

<p><i>Tidal Wetlands License No.</i> _____ <i>MDE Permit No.</i> _____</p>	<p>FRAC-OUT CONTINGENCY PLAN <i>for</i> _____ CONDUIT O.D. SIZE (_____ INCHES) <i>and</i> ESTIMATED BORE SIZE (_____ INCHES)</p>
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HORIZONTAL DIRECTIONAL DRILLING
beneath the

_____ BODY OF WATER/WETLAND

_____ CITY, _____ COUNTY, MARYLAND

1.0 Purpose

This Frac-Out Contingency Plan is to provide assurance of adequate monitoring, detection, containment and cleanup for potential discharge of drilling fluid or other materials (referred to as an “inadvertent return” or “frac-out”) resulting from the horizontal directional drilling (HDD) crossing of the [Click here to enter text.](#) authorized by this Wetlands License or Permit.

Licensee: _____

Design Engineer: _____

Independent Monitoring Contractor (IMC): _____

2.0 Best Practices

The Licensee and their HDD Contractor, under observation of the Design Engineer and the IMC, shall follow the best management practices contained in *Horizontal Directional Drill Good Practices Guidelines* by HDD Consortium, David Bennett, PhD, Samuel Ariaratnam, PhD, & Casey E. Como (2008).

3.0 Pre-Construction

Before construction begins:

- 3.1 The Licensee shall conduct a bathymetric or topographic survey of all HDD stream crossings to ascertain the effect of HDD and installation of conduits on the topography of wetlands and waterway bottoms. The survey must be conducted 100 feet from each side of the HDD centerline.
- 3.2 The Licensee shall conduct a preconstruction meeting. The Licensee shall include the following representatives in a notice of the preconstruction meeting at least two weeks before the meeting is to be held:
 - HDD Contractor
 - Design Engineer
 - IMC
 - Maryland Department of the Environment, Water Management Admin., Compliance Program (MDE)
 - Board of Public Works, Wetlands Administration
- 3.3 If the project requires Coast Guard approval, the Licensee shall notify and provide project plans to the Commander, Fifth Coast Guard District, Portsmouth, Virginia.

4.0 Construction

During construction:

- 4.1 The HDD Contractor and the IMC shall perform daily visual monitoring of the drilling route and surrounding area during all HDD operations and shall make and retain daily inspection notes.
- 4.2 The IMC shall provide weekly HDD monitoring reports to MDE and to the Wetlands Administration, including the following information:
- Volume of drilling material used and recovered
 - Method of material disposal
 - Depth of bore below the water body or wetland bottom
- 4.3 The following containment materials must be available at the HDD crossing location and adequately designed for the specific project; including but not limited to:

Material	Required items are indicated below
hay bales	<input type="checkbox"/>
silt fence	<input type="checkbox"/>
plastic sheeting	<input type="checkbox"/>
turbidity barriers/#linear feet of turbidity curtain	<input type="checkbox"/>
turbidity curtain height #	<input type="checkbox"/>
shovels, pails	<input type="checkbox"/>
push brooms	<input type="checkbox"/>
squeegees	<input type="checkbox"/>
pumps and sufficient hose	<input type="checkbox"/>
mud storage tanks	<input type="checkbox"/>
boat(s)	<input type="checkbox"/>
vacuum truck on 24-hour call	<input type="checkbox"/>
generator with light tower	<input type="checkbox"/>
other 1:	<input type="checkbox"/>
other 2:	<input type="checkbox"/>
other 3:	<input type="checkbox"/>

5.0 Response to Frac-Out

A frac-out is a discharge of drilling fluid or other materials. If a frac-out is observed or has occurred in federally or State regulated waters or wetlands, the Licensee is responsible for following this Frac-Out Contingency Plan. Specifically, the Licensee shall:

5.1 Assess the frac-out to determine the amount of drilling fluid released and the potential for the frac-out to reach the water or wetlands.

5.2 If frac-out is at an **Upland location**:

- Promptly notify HDD Contractor's on-site supervisor, Design Engineer, and IMC.
- If frac-out cannot be controlled, immediately suspend drilling operation until containment is in place.
- Evaluate frac-out to determine the most appropriate cleanup measures, including if containment structures are needed.
- Implement appropriate cleanup measures to contain and remove frac-out drilling fluid to the extent practicable.
- Depending on volume of drilling fluid lost, remove the fluid by vacuum truck and/or shovel. The IMC may determine that small amounts are unrecoverable.
- Remove drilling fluids at a rate sufficient to maintain containment of the frac-out during all drilling operations.

5.3 If frac-out is in a **Tidal Wetland** or **Nontidal Wetland location** (includes 25-foot non-tidal wetland buffer):

- Suspend forward drilling and promptly notify:

Contacts	Phone	Email
HDD Contractor's on-site supervisor		
Design Engineer		
Independent Monitoring Contractor		
MD Dept. of Environment (Compliance)	410-537-3510	
Board of Public Works	410-260-7791 <i>or</i>	
Wetlands Administration	410-260-7764	
United States Army Corps of Engineers Baltimore District	410-962-3671	
USACE Project Manager		

- Evaluate frac-out to determine the appropriate cleanup measures, including if containment structures are needed. The Licensee shall consult with MDE, the Wetlands Administrator (if in a tidal wetland), and the USACE concerning the evaluation and proposed cleanup measures as soon as possible, and take appropriate, immediate action to stop and contain the frac-out.
- Implement appropriate cleanup measures to contain and remove frac-out drilling fluid to the extent practicable. Appropriate cleanup measures are determined by the specific circumstances of the frac-out and may include, but are not limited to:
 - Removing the drilling fluid by hand if efforts to contain and remove the drilling fluid will result in further disturbance by equipment and personnel.
 - Diluting the drilling fluid with fresh water or allowing the fluid to dry and dissipate naturally or a combination of both if hand removal is not possible.

- Using small collection sump pumps (less than 5 cubic yards) to remove the fluid, if the amount of the released drilling fluid exceeds that which can be contained with hand-placed barriers.
- Store removed drilling fluid in a temporary holding tank or other suitable structure, out of the wetland area and wetland buffer pending reuse or disposal.
- Evaluate current drill profile (e.g., drill pressures, pump volume rates, drilling mud consistency) to identify methods to prevent further frac-out events.
- Resume drilling only when evaluation, regulatory agency coordination, and cleanup are complete and prevention measures are in place.
- Submit a report, prepared by the IMC and the Design Engineer summarizing the incident, including the data used to evaluate the drill profile at the time of the frac-out, to MDE, the Wetlands Administrator (if in a tidal wetland), and the USACE.

5.4 If frac-out is at an **In-Waterbody location**:

- Suspend forward drilling and promptly notify:

Contacts	Phone	Email
HDD Contractor's on-site supervisor		
Design Engineer		
Independent Monitoring Contractor		
MD Dept. of Environment (Compliance)	410-537-3510	
Board of Public Works	410-260-7791 <i>or</i>	
Wetlands Administration	410-260-7764	
United States Army Corps of Engineers Baltimore District	410-962-3671	
USACE Project Manager		

- Evaluate frac-out to determine the most appropriate cleanup measures, including if structures are needed to contain the plume. The Licensee shall consult with MDE, the Wetlands Administrator (if in a tidal wetland), and the USACE concerning the evaluation and proposed cleanup measures as soon as possible, and take appropriate, immediate action to stop and contain the frac-out.
- Implement appropriate cleanup measures to contain and remove frac-out drilling fluid to the extent practicable. Appropriate cleanup measures are determined by the specific circumstances of the frac-out and may include, but are not limited to:
 - Pump or vacuum truck,
 - Hand-placed containment recovery,
 - Silt curtains, turbidity barriers, and similar measures.
- Store removed drilling fluid in a temporary holding tank or other suitable structure, out of the wetland area and wetland buffer pending reuse or disposal.
- Evaluate current drill profile (e.g., drill pressures, pump volume rates, drilling mud consistency) to identify methods to prevent further frac-out events.

- Resume drilling *only* when evaluation, regulatory agency coordination, and cleanup are complete and prevention measures are in place.
- Submit a report, prepared by the IMC and the Design Engineer summarizing the incident, including the data used to evaluate the drill profile at the time of the frac-out, to MDE, the Wetlands Administrator (if in a tidal wetland), and the USACE.

6.0 Cleanup Guidelines

- Hand cleaning means using shovels, buckets, and soft-bristled brooms without causing damage to vegetation.
- Containment structures (turbidity curtains, booms, or other) must be pumped out.
- Ground surface must be scraped to bare topsoil without causing undue loss of topsoil or vegetation damage.

7.0 Close-Out Procedures

After the drilling fluid has been contained and removed, the Licensee shall:

- 7.1 Recycle or dispose of the removed drilling fluid at an authorized upland location or commercial disposal facility.

Note: Recovered drilling mud may not be deposited in waters of the State, streams, water bodies, or storm drains.

- 7.2 Remove all containment structures and materials unless otherwise specified by the Design Engineer with approval from the appropriate regulatory agencies.
- 7.3 Consult with MDE and the USACE concerning restoration.

8.0 Final Completion Reporting

After construction:

- 8.1 If a pre-construction bathymetric survey was required (for stream crossings), the Licensee shall conduct a final bathymetric or topographic survey of the HDD crossing in the same area as the preconstruction survey.
- 8.2 The Licensee shall submit a final report prepared by the IMC and the Design Engineer to MDE. The report must summarize the impacts of the HDD project, if any, and include the weekly monitoring report results. The report must also include the post-construction bathymetric survey and a comparison with the preconstruction bathymetric survey.

Note: There may be a need for additional Federal, State, County or Municipality authorizations or approvals associated with the aforementioned information. This guidance is not meant to replace or substitute for any other applicable regulations or requirements.

By signing below, I certify that I have read this document, that I know and understand the meaning and intent of this Frac-Out Contingency Plan, and that in the event of a frac-out, I agree to follow this plan.

_____ *representing* _____
Signature (Licensee) *Company*
Printed Name: _____ *Date:* _____