

## INFORMATION SHEET

ORDER NO.  
A GREENER GLOBE CORPORATION  
BERRY STREET MALL (AKA FINGER'S) LANDFILL  
PLACER COUNTY

### **Background**

The Berry Street Mall Landfill is a closed Class III landfill along Galleria Boulevard in the City of Roseville. The 26-acre site includes the closed landfill unit (13 acres) and associated facilities, including precipitation and drainage controls, landfill gas (LFG) controls, leachate sump, monitoring wells, pond, and access roads. The landfill operated from 1946 to November 1987, accepting primarily household wastes. William Finger, through Berry Street Mall, Inc. (BSMI), owned and operated the landfill for most of its active period, having acquired the property from its original owners, Leo Block and William Kaseberg, in 1952. The landfill ceased operations in November 1987 after reaching approximate capacity. In 1996, the Discharger acquired the property in foreclosure proceedings.

Approximately 15 tons per day (5,400 tons per year) of waste were discharged to the facility, consisting primarily household refuse (90%) and construction and demolition debris (8%). Approximately 225,000 tons of waste is estimated to have been discharged to the landfill. The average height of the waste column is estimated to be 35 feet and the minimum separation of wastes from groundwater is about 95 feet.

The landfill has a long history of noncompliance with Central Valley Water Board; CalRecycle; and LEA orders, both during and after its active period, as outlined in Attachment 1. Such issues included landfill fires; leachate seeps; cover erosion; exposed waste; site cleanup issues; failure to submit closure and postclosure plans; failure to conduct groundwater monitoring and reporting; and failure to implement corrective action. In 1991, under authority of a Notice and Order and Corrective Action Order, CalRecycle intervened for the limited purpose of implementing landfill closure and corrective action under Chapter 15 (now Title 27) regulations.

### **Landfill Closure**

In 1993, CalRecycle closed the landfill in accordance with Title 27 regulations and an approved Final Closure Plan (FCP). The project included installation of clay cover, precipitation and drainage controls, a standby landfill gas (LFG) collection system, a perimeter leachate collection system and sump, soil gas and LFG monitoring wells, and a groundwater monitoring system. Closure was also implemented as a corrective action measure to mitigate potential leachate and LFG impacts to groundwater. The FCP included conceptual plans for converting the standby LFG collection system to an active LFG extraction system, if LFG monitoring indicated the need. In 1994, CalRecycle certified the landfill as closed, noting that the property owner remained liable for postclosure maintenance and monitoring.

A 1994 approved Final Postclosure Maintenance Plan developed by CalRecycle included plans for postclosure maintenance and monitoring of all of the landfill's environmental control and monitoring systems (e.g., standby LFG collection system, soil gas probes, leachate sump, lysimeters, groundwater monitoring wells, storm drains, and onsite

stream,). Although CalRecycle conducted postclosure monitoring under the postclosure maintenance and monitoring plan during the first several months after landfill closure, neither the former owner/operator nor the current Discharger implemented monitoring under the plan, except for the soil gas perimeter probes and groundwater monitoring wells. As a result, historical data for most of the landfill's monitoring and control systems (i.e., lysimeters; standby LFG collection system; leachate sump; storm drains; and onsite stream) is lacking, except for during the first year after landfill closure. In addition, valid CLs have not yet been developed for the site.

### **Groundwater**

The upper water bearing zone (UWBZ) occurs in the Valley Springs formation, which is estimated to have an overall permeability of in the order of  $1 \times 10^{-3}$  cm/sec. The depth to groundwater at the site ranges from about 115 feet bgs (90 feet MSL) in the southeast corner of the site (i.e., upgradient) to about 133 feet bgs (57 feet MSL) on the northwest side of the site (i.e., downgradient). Groundwater generally flows from southeast to the northwest (or west-northwest) consistent with the local gradient. There are six groundwater monitoring wells at the site (GWs-1 through 6), including one upgradient well, four down gradient wells, and one side gradient well.

Historical groundwater monitoring data for the site is limited due to the failure of the Discharger and previous operator to comply with previous WDRs (see Attachment 1). Also, previous WDRs allowed a reduction in monitoring frequency to annual after 24 months (eight quarters) of monitoring. Historical monitoring data is thus limited as follows:

#### Wells GW-1 through 4

- Before 1993 – no sampling
- July through October, 1993 -- monthly sampling (by CalRecycle)
- 1994 through 1998 – no sampling (WDRs required quarterly)
- 1999 through 2001 -- annual sampling (WDRs required quarterly)
- 2002 through 2004 -- quarterly sampling
- 2005 through 2009 – annual sampling

#### Wells GW-5 and 6

- Second through Fourth Quarter, 2004 -- quarterly sampling
- 2005 through 2009 -- annual sampling

The above groundwater monitoring data shows the presence of low to trace concentrations of VOCs and elevated concentrations of inorganic salts indicative of impacts from the landfill. VOCs detected consist primarily of Freon compounds, including carbon tetrachloride (Freon 10), Trichlorofluoromethane (Freon 11), Dichlorodifluoro-methane (Freon 12), and Chloroform (Freon 20). Carbon tetrachloride (1.8 µg/L) continues to be detected above drinking water standards, which include the California Public Health goal (0.1 µg/L) and California Primary MCL (0.5 µg/L). Elevated salts historically detected in groundwater at the site include alkalinity, chloride, sulfate, total dissolved solids and specific conductance.

## **Revised WDRs**

These revised WDRs prescribe requirements for postclosure maintenance and corrective action monitoring, including submitting and implementing an updated postclosure maintenance and monitoring plan, providing financial assurances, submission and implementation of evaluation monitoring and corrective action programs, monitoring and reporting, and other requirements. The monitoring specifications of the WDRs incorporate Title 27 prescriptive methods and performance standards for all prescribed monitoring programs (e.g., background, detection, and corrective action).

### Required Technical Reports

Facility Investigation Report - Provision G.3 requires that the Discharger investigate and submit a report as to the condition and operational status all landfill monitoring and control facilities at the site, including plans and schedules, as necessary, for restoring such facilities to good working order.

Updated postclosure maintenance and monitoring plan - Provision G.4 requires that the Discharger submit for approval an updated postclosure maintenance and monitoring plan consistent with this Order, including updated financial assurance cost estimates for postclosure maintenance, monitoring and corrective action (known and reasonably foreseeable release).

Financial Assurance Demonstration - Provision G.5 and G.5, respectively, require that the Discharger obtain and maintain financial assurances in at least the amount of approved cost estimates, and submit a demonstration every two years as to the adequacy and ongoing viability of such financial assurance mechanisms.

Revised Evaluation Monitoring Program - Provision G.7.c requires that the Discharger submit a revised evaluation monitoring program under Title 27 to improve characterization of groundwater flow at the site and investigate the source and extent of groundwater impacts. The evaluation monitoring program must include plans and schedules for installation of additional wells; identification of potential conduits to groundwater; investigation of various media as potential sources (e.g., soil, soil pore fluid, soil gas, LFG, leachate, surface water, and storm water); and an evaluation as to whether discharges (e.g., storm water) to surface water from the site are in compliance with the WDRs. The evaluation monitoring program may include an investigation of potential offsite sources of onsite impacts.

Revised EFS/CAP - Provision G.8 requires that the Discharger submit a revised CAP under Title 27, including evaluation monitoring program report and engineering feasibility study (EFS). The revised CAP must include an evaluation of existing corrective action measures, a discussion of additional corrective action needs and options, and plans for additional corrective action measures, as necessary.

Other Reports -- WDR Provision G.7.a requires the Discharger to submit a technical report proposing data analysis methods for monitoring consistent with Title 27 requirements and the monitoring specifications of this Order. WDR Provision G.7.b specifies that the

Discharger submit an updated WQPS Report, including COCs, CLs, monitoring points, Point of Compliance, and compliance period consistent with Title 27, Section 20390.

### Non-Prescriptive Data Analysis Methods

Monitoring Specifications in the WDRs specify that the Discharger may use certain non-prescriptive methods in lieu of the prescriptive data analysis methods specified in Title 27, as follows:

#### Statistical

- *Gamma 95 Percent Upper Prediction Limit (Gamma 95% UPL) Method*<sup>1</sup>
  - ⇒ Parametric statistical method
  - ⇒ Background data matched with a specific gamma distribution
  - ⇒ Method provides higher statistical power (e.g., lower triggering concentrations and lower risk of false positives)
- *Pass 1-in-3, 6-Month Statistical Retest*<sup>2</sup>
  - ⇒ Method more powerful than Title 27 prescriptive (Pass 2-in-3, 30-day) retest.
- *Paired Difference Analysis* (i.e., for surface water monitoring)
  - ⇒ Parametric statistical method
  - ⇒ Statistics run on differences between two monitoring points
  - ⇒ Used in surface water monitoring to screen out background variance

#### Nonstatistical

- *California Nonstatistical Data Analysis Method (Pass 2-in-3)*

Nonstatistical Trigger -- For each monitoring point, identify each analyte (i.e., monitoring program or COC) in the current sample that exceeds its respective PQL and/or MDL. The Discharger shall conclude that the null hypothesis has been rejected if:

  - ⇒ The data contain two or more analytes that equal or exceed their respective MDLs; and/or
  - ⇒ The data contain one analyte that equals or exceeds its PQL.

The method thus has both single constituent and multi-constituent release triggers.
- *Pass 1-in-2, 3-month nonstatistical retest*<sup>3</sup>
  - ⇒ More powerful than California Nonstatistical Data Trigger (Pass 2-in-3, 30-day) retest.

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1. *Simultaneous Gamma Prediction Limits for Groundwater Monitoring Applications*, Gibbons and Bhaumik (2006); *One-Sided Approximate Prediction Intervals for at Least p of m Observations From a Gamma Population at Each of r Locations*, Bhaumik and Gibbons (2006).

2. Method requires that Discharger conduct initial sampling at start of monitoring period, first retest at mid-period, and second retest, if necessary, just prior to end of monitoring period.

3. Method requires that Discharger conduct initial sampling at start of monitoring period and re-sampling just prior to end of monitoring period.

Because they have higher effectiveness in detecting a release, the above methods are deemed to be more stringent than Title 27 requirements per Section 20080(a)(1).

### Monitoring and Reporting

The MRP requires monitoring of all Title 27 media to obtain necessary information as to the source of impacts and need for additional corrective action measures. As previously noted, most of this data is lacking due to the operator's historical failure to fully implement the 1994 postclosure maintenance and monitoring plan. Specifically, the MRP requires quarterly LFG and soil gas monitoring; and semiannual leachate, soil pore water, and groundwater monitoring. The groundwater monitoring program includes concurrent detection monitoring to detect any potential new release from the landfill. The MRP also requires semiannual surface and storm water monitoring. Five year monitoring for all other landfill constituents of concern (COCs) is also required for specified media. The MRP further requires that the Discharger obtain coverage under the General Industrial Storm Water Permit.

Water Quality Protection Standard (WQPS) -- Pending submission of a updated WQPS under the WDRs, the MRP establishes interim CLs where feasible based on available monitoring data, as follows:

- ⇒ Statistical CLs specified for all general minerals.
- ⇒ CLs set equal to the PQL for dissolved metals not generally detected in background (18).
- ⇒ CLs not specified for dissolved metals not included in historical monitoring (7).
- ⇒ CLs for organic COCs (including VOCs) set equal to the MDL.

### Other Requirements

Postclosure Specification C.10 requires that the Discharger conduct an aerial site survey of the site every five years for the purpose of updating the topographic map for the site. MRP Section G.3.c.iii requires that COC monitoring be conducted by 15 December 2011 and at least every five years thereafter.

Surface drainage at the site is to an onsite intermittent stream tributary to the south branch of Pleasant Grove Creek, thence Pleasant Grove Creek; Verona Cross Canal; and the Sacramento River. (JDM)

## INFORMATION SHEET - ATTACHMENT 1

### Violations of Previous Orders

- a. WDR Order 72-17
  - i. Improper disposal of solid wastes to unlined pits
  - ii. Failure to control leachate
  
- b. 1 December 1987 Section 13267 Order
  - i. Failure to submit a Report of Waste Discharge (RWD)
  - ii. Failure to submit Final Closure and Postclosure Maintenance Plan
  - iii. Failure to submit Solid Waste Assessment Test (SWAT) Investigation report
  
- c. WDR Order 89-115
  - i. Failure to complete landfill winterization
  - ii. Failure to implement SWAT
  - iii. Failure to submit final closure and post-closure maintenance plan
  - iv. Failure to implement final closure and post-closure maintenance plan
  - v. Failure to submit groundwater monitoring program
  - vi. Failure to install groundwater monitoring wells
  - vii. Failure to conduct groundwater monitoring.
  
- d. CIWMB Orders 91-01 (Notice and Order, Corrective Action Order)
  - i. Failure to assess nature and extent of conditions requiring corrective action
  - ii. Failure to extinguish landfill fire
  - iii. Failure to maintain adequate site security
  - iv. Receipt of unacceptable materials as landfill cover material
  
- e. Cleanup and Abatement Order 99-724
  - i. Failure to determine the lateral and vertical extent of groundwater pollution
  - ii. Failure to conduct quarterly monitoring under WDRs
  - iii. Failure to submit monitoring reports timely and completely under WDRs
  - iv. Failure to pay annual WDR fees
  - v. Failure to cleanup trash and debris at site
  - vi. Failure to obtain coverage under General Storm Water Permit
  
- f. Final Stipulated Judgment
  - i. Failure to pay annual WDR fees