Consultation Posting
110618

Purpose: To document the *Rocky Flats Legacy Management Agreement* party consultation on the Original Landfill Stabilization Project

Concurrence Date: This notification was provided via email to CDPHE and EPA on November 6, 2018.

Related Contact Records: 2013-02; 2013-03; 2014-09; 2015-03; 2015-06

Description of Activity: On October 16, 2018, DOE provided a briefing to CDPHE and EPA on the status of the Original Landfill (OLF) Stabilization Project. This project is a maintenance action intended to stabilize the east and west portions of the landfill that have been prone to movement since 2007. Geotechnical and civil engineering design firms were contracted in 2017 to investigate and evaluate this movement, propose alternatives to stabilize the areas prone to movement, and design a long-term solution to minimize hillside instability at the OLF. DOE reviewed the five alternatives evaluated by the design subcontractors and selected an alternative that employs ground anchors and subsurface trench drains. This design will address the two primary contributors to hillside instability identified by the design subcontractors: (1) a weak subsurface soil layer further weakened by movement and (2) groundwater. The design subcontractors have completed a 30% design of this selected alternative and are currently progressing toward the 60% design. The design details described below are meant to convey the current path forward for the stabilization design; revisions to the design may be made as the design progresses towards finalization. Periodic updates will be provided by DOE to the RFLMA parties as design progresses.

The selected preliminary design includes the installation of approximately 182 ground anchors with reaction blocks installed in rows on the east and west portions of the OLF area where past movement and slumping have occurred (Figure 1). These ground anchors (Figure 2) will be embedded into competent bedrock to restrain slide-prone materials. The reaction block at the top of each ground anchor consists of an approximately 8 feet by 8 feet reinforced concrete pad that spreads out the restraining load of the ground anchor. When complete, the ground anchors and reaction blocks will be fully buried (i.e., they will not be visible on the ground surface). The selected preliminary design also includes the installation of up to two trench drains each at the west and east sides of the landfill area. These trench drains are designed to control groundwater elevations within the landfill area. The groundwater collected by the trench drains will be diverted to the west in the direction of the existing West Perimeter Channel and to the east in the direction of the South Interceptor Ditch (SID).

In addition to these major design features, the design team was also tasked with considering options for (1) ensuring the presence of the 2-foot cover within the waste footprint at the east and west edges where movement has occurred in the past, and (2) optimization of the storm water management

system, including potential reconfiguration of the existing berms and channels. Discussion of options for these two topics is ongoing. However, the current proposal to ensure the presence of the 2-foot cover within the waste footprint where movement has occurred in the past (see red hatched areas in Figure 1) includes disking the top 0.5 foot of soil at each area and screening the soil for evidence of landfill materials. Field screening will include visual observation and chemical and radiological screening. Soil cover will be added as necessary to ensure the required 2-foot soil cover is present. Work instructions specific to soil, water, and landfill materials management during implementation of the design will be in place prior to commencement of field work.

The goal for the optimization of the storm water management system is to create and maintain positive drainage off the landfill cover while simultaneously minimizing disturbance to the existing cover and established vegetation. The current concept for reconfiguration of the berms and channels is to retain the berms and channels as they currently exist in the central area of the landfill, which has remained stable since closure. Berms in the disturbed areas may be reconfigured to improve storm water movement off the waste footprint cover. The design concept may change as final design progresses.

The OLF stabilization project briefing also included preliminary discussion of design implementation, to include soil and water management strategies. According to the current 30% design, some of the ground anchors and a portion of the trench drain on the east side of the landfill will be installed within the waste footprint. Consistent with past practices, soil and debris excavated from within the waste footprint will be returned to the excavation within the waste footprint where it originated. This will be achieved through soil compaction and surface contouring, as necessary, to maintain cover drainage. In the event that there is a surplus of landfill material from within the waste footprint that cannot be returned to the excavation from where it came, this material will be deposited at one of the disturbed edges within the waste footprint on the east or west side prior to placement of the soil cover (see Description of Activity paragraph 3 above). Excess soil removed from the trench drains and ground-anchor installations outside the waste footprint will be stockpiled for use at the OLF or will be used as fill elsewhere in the Central Operable Unit, as needed.

This email notification is a record of the discussion of the OLF stabilization project with the RFLMA parties at the October 16, 2018, consultation. It is provided for informational purposes only. Following finalization of the OLF stabilization project design, a Contact Record with an attached Soil Disturbance Review Plan will be finalized for field implementation of these maintenance activities at the OLF. As required by RFLMA, the approved Contact Record will be posted to the LM website, stakeholders will be notified, and there will be a 10-day wait period after the posting before beginning field activities to allow stakeholder input.

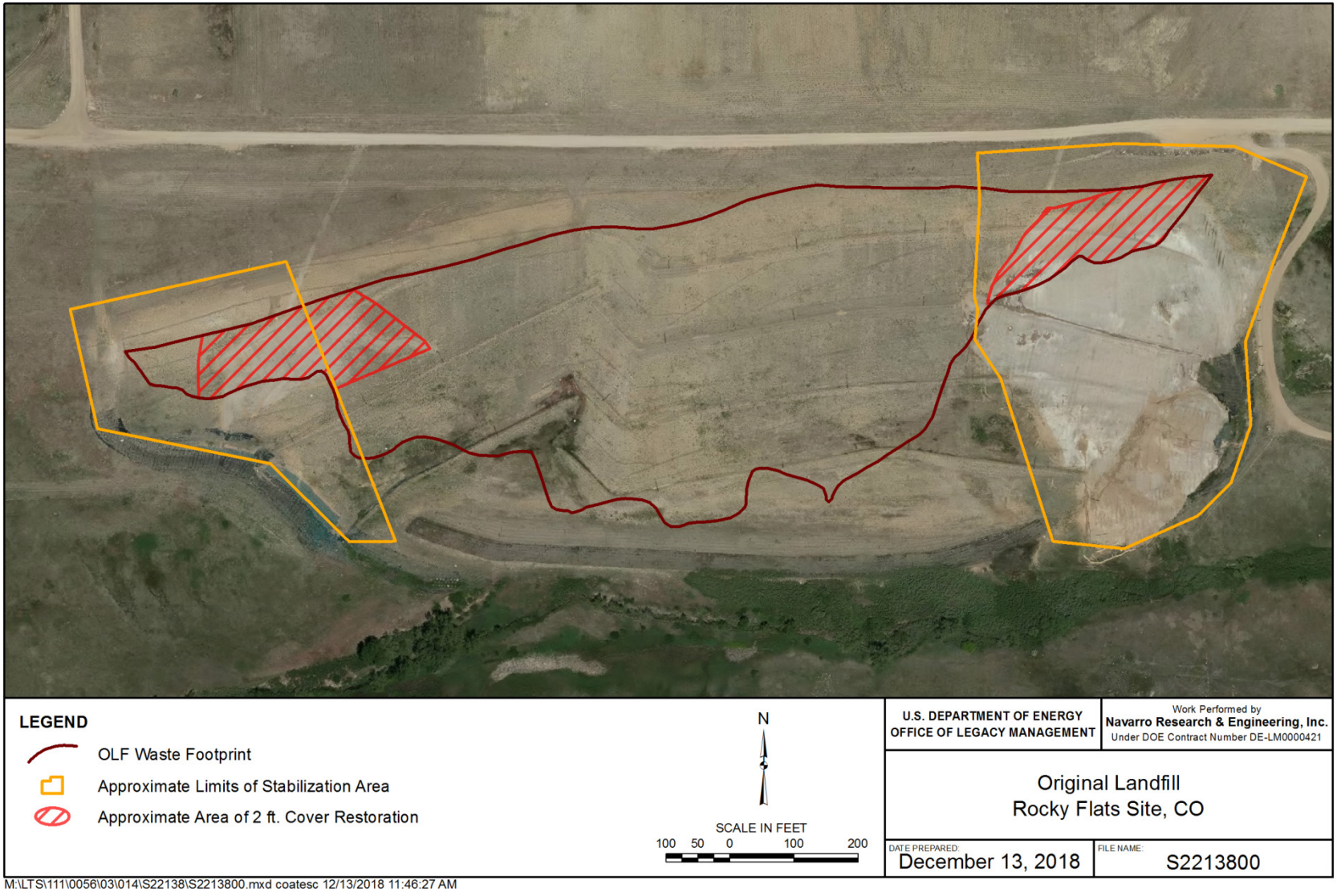

Figure 1. Original Landfill

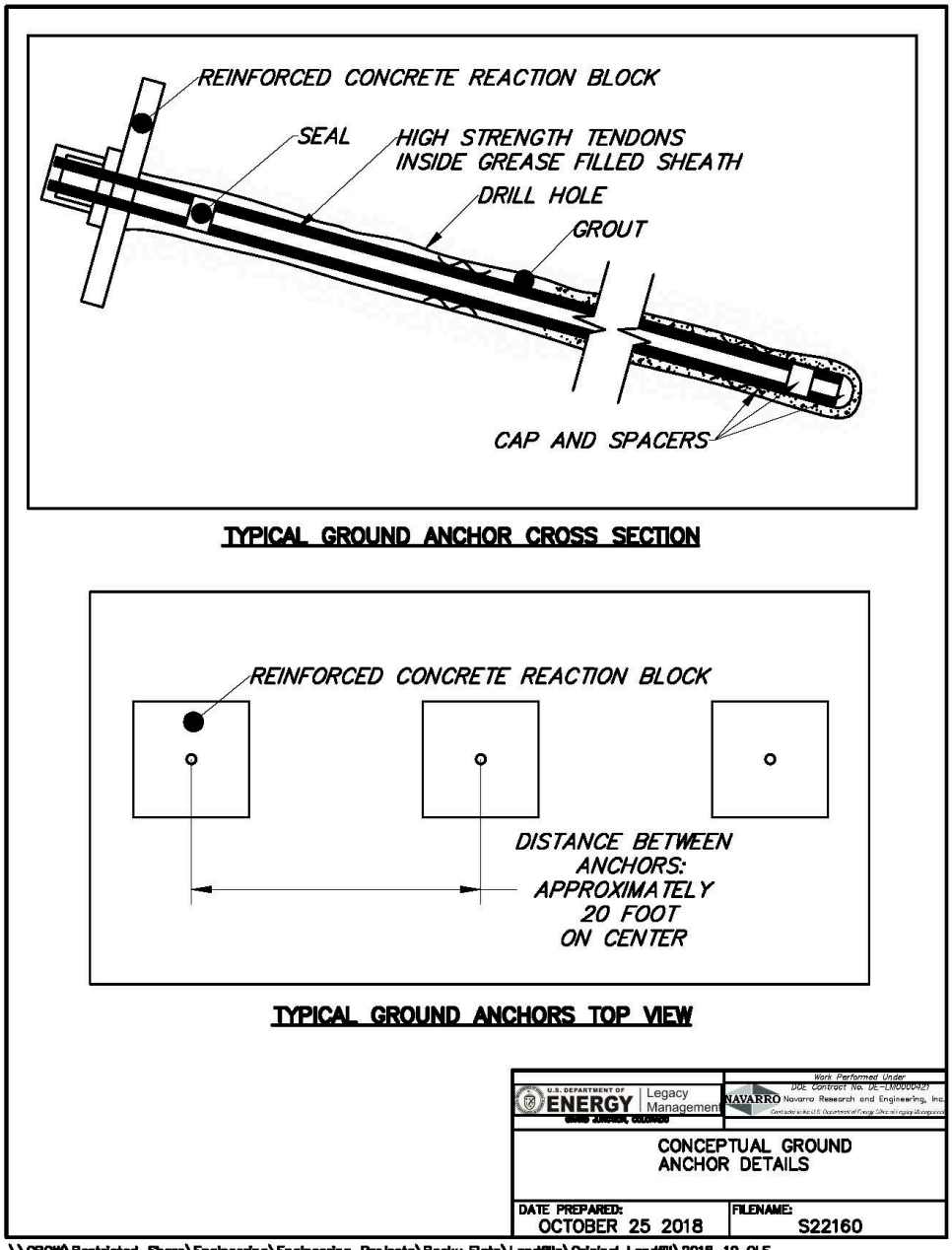

Figure 2. Conceptual Ground Anchor Details