

## Bethlehem Landfill Committee Meeting Minutes

Date: Thursday, February 21, 2019  
Time: 1:00 p.m.  
Location: Lower Saucon Township Council Meeting Room  
Attendance: **Hanover Engineering:** Chris Taylor; **Bethlehem Landfill:** Cody White & Bob McReynolds; **Exelon:** Ken Minton; **Staff:** Leslie Huhn & Diane Palik; **Members:** Neil Ortwein & Hazem Hijazi. Absent: Priscilla deLeon

Mr. White reviewed the monthly tonnages for January:

	<u>November</u>	<u>December</u>	<u>January</u>
MSW	29,821.85	25,046.21	25,878.48
C&D	3,074.18	1,727.78	1,844.80
Residual (Total)	2,068.11	3,022.87	2,084.66
Asbestos	0.00	145.01	375.23
Sewage Sludge	71.27	99.00	90.92
Out of State (Total)	19,827.23 (60%)	16,232.76 (65%)	19,777.74 (65%)
Recycle	12 (83%)	12 (75%)	11 (82%)

Mr. White said there were two Form U Submittals on February 5<sup>th</sup> and February 13<sup>th</sup>, both for contaminated soil. The first quarter annual groundwater trend analysis sampling event is scheduled for February 25<sup>th</sup> through the 27<sup>th</sup> by Earth Res. There was no correspondence or reports. Mr. Taylor asked Mr. White to make sure the North Slope Road is clear to get to the wells.

Mr. White said for Landfill Operations, DEP inspections; Susan French was there on February 14<sup>th</sup> with Matt Glogowski. Mr. Taylor said he hopes they get more regular with their inspections. Mr. White said Mr. Glogowski is replacing Susan French. DEP had no concerns. There were two Host Municipal Inspections on February 7<sup>th</sup> and February 21, 2019.

Mr. White said for Commercial Waste Vehicles in January, there were 2,788 trucks with 86 overweight's, 11 warnings and 75 suspensions. Mr. Taylor said he was at the transfer station today and they were all underweight. He asked if there was any staging. Mr. McReynolds said he's sure there is, but he's not aware of any. Mr. Taylor said the PD had reported a driver driving erratically and there was garbage on Applebutter Road. Mr. Pannucci told Mr. Taylor he checked the driver's records and reported it to the PD when they called to follow up with it. Mr. McReynolds said he has no problem with the police getting involved. If they are doing something illegal, then they should get cited.

Mr. White said BRE has been running at full to half capacity with intermittent shutdown, in conjunction with the flare as the main GCCS. Bethlehem Landfill and BRE continue to communicate along with SCS Field Services with any routine or non-routine maintenance to maximize LFG production and minimize odors between the plant and flare. The January average flare flow was 1,458 scfm.

Mr. Minton said they were online 96.4% of time in January. They had three shutdowns; one was a maintenance shutdown early in the month. They had an air compressor failure on the 29<sup>th</sup> and then another air compressor failure on the 31<sup>st</sup>, but when they went to restart it, they had an expansion joint rupture in the turbine, which has kept the turbine out since then. They are looking at the economics of replacing the expansion joint to determine if it's economically viable because of the plant closure on June 1, 2019. They have quotes and he's waiting on approval. Mr. Hijazi questioned June 1<sup>st</sup>, and Mr. Minton said the date could be moved out more, he's not sure at this time. PJM has given them approval for the retirement of the Bethlehem plant. It's just a matter of contractual obligations they have with Bethlehem Landfill. If a decision is not made to replace the expansion joint, they will not come back online at all. The cost of the expansion joint is about \$25,000 plus you have to bring a small crane in to lift it out. They have to take down and remove the equipment when they close up, down to the pads.

Mr. White said the North Slope Road and swale have been replaced from heavy rain. Sedimentation traps and ponds need to be cleaned out. They regraded the area and set up temp berm areas because of the rain/snow we are

getting. The abatement system continues to operate and discharge to the Bethlehem WTP. Intermittent malfunctions of the well pumps and controls are repaired or replaced as needed. Since the last meeting, AB-3 has undergone pumps, heater and flow meter maintenance.

Mr. White said the leachate collection flow rates continue to be monitored and reported. Intermittent malfunctions of the well pumps and controls are repaired or replaced as needed. Since the last meeting, all flow meters have been calibrated. Troubleshooting for LMC-7 has been moved back to March. There will be maintenance checks on all the wells. Mr. Taylor said the flows for LMC-7 it's all zeroes for secondary flows. Mr. White said most of that flow is primarily going through the actual primary, which means the primary is working harder than the secondary. Mr. Taylor said they all have their own meters and sumps. The detection zone is to make you aware that the primary doesn't have too much flow; just enough that it's spilling over into the chambers and it's being collected.

Mr. White said there were two radioactive loads for January. The waste streams met level 1 requirement and were disposed of onsite. Phase IV Construction activities for waste operations have moved off of this area. The SE Realignment Construction activities for waste operations continue in Cell SE-1-A.

Mr. White said there were four complaints received on November 24<sup>th</sup> (odor complaint), December 28<sup>th</sup> (water on Applebutter Road), January 8<sup>th</sup> (odor complaint), and February 1<sup>st</sup> (odor complaint). Mr. McReynolds said the water on Applebutter Road was fixed by PennDOT as it was their road. They removed a lot of sediment and it's been flowing ever since. Mr. Taylor said there's a covenant area in the permit where you are not supposed to have any garbage disposal and you have had it delineated by a site surveyor and no garbage has been placed in the covenant area. The two odor complaints in 2019, IESI and DEP checked on both of them, and found no odors. Mr. McReynolds said they got there real early in the morning on February 1<sup>st</sup> and they did not smell anything. Maybe there's something early in the morning that he's not aware of, that's why he went out so early. Mr. Ortwein said it's the Bethlehem Waste Water Treatment Plant also. If you have your windows closed in the winter, you don't smell it, but in the summer you can smell it in Steel City.

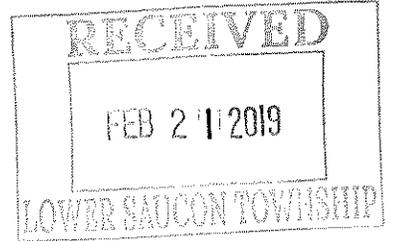
Mr. Taylor reviewed the leachate demand report with all the primary and secondary flows for January 2019. He asked about Pump House 1. Mr. White said Pump House 1 seems to receive more flow. As far as single digits, for secondary flows, they just performed some work on PS-1. Mr. Taylor said you are starting to get flow now on PS-4. Mr. White said yes, and to note, Martin & Martin will be changing the flow programming for PS-4 as there's a programming issue. The flow totals are good, they are going to have to change the meter out, so the next readings may be slightly off.

Mr. Taylor asked about the Form 50's that was submitted with no date, and Mr. McReynolds said he will check on that. Mr. Taylor said they didn't receive any royalty payments for 3Q18 and 4Q18. Mr. Minton said he received confirmation from Fed Ex that the landfill received them.

Mr. Taylor said the last SEM tests, there were six exceedance locations. Mr. White said two of them, gophers were digging at the wells and then the gas escapes from their holes. Another one was a soil issue and one was a collection knockout. Mr. Taylor said at the TCC meeting, there was a concern on the gas probe wells had a hit over SW-3 at 2200 and it seems like there's a lot of gas there. Mr. White said they've been working with SCS about the issue and the gas itself is low, and there's a lot of higher oxygen in that area, so they would keep them at a balancing point. They had opened them to mediate any methane in the soil probe. It's an area they've been covering and adjusting. When SCS gets a hit, he doesn't know when the rechecks are but they do get paperwork saying there was a hit and when there was a correction. It's since been tested and it is zero.

Mr. Ortwein was concerned about recycling in the Township. Mr. Hijazi said the EAC used to have events, but it got too expensive. Mr. Ortwein said people cut it up and throw it in the landfill.

Mr. Taylor said the next meeting is on March 21, 2019 starting at 1:00 p.m. The meeting adjourned at 1:40 p.m.



**Bethlehem Landfill Company  
LST Committee Meeting Notes February 2019  
February 21, 2019**

**Agenda Items**

**I. Waste Activities**

Monthly Tonnages

	November	December	January
MSW	29,821.85	25,046.21	25,878.48
C&D	3,074.18	1,727.78	1,844.80
Residual (Total)	2,068.11	3,027.87	2,084.66
Asbestos	0.00	145.01	375.23
Sewage Sludge (90/10)	71.27	99.00	90.92
Out of state (Total)	19,827.23 (57%)	16,232.76 (54%)	19,777.74 (65%)
Recycle	12 (83%)	12 (75%)	11 (82%)

<u>Form U Submittals</u>	<u>Waste</u>	<u>Approval Date</u>
1490 Southern Owner, LLC	Contaminated Soil (506)	2/5/19
Sterling Oaks Contractors, LLC	Contaminated Soil (507)	2/13/19

**II. Annual Groundwater Trend Analysis**

First quarter sampling event is scheduled for February 25<sup>th</sup> through the 27<sup>th</sup> by Earth Res Group.

**III. Correspondence / Reports**

None

**IV. Landfill Operations**

Department of Environmental Protection Inspections

2/14/19 S. French (Solid Waste), M. Glogowski (Solid Waste)

Host Municipal Inspection

2/7/19 C. Taylor  
2/21/19 C. Taylor

<u>Commercial Waste Vehicles</u>	November	December	January
Total # Trucks	2846	2469	2788

	November	December	January
Overweight	89	53	86
Warnings	70	41	11
Suspensions	19	12	75

November – TT=73, RO=3, RL=10, FL=1, DT=2 December – TT=49, RL=1, FL=1, DT=2 January – TT=49, RL=5, DT=32

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

Bethlehem Renewable Energy and Flare Operations and Gas Collection

**BRE has been running at full to half capacity, with intermittent shutdown, in conjunction with the flare as the main GCCS. Bethlehem Landfill and BRE continue to communicate along with SCS Field Services with any routine or non-routine maintenance to maximize LFG production and minimize odors between plant and flare.**

**January Average Flare Flow = 1,458 SCFM**

See times for flare shutdowns.

None

Documentation is on file.

North Slope Road and swale have been repaired from heavy rain. Sedimentation traps and ponds need to be cleaned out.

#### Abatement System

Abatement system continues to operate and discharge to the Bethlehem WWTP. Intermittent malfunctions of the well pumps and controls are repaired or replaced as needed. Since the last meeting, AB-3 has under gone had pumps, heater, and flow meter maintenance.

#### Leachate collection

Flow rates continue to be monitored and reported. Intermittent malfunctions of the well pumps and controls are repaired or replaced as needed. Since the last meeting, all flow meters have been calibrated. Troubleshooting for LMC-7 has been moved to March.

#### Radiation Monitoring

There were 2 radioactive loads for January (Tc-99m(2)). The waste streams met level 1 requirement and were disposed of onsite.

#### Phase IV Construction Activities

Waste operations have moved off of this area.

#### SE Realignment Construction Activities

Waste operations continue in Cell SE-1A.

#### Complaints received by Waste Connections

4 complaints received on 11/24/18 (Odor Complaint), 12/28/18 (Water on Applebutter Road), 1/8/19 (Odor Complaint), and 2/1/19 (Odor Complaint)

**BETHLEHEM LANDFILL**

**LEACHATE DEMAND REPORT**

**January 2019**

<u>Location</u>	<u>Total gallons</u>
LMC-6	81,421
LMC-7	22,594
LMC-8	109,219
PS-4	1,112,384
LMC-10	1,325,618
PS-1	141,646
PS-2	181,992
PS-3	201,720
Phase-IV	525,358

Total LMC-10 Flow = LMC-6, 7, 8, Abatement Well System, Phase I and II, SE Realignment (PS-4), and LFG condensate. Phase-IV total from PS-1, PS-2 and PS-3.

**Total Discharge**

LMC-10	1,325,618
<u>Phase IV</u>	<u>525,358</u>
<b>TOTAL</b>	<b>1,850,976 gallons</b>

**Total Leachate**

Leachate	541,819
<u>Phase IV</u>	<u>525,358</u>
<b>TOTAL</b>	<b>1,067,177 gallons</b>

LMC-10 Flow – Abatement System Flow = Leachate System Flow (gallons).  
Abatement System Flow = 1,309,157 gallons (Neptune Flow meters)

# BETHLEHEM LANDFILL

## GROUNDWATER DEMAND REPORT

January 2019

<b>Well No.</b>	<b>Water Level (avg. ft SWL*)</b>	<b>Flow (avg. GPM)</b>	<b>(Total gal)</b>
AB-1	70.1	7.2	289,217
AB-2	45.1	4.0	161,657
AB-3	44.1	0.3	11,550
AB-4	39.7	3.4	139,051
AB-5	46.1	1.1	46,253
AB-6	39.1	0.1	2,380
AB-7	41.3	4.2	170,209
AB-8	42.1	2.9	116,841
AB-9	41.8	<0.1	780
AB-10	40.1	9.2	371,219
TW-1	54.4	<0.1	0
<b>Total Flow</b>			<b>1,309,157 gallons</b>

\*SWL above transducer set point

\* Per DEP approval well TW-1 was shut down September 14, 2009.

	TIME (days)	LMC-6 (Primary Flows)				LMC-7 (Primary Flows)				LMC-8 (Primary Flows)			
		TOTALIZER	GALLONS	LOW (gpd)	G/A/D	TOTALIZER	GALLONS	LOW (gpd)	G/A/D	TOTALIZER	GALLONS	LOW (gpd)	G/A/D
1/19/2018	11.00	1874259	3,135	285	18	4054038	3771	343	28	7,199,823	9031	821	142
1/23/2018	4.00	1875502	1,243	311	20	4055580	1542	386	32	7,203,167	3344	836	144
1/30/2018	7.00	1877933	2,431	347	22	4058577	2997	428	35	7,209,026	5859	837	144
2/8/2018	9.00	1880966	3,033	337	21	4062106	3529	392	32	7,216,708	7682	854	147
2/14/2018	6.00	1883308	2,342	390	25	4064578	2472	412	34	7,221,791	5083	847	146
2/19/2018	5.00	1885424	2,116	423	27	4067006	2428	486	40	7,226,192	4401	880	152
2/26/2018	7.00	1888948	3,524	503	32	4071862	4856	694	57	7,237,088	10896	1,557	268
3/5/2018	7.00	1892750	3,802	543	35	4076300	4438	634	52	7,251,146	14058	2,008	346
3/12/2018	7.00	1896675	3,925	561	36	4093937	17637	2,520	207	7,263,202	12056	1,722	297
3/19/2018	7.00	1900129	3,454	493	31	4113947	20010	2,859	234	7,269,797	6595	942	162
3/26/2018	7.00	1903092	2,963	423	27	4121738	7791	1,113	91	7,275,931	6134	876	151
4/2/2018	7.00	1905763	2,671	382	24	4127863	6125	875	72	7,282,438	6507	930	160
4/12/2018	10.00	1908965	3,202	320	20	4135735	7872	787	65	7,291,172	8734	873	151
4/17/2018	5.00	1913740	4,775	955	61	4139567	3832	766	63	7,295,629	4457	891	154
4/25/2018	8.00	1923985	10,245	1,281	82	4145883	6316	790	65	7,302,357	6728	841	145
5/1/2018	6.00	1927224	3,239	540	34	4150402	4519	753	62	7,307,719	5362	894	154
5/7/2018	6.00	1929415	2,191	365	23	4153984	3582	597	49	7,312,372	4653	776	134
5/14/2018	7.00	1931714	2,299	328	21	4157899	3915	559	46	7,317,861	5489	784	135
5/22/2018	8.00	1941451	9,737	1,217	78	4162642	4743	593	49	7,324,158	6297	787	136
5/30/2018	8.00	1957150	15,699	1,962	125	4168640	5998	750	61	7,330,876	6718	840	145
6/7/2018	8.00	1962087	4,937	617	39	4173975	5335	667	55	7,337,432	6556	820	141
6/11/2018	4.00	1963994	1,907	477	30	4176297	2322	581	48	7,340,758	3326	832	143
6/20/2018	9.00	1968645	4,651	517	33	4181070	4773	530	43	7,347,903	7145	794	137
6/29/2018	9.00	1972093	3,448	383	24	4185888	4818	535	44	7,354,995	7092	788	136
7/5/2018	6.00	1975571	3,478	580	37	4188922	3034	506	41	7,359,559	4564	761	131
7/9/2018	4.00	1977247	1,676	419	27	4190621	1699	425	35	7,362,407	2848	712	123
7/16/2018	7.00	1980957	3,710	530	34	4193793	3172	453	37	7,367,648	5241	749	129
7/23/2018	7.00	1987902	6,945	992	63	4197413	3620	517	42	7,373,190	5542	792	137
8/1/2018	9.00	2002364	14,462	1,607	102	4203043	5630	626	51	7,380,786	7596	844	146
8/6/2018	5.00	2009784	7,420	1,484	95	4206558	3515	703	58	7,387,834	7048	1,410	243
8/13/2018	7.00	2016356	6,572	939	60	4211550	4992	713	58	7,397,325	9491	1,356	234
8/20/2018	7.00	2031303	14,947	2,135	136	4216001	4451	636	52	7,406,036	8711	1,244	215
8/31/2018	11.00	2041040	9,737	885	56	4222779	6778	616	51	7,417,472	11436	1,040	179
9/7/2018	7.00	2048903	7,863	1,123	72	4226212	3433	490	40	7,423,929	6457	922	159
9/12/2018	5.00	2062345	13,442	2,688	171	4229341	3129	626	51	7,429,272	5343	1,069	184
9/18/2018	6.00	2075788	13,443	2,241	143	4232471	3130	522	43	7,434,616	5344	891	154
10/1/2018	13.00	2126610	50,822	3,909	249	4240280	7809	601	49	7,448,700	14084	1,083	187
10/11/2018	10.00	2144225	17,615	1,762	112	4248664	8384	838	69	7,459,592	10892	1,089	188
10/19/2018	8.00	2162440	18,215	2,277	145	4254418	5754	719	59	7,468,523	8931	1,116	192
10/26/2018	7.00	2168193	5,753	822	52	4259031	4613	659	54	7,476,178	7655	1,094	189
11/8/2018	13.00	2218469	50,276	3,867	246	4267917	8886	684	56	7,494,605	18427	1,417	244
11/12/2018	4.00	2235017	16,548	4,137	264	4270862	2945	736	60	7,503,285	8680	2,170	374
11/20/2018	8.00	2281915	46,898	5,862	373	4277348	6486	811	66	7,519,184	15899	1,987	343
11/26/2018	6.00	2323727	41,812	6,969	444	4282847	5499	917	75	7,536,060	16876	2,813	485
12/3/2018	7.00	2362413	38,686	5,527	352	4288737	5890	841	69	7,549,897	13837	1,977	341
12/12/2018	9.00	2378987	16,574	1,842	117	4295542	6805	756	62	7,562,467	12570	1,397	241
12/17/2018	5.00	2385229	6,242	1,248	80	4298911	3369	674	55	7,569,124	6657	1,331	230
12/27/2018	10.00	2410111	24,882	2,488	158	4308355	9444	944	77	7,588,337	19213	1,921	331
1/3/2019	7.00	2421998	11,887	1,698	108	4313118	4763	680	56	7,596,652	8315	1,188	205
1/8/2019	5.00	2432734	10,736	2,147	137	4318265	5147	1,029	84	7,604,683	8031	1,606	277
1/14/2019	6.00	2440995	8,261	1,377	88	4323231	4966	828	68	7,612,768	8085	1,348	232
1/21/2019	7.00	2448933	7,938	1,134	72	4328080	4849	693	57	7,622,157	9389	1,341	231
1/31/2019	10.00	2478187	29,254	2,925	186	4335657	7577	758	62	7,636,997	14840	1,484	256

A	B	C	D	E	F	J	K	L	M	G	R	S	T
	TIME (days)	LMC-6 (Secondary Flows) TOTALIZER GALLONS	LMC-6 (Secondary Flows) FLOW (gpd)	LMC-6 (Secondary Flows) G/J/D	TOTALIZER GALLONS	LMC-7 (Secondary Flows) FLOW (gpd)	LMC-7 (Secondary Flows) G/J/D	TOTALIZER GALLONS	LMC-8 (Secondary Flows) G/J/D	LMC-8 (Secondary Flows) TOTALIZER GALLONS	LMC-8 (Secondary Flows) LOW (gpd)	LMC-8 (Secondary Flows) HIGH (gpd)	LMC-8 (Secondary Flows) G/J/D
1024													
1025	1/3/2018	5.00	1600721	338	68	4	2112210	6549	1310	5665649	7050	1410	243
1026	1/6/2018	5.00	1601441	720	144	9	2116694	4394	879	5666369	2737	547	394
1027	1/9/2018	11.00	1602712	1271	116	7	2121605	5001	485	5630015	21629	1966	339
1028	1/23/2018	4.00	1603209	497	124	8	2123342	1737	434	5636557	8542	2136	368
1029	1/30/2018	7.00	1605516	2307	330	21	2123726	386	55	5659151	20594	2942	507
1030	2/6/2018	10.00	1612457	6941	694	44	2124776	1048	105	5687587	28436	2844	450
1031	2/14/2018	5.00	1617774	5317	1063	68	2130619	6143	1229	5670541	19954	3991	688
1032	2/19/2018	5.00	1623885	6111	1222	78	2138372	7453	1491	5726994	19363	3873	668
1033	2/19/2018	7.00	1636647	12762	1823	116	2153435	15083	2152	5756377	31473	4496	775
1034	3/5/2018	7.00	1648130	12483	1783	114	2164612	11177	1597	5786748	30371	4339	748
1035	3/12/2018	7.00	1658957	9227	1318	84	2173900	9238	1327	5814027	25279	3611	623
1037	3/19/2018	7.00	1667576	9219	1317	84	2180481	6551	936	5832265	18238	2605	449
1038	3/26/2018	7.00	1677149	9573	1368	87	2185567	5116	731	5849581	17296	2471	426
1039	4/2/2018	7.00	1687602	10453	1493	95	2192454	6887	984	5865543	15982	2283	394
1040	4/12/2018	10.00	1702142	14540	1454	93	2198402	5948	595	5881237	25694	2569	443
1041	4/17/2018	5.00	1706144	4002	800	51	2201562	3804	632	5903444	9107	1821	314
1042	4/25/2018	8.00	1714931	8787	1098	70	2205366	3804	476	5921495	21151	2644	456
1043	5/1/2018	6.00	1729278	7347	1225	78	2207750	2424	404	5928129	6634	1108	191
1044	5/7/2018	6.00	1729886	3508	601	38	2209485	1695	283	5938579	1450	242	42
1045	5/14/2018	7.00	1729886	2744	392	25	2212846	3160	451	5931093	1514	216	37
1046	5/22/2018	8.00	1736016	7380	923	59	2223681	11036	1367	5940569	9476	1185	204
1047	5/30/2018	8.00	1744630	8620	1078	69	2228853	5172	640	5959946	19377	2422	418
1048	6/7/2018	8.00	1748135	3505	438	28	2231875	3022	378	5961248	1302	163	28
1049	6/11/2018	4.00	1749281	1126	282	18	2232909	334	84	5961535	387	97	17
1050	6/20/2018	9.00	1751966	2705	301	19	2232905	96	11	5962208	873	64	11
1051	6/29/2018	9.00	1754088	2102	234	15	2232575	270	30	5962808	600	67	11
1052	7/6/2018	6.00	1755473	1405	234	15	2232654	79	13	5963266	458	76	13
1053	7/9/2018	4.00	1756345	872	218	14	2232854	0	0	5963606	340	85	15
1054	7/16/2018	7.00	1759035	2690	384	24	2232707	53	8	5964367	761	109	19
1055	7/23/2018	7.00	1759849	6814	973	62	2232819	112	16	5970316	5849	850	147
1056	8/1/2018	9.00	1791023	25174	2797	178	2232983	64	7	6006724	38408	4268	736
1057	8/6/2018	5.00	1814256	23232	4646	296	2232978	95	19	6031285	22561	4512	778
1058	8/13/2018	7.00	1829115	13860	1980	126	2232978	0	0	6051372	20087	2870	495
1059	8/20/2018	7.00	1841525	13410	1916	122	2233031	53	8	6094375	43603	6229	1074
1060	8/31/2018	11.00	1853573	12048	1095	70	2234334	1303	118	6128179	33200	3018	520
1061	9/7/2018	7.00	1857973	4400	629	40	2234334	0	0	6136551	8476	1211	209
1062	9/12/2018	5.00	1862522	4549	910	58	2234334	0	0	6140569	3408	682	118
1063	9/18/2018	6.00	1867071	4549	758	48	2234334	0	0	6143458	3399	567	98
1064	10/1/2018	13.00	1870004	2933	228	14	2234334	0	0	6177029	33571	2582	445
1065	10/11/2018	10.00	1870004	0	0	0	2234334	0	0	6178949	1916	192	33
1066	10/19/2018	8.00	1870004	0	0	0	2234334	0	0	6222926	5286	755	130
1067	10/26/2018	7.00	1870004	0	0	0	2234334	0	0	6217640	38695	4837	834
1068	11/6/2018	13.00	1870004	0	0	0	2234334	11	1	6256016	33090	2545	439
1069	11/12/2018	4.00	1870004	0	0	0	2234334	0	0	6271294	15278	3820	659
1070	11/20/2018	8.00	1870004	0	0	0	2234334	0	0	6305331	34097	4262	735
1071	11/26/2018	6.00	1870004	0	0	0	2234334	0	0	6330351	24960	4160	717
1072	12/3/2018	7.00	1870070	56	9	1	2234364	0	0	6355909	25558	3651	630
1073	12/12/2018	9.00	1870075	5	1	0	2234364	0	0	6375901	19952	2221	383
1074	12/17/2018	5.00	1870075	0	0	0	2234364	0	0	6386162	10261	2052	354
1075	12/27/2018	10.00	1878681	8606	861	55	2234364	0	0	6415035	28877	2888	498
1076	1/6/2019	7.00	1884940	6259	894	57	2234364	0	0	6453524	18485	2641	455
1077	1/6/2019	5.00	1891124	6184	1237	79	2234364	0	0	6450242	16818	3364	580
1078	1/14/2019	6.00	1896692	5568	928	59	2234364	0	0	6462673	12331	2055	354
1079	1/21/2019	7.00	1901693	5201	743	53	2234419	55	8	6476106	13433	1919	311
1080	1/31/2019	10.00	1910721	8279	828	53	2234419	0	0	6502398	26292	2629	453

IESI BETHLEHEM LANDFILL

	A	B	C	D	E	F	H	I	J	K	M	N	O
866		TIME	Phase IV PS-1 (Secondary Flows)				Phase IV PS-1 (Primary flow)				sump		
867		(days)	TOTALIZER	GALLONS	FLOW (gpd)	g/ac/day			Totalizer	gallons	flow(gpd)	g/ac/day	inches
868	1/3/2018	5	302042	42	8	0			48301870	33161	6632	255	14.2"
869	1/8/2018	5	302042	0	0	0			48316003	14133	2827	109	14.4"
870	1/19/2018	11	302042	0	0	0			48316623	620	56	2	18.4"
871	1/23/2018	4	303551	1509	377	15			48316672	49	12	0	16.1"
872	1/30/2018	7	304748	1197	171	7			48317544	872	125	5	15.3"
873	2/9/2018	10	305235	487	49	2			48321272	3728	373	14	18.1"
874	2/14/2018	5	306423	1188	238	9			48322929	1657	331	13	16.1"
875	2/19/2018	5	308927	504	101	4			48335358	12429	2486	96	20.2"
876	2/26/2018	7	308297	1370	196	8			48365809	30451	4350	167	17.8"
877	3/5/2018	7	309239	942	135	5			48394293	28484	4069	157	14.9"
878	3/12/2018	7	310109	870	124	5			48421021	26728	3818	147	21.2"
879	3/19/2018	7	310874	765	109	4			48450104	29083	4155	160	11.3"
880	3/26/2018	7	310907	33	5	0			48481784	31680	4526	174	14.7"
881	4/2/2018	7	310926	19	3	0			48515391	33607	4801	185	17.7"
882	4/12/2018	10	312355	1429	143	5			48563817	48426	4843	186	15.9"
883	4/17/2018	5	312358	3	1	0			48589965	26148	5230	201	14.4"
884	4/25/2018	8	313666	1308	164	6			48632494	42529	5316	204	22.9"
885	5/1/2018	6	313670	4	1	0			48668382	35888	5981	230	21.9"
886	5/7/2018	6	314364	694	116	4			48699782	31400	5233	201	20.4"
887	5/14/2018	7	314639	275	39	2			48737142	37360	5337	205	18.7"
888	5/22/2018	8	315273	634	79	3			48785701	48559	6070	233	18.9"
889	5/30/2018	8	316171	898	112	4			48840699	54998	6875	264	19.8"
890	6/7/2018	8	316474	303	38	1			48890927	50228	6279	241	18.1"
891	6/11/2018	4	316480	6	2	0			48915631	24704	6176	238	22.9"
892	6/20/2018	13	316484	10	1	0			48971353	80426	6187	238	16.1"
893	6/29/2018	9	316495	11	1	0			49025903	54550	6061	233	13.6"
894	7/5/2018	6	316498	3	1	0			49059729	33826	5638	217	20.2"
895	7/9/2018	4	316502	4	1	0			49082662	22933	5733	221	14.0"
896	7/16/2018	7	316504	2	0	0			49120934	38272	5467	210	18.4"
897	7/23/2018	7	316507	3	0	0			49161305	40371	5767	222	15.4"
898	8/1/2018	9	316545	38	4	0			49205956	44651	4961	191	23.6"
899	8/6/2018	5	316633	88	18	1			49231931	25975	5195	200	18.9"
900	8/13/2018	7	316776	143	20	1			49268430	36499	5214	201	21.5"
901	8/20/2018	7	316944	168	24	1			49305805	37375	5339	205	18.9"
902	8/31/2018	11	317122	178	16	1			49369414	63609	5783	222	23.4"
903	9/7/2018	7	317301	179	26	1			49415154	45740	6534	251	18.7"
904	9/12/2018	5	317403	102	20	1			49455655	40501	8100	312	22.1"
905	9/18/2018	6	317557	154	26	1			49496755	41100	6850	263	21.2"
906	10/1/2018	13	317871	314	24	1			49565289	68534	5272	203	22.1"
907	10/11/2018	10	318122	251	25	1			49623186	57897	5790	223	21.2"
908	10/19/2018	8	318345	223	28	1			49664658	41472	5184	199	23.4"
909	10/26/2018	7	318500	155	22	1			49706343	41685	5955	229	17.4"
910	11/8/2018	13	318736	236	18	1			49784960	78617	6047	233	14.0"
911	11/12/2018	4	318746	10	3	0			49805391	20431	5108	196	17.4"
912	11/20/2018	8	319503	757	95	4			49860144	54753	6844	263	17.4"
913	11/26/2018	6	319996	493	82	3			51031479	1171335	195223	7509	20.4"
914	12/3/2018	7	325089	5093	728	28			51105543	74064	10581	407	20.6"
915	12/12/2018	9	329426	4337	482	19			51747262	641719	71302	2742	17.6"
916	12/17/2018	5	331435	2009	402	15			51802463	55201	11040	425	21.9"
917	12/27/2018	10	339877	8442	844	32			54197652	2395189	239519	9212	23.6"
918	1/3/2019	7	343848	3971	567	22			54208523	10871	1553	60	14.9"
919	1/8/2019	5	347137	3289	658	25			54208523	0	0	0	18.9"
920	1/14/2019	6	349233	2096	349	13			54233557	25034	4172	160	20.4"
921	1/21/2019	7	352210	2977	425	16			54270683	37126	5304	204	20.8"
922	1/31/2019	10	357979	5769	577	22			54324279	53596	5360	206	15.3"

IESI BETHLEHEM LANDFILL

	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ
866	Phase IV PS-3 (Secondary)						Phase IV PS-3 (Primary)						sump
867	Date	days	totalizer	gallon	flow(gpd)	g/ac/day			totalizer	gallons	flow(gpd)	g/ac/day	inches
868	1/3/2018	5	42581	0	0	0		8447408	13122	2624	632	7.2"	
869	1/8/2018	5	42581	0	0	0		8460116	12708	2542	612	25.3"	
870	1/19/2018	11	42581	0	0	0		8502963	42847	3895	939	25.9"	
871	1/23/2018	4	42581	0	0	0		8514485	11522	2881	694	17"	
872	1/30/2018	7	42582	1	0	0		8544625	30140	4306	1038	23"	
873	2/9/2018	10	42582	0	0	0		8579847	35222	3522	849	16.0"	
874	2/14/2018	5	42582	0	0	0		86110530	30683	6137	1479	26.8"	
875	2/19/2018	5	42582	0	0	0		8640256	29726	5945	1433	26.6"	
876	2/26/2018	7	42582	0	0	0		8667943	47687	6812	1642	25.3"	
877	3/5/2018	7	42582	0	0	0		8743191	55248	7893	1902	23.8"	
878	3/12/2018	7	42583	1	0	0		8789495	46304	6615	1594	22.3"	
879	3/19/2018	7	42583	0	0	0		8823534	34039	4863	1172	23.6"	
880	3/26/2018	7	42629	46	7	1		8850029	26495	3785	912	27.4"	
881	4/2/2018	7	42631	2	0	0		8877792	27763	3966	956	26.8"	
882	4/12/2018	10	42631	0	0	0		8918259	40467	4047	975	24.7"	
883	4/17/2018	5	42631	0	0	0		8935021	16762	3352	808	25.7"	
884	4/25/2018	8	42632	1	0	0		8967304	32283	4035	972	25.7"	
885	5/1/2018	6	42632	0	0	0		8986273	18969	3162	762	25.5"	
886	5/7/2018	6	42632	0	0	0		9002559	16286	2714	654	26.8"	
887	5/14/2018	7	42632	0	0	0		9020498	17939	2563	618	24.9"	
888	5/22/2018	8	42632	0	0	0		9047728	27230	3404	820	25.9"	
889	5/30/2018	8	42665	33	4	0		9086032	38304	4788	1154	27.4"	
890	6/7/2018	8	42665	0	0	0		9110208	24176	3022	728	25.5"	
891	6/11/2018	4	42665	0	0	0		9120377	10169	2542	613	26.2"	
892	6/20/2018	13	42665	0	0	0		9142393	32185	2476	597	26.8"	
893	6/29/2018	9	42665	0	0	0		9162659	20266	2252	543	23.6"	
894	7/5/2018	6	42665	0	0	0		9176312	13653	2276	548	23.6"	
895	7/9/2018	4	42665	0	0	0		9185141	8829	2207	532	27.9"	
896	7/16/2018	7	42665	0	0	0		9199913	14772	2110	509	26.8"	
897	7/23/2018	7	42666	1	0	0		9216822	16909	2416	582	25.1"	
898	8/1/2018	9	42666	0	0	0		9259666	42844	4760	1147	21.1"	
899	8/6/2018	5	42666	0	0	0		9284508	24842	4968	1197	24.9"	
900	8/13/2018	7	42666	0	0	0		9322417	37909	5416	1305	24.9"	
901	8/20/2018	7	42666	0	0	0		9354156	31739	4534	1093	25.7"	
902	8/31/2018	11	42689	23	2	0		9396489	42333	3848	927	25.3"	
903	9/7/2018	7	42689	0	0	0		9416454	19965	2852	687	26.8"	
904	9/12/2018	5	42689	0	0	0		9434353	17899	3580	863	24.8"	
905	9/18/2018	6	42689	0	0	0		9452352	17999	3000	723	25.7"	
906	10/1/2018	13	42689	0	0	0		9488864	36512	2809	677	66.9"	
907	10/11/2018	10	42689	0	0	0		9490856	1992	199	48	67.8"	
908	10/19/2018	8	42781	92	12	1		9494868	4012	502	121	63.1"	
909	10/26/2018	7	42817	36	5	0		9500655	5787	827	199	60.5"	
910	11/8/2018	13	42817	0	0	0		9596127	95472	7344	1770	24.5"	
911	11/12/2018	4	43246	429	107	10		9627326	31199	7800	1879	15.3"	
912	11/20/2018	8	43246	0	0	0		9692363	65037	8130	1959	17.7"	
913	11/26/2018	6	43246	0	0	0		9747387	55024	9171	2210	21.5"	
914	12/3/2018	7	43266	20	3	0		9811123	63736	9105	2194	18.5"	
915	12/12/2018	9	43266	0	0	0		9869983	58860	6540	1576	26.6"	
916	12/17/2018	5	43266	0	0	0		9893769	23786	4757	1146	27.6"	
917	12/27/2018	10	43266	0	0	0		9968493	74724	7472	1801	23.2"	
918	1/3/2019	7	43266	0	0	0		10015193	46700	6671	1608	20.2"	
919	1/8/2019	5	43266	0	0	0		10063124	47931	9586	2310	18.5"	
920	1/14/2019	6	43266	0	0	0		10105956	42832	7139	1720	26.2"	
921	1/21/2019	7	43266	0	0	0		10142879	36923	5275	1271	21.5"	
922	1/31/2019	10	43266	0	0	0		10216913	74034	7403	1784	20.0"	

IESI BETHLEHEM LANDFILL

	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
865	Phase IV PS-4 (Secondary)						Phase IV PS-4 (Primary)						sump
866	Date	days	totalizer	gallon	flow(gpd)	g/ac/day			totalizer	gallons	flow(gpd)	g/ac/day	inches
867													
868													
869													
870													
871													
872													
873													
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907													
908													
909									0	0	#DIV/0!	#DIV/0!	0"
910			0	0	0	0			0	0	#DIV/0!	#DIV/0!	0"
911	11/12/2018	0	147	147	0	0			207023	207023	#DIV/0!	#DIV/0!	28.3"
912	11/20/2018	8	147	0	0	0			575433	368410	46051	11097	31.4"
913	11/26/2018	6	147	0	0	0			880527	305094	50849	12253	21.5"
914	12/3/2018	7	147	0	0	0			1158031	277504	39643	9553	18.5"
915	12/12/2018	9	147	0	0	0			1158032	1	0	0	18.5"
916	12/17/2018	5	147	0	0	0			1158033	1	0	0	18.5"
917	12/27/2018	10	404	257	26	2			1560142	402109	40211	9689	19.3"
918	1/3/2019	7	404	0	0	0			1560143	1	0	0	19.3"
919	1/8/2019	5	483	79	16	1			1856842	296699	59340	14299	22.1"
920	1/14/2019	6	586	103	17	2			1875514	18672	3112	750	15"
921	1/21/2019	7	586	0	0	0			2019879	144365	20624	4970	14.1"
922	1/31/2019	10	941	355	36	3			2269621	249742	24974	6018	22.5"

## Bethlehem Renewable Energy

### Monthly Operations Report

January 2019

#### Turbine

Start Hours	End Hours	On Line Hours	On Line %	T1 Avg °F	T5 Min °F	T5 Max °F
18569.9	19287.1	717.3	96.4%	34.8	0	0

#### Generator

On Line Hours	Gross Total kWH	Gross Avg kWH/Hr
717.3	2,328,560	3,246

#### Station Intertie Relay

Total Import kWH	Total Export (Net) kWH	Average Export (Net) kWH/Hr	Average Plant Parasitic Load kWH/Hr
2966.064	1,741,422	2,341	910

#### Land Fill Gas

Total kSCF	Total MMBtu's	Average SCFM	Average Field Vac in. H2O
68,960	37,609	1,545	-60.3

Average CH4 %	Average CO2 %	Average O2 %	Average N2 %	Average H2S ppm
53.5%	40.4%	1.3%	4.9%	0.0

**COMBINED SSM REPORTING FORM**  
*Landfill Gas Collection and Control System*

<p>This form is used to document actions taken during a SSM event of any portion of the gas collection and control system. If any of the steps taken are not consistent with this procedure, document the variations on a "SSM Plan Departure Report Form" and follow the reporting requirements in the SSM Plan.</p>		
<p>1. Event Type (Check all that apply Shutdown <input checked="" type="checkbox"/> /Startup <input checked="" type="checkbox"/> /Malfunction <input type="checkbox"/>:</p>		
2.a. Beginning of Shutdown Event	Date: 01/07/19	Time: 07:40
End of Shutdown Event	Date: 01/07/19	Time: 07:40
2.b. Beginning of Startup Event	Date: 01/07/19	Time: 16:34
End of Startup Event	Date: 01/07/19	Time: 16:35
2.c. Beginning of Malfunction Event	Date:	Time:
End of Malfunction Event	Date:	Time:
3. Duration of GCCS System Downtime (hours): <u>0 min</u> (the flare was running during the turbine outage)		
4. Duration of SSM Event (hours): Shutdown <u>0 min</u> Startup <u>1 mins</u> Malfunction		
5. Description of Affected Equipment: Turbine		
6. Cause/Reason for SSM event: To perform plant maintenance.		
7. Name of person completing this form (please print): Ken Minton		
8. Date form completed: 2/21/19		
<p>Follow the procedure listed below for each SSM event. This form is to be used to document the actions taken during each SSM event. Check off the steps completed.</p>		
<b>11. MALFUNCTION PROCEDURE CHECKLIST</b>		Check if procedure was followed
For all malfunctions, follow procedures in Section 5.2 of the SSMP		<input type="checkbox"/>
For loss of electrical power, follow procedures in Section 5.4 of the SSMP		<input type="checkbox"/>
For low temperature conditions in the enclosed flare, PCD-03, follow procedures in section 5.5 of the SSMP		<input type="checkbox"/>
For loss of flame at the enclosed flare, PCD-03, follow procedures in Section 5.6 of the SSMP		<input type="checkbox"/>
For temperature monitoring/recording device monitoring malfunctions, follow procedures in Section 5.8 of the SSMP		<input type="checkbox"/>
For collection well and pipe failures, follow procedures in Section 5.9 of the SSMP		<input type="checkbox"/>
For field monitoring equipment malfunctions, follow procedures in Section 5.11 of the SSMP		<input type="checkbox"/>
<b>10. SHUTDOWN EVENT PROCEDURE CHECKLIST</b>		Check if procedure was followed
Flare		<input type="checkbox"/>

**COMBINED SSM REPORTING FORM**  
*Landfill Gas Collection and Control System*

<p>This form is used to document actions taken during a SSM event of any portion of the gas collection and control system. If any of the steps taken are <b>not consistent with this procedure</b>, document the variations on a "SSM Plan Departure Report Form" and follow the reporting requirements in the SSM Plan.</p>		
<p>1. Event Type (Check all that apply Shutdown <input checked="" type="checkbox"/> /Startup <input checked="" type="checkbox"/> /Malfunction <input type="checkbox"/>:</p>		
2.a. Beginning of Shutdown Event	Date: 01/29/19	Time: 09:52
End of Shutdown Event	Date: 01/29/19	Time: 09:52
2.b. Beginning of Startup Event	Date: 01/29/19	Time: 10:12
End of Startup Event	Date: 01/07/19	Time: 10:55
2.c. Beginning of Malfunction Event	Date:	Time:
End of Malfunction Event	Date:	Time:
3. Duration of GCCS System Downtime (hours): <u>0 min</u> (the flare was running during the turbine outage)		
4. Duration of SSM Event (hours): Shutdown <u>0 min</u> Startup <u>43mins</u> Malfunction		
5. Description of Affected Equipment: Turbine		
6. Cause/Reason for SSM event: Loss of service air		
7. Name of person completing this form (please print): Ken Minton		
8. Date form completed: 2/21/19		
<p>Follow the procedure listed below for each SSM event. This form is to be used to document the actions taken during each SSM event. Check off the steps completed.</p>		
<b>11. MALFUNCTION PROCEDURE CHECKLIST</b>		Check if procedure was followed
For all malfunctions, follow procedures in Section 5.2 of the SSMP		<input type="checkbox"/>
For loss of electrical power, follow procedures in Section 5.4 of the SSMP		<input type="checkbox"/>
For low temperature conditions in the enclosed flare, PCD-03, follow procedures in section 5.5 of the SSMP		<input type="checkbox"/>
For loss of flame at the enclosed flare, PCD-03, follow procedures in Section 5.6 of the SSMP		<input type="checkbox"/>
For temperature monitoring/recording device monitoring malfunctions, follow procedures in Section 5.8 of the SSMP		<input type="checkbox"/>
For collection well and pipe failures, follow procedures in Section 5.9 of the SSMP		<input type="checkbox"/>
For field monitoring equipment malfunctions, follow procedures in Section 5.11 of the SSMP		<input type="checkbox"/>
<b>10. SHUTDOWN EVENT PROCEDURE CHECKLIST</b>		Check if procedure was followed
Flare		<input type="checkbox"/>

**COMBINED SSM REPORTING FORM**  
*Landfill Gas Collection and Control System*

<p>This form is used to document actions taken during a SSM event of <b>any portion of the gas collection and control system</b>. If any of the steps taken are <b>not consistent with this procedure</b>, document the variations on a "SSM Plan Departure Report Form" and follow the reporting requirements in the SSM Plan.</p>		
<p>1. Event Type (Check all that apply Shutdown <input checked="" type="checkbox"/> /Startup <input type="checkbox"/> /Malfunction <input type="checkbox"/>:</p>		
2.a. Beginning of Shutdown Event	Date: 01/31/19	Time: 07:02
End of Shutdown Event	Date: 01/31/19	Time: 07:02
2.b. Beginning of Startup Event	Date:	Time:
End of Startup Event	Date:	Time:
2.c. Beginning of Malfunction Event	Date:	Time:
End of Malfunction Event	Date:	Time:
<p>3. Duration of GCCS System Downtime (hours): <u>0 min</u> (the flare was running during the turbine outage)</p>		
<p>4. Duration of SSM Event (hours): Shutdown <u>0 min</u> Startup Malfunction</p>		
<p>5. Description of Affected Equipment: Turbine</p>		
<p>6. Cause/Reason for SSM event: Loss of service air</p>		
<p>7. Name of person completing this form (please print): Ken Minton</p>		
<p>8. Date form completed: 2/21/19</p>		
<p align="center">Follow the procedure listed below for each SSM event. This form is to be used to document the actions taken during each SSM event. Check off the steps completed.</p>		
<p>11. MALFUNCTION PROCEDURE CHECKLIST</p>		<p>Check if procedure was followed</p>
<p>For all malfunctions, follow procedures in Section 5.2 of the SSMP</p>		<input type="checkbox"/>
<p>For loss of electrical power, follow procedures in Section 5.4 of the SSMP</p>		<input type="checkbox"/>
<p>For low temperature conditions in the enclosed flare, PCD-03, follow procedures in section 5.5 of the SSMP</p>		<input type="checkbox"/>
<p>For loss of flame at the enclosed flare, PCD-03, follow procedures in Section 5.6 of the SSMP</p>		<input type="checkbox"/>
<p>For temperature monitoring/recording device monitoring malfunctions, follow procedures in Section 5.8 of the SSMP</p>		<input type="checkbox"/>
<p>For collection well and pipe failures, follow procedures in Section 5.9 of the SSMP</p>		<input type="checkbox"/>
<p>For field monitoring equipment malfunctions, follow procedures in Section 5.11 of the SSMP</p>		<input type="checkbox"/>
<p>10. SHUTDOWN EVENT PROCEDURE CHECKLIST</p>		<p>Check if procedure was followed</p>
<p>Flare</p>		<input type="checkbox"/>