From: Boyle, Ron <Ron.Boyle@aecom.com>
Sent: Wednesday, January 12, 2011 2:14 PM
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Cc: Frey, Jesse <JFrey@wm.com>; Lottig, Justin <jlottig@wm.com>; Frerich, Dan <Dan.Frerich@aecom.com>
Subject: Assessment of Northwestern Portion of Cell E6 for MSW Placement, Waimanalo Gulch Sanitary Landfill

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Hi Joe,

It is AECOM's understanding that WMH would like to begin filling MSW in the northwestern portion of Cell E6 at the Waimanalo Gulch Sanitary Landfill (WGSL). This area is at a higher elevation which has not been flooded by recent storm events and is needed for immediate use due to lack of alternative filling areas. The purpose of this e-mail is to address concerns recently expressed by DOH Solid Waste Branch before filling can commence. The primary concerns are discussed below:

1. On Monday, 1/10/11, AECOM observed the northwestern sideslope of the Cell E-6 liner for any potential damage due to large rocks that were rolled down from the Western Surface Water Drainage excavation last week. The sideslope liner is covered by approximately 3 feet of operations layer (sand material) on the bench and 2 feet on the sideslope and was previously placed in accordance with the project specifications. Due to recent rains (late December 2010), erosion gullies had formed in the sideslope operations layer but these areas were repaired by Goodfellow Brothers, Inc. (GBI) prior to excavating and pushing rocks down from above. Based on discussions with GBI personnel and field observations, it appears that the operations layer was intact and provided the necessary protection to the liner from the rocks rolled down from above. There are large rocks/boulders spread along the E-6 liner bench and floor that should be removed carefully with an excavator to prevent damage to the underlying liner and leachate collection layer. On Wednesday, 1/12/11, AECOM's CQA representative (Dan Frerich) observed that the rocks on the floor of the cell were carefully removed using a tracked excavator and stockpiled outside of the landfill cell.
2. On Wednesday, 1/12/11, AECOM observed the northwestern edge of the Cell E6 floor liner for any potential damage to the encapsulated liner system as a result of recent flooding events. Based on AECOM's observations, it appears this area did not sustain any significant damage from flooding. The edge of liner in this area was constructed in accordance with Detail W shown on sheet no. 10 of the drawings prepared by Geosyntec (dated January 2010). The northern edge of the liner system along the cell floor was buried in a 1-foot deep trench, then backfilled will soil cushion material and covered with pieces of plywood. This edge was then covered with a 4.5-foot high stormwater diversion berm constructed with compacted soil cushion material. The edge of E6 floor liner further to the east at the E4 liner tie-in area was damaged by the recent storm flows due to it being at a lower elevation. An assessment of the damage in this tie-in area is currently underway. GBI was in the process of uncovering this area for repair but recent rain storms required that work be suspended.
3. On Wednesday, 1/12/11, AECOM observed the northwestern edge of the Cell E6 floor for any potential damage to the LCRS gravel layer. Based on AECOM's observations, it appears that there were minimal impacts from the recent storm flows to this area. Because the overlying operations layer and MSW placed in 2010 are visually intact, it is expected that the underlying LCRS gravel layer is intact. Additionally, a layer of 10 oz/sy geotextile filter layer fabric protects the underlying gravel from infiltration of silt. The leading edge of the LCRS gravel layer will be exposed later in 2011 for completion of the remainder of Cell E6 and CQA monitors will confirm that the gravel is free of contamination.

4. On Wednesday, 1/12/11 AECOM met with WMH and GBI personnel to discuss measures being taken to prevent further clogging of the temporary drainage inlet no. 1. An approximately 15-foot high temporary berm was constructed across the valley floor yesterday to contain runoff and direct it into the drainage inlet. It was agreed that the area surrounding the inlet should be dug down to the level of the inlet riser by removing mud and rocks that had accumulated from previous storm events. This will increase the storage capacity for debris accumulation in future events. A berm of large boulders will be stacked just upstream of the inlet to act as an energy dissipater and hold back debris from clogging the inlet grate. AECOM's CQA representative will remain on site to confirm that these improvements are completed today.

In conclusion, based on our recent observations of Cell E6 at WGSL and completion of temporary drainage measures, we believe that the northwestern section of Cell E6 is in good condition and has adequate protection from future storm events to allow placement of MSW.

Let me know if you have any questions.

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