

David

Project = 0930104-020-AC-PSD-382B



OKEECHOBEE LANDFILL
10800 NE 128th Avenue
Okeechobee, FL 32974

Module AP235

October 11, 2012

RECEIVED

OCT 16 2012

DIVISION OF AIR
RESOURCE MANAGEMENT

Mr. David Read
Air Permitting Engineer
Division of Air Resources Management
Department of Environmental Protection
2600 Blair Stone Road, MS 5000
Tallahassee, FL 32399

RE: Okeechobee Landfill, Inc (OLI) PSD Air Construction Permit 0930104-018-AC (PSD-FL-382A)

Dear David:

This letter is to request a second extension to Specific Condition III.A.1 of the referenced permit that requires OLI to install and operate a gas desulphurization plant (GDP) such that all collected landfill gas is treated to less than 200 ppmv H₂S by June 30, 2012. The first extension, granted by FDEP on June 28, 2012, extended the compliance date to October 28, 2012. Due to continuing operational issues described below, we are requesting the compliance date be extended again to March 31, 2013.

Similar to the first request, the plant remains functional and treating landfill gas, but we continue to experience foaming which is precluding consistent treatment of landfill gas to the 200 ppmv H₂S level. The foaming prevents optimum transfer of H₂S from the vapor phase to the liquid phase in the system contactor and causes a number of other operational issues which lead to significant down-time. A table showing the H₂S data and thirty day rolling average from June 30, 2012 through September 30, 2012 is attached. As shown, we were able to meet the permit limit of 200 ppmv H₂S for an extended period, but concentrations have steadily increased since mid August.

It is important to note that even with the ongoing problems, the landfill gas is still being treated to levels that are lower than those we proposed in our permit application (400 ppmv H₂S). Also, due to several factors, gas flow rates at the landfill are significantly lower than estimated in the permit application. This combination of reduced H₂S concentrations to the flare and decreased gas flows (currently approximately 2700 scfm), means the annual emissions of SO₂ are greatly reduced and considerably lower than the amounts emitted before construction of the GDP. The emissions of SO₂ in tons per year are still less than the worst case SO₂ emissions that passed dispersion modeling conducted in February 2007 for the permit application. The landfill gas generation used in the dispersion modeling was based on the full build out of both the Berman Road and Clay Farms landfill of 32,400 scfm of gas. Based on current data for the landfill, including much lower waste acceptance rates and the amount of landfill gas being generated versus modeled, it is very likely that the life of site gas curve used

for the modeling was over-stated. With respect to SO₂ concentrations in the emissions, the modeling that was performed for the permit application was conducted assuming a GDP being in place, and since SO₂ emissions are directly related to H₂S content of the landfill gas, we still believe that the modeled results accurately reflect compliance with the NAAQS in place at the time of the permitting. Again, we believe this is all important for FDEP to consider when evaluating this request.

Since the time of the first request, the OLI plant design team has investigated a number of issues and considered several potential solutions. We provided email updates to you on our progress on 7/23, 8/15, and 9/17. In August, it appeared the foaming issue had been sufficiently resolved through changes to the input temperature of the process water and incremental changes to the conductivity present in the system. Outlet concentrations of H₂S declined significantly. However, these improvements proved unsustainable, and foaming began increasing in late August and into September. During this time, we continued to both press the contractor for solutions and utilize antifoaming agents to the degree practicable (if used in excess, the antifoaming agents can cause problems with the system). Though the contractor's design and operation engineers believe the constituents in the landfill gas itself are not problematic and the system can be made fully functional, they have yet to provide a definitive solution.

In response to the recent increase in foaming events, the contractor has now suggested the system may be magnesium deficient and recommended the addition of magnesium sulfate. They also recommended installation of continuous drip feed or dosing antifoam pumps at various points in the system, changes to the nutrient feed, and additional adjustments to the conductivity, pH, and redox potential. We are currently pursuing these recommendations and began feeding magnesium into the system on October 9, 2012. They continue to work with the water treatment subcontractor to evaluate potential issues and solutions for the input water, though it is unclear if this will improve the system. We estimate it will take several months to, implement, and fully evaluate the changes to the system, which must be allowed to reach steady state before a true confirmation of efficacy and stable operation can be made. Achieving steady state when changing a biological system can take several weeks. On the positive side, at this point we are more comfortable with the H₂S measurements obtained from the CFM and other instruments, so we can better assess our emissions and the effect of any changes to the system.

Lastly, while other non-WM landfills have successfully utilized this technology on a smaller scale, Okeechobee Landfill is not the only Waste Management landfill site experiencing issues with this technology. Two other WM landfills, the King George Landfill in Virginia and Pine Tree Acres Landfill in Michigan, are experiencing startup issues at new GDPs using the same biological H₂S removal technology and contractors. The Pine Tree Acres GDP was operational for several months, but was shut down after experiencing very similar foaming issues to OLI, despite using treated city water with very different characteristics. The King George Landfill is delayed in startup. Because of the inability of the contractor to provide timely solutions on multiple projects, upper level management from WM is working at a high level with the GDP vendor to achieve a comprehensive solution to these issues and will pursue all avenues necessary to do so. However, each system has unique characteristics and requires a specific recipe and approach.

We thank you for your willingness to consider this request. Please be assured OLI is working diligently to both minimize emissions and correct all problems with the GDP. If you have any questions, please contact Jim Christiansen at 321-704-4162.

Sincerely,

A handwritten signature in blue ink, appearing to read 'T. Bishop', with a long horizontal flourish extending to the right.

Tony Bishop
District Manager

cc: Lee Hoefert, P.E., SE District Air Program

ATTACHMENT

Okeechobee Landfill GDP H2S Data Extract

Date	Time GC or Draeger	Draeger/Only Use when GC down in Column D	Average Daily GC or Draeger Sulfur Concentration	Draeger used Yes/No	MONTHLY AVERAGE	
					30-day Rolling Sulfur Concentration	CFM/Draeger Sulfur Concentration
					ppmv	ppmv
5/31/2012	4:10 PM	140	140	Yes		
6/1/2012	3:00 PM	140	140	Yes	--	
6/2/2012	1:30 PM	160	160	Yes	--	
6/3/2012	10:30 AM	120	120	Yes	--	
6/4/2012	6:15 AM	220	170	Yes	--	
6/5/2012	3:00 PM	175	180	Yes	--	
6/6/2012	N/A	N/A	0	N/A	--	
6/7/2012	4:30 PM	205	210	Yes	--	
6/8/2012	4:30 PM	220	210	Yes	--	
6/9/2012	N/A	0	200	N/A	--	
6/10/2012	N/A	0	180	N/A	--	
6/11/2012	4:00 PM	140	260	Yes	--	
6/12/2012	6:00 AM	180	140	Yes	--	
6/13/2012	N/A	0	0	Yes	--	
6/14/2012	4:34 PM	180	180	Yes	--	
6/15/2012	0:00	0	300	No	--	
6/16/2012	0:00	0	276	No	--	
6/17/2012	0:00	0	215	No	--	
6/18/2012	0:00	0	187	No	--	
6/19/2012	0:00	0	200	No	--	
6/20/2012	0:00	0	218	No	--	
6/21/2012	0:00	0	218	No	--	
6/22/2012	0:00	0	150	No	--	
6/23/2012	0:00	0	182	No	--	
6/24/2012	0:00	0	224	No	--	
6/25/2012	0:00	0	258	No	--	
6/26/2012	0:00	0	183	No	--	
6/27/2012	0:00	0	70	No	--	
6/28/2012	0:00	0	107	No	--	
6/29/2012	0:00	0	198	No	176	
6/30/2012	0:00	0	89	No	174	175.8471
7/1/2012	0:00	0	94	No	173	
7/2/2012	0:00	0	210	No	174	
7/3/2012	0:00	0	234	No	178	
7/4/2012	0:00	0	191	No	179	
7/5/2012	0:00	0	189	No	179	
7/6/2012	0:00	0	190	No	185	

7/7/2012	0:00	0	176	No	184	
7/8/2012	0:00	0	189	No	184	
7/9/2012	0:00	0	173	No	183	
7/10/2012	0:00	0	157	No	182	
7/11/2012	0:00	0	117	No	177	
7/12/2012	0:00	0	116	No	176	
7/13/2012	0:00	0	151	No	181	
7/14/2012	0:00	0	160	No	181	
7/15/2012	0:00	0	158	No	176	
7/16/2012	16.40PM	160	0	Yes	167	
7/17/2012	0:00	0	137	No	164	
7/18/2012	0:00	0	128	No	162	
7/19/2012	0:00	0	117	No	159	
7/20/2012	0:00	0	119	No	156	
7/21/2012	0:00	0	118	No	153	
7/22/2012	0:00	0	110	No	151	
7/23/2012	0:00	0	252	No	154	
7/24/2012	0:00	0	143	No	151	
7/25/2012	0:00	0	128	No	147	
7/26/2012	0:00	0	100	No	144	
7/27/2012	0:00	0	59	No	144	
7/28/2012	0:00	0	56	No	142	
7/29/2012	0:00	0	56	No	137	
7/30/2012	0:00	0	40	No	135	
7/31/2012	0:00	0	138	No	137	135.5454
8/1/2012	0:00	0	29	No	131	
8/2/2012	0:00	0	10	No	123	
8/3/2012	0:00	0	9	No	117	
8/4/2012	0:00	0	13	No	112	
8/5/2012	0:00	0	13.60.04	No	109	
8/6/2012	0:00	0	10	No	103	
8/7/2012	0:00	0	10	No	97	
8/8/2012	0:00	0	6	No	91	
8/9/2012	0:00	0	5	No	86	
8/10/2012	0:00	0	9	No	82	
8/11/2012	0:00	0	6	No	79	
8/12/2012	0:00	0	9	No	74	
8/13/2012	0:00	0	6	No	68	
8/14/2012	0:00	0	7	No	63	
8/15/2012	0:00	0	6	No	63	
8/16/2012	0:00	0	5	No	59	
8/17/2012	0:00	0	12	No	55	
8/18/2012	0:00	0	9	No	51	
8/19/2012	0:00	0	3	No	47	
8/20/2012	0:00	0	7	No	43	
8/21/2012	0:00	0	12	No	40	

8/22/2012	0:00	0	82	No	34	
8/23/2012	0:00	0	110	No	33	
8/24/2012	0:00	0	666	No	51	
8/25/2012	0:00	0	716	No	73	
8/26/2012	0:00	0	47	No	72	
8/27/2012	0:00	0	17	No	71	
8/28/2012	0:00	0	33	No	70	
8/29/2012	0:00	0	122	No	73	
8/30/2012	0:00	0	134	No	73	
8/31/2012	0:00	0	125	No	76	74.5375
9/1/2012	0:00	0	139	No	81	
9/2/2012	0:00	0	132	No	85	
9/3/2012	0:00	0	126	No	89	
9/4/2012	0:00	0	127	No	90	
9/5/2012	0:00	0	201	No	96	
9/6/2012	0:00	0	470	No	112	
9/7/2012	0:00	0	574	No	131	
9/8/2012	0:00	0	309	No	141	
9/9/2012	0:00	0	237	No	148	
9/10/2012	0:00	0	210	No	155	
9/11/2012	0:00	0	226	No	162	
9/12/2012	0:00	0	226	No	170	
9/13/2012	0:00	0	242	No	178	
9/14/2012	0:00	0	168	No	183	
9/15/2012	0:00	0	165	No	188	
9/16/2012	0:00	0	191	No	194	
9/17/2012	0:00	0	205	No	201	
9/18/2012	0:00	0	294	No	210	
9/19/2012	0:00	0	480	No	226	
9/20/2012	0:00	0	470	No	241	
9/21/2012	0:00	0	469	No	254	
9/22/2012	0:00	0	0	No	251	
9/23/2012	0:00	0	0	No	228	
9/24/2012	0:00	450	0	Yes	205	
9/25/2012	0:00	0	508	No	220	
9/26/2012	0:00	0	466	No	235	
9/27/2012	0:00	0	430	No	248	
9/28/2012	0:00	0	351	No	256	
9/29/2012	0:00	0	0	No	251	
9/30/2012	0:00	0	0	No	247	247.1393

*Note there are a few days when the CFM (GC) was not functional on weekend days with no Draeger re: