



Angus Jennings <townmanager@hampdenmaine.gov>

Pine Tree Landfill

1 message

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To: Angus Jennings <townmanager@hampdenmaine.gov>
Cc: Stephen Rabasca <srabasca@soilmetrics.com>

Fri, Apr 6, 2018 at 9:10 AM

Good morning Angus,

At your request I have reviewed two memoranda from MDEP staff regarding Pine Tree Landfill and have attached a brief review for you and the Hampden Environmental Trust members.

I have also reviewed the email correspondence you shared between Bill Lippincott and the MDEP staff regarding the leachate releases discovered in 2016 and tracked back to two of the leachate recirculation trenches. In these emails Steve Farrar, the MDEP engineer, describes his understanding of the incidents and how PTL responded. As noted by the MDEP staff, imperfections can occur in the geomembranes that are part of the landfill liner and cover, despite the stringent quality control measures that were used during construction. There is also some risk that on-going activities such as plowing can damage the cover system.

We concur with the MDEP's comment that the water quality monitoring program is a critical component of the post-closure program because it is intended to detect releases if there are construction defects or damage to the geomembrane containment or leachate collection systems. There are two situations at PTL that illustrate how water quality monitoring data has aided in assessment of these systems at PTL. Prior to closure there were significantly elevated concentrations of landfill parameters in monitoring well 602B along the northeast side of the landfill. These elevated concentrations were an indication of a potential problem and in 2008 PTL investigated and made significant repairs to correct leachate seeps and to improve the leachate collection system. Once these repairs were made, the specific conductance in well 602B dropped from 4,220 umhos/cm in 2008 to 1,930 umhos/cm in 2009. A second, more recent condition has been identified in several wells southwest of the landfill. These wells show a rising trend, which may be related to the condition that allowed recirculated leachate to seep from the toe of the landfill in 2016. The damaged geomembrane was repaired in 2016 and monitoring is on-going to determine whether that repair was adequate to reverse this trend.

I hope that this information and the attached memo is helpful to the Town. Please let me know if there are additional questions or information that would be helpful.

Matt

Matthew Reynolds, P.E., C.G.

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From: Angus Jennings <townmanager@hampdenmaine.gov>
Sent: Tuesday, February 27, 2018 1:19 PM

	Drumlin Environmental, LLC <i>Hydrogeologic and Engineering Consultants</i> Soil Metrics, LLC	
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REVIEW MEMORANDUM

To: Angus West & Hampden Environmental Trust
From: Matt Reynolds
Date: April 6, 2018
Subject: Pine Tree Landfill –February 2018 MDEP Review Memos

Two technical review memoranda from Maine Department of Environmental Protection (MDEP) staff related to Pine Tree Landfill (PTL) were recently shared with the Town. We have reviewed these memoranda and offer comments below.

February 13, 2018 Review of 2017 Water Quality Results (Richard Heath)

This memo is an update on an annual review that Richard performs. It is based on electronic data deliverables to the internal MDEP system. The data is expected to be available to the Town when the Annual Report is released in April. Once we have the Annual Report we can review the data in more detail. However, we have found these annual memos to be useful and generally are in agreement with the observations and conclusions.

The memo highlights positive and negative trends in the 2017 data. Among the positive trends:

- A. Many locations and concentrations have been stable or decreased since 2012.
- B. The extent of dissolved methane in groundwater around the landfill continues to shrink as a result of the corrective actions.
- C. Arsenic concentrations that were rising in 2014 and 2015 at on-site monitoring locations have dropped in 2017. At the off-site domestic well to the east (DW-103) arsenic was equal to the Maximum Contaminant Level (MCL), which represents a decrease from 2016.

Among the negative trends:

- D. Water quality in the southwest corner of the landfill at wells 802B and 803A continued to deteriorate. Dissolved methane is down though, so that doesn't seem to be the source. PTL had suggested that the upward trend might be due to the leachate release in this area in 2016 (that was removed), but 2017 data doesn't show the improvement expected.

- E. Wells on the west side of the landfill continue to show increases in specific conductance. The MDEP speculates that these may be due to transfer station impacts and/or road salt. The MDEP is not requiring analysis of expanded monitoring parameters for 2018 because these impacts may not be specifically due to the landfill. However, if the trend persists, the MDEP indicates that additional evaluation will be needed.

Overall the 2017 water quality data, as reviewed by the MDEP, show that there continues to be strong landfill impact at many monitoring locations on-site, but that there also continue to be positive downward trends at many wells.

February 22, 2018 Review of 2016 Annual Post-Closure Operations Report (Steve Farrar)

This short memo provided a general overview of the engineering aspects of the 2016 Annual Report. Brief comments were offered on four attachments to the 2016 Annual Report:

1. Leachate Recirculation Report *(The memo noted that approximately 35% is remaining of the calculated “available field capacity” for leachate recirculation in the landfill in the areas influenced by the leachate recirculation trenches. It also noted that leachate recirculation appears to be helping methane generation, which is captured and sent to the on-site landfill gas to energy (LFGE) plant. The memo referenced the failure of leachate recirculation trenches 1 and 4 and that PTL had stopped using these. But there was no assessment of the membrane defects that allowed leachate releases from the recirculation system.)*
2. Landfill Gas Report *(The memo noted the landfill gas flow rate and methane concentration has been declining from year to year, which is expected.)*
3. Air Monitoring Report *(The memo noted that there was no data indicating elevated air releases from the landfill and recommended continuation of air monitoring)*
4. Geotechnical Monitoring Report *(The memo indicated that the 2016 data did not show significant concerns with settlement or displacement, which is consistent with the findings of our review described in our August 7, 2017 Memorandum. The MDEP recommended continuation of geotechnical monitoring)*

As noted above the 2017 Annual Report will be issued in April. We will review that report and provide comments to the Town as we have done previously.

If there are further questions, please feel free to call or email at any time.