland	September 2, 2014	C59, C60	No	No	No	No	No	No	No	Small low grade rocky bottom stream within a commercial lot; stormwater outfall pipe
PA-CH-0212.0000-RD	Chester	West Whiteland	September 2, 2014	C60	No	No	No	No	No	No	No	Stormwater outfall pipe
PA-CH-0219.0000	Chester	West Whiteland	September 2, 2014	C66	No	No	Yes	No	No	No	No	Dry channel stream within a commercial lot
PA-CH-0219.0000-ABTS	Chester	West Whiteland	September 2, 2014	B79, B80	B71	No	Yes	No	No	No	No	Dry channel stream within a commercial lot
PA-CH-0232-ABTW2	Chester	West Whiteland	September 2, 2014	B81	No	No	Yes	No	No	No	No	Small low gradient stream within a wooded area
PA-CH-0236.0000	Chester	West Whiteland	September 2, 2014	B80	B71	No	Yes	No	No	No	No	Small low gradient stream within a wooded wetland
PA-CH-0238.0000-RD	Chester	West Whiteland	September 2, 2014	B80	B71	No	Yes	No	No	No	No	Small low gradient stream within a wooded wetland
PA-CH-0240.0000-ABTW	Chester	West Whiteland	September 2, 2014	B79, B80	B71	No	Yes	No	No	No	No	Small low gradient stream within a wooded wetland
PA-CH-0241.0000	Chester	West Whiteland	September 2, 2014	B79	B71	No	Yes	No	No	No	No	Small low gradient stream within a wooded wetland
PA-CH-0241.0000-ABTW	Chester	West Whiteland	September 2, 2014	B79	B71	No	Yes	No	No	No	No	Small low gradient stream within a wooded wetland
PA-CH-0242.0000	Chester	West Whiteland	September 2, 2014	B79	No	No	Yes	No	No	No	No	Small low gradient stream within a wooded area
PA-CH-0242.0000-ABTW2	Chester	West Whiteland	September 2, 2014	B79	No	No	Yes	No	No	No	No	Small low gradient stream within a wooded area
PA-CH-0243.0000	Chester	West Whiteland	September 2, 2014	B79	No	No	Yes	No	No	No	No	Small low gradient stream within a wooded area
PA-CH-0246.0000	Chester	West Whiteland	September 2, 2014	No	No	No	No	No	No	No	No	Access to pond B-10
PA-CH-0246.0000-ABTW	Chester	West Whiteland	September 2, 2014	No	B70	No	No	No	No	No	No	Emergent wetland within a stormwater management basin
PA-CH-0246.0000-ABTW2	Chester	West Whiteland	September 2, 2014	No	B70	No	No	No	No	No	No	Emergent wetland within a stormwater management basin
PA-CH-0246.0000-ABTW3	Chester	West Whiteland	September 2, 2014	No	B67, B68, B69	No	No	No	No	No	No	Small isolated emergent wetlands within a disturbed fallowfield
PA-CH-0247.0000-ABTE	Chester	West Whiteland	September 2, 2014	No	No	No	No	No	No	No	No	Access to pond B10
PA-CH-0293.0000-RD	Chester	West Whiteland	September 4, 2014	No	No	No	No	No	No	No	No	Access
PA-CH-0293.0000-RD2	Chester	West Whiteland	September 4, 2014	No	No	No	No	No	No	No	No	Access
PA-CH-0293.0000-ABTN	Chester	West Whiteland	September 4, 2014*	No	H35	No	No	No	No	No	No	Small area of emergent wetlands located in stormwater management basin
PA-CH-0295.0000-WX	Chester	West Goshen	September 4, 2014	H30	H36	No	Yes	No	No	No	No	Small low gradient stream within wooded area
PA-CH-0296.0000	Chester	West Goshen	September 4, 2014	H30, H31	H36	No	Yes	No	No	No	No	Small low gradient stream and wetland seep within wooded area

Pennsylvania Pipeline Project - Segment #3,
Chester and Delaware Counties

Parcel Number	County	Municipality	Date Completed	Stream Segment	Wetland Segment	Pond	Aquatic Habitat Present	Turtles Observed	RBT Observed	Suitable RBT Aquatic Habitat?	Suitable RBT Nesting Habitat?	Notes
PA-CH-0296.0000-ABTN	Chester	West Goshen	September 4, 2014	H30	No	No	Yes	No	No	No	No	Small low gradient stream within wooded area
PA-CH-0296.0000-RD	Chester	West Goshen	September 4, 2014	H31, H32	H36	No	Yes	No	No	No	No	Small low gradient stream and wetland seep within wooded area
PA-CH-0396.0000	Chester	East Goshen	September 4, 2014	No	H31	No	No	No	No	No	No	Small emergent wetland within a former sediment trap
PA-CH-0396.0000-RD	Chester	East Goshen	September 4, 2014	No	H31	No	No	No	No	No	No	Small emergent wetland within a former sediment trap
PA-CH-0417.0000	Chester	East Goshen	September 4, 2014	No	H30	No	No	No	No	No	No	Emergent wetland within a stormwater management basin
PA-CH-0417-RD.0000	Chester	East Goshen	September 4, 2014	No	H30	No	No	No	No	No	No	Emergent wetland within a stormwater management basin
PA-CH-0422.0000	Chester	Westtown	September 4, 2014	No	B35	No	No	No	No	No	No	Emergent wetland within a stormwater management fore-bay and basin
PA-CH-0453.0000	Chester	Westtown	September 4, 2014	No	No	No	No	No	No	No	No	Access
PA-CH-0453.0000-RD	Chester	Westtown	September 4, 2014	No	No	B5	Yes	No	No	No	No	Small ornamental pond surrounded by mature trees and residential homes
PA-CH-0454.0000	Chester	Westtown	September 4, 2014	No	No	No	No	No	No	No	No	Access
PA-CH-0454.0000-RD	Chester	Westtown	September 4, 2014	B34	No	B5	Yes	No	No	No	No	Small pond surround by mature trees and residential homes; small first order stream
PA-CH-0455.0000	Chester	Westtown	September 4, 2014	No	No	No	No	No	No	No	No	Access
PA-CH-0455.0000-RD	Chester	Westtown	September 4, 2014	B34	No	No	No	No	No	No	No	Stream within pipe
PA-CH-0457.0000	Chester	Westtown	September 4, 2014	B34	B36	No	No	No	No	No	No	Small stream with emergent floodplain wetlands
PA-CH-0457.0000-ABTE	Chester	Westtown	September 4, 2014	No	No	No	No	No	No	No	No	Access
PA-CH-0458.0000	Chester	Westtown	September 4, 2014	B34	B36	No	No	No	No	No	No	Small stream with emergent floodplain wetlands
PA-CH-0458.0000-RD	Chester	Westtown	September 4, 2014	B34	B36	No	No	No	No	No	No	Pipe outfall with small stream floodplain emergent wetlands
PA-DE-0008.0000	Delaware	Thornbury	September 4, 2014	B36	No	B6	No	No	No	No	No	Stormwater swales/stream channel stabilized with rip-rap; apparent pond under construction; pond is a dry hole in the ground surrounded by woods
PA-DE-0008.0000-RD	Delaware	Thornbury	September 4, 2014	B36	No	No	No	No	No	No	No	Stormwater swales/stream channel stabilized with rip-rap
PA-DE-0013.0000	Delaware	Edgemont	September 5, 2014*	B37	No	No	No	No	No	No	No	Small low gradient stream
PA-DE-0014.0000	Delaware	Edgemont	September 5, 2014	B37	No	No	No	No	No	No	No	Small low gradient stream
PA-DE-0015.0000	Delaware	Edgemont	September 5, 2014	B37, B38, B39	B37	No	No	No	No	No	No	Small low gradient streams through existing easement; small area of forested wetlands
PA-DE-0016.0000	Delaware	Edgemont	September 5, 2014	No	No	No	No	No	No	No	No	Access

Parcel Number	County	Municipality	Date Completed	Stream Segment	Wetland Segment	Pond	Aquatic Habitat Present	Turtles Observed	RBT Observed	Suitable RBT Aquatic Habitat?	Suitable RBT Nesting Habitat?	Notes
PA-DE-0016.0000-RD2	Delaware	Edgemont	September 5, 2014	B55	B50	No	Yes	No	No	No	No	Small low gradient streams and wetlands within a stormwater management basin
PA-DE-0017.0000	Delaware	Edgemont	September 5, 2014	B51, B52, B53, B54, B55,	B50; B51	No	Yes	No	No	No	No	Small low gradient streams with floodplain wetlands; stormwater management basin with wetlands
PA-DE-0017.0000-RD	Delaware	Edgemont	September 5, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0018.0000	Delaware	Edgemont	September 5, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0018.0000-ABTS	Delaware	Edgemont	September 5, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0019.0000	Delaware	Edgemont	September 5, 2014	B56	B52	No	Yes	No	No	No	No	Small low gradient streams with floodplain wetlands
PA-DE-0019.0000-ABTN	Delaware	Edgemont	September 5, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0020.0000	Delaware	Edgemont	September 5, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0021.0000	Delaware	Edgemont	September 5, 2014	B56, B57	B52	No	Yes	No	No	No	No	Small low gradient streams with floodplain wetlands
Willow Lane	Delaware	Edgemont	September 5, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-021.0000-ABTN	Delaware	Edgemont	September 5, 2014	B56, B57	B52	No	Yes	No	No	No	No	Small low gradient streams with floodplain wetlands
PA-DE-0032.0000	Delaware	Edgemont	September 5, 2014	B58	B53	No	Yes	No	No	No	No	Small low gradient stream associated with a seep within wooded wetlands
PA-DE-0032.0000-RD	Delaware	Edgemont	September 5, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0033.0000	Delaware	Edgemont	September 5, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0033.0000-RD	Delaware	Edgemont	September 5, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0034.0000	Delaware	Edgemont	September 5, 2014	No	B54	No	No	No	No	No	No	Emergent and wooded wetlands
PA-DE-0034.0000-RD	Delaware	Edgemont	September 5, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0043.0000	Delaware	Middletown	September 5, 2014	C43	No	No	No	No	No	No	No	Dry headwaters channel
PA-DE-0048.0000	Delaware	Middletown	September 5, 2014*	No	C21	No	No	No	No	No	No	Wooded wetlands
PA-DE-0049.0000	Delaware	Middletown	September 5, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0049.0000-RD	Delaware	Middletown	September 5, 2014	No	C21	No	No	No	No	No	No	Wooded wetlands
PA-DE-0050.0000	Delaware	Middletown	September 5, 2014	C42	No	No	No	No	No	No	No	Dry headwaters channel
PA-DE-0059.0000	Delaware	Middletown	September 9, 2014	No	C20	No	No	No	No	No	No	Emergent wetlands within a stormwater management basin

Parcel Number	County	Municipality	Date Completed	Stream Segment	Wetland Segment	Pond	Aquatic Habitat Present	Turtles Observed	RBT Observed	Suitable RBT Aquatic Habitat?	Suitable RBT Nesting Habitat?	Notes
PA-DE-0060.0000	Delaware	Middletown	September 9, 2014*	No	C19	No	No	No	No	No	No	Emergent wetland
PA-DE-0061.0000	Delaware	Middletown	September 9, 2014	No	C19	No	No	No	No	No	No	Emergent wetland
PA-DE-0061.0000-ABTS	Delaware	Middletown	September 9, 2014	C40	No	No	Yes	No	No	No	No	Low gradient stream in woods
PA-DE-0062.0000	Delaware	Middletown	September 9, 2014	C40, C41	C18	No	Yes	No	No	No	No	Low gradient stream with fringe wetlands
PA-DE-0063.0000	Delaware	Middletown	September 9, 2014	C40, C41	C18	C6	Yes	No	No	No	No	Low gradient stream with fringe wetlands; small shallow ornamental pond located within an maintained lawn area surround by mature trees
PA-DE-0064.0000-RD	Delaware	Middletown	September 9, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0065.0000	Delaware	Middletown	September 9, 2014	No	C24	No	No	No	No	No	No	Small emergent wetland within an agricultural field
PA-DE-0066.0000	Delaware	Middletown	September 9, 2014	No	C24	No	No	No	No	No	No	Small emergent wetland within an agricultural field
PA-DE-0069.0000	Delaware	Middletown	September 9, 2014	C45	C23	No	Yes	No	No	No	No	Medium grade headwaters stream (wooded) fed by a spring
PA-DE-0070.0000	Delaware	Middletown	September 9, 2014	C44, C45	C23	No	Yes	No	No	No	No	Medium low grade rocky bottom stream channel with fringe wetlands
PA-DE-0071.0000	Delaware	Middletown	September 9, 2014	C44	C23	No	Yes	No	No	No	No	Medium low grade rocky bottom stream channel with fringe wetlands
PA-DE-0071-WX	Delaware	Middletown	September 9, 2014	C44	C23	No	Yes	No	No	No	No	Medium low grade rocky bottom stream channel with fringe wetlands
PA-DE-0074.0000-RD	Delaware	Middletown	September 9, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0075.0000	Delaware	Middletown	September 9, 2014	C23, C24, C25, C26	C10	No	Yes	No	No	No	No	Dry channels associated with a stormwater management basin and runoff from parking lot/access road; small low gradient stream within valley floor and adjacent emergent/wooded wetlands
PA-DE-0076.0000	Delaware	Middletown	September 9, 2014	C15, C16, C17, C18, C19, C20, C21, C22	No	No	No	No	No	No	No	Dry headwater channels and erosional channels
PA-DE-0102.0000	Delaware	Middletown	September 10, 2014	H1	I1	No	No	No	No	No	No	Dry headwater channel and wooded/emergent wetlands
PA-DE-0102.0000-ABTE	Delaware	Middletown	September 10, 2014	H1, I1, I2	I1, I2	No	Yes	No	No	No	No	Small low gradient stream and wooded/emergent wetlands
PA-DE-0103.0001	Delaware	Middletown	September 10, 2014	I2	No	No	Yes	No	No	No	No	Small low gradient stream
PA-DE-0104.0002	Delaware	Middletown	September 10, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0002-ABTS	Delaware	Middletown	September 10, 2014*	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0003	Delaware	Middletown	September 10, 2014	H27, H28	No	No	No	No	No	No	No	Small medium gradient streams

Parcel Number	County	Municipality	Date Completed	Stream Segment	Wetland Segment	Pond	Aquatic Habitat Present	Turtles Observed	RBT Observed	Suitable RBT Aquatic Habitat?	Suitable RBT Nesting Habitat?	Notes
PA-DE-0104.0004	Delaware	Middletown	September 10, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0004-RD	Delaware	Middletown	September 10, 2014	No	H32, H33	No	No	No	No	No	No	Modified agricultural wetlands
PA-DE-0104.0005	Delaware	Middletown	September 10, 2014	H35, H36	H38	No	Yes	No	No	No	No	Small medium gradient streams within forested wetlands; a small irrigation pond is located within the woods immediately outside of the ROW, no RBT habitat
PA-DE-0104.0006	Delaware	Middletown	September 10, 2014	No	H37	No	No	No	No	No	No	Small isolated forested wetland
PA-DE-0104.0007-ABTE	Delaware	Middletown	September 10, 2014*	H34	No	No	No	No	No	No	No	Small medium gradient stream
PA-DE-0104.0009-RD	Delaware	Aston	September 10, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0010-ABTW	Delaware	Aston	September 10, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0010-ABTS	Delaware	Aston	September 10, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0010-ABTS4	Delaware	Aston	September 10, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0010-ABTS6	Delaware	Aston	September 10, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0011	Delaware	Aston	September 10, 2014*	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0014-ABTS	Delaware	Aston	September 12, 2014	H42	No	No	Yes	No	No	No	No	Chester Creek; steep banks; wooded
PA-DE-0104.0014-ABTS3	Delaware	Aston	September 12, 2014	H42	No	No	Yes	No	No	No	No	Small medium gradient stream within a wooded area
PA-DE-0104.0016-ABTW	Delaware	Chester	September 12, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0019	Delaware	Chester	September 12, 2014	No	I14	No	No	No	No	No	No	Abandoned stormwater management basin within a wooded area
PA-DE-0104.0019-ABTW	Delaware	Chester	September 12, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0021	Delaware	Chester	September 12, 2014	No	I15, I16	No	No	No	No	No	No	Wooded wetlands
PA-DE-0104.0022	Delaware	Chester	September 12, 2014	I17	I16	No	No	No	No	No	No	Wooded wetland with a dry erosional feature
PA-DE-0104.0022-ABTN	Delaware	Chester	September 12, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0022-ABTN2	Delaware	Chester	September 12, 2014	I18	No	No	No	No	No	No	No	Wooded area man-made ditch
PA-DE-0104.0022-RD	Delaware	Chester	September 12, 2014	I18, I19, I20	I16	No	No	No	No	No	No	Wooded wetland with man-made ditches
PA-DE-0104.0023	Delaware	Chester	September 12, 2014	I18	No	No	No	No	No	No	No	Wooded area man-made ditch
PA-DE-0104.0025	Delaware	Chester	September 12, 2014	H43	No	No	Yes	No	No	No	No	Medium sized low gradient rocky bottom stream within a wooded area.

Pennsylvania Pipeline Project - Segment #3,
Chester and Delaware Counties

Parcel Number	County	Municipality	Date Completed	Stream Segment	Wetland Segment	Pond	Aquatic Habitat Present	Turtles Observed	RBT Observed	Suitable RBT Aquatic Habitat?	Suitable RBT Nesting Habitat?	Notes
PA-DE-0104.0025-ABTW	Delaware	Chester	September 12, 2014	H44	No	No	Yes	No	No	No	No	Small low gradient stream within a wooded area
PA-DE-0104.0026	Delaware	Chester	September 12, 2014	H43	No	No	Yes	No	No	No	No	Medium sized low gradient rocky bottom stream within a wooded area.
PA-DE-0104.0027	Delaware	Chester	September 12, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0027ABTE	Delaware	Chester	September 12, 2014*	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0027-RD	Delaware	Chester	September 12, 2014	No	No	No	No	No	No	No	No	Access
PA-DE-0104.0029	Delaware	Chester	September 12, 2014*	I12, I14	I9, I10, I11	No	Yes	No	No	No	No	Small low gradient streams within wooded wetlands associated with former detention basins
PA-DE-0150.0001	Delaware	Chester	September 12, 2014	No	No	No	No	No	No	No	No	Access

APPENDIX D

PHOTOGRAPHS

1. View south of stormwater management pond (Pond A3) with CMP riser within Parcel PA-CH-0019.0000-ABTN along the proposed pipeline ROW. Fish and a large common snapping turtle were observed within the pond (June 29, 2015)

2. View of twin ponds and maintained lawn (potential nesting habitat) within Parcel PA-CH-0022.0000 approximately 60 feet outside the pipeline ROW (June 29, 2015)

3. View of small man-made pond along Hedge Road approximately 250 feet outside the pipeline ROW (August 25, 2014).

4. View of pond (Pond-A4) within Parcel PA-CH-0032.0000 within the pipeline ROW (August 25, 2014).

5. View of headwaters stream within an agricultural pasture within Parcel PA-CH-0035.0000 within the pipeline ROW (August 25, 2014).

6. View of pond (Pond-B2) and maintained lawn (potential nesting habitat) within Parcel PA-CH-0042.0000-WX approximately 35 feet outside the pipeline ROW (August 25, 2014).

7. View north of wetlands (C49) within the ROW of the pipeline within Parcel PA-CH-0065.0000. Pond XX3 is located approximately 150 feet outside the pipeline ROW (August 25, 2014).

8. View north of wetlands with small headwater stream channels within the ROW of the pipeline within Parcel PA-CH-0072.0000 (August 27, 2014).

9. View north of a small headwater stream channel (S-B18) within the ROW of the pipeline within Parcel PA-CH-0072.0000 (August 27, 2014).

10. View northeast of a small headwater stream channel (S-H9) within the ROW of the pipeline within Parcel PA-CH-0075.0000 (August 27, 2014).

11. View of a pond (Pond XX11) and maintained lawn (potential nesting habitat) within Parcel PA-CH-0086.0000 approximately 175 feet outside the pipeline ROW (June 29, 2015).

12. View of a basking eastern painted turtle within pond (Pond XX11) within Parcel PA-CH-0086.0000 (June 29, 2015).

13. View northwest of a stream channel (S-H15) from Styler Road adjacent to the ROW of the pipeline within Parcel PA-CH-0085.0000 (June 29, 2015).

14. View of eastern redbelly turtles and ROW wooded stakes in Marsh Creek (Pond H3) within Parcel PA-CH-0089.0000-WX (June 29, 2015).

15. View of eastern redbelly turtles basking on a log in Marsh Creek (Pond H3) within Parcel PA-CH-0090.0000 (June 29, 2015).

16. View of eastern redbelly turtles basking on floating wetlands in Marsh Creek (H3) along Little Conestoga Road (June 29, 2015).

17. View west of a stream channel (S-C73) within the ROW of the pipeline in Parcel PA-CH-0099.0000-WX (August 27, 2015).

18. View southwest of a pond (Pond H2) within the ROW of the pipeline within Parcel PA-CH-0109.0000. Eastern painted turtles were observed basking within the pond (August 27, 2014).

19. View east of a stream channel (S-C96) and emergent wetlands (C47) within the ROW of the pipeline within Parcel PA-CH-0110.0000 (August 27, 2014).

20. View southeast of a vernal pool in wetlands C47 within the ROW of the pipeline within Parcel PA-CH-0110.0000 (August 27, 2014).

21. View north of a small headwaters stream channel (S-C91) and forested wetlands (C43) within the ROW of the pipeline within Parcel PA-CH-0116.0000 (August 29, 2014).

22. View north of a small headwaters stream channel (S-H5) within the ROW of the pipeline within Parcel PA-CH-0130.0000-WX (August 29, 2014).

23. View southeast of a small headwaters stream channel (S-C64) and maintained lawn within the ROW of the pipeline within Parcel PA-CH-0157.0000 (September 2, 2014).

24. View southeast of a historically disturbed small headwaters stream channel (S-C63) within the ROW of the pipeline within Parcel PA-CH-0172.0000-ABTS (September 2, 2014).

25. View north of a historically disturbed small stream channel (S-C59) within the ROW of the pipeline within Parcel PA-CH-0212.0000-WX (September 2, 2014).

26. View east of a stream channel (S-B81) within the ROW of the pipeline within Parcel PA-CH-0235.0000-WX (September 2, 2014).

27. View east of a pond (Pond B11) and maintained lawn areas immediately outside the ROW of the pipeline within Parcel PA-CH-0235.0000-WX (September 2, 2014).

28. View south of a stream channel (S-B79) and emergent wetlands (B71) within the ROW of the pipeline within Parcel PA-CH-0241.0000-ABTW (September 2, 2014).

29. View south of emergent wetlands (B71) in a stormwater management basin within the ROW of the pipeline within Parcel PA-CH-0246.0000-ABTW2 (September 2, 2014).

30. View west of Iron Lake (Pond B10) immediately outside the ROW of the pipeline within Parcel PA-CH-0247.0000 (September 2, 2014).

31. View of a eastern painted turtle within Iron Lake (Pond B10) immediately outside the ROW of the pipeline within Parcel PA-CH-0247.0000 (September 2, 2014).

32. View south of a stream channel (S-H30) within the ROW of the pipeline within Parcel PA-CH-0295.0000-WX (September 4, 2014).

33. View east of emergent wetlands (H30) in a stormwater management basin within the ROW of the pipeline within Parcel PA-CH-0417.0000-RD (September 4, 2014).

34. View east of emergent wetlands (B35) in a stormwater management basin within the ROW of the pipeline within Parcel PA-CH-0422.0000 (September 4, 2014).

35. View of a small ornamental pond (Pond B5) on a wooded residential lot in the ROW of the pipeline within Parcel PA-CH-0454.0000-RD (September 4, 2014).

36. View south of a small stream channel (S-B34) and wetlands (B36) within the ROW of the pipeline within Parcel PA-CH-0458.0000-RD (September 4, 2014).

37. View of a dry small ornamental pond (Pond B6) on a wooded residential lot in the ROW of the pipeline within Parcel PA-DE-0008.0000 (September 4, 2014).

38. View west of a rip-rap channel (S-B34) within the ROW of the pipeline within Parcel PA-DE-0008.0000 (September 4, 2014).

39. View south of a small stream channel (S-B37) within the ROW of the pipeline within Parcel PA-DE-0015.0000-RD (September 5, 2014).

40. View of a pond (Pond XX10) approximately 150 feet outside the ROW of the pipeline within Parcel PA-DE-0017.0000-ABTN (September 5, 2014).

41. View south of a small headwater stream channel (S-B58) and wetlands (B53) within the ROW of the pipeline within Parcel PA-DE-0032.0000 (September 5, 2014).

42. View west of a small headwater stream channel (S-C43) within the ROW of the pipeline within Parcel PA-DE-0043.0000 (September 5, 2014).

43. View of a pond (Pond XX10) approximately 150 feet outside the ROW of the pipeline within Parcel PA-DE-0017.0000-ABTN (September 5, 2014).

44. View east of emergent wetlands (C20) in a stormwater management basin within the ROW of the pipeline within Parcel PA-DE-0059.0000 (September 9, 2014).

45. View of a small ornamental pond (Pond C6) within the ROW of the pipeline within Parcel PA-DE-0063.0000 (September 9, 2014).

46. View west of a small headwater stream channel (S-C40) that drains Pond C6 within the ROW of the pipeline within Parcel PA-DE-0061.0000-ABTS (September 9, 2014).

47. View south of a small headwater stream channel (S-C45) and Wetland BA1 within the ROW of the pipeline within Parcel PA-DE-0069.0000 (September 9, 2014).

48. View east of a stream channel (S-C44) and Wetland C23 within the ROW of the pipeline within Parcel PA-DE-0069.0000 (September 9, 2014).

49. View south of a small stream channel (S-C23) and Wetland C10 within the ROW of the pipeline within Parcel PA-DE-0075.0000 (September 9, 2014).

50. View west of Chester Creek (S-I4) immediately outside the ROW of the pipeline within Parcel PA-DE-0104.0000-WX. Chester Creek is known to contain RBTs (September 10, 2014).

51. View east of a small stream channel (S-I2) within the ROW of the pipeline within Parcel PA-DE-0104.0000-WX (September 10, 2014).

52. View east of a small stream channel (S-I5) within the ROW of the pipeline within Parcel PA-DE-0103.0002-WX (September 10, 2014).

53. View of pond and maintained lawn (potential nesting habitat) approximately 175 feet outside the ROW of the pipeline within Parcel PA-DE-0104.0001 (September 10, 2014).

54. View of pond and basking RBT approximately 175 feet outside the ROW of the pipeline within Parcel PA-DE-0104.0001 (September 10, 2014).

55. View of maintained lawn (potential nesting habitat) adjacent to pond approximately 175 feet outside the ROW of the pipeline within Parcel PA-DE-0104.0001 (September 10, 2014).

56. View west of a stream channel (S-H29) and the outfall of the pond within the ROW of the pipeline within Parcel PA- DE-0104.0001-RD (September 10, 2014).

57. View north of a stream channel (S-H28) within the ROW of the pipeline within Parcel PA- DE-0104.0003 (September 10, 2014).

58. View west of a stream channel (S-H35) within the ROW of the pipeline within Parcel PA- DE-0104.0005 (September 10, 2014).

59. View south of a small agricultural water withdrawal pond in the wood immediately outside the ROW of the pipeline within Parcel PA- DE-0104.0005 (September 10, 2014).

60. View west of a dam on Chester Creek (S-H47) immediately outside the ROW of the pipeline within Parcel PA-DE-0104.0009. Chester Creek is known to contain RBTs (September 10, 2014).

61. View west of Chester Creek (S-H47) immediately upstream of the dam within Parcel PA-DE-0104.0009. Chester Creek is known to contain RBTs (September 10, 2014).

62. View southwest of Chester Creek (S-H47) immediately downstream of the dam within Parcel PA-DE-0104.0009. Chester Creek is known to contain RBTs (September 10, 2014).

63. View of maintained lawn (potential nesting habitat) adjacent to Chester Creek within the ROW of the pipeline within Parcel PA-DE-0104.0008-RD (September 10, 2014).

64. View northeast of Chester Creek (S-H41) within the ROW of the pipeline within Parcel PA-DE-0104.0012. (September 10, 2014).

65. View east of a small rocky bottom stream channel (S-H43) within the ROW of the pipeline within Parcel PA- DE-0104.0016 (September 12, 2014).

66. View east of a small rocky bottom stream channel (S-H43) within the ROW of the pipeline within Parcel PA- DE-0104.0016 (September 12, 2014).

67. View east of a stormwater management basin approximately 50 feet from the ROW of the pipeline within Parcel PA-DE-0104.0016 (September 12, 2014).

68. View north of a small forested stream channel/ditch (S-I18) within the ROW of the pipeline within Parcel PA- DE-0104.0022-RD (September 12, 2014).

69. View of a forested stream channel (S-I12) and outfall pipes associated with abandoned stormwater management ponds within Parcel PA- DE-0150.0000 (September 12, 2014).

70. View west of Pond I1 (within containment berm) within the ROW of the pipeline within Parcel PA-DE-0150.0000 (Sunoco Refinery) (September 12, 2014).

71. View west of eastern painted turtles basking on pile in Pond I1 (containment berm) within the ROW of the pipeline within Parcel PA-DE-0150.0000 (Sunoco Refinery) (September 12, 2014).

72. View of turtle nest on the containment berm between Pond I1 and Wetland I7 within the ROW of the pipeline within Parcel PA-DE-0150.0000 (Sunoco Refinery) (September 12, 2014).

73. View of maintained lawn along the containment berms of Pond I1 and Wetland I7 within the ROW of the pipeline within Parcel PA-DE-0150.0000 (Sunoco Refinery) (September 12, 2014).

74. View of open water within Wetland I7 in the ROW of the pipeline within Parcel PA-DE-0150.0000 (Sunoco Refinery) (September 12, 2014).

75. View of a forested stream channel (S-I10) within the pipeline ROW Parcel PA- DE-0150.0000 (September 12, 2014).

76. View east of emergent wetlands (Wetland-I5) within the pipeline ROW Parcel PA- DE-0150.0000 (September 12, 2014).