

Hanover

Engineering Associates Inc

April 23, 2012

APR 25 2012

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

RE: Joint Municipal Landfill Committee
Minutes of April 18, 2012 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 p.m. on April 18, 2012. The meeting was moved from the usual third Thursday of the month due to a conflict with Ms. deLeon's schedule.

Attending the meeting were:

Ms. Priscilla deLeon
Mr. Allen Schleyer
Mr. Christopher Taylor, PG, HMI

AGENDA ITEMS

I. Status of Waste Activities

Monthly Tonnages:

	<u>January 2012</u>	<u>February 2012</u>	<u>March 2012</u>
Mun Solid Waste - total	23,490.00	23,113.40	31,091.30
Mun Solid Waste - out/state	[15,221.30] (65%)	[14,693.70] (63%)	[21,769.50] (70%)
Construction and Demolition	11,867.80	5,392.10	5,735.00
Residual Waste (Total)	975.00	2,255.90	2,690.40
Asbestos	[51.40]	[51.30]	[16.30]
TOTAL	36,332.80	30,761.40	39,516.70

	<u>January 2012</u>	<u>February 2012</u>	<u>March 2012</u>
Recycled Tonnage (percent from Lower Saucon Twp.)	9.70 (77%)	52.13 (85%)	13.40 (70%)

NOTES:

1. The tonnage for 'Mun Solid Waste - out/state' is included in the tonnage for 'Mun Solid Waste - total' and is therefore shown in brackets, with the percentage of the total shown in parentheses.
2. The tonnage for 'Asbestos' is included in the tonnage for 'Residual Waste (Total)' and is therefore shown in brackets.

Mr. Schleyer stated that he put the percentage of out of state Municipal Solid Waste next to the tonnage figure for that category. Ms. deLeon asked if Construction and Demolition (C & D) waste is broken down to local versus out of state. Mr. Schleyer responded no, it isn't, and added that most

ROUTING

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

C & D waste is from local sources, and that it is really part of Municipal Solid Waste. Ms. deLeon responded that this should be noted in the report. Mr. Schleyer clarified that C & D waste is a separate item on the trucking ticket, and can therefore be broken out separately in the report, but that from a regulatory standpoint, it is considered to be a type of Municipal Solid Waste. Mr. Schleyer offered that this category could be eliminated from the report, with the tonnage added into the Municipal Solid Waste category, and the resulting out of state percentage calculated for the combined tonnages. Mr. Taylor stated that he'd rather keep the C & D category separate and that he could live with not having an out of state percentage listed for this category based on the understanding that the vast majority of the tonnage is from local sources. Ms. deLeon stated her agreement with this.

Mr. Taylor stated that the tonnage for Municipal Solid Waste was up in March. Mr. Schleyer responded yes, and stated that this was due to a big push for the end of the quarter to max out the quarterly Average Daily Volume number for the landfill. He explained that the transfer stations shift the outgoing waste flow among IESI's landfills as needed to regulate their tonnage numbers. He added that this accounts for the increase in the number of trucks also.

Mr. Schleyer noted that local recycling tonnage dropped off in March. He theorized that people are probably taking their recycling to more local locations. A discussion ensued regarding the other recycling location options available to residents of the area.

<u>Form U Submittals</u>	<u>Waste</u>	<u>Approval Date</u>
Plainfield Country Club	ACM	03-06-12
Vopak Terminal	ACM	03-06-12
Mars Snack Food	ACM	03-14-12
Vyncrest LLC	Off-spec product	03-19-12
Linde LLC	Wood waste	03-28-12
BASF	Plant trash	03-28-12
Evergreen Recycling	Off-spec product	04-05-12
Calpine	Sand Blast Grit	submitted 04-10-12

II. Annual Groundwater Trend Analysis

- The 1st Quarter 2012 Quarterly Groundwater Monitoring sampling took place the week of March 19, 2012.
- The Annual 2011 Groundwater Trend report is due June 30, 2012.

Mr. Taylor asked if there were any problems with the sampling. Mr. Schleyer responded no, but added that a few wells weren't sampled because they were dry. Mr. Taylor clarified that that was what he was getting at, and asked how a situation like that is handled by the regulators. Mr. Schleyer responded that the report must simply note the well as dry, and indicated that the DEP doesn't consider that a problem.

III. Correspondence and Reports

- Form U Submittals to PADEP and Lower Saucon Township
- Abatement System Report
- 4th Quarter 2011 Groundwater Quarterly Report
- Cell 4E Permit Modification

- Responses to PADEP Inspections
- PPC Plan (updated)

Mr. Schleyer noted that the landfill sent out an updated PPC Plan. Mr. Taylor asked if that was a normal course of action. Mr. Schleyer responded yes, and explained that the plan is updated periodically, which sometimes involves adding changes to it and sometimes issuing an update with no changes.

IV. Landfill Operations

- Department of Environmental Protection Inspections
 - March 8, 2012 – S. French: Engineer’s meeting
 - March 21, 2012 – B. Bham: groundwater monitoring
 - March 22, 2012 – R. Croll, T. Derstine, Radiation Management
 - March 26, 2012 – W. Govern: site inspection
 - April 5, 2012 – B. Bham: groundwater monitoring
 - April 12, 2012 – S. French: Engineer’s meeting
 - April 13, 2012 – W. Govern: site inspection

Mr. Schleyer stated that Mr. Croll and Mr. Derstine came out to the landfill to look at the rolloff container holding the radioactive material, and confirmed that it is still “hot”. Mr. Schleyer stated that he still hasn’t heard back from them regarding the final disposition of the container.

- Host Municipal Inspection
 - March 9, 2012 – Chris Taylor
 - March 15, 2012 – Chris Taylor
 - April 13, 2012 – Chris Taylor
- Bethlehem Renewable Energy (BRE) and Flare Operations

The following is an update to the Gas Turbine Generator/Flare activity. We had the following BRE/LFG Generator shutdowns at Bethlehem Landfill. Auto-valves closed as designed for each shutdown of either the flare or turbine. No odors were noted or odor complaints received by Bethlehem Landfill during the outage events. BRE is currently shutdown for equipment repairs. The flare is operating.

Mar 1, 2012	Turbine shutdown	11:19	Protective shutdown
	Flare shutdown	11:20	High temperature
	Flare startup	12:13	Duration 53 min
	Turbine startup	14:06	Duration 53 min then flare running
Mar 2, 2012	Turbine shutdown	14:35	Manual shutdown for BRE plant repairs
Mar 26, 2012	Turbine startup	10:50	Flare operating during plant shutdown
Mar 28, 2012	Flare shutdown	12:25	High temperature
	Flare startup	13:30	Turbine running during flare shutdown

All shutdown information is provided to the PADEP.

Mr. Schleyer noted that the BRE plant was shut down from March 2 to March 26. Ms. deLeon asked if it was up and running now. Mr. Schleyer responded yes. Ms. deLeon and Mr. Taylor both noted that the above statement "BRE is currently shutdown for equipment repairs" is inconsistent. Mr. Schleyer agreed, explaining that that was meant to refer to the conditions in March. Mr. Taylor asked if the problem that caused the shutdown was fixed. Mr. Schleyer responded that he hoped so, but that testing was still taking place. Mr. Taylor asked for clarification of the relationship between the landfill operation and the BRE plant, stating his belief that the BRE plant was essentially a separate operation from the landfill over which Mr. Schleyer really had no control. Mr. Schleyer agreed with that assessment. Ms. deLeon asked if both the BRE plant and landfill flare were running. Mr. Schleyer responded yes.

During the inspection following the meeting, Mr. Taylor confirmed that the BRE plant was operating.

- Well Sampling
 - The 1st Quarter 2012 Quarterly Groundwater Monitoring sampling took place the week of March 19, 2012.
- 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.
- Gas Collection
 - The Bethlehem Renewable Energy plant continues to operate as the primary landfill gas control system. The flare is a back-up to the generating plant. The flare is usually running simultaneously with the power plant. The flare is functioning as the secondary LFG control device.

During the inspection following the meeting, Mr. Taylor confirmed that the landfill flare was operating.

- 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 Mieser 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 1st 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 PADEP 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 PADEP 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 IESI 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).

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).

- Radiation Monitoring

- March 6, 2012: I-131 Level 1
- April 4, 2012: I-131 Level 1
- April 7, 2012: I-131 Level 1

Level 1 isotopes were disposed of on site.

Ra-226 Construction and Demolition material continues to remain in the isolation area until directed from PADEP for off-site transport.

During the inspection following the meeting, Mr. Schleyer pointed out the roll-off container staged in the isolation area.

- Phase IV Construction Activities

- Phase IV D-Stage 3, Cell 4-B, and Cell F are currently the active disposal area. Cell F was approved for disposal March 1, 2012. Capping certification is in the process of completion for submittal.

Mr. Schleyer stated that the active face for disposal is shifting between the cells noted.

- Complaints

- No complaints filed in March

- Miscellaneous

- Mr. Taylor asked about the status of the missing section of perimeter fence along the northern property line. Mr. Schleyer stated that the regular fencing contractor was

unavailable, that the landfill had three (3) new bidders come out to look at the job, and that they were currently reviewing the bids.

V. Commercial Waste Vehicles

	<u>January 2012</u>	<u>February 2012</u>	<u>March 2012</u>
Total Trucks	3,071	2,652	3227
Overweight	59	42	53
Warnings	38	31	33
Suspensions	21 (3>3%) 1-RO, 2-TT	11 (1>3%) 1-TT	20 (6>3%) 3-TT, 3-DT

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

Mr. Schleyer noted that there were fifty-three (53) overweight trucks in March. Mr. Taylor noted that six (6) trucks were more than three percent (3%) overweight. Mr. Schleyer commented that these were mostly C & D waste trucks. He explained how such trucks are loaded on a job site usually based on a certain number of machine buckets of material, and that sometimes the material in one or several bucket loads is heavier than expected. Mr. Taylor stated that the problem is that these trucks are not coming from a site with a scale. Mr. Schleyer responded yes.

VI. Correspondence

- Correspondence from Department of Environmental Protection

- Mr. Taylor stated that he had received a copy of correspondence from the DEP to Lower Saucon Township that was dated March 13, 2012, but not received until after the last monthly meeting on March 15. This correspondence included the DEP report of their inspections conducted at the landfill on January 24, 2012, in response to a complaint filed with the DEP. This report indicated "No violations noted".

Ms. deLeon asked about the Notice of Violation posted on the DEP's website. Mr. Taylor stated that he had forgotten to look this up, as was discussed at the last meeting. Mr. Schleyer indicated that he is trying to look into the matter through his DEP contacts, and that he would like to know why the website indicates a violation when the landfill has not received a formal written Notice of Violation from the DEP.

- Correspondence to Department of Environmental Protection

- Mr. Schleyer reiterated that IESI had sent a report to DEP's Air Quality program on March 13, 2012 which documented their actions in response to Air Quality's findings from the January 24, 2012 inspection. Mr. Taylor had not seen this report as of the last monthly meeting on March 15. In reviewing the report for this meeting, Mr. Taylor stated his belief that the report adequately addresses the issues raised by the Air Quality program during the inspection. Mr. Taylor asked if a confirming letter could be expected from the Air Quality program. Mr. Schleyer responded that he does not expect to hear back from them, since all corrective actions have been made by IESI and documented to the DEP.

- 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.

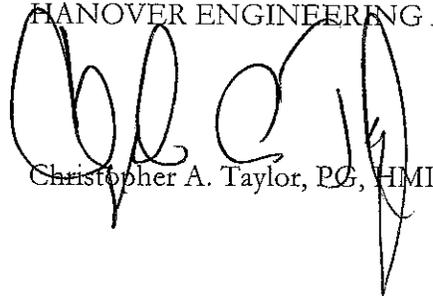
VIII. Establish Time for Next Meeting

1:00 p.m. May 17, 2012 at the Landfill Facility Office.

END OF MINUTES

Respectfully,

HANOVER ENGINEERING ASSOCIATES, INC.



Christopher A. Taylor, PE, HMI

cat:bls/rfr

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Enclosure(s)

cc: Ms. Priscilla deLeon (via e-mail)
Mr. Hazem Hijazi, PE (via e-mail)
Mr. Allen Schleyer (via e-mail)
Ms. Laouessa 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 (via e-mail)
Ms. Leslie Huhn (via e-mail)
Ms. Diane Palik (via e-mail)

BETHLEHEM LANDFILL
LEACHATE DEMAND REPORT

March 2012

<u>Location</u>	<u>Total gallons</u>
LMC-6	11,541
LMC-7	20,497
LMC-8	29,708
LMC-10	1,490,000
PS-1	407,906
PS-2	119,285
Phase-IV	527,191

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

Total Discharge

LMC-10	1,490,000
<u>Phase IV</u>	<u>527,191</u>
TOTAL	2,017,191 gallons

Total Leachate

Leachate	170,743
<u>Phase IV</u>	<u>527,191</u>
TOTAL	697,934 gallons

LMC-10 Flow – Abatement System Flow = Leachate System Flow (gallons).
Abatement System Flow = 1,319,257 gallons (Neptune Flow meters)

IESI BETHLEHEM LANDFILL

A	B	C	D	E	F	H	I	J	K	M	N	O
	TIME (days)	Phase IV PS-1 (Secondary Flows)				Phase IV PS-1 (Primary Flow)						Sump Level
		TOTALIZER	GALLONS	FLOW (gpd)	g/ac/day	TIME	TOTALIZER	Gallons	FLOW (gpd)	g/ac/day		
473												
474												
475	12/30/2011	40907	225335	469	67	3	20146806	171752	24536	1031	12.5"	
476	1/6/2012	7	225609	274	39	2	20241943	95137	13591	571	22.1	
477	1/13/2012	7	225889	280	40	2	20365489	123546	17649	742	22.1	
478	1/20/2012	7	226169	280	40	2	20478132	112643	16092	676	21.2"	
479	1/27/2012	7	226503	334	48	2	20618373	140241	20034	842	18.9"	
480	2/3/2012	7	226872	369	53	2	20787532	169159	24166	1015	19.1"	
481	2/10/2012	7	227083	211	30	1	20877618	90086	12869	541	22.7"	
482	2/16/2012	6	227261	178	30	1	20952699	75081	12514	526	14.2"	
483	2/24/2012	8	227503	242	30	1	21044854	92155	11519	484	20.8"	
484	3/2/2012	7	227746	243	35	1	21126496	81642	11663	449	23.8"	
485	3/9/2012	7	227981	235	34	1	21213120	86624	12375	476	23.4"	
486	3/16/2012	7	228269	288	41	2	21318994	105874	15125	582	23.6"	
487	3/23/2012	7	228535	266	38	1	21411515	92521	13217	508	21.2"	
488	3/30/2012	7	228823	288	41	2	21509600	98085	14012	539	23.8"	
489	4/6/2012	7	229131	308	44	2	21611815	102215	14602	562	14.4"	
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*3/2/12 Added Cell F acreage to G/A/D

