

Summit Soil Fabrication Pilot Project: Proposed Windrow Turner Test

BRRMF December 20th, 2018

Introduction

Windrows in Year One Phase Two (Y1P2) of the Summit Soil Fabrication Pilot Project were built to accommodate a pull behind windrow turner. Windrows from Y1P2 and Year Two Phase One (P2P1) will be turned and spread in the spring of 2019. In order to test whether a pull behind compost turner may be effective a test windrow will be created at the Brady Road Resource Management Facility (BRRMF), biosolids composting facility. The test is proposed to take place on Thursday, December 20th, 2018.

The leaf and yard waste compost turner model number CT820 from Vermeer will be used to mix this test windrow. This turner works similarly to the pull behind model: the turner slowly moves over top of the material, mixing the windrow with large steel blades. The turner will be tested at BRRMF due to the impracticality of transporting the turner to Summit Landfill. Additionally, a fresh windrow will represent the non-frozen conditions of spring mixing and spreading operations planned at Summit.

Environmental Controls

The test windrow and all feedstocks will be contained on the biosolids pad with existing environmental controls. Surface water on the asphalt portion of the pad drains to the leachate tank, which gets pumped out regularly and the liquid is brought to NEWPCC to be treated. The gravel pad drains to the retention pond. Odour will be monitored during the test using biosolids composting protocols. No biosolids will be composted during this test.

After the windrow is formed and mixed, the area will be thoroughly cleaned, including all equipment and vehicles. All biosolids will be scrapped from the asphalt pad and added to the windrow.

Feedstocks

Screened sweepings will be brought from Summit Landfill. Approximately 150 m³ of street sweepings will be deposited on the gravel portion of the pad west of the current bunkers. A portion of the sweepings will be moved to the north end of the asphalt pad to be used as a backer for when the biosolids are delivered.

Biosolids will be diverted from being buried in the landfill to the biosolids pad on the test day. No biosolids will be stockpiled on site.

Biosolids will be dumped on the asphalt portion of the pad in front of the furthest north bunker. Street sweepings will be placed to the north of the biosolids to create a "backer" to grab the biosolids. Any biosolids runoff will drain to the leachate tank.

The windrows will be created to the north of the asphalt pad on the gravel base. A woodchip base of approximately 10 cm will be placed down on the gravel reducing the potential for biosolids seepage onto the gravel. This area drains to the controlled retention pond.

Woodchips will be used from the BRRMF wood grinding operation.

Equipment

One large loader with a 5 yard bucket will be used to create the windrows the same size as at Summit (4.5 m wide x 2m high). The leaf and yard waste compost turner model number CT820 from Vermeer will be used to mix this test windrow.

Windrow creation

Once all the feedstocks are on site, the windrow will be created using the same technique as Summit Soil Fabrication Y1P2: two scoops of woodchips will be placed directly beside each other and biosolids will be placed between these two piles and three scoops of sweepings will be placed on top. For an effective test of the compost turner the windrow will need be 20-25 meters long. This will require 50 tonnes of biosolids, or two loads.

Fabricated Soil

If the soil is successfully mixed by the compost turner, it will be stockpiled on the compost pad until it can be spread on a closed portion of the landfill close to the 2017 fabricated soil plots. If the soil is not successfully mixed by the turner, it will be tossed and rolled with a loader before being stockpiled and spread.

Reporting

Results will be submitted to MSD via email within two weeks of the test.

Map is attached for reference



BRRMF Biosolids Composting Facility July 2, 2018