

## EXAMPLE TEMPLATE FOR A PPC PLAN FOR PIPELINES

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The purpose of this example PPC plan is to provide starting point. The project proponent should review DEP's *Trenchless Technology Technical Guidance Document* (310-2100-003), address all potential risk to resources or any potential impacts to the environment, and develop a PPC plan that is commensurate with the size and scope of the project.

The following example includes several “placeholders” for project proponents to enter data and information after they have reviewed the guidance document. It is the sole responsibility of the project proponent to diligently evaluate all risks associated with a project and assess when a more robust PPC plan is needed to abate risk, including preventing and responding to IRs and releases.

Please also refer to the DEP's *Guidance for the Development and Implementation of Environmental Emergency Response Plans*. [Technical Guidance/Document Number 400-2200-001] from April 2001.

<http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4582>

For more information, please visit the Bureau of Waterways Engineering & Wetlands <https://www.dep.pa.gov/Business/Water/Waterways/Pages/default.aspx> or visit the Trenchless Technologies webpage at <https://www.dep.pa.gov/About/Regional/RPCO/Pages/Trenchless.aspx>.

# **Trenchless Technology Inadvertent Return Preparedness, Prevention and Contingency (PPC) Plan**

**[INSERT PROJECT NAME]**  
**[Insert Company Name]**

**[INSERT PLAN PREPARER]**  
**[INSERT DATE PREPARED]**  
**[INSERT DATE UPDATED]**

**DEP Revision Date - March 2020**

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## FOREWORD

**[Insert project-specific content. Sample language provided below.]**

Trenchless technology is defined as a type of subsurface construction work that requires few trenches or no trenches which includes any trenchless construction methodology, including without limitation, horizontal directional drilling, guided auger bore, cradle bore, conventional auger bore, jack bore, hammer bore, guided bores, and proprietary trenchless technology.

Trenchless technology is typically utilized when conventional trenching techniques are not desirable or practicable. Trenchless technology is suitable for a variety of soil and geologic conditions and primarily intended for avoiding obstacles including stream crossings, roads, environmental or historical features, or other features that may limit conventional trenching construction.

This plan satisfies the requirements set forth in 25 Pa. Code [§ 78a.68a](#) and [§ 102.5\(l\)](#) and is written in accordance with DEP's Guidelines for the Development and Implementation of Emergency Response Plans. This plan presents methodologies to prevent, control and minimize the impacts to sensitive environmental resources from **inadvertent returns (IR)** of drilling fluids associated with the proposed crossings using trenchless technology during the construction of the project.

**[OPTIONAL depending on site conditions]** This plan, as applicable, also contains sections outlining special procedures for:

- Water Supplies
- Geologic Concerns (Karst, Voids, Mines)
- Bog Turtle Areas
- Other Special Areas

### 1.0 PROJECT DESCRIPTION

**[Insert project-specific content - General description of project: location, length, size, number of proposed drill location, etc.]**

### 2.0 PREPAREDNESS

**[Insert project-specific content - Sample language provided below.]**

Preparedness planning involves identifying organizational resources, determining roles and responsibilities, developing procedures and planning activities in order to reach a level of readiness to be able to respond timely and effectively to a pollution incident shall one occur.

## **2.1 OPERATIONS PLAN**

**[Insert project-specific content - Sample language provided below.]**

This Section references all of the measures and controls that would be implemented to ensure that all project-specific environmental permits, conditions, and plans will be followed at all times. In addition to federal, state, and local permits and their conditions, the following plans have been developed for this project.

**[List Plans here. Examples given below]**

- Site-Specific Plans for Trenchless Crossing of Stream and Wetland Resources
- Erosion and Sediment (E&S) Control and Site Restoration (SR) Plan
- Prevention, Preparedness, and Contingency Plan (PPC Plan)
- Aids to Navigation (ATON) Plan
- Conservation Plans for Threatened and Endangered (T&E) Species

## **2.2 PERSONNEL, ROLES AND RESPONSIBILITIES**

**[Insert project-specific content - Sample language provided below. Also see Section 4.B of this guidance document]**

To ensure the highest probability of success on proposed trenchless technology installations, a technical team (Team) should be assembled which may include geologists, engineers, scientists, and other consultants having expertise in trenchless technology design, construction, subsurface geology and hydrogeology, and environmental issues.

## **2.3 TRAINING**

**[Insert project-specific content. Also see Section 4.B of this guidance document]**

## **2.4 EMERGENCY RESPONSE PLANNING**

**[Insert project-specific content. Also see Section 4.G of this guidance document]**

### **2.4.1 NOTIFICATIONS AND CONTACT LISTS**

**[Cross-Reference to Section 8 of this Sample PPC Plan (or combine)]**

### 3.0 PREVENTION

**[Insert project-specific content – Sample language provided below.]**

Prevention planning involves written, approved, implemented, and periodically tested programs specifically outlining all actions to be taken to reduce the occurrence of avoidable incidents and minimize impacts shall an incident occur.

The use of trenchless technology for obstacle or resource avoidance during pipeline construction has been utilized extensively with high levels of success. However, IRs of drilling fluids can occur for various reasons. The following sections detail methodologies to be implemented for the Project with the intent of avoiding or minimizing IRs based on a sound understanding of the reasons that cause returns.

#### 3.1 ENVIRONMENTAL AND GEOLOGIC INSPECTION

**[Insert project-specific content - Sample language provided below. Also see Section 2 of this guidance document]**

To ensure that operations associated utilizing trenchless construction methodologies (including HDD) are conducted in accordance with permit conditions, established requirements, and standard trenchless technology industry practice, pipeline companies should provide Environmental Inspectors (EIs) to monitor all pipeline construction activities, with increased attention provided to trenchless technology installations. Specifically, each construction spread should have an appropriate number of EIs, based on the size and complexity of the project. If trenchless technology is proposed, the EIs should have appropriate support from a Pennsylvania-licensed Professional Geologist (PG). The minimum recommended requirements of the PG are as follows:

- Current Professional Geologist licensed in Pennsylvania
- Experienced in the field of hydrogeology
- Received training and experienced on trenchless technology (e.g., methods to monitor trenchless technology activities and progress, and procedures for analyzing loss of circulation and IR events)

The EIs primary responsibility is to focus on environmental compliance. When necessary, this focus may include activities related to trenchless construction methodologies (including HDD). The EIs direct responsibilities, as they relate to this PPC plan, include:

**List here. Examples given below:**

- The EIs should document the progress of the trenchless technology including subsurface characteristics as evidenced by examination of cuttings and returns as the trenchless technology is progressing for the

complete length of the trenchless technology profile either through the pilot hole, a ream hole, or a combination of both, such that one complete logging of the profile geology is acquired as early in the trenchless technology as possible;

- The EIs should document tool and mud pressures, trenchless technology materials (water, bentonite) consumption and document potential losses of circulation,
- The EIs should patrol the land surface along the trenchless technology alignment to inspect for IRs (see Section 3.2). The EIs should communicate regularly with the trenchless technology contractors. The trenchless technology contractor's performance should be evaluated on compliance with permit terms and conditions at the work location; construction design drawings; technical specifications; and PPC Plan requirements.

The EIs, including the PGs, should have “stop-work” authority, which is the authority to stop site-specific activities that violate the environmental permits or conditions. If prior notification or approval is required, such work should not begin until notification is given or approval is received.

### **3.2 TRENCHLESS TECHNOLOGY ALIGNMENT MONITORING AND IR PROTOCOLS**

**[Insert project-specific content - Sample language provided below. Also see Section 4.G of this guidance document]**

Persistent monitoring of the trenchless technology alignment for an IR is an integral component in minimizing adverse environmental impacts. The intensity of this monitoring will vary depending upon the following drilling fluid operational conditions:

- Condition 1: Full circulation
- Condition 2: Loss of circulation
- Condition 3: Inadvertent returns

It is imperative that the driller and geologist interact to develop the best solution for overcoming loss of circulation and inadvertent return. In consultation with the driller, the PG should document as best as possible the downhole geologic and drilling conditions leading to the cause of the loss of circulation. This may include various drilling factors as well as rock fractures, voids, weathered rock zones, faults, conduits, and geologic contacts. The PG should note if voids are mud-filled or open and the size of open voids.

➤ **Monitoring Protocol for Condition 1 - Full Circulation**

When trenchless technology operations are in progress and full drilling fluid circulation is being maintained at one or both of the endpoints, the following monitoring protocol should be implemented.

List here. For example:

- The presence of drilling fluid returns at one or both of the trenchless technology endpoints should be periodically monitored and documented.
- Areas along the drilled alignment should be periodically walked and visually inspected for signs of inadvertent drilling fluid returns as well as surface heaving and settlement.
- Streams should be visually inspected from the banks for a visible drilling fluid plume.
- Drilling fluid products present at the jobsite should be documented.

➤ **Monitoring Protocol for Condition 2 - Loss of Circulation**

When trenchless technology operations are in progress and there is a loss of drilling fluid from an endpoint, or mid-circulation, the following monitoring protocol should be implemented.

List Here. For example:

- DEP and other entities should be immediately notified as addressed in Section 8.0.
- The EI or PG should increase the frequency of visual inspections along the trenchless technology alignment and outside the limits of disturbance (i.e. on public areas and where authorized without trespassing and conduct enhanced monitoring of sensitive environmental resources within [enter amount here - recommended **### feet**] of the trenchless technology alignment). Please see the guidance document for recommend distance)
- The EI or PG should document periods of contractor downtime (during which no drilling fluid is pumped) and the contractor's drilling fluid pumping rate to estimate lost circulation volumes.
- Drilling operations **with losses > [enter amount here - recommended 20%]**<sup>1</sup> should be temporarily suspended and

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<sup>1</sup> Some losses are expected as part of normal drilling operations. When the percentage exceeds 20%, contingencies should be engaged.



DEP should be provided with (1) a **loss prevention report**, which describes the measure(s) that should be implemented to prevent, to the maximum extent practicable, the likelihood of additional losses of circulation; and (2) proof that every public water supplier with public well source within  $\frac{1}{2}$  **mile**<sup>2</sup> and surface water intake within **1 mile**<sup>3</sup> of the trenchless technology alignment, and every landowner with a private water supply within **450 feet**<sup>4</sup> of the trenchless technology alignment has been notified (**1000 feet**<sup>5</sup> in Karst Areas, for example areas underlain by carbonate bedrock). Drilling operations should not resume until all required information has been submitted.

- The trenchless technology contractor should take one or more of the following actions to restore full circulation, as appropriate:
  - Minimize annular pressures by minimizing drilling fluid density consistent with hole cleaning and stabilization requirements.
  - Adjust viscosity as necessary to reduce annular pressures consistent with hole cleaning and stabilization requirements.
  - Adjust gel strength as necessary to reduce annular pressures.
  - Control the balling of material on bits, reaming tools, and pipe to prevent a plunger effect from occurring.
  - Control penetration rates and travel speeds to prevent a plunger effect from occurring.
  - Reduce drilling fluid pumping pressures to the minimum necessary to maintain hole cleaning requirements.
  - Size the hole frequently by advancing and retracting the drill string to keep the annulus clean and unobstructed.
  - Seal a zone of lost circulation using a high viscosity bentonite plug, loss control materials, or grouting.

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<sup>2</sup> This amount is discussed in guidance document.

<sup>3</sup> This amount is discussed in guidance document.

<sup>4</sup> This amount is discussed in guidance document.

<sup>5</sup> This amount is discussed in guidance document.

- Suspend drilling activities as long as necessary to allow plugs, loss control materials, or grout to cure.
- If drilling fluid flow has been suspended, re-establish circulation slowly before advancing.
- In consultation with the driller, the PG should document as best as possible the downhole geologic and drilling conditions leading to the cause of the loss of circulation. This may include various drilling factors as well as rock fractures, voids, weathered rock zones, faults, conduits, geologic contacts, etc. Also, it should be noted if voids are mud filled or open, size of open voids, etc.
- Each construction spread should have an appropriate number of EIs, based on the size and complexity of the project for appropriate and timely coverage. If trenchless technology is proposed, the EIs should have appropriate support from a Pennsylvania-licensed Professional Geologist (PG). The EI or PG should document steps taken by the trenchless technology contractor to (1) restore circulation to the entry and exit and (2) reduce annular pressure down hole. Should the contractor fail to comply with the requirements of this plan, the EI or PG should notify appropriate personnel<sup>6</sup> so that appropriate actions can be taken.
- If circulation is regained, and there is no IR or other loss of circulation within 48 hours, the EI or PG should inform the appropriate personnel and resume the monitoring protocol associated with Condition 1.
- If circulation is not re-established, the EI or PG should increase the frequency of visual inspection along the drilled path alignment and outside the limits of disturbance on public areas and where authorized without trespassing. Additionally, the EI or PG should document periods of contractor downtime (during which no drilling fluid is pumped) and the contractor's drilling fluid pumping rate to estimate lost circulation volumes.

➤ **Monitoring Protocol for Condition 3 - Inadvertent Returns**

If an IR is detected, the following monitoring and operational protocol should be implemented. Also see Section 4.3 in this PPC Plan. Please note, IRs impacting uplands only are addressed in Section 4.2 in this PPC Plan.

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<sup>6</sup> Appropriate personnel are defined by project proponent but should include those with corporate oversight and decision making authority.

List here. For example:

- DEP and other entities should be immediately notified as addressed in Section 8.0 of this PPC Plan.
- The EI or PG should document the location, magnitude, and potential impact of the IR.
- If the IR occurs in surface waters of the Commonwealth, confirmed to be less than **XX** gallons<sup>7</sup>, and is the first IR at a trenchless technology location, trenchless technology operations may continue after;
  - 1) containment is achieved,
  - 2) cleanup of the IR has been completed, with all solid wastes properly managed in accordance with [25 Pa. Code Subpart D, Article IX](#) (relating to residual waste management) (collectively “cleanup”),
  - 3) the project proponent submits to DEP written notice and documentation that the IR has been contained and the cleanup has been completed, and
  - 4) DEP has been notified and given the opportunity to respond. DEP will typically respond within **72 hours** (3 business days) after written notice and documentation is provided.
    - Written notice and documentation of the IR should be provided on the Initial IR and Interim or final report forms attached as Attachment B (the requirements of Initial, Interim, and Final IR reports are set forth below in Section 8.0 (Notifications).in this PPC Plan.
    - The Team should monitor and document the IR as well as periods of contractor downtime and the contractor’s drilling fluid pumping rate to estimate IR volumes.
    - The basis for the estimate of the IR volumes, including any information, measurements, or

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<sup>7</sup> The project proponent should insert an appropriate number here (e.g. 50 gallons has been previously used on other projects). Severity of IRs within surface waters will depend on both the volume of the IR, the size of the surface water and the speed of action per the contingency planning.

calculations supporting that estimated volume, should be provided on the forms attached as Attachment B.

- If the IR is (i) **XX** gallons or greater (should match previous amount listed above), (ii) of unknown quantity, or (iii) is a second or subsequent IR at a trenchless technology location in surface waters of the Commonwealth, drilling operations should be suspended and DEP notified, provided a **written restart report**, and given opportunity to respond. The restart report should contain:
  - An overview of the trenchless technology activities,
  - The stage of the trenchless technology drilling operation (pilot, ream, etc.)
  - The PG's assessment of the strata where IR occurred,
  - The Length, Depth and alignment of drill bit at time of IR,
  - Profile of the drill path as constructed overlain on the permitted drill profile
  - Moving forward - consideration of the use of following options. The restart report should include a detailed justification for eliminated options.
    - Options include:
      - Alternative entry and exit points - including the use of an intercept drill option,
      - Alternative entry and exit angles,
      - Alternative profile depth,
      - Reduced drilling fluid pressures,
      - Thickened drill mud and the use of pre-approved loss circulation materials,
      - Grout techniques,
      - Bore hole casing,
      - Relief wells.
  - Recommendations on measures that would minimize the likelihood of further IRs to adequately protect public health, safety and the environment.

- An analysis of the risk of additional IRs after the use of the proposed mitigation measures.
- The proposed schedule for recommencement of trenchless technology operations and the anticipated duration of the trenchless technology operations.
- The restart report should be sealed by an experienced Pennsylvania licensed professional geologist or experienced Pennsylvania licensed professional engineer.
- Trenchless technology activities may recommence after DEP provides approval to restart. The restart report should not be approved unless there is a demonstration that the mitigation measures would adequately protect public health, safety, and the environment. Periods of contractor downtime and the contractor's drilling fluid pumping rate should also be documented to estimate IR volumes. The basis for the estimate of the IR volumes, including any information, measurements, or calculations supporting that estimate, should be provided on the forms in Attachment B. Notifications to government agencies and water supply owners is addressed in this PPC Plan and the guidance document.

### 3.3 HYDROLOGIC (GROUNDWATER) CONSIDERATIONS

**[Insert project-specific content - Sample language provided below. Also see Section 2 of this guidance document]**

During drilling operations, the trenchless technology contractor should monitor the annulus pressure of returns during the trenchless technology pilot hole phase using an annular pressure monitor. If the pressure spikes significantly and unexpectedly and all other drilling parameters are otherwise unchanged, or if the pressure drops, an inspection of the trenchless technology alignment and adjacent areas for returns should be conducted. The surfacing of groundwater over the trenchless technology profile as a result of trenchless technology activities, other than returning water to the entry or exit pit, could be indicative of an ongoing or impending IR. When groundwater surfacing is identified, it should be photographed, characterized (i.e., location, size, limits, flow rate, clarity, etc.) and appropriate mitigation measures taken (please see below). The inspection and early detection of any surfacing of groundwater over the trenchless construction profile would allow the trenchless construction contractor to stop or adjust the trenchless construction profile to reduce the potential for secondary impacts or an IR. If it is determined that the surfacing of groundwater over the trenchless construction profile, other than returning water to the entry or exit pit, is related to

its construction activities or contains drilling fluids, or the presence of bentonite, the groundwater discharge may be treated as an IR.

During the pilot hole or reaming phase of an trenchless technology, a sudden increase in drilling fluid returns, the appearance of clear water mixed with drilling fluids, or clear water only returning to the entry point or exit point indicates that the trenchless technology has progressed into, or intercepted, a zone of groundwater with a hydrostatic pressure greater than the annular pressure of the trenchless technology phase in progress. If this occurs, the PG should document the current phase of the TT, the location and elevation of the tool, and consult with other experts, as necessary, regarding the known presence, or unknown potential for the trenchless technology to have intercepted a mine pool, just entered a void, encountered a water bearing zone at higher elevation, or encountered a water bearing zone under artesian pressure. The Team (as described previously) should collect samples of the water to test for acid mine pool constituents.

If the volume of produced water is minimal or does not exceed the volumes being used for the trenchless construction phase in progress, then this water should be pumped with the returning fluids and cuttings and recycled into the trenchless construction process. If the volume of produced water exceeds the water demand for continued drilling, the contractor should capture and haul away all produced water for treatment until the test results show that the water can be safely discharged at a suitable location at the trenchless construction location. The Team should obtain any required authorizations for on-site discharge of excess produced waters. If the volume of produced water exceeds the water demand for continued drilling, when weather permits, the necessary portion of the bore hole should be grouted and allowed an appropriate period of time for curing before proceeding with further trenchless construction activities.

If the produced groundwater returns persist after pipe pullback, the contractor should develop and implement a plan to establish a seal to stop groundwater flows or mine pool discharge as to avoid impacts to environment and public and private water supplies.

### **3.4 DRILLING FLUID MANAGEMENT**

**[Insert project-specific content - Sample language provided below. Also see Section 4.D of this guidance document]**

The major component of drilling fluid used in trenchless technology pipeline installation is fresh water, typically obtained at a nearby crossing location. Water itself may not prevent hole collapse, coat boring walls, or efficiently flush cuttings from a borehole. It is generally necessary to modify water by adding a viscosifier, such as naturally occurring bentonite clay. Bentonite clay is comprised of a number of clay minerals with the most prominent one being sodium

montmorillonite, a component of many Pennsylvania soils. Bentonite is non-toxic and has a number of uses in agriculture, food preparation, pet, makeup, and industrial sectors. Releases of significant amounts of bentonite, similar to sediment, can however impact aquatic environments and if unchecked can alter them to an uninhabitable state. Bentonite is not a listed hazardous material or substance as defined by the U.S. Environmental Protection Agency. Following drilling activities, if the product is released into the environment, it can be considered an industrial waste. It should be noted however that it does not meet the criteria of a hazardous waste, as defined by the [USEPA](#).

Some methods of trenchless technology 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 typically stored in a 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 returned to the entrance point for reuse. The excess spoil (cuttings) and drilling fluid are transported to, and disposed of, at an approved and permitted solid waste landfill. Meanwhile as drilling progresses, the borehole is made longer and wider, so additional drilling fluid is needed, which is managed by a trained mud specialist. This specialist should continually monitor the fluid viscosity adjusting fluid composition as necessary to achieve the goals of a stable hole and efficient cutting removal.

In the borehole, the most common situation has drilling fluid returning to the drilling rig in the annular space between the borehole wall and the drill rods pushing the drill bit. At times, drilling circumstances or the conditions in the surrounding soil or geology may lead to drilling fluids escaping the boring through loose, unconsolidated soils or through any number of void-producing geologic structures. The drilling fluid may even travel along manmade subsurface features. This fugitive drilling fluid may come to the surface to upland properties and at times water resources of the Commonwealth. When this occurs, it is called an inadvertent return (IR). DEP defines an IR as an unauthorized discharge of drilling fluids to the ground surface or surface waters, including wetlands, associated with trenchless technology construction methodologies.

In the drilled annulus, the path of least resistance may be an existing fracture or fissure in the soil or rock substrate, or a manmade structure. When this happens, circulation can be lost or reduced. This is known as a Loss of Circulation (LOC). This is a common occurrence in the trenchless technology process that can be effectively managed and controlled during the completion of the trenchless technology. However, the environment may be impacted if the drilling fluid from a LOC is not properly managed and discharges to the surface of the ground or within a waterway or wetland.

To counter LOCs and IRs, the drilling contractor should implement numerous strategies employing drill fluid composition, drill fluid additives, drill speed,

return annular pressure, and grout techniques to abate an inadvertent return situation.

### 3.4.1 DRILLING FLUID CONTROL

**[Insert project-specific content - Sample language provided below. Also see Section 4.D of this guidance document]**

The most effective way to minimize environmental impact associated with trenchless technology installations and specifically with drilling fluids is to maintain drilling fluid recirculation. Maintenance of fluid circulation is the responsibility of the trenchless technology contractor. Monitoring of drilling mud volumes, pressures, and pump rates and returns may assist in determining if significant drill mud loss occurs signaling a possible IR. The following requirements should be placed upon each trenchless technology contractor with respect to drilling fluid control:

**[List here – examples provided below.]**

- Instrumentation - The trenchless technology contractor should monitor the annular pressure of returns during the trenchless technology pilot hole phase using an annular pressure monitor. The contractor should always provide and maintain instrumentation which accurately locates the pilot hole, measures drill string axial and torsional loads, and measures drilling fluid discharge rate. Appropriate personnel should always have access to these instruments and their readings. A log of all recorded readings should be maintained and become a part of the “As-Built” information.
- Composition - The composition of all drilling fluids proposed for use should be properly documented and meet established requirements.
- Recirculation - The contractor should maintain appropriate recirculation of drilling fluid to the bore pit. The contractor should provide solids control and fluid cleaning equipment of a configuration and capacity that can process drilling fluids to the bore pit that produce drilling fluids suitable for reuse.
- Loss of Circulation - The contractor should employ its best efforts to maintain full annular circulation of drilling fluids. In the event that annular circulation is lost or significantly diminished, the



contractor should take one or more of the following steps to restore circulation:

- Stop and wait an appropriate amount of time for bentonite to swell in order to plug any minor circulation losses.
- Clean the hole frequently by advancing and retracting the drill string in order to keep the annulus open.
- Minimize annular pressures by minimizing fluid density consistent with hole cleaning and stabilization requirements.
- Adjust viscosity as necessary to reduce annular pressures consistent with hole cleaning and stabilization requirements.
- Adjust gel strength as necessary to reduce annular pressures.
- Control the balling of material on bits, reaming tools, and pipe in order to prevent a plunger effect from occurring.
- Control penetration rates and travel speeds in order to prevent a plunger effect from occurring.
- Seal a zone of lost circulation using a high viscosity bentonite plug, loss control materials, or grouting. Drilling activities should be suspended as long as necessary to allow plugs, loss control materials, or grout to cure.
- When drilling fluid flow has been suspended, re-establish circulation slowly and before advancing.

### **3.4.2 DRILLING FLUID DISPOSAL**

**[Insert project-specific content. Sample language below adapted from Section 4.D of this guidance document]**

In addition to understanding and considering the aspects and uses of drilling fluid physical properties and in managing drilling fluids, project proponents must consider the disposal of all drilling fluids. Drill cuttings could become contaminated with regulated materials which could, in some instances, cause drilling fluids or cuttings to be classified as a hazardous or special waste.

If drilling fluids or cuttings are contaminated or otherwise require disposal, the trenchless technology contractor should follow appropriate disposal requirements. As part of their due diligence in managing drilling fluids, project proponents prior to commencement of drilling activities should identify a primary disposal location and a back-up disposal location, and a documented protocol should be developed and readily available upon request.

When using drilling fluid additives other than bentonite and water, drillers should characterize the drilling fluid (drill cuttings and drill fluids) prior to disposal or reuse onsite<sup>8</sup> or offsite by determining constituents of material to be disposed.

## 4.0 IR CONTINGENCY

**[Insert project-specific content. Sample language below adapted from Section 4.A and G of this guidance document]**

If an IR is observed, the trenchless technology contractor should take immediate measures to eliminate, reduce, or control the return. The appropriate actions to be taken may depend on the location and time of return, site specific geologic conditions, and the volume of the return.

### 4.1 GENERAL CONDITIONS

**[List here – examples provided below.]**

- The PPC Plan(s), which may include an IR Plan, Water Supply Plan, and Void Mitigation Plan, must be present onsite during drilling operations and must be made available to DEP or CCD upon request as required under 25 Pa. Code [§ 102.5\(l\)](#) and [§ 78a.68a\(b\)](#);
- All required permits and Material Safety Data Sheets must be onsite and made available to DEP required under 25 Pa. Code [§ 78a.6a\(d\)](#);
- DEP should be notified at least **24 hours** prior to the beginning of each trenchless technology, or any type of bore, under waters of the Commonwealth. For Oil and Gas (O&G) activities, this notification must be made through DEP's online Oil and Gas Reporting Electronic (OGRE) application required under [§ 78a.68a\(j\)](#). The OGRE application is accessed via DEP's Greenport login in system at

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<sup>8</sup> Once determined, the driller may apply on-site if the drilling liquid and cuttings meets DEP's co-product determination requirements 25 Pa. Code § 287.8: <https://www.pacode.com/secure/data/025/chapter287/s287.8.html>. The definition of co-product can be found in 25 Pa. Code § 287.1: <https://www.pacode.com/secure/data/025/chapter287/s287.1.html>.

<https://www.depgreenport.state.pa.us>. For non-O&G activities, this notification must be made by contacting the appropriate DEP regional office required under 25 Pa. Code [§ 91.33](#). (See Notifications in Section 8.0 of this PPC Plan.)

- Drilling fluid additives other than bentonite and water must be approved by DEP prior to use required under 25 Pa. Code [§ 78a.68a\(f\)](#). All approved or referenced trenchless technology fluid additives are listed on DEP's web link here:  
<http://www.dep.pa.gov/Business/Energy/OilandGasPrograms/OilandGasMgmt/IndustryResources/InformationResources/Pages/default.aspx>;
- When an IR or loss of circulation is discovered, the IR or loss of circulation should be immediately reported to DEP required under 25 Pa. Code [§ 78a.68a\(g\)](#) and [§ 91.33](#) (see Notifications in Section 8.0 of this PPC Plan).

## 4.2 IRs IN UPLANDS

**[Insert project-specific content. Sample language below adapted from Section 4.A, E and G of this guidance document]**

If an inadvertent return (IR) is identified within or nearby the trenchless technology alignment, within the adjacent uplands (an “upland IR”), then notification, containment, and cleanup should be carried out as specified in this Section. Upland IRs include “punch-out returns”, which may be defined as releases of drilling fluids in uplands that occur within the trenchless technology staging area as depicted in the approved erosion and sedimentation control plan. Punch-out returns may occur for a number of reasons, for example, when the trenchless technology nears the exit point during pilot hole drilling as a result of reductions in the depth of the drill and unconsolidated soil conditions near the exit point.

The EI should be present as the containment and cleanup may need to be conducted outside of pre-approved limits of disturbance. The trenchless technology contractor, EI and PG (as applicable) should work closely to determine the best course of action for IRs occurring within upland areas and should immediately notify appropriate personnel and agencies. (Notification of DEP and other entities is addressed in this PPC Plan.) Upon occurrence of an upland IR that impacts a water supply well, results in a complaint that a water supply well has been impacted, or enters a water of the Commonwealth, drilling operations should be suspended until the procedures in Monitoring Protocol for Condition 3 are complied with.

Drilling operations should immediately be suspended following an upland IR, except if the upland IR is a punch-out return where the drilling fluid is contained

within the permitted limit of disturbance and does not enter a water of the Commonwealth or impact a water supply well. The EI or PG should quantify the upland IR, document its location, photograph the return, determine the proximity of the return to any resource(s), assess the potential to impact any resource(s), and report the incident to appropriate personnel. Information about the upland IR, should be recorded and updated as necessary as a running interim report on the data form provided in Attachment B. As appropriate, the general reporting should be submitted as “Initial”, “Interim”, and then “Final”. The initial, interim, and final reports should comprehensively document the return from initial discovery and notification through final restoration. For prolonged periods of time prior to final restoration, the photos should be updated periodically to reflect seasonal changes on site. DEP, the County Conservation District, the municipality, and affected landowners (private or public) should be promptly notified of the upland IR. The trenchless technology contractor should take swift and appropriate actions to contain, reduce, eliminate, or control the return.

These actions may include, as appropriate:

**[List here. Examples provided below.]**

- Constructing a small pit or sandbag coffer around the return point, installing a section of sediment barrier 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;
- Adjusting the properties of the drilling fluid mixture; and/or
- Adding pre-approved loss circulation materials to the fluid mixture, as listed or referenced on DEP’s website:  
<http://www.dep.pa.gov/Business/Energy/OilandGasPrograms/OilandGasMgmt/IndustryResources/InformationResources/Pages/default.aspx>.

When trenchless technology operations have been suspended pursuant to this section following an upland IR, trenchless technology operations may generally resume after (1) containment of the upland IR is achieved, (2) cleanup of the upland IR has been completed, and (3) DEP receives written notice and documentation that the IR has been contained and the cleanup has been completed.

### 4.3 IRs IN SURFACE WATERS OF THE COMMONWEALTH

**[Insert project-specific content. Sample language below adapted from Section 4.A, E and G of this guidance document]**

If an IR is identified within wetlands, springs, seeps, streams, rivers, lakes, or any other surface water, drilling operations should be suspended<sup>9</sup>. During the suspension the EI should quantify the return (gallons), document its location, photograph the return, assess the potential to impact to the resource(s), and report the incident to appropriate personnel. Information about the return should be recorded and updated as necessary on the data form provided in Attachment B. Each form should be updated as new information is learned about the return and as activities to restore the area occur. The general reporting should be “Initial”, “Interim”, and then “Final”. The initial, interim, and final reports should comprehensively document the return from initial discovery and notification through final restoration.

**NOTE: All IRs in wetlands, springs, seeps, streams, rivers, lakes, or any other surface water, regardless of size, are considered a violation of the Pennsylvania Clean Streams Law and should be reported to DEP and other appropriate agencies.**

**Containment, clean-up, and restoration activities that would require the installation of construction matting, placement of materials in the wetland or waterway, or the entry of construction vehicles and equipment are not authorized without prior DEP and USACE approval.**

If mechanical methods are needed to facilitate containment, clean-up, and restoration, then the following procedures should be followed:

**[List here. Examples provided below.]**

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

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<sup>9</sup> See Section 3.3 of this PPC Plan regarding the surfacing of groundwater related to construction activities in an area other than the entry or exit pits.

- Drilling operations should only resume once the return is contained and successfully recovered and DEP given the opportunity to provide approval of restart in accordance with Monitoring Protocol for Condition 3. The return area should continue to be monitored during the daily inspection.

Ceasing operations completely during pipe pullback can present special situations threatening completion of the pipe necessitating drilling a new boring through what may have been a highly difficult subsurface environment. Therefore, an exception to ceasing operations, with DEP's consent, can be due to an inadvertent return during pipe pullback operations. To avoid delays, it is expected that the project proponent appropriately plans for such contingencies to enable DEP to grant prior approval, where possible. If the application indicates that inadvertent returns would be unavoidable during pipe pull back, planning for that contingency should be clearly articulated in the application materials and addressed in the PPC plan. During situations where persistent inadvertent returns during drilling and reaming operations are apparent, the permittee should contact DEP and propose a special contingency plan detailing measures to deal with anticipated inadvertent returns prior to beginning pull back operations.

#### **4.4 CONTAINMENT AND CLEAN-UP MATERIALS AND EQUIPMENT**

**[Insert project-specific content. Sample language below adapted from Section 4.A and G of this guidance document]**

The trenchless technology contractor should have the necessary containment and clean-up equipment on-site, at the boring location and readily available for use. At a minimum, a combination of some or all the following material and equipment should be on site and in ample supply depending on the extent of sensitive areas:

**[List here. Examples provided below.]**

- Spill sorbent pads and booms
- Compost filter socks
- Straw bales (certified weed-free)
- Wood stakes
- Sand bags
- Sediment barriers (silt fence, compost filter socks, etc.)
- 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 (prior approval required - may be considered for use on large streams)
- Timber Mats (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.

#### **4.5 RESPONSE TO WS INCIDENT**

**[Insert project-specific content. See Section 5.0 of this PPC Plan - if applicable]**

#### **4.5 RESPONSE TO IRs IN BOG TURTLE AREAS**

**[Insert project-specific content. See Section 6.0 of this PPC Plan - if applicable]**

#### **4.6 RESPONSE TO VOIDS**

**[Insert project-specific content. Sample language below adapted from Section 4.A and G of this guidance document]**

In response to drilling activities that encounter unanticipated underground voids, the following steps should be taken. The operation should be suspended until a professional engineer or geologist investigates the site subsurface in order to specifically develop a solution or to recommend another method of proceeding. Please note that this process can be time intensive as any action approved in these areas need to be protective of both the resources of the Commonwealth and the health and safety of the citizens of Pennsylvania and their property. The PPC plan should clearly discuss how this will be addressed.

### **5.0 SPECIAL WATER SUPPLY PROCEDURES [IF APPLICABLE]**

**[Insert project-specific content - Sample language provided below. Please review this guidance document for further details]**

This section describes the methodology used to identify existing water supplies (i.e., private groundwater wells, public groundwater wells, and private water supply intakes) in relation to the project areas and presents a summary of the existing environment regarding these water supplies.

Next, this section provides an evaluation of the risks to the types of water supplies and outlines the prevention, preparedness, and contingencies regarding the potential impacts to those supplies.

Private and public water supplies have the potential of being impacted by hazardous material spills and alteration of aquifer conditions during any of the project activities including:

**[List here – example provided below.]**

- Open trenching and grading activities through karst terrain and mining areas have the potential to expose voids acting as conduits to groundwater which can introduce contaminants to groundwater sources.
- Construction and installation of block valves and pump or compressor station.
- Unanticipated encounters with contaminated soil may also threaten water resources and supplies.
- Additional risks to private and public water supplies may result from the activities associated with the trenchless technology method of pipeline installation, specifically, the use of drilling fluids during the drill process.
- Hydrostatic testing may require the use of and discharge to public water supply surface waters.

For this project, all landowners are to be identified with a private water supply within 450 feet of a trenchless technology alignment (1000 feet in Karst Areas) or public water suppliers with a well(s) within ½ mile or a water supply intake within 1 mile downstream of the crossing. These entities should be contacted within 15 days prior to the commencement of trenchless technology operations. (See Notifications in Section 8 of this PPC Plan.)

## **5.1 PUBLIC AND PRIVATE OWNER CONSULTATIONS**

**[Insert project-specific content. Please review this guidance document for further details.]**

## **5.2 PROCEDURES**

**[Insert project-specific content - Sample language provided below. Please review this guidance document for further details.]**

Prior to the start of any trenchless technology in a particular location, all landowners with a private water supply source located within a minimum of 450 feet (a minimum of a 1000 feet in Karst areas or areas underlain by carbonate bedrock) from the trenchless technology alignment should be offered an alternative temporary water supply (e.g., water buffalo with potable water adequate for purposed served) that should be installed and maintained, at project



proponent's expense, for the entire period of the trenchless technology. Installations should be approved as required with local zoning and building ordinances.

If a landowner who had not previously been connected to a temporary water supply reports a complaint of an impact to his or her water supply, the project proponent should immediately respond to the complaint and promptly provide the landowner with bottled drinking water. Temporary alternative water supply should be provided at the project proponent's expense until the impacted water supply is restored or replaced to the satisfaction of the property owner.

For each landowner with a private water supply located within **450 feet (1000 feet** in Karst areas) from the trenchless technology alignment, the project proponent should offer to collect water supply samples, before during and after the trenchless technology, at the project proponent's expense. Sampling should address quantity (yield) (unless the well is not accessible) and quality of the existing source. Once available, sampling results should be made available to DEP within 24 hours of a request by DEP for the results. If any impact to a private water supply attributable to pipeline construction is identified after post-construction sampling, the project proponent should restore or replace the impacted water supply to the satisfaction of the private water supply owner.

### **5.2.1 Response to Water Supply Complaints**

**[Insert project-specific content - Sample language provided below. Also see examples on DEP's Pipeline Portal such as [ME2 Water Supply PPC Plan](#) or [ASR Well & Spring Monitoring Plan](#).]**

If an impact occurs on the groundwater supply or the water quality as a result of construction, the project proponent should work with the landowner to ensure a temporary supply of water, and if necessary, replacement of permanent water supply. Mitigation measures will need to be coordinated with the individual landowner in order to meet the landowner's specific needs

**[List here – example provided below.]**

- Any water supply complaints received that may be related to trenchless technology or related construction operations must be reported to DEP as required under 25 Pa. Code [§ 91.33](#). For O&G activities, reporting must be done as required under 25 Pa. Code [§ 78a.68a\(j\)](#).
- Potable water should be supplied to affected users until the situation is resolved.

- Water quality and quantity re-sampling should be conducted to determine the extent of impact and help determine remedial actions, if any.
- All complaints received regarding water well yield or quality should be tracked and documented, including the results of any water quality or yield testing that was performed, and how the complaint was resolved.

## 6.0 SPECIAL BOG TURTLE (BT) AREA PROCEDURES [IF APPLICABLE]

**[Insert project-specific content- Sample language provided below]**

Following final consultation with the USFWS, the bog turtle (*Glyptemys muhlenbergii*), a federally threatened species, has been identified along the construction corridor for this project. **(REFERENCE ANY CORRESPONDENCE HERE.)** This has resulted in the identification of **[LIST HERE LOCATIONS WHERE BOG TURTLE CONCERNS HAVE BEEN IDENTIFIED]** that would require special bog turtle IR procedures. In accordance with USFWS final determination letter, the following procedures including pre-construction and during construction procedures, should be followed to ensure no bog turtles are negatively impacted and outlines a contingency plan for IRs for special concern area(s).

The primary potential environmental impact associated with trenchless technology revolves around the use of drilling fluids. IR of drilling fluids is a potential environmental concern in general and is of concern to the USFWS regarding potential impacts to bog turtles. The purpose of this IR Plan is to present a plan to further minimize potential impacts to bog turtles associated with all phases of the trenchless technology process, in particular in the event of an IR. The goal of this plan is to avoid impacts to the bog turtle. The objectives to carry out this goal are:

**[List here. Examples provided below.]**

- List known or potential bog turtle habitats.
- Ensure that 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 habitats are marked onsite prior to construction and that all work areas are appropriately defined (e.g., staked) according to project plans.

- Ensure bog turtle habitats are sealed off and protected from construction activities.
- Provide daily inspection of contractor activities to ensure compliance with project work plans.
- Provide daily inspection of the trenchless technology alignment and adjacent areas for timely detection of IRs.
- Ensure all appropriate notifications are made to the USFWS, United States Army Corps of Engineers (USACE) and DEP, and all other applicable regulatory agencies in a timely manner and that all required documentation is completed as identified in this document.

## 6.1 PRE-CONSTRUCTION ACTIVITIES RELATED TO BOG TURTLE

**[Insert project-specific content- Sample language provided below.]**

All construction, including professional survey personnel should be trained on implementation of this plan, the identification of this species and its biology, and the location of the areas of concern. All construction personnel, Environmental Inspector (EI), and onsite bog turtle Specialist (BT Specialist)<sup>10</sup> should be provided with the necessary project plans, mapping, permits, authorized impacts, clearance letters, conservation plans, and this contingency plan prior to the start of construction activities.

To reduce the risk of unintentional impacts to bog turtles and their habitats, a BT Specialist should inspect the surveyed (e.g. staked) entrance and exit locations and access roadways associated with the trenchless technology prior to disturbance to ensure that they are not sited in bog turtle habitat and in accordance with project plans. In addition, the boundary of the bog turtle habitat nearest to the work areas should 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, sediment barrier should 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.

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<sup>10</sup> 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](#).

## **6.2 CONSTRUCTION ACTIVITIES FOR BOG TURTLE**

**[Insert project-specific content – Sample language provided below.]**

All procedures implemented by the drilling contractor discussed previously in this contingency plan to reduce the potential for, identification, and notification of IRs should be implemented at all trenchless technologies. At the potential bog turtle locations, inspection of the work areas and compliance with the project plans should be carried out daily by the BT Specialist. In addition, when drilling commences the BT Specialist should inspect all disturbed upland areas and sediment barriers multiple times for bog turtles and IRs. In addition, each wetland should be inspected once-daily for the occurrence of IRs, including the surfacing of groundwater by the BT Specialist. These inspections should continue until drilling is completed and the IR risk in the wetlands has been removed.

## **6.3 BOG TURTLE OBSERVATIONS AND HANDLING**

**[Insert project-specific content - Sample language provided below.]**

Construction personnel should be trained to report all turtle observations to the EI immediately upon siting. All bog turtle observations that are not in harm's way should be documented within project logs and reported to the USFWS, the USACE, and DEP within the final report. Documentation should 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 should be handled by the BT Specialist assigned to the area and only if handling is determined necessary to remove the risk of injury or death. Other project personnel may be 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 should only be moved to an area within the same wetland, only to a distance necessary to remove the threat. Additional sediment barrier 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 should also be considered if practicable to completing the drill. Any bog turtles found within harm's way should be reported to the USFWS immediately as an incident and how it was handled.

## **6.4 RESPONSE TO INADVERTENT RETURNS IN BOG TURTLE AREAS**

**[Insert Content – Sample language provided below.]**

See Section 4.0 for IR Contingencies outside of Bog Turtle Areas. For IRs that occur in the vicinity of known bog turtle habitat, see additional response protocols to follow below.

#### 6.4.1 Inadvertent Returns in Bog Turtle Wetlands or Streams

**[Insert Content – Sample language provided below.]**

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

**Containment, clean-up, and restoration activities that would require the installation of construction matting, placement of materials in the wetland or waterway, or the entry of construction vehicles and equipment are not allowed without prior DEP, USACE, and USFWS approval.** If upon reporting the incident, and under further consultation with the agencies, the IR is determined to be significant enough to warrant containment, clean-up, and restoration via mechanical methods, then the following procedures should be followed:

**[List here. Examples provided below.]**

- Draft containment and restoration plan, outlining the limits, types, and duration of disturbances, should be submitted to DEP, the USACE, and the USFWS for review and approval.
- Appropriate aquatic resource encroachment permits should 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 may resume when the IR is contained and successfully remediated. The IR area should continue to be monitored during the daily inspection.

With prior DEP authorization, one exception to ceasing drilling operations would be a return 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.

## 7.0 OTHER SPECIAL AREA PROCEDURES [IF APPLICABLE]

[If applicable, insert project-specific content]

## 8.0 NOTIFICATIONS

[Insert project-specific content - Sample language provided below.]

- **Commencement of Trenchless Technology:** Notify DEP at least **24 hours** prior to the beginning of each trenchless technology, or any type of bore, under waters of the Commonwealth as to the anticipated date of commencement. For Oil and Gas projects, this notification must be made through DEP’s online Oil and Gas Reporting Electronic (OGRE) application. The OGRE application is accessed via DEP’s Greenport login in system at <https://www.depgreenport.state.pa.us>. All other projects must notify the appropriate DEP regional office (see contact list).
- **Pullback:** Notify DEP at least **24 hours** prior to commencing pullback at any trenchless technology site as to the anticipated date of commencement.
- **Impact to Water Supply:** Notify DEP with immediate verbal notification of any citizen complaint it receives of an impact to a private or public water supply upon becoming aware of an impact to a private or public water supply, and when an alternate water supply is provided. This notification includes a detailed description of the incident using the best currently available information which, for Oil and Gas Projects, should also be reported to DEP’s online Oil and Gas Reporting Electronic (“OGRE”) application within **24 hours**. The OGRE application is accessed via DEP’s Greenport login in system at <https://www.depgreenport.state.pa.us>.
- **Inadvertent Returns:** When an IR is discovered (regardless of whether the IR is to uplands or waters of the Commonwealth), DEP should be provided with immediate verbal notification and within **24 hours** reported to the County Conservation District, the municipality in which the IR occurred, any landowners affected by the return, and public water suppliers with an identified well source located within ½ mile of the trenchless technology alignment, public water intakes located within 1 mile downstream, and every landowner with a private water supply located within **450** feet of the trenchless technology alignment (**1000** feet in Karst areas). IRs occurring in or flowing into waters of the Commonwealth also require notification to the Pennsylvania Fish and Boat Commission, U.S. Army Corp of Engineers. If necessary for emergency response or remedial activities in, along or across, or projecting into aquatic resources, an

emergency permit may be sought from the appropriate DEP office and must meet the requirements in [§ 105.64](#) (relating to emergency permits).

- **Loss of Circulation:** When a loss of circulation is identified, DEP should be provided with immediate verbal notification and within 24 hours reported to identified public water suppliers with a well source located within ½ mile of the trenchless technology alignment and every landowner with a private water supply located within **450** feet of the alignment (**1000** feet in Karst) that a loss of circulation occurred and that their water supply may be impacted.
- **Groundwater:** When trenchless construction activities result in the surfacing of groundwater (other than at the entry or exit pit where the volume of water does not exceed the volume of water being used for trenchless construction), DEP should be immediately notified and within **24 hours** reported to identified public water suppliers with a well source located within ½ mile of the trenchless construction alignment and every landowner with a private water supply located within **450** feet of the alignment (**1000** feet in Karst Areas) that a surfacing of groundwater occurred and that their water supply may be impacted.
- **Interception of Mine Pool or Mine Seeps:** When trenchless construction activities intercept a mine pool or a mine seep, DEP should be immediately notified.

**[IDENTIFY RESPONSIBLE PARTY WITHIN THE COMPANY]** shall be responsible for the notifications described below of all returns occurring in or flowing into aquatic resources. The notifications should initially be made via phone to DEP's Emergency Response numbers listed below and then to the appropriate agency personnel via submittal of an initial IR data form located in Attachment B. Within one (1) business day of verbal notification of an IR, DEP should be provided with an initial written report regarding the IR.

The Pennsylvania Clean Streams Law regulations require that when any pollutant 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 should notify DEP immediately. Therefore, for all IRs in aquatic resources, DEP should be immediately notified using the appropriate DEP regional emergency number upon discovery:

**[LIST PERTINENT AGENCIES AND SPECIFIC CONTACT INFO]**

- DEP
- PFBC
- USACOE
- USFWS (if Bog Turtles or other threatened or endangered habitat that is affected)
- Local agencies and municipalities who are downstream users of water, as applicable]

Following notification to the appropriate emergency and regulatory numbers, notification should be made to the below listed individuals utilizing the IR form. This should consist of the initial reporting of the return, open consultation and further reporting to DEP and the USACE regarding the IR. When necessary, further consultations should be held regarding remediation approval, restoration approval, and the need for appropriate approval or permits. The IR data form should be used to document the consultation and approvals and report final remediation and restoration.

After submission of the initial written report, DEP should be provided with weekly interim written reports regarding any IR until a final report is submitted. The interim and final reports should be submitted on forms approved by DEP.

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**PPC PLAN ATTACHMENT A  
Trenchless Technology (TT) Table**

<b>TT Crossing Identifier</b>	<b>Aquatic Resource Crossed</b>	<b>County</b>	<b>Municipality</b>	<b>Travel and Clearing LOD or Travel LOD (Identify)</b>	<b>EV Wetland (Y/N)</b>	<b>Bog Turtle Occupied Wetland (Y/N)</b>
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**PPC PLAN ATTACHMENT B**

**Inadvertent Return Report - Data Form**

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**INADVERTENT RETURN REPORT - DATA FORM**

<b>Report Date:</b>	<b>HDD Alignment No.</b>	
<b>Project Site:</b>	<b>HDD Company</b>	
<b>Date and Time when IR was discovered</b>	<b>Date:</b>	<b>Time:</b>
<b>Location: Street</b>	<b>Munic:</b>	<b>County:</b>
<b>LAT:</b>	<b>From</b>	<b>To</b>
<b>Decimal</b>	<b>Station</b>	<b>Station:</b>
<b>LONG:</b>		
<b>Decimal</b>		
	<b>:</b>	

**DEP Permit Nos  
(102 and 105)  
Corps Permit No.  
IR Tracking ID  
Name of EI and/or  
PG**

**I. BACKGROUND INFORMATION**

- A. Name of all person(s) providing information for this report and contact information:**
- B. Material(s) released:**
- C. Description of the release:**
- D. Estimated quantity of material released:**
- E. Estimated aerial extent of material released:**
- F. Has IR been contained within the limit of disturbance? (Provide dates and times)**      Y/N    Note:
- F1 What revisions to drilling were implemented prior to resumption of drilling?**
- G. T&E / bog turtle area:**      Y/N    Note:
- H. Trout stream:**      Y/N    Note:
- I. EV water:**      Y/N    Note:
- J. EV wetland:**      Y/N    Note:
- K. Any downstream impacts (If yes, describe) Public? Private?**      Y/N    Note:

- K1 Did a fish kill occur? (Provide dates & times)** Y/N Note:
- K2 Has the substrate been coated?** Y/N Note:
- K3 Were any water supplies impacted? (Provide dates and times)** Y/N Note:
- K4 If water supplied were impacted, were the owner of the water supplies notified? Has anything been provided to the owners of the impacted water supplies? (Provide dates and times)** Y/N Note:

## II. VERBAL NOTIFICATIONS

**DEP Emergency Notification:** Who made call on behalf of permittee?:  
 Phone number called:  
 Date:  
 Time:  
 Person called:  
 V/M? Note:

**County Conservation District Notification:** Who made call on behalf of permittee?:  
 Phone number called:  
 Date:  
 Time:  
 Person called:  
 V/M? Note:

**USACE Regulatory Notification:** Who made call on behalf of permittee?:  
 Phone number called:  
 Date:  
 Time:  
 Person called:  
 V/M? Note:

**Pennsylvania Fish and Boat Commission Notification:** Who made call on behalf of permittee?:  
 Phone number called:  
 Date:  
 Time:  
 Person called:  
 V/M?

**Other Emergency Notifications:** Who made call on behalf of permittee?:  
 Phone number called:  
 Date:  
 Time:

Person called:  
V/M?

Note:

**LIST ANY NOTIFICATION OF INCIDENT MADE TO WATER INTAKES, WATER WELL OWNERS AND LANDOWNERS**

Name:	Date:	Time:	Public or Private	Note:
Name:	Date:	Time:	Public or Private	Note:
Name:	Date:	Time:	Public or Private	Note:
Name:	Date:	Time:	Public or Private	Note:

**III. ACTIONS TAKEN/FOLLOW UP**

**IMMEDIATE ACTION TAKEN:**

- A. When did the release occur?
- B Volume of IR (gallons)
- B1. Does this volume represent the total released from the beginning?
- B2. Estimated areal extent of IR.
- B3. Extend of downstream release, if any. (feet)
- C. What is the duration of the IR?
- D. Date and Time of cessation of drilling.      Date:                      Time:                      Note:
- E. Was drilling resumed?      Y/N      Note:
- E1. If so, what was the technical basis for resuming drilling?
- E2. If so, has the release continued or another release occurred?      Y/N      Note:

**CORRECTIVE MEASURES SUMMARY:**

- A. Was the IR ceased?      Y/N      How and when?
- A1. If so, what modifications to the HDD process were used?
- B. Was the IR contained?      Y/N      How and when?
- C. Was the drilling fluid recovered?      Y/N      How and when?
- D. Was drilling resumed?      Y/N
- D1. If so, what modifications to the drilling process were used?

- D2. If so, has another release occurred? Y/N**
- E. Describe root cause(s) of IR.**
- F. Have impacts been remediated?**
- F1. If so, date of remediation.**

**MAP: SEE ATTACHED**

**PHOTOGRAPH(S): SEE ATTACHED**

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**IV. PHOTO DOCUMENTATION**

**PHOTO NUMBER**

Comments:

**PHOTO NUMBER**

Comments:

**PHOTO NUMBER**

Comments:

**PHOTO NUMBER**

Comments:

**Printed Name, Title and Signature of Person(s) Submitting this Report**

\_\_\_\_\_  
**Name**

\_\_\_\_\_  
**Title**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Date**

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