



AER Drilling Waste Requirements

Rondine Cabot, Field Inspector

February 19, 2014

Topics to be discussed

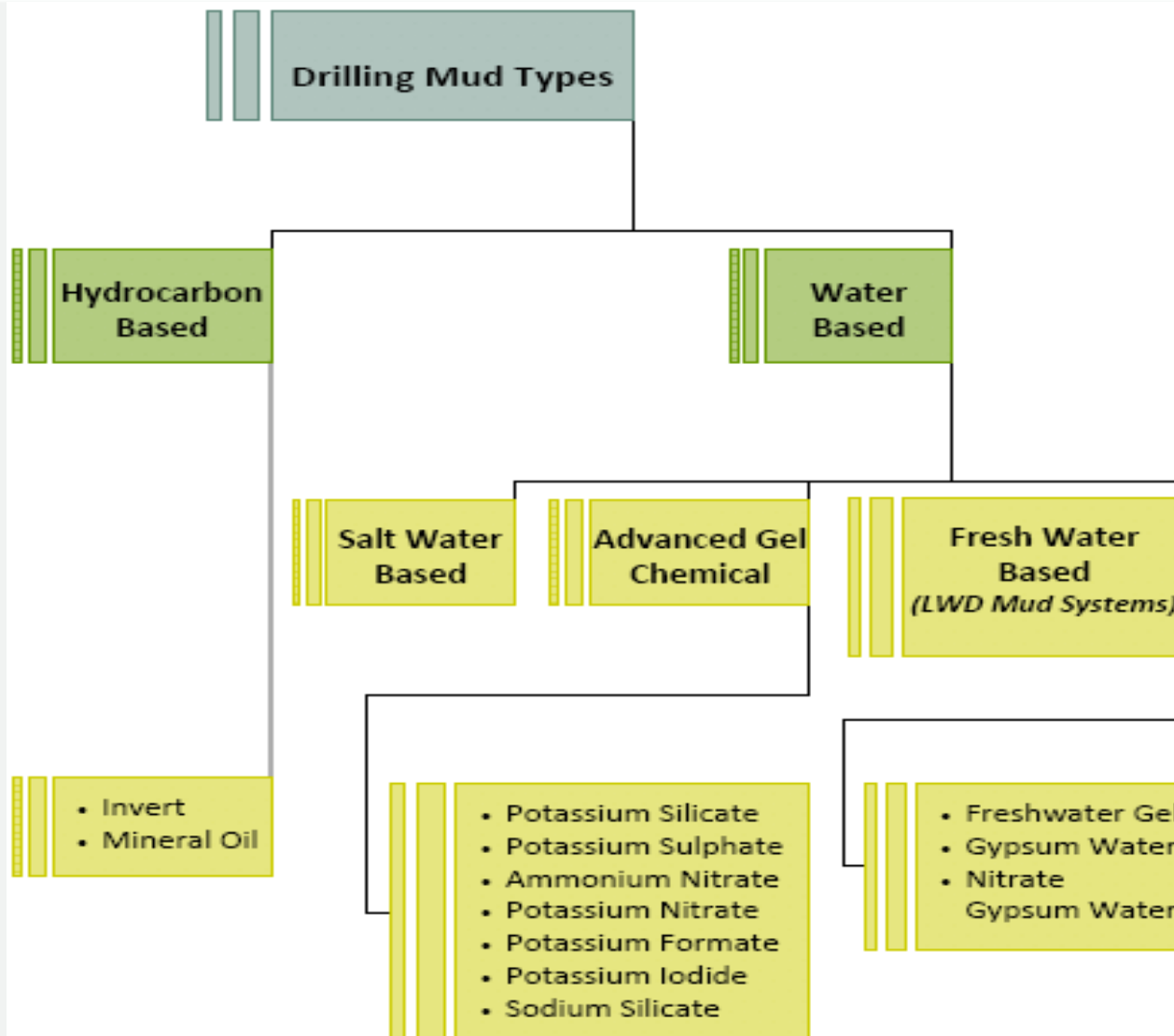
- › Drilling waste definition
- › Common types of drilling waste
- › Drilling waste disposal methods
- › Landowner consent requirements

AER Drilling Waste Definition

Drilling waste is the mud and cuttings generated while

- 》 drilling a well (including oilsands exploration wells) and
- 》 directional drilling for the purpose of pipeline construction.

Common types of Drilling Mud



Storage of Drilling Waste

- » Sump (earthen excavation)
- » Earthen berm storage system
- » Aboveground storage tank
- » Entry and exit pits (pipeline only)

Sump

- » Construction requirements to ensure the drilling waste does not migrate beyond the walls of the sump into the environment



Sumps

» Remote

- » requires landowner approval
- » Licensee has 18 months to close the storage system
- » Fencing to prevent public and wildlife access
- » Signage required to identify the site

» On-Lease

- » no extra approvals, assumed with the lease license
- » Licensee has 18 months to close the storage system
- » Fencing to prevent public and wildlife access
- » No extra signage required as lease already has sign

Earthen Berm

- » Construction requirements to ensure the drilling waste does not migrate beyond the berm into the environment



Earthen Berm

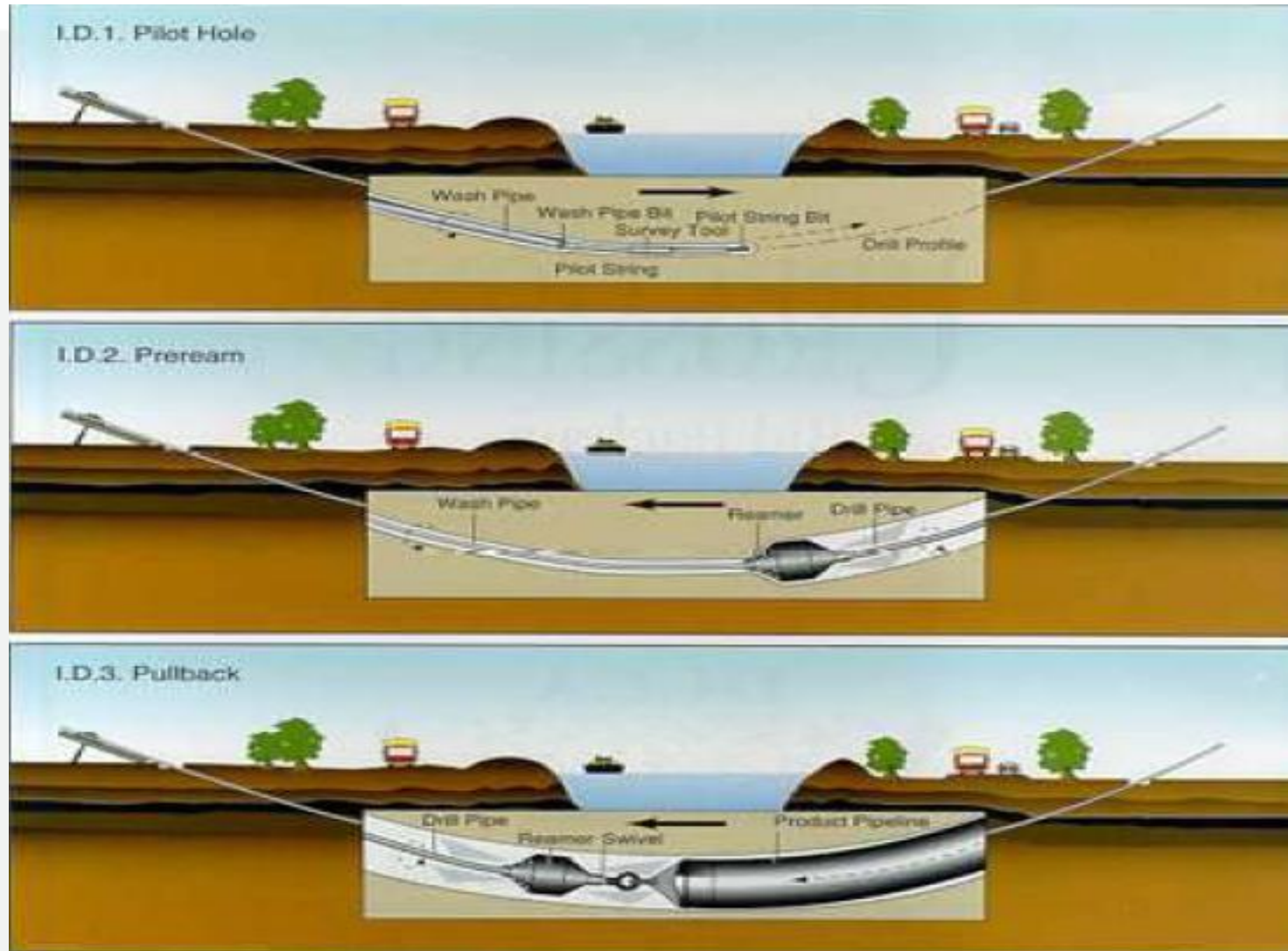
- » Has to be located on a licensed site or a licensed remote sump site
- » Can only store water based drilling mud

Above Ground Storage

» Tanks located on the licensed lease site



Entry/Exit Pits (Pipeline only)



Pipeline Boring Rig



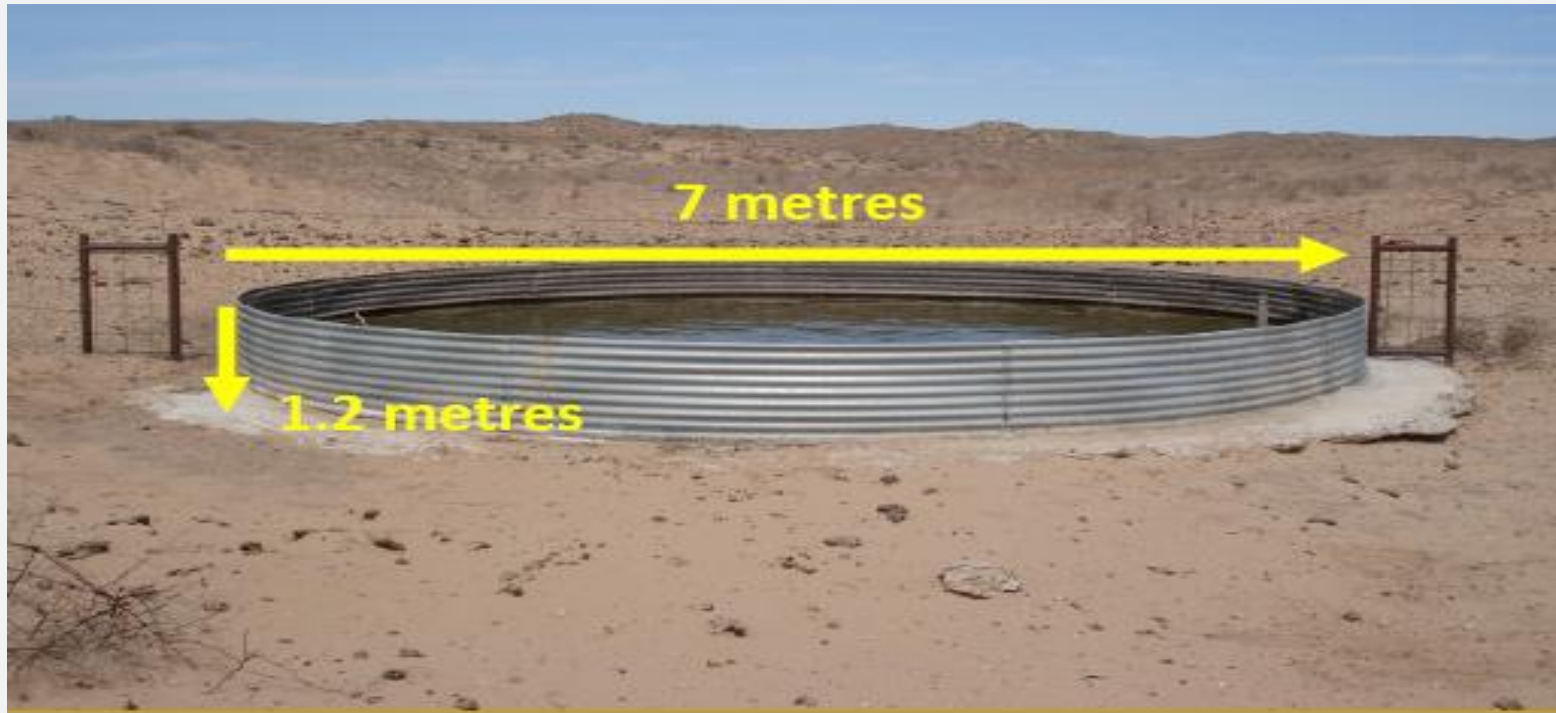
Entry/Exit Pits (Pipeline only)



Storage of Cement Returns

- » Cement Ring
- » Tank or Bin
- » Cement pit

Cement Ring



Tank or Bin



Pit



Disposal of Drilling Waste

- » Landspray while drilling
- » Landspray
- » Landspread
- » Mix-bury-Cover
- » Pump off
- » Pipeline specific

Landowner Consent is required to

- 》 manage drilling waste beyond the well site or pipeline-right-of-way boundaries
 - 》 landspray,
 - 》 landspray-while-drilling
 - 》 pump-off method
- 》 place cement returns in pits on a well site or remote drilling waste storage site when the collective area of one or more pits exceeds 4 m².

Landspray While Drilling (LWD)



Incorporation



Landspray



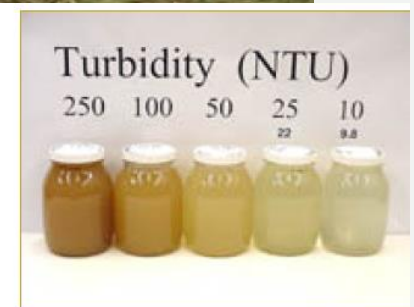
Landspread



Mix-bury-Cover



Pump-off



Pipeline Specific

- » Landowner consent not required for pipeline waste disposal within a disturbed pipeline right-of-way using mix-bury-cover or landspread.
- » Disposal of drilling waste on a pipeline right-of-way is limited to those generated from construction of the pipeline associated with the right-of-way.



Questions



The image is a composite. The top half features a bright blue sky with scattered white clouds. A white diagonal band with a grey chevron graphic on the left side runs across the middle. The bottom half shows a wide, flat landscape with vibrant yellow fields in the foreground and green fields further back, separated by a dirt road that leads towards the horizon under a clear blue sky.

Thank you