

**DATE:** June 19, 2009

**TO:** General Manager

**FROM:** Assistant General Manager

**SUBJECT:** Emergency Item to authorize Scope of Work with Golder Associates in the amount of \$12,036 to conduct groundwater monitoring field work at Well G-32 and prepare a report for the Regional Water Quality Control Board relating to an exceedence of sulfates in the at Well G-32.

**RECOMMENDATION:** That the Board of Directors approve an emergency item to authorize Golder Associates in an amount not to exceed \$12,036, to conduct field work at groundwater well G-32 and prepare a report.

**Golder Associates Inc.**  
425 Lakeside Drive  
Sunnyvale, California 94085  
Telephone: (408) 220-9223  
Fax: (408) 220-9224



## TECHNICAL MEMORANDUM

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**TO:** Rick Shedden, Tim Flanagan

**DATE:** June 17, 2009

**FR:** Bill Fowler

**OUR REF:** 043-7406-200

**RE:** Scope of Work, Optional Demonstration, Well G-32

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In accordance with our telephone conference with Dan Niles yesterday, I have prepared this scope of work and the attached cost estimate for completing an Optional Demonstration addressing the sulfate and nitrate exceedances noted in Well G-32 and reported to the RWQCB. Per our discussion we are recommending the following:

### **Task 1- Summarize Hydrogeologic Setting**

We will prepare a table showing the well completion data for the pertinent wells located along the Salinas River floodplain, and a schematic hydrogeologic cross section showing the geologic conditions, water table, Salinas River, etc. A short summary will be prepared for the letter report (Task 5).

### **Task 2 – Review of Historical Geochemical Data**

We will review the geochemical data in our files for a representative suite of the floodplain wells (G-1, G-32, G-21, G-2, G-3 and 3R, G-22, G-23 and G-4) going back approximately eight to ten years. We will evaluate the redox conditions of the wells, as well as prepare time-concentration graphs for key inorganic constituents including: ammonia as N, alkalinity, calcium chloride magnesium, manganese, nitrate as N, potassium, sodium sulfate, TDS and TKN. Piper stiff diagrams will be prepared illustrating the current conditions of well G-32 as compared to other wells, typical site leachate, and the Salinas River.

The goal of the geochemistry work will be to identify a geochemical signature or “fingerprint” of the chemistry of well G-32 so that it can be compared and contrasted with potential sources (i.e., the compost, landfill leachate and the Salinas River).

### **Task 3 – Sampling and Analyses of Biosolids Compost**

Three to four, four-point composite samples will be obtained from representative samples of the biosolids compost. We recommend testing a relatively young sample (possibly from a currently active stockpile), as well as the area of the site with the most recent spreading activities (i.e., in the last year prior to this winter’s rainfall). The samples will be tested for a suite of geochemical indicator parameters including the parameter list outlined in Task 2 and phosphorus. Samples will be prepared using an extraction procedure (e.g., STLC or “Soluble Threshold Limit Concentration”) which is used to determine whether certain leachable compounds are present and will leach to the dissolved phase in runoff when exposed to normal climatic conditions. The resulting data will be compared to the geochemical signature prepared in Task 2.

As part of this task, Golder will also evaluate the nutrient loading (Nitrogen, Phosphorus, and Potassium) from the compost to the landfill final vegetative layer using agricultural standard methods.

#### **Task 4 – Prepare Drainage and Compost Map**

With the District's assistance, Golder will prepare a map of the site showing where compost has been applied to the landfill, compost blending and stockpile areas and the primary drainage paths from these areas to the floodplain. We anticipate spending a half-day at the site doing a site reconnaissance with appropriate District personnel to map out these areas.

#### **Task 5 – Prepare Summary Letter Report**

The information developed in Tasks 1 through 4 will be compiled and summarized in a letter report with appropriate supporting data, tables, and figures. The required submittal date for the optional demonstration is September 7. We estimate it will take approximately four to six weeks to complete the above scope of work and will therefore have a report to the District for internal review by July 31.

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# MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT

*Home of the Last Chance Mercantile*

June 12, 2009

**Via E-mail (Dniles@waterboards.ca.gov) and Regular Mail**

Mr. Dan Niles  
California Regional Water Quality Control Board -  
Central Coast Region  
895 Aerovista Place, Suite 101  
San Luis Obispo, CA 93401

**Re: Notification of Verification Resample Results for Well G-32 and Intent to Perform an Optional Demonstration, Monterey Peninsula Landfill, Marina, California, MRP R3-2006-0017**

Dear Mr. Niles:

This letter provides the results of the resampling performed for groundwater detection monitoring Well G-32 in accordance with 27 CCR 20415(e)(8)(E).

On May 27, 2009, the Monterey Regional Waste Management District (MRWMD) notified you verbally that "initial measurably significant" monitoring results had been identified for the sulfate monitoring parameter in well G-32 by our groundwater consultant (Golder Associates) upon completion of their evaluation of the First Semi-Annual 2009 monitoring data. Per CCR Title 27, the MRWMD (1) followed up its verbal notification with a written notification to the Regional Quality Control Board (RWQCB) on May 27, 2009 (within 7 days), and (2) completed a verification resampling program within 30 days of determination of the initial measurably significant result. The well was resampled on May 29<sup>th</sup> with a split sample being sent to two separate analytical laboratories. The sample results confirm an exceedence of the established concentration limit for sulfate in Well G-32.

Sample Date	Well G-32	Units
3/19/2009	1800	mg/L
5/29/2009*	1400	mg/L
5/29/2009*	1740	mg/L
*G-32 Resample event		

Based on these results, the MRWMD is intending to perform an Optional Demonstration in accordance with 27 CCR 20420 (k) (7) to demonstrate that the waste management unit is not the cause of the sulfate increase. It is the MRWMD's opinion based on the nature of the detected impact, and the location of the well, that the groundwater in the vicinity of the well has been affected by surface storm water runoff from the final cover of the landfill which has a vegetative layer augmented with composted biosolids (wastewater sludge). The detection of increased sulfate and also nitrate, and the location of the well in an area that receives significant runoff from the landfill, is consistent with this interpretation.

In accordance with (k) (7), the Optional Demonstration will be submitted within 90 days of the determination of the "measurably significant" evidence of a release. The final resample result was received by Golder Associates and the MRWMD notified on Tuesday, June 9, 2009; therefore, the Optional Demonstration will be submitted to the RWQCB by September 7, 2009.

We would like to discuss the scope of our optional demonstration prior to initiating the work. Please contact me at (831) 384-5313 at your earliest convenience so we can schedule a conference call with Golder to discuss the proposed work tasks.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard D. Shedden", with a long horizontal flourish extending to the right.

Richard D. Shedden, P.E.  
Senior Engineer