Semi-Annual Groundwater Monitoring Report Review
Central District

Report Review Date: 5/9/13	WACS Facility ID #: 87081
Facility Name: Vista Landfill	
Report Monitoring Period: December 2012	
Monitoring Type: Routine	Landfill Type: Class III
Report Date: 2/14/13	
Report Received Date: 3/11/13	

I have reviewed the facility's December 2012 "2012 2nd Semi-Annual Water Quality Monitoring Report" prepared and submitted by SCS Engineers on behalf of the facility. Facility Environmental Protection Manager Paul Bermillo signed the report's Water Quality Monitoring Certification as the Owner or Authorized Representative, and Professional Geologist Joseph Mizerany of SCS Engineers sealed the report. The report includes all the contents required by the facility's Water Quality Monitoring Plan Implementation Schedule (MPIS) dated 10/1/12. All required Groundwater Sampling Logs and sampling results are provided.

GROUNDWATER IMPACTS SUMMARY

Currently, there are no immediate actions needed to protect groundwater. There were several volatile organic compounds present in some of the wells, but the concentrations were below groundwater quality standards. Although the benzene concentration of 0.81 µg/L in MW-FL3 was below groundwater quality standards, future reports from the facility should note whether the benzene concentration is increasing.

GROUNDWATER LEVELS/CONTOURS

The report contains the required water levels and contours. It indicates that because there are a limited number of Floridan Aquifer wells at the landfill, potentiometric maps were not prepared for that aquifer.

GROUNDWATER SAMPLING

The facility sampled all the required wells and performed all the required analyses. The facility also requested analyses and reported results for parameters that are not required by its MPIS: semi-volatile organic compounds, coliforms, asbestos, herbicides, dioxins and furans, carbamates, radioactive materials, and polychlorinated biphenyls. Discussion of the extra analyses are not addressed in this review.

I do not currently recommend Evaluation Monitoring for any of the wells.
Chain of Custody forms and Groundwater Sampling Logs for MW-2A and MW-5A indicate those wells went dry during sampling. However, the laboratory results for those wells are provided for all the analyses required by the MPIS.

The Groundwater Sampling Logs are incomplete. Specifically, neither the "Well Volume Purge" nor the "Sampling Data" sections contain data. The "Sampling Data" section references seeing the Chain of Custody form and bottle order worksheet for the data, but the sample volume taken from the wells is not recorded on any of the Chain of Custody forms.

Temperature, preservation, and holding times for all samples collected and delivered to the laboratory were acceptable. There were no turbidity issues.

The facility's data upload to the Water Assurance Compliance System (WACS) is incomplete. This appears to be an electronic data submission problem unrelated to well sampling events or analytical testing. Out of the 18 monitoring wells, only MW-2A and MW-5A have complete analytical data entry. The other 16 monitoring wells have analytical data missing for the following 24 parameters.

> Barium, benzene, bromodichloromethane, bromoform, carbon tetrachloride, chloroform, dibromochloromethane, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,2-dichloropropane, ehthylbenzene, dichloromethane, styrene, tetrachloroethene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, vinyl chloride, xylenes

NOTIFICATIONS

The Department's Oculus document management system does not contain notifications of sampling events as required by the facility's MPIS.

EXCEEDANCES

Chlorine Dioxide MRDL = 0.8 mg/L	
Well ID #	Concentration (mg/L)
MW-2B	1.34
MW-7A	0.9
MW-8R	2.7

Acceptable report conclusions

- Rapid infiltration basins (RIBS) may be impacting groundwater quality.

Aluminum MCL = 200 µg/L	
Well ID #	Concentration (µg/L)
MW-2A	1,400
MW-2B	330
MW-7B	740
MW-3B	360
MW-7B	740
MW-8R	370
MW-FL2	1,200
MW-FL3	220

Acceptable report conclusions:

- Aluminum concentrations are naturally elevated in this area and to not appear to be related to landfill operations.
- The concentrations are consistent with monitoring event data collected prior to waste placement.

Iron MCL = 300 µg/L	
Well ID #	Concentration (µg/L)
MW-7B	450

Report conclusions:
- Iron concentrations are consistent with historical data collected prior to waste placement.
- Iron is naturally found at elevated concentrations in Florida groundwater.

Our conclusions:
- Some iron exceedances may be related to the landfill operations.
- There are no known impacts to surface water quality or a drinking water well.

Nitrate MCL = 10 mg/L	
Well ID #	Concentration (mg/L)
MW-6A	13
MW-1A	12
MW-7A	13

Acceptable report conclusions:
- Exceedances are consistent with historical data.
- RIBS may be impacting groundwater quality.

pH = 6.5 – 8.5
Almost half of the wells had pH values lower than the allowed range, and one well (MW-FL2R) had a pH value higher than the allowed range.

Report conclusions:
- The pH levels observed are characteristic of the groundwater in this region of Florida.
- The high pH in MW-FL2R indicates the potential presence of grout in the sand pack; the high pH is considered an artifact of well construction and may be related to the abandonment of MW-FL2.

Our conclusion:
- The pH levels observed are characteristic of the groundwater inside of or in the vicinity of each well.

DO
Several of the wells had DO values higher than the allowed percentage.

Report conclusions:
- None

LABORATORY QUALITY CONTROL

The first page of the TestAmerica laboratory's "Case Narrative" pages indicates that the laboratory received two samples on 12/15/12, but none of the Chain of Custody forms show "12/15/12" as a received date. One of the Chain of Custody forms lists a trip blank, but the laboratory noted it was not received.

TestAmerica laboratory was used to measure DO, pH, specific conductivity, temperature, turbidity and colors and sheens. The laboratory notes that pH should be performed in the field immediately following sampling. The MPIS specifically indicates all of those parameters are "Field Parameters."

The facility requested analyses and reported results for parameters that are not required by its MPIS. Accordingly, quality control details for those extra parameters are not addressed in this review.

Method Blanks

The laboratory reported method blank contamination for the following parameters.

Methylene Chloride, Zinc, Sodium, Mercury, Thallium, and Total Cyanide

Report conclusion:
- Corrective action is deemed unnecessary because the concentrations are not present at levels greater than limits.

Our conclusion:
- The laboratory's glassware and/or equipment may have been inadequately cleaned.

Matrix Spike and Matrix Spike Duplicates

There were matrix spike recovery issues for EPA Methods for the following parameters.

Toluene, Aluminum, Iron, Sodium, Lead, Mercury, Nitrite, and Nitrite-Nitrate

Report conclusion:
- Laboratory Control Sample analyses indicated the analytical systems were operating within control. Corrective action is deemed unnecessary.

Our conclusion:
- Recovery issues may be attributed to laboratory technician sample preparation technique.

Matrix spiking could not be performed for the following EPA Method. The method detects all the organic compounds listed in 40 Code of Federal Regulations 258, Appendix I, "Criteria for Municipal Solid Waste Landfills."

8260B

Report conclusion:
- There was insufficient sample volume submitted to the laboratory, and the required quality assurance and control measures could not be performed (as indicated in the laboratory's "Case Narrative" page.

Our conclusion:
- The laboratory could not perform quality assurance or control measures for EPA Method 8260B for any of the wells because the facility submitted an insufficient volume of water samples.

Sample Duplicates

There were quality control issues for the following parameter for the MW-4A sample.

Total Dissolved Solids

Report conclusion:
- Laboratory Control Sample analyses indicated the analytical systems were operating within control. Corrective action is deemed unnecessary.

Our conclusion:

- Recovery issues may be attributed to laboratory technician sample preparation technique.

By: Allen Rainey
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