

**HDD FRAC OUT PLAN**  
**Response to Data Request 106**  
**Hydrogen Energy California**

## **1.0 Construction Monitoring**

Pipeline construction personnel will monitor all directional drilling during construction:

- Prior to drilling, personnel will be familiarized with frac-out detection, notification and response.
- Monitoring personnel will have appropriate communication equipment to contact the HDD construction foreman.
- Observation of the crossing area is to be conducted during all drilling activities, particularly when mud circulation is active.
- Upon a sustained loss in fluid pressure or loss of circulation, the HDD operator will immediately notify the construction monitors with the position of the drill head.

## **2.0 Response to Frac-Outs**

In the event of a frac-out, the release will be assessed to determine the amount of drilling mud released and potential for the release to reach a waterway. Response measures will vary based on the location of the frac-out:

### **Land Locations**

- Initiate immediate suspension of the directional drilling operation.
- Advise HECA /construction contractor representatives.
- Evaluate the release to determine if containment structures will effectively contain the release.
- Install containment as needed to prevent an uncontrolled release of drilling mud.

### **Waterway Locations**

- Initiate immediate suspension of directional drilling operations.
- Advise HECA/construction contractor representatives.
- Document and monitor release.
- Review drill pressures, pump volume rates, and drill profile.
- Implement steps to contain frac-out material and evaluate the current drill profile to identify means to prevent further frac-out events.

### **3.0 Containment**

Containment, response and clean-up equipment shall be available at both sides of the HDD crossing location. Equipment shall include the following:

- straw bales
- silt fencing
- plastic sheeting
- mud pumps and hose
- mud storage tanks
- vacuum truck

#### **Land Locations**

- Deploy appropriate containment measures to contain and recover drilling mud as feasible.
- Remove excess mud at a rate sufficient to prevent an uncontrolled release.

#### **Wetland Locations**

- Evaluate the release and deploy appropriate response and containment methods.
- Small surface releases that do not allow practical collection of released material shall be diluted with fresh water and/or the fluid allowed to dry and dissipate naturally.
- Surface releases exceeding a volume that allow complete containment with hand-placed barriers can use small collection sumps (less than 5 cubic yards) to remove released drilling mud by the use of portable pumps and hoses.
- Surface releases exceeding volumes that can be contained and collected using small sumps shall require a suspension of drilling operations until surface release volumes can be brought under control.
- Excess mud will be held within a contained area and removed using pumps at a rate sufficient to maintain secure containment.
- Mud will be stored in a temporary holding tank out of the wetland for reuse or disposal in an approved disposal facility.

#### **In-Stream Locations**

- In general, containment is not feasible for in-stream releases. Conditions are to be assessed to determine whether hand-placed containment, recovery or other measures, such as silt curtains, would be effective and beneficial at the specific release site.

- After initial assessment drilling operations will be allowed to resume unless the release poses a safety or environmental threat as determined by the HECA/construction contractor representative.

#### **4.0 Notification**

For all drilling mud releases during HDD crossings, the Contractor will notify the drilling foreman. The drilling foreman will immediately notify the appropriate HECA/construction contractor representative as required in the project communications plan. A HECA/construction contractor representative will assess the severity of the release and determine if further notifications to other agencies are required. A HECA/construction contractor representative will complete all agency notifications.

#### **5.0 Clean-up**

Clean-up measures will be implemented following frac-outs in on shore areas.

- Drilling mud will be cleaned up using methods that do not cause extensive ancillary damage to existing vegetation. This would include the use of hand tools such as shovels, buckets and brooms. If allowed by the HECA/construction contractor representative, fresh water washes can also be used if deemed beneficial and feasible.
- Containment structures will be pumped out and the ground surface scraped to bare topsoil without causing undue loss of topsoil or ancillary damage to existing and adjacent vegetation.
- Material will be collected in containers for temporary storage prior to removal from the site.
- Potential for secondary impact from the clean-up process is to be evaluated. A HECA/construction contractor representative shall determine if clean-up activities are to continue if physical damage to the site will exceed the benefits of removal activities.
- In general, no clean-up measures will be initiated for in-stream releases. If site specific conditions are such that containment and clean-up may be feasible and beneficial, fresh water washes or other low-impact steps may be employed without undue disturbance to the stream banks and bed.