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July 16, 2007

Dept. of Environmental Protection

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Southwest District

Solid Waste Section  
Department of Environmental Protection  
Southwest District Office  
3804 Coconut Palm Drive  
Tampa, FL 33619-1352

**Re: Review of Semi-Annual Sampling Results  
First Half 2007 Sampling Event  
Hardee County Solid Waste Disposal Facility  
GMS ID No. 4025C30001  
Long-term Care Permit No. 38414-007-SO**

Dear Sir or Madam:

On behalf of the Hardee County Solid Waste Department, PBS&J would like to present this review of the results of the first half 2007 sampling event at for the facility referenced above. This document is designed to comply with the requirements of Specific Condition 33 of the facility's permit, and was compiled in general accordance with the guidelines promulgated in Chapter 62-701.510(9) (a) of the Florida Administrative Code (FAC).

**BACKGROUND**

The Hardee County Solid Waste Disposal Facility is an active Class I landfill which encompasses approximately 100 acres of land at 685 Airport Road in Hardee County, Florida. According to the facility's permit, the facility's water quality monitoring network is designed to monitor the groundwater in the surficial aquifer, surface water, and leachate. The groundwater monitoring network is designed to include seven monitoring wells, which are designated MW-1, MW-2, MW-4, MW-5, MW-8, MW-9, and MW-10. The facility's permit designates MW-1 MW-4 as background wells and the other wells as detection wells. Two wells are not currently active, MW-9 which was recently damaged by heavy equipment, and MW-10, which has not yet been installed. There are three other monitoring wells, MW-3, MW-6, and MW-7, which are designated by the permit as piezometers. The layout of the site illustrating the well locations is presented in Figure 1.

Actually  
non-hold  
sample

Actually Sampled

Specific Condition 29 of the facility's permit specifies that groundwater samples be collected from monitoring wells MW-1, MW-2, MW-4, MW-5, MW-8, MW-9, and MW-10 on a semiannual basis. The groundwater samples are analyzed for the parameters listed on the 40

Code of Federal Regulations (CFR) Part 258, Appendix I excluding the volatile organic compounds, as well as for total ammonia, iron, chlorides, mercury, nitrate, sodium, and total dissolved solids (TDS). These parameters are also listed in Specific Condition No. 29(c) of the facility's permit.

In addition, surface water is collected at one location, designated SW-2, during both semi-annual sampling events. The surface water sample is analyzed for the laboratory parameters listed in Specific Condition 27(c) of the permit.

According to Specific Condition 26 (a) of the permit, leachate is collected once per year, during the first semiannual sampling event, at Manhole 9. The leachate sample is analyzed for the laboratory parameters listed in the referenced specific condition.

### FIRST HALF 2007 SAMPLING EVENT

2 MW-10  
The first half 2007 sampling event was conducted on June 21, 2007 by PBS&J personnel. A leachate sample was collected from Manhole 9, and groundwater samples were collected from wells MW-2, MW-5, and MW-8. A groundwater sample could not be collected from monitoring well MW-1 because it was dry at the time of sampling, and from MW-4 because the well could not be accessed because of a faulty cap. No surface water sample was collected at SW-2 because the sampling point was dry at the time of sampling.

NO SW  
SAMPLE FOR  
1ST HALF  
2007

Descriptions of the sampling procedures and findings of this sampling event are presented below. A Florida Department of Environmental Protection (FDEP) Ground Water Monitoring Report form for the sampling event is provided in Attachment A.

#### Sample Collection Methodology

The samples that were collected during this sampling event were done so in general accordance with the FDEP's Standard Operating Procedure for Field Activities (SOP 001/01).

The leachate sample was collected with a peristaltic pump. The sample was designated M-9. Prior to sampling the monitoring wells, they were purged with a peristaltic pump using the "low-flow" method. A minimum equivalent of three well volumes was purged from each well prior to sample collection. Temperature, pH, conductivity, dissolved oxygen (DO), and turbidity measurements were monitored and recorded throughout the purging process to ensure that representative water samples were collected. The groundwater samples were given identifiers which corresponded to the well of origin.

Copies of the field data sheets and the field equipment calibration logs from this sampling event are provided in Attachment B.

Depth-to-groundwater measurements were made from the top-of-casing (TOC) at each monitoring well prior to initiating the purging process. The water level measurements were subtracted from the TOC elevations to determine the elevation of the water table at each well. The TOC elevations are referenced in feet above the National Geodetic Vertical Datum (NGVD).

The leachate and groundwater samples were carried to Environmental Conservation Laboratories, Inc. (ENCO) for analysis of the parameters listed in the applicable specific conditions of the facility's permit.

## **Sampling Results**

### **Leachate Analytical Results**

The following analytes were detected in the leachate sample collected during this sampling event:

- Numerous inorganic analytes.
- Several pesticides/herbicides, including A-BHC, D-BHC, endosulfan sulfate, endosulfan II, and methoxychlor.
- Several volatile organics, including 1,4-dichlorobenzene, acetone, benzene, carbon disulfide, chlorobenzene, ethylbenzene, and toluene.

The concentration of every parameter that was detected in the leachate was compared to the regulatory levels listed in 40 CFR Part 261.24, as required by the Florida solid waste regulations. A standard has not been established for every parameter. None of the parameter concentrations detected in the leachate exceeded their respective regulatory standard.

A summary of the leachate analytical results is presented in Table 1. The complete laboratory analytical report is provided in Attachment C-1.

### **Groundwater Analytical Results**

The only parameters that were detected in the groundwater samples were inorganics, and all of the inorganics that were included in the analytical program except for antimony, beryllium, cadmium, cobalt, selenium, silver, and thallium were detected in at least one well. A summary of the groundwater analytical results is presented in Table 2, and the analytical report is provided in Attachment C.

The concentration of every parameter that was detected in the groundwater was compared to its Maximum Contaminant Level (MCL) or Secondary Drinking Water Standard (SDWS) in accordance with the Florida statutes. The MCLs and SDWSs for Drinking Water Standards,

Solid Waste Section, FDEP  
July 16, 2007  
Page 4

Monitoring, and Reporting are promulgated in Chapter 62-550, FAC. Not every parameter has an MCL or SDWS. Two parameters, pH and iron, were detected in the samples collected at all three wells sampled during this event at concentrations in excess of the regulatory criteria, or outside of the prescribed range as is the case with pH. Both of these analytes have secondary standards.

### Groundwater Flow Pattern

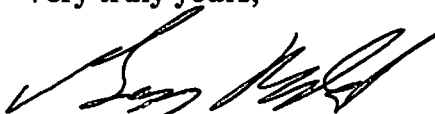
The groundwater level elevation data from this event are presented in Table 3. The elevation data were plotted and contoured to generate the groundwater elevation contour map presented in Figure 1. The data indicated that the groundwater in the surficial aquifer beneath the landfill was flowing in a south-southeasterly direction at the time of this sampling event. The water table gradient measured 0.003 feet per foot beneath the site.

### SUMMARY AND CONCLUSIONS

The results of the first half 2007 sampling event at the Hardee County Solid Waste Disposal Facility were consistent with those of the recent sampling events. There were no analytes detected in the leachate at concentrations in excess of the regulatory criteria. There were two analytes detected in the groundwater at concentrations in excess of the criteria, pH, and iron, but both of these analytes have secondary standards.

If you have any questions regarding the information presented in this report, please call me at (407) 806-4339.

Very truly yours,



Greg Mudd, P.G.  
Senior Geologist

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