East Goshen Township
Pipeline Task Force
Meeting Agenda

Thursday, August 8, 2019
5:00 PM

1. Call to Order

2. Pledge of Allegiance

3. Moment of Silence

4. Ask if anyone is recording the meeting

5. Approval of Minutes
   a. July 25, 2019

6. Public Comment

7. Chairman's Report

8. Reports
   a. Legislative Update
   b. Current Pipeline Events Impacting East Goshen

9. Old Business
   a. Discuss PUC rulemaking proposal seeking public comment on Safety Regulations (Comment period 6/29 – 8/28)
      - Review Google doc and prepare comments
   b. Review Pipeline legislation - Bills: 40, 257, 259, 261, 262

10. New Business
    a. Consider a letter to the DEP sharing concerns regarding the direct Pipe Boring method as stated in the Exton Bypass Crossing Analysis
    b. Discuss ABC 2020 Budget Request

11. Correspondence

12. Adjournment

PIPELINE TASK FORCE WORKSHOP MEETING
1580 PAOLI PIKE
THURSDAY, July 25, 2019
DRAFT MINUTES

Present: Chair Caroline Hughes, Vice Chair Bill Wegemann; Members: Judi DiFonzo, Russ Frank, Karen Miller, Christina Morley, Gerald Sexton; David Shuey, Liaison, Township Supervisor; Marty Shane, Township Supervisor; Rick Smith, Township Manager

Members of Public in Attendance: Melissa DiBernardino, Gabrielle Long, Mary Jean Naftzger, Brian Sweet, Michele Truitt, Everett Warren

Call to Order & Pledge of Allegiance
Caroline called the meeting to order at 5:02 p.m. and led the pledge of allegiance.

Moment of Silence
Caroline called for a moment of silence to honor our troops and first responders.

Recording
Caroline asked if anyone was recording the meeting. No one was recording.

Approval of Minutes
The minutes from June 27, 2019, were unanimously approved as amended.

Public Comment

1. Everett Warren, 540 Beaumont Circle, reported that Sunoco placed a box around the generator to address the noise issue. He is not sure if this is temporary or permanent. He stated that Sunoco workers have been there to check on the noise. Caroline asked Everett if he had any damage due to the drilling and vibration. Everett replied that he has had some damage. He had an inspector visit last year who stated that damage has to be proven that it is caused from the drilling. He also stated that he has had water in his basement once in 33 years, but now has water from the ground coming up into his basement that is keeping his sump pump running. Rick stated that the rainfall experienced in this area is the highest ever recorded and that ground water levels were high.

2. Mary Jean Naftzger, 439 Gateswood Drive, thanked Bill for his help and reported that she contacted Sunoco and they had a structural engineer come out to her house. The expense was paid for by Sunoco.

3. Michele Truitt, 1430 Grand Oak Lane, reported that on June 2, 2019, her parents unavoidably drove through the drilling fluid and grout puddle at Wilson Drive and Boot Road. The car has corrosive damage from the materials in the fluid. She expressed concern that other people may have driven through it. Mary Jean asked what happens if this material goes in sewer. Caroline stated that if any

goes in sewer, construction will be shut down due to the Clean Air Council agreement.

4. Melissa DiBernardino, 1602 Old Orchard Lane, asked for an update on the PennDOT study regarding Boot Road and Wilson Drive. David stated that the study was found out to be insufficient. Another study will take place at night during the first week of August. This study will be released to the public. David stated that PennDOT continues to inspect the site in the interim. Melissa raised concern about the content of the mixture from the IR and its effect on private wells and public water.

Chairman's Report

1. Caroline thanked Bill for filling in as Chair in her absence.
2. The following topics were discussed:
    a. At the Pennsylvania House Emergency Preparedness and Veteran's Affairs hearing Joe McGinn testified that municipalities are responsible for emergency response planning. There was discussion that the Township and Emergency Services are aware of this and a plan is in place. Caroline and Christina expressed concern that an all-hazards approach is not sufficient.
    b. Middletown Township sent a letter to the PUC regarding the sinkhole in Delaware County.
    c. Mariner One and the 12-inch bypass line are exposed in a creek in Exton.
    d. A Berks County resident filed a civil suit against Sunoco due to his family becoming sick after contamination to his well.
    e. Wilmer Baker, a Cumberland County resident, had a PUC complaint hearing against Sunoco. Cumberland County passed a resolution related to Mariner and its safety concerns.
    f. A Reading resident is dealing with $20,000 worth of damage to his home due to water runoff issues possibly caused by Sunoco construction. Caroline expressed concern because of the incredible rain and storm water runoff experienced in this area this could be an issue.

Reporting

1. Legislative Update

Bill explained that he and members from East Goshen Safe Environment Advocates have attended 4 separate meetings with legislators Killion, Comitta and Dinniman and Joe McGinn from Sunoco. There was discussion about the Restore PA Plan and the severance tax that it proposes. Bill stated that 75 bills have been introduced in the last 4 years regarding pipelines – none of which have been passed.

Bill talked about the fugitive dust issue and stated a meeting with Sunoco and Carolyn Comitta was scheduled for July 26.

2. Current Events Impacting East Goshen

Rick stated that the drill has been moved to the Executive Center.

Rick stated that when the Township receives the request from Sunoco for 24x7 drilling, the Board of Supervisors will hold a public meeting to solicit public comment.

There was discussion about dual pull backs and direct pipe boring method. Concern was expressed about the amount of space between the pipes being installed. Rick stated that the direct pipe bore method is not being proposed in East Goshen; this was proposed for Exton.

Old Business

1. PUC rulemaking proposal on Safety Regulations
   The TF discussed the draft letter from to the PUC from the County. Caroline made a motion to ask the Board of Supervisors to write a letter supporting the efforts outlined in the draft. Christina seconded the motion. The motion passed unanimously 7-0.

2. There was discussion about the TF editing and adding comments to the Google doc for the PUC Safety Rulemaking. Marty stated that the Board of Supervisors would like to see the TF's comments when complete and suggested that they be submitted to the PUC along with the Chester County Association of Township Officials (CCATO). The TF will review and update with their comments and hold a meeting on August 8, 2019, @ 5:00 pm to complete and compile their comments to present to the Board of Supervisors.

3. Remaining agenda items will be discussed at the next meeting if time allows.

Action Items for TF

The next meeting is Thursday, August 8, 2019, at 5:00 pm.

Adjournment

The meeting was adjourned at 7:05 pm.

Respectfully submitted,
Susan D'Amore

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Please add comments to the following Subject Areas and the corresponding sections. Click here for the electronic copy that was in the agenda for your reference.

Subject Areas

A. Construction

1. Pipeline Material and Specification

Hazardous liquids (especially natural gases, natural gas liquids, or highly volatile liquids) must be transported only in coated steel pipe. There must be no grandfathered exceptions for uncoated pipe, bare steel pipe, or other vintage materials.

All coated pipe must be stored in accordance with the manufacturer's recommendations prior to installation. This includes protection from the weather and UV degradation.

2. Cover Over Buried Pipelines

3. Underground Clearances

Section 195.250 provides that pipe installed underground must have at least a 12-inch clearance between the outside of the pipe and the extremity of any other underground structure. 49 CFR § 195.250. East Goshen Township requests that the second sentence of this section be removed. "*Where a 12-inch clearance is impracticable, the clearance may be reduced provided that adequate provisions are made for corrosion control. 49 CFR § 195.250*".

The pipeline owner or contractor must not be given the authority to make this decision should the 12-inch clearance be deemed "impractical". Only the PUC, after consulting with a certified third party industry expert (during a mandated site visit), will have the authority to grant an exception to the 12 inch clearance.

4. Valves

Section 195.258 requires valves be installed at a location that is accessible to authorized employees and protected from damage or tampering. More detail should be included in the regulations regarding how these locations are protected from damage or tampering.

All valves, piping, and equipment used in above-ground valve stations must be protected from the weather and UV degradation. This can be accomplished through external coatings with suitable resistance or by shielding structures.

Valve spacing in high consequence areas is a safety conundrum regarding hazardous compounds and especially highly volatile liquids. Closer valve spacing decreases the volume of material between valves and can help reduce the amount of material that escapes from a leak. However, these valves are a high potential source for leaks.

All valve and compressor stations should be required to install gas monitoring and central alarm devices that cover 100% of the footprint of the station. These devices are available and commonly used in gas storage and production facilities.

East Goshen Township - Agree that valve sites have a high potential for leaks.

That being said Natural Gas pipelines are regulated by Title 49 Section 192 of the Federal Code. Section 192.179 has a spacing limit of 8 miles for valve in a Class 3 HCAs. Hazardous Liquid pipelines are regulated by Title 49 Section 195 of the Federal Code. Section 195.260 says that valve shall be located at locations that will minimize damage.

Suggest that the Commission require Hazardous Liquid Pipelines to comply with Natural Gas valve spacing requirements. In order to minimize the risk a gas detection meter ($2,400) could be installed at each valve location. New installations would have to comply immediately. Existing pipelines would be brought into compliance over time.

B. Operation and Maintenance

1. Pipeline Conversion

Any conversion or "repurposing" of an existing pipeline to a more volatile product and/or a product which will operate at a higher pressure, will require advanced notification and approval from the PUC. The PUC will consult with a certified third party industry expert prior to granting any approval for such a conversion.

In determining whether conversion and/or repurposing is appropriate the PUC will perform a detailed risk assessment with consideration given to factors such as age of pipeline; commercial/residential development of surrounding areas; initial use of pipeline, history of leaks; proposed operating pressure. If any of these factors is determined to pose a risk to public safety, the determination shall be made that conversion and/or repurposing is prohibited.

2. Construction Compliance

3. Pressure Testing and Maximum Operating Pressure

There must be no exceptions to the pressure testing requirements for pipelines that transport hazardous liquids. If an older pipeline cannot pass the pressure test, it must be replaced.

The Maximum Operating Pressure of any pipeline system may not exceed the maximum pressure of the weakest part of that pipeline network.

4. Line Markers

5. Inspections of Pipeline Right-of-Ways

East Goshen

6. Emergency Flow Restricting Devices

   Remote-control valve spacing in high consequence areas is a safety conundrum regarding hazardous compounds and especially highly volatile liquids. Closer valve spacing decreases the volume of material between valves and can help reduce the amount of material that escapes from a leak. However, these valves are a high potential source for leaks. Similar to comment for Page 9, 4. Valves.

7. Leak Detection

   All pipelines that transport hazardous liquids must be equipped with external leak detection systems. These external systems are in addition to typical monitoring of operating parameters (such as flow rate and pressure) to detect leaks. Sensors for these external systems are typically installed outside the pipe in the ground or in the air. Alarms for these external systems typically are located such that the public and emergency services personnel are notified immediately of a leak. External leak detection systems are critical at above ground valve stations since these are a high potential source of leaks.

   Pipeline operators must be required to investigate, develop, and implement the latest technologies for external leak detection including fiber optics.

   Direct Current Voltage Gradient (DCVG) testing is one of the best methods to detect the size and location of buried pipeline coating defects. Pipeline owners should be required to conduct DCVG surveys at least annually in all HCA designated areas.

   A Close Interval Potential Survey (CIPS) is an effective test for catholic protection effectiveness. Pipeline owners should be required to conduct CIPS at least annually in all HCA designated areas.

East Goshen - Require gas detection at all hazardous liquid valve location.

8. Corrosion Control and Cathodic Protection

   All pipelines that transport hazardous liquids must be equipped with corrosion control and cathodic protection systems regardless when the pipeline was placed in service. There must be no grandfathered exceptions.

C. Additional Subject Areas for Public Comment

1. Utility interactions with local government officials, including but not limited to such topics as emergency planning and emergency response coordination, periodic drills with utility/municipal coordination.

East Goshen Township - Adopt the Texas Railroad Commission regulations set forth in Section 8.310 (see below)

§8.310 Hazardous Liquids and Carbon Dioxide Pipelines Public Education and Liaison

(a) Liaison activities required. Each operator of a hazardous liquid or carbon dioxide pipeline or pipeline facilities or the operator's designated representative shall communicate and conduct liaison activities at intervals not exceeding 15 months, but at least once each calendar year with fire, police, and other appropriate public emergency response officials. The liaison activities are those required by 49 CFR Part 195.402(c)(12). These liaison activities shall be conducted in person, except as provided by this section.

(b) Meetings in person. The operator or the operator's representative may conduct required community liaison activities as provided by subsection (c) of this section only if the operator or the operator's representative has completed one of the following efforts to conduct a community liaison meeting in person with the officials:

(1) mailing a written request for a meeting in person to the appropriate officials by certified mail, return receipt requested;

(2) sending a request for a meeting in person to the appropriate officials by facsimile transmission; or

(3) making one or more telephone calls or e-mail message transmissions to the appropriate officials to request a meeting in person.

(4) At any time the operator or operator's representative makes contact with the appropriate officials and schedules a meeting in person, no further attempts to make contact under this section are necessary. However, if a scheduled meeting does not take place, the operator or operator's representative shall make an effort to re-schedule the community liaison meeting in person with the officials using one of

the methods in paragraphs (1) - (3) of this subsection before proceeding to arrange a conference call pursuant to subsection
(c) of this section.

(c) Alternative methods. If the operator or operator's representative cannot arrange a meeting in person after complying with subsection (b) of this section, the operator or the operator's representative shall conduct community liaison activities by one of the following methods:

(1) holding a telephone conference with the appropriate officials; or

(2) delivering the community liaison information required to be conveyed by certified mail, return receipt requested.

(d) Records. The operator shall maintain records documenting compliance with the liaison activities required by this section. Records of attendance and acknowledgment of receipt by the emergency response officials shall be retained for five years from the date of the event that is commemorated by the record. Records of certified mail and/or telephone transmissions undertaken in compliance with subsections (b) and (c) of this section satisfy the record-keeping requirements of this subsection.

2. Requiring periodic public awareness meetings with municipal officials and the public.

FROM CPUC Gas Safety Plan:
As part of the Public Awareness program, the PUC shall establish Emergency Response standards for operators of PUC-regulated pipelines.
East Goshen Township - Adopt the Texas Railroad Commission regulations set forth in Section 8.315 (see below)

§8.310 Hazardous Liquids and Carbon Dioxide Pipelines Public Education and Liaison

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acknowledgment of receipt by the emergency response officials shall be retained for five years from the date of the event that is commemorated by the record. Records of certified mail and/or telephone transmissions undertaken in compliance with subsections (b) and (c) of this section satisfy the record-keeping requirements of this subsection.

§8.315 Hazardous Liquids and Carbon Dioxide Pipelines or Pipeline Facilities Located Within 1,000 Feet of a Public School Building or Facility

(a) In addition to the requirements of §8.310 of this title (relating to Hazardous Liquids and Carbon Dioxide Pipelines Public Education and Liaison), each owner or operator of each intrastate hazardous liquids pipeline or pipeline facility and each intrastate carbon dioxide pipeline or pipeline facility shall comply with this section.

(b) This section applies to each owner or operator of a hazardous liquid or carbon dioxide pipeline or pipeline facility any part of which is located within 1,000 feet of a public school building containing classrooms, or within 1,000 feet of any other public school facility where students congregate.

(c) Each pipeline owner and operator to which this section applies shall, for each pipeline or pipeline facility any part of which is located within 1,000 feet of a public school building containing classrooms, or within 1,000 feet of any other public school facility where students congregate, file with the Division, no later than January 15 of every odd numbered year, the following information:

(1) the name of the school;

(2) the street address of the public school building or other public school facility; and

(3) the identification (system name) of the pipeline.

(d) Each pipeline owner and operator to which this section applies shall:

(1) upon written request from a school district, provide in writing the following parts of a pipeline emergency response plan that are relevant to the school:

(A) a description and map of the pipeline facilities that are within 1,000 feet of the school building or facility;

(B) a list of any product transported in the segment of the pipeline that is within 1,000 feet of the school facility;

(C) the designated emergency number for the pipeline facility operator;

(D) information on the state's excavation one-call system; and

(E) information on how to recognize, report, and respond to a product release; and

(2) mail a copy of the requested items by certified mail, return receipt requested, to the superintendent of the school district in which the school building or facility is located.

(e) A pipeline operator or the operator's representative shall appear at a regularly scheduled meeting of the school board to explain the items listed in subsection (c) of this section if requested by the school board or school district.

(f) Records. Each owner or operator shall maintain records documenting compliance with the requirements of this section. Records of attendance and acknowledgment of receipt by the school board or school district superintendent shall be retained for five years from the date of the event that is commemorated by the record. Records of certified mail transmissions undertaken in compliance with this section satisfy the record-keeping requirements of this subsection.

3. Pennsylvania specific enhancements to public utility's public awareness programs pursuant to 49 CFR § 195.440 and API Recommended Practice 1162.

4. Pennsylvania specific enhancements for operator qualification.

5. Enhancing transparency while protecting confidential infrastructure security information.

East Goshen Township - The existing federal regulations and state law requires that pipeline company to provide "local pipeline safety agencies" to obtain a copy of a pipeline Integrity Management Program (IMP).

Hazardous Liquid pipelines are regulated by Title 49 Section 195 of the Federal Code. Section 195.452 requires the pipeline operator develop an Integrity Management Program (IMP).

The requirements for the IMP are set forth in Title 49 Section 192 of the Federal Code.

Section 192.911(n)(2) requires the IMP to contain procedures for providing a copy of the IMP or risk assessment to a State or local pipeline safety agency where the Office of Pipeline Safety has an interstate agent agreement.

Pennsylvania has such an agreement with the US Department of Transportation.

In addition the Public Utility Confidential Security Information Disclosure Protection Act specifically references political subdivision, so the legislature clearly anticipated that Townships would be able to access this information.

6. Regulation of construction techniques such as horizontal directional drilling.

East Goshen Township - Add a new section that deals with the impacts from the actual construction of the pipeline. Especially HDD pipeline installations that result in stationary drills and mud machines being operated continuously for days and weeks on end at one location. For example

Noise - Establish standardized noise limits during construction. I.E. Construction equipment shall not exceed XX dBA at a distance of XX feet. Or in the alternative mandate that all construction activities must comply with municipal ordinances.

Vibration - Establish standardized vibration limits during construction. I.E. Equipment shall not exceed XX ??? at a distance of XX feet. Or in the alternative mandate that all construction activities must comply with municipal ordinances.

Hours - Establish standardized working hours during construction I.E. 7 am to 7 pm ***Monday - Friday****. In the alternative mandate that all construction activities must comply with municipal ordinance*

Dust - Establish standardized limits on the amount of dust. I.E. specifically reference the applicable sections of the Pa CODE (I.E. 123.1). Or in the alternative mandate that all construction activities must comply with municipal ordinance

7. Accident and incident reporting criteria, notification criteria for reporting incidents or unusual events to local emergency officials.

8. Advance notification and/or Commission pre approval of major construction activities.
9.

East Goshen Township - One of the concerns expressed with the Sunoco Mariner Project was a lack of notice about the project.

Suggest adding new section titled "Commencement of New Construction"

Commencement of Construction

At least 90 days prior to commencement of construction of any installation totaling one mile or more of pipe, each operator shall file with the Commission a report stating the proposed originating and terminating points for the pipeline, municipalities to be traversed, size and type of pipe to be used, type of service, design pressure, and length of the proposed line on Form XXXXX.

The operator shall provide confirmation that they have provided written notification to each of the municipalities to be traversed with the report.

The Commission could them publish a notice about the project in the PA Bulletin

The intention is to replicate what is required section 8.115 of theTexas Railroad Commission regulations (see below)

TEXAS ADMINISTRATIVE CODE: As in effect on 06/18/2018.

TITLE 16 ECONOMIC REGULATION

PART 1 RAILROAD COMMISSION

OF TEXAS CHAPTER 8 PIPELINE

SAFETY REGULATIONS

SUBCHAPTER A GENERAL REQUIREMENTS AND DEFINITIONS

§8.115 New Construction Commencement Report

Except as set forth below, at least 30 days prior to commencement of construction of any installation totaling one mile or more of pipe, each operator shall file with the Commission a report stating the proposed originating and terminating points for the pipeline, counties to be traversed, size and type of pipe to be used, type of service, design pressure, and length of the proposed line on Form PS-48. Each operator shall file a new construction report for the initial construction of a new liquefied petroleum gas distribution system.
Each operator of a sour gas pipeline and/or pipeline facilities, as defined in §3.106(b) of this title (relating to Sour Gas Pipeline Facility Construction Permit), shall file a new construction report and Form PS-79, Application for a Permit to Construct a Sour Gas Pipeline Facility. New construction on natural gas distribution or master meter system of less than five miles is exempted from this reporting requirement.

10. Odorant utilization.

    Odorant must be utilized on all natural gas (methane) that is transported in pipelines.

11. Geophysical testing and baselining

12. Protection of public and private water wells and supplies.

East Goshen - There is no central database of private wells in Pennsylvania and while some counties and municipalities may have some information it is not uniform or complete. Suggest that if a pipeline operator is required to identify the private well owners with XXX feet of the proposed pipeline pursuant to some other permit requirement that they be required to send a certified letter to each property owner advising them of the project and of the need for the information concerning their well.

13. Land agents and eminent domain (see 52 Pa.Code§ 57.91).

14. Background investigations of employees and contractors.

15. Integration of new regulations on existing facilities.

Grandfathered exceptions to new regulations for existing facilities must be rare occurrences that are approved by the PUC on a case-by-case basis.

East Goshen - Safety requirements should be phased in over time in accordance with a schedule established by the Commission.

WEST WHITELAND TOWNSHIP

THURSDAY 7-18-19

7 PM

HORIZONTAL DIRECTIONAL DRILL ANALYSIS
EXTON BYPASS CROSSING
PADEP SECTION 105 PERMIT NO.: E15-862
PA-CH-0256.0000-RR
(SPLP HDD No. S3-0400)

(1)

EXTON BYPASS CROSSING
PADEP SECTION 105 PERMIT NO. E15-862
PA-CH-0256-0000-RR
(SPLP HDD No. S3-0400)

This reanalysis of the horizontal directional drill (HDD) installation of a 20-inch diameter pipeline under Exton Bypass has been completed in accordance with Condition No. 3 of the Stipulated Order issued under Environmental Hearing Board Docket No. 2017-009-L. Condition No. 3 stipulates for HDDs initiated after the temporary injunction issued by the Pennsylvania Department of Environmental Protection (PADEP) Environmental Hearing Board on July 25, 2017, a reanalysis must be performed on HDDs for which an inadvertent return (IR) occurs during the installation of one pipe (20 or 16-inch diameter) where a second pipe will thereafter be installed in the same right-of-way (ROW).

The installation of the 16-inch diameter pipeline using HDD was initiated before the temporary injunction issued by the Pennsylvania Department of Environmental Protection (PADEP) Environmental Hearing Board on July 25, 2017. The 16-inch HDD had an inadvertent return (IR) on the installation of the first pipe (16-inch) and therefore, the installation of the second pipe (20-inch) requires reanalysis.

The 20-inch pipe HDD is referred to herein as HDD S3-0400.

SPLP has completed additional geotechnical and geophysical investigations of the drilling area to assess if the HDD could be redesigned to pass through better bedrock conditions; however, the data revealed inconsistencies in rock quality and other problematic geologic factors at depths through and below the HDD design limitations. Therefore, SPLP has elected to abandon any future HDD attempts to install the pipeline through this area and has developed an alternate construction plan using a combination of open trench construction method in uplands, and a Direct Pipe bore underneath aquatic resources, U.S. 30 Exton Bypass, an abandoned Norfolk rail line, and the active Amtrak/SEPTA rail lines.

PIPE INFORMATION

20-inch: 0.456 wall thickness; X-65

ORIGINAL HORIZONTAL DIRECTIONAL DRILL DESIGN SUMMARY: 20-INCH

- Horizontal length: 2,200 foot (ft)
- Entry/Exit angle: 10-16 degrees
- Maximum Depth of cover: 117 ft
- Pipe design radius: 2,200 – 2,400 ft

Pipe stress allowances are an integral part of the design calculations performed for each HDD. The 20-inch HDD profile was intended to pass under public transportation infrastructure and a residential area adjacent to the existing SPLP pipeline easement, thereby avoiding surface disturbances where residences are immediately adjacent to the existing easement. The difference in elevation between the northwest HDD entry point and exit point allowed for a low angle of entry, but did result in an exit that exceeded the pipe free stress radius "breakover" allowance, which requires either ramping out the exit side ditch line before tie-in to the conventional laid pipe, or installing a custom pipe bend at the tie-in point. The entry and exit radius to the horizontal run at 2,000 – 2,400 ft is below pipe stress allowances and would have allowed for a clean pull through of the HDD pipe segment.

INADVERTENT RETURN DISCUSSION

During the pilot phase drilling for the S3-0400 16-inch, the first pilot drill was terminated after 909 feet of progress due to losses of returns and borehole collapse, and was abandoned by grouting. The HDD was

redesigned and the second pilot drill experienced similar issues; however, approved LCM products were used to improve circulation until completion of the pilot.

A 20-inch ream commenced from northwest to southeast and at approximately 940 feet from the northwest entry/exit a 50-gallon IR occurred. This IR location corresponds approximately with the projected location of the Marctic Thrust Fault zone. The IR was cleaned up and a 30-inch reamer was added behind the 20-inch reamer to improve circulation and reduce drilling fluid pressure through completion of the 20-inch ream. A 24-inch ream commenced from northwest to southeast and at 1,763 ft of progress a 500-gallon IR occurred, at the same location of the previous IR. Crews removed the bentonite drilling fluid and fenced off the area to prevent access. The next day a circular subsidence feature, initially 3 feet in diameter and 2 feet deep, was visible at the land surface, which subsequently expanded to a 9.0 ft by 9.5 ft circular area.

The cause of the IR during the reaming phase was due to a build-up of cuttings that clogged the annulus and caused the drilling fluids to migrate vertically through highly weathered and fractured bedrock to ground surface. The 24-inch reaming tool was located approximately 800 feet past the IR location and was at a higher elevation which assisted in the vertical movement of the drilling fluids.

The subsidence feature that developed was most likely caused by soil flowing downward along foliation planes within the saprolite horizon, weakened by drilling activity, into the subsurface fault zone. The Marctic Thrust Fault zone is characteristically filled with broken and weathered rock allowing this material to slowly collapse into the HDD annulus, causing subsidence at the ground surface.

Figures 1 and 2 in Attachment 2 provide a plan and cross section view of the HDD bore hole and locations of the IRs. Additional written description of the IR events during the drilling of HDD S3-0400 is provided in Section 3.0 of the Hydrogeologic Analysis Report provided in Attachment 1. SPLP utilized all the foregoing information obtained during installation of the 16-inch pipe in the assessment of construction alternatives and re-routes at this location.

GEOLOGIC AND HYDROGEOLOGIC ANALYSIS

HDD S3-0400 transects the contact between the Piedmont Lowland Section to the north and Piedmont Upland Section to the south, both of the Piedmont Physiographic Province. The Marctic Thrust Fault marks the change from lowlands to uplands. The Lowland Section is characterized by broad moderately dissected, karst valleys separated by broad low hills. The Upland Section is characterized by broad rounded hilltops.

The mapped bedrock units crossed by the HDD alignment include; mica schist and phyllite of the Octoraro Formation; the calcareous phyllite upper unit of the Conestoga Formation; and carbonaceous limestone of lower unit of the Conestoga Formation. These lithologies correspond with the latest geologic map of Chester Valley.

The revised construction plans are for 2,114 ft of open trench construction, and an 816 ft Direct Pipe bore. The Direct Pipe bore method is cased, and has a closed fluid control system. The planned bore will pass through overburden or highly weathered and weak bedrock with low RQD values. The geology at this location presents no IR or subsidence risks to the construction methods planned in replacement of the HDD.

Attachment 1 provides a discussion on the geology and results of the geotechnical investigations and a geophysical investigation performed at this location.

EXTON BYPASS CROSSING
PADEP SECTION 105 PERMIT NO. E15-862
PA-CH-0256-0000-RR
(SPLP HDD No. S3-0400)

HYDROGEOLOGY, GROUND WATER, AND WELL PRODUCTION ZONES

The most basic conceptual model for groundwater flow in the area of HDD S3-0400 is to depict the uplands underlain by the Octorara Formation as the groundwater recharge zone and the lowland underlain by units of the Conestoga Formation as a groundwater discharge zone. As such, ground water is expected to move southeast to northwest at the HDD. Both formations have components of primary porosity and secondary porosity.

Primary porosity best supports the basic conceptual model of groundwater flow from recharge areas in uplands to discharge areas in lowlands. Secondary porosity created by openings in foliations, fractures and faults can impart anisotropies on the groundwater flow system altering the basic directions of groundwater flow.

Groundwater levels recorded during the geotechnical borings show groundwater depths ranging from 5.5 to 28 feet (ft) below ground surface (bgs).

A search of the Pennsylvania Groundwater Information System (PaGWIS) database produced twelve residential wells with 0.5 miles of the HDD S3-0400 alignment. Five of the wells were in the Conestoga Formation and seven of the wells are within the boundaries of the mapped Octoraro Formation. The water levels for the Conestoga Formation wells ranged from 17 to 40 ft bgs with a mean of 24 ft bgs. The water levels for the Octoraro wells ranged from 9 to 45 ft bgs with a mean of 30 ft bgs.

The revised construction plans are for 2,114 ft of open trench construction, and an 816 ft Direct Pipe bore. The Direct Pipe bore method is cased, and has a closed fluid control system. The planned bore will pass through overburden or highly weathered and weak bedrock with low RQD values. The hydrogeology at this location presents no IR or subsidence risks to the construction methods planned in replacement of the HDD.

Attachment 1 provides a discussion on the hydrogeology and results of the geotechnical investigation performed at this location.

ADJACENT FEATURES ANALYSIS

This HDD location is located on the southeast of the Town of Exton, West Whiteland Township, in Chester County, Pennsylvania. The HDD alignment crosses under U.S. 30 Exton Bypass; two (2) wetlands; an abandoned Norfolk rail line and active Amtrak/SEPTA rail line, and Lynetree Drive. This HDD location is set within urban residential developments for the majority of its length.

The pipeline route follows an existing SPLP utility easement with one or more existing pipelines for the entire length of the HDD alignment.

Aquatic resources along the HDD alignment include wetlands W-K18, and W-K21.

SPLP's public outreach conducted in October of 2017 resulted in no private water wells being identified within 450 ft of the HDD alignment. A water well map is provided as Figure 5 in the Hydrogeologic Reevaluation Report provided in Attachment 1. Landowner responses and available information indicates the properties adjacent to the HDD alignment are served by public water.

SPLP will transmit a copy of this HDD analysis to all landowners having a property line within 450 ft of any direction of this HDD location.

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ALTERNATIVES ANALYSIS

As required by the Order, the reanalysis of HDD S3-0400 includes an evaluation of open cut alternatives and a re-route analysis. As part of the PADEP Chapter 105 permit process for the Mariner II East Project, SPLP developed and submitted for review a project-wide Alternatives Analysis. During the development and siting of the Project, SPLP considered several different routings, locations, and designs to determine whether there was a practicable alternative to the proposed impact. SPLP performed this determination through a sequential review of routes and design techniques, which concluded with an alternative that has the least environmental impacts, taking into consideration cost, existing technology, and logistics. The baseline route provided for the pipeline construction was to cross every wetland and stream on the project by open cut construction procedures.

Re-Route Analysis

The pipeline route as currently permitted follows an existing SPLP easement through urban development southeast of the Town of Exton. The general route of the Mariner II project in this area of the state is from northwest to the southeast.

There is an existing Texas Eastern Pipeline easement 700 ft to the southwest of the SPLP easement. This easement originates in near vicinity to the SPLP, north of Exton Bypass, then proceeds through larger areas of wetlands and a stream which are not present on the SPLP easement. This easement is set within the same geologic setting; crosses under the same transportation infrastructure; crosses through the same residential area as the SPLP easement, and ultimately this easement proceeds in a southern direction deviating away from the general direction of the Mariner Pipeline project. Therefore, this alternative route presents no advantages over the existing SPLP easement.

There are no existing utility corridors to the east-northeast that provide a practical alternative route. Any alternate route considered to the east-northeast would require the clearing of a new "greenfield" corridor through existing woodlands, increase the number of stream crossings, and possibly encroach on additional private residences before it could rejoin the current route.

In summary, due to the urban setting surrounding the overall route of the Mariner II pipelines in this area, there is no alternative route that could avoid conflicts with existing development. Since SPLP possesses no prior rights for multiple utility lines in any nearby existing corridor, nor any new corridor that could be developed, SPLP anticipates significant legal action would be necessary to acquire a new easement.

Open-cut Analysis

In this area of the Mariner II Pipeline project, the use of an HDD construction method was selected to be employed in many instances due to the infrastructure and amount of residential and commercial development adjacent to and encroaching upon the existing SPLP easement, since the HDD method generally avoids direct disturbance of lands between the points of entry and exit. However, as previously discussed, SPLP performed additional geologic investigations and has determined from this data that a revised HDD design will not be able to avoid the subsurface geologic conditions that resulted in the problems that occurred during installation of the 16-inch pipeline.

SPLP evaluated the select use of open cut construction of the existing permitted right-of-way and determined this would have the least impact, and most effective means, for installing the pipeline and restoring the properties where adequate space exists to employ conventional construction methods. As discussed previously, SPLP's revised construction plans are for 2,114 ft of open trench construction.

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Use of Conventional Auger Bore

Planning for a conventional bore must account for the extent or width of the feature (road, stream, residence, etc.) being bored under, as well as the length and width of the setup-entry pit for setup and operations of the boring equipment, and the receiving pit through which the product pipeline is pulled back through after the boring machinery exits and is removed.

Based on the track record of installations during construction of this pipeline project, conventional auger bores should be limited to approximately 200 linear feet or less, varying by the underlying substrate at a proposed bore location. Conventional auger bores for the 20-inch pipeline, attempted at longer distances, have at times had alignment drift and elevation deflections which have complicated installation. Drift and deflection are safety concerns when boring adjacent to in-service pipelines and other utilities, and there is one existing in service pipeline within the existing SPLP easement and the already installed 16-inch ME II pipeline.

The length of crossing to pass under the aquatic resources; U.S. 30 Exton Bypass; the abandoned Norfolk rail line, and the active Amtrak/SEPTA rail line is beyond the capabilities of this technology. Subset conventional auger bores of the Exton Bypass and abandoned and active railroads was considered and rejected due to difficulty of accessing the alignment and resulting impacts to the public.

Use of FlexBor

SPLP contractors attempted three (3) FlexBors and partially completed two of these to replace HDDs on the Mariner Project. One FlexBor failed in the pilot phase and was replaced with a conventional bore under a highway and open-cut construction. The two partially successful FlexBors completed the pilot phases, but both had difficulties completing the reaming phase. SPLP's analysis is that this technology is not perfected for larger diameter bore attempts.

Use of Direct Pipe Bore

The Direct Pipe bore method is also known as "microtunneling". This method of pipeline installation is a remote-controlled, continuously supported pipe jacking method. During the direct pipe installation, operations are managed by an operator in an above-ground control room alongside of the installation pit. Rock and soil cutting and removal occurs by drilling fluid injection through the cutting tool during rotation at the face of the bore, and the cuttings are forced into inlet holes in the crushing cone at the tool face for circulation to a recycling plant through a closed system. The entire operating system for this method of pipeline installation, including the cutting tool drive hydraulics, fluid injection, fluid return, and operating controls are enclosed inside the 50-inch outside diameter bore pipe being installed. At the launching point/entry pit, the bore pipe is attached to a "jacking block" that hammers the bore pipe while the tool is cutting through the substrate or geology. The cutting tool face is marginally larger in diameter than the pipe it is attached to. As a result, there is minimal annulus space, which minimizes the potential for drilling fluid returns or the production of groundwater returning back to the point of entry. Once the bore pipe is installed, the 16-inch product pipeline will have spider gaskets and spacers installed to prevent coating damage and cathodic protection short circuits, and then will be pulled through the bore pipe.

SPLP evaluated the use of Direct Pipe bore to pass by difficult crossing features within the alignment of HDD S3-0400. The construction specialists who operate this boring equipment identified an 816 ft segment of this alignment to employ this method of construction; which is incorporated into SPLP's revised construction plan.

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CONCLUSION

As stated previously, SPLP has evaluated the events which occurred during the S3-0400 16-inch HDD, and performed additional geotechnical investigations and a geophysical investigation of the alignment. This data revealed inconsistencies in rock quality and other problematic geologic factors at depths through and below the HDD design limitations. Therefore, SPLP has elected to abandon any future HDD attempts to install a pipeline through this area and has developed an alternate construction plan using a combination of open trench construction method in uplands, and a Direct Pipe bore underneath aquatic resources, U.S. 30 Exton Bypass, an abandoned Norfolk rail line, and the active Amtrak/SEPTA rail lines.

The revised construction plan will avoid impacts to public infrastructure and natural resources, and accelerate the completion of the pipeline installation and restoration while adjacent to residential areas.

Attachment 2 contains the HDD plan and profile with the 16-inch HDD IR location data, and the plan and profile views of the direct bore discussed above.

To address the additional impacts associated with these proposed changes in construction methods, a Chapter 102 & Chapter 105 permit modification package has been submitted to the PADEP.

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FEASIBILITY DETERMINATION

Based on the information reviewed by the Geotechnical Evaluation Leader, Professional Geologists, Professional Engineers, and HDD specialists, the HDD Reevaluation Team's opinion is that the proposed alternative construction plans presented within this re-revaluation report will minimize the risk of IRs and impacts to public and private water supplies during the construction phases for this segment of the Mariner II Pipeline Project.

Pertaining to Horizontal Directional Drilling Practices and Procedures; Conventional Construction; Alternatives; and Environmental Effects

5/30/2019
Date

Larry J. Gremminger, CWB
Geotechnical Evaluation Leader
Mariner East 2 Pipeline Project

Pertaining to the practice of geology

5/29/19
Date

Richard T. Wardrop, P.G.
License No. PG-000157-G
Groundwater & Environmental Services, Inc.
Lead Hydrogeologist

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RICHARD T. WARDROP
GEOLOGIST
PG-000157-G

Pertaining to the pipeline stress and geometry

5/29/19
Date

Jeffery A. Lowy, P.E.
Lic. No. PE082759
Rooney Engineering, Inc.
Civil Engineer

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JEFFREY A. LOWY
ENGINEER
PE082759
5/29/19

8

Memo

To: Conservancy Board, Parks & Rec Commission, Pipeline Task Force, Futurist Commission, Sustainability Commission & Historical Commission
From: Jon Altshul
Re: 2020 Budget Request
Date: July 11, 2019

As we enter the second half of 2019, it is time to begin thinking about the Township's budget for 2020.

To that end, if your ABC has its own budget, attached please find an Excel worksheet with individual tabs for each of your ABCs showing:

- 2019 year-to-date budgeted and actual expenditures through June.
- A blank column for the 2020 budget request.

I would be grateful if you could provide me with:

1) 2020 budget requests for each line item
3) A justification for your 2020 budget request. This justification is particularly important for any line item for which you are requesting more budget authority in 2020 than you received in 2020. Please use a separate page if your justification can not fit in the Excel cell.

Note that the Township has many "ABC-related" expenditures. For example, the Township needs to maintain the Blacksmith Shop/Plank House. The Township also incurs legal costs related to the pipeline and consulting costs related to planning work, etc. These line items are separate from your ABC budget; however, to the extent that your ABC intends to make upcoming recommendations to the Board of Supervisors that could result in the expenditure of Township funds beyond current levels, please let me know as soon as possible!

As always, 2019 will be a tight budget year. Preliminary forecasts suggest that the Township will need to continue to deplete its general fund balance in order to achieve a balanced budget. Thus, all Township departments and ABC groups will be under pressure to identify cost savings.

When developing your budget request, remember your group's mission, goals and objectives. Then ask yourselves, what do you need in order to realize your objectives and what do you merely want? Expenditures that don't meet the "need" threshold are unlikely to receive BOS approval.

Please don't hesitate to contact me by phone or email over the summer.

As we plan to have preliminary budget materials prepared for discussions with the Board in early autumn, **please return this completed worksheet to me by no later than Friday, September 27th.** I will follow up with you if I have any questions.

Thank you!

PIPELINE TASK FORCE		2019 Budget	2019 YTD Expenses	2019 Projection	2020 Budget Request	Justification
PIPELINE TASK FORCE EXPENSES	01401 3041	3000	0			