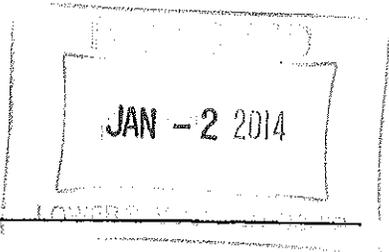


# Hanover

Engineering Associates Inc



May 23, 2013

Mr. Jack Cahalan, Manager  
Lower Saucon Township  
3700 Old Philadelphia Pike  
Bethlehem, PA 18015

RE: Joint Municipal Landfill Committee  
Minutes of May 16, 2013 Meeting  
Hanover Project LS90-07

Dear Mr. Cahalan:

The Joint Municipal Committee between IESI Bethlehem Landfill and Lower Saucon Township met at the Landfill Office at 1:00 PM on May 16, 2013. Attending the meeting were:

Ms. Priscilla deLeon  
Ms. Donna Louder\*  
Mr. Hazem Hijazi, PE  
Mr. Allen Schleyer  
Mr. Christopher Taylor, PG, HMI

\*Ms. Louder had to leave the meeting at 1:40 PM to attend to a pressing personal matter.

## AGENDA ITEMS

### I. Status of Waste Activities

#### Monthly Tonnages:

	<u>February</u>	<u>March</u>	<u>April</u>
Municipal Solid Waste (total)	22,168.30	25,297.30	25,499.40
Construction and Demo (total)	8,677.90	8,877.00	10,334.80
Residual Waste (total)	1,944.90	3,108.30	1,255.40
Asbestos	[45.30]	[6.80]	[47.20]
Out of state-total (percentage)	[22,682.50](69%)	[26,282.10](70%)	[24,325.90](66%)
<b>TOTAL</b>	<b>32,791.10</b>	<b>37,282.60</b>	<b>37,089.60</b>

Recycled Tonnage (percent from Lower Saucon Twp.)	0.00 (77%)	23.50 (83%)	40.80 (81%)
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NOTES: 1. The tonnage for 'Asbestos' is included in the tonnage for 'Residual Waste (total)' and is therefore shown in brackets.

2. The 'Out of state - total' tonnage figure has now been consolidated to include total tonnage from all waste categories, and is shown in brackets because it is included in the tonnage for the other categories.

#### ROUTING

- Council
- Manager *orig*
- Asst. Mgr.
- Zoning
- Finance
- Police
- P. Works
- P/C
- P & R
- EAC
- Engineer
- Solicitor
- Planner
- Landfill
- EMC
- Other

*website jml05-16-13*

<u>Form U Submittals</u>	<u>Waste</u>	<u>Approval Date</u>
Borealis Compounds	Plant Trash	04/03/13
Fibermark	Contaminated soil	04/03/13
NYS R. Clemente State Park	ACM	04/03/13
GI Holdings	ACM	04/11/13
Custom Particle Reduction	Plant Trash	04/24/13
NOVA Dev. Group	ACM	04/24/13
GI Holdings	ACM	04/24/13
SMAC	ACM	04/24/13
Chapel Hill Academy	ACM	04/24/13
Penn Engineering	Plant trash/oily waste	05/06/13
Lehigh County Authority	Spent blast media	05/06/13
Cyclechem	ACM	submitted 05/07/13
NOVA Dev Group	ACM	05/14/13

II. Annual Groundwater Trend Analysis

- The 1<sup>st</sup> Quarter 2013 Quarterly Groundwater Report sampling was completed during the week of March 18, 2013.

III. Correspondence and Reports

- Form U Submittals to PA DEP and Lower Saucon Township
- Abatement System Report
- Minor Permit Modification – re-grade contours 2013
- Title V Permit
- Operating Permit 100020 renewal permit

IV. Landfill Operations

- Department of Environmental Protection Inspections
  - April 11, 2013 – S. French, J Kunkle: Engineers meeting
  - April 22, 2013 – W. Govern: site inspection
  - May 6, 2013 – S. Ripple: stormwater inspection
  - May 9, 2013 – S. French: Engineer's meeting

Ms. deLeon asked if any reports noted any conditions of concern. Mr. Schleyer responded no, they were just routine inspections. Ms. deLeon noted that Susan French was here after Chris' report (referring to Mr. Taylor's report of the slope failure on the west high wall), and asked if she was aware of the Township's concerns about the wall. Mr. Schleyer responded yes, and added that she looked at everything. A lengthy discussion followed on when this issue was reported and to whom. Mr. Schleyer then provided an explanation of how the west high wall came about. A lengthy discussion followed on the wall situation and possible actions to investigate and remediate it. Mr. Taylor stated that he'd like to see the soil removed from the lower stormwater swale. Mr. Schleyer responded that that was already taken care of.

- Host Municipal Inspection
  - April 12, 2013 -- Chris Taylor
  - April 18, 2013 -- Chris Taylor
  - May 2, 2013 -- Chris Taylor
- Bethlehem Renewable Energy (BRE) and Flare Operations

The following is an update to the Bethlehem LFG Flare activity. We had the following LFG flare shutdowns at Bethlehem Landfill. The auto-valve closed as designed for each shutdown of the flare. No odors were noted or odor complaints received by Bethlehem Landfill during the outage events. The BRE power plant is currently shut down.

Apr 9, 2013	Flare shutdown	16:00	Maintenance -- switch blowers
	Flare startup	16:15	Duration 15 min
Apr 13, 2013	Flare shutdown	09:06	Blower maintenance/igniter repair
	Flare startup	13:57	Duration 4 hr 51 min

All shutdown information is provided to the PA DEP.

A discussion on the status of the BRE plant application took place. Ms. deLeon stated that her biggest gripe is notification, that BRE asked for a waiver because they didn't notify everyone they should have. Mr. Schleyer asked what notification. Ms. deLeon explained that they didn't notify all the people within the distance spelled out in the Zoning Ordinance, and reiterated that she wasn't happy about it. Ms. deLeon provided a discussion on the proceedings of the Township meeting the previous night, as they related to the BRE application. Mr. Hijazi asked if the results of the meeting resolve BRE's issues to allow them to start operating. Ms. deLeon stated that it passed, and added that Ms. Louder saw tanks staged on the property.

- Gas Collection
  - The Bethlehem Renewable Energy Plant is currently shut down for further pretreatment evaluation. The flare is the primary landfill gas collection and control system.

During the inspection following the meeting, Mr. Taylor confirmed that the landfill flare was operating at 2,456 scfm at 1710 degrees F.
- Well Sampling
  - The 1st Quarter 2013 Quarterly Groundwater Monitoring sampling was completed during the week of March 18, 2013.
- North Slope
  - The North Slope sedimentation traps are functional.
  - The North Slope perimeter road is accessible.

- Abatement System Operations

- The abatement system continues to operate and discharge to the Bethlehem Waste Water Treatment Plant. Intermittent malfunctions of the well pumps and controls are repaired or replaced as needed.

- Leachate Collection

Flow rates continue to be monitored and reported.

Following is a summary of the work history and developments:

- IESI submitted the report from Meiser and Earl, Inc. on December 23, 2008, to DEP and Lower Saucon Township evaluating the various tests that were performed to locate the source of the elevated detection zone flows as outlined in their May 7, 2008 Work Plan. Lower Saucon Township has forwarded their comments on the December 23, 2008 report to DEP.
- IESI has completed welding of approximately 1,200 L.F. of the secondary line to the primary liner along the northern end of Cell 3-D while the anchor trench was open and prior to completing the weld, a 2½-inch rain event occurred. A spike in the leachate collection/detection flow may be observed.
- IESI will retest the gabion stormwater channel over Cell 3-C and discharging into sedimentation Pond 4 for possible infiltration into the detection zone by flooding the channel on September 24, 2009.
- The capping of the remaining five (5) acres of Phase III has been completed.
- IESI provided an updated report on their LMC investigation to DEP and Lower Saucon Township November 2009. The reports in part indicated that:
  1. LMC 7 does not appear to be affected by rainfall since the northern Cell 3 anchor trench cap/liner welding occurred.
  2. LMC 8 still spiking from rainfall events.
- The next investigation will be to the integrity of the liner under gabion channel in Cell 3-C which will occur in the 1<sup>st</sup> Quarter 2010. IESI is looking for a seven to ten (7-10) day window with no rain for a meaningful evaluation. IESI received authorization for the Gabion Channel Work Plan from DEP on December 22, 2009.
- The investigation of the integrity of the liner under the gabion downchannel located in Cell 3C began April 10, 2010. The southern-most end of the gabion channel was excavated down to the anchor trench as well as to the east and west of the channel along the anchor trench. Toe drains above the primary liner were replaced and the primary and secondary liners were welded together in the excavated areas. The gabion channel and piping leading to Basin 4 were reconstructed. IESI will continue to monitor the LMC flows and prepare a report on the latest work performed.
- To date the flows into LMC-8 appear to have been substantially reduced since the repair in the first week of April 2010.
- As of this date the data appears to indicate that the repairs to the southern end of the gabion downchannel leading to Sedimentation Pond 4 and the toe drains running east/west at the southern most end of the gabion channel have caused a substantial reduction in the detection zone of LMC-8.
- The LMC-8 Detection Zone flow rate continues to be monitored. Existing data continues to show a substantial reduction in the flow rate.
- September/October 2010 – the recent rain events have shown influence on LMC-8. The committee is recommending that IESI investigate and consider extending the toe-drain, which was replaced in April along the toe of the southern slope and above Sedimentation Pond 4, to the east and west. Mr. Schleyer provided a summary of the remedial work completed to date to alleviate the high leachate flows being

recorded in LMC-8. He reviewed the recent flow data, and stated his opinion that the remedial work has helped to reduce the overall flows. He stated his opinion that the flow data for 2010 indicates that the "response time" between a storm event and high flows observed in LMC-8 is less, and that the flows are of a shorter duration, since the work has been completed. He stated that he is monitoring the flow data and planning out the next step in the process, but is currently concentrating his efforts on the methane gas problem experienced at the residence at 2293 Applebutter Road. Ms. deLeon stated that Lower Saucon Township is very concerned about the high leachate flows, since these could indicate a tear in the landfill liner or other serious problem.

- February 2011: Discussion regarding monitoring results, as provided in the Third Quarter 2010 Quarterly Facility Report, revealed that samples taken from the leachate detection zone provided very similar chemical analyses to samples taken from the leachate collection zone. Mr. Schleyer indicated that IESI had recognized this correlation, and noted it in their cover letter for the report. Mr. Schleyer provided further explanation with regard to how the report is prepared, and noted that the drainage area for LMC-8 is Phase 3, Cell C, which was completed prior to IESI's ownership of the facility.
- March 2011: Mr. Schleyer stated that rainy weather is necessitating working on erosion control, but that the toe-drain work is still at the forefront of his work plan. Ms. deLeon asked "What's going on there" in reference to the high leachate flows documented in the leachate demand report. Mr. Schleyer stated that "stormwater is still getting in" and that they have an "open cell; rainwater is going directly in there". Ms. deLeon stated that leachate flows jumped up starting February 11, 2011. Mr. Schleyer attributed this to a neighboring cell "filling up and overtopping" the short barrier between cells. He stated that LMC-8 serves Phase 3 Cell C, and that when this cell "fills up" with leachate, it causes the high flows documented in LMC-8, but also causes leachate to overspill to the adjacent Phase IV, causing high flows there also.
- April 2011: Mr. Schleyer noted that flows recorded in LMC 6 increased starting March 18, 2011, but that he is not sure exactly why other than to say it is stormwater-related. Mr. Schleyer stated that it is "the same scenario" as last month, with heavy rains every week that has his crews busy repairing leachate seeps and erosion rills.
- May 2011: Additional toe-drain drainage piping was constructed during the beginning of May. A final report will be completed and submitted to the PA DEP and Township.
- June 2011: Mr. Taylor asked if the toe drains have been carrying water to daylight (i.e. - has water been flowing out of the new outlets installed in May). Mr. Schleyer responded that there have been a few flowing out.
- July 2011: Ms. deLeon asked what the PA DEP says about the LMC 8 work that was completed. Mr. Schleyer stated that they're okay with it, and that it's "everything we said we'd do". Mr. Taylor commented that we'll probably need up to one (1) year of data to evaluate the effectiveness of the work.
- August 2011: Mr. Schleyer confirmed that that he is still collecting leachate flow data. He stated that he is taking LMC 8 detection zone readings every other day to see if the recent heavy rain causes a "bump" in the data. He indicated that the flow data during rain events should be a good tell-tale sign of whether the toe drains are working. He stated that he wants to collect more data, through the wet season.
- September 2011: Mr. Schleyer acknowledged higher detection zone flows during the monitoring period reported herein. He stated that the toe drains are functioning,

- because he has seen water flowing from them, and noted the extreme rainfall conditions that occurred during this monitoring period.
- October 2011: Mr. Schleyer stated that the flows in LMC 8 still bounce up when it rains. Ms. deLeon asked if anyone has any other ideas (to remediate this problem). Mr. Schleyer responded no. During the inspection following the meeting, I observed water flowing from each of the toe drain outlets. It had just rained in the last twenty-four (24) hours preceding the inspection.
  - November 2011: Mr. Taylor asked what specific steps IBSI is taking to identify the source of the inflow creating high flows in LMC 8. Mr. Schleyer responded that they are monitoring flow rates versus rainfall.
  - December 2011: Mr. Schleyer stated that, as part of the construction of new cell 4F, the anchor trench along the north side of adjacent Cell 4B was exposed in order to "attach" the old cell to the new cell. He stated that this exposure allowed water from rain events at that time to run right into the collection and detection zones, which caused a spike in the flow numbers for those zones in both LMC 7 and LMC 8. He stated that he expects the numbers to come down. Mr. Taylor asked if everything was buttoned up now (i.e. -- no continuing exposure to stormwater). Mr. Schleyer responded that, yes, it was.
  - January 2012: Mr. Taylor noted that secondary leachate flows continue to exceed 100 gallons per acre per day (G/A/D) through LMC-8, and are also elevated above normal levels for LMC-6 and LMC-7. Mr. Taylor asked Mr. Schleyer if he is still attributing these higher leachate flows to Cell F being open. Mr. Schleyer stated that, yes, he was.
  - February 2012: Mr. Schleyer stated that the high leachate flow numbers are, in his opinion, still due to Cell F being open.
  - March 2012: Mr. Schleyer stated that there was a misunderstanding between himself and Mr. Taylor, and that what he meant to say was that there was only one (1) week where the connection between Cell 4F and the adjacent cells were open, in order to fuse the liners together, and that there was a large rain event that week. He stated that in no way did he mean this condition was the continuous cause of high flows in LMC-8 (over many weeks).
  - April 2012: Mr. Taylor noted that leachate flows are down overall, including secondary flows in LMC-8. Ms. deLeon asked if, regarding the leachate totals, did it help that it didn't rain much lately. Mr. Schleyer responded yes, and noted that LMC-8 is now down to 15 gallons per acre per day (secondary flows).
  - May 2012: Mr. Taylor addressed the issue of secondary leachate flows in LMC-8 as one of the issues that is being tracked by him at the monthly landfill committee meetings, and reminded Mr. Schleyer that this is still an issue of concern with the Township. Mr. Taylor noted that flows were up in the last two (2) weeks due to increased rainfall, but still just under one-hundred gallons per acre per day in the last week of reporting.
  - July 2012: Mr. Schleyer provided a description, using landfill plans, of which areas LMC 6, 7, and 8 drain. Mr. Schleyer stated that, in regard to LMC 8, that they've significantly reduced the infiltration into it, but it's not one-hundred percent. He stated that they've determined that stormwater is getting into the system, but that it still all gets collected and sent to the Wastewater Treatment Plant. Mr. Schleyer provided an explanation of work completed to date, including the toe drain work, re-sealing the liner and cap system, and installing clay as a sealer. He stated that a quick rain will give a little bump in the flow numbers, and that a soaking rain will cause a

broad increase. Mr. Taylor stated that elevated secondary leachate flows in LMC-8 is an issue that is being tracked by him, and is still an issue of concern with the Township.

- August 2012: In accordance with direction received at the technical committee meeting on August 21, 2012, Mr. Taylor advised Mr. Schleyer that the Township Council had authorized the issuance of a letter to the PA DEP documenting the Township's concerns with elevated flows in the leachate detection zone.
- September 2012: The recent secondary flow readings in LMC-8 were reviewed and found to be generally higher than for the previous month.
- October 2012: The recent secondary flow readings in LMC-8 were reviewed and the last two (2) weeks reported were found to be significantly higher, apparently due to higher rainfall amounts.
- November 2012: The recent secondary flow readings in LMC-8 were reviewed and the last four (4) weeks were found to be very high, apparently due to high rainfall amounts. Mr. Schleyer stated that there were still spikes in the LMC-8 detection zone, which drop off after a rain.
- December 2012: The recent secondary flow readings in LMC-8 were reviewed and the last four (4) weeks were found to be high, apparently due to high rainfall amounts.
- January 2013: The recent secondary flow readings in LMC-8 were reviewed and the last four (4) readings were found to be very high, apparently due to high rainfall amounts. Mr. Schleyer noted that the reported flow rates jumped up for several weeks. Ms. deLeon asked were there storms? Mr. Schleyer responded yes, several rain events.
- February 2013: The recent secondary flow readings in LMC-8 were reviewed and found to be very high. Mr. Taylor noted that there currently was a very long stretch of readings well in excess of 100 gallons per acre per day, dating back to October 5, 2012, and stated that the Township was not happy about this situation.
- March 2013: The recent secondary flow readings in LMC-8 were reviewed and found to be very high, continuing the unbroken stretch of readings well in excess of 100 gallons per acre per day (g/a/d) which began October 5, 2012.
- April 2013: The latest secondary flow readings in LMC-8 were reviewed and found to still be in excess of 100 g/a/d. Mr. Schleyer commented that the weather's been drier, that LMC-8 is showing a downward trend in flow.

The latest secondary flow readings in LMC-8 were reviewed and found to still be in excess of 100 g/a/d, which began October 5, 2012. Mr. Schleyer noted that the reading for the last week was lower.

- Radiation Monitoring

- April 10, 2013: I-131
- April 15, 2013: I-131
- April 15, 2013: I-131
- April 26, 2013: TC-99M
- May 3, 2013: TC-99M
- May 8, 2013: TC-99M

All are Level 1 isotopes and disposed of on site.

- Phase IV Construction Activities

- Cell 4-E Stage 1/Cell 4-D Stage 1 is the current active disposal area.

Mr. Schleyer stated that construction of Cell 4E Stage 2 is now beginning with the preparation of the subgrade.

During the inspection following the meeting, Mr. Taylor observed garbage being disposed of in Cell 4D Stage 1, with two (2) trucks dumping and zero (0) truck waiting. Wind screens were observed in place at the working face. It was observed that cover soil was being hauled from the north end of Cell 4E to the working face and staged. Material was being excavated from the north end of Cell 4E and run through the crusher to produce cover material.

- Complaints

- No reported complaints for April 2013.
- May 2, 2013 – A neighbor spotted a tractor trailer going left on Applebutter Road from the landfill. The truck or company name was not identified. IESI contacted all the tractor trailer haulers to remind them to only make a right turn from the landfill.

Ms. deLeon stated that, with the situation on Route 412 (referring to construction causing traffic back-ups), more drivers will try to take different routes (from the approved route). She told Mr. Schleyer that he will have to keep any eye on that situation. Mr. Schleyer responded that we will.

- Miscellaneous

During the inspection following the meeting, the following took place:

- It was observed that IESI has been dressing up erosion areas on the upper section of the south slope.
- Mr. Schleyer pointed out that the most recent final cap area on the south slope was overseeded, since the seeding that took place last fall had not produced a good vegetative cover.
- The west high wall was observed. No new slope failures were evident. It was confirmed that the soil that had fallen into the head of the lower stormwater channel had been removed.
- The adjoining parcel to the west (commonly called the "Fox property") was observed from the landfill site. No earthmoving activity was evident on this property. Mr. Schleyer was asked if he planned to perform earthmoving activities on that property. He stated that IESI had previously talked about borrowing material from there for use on the landfill site. He stated that the property was used as a borrow pit before, and that this was the reason that there was a sedimentation pond at the bottom of the property.

- At the time of this inspection, the wind was blowing from the west at an estimated five to fifteen miles per hour (5 – 15 mph). A patrol of Steel City was performed. No landfill-related odors or noises were observed.

V. Commercial Waste Vehicles

	<u>Feb 2013</u>	<u>March 2013</u>	<u>April 2013</u>
Total Trucks	2,542	2,877	2,942
Overweight	35	40	55
Warnings	23	25	34
Suspensions	12 (4>3%) 4-TT	15 (4>3%) 4-TT	21 (5>3%) 5-TT

FL = front loader, RO = roll off, TT = tractor trailer, RL = rear loader,  
DT = triaxle dump truck

VI. Correspondence

- Correspondence from Department of Environmental Protection
  - No discussion.
- Correspondence to Department of Environmental Protection
  - No discussion.
- Other Correspondences
  - No discussion.

VII. Township Activities/Township Staff Meeting Update

- Township correspondence to the Department of Environmental Protection
  - No discussion.
- Council Meeting IESI Issues
  - No discussion.
- Miscellaneous
  - No discussion.

VIII. Establish Time for Next Meeting

1:00PM June 20, 2013 at the Landfill Facility Office.

**END OF MINUTES**

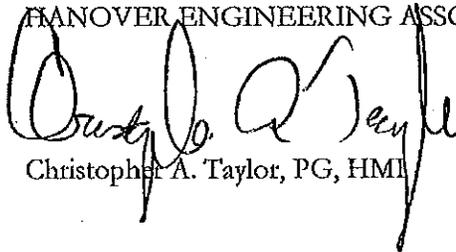
Mr. Jack Cahalan, Manager  
Lower Saucon Township

10

May 23, 2013

Respectfully,

HANOVER ENGINEERING ASSOCIATES, INC.



Christopher A. Taylor, PG, HMI

cat:cat/dad

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Enclosure(s)

cc: Ms. Priscilla deLeon (via e-mail)  
Mr. Hazem Hijazi, PE (via e-mail)  
Ms. Donna Louder (via e-mail)  
Mr. Allen Schleyer (via e-mail)  
Ms. Laressa J. McNemar, PE (via e-mail)  
Mr. James B. Birdsall, PE (via e-mail)  
Mr. Scott J. Brown, HMI (via e-mail)  
Mr. Jacob A. Schray, HMI (via e-mail)  
Mr. Rich Sichler, PG (via e-mail)  
Ms. Leslie Huhn (via e-mail)  
Ms. Diane Palik (via e-mail)  
Ms. Susan French (via e-mail)

**BETHLEHEM LANDFILL**  
**LEACHATE DEMAND REPORT**

April 2013

<u>Location</u>	<u>Total gallons</u>
LMC-6	9,916
LMC-7	37,344
LMC-8	35,202
LMC-10	1,719,000
PS-1	286,447
PS-2	208,508
PS-3	65,420
Phase-IV	560,375

Total LMC-10 Flow = LMC-6, 7, 8, Abatement Well System, Phase I and II, and LFG condensate. Phase-IV total from PS-1, PS-2 and PS-3.

Total Discharge

LMC-10	1,719,000
Phase IV	560,375
<b>TOTAL</b>	<b>2,279,375 gallons</b>

Total Leachate

Leachate	275,544
Phase IV	560,375
<b>TOTAL</b>	<b>835,919 gallons</b>

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LMC-10 Flow - Abatement System Flow = Leachate System Flow (gallons).  
 Abatement System Flow = 1,443,456 gallons (Neptune Flow meters)







