



Florida Department of Environmental Protection

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

ELECTRONIC MAIL

mkaiser@wasteservicesinc.com

Mr. Mike Kaiser
Waste Services, Inc.
1501 Omni Way
St. Cloud, Florida 34473

OCD-SW-08-0566

Osceola County - SW
J.E.D. Solid Waste Management Facility Class I
Permit # SO49-0197726-007
Review of Landfill Gas Exceedance Information

Dear Mr. Kaiser:

The Department has reviewed your submittal, "Reporting of Gas Monitoring Probe Test Results Fingerprint Analyses of Exceedances," dated August 11, 2008. A report from Brown and Caldwell, "Gas Monitoring Probe Testing Result Summary, J.E.D. Solid Waste Management Facility," dated August 7, 2008, was included in your submittal. The submittal concludes the landfill gas (LFG) exceedances at the probes are caused by natural occurring methane associated with decomposition of organic materials in the wetlands surrounding the facility's boundary. You requested a meeting to discuss future methods for sampling, validating exceedances, and reporting results for probes.

The Department has the following comments regarding the Brown and Caldwell (BC), "Gas Monitoring Probe Testing Result Summary, J.E.D. Solid Waste Management Facility," dated August 7, 2008:

1. Page 3: BC states, "Except for ethanol, it is believed that the presence of these compounds in the gas probe samples can be attributed to the PVC adhesive cement used to attach the sampling ports to the PVC gas probe pipes. ... WSI has indicated to BC that theses ports and the adhesive will be removed, and new ports will be attached without adhesives." The hypothesis that the VOCs may come from adhesive cement is plausible. Removing the adhesive is a reasonable action.
2. Page 4: We do agree that methane and some naturally occurring VOCs, such as, chloroform or ethanol, can originate from wetlands and swamp.
3. Page 4: We do not agree that the double geosynthetic liner system will block landfill gas from exiting the landfill. The liners will impede the flow. LFG will seek easier pathways. However, LFG gas can migrate through the liners.
4. Page 4: There is the assertion that if there is water in the stormwater retention area then the saturated soils beneath the retention area would effectively block the path of any gas migration. On July 18, there was water in the stormwater basin and LFG concentrations exceeded 100% of the lower explosive level (LEL). Therefore, Brown and Caldwell concludes the LFG is coming from sources outside the landfill.

- a. What proof is there that water in the retention area does correlate to fully saturated soil beneath the retention pond?
 - b. Has groundwater been detected in the gas probes? I did not see in the Brown and Caldwell report anything to indicate that groundwater was or was not present in the gas probes that had high LFG concentrations.
5. Page 4: BC recommends "WSI randomly retest some of the perimeter gas probes for VOCs once the PVC adhesive has been removed and the ports replaced." This is not specific enough. An agreement must be reached about the number of samples and whether they need to be taken over a period of time. Also, "random" retest is not desirable. Retesting the worst gas probes would be a better indication.
6. Based on the LFG monitoring logs for May, June, and July 2008 the gas concentrations are higher when there is standing water in the storm water basin. However, it is not clear whether the "standing water" was throughout the basin or small ponding of water within the basin.

On October 9, 2008 you submitted "Reporting Results for the Soil Gas Monitoring Probes Oct 2008." All the gas probes except for GP-8, GP-20, and GP-22 had landfill gas concentrations above 99% of the lower explosive limit of the gas meter used. There was standing water in reported in the storm water basin. You concluded, "the results reported during this monitoring event are consistent with previous events and is attributed to natural occurring methane."

Based on the submittals the Department recommends the following:

7. Remove the adhesive from the gas probes and attach new ports without adhesives. Then repeat the VOC testing done by BC. The testing needs to be done in the eight gas probes already tested. Testing in the leachate risers is not necessary
8. For gas probes GP-10 and GP-18, measure groundwater levels in the gas probes after each LFG measurement to determine if the water level is above the bottom of the dry retention area. (Since we are now entering the dry season, you may want to do a special sampling event, such as, take the LEL measurement after a storm event when water is still in the retention area.)
9. When taking landfill gas measurements, describe more fully the extent of water remaining in stormwater ponds. What depth? How large an area? Is it near the gas probe?
10. Please submit a drawing showing the locations of the gas probe in relation to the stormwater ponds, the wetlands (actual delineations or estimated) and the property boundary.
11. Some other ideas to consider:
 - a. Move the gas probes closer to the edge of the liner. If the gas is coming from the disposal area, the concentrations should be higher. And, when there is water in the stormwater basin there should be no LFG problem in the gas probe.
 - b. Using temporary bore holes, go radially out from gas probes with high LFG concentrations to see if a source direction can be determined.
 - c. Determine the total organic content (TOC) using method 415.1 in the soil (vadose/smear) upgradient and downgradient (as close to wetlands as possible) of the probe locations to find out the change in TOC.

The Department would be willing to meet with you now to discuss future methods for sampling, validating exceedances, and reporting results for probes. We could meet at the DEP office or by teleconference. Or, you can accomplish Items 7 through 10 first, and then we could meet to discuss the results. Let me know what you would like to do.

Sincerely,



F. Thomas Lubozynski, P.E.
Waste Program Administrator

Date: November 5, 2008

FTL

Copies to:

Shawn McCash, Waste Services Inc, smccash@wasteservicesinc.com
Matt Orr, Waste Services Inc, morr@wasteservicesinc.com
Dennis Pantano, Waste Services Inc, Waste Services Inc, dpantano@wasteservicesinc.com
Daniel Courcy, P.E., Brown and Caldwell dcourcy@brwncald.com