

**COMBINED GROUNDWATER AND
WASTE DISPOSAL MONITORING REPORT
FOR THE FIRST SEMI-ANNUAL
MONITORING PERIOD OF 2006**

**SUNSHINE CANYON CITY & COUNTY LANDFILLS
SYLMAR, CALIFORNIA**

RWQCB File No. 58-076

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EXECUTIVE SUMMARY¹

This document presents the combined groundwater and waste disposal monitoring report for the Sunshine Canyon City Landfill (City Landfill) and Sunshine Canyon County Extension Landfill (County Landfill), covering the first semi-annual monitoring period of 2006. The principal findings of the report are summarized below.

County Landfill. During the first semi-annual monitoring period there were no confirmed volatile organic compound (VOC) detections or statistical exceedances noted for groundwater monitoring wells located downgradient of the County Landfill (i.e., CM-15, CM-16, and CM-17). Based on the lack of confirmed landfill impacts at the facility's formal point of compliance (POC), the County Landfill is considered to be operating in accordance with applicable water quality protections standards (WQPS). As in previous monitoring periods, several VOCs were again detected in subdrain liquids collected from the County Landfill during the first semi-annual monitoring period. The low level VOC detected in the subdrain liquids are thought to be associated with migrating landfill gas from the County Landfill, and are collected and managed as part of the facility's ongoing corrective action program (CAP). Approximately 10,676,563 gallons of subdrain liquid with low level VOC concentrations were collected and managed by the facility during the first semi-annual monitoring period.

During the first semi-annual monitoring period, the County Landfill gas collection system was upgraded with an additional 750 linear feet of lateral gas collection piping. During the first semi-annual monitoring period, monthly measurements of methane gas concentrations were conducted at upper and lower subdrain termination points to evaluate the progress of the CAP in reducing landfill gas migration to the subdrain system. No methane concentrations exceeding 5% were detected at the County Landfill subdrain termination points during the first semi-annual monitoring period. In addition, none of the facility's perimeter gas monitoring probes exhibited methane concentrations above 5%. Two temporary gas monitoring probes at the County Landfill, GP-1T and GP-2T, continued to exhibit methane concentrations in excess of 5% at several depth intervals during the first semi-annual monitoring period.

During the second quarter of 2006, concentrations of benzene (1.1 ug/L) and vinyl chloride (0.71 ug/L) in the County Landfill water-use sample were slightly above the State of California maximum contaminant level (MCL) for drinking water. The site has implemented required corrective actions and an additional sample was collected from the water-use sample port during July 2006 and submitted for additional laboratory analyses. The results of these analyses are pending and will be submitted to the RWQCB under separate cover.

¹ This section serves as the facility's "Summary of Non-Compliance" pursuant to requirements of Monitoring and Reporting Programs CI-2043 and CI-7059.

City Landfill. During the first semi-annual monitoring period of 2006, exceedances of site-specific WQPS were again noted for groundwater monitoring points located downgradient of the City Landfill. The WQPS exceedances noted for the City Landfill are as follows: 1,4-dioxane at Monitoring Wells MW-1, MW-2A, MW-5, MW-9, and MW-13R, and the extraction trench; chlorobenzene, cis-1,2-dichloroethane (cis-1,2-DCA), 1,4-dichlorobenzene, and methyl-tert-butyl ether (MtBE) at the extraction trench; and cis-1,2-DCA, 1,2-dichloroethane, 1,1-dichloroethane, MtBE, and ammonia-nitrogen at Monitoring Well MW-9. Chloride and chemical oxygen demand, which were moved to “tracking mode” at Monitoring Well MW-2A following the fourth quarter 2005 monitoring event, were not detected above the facility’s site-specific concentration limits during the first semi-annual monitoring period of 2006.

During the second quarter 2006 monitoring event, tentative exceedances of site-specific WQPS were noted for select organic compounds at Monitoring Wells MW-1, MW-6, MW-13R, MW-14, Lysimeter LY-7. In addition, trace concentrations of 1,4-dioxane were noted in liquid samples collected at surface water monitoring stations S-AR and S-B during the second quarter of 2006. The RWQCB was notified of these detections in a letter from BFI dated August 4, 2006. That letter outlines BFI’s proposed resampling activities related to these detections. The resampling activities are expected to be completed during August of 2006.

During the first semi-annual monitoring period, BFI continued to operate the groundwater barrier and extraction system pursuant to RWQCB Order R4-2003-0155. During the first semi-annual monitoring period, a total of approximately 4,111,433 gallons of impacted groundwater was removed from various groundwater extraction points at the City Landfill.

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1. INTRODUCTION

This document presents a combined semi-annual groundwater and waste disposal monitoring report for the Sunshine Canyon City Landfill (City Landfill) and Sunshine Canyon County Extension Landfill (County Landfill). The document includes the results of environmental monitoring activities conducted for these facilities during the first semi-annual monitoring period of 2006.¹ This report was prepared for Browning-Ferris Industries of California, Inc. (BFI) by A-Mehr, Inc. (A-Mehr) for submittal to the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) in reference to RWQCB File No. 58-076.

1.1 Background

Groundwater monitoring was first performed at the City Landfill in 1986 as part of the solid waste assessment test (SWAT) investigation for that facility (ETC, 1988a). Groundwater monitoring is currently conducted for the City Landfill in accordance with revised RWQCB Monitoring and Reporting Program (MRP) CI-2043 (RWQCB, 2003a), adopted for the facility in November of 2003.

Baseline groundwater monitoring was initiated at the County Landfill in 1994. A formal groundwater detection monitoring program was implemented at the facility in 1996, concurrent with the initial acceptance of waste. Groundwater monitoring is currently conducted for the County Landfill pursuant to revised MRP CI-7059 (RWQCB, 2004b), adopted for the facility in August of 2004.

1.2 Report Scope and Organization

The remainder of this report is organized in nine parts, as follows:

- Section 2, *General Site Information*, describes site conditions within Sunshine Canyon pertinent to the facility's environmental monitoring programs;
- Section 3, *Groundwater Monitoring*, describes the current groundwater monitoring programs for the City and County Landfills, and presents the results of groundwater monitoring activities conducted during the first semi-annual monitoring period;

¹ For purposes of this report, the first semi-annual monitoring period is defined as the period from January 1 to June 30, 2006.

- Section 4, *Vadose Zone Monitoring*, describes the current vadose zone monitoring programs for the City and County Landfills, and summarizes the results of subdrain liquid, lysimeter liquid, and gas migration monitoring activities conducted during the first semi-annual monitoring period;
- Section 5, *Surface Water Monitoring*, describes the current surface water monitoring programs for the City and County Landfills, and summarizes the results of stream water, spring water, and storm water monitoring activities conducted during the first semi-annual monitoring period;
- Section 6, *Monitoring of Leachate Quality*, describes the leachate quality monitoring programs for the City and County Landfills²;
- Section 7, *Water Use Monitoring*, summarizes the results of water-use monitoring activities conducted at the City and County Landfills during the first semi-annual monitoring period;
- Section 8, *Liquid Generation and Management*, summarizes the results of monitoring activities related to onsite liquid generation and management conducted during the first semi-annual monitoring period;
- Section 9, *Drainage System Monitoring and Related Observations*, describes the various drainage system monitoring activities required for the City and County Landfills, and presents the results of related monitoring conducted during the first semi-annual monitoring period; and
- Section 10, *Waste Disposal Reporting*, addresses waste disposal monitoring and reporting requirements for the first semi-annual monitoring period, including those related to waste acceptance, remaining capacity and site life, waste disposal boundaries, seeps and springs, and identification of unacceptable wastes.

The *Executive Summary*, presented at the front of the report, summarizes the significant findings for the City and County Landfills during the first semi-annual monitoring period of 2006. It includes a discussion of the facilities' compliance records, actions planned or taken during the monitoring period to maintain compliance with the facilities' WDRs, corrective action measures undertaken during the semi-annual monitoring period, and any exceedances of site-specific water quality protection standards (WQPS).

² No leachate quality analyses were required during the first semi-annual monitoring period.

Figures, tables, and references are included at the end of the report. Table 1-1 presents a summary of the semi-annual reporting elements required for the City and County Landfills and provides a general index indicating where each reporting requirement is addressed in the combined report.

2. GENERAL SITE INFORMATION

This section of the report describes conditions within Sunshine Canyon related to environmental monitoring programs at the City and County Landfills. The remainder of this section is organized in four parts, as follows:

- Site Description;
- Climate and Surface Water Hydrology;
- Hydrogeologic Setting; and
- Groundwater Geochemistry.

2.1 Site Description

The Sunshine Canyon Landfill is located at 14747 San Fernando Road, in Sylmar, California. The general site layout is shown in Figure 2-1. The landfill property covers approximately 1,030 acres and includes two distinct waste management units. The County Landfill is located in the northern portion of Sunshine Canyon, within unincorporated Los Angeles County. The County Landfill is a Class III municipal solid waste (MSW) disposal unit and began accepting waste in 1996. The County Landfill is equipped with a composite liner and leachate collection and removal system.

The City Landfill is located in the southern portion of Sunshine Canyon and lies completely within the City of Los Angeles. The City Landfill is divided into two main parts. City Landfill Unit I is a closed, unlined Class III MSW disposal unit which began operations in 1958. City Landfill Unit II is a Subtitle D-lined MSW disposal unit, located between City Landfill Unit I and the County Landfill. City Landfill Unit II began receiving waste during the third quarter of 2005.

2.2 Climate and Surface Water Hydrology

Sunshine Canyon is located north of the San Fernando Valley at the eastern end of the Santa Susana Mountains. The climate in the vicinity of the site is dominated by the semi-permanent, high-pressure atmospheric conditions of the eastern Pacific Ocean. It is a Mediterranean climate characterized by mild winters, when most of the precipitation occurs, and warm dry summers (A-Mehr, 2002). The average annual precipitation in the area of Sunshine Canyon is approximately 22 inches. During the period from 1941 to 1995 the maximum annual precipitation was 55.8 inches;

the minimum was 10.2 inches. The maximum expected 100-year, 24-hour storm is approximately 12 inches (A-Mehr, 2002).

The Sunshine Canyon Landfill is located within the 900-square-mile Los Angeles River Watershed Basin. Surface water runoff originating in Sunshine Canyon exits through the mouth of the canyon, where it proceeds in a southerly direction.

2.3 Hydrogeologic Setting

The Sunshine Canyon Landfill is underlain predominantly by marine sedimentary rocks of the late Miocene to early Pliocene Towsley Formation (the bedrock). The bedrock consists primarily of siltstone and fine-grained sandstone interbedded with lenses of coarse-grained sandstone and conglomerate. The bedrock ranges from relatively fresh to highly weathered, with the degree of weathering generally decreasing with increasing depth below ground surface.

The bedrock is locally overlain by younger sedimentary deposits consisting of alluvium, colluvium, and/or landslide debris (collectively referred to here as the alluvial deposits). The alluvial deposits occur primarily along the axis of the various sub-canyons that comprise Sunshine Canyon and consist of varying mixtures of unconsolidated sand, gravel, silt, and clay. The alluvial deposits are locally up to 30 feet thick (ETC, 1988b).

Groundwater beneath the site occurs in two main zones: 1) a shallow, unconfined water-bearing zone consisting of alluvial deposits and/or upper weathered portions of the bedrock (the shallow groundwater zone), and 2) a deeper, locally confined water-bearing zone consisting primarily of relatively fresh bedrock materials (the deep groundwater zone). The hydraulic conductivity of the bedrock (including both weathered and unweathered portions) ranges from 10^{-3} to 10^{-9} centimeters per second (cm/sec) with values increasing with increasing weathering and fracture density (ETC, 1988b). The hydraulic conductivity of the alluvial deposits is expected to be on the order of 100 to 200 feet per day (PRA, 1991).

2.4 Groundwater Geochemistry

Beneficial uses of groundwater resources beneath Sunshine Canyon are limited. Groundwater samples collected from site monitoring wells exhibit natural total dissolved solids (TDS) concentrations ranging from about 700 to 6,500 milligrams per liter (mg/L). Because of low production capabilities and poor natural water quality, the bedrock lithologies underlying Sunshine Canyon are generally considered to be non-water bearing (Brown, 1975).

Previous hydrogeologic investigations conducted for the Sunshine Canyon Landfill have documented a wide variance in the overall composition and quality of natural groundwater beneath the facility (e.g., ETC, 1888a, and A-Mehr, 2003a&b). Sunshine Canyon has, in the past, been the site of extensive oil exploration and production as evidenced by the former presence of numerous oil exploration and production wells (ETC, 1988a). Sunshine Canyon is characterized by east-west trending fault systems which serve as large-scale crude oil traps. Upward seepage of crude oil along these faults and subsequent contact between groundwater and crude oil has been documented at numerous locations within Sunshine Canyon (PRA Group, 1991; ETC, 1988a, 1988b; A-Mehr, 2003a).

The presence of shallow crude oil deposits coupled with the overall low permeability of bedrock materials has resulted in extensive areas of reduced (poorly oxygenated) groundwater beneath Sunshine Canyon. These conditions have, in turn, resulted in groundwater which locally exhibits high concentrations of alkalinity, ammonia, and, in some cases, sulfide. In addition, pre-landfill monitoring has confirmed the local presence of naturally-occurring groundwater with elevated concentrations of chloride, TOC, COD, and potassium (ETC, 1988a; A-Mehr, 2003a). The fact that many of these constituents are also present at high concentrations in site leachate adds significantly to the degree of complexity involved in the evaluation of groundwater monitoring data from the City and County Landfills.

3. GROUNDWATER MONITORING

This section of the report describes the current groundwater monitoring programs for the City and County Landfills and summarizes the results of groundwater monitoring activities conducted for these facilities during the first semi-annual monitoring period. The remainder of this section is organized in seven parts, as follows:

- Monitoring Networks;
- Monitoring Parameters;
- Water Quality Protection Standards;
- Summary of Groundwater Monitoring Activities;
- Data Evaluation and Results for the County Landfill;
- Data Evaluation and Results for the City Landfill; and
- Groundwater Flow Conditions.

Table 3-1 provides an overview of the current groundwater monitoring requirements for the City and County Landfills, and describes the associated data evaluation methods and notification/response criteria.

3.1 Monitoring Networks

Section II.A of MRP CI-2043 and CI-7059 (the MRP) establish the general groundwater monitoring networks for the landfill facilities. Consistent with RWQCB oversight and approval, some of the monitoring points shown in the MRP have been subsequently upgraded or modified. The current groundwater monitoring networks for the City and County landfills are described below.

3.1.1 County Landfill

The current groundwater monitoring network for the County Landfill consists of six wells. Monitoring Wells CM-9-R3, CM-10, and CM-11R are located upgradient of the County Landfill and represent the current background monitoring points for that facility. Monitoring Wells CM-15, CM-16, and CM-17 are located downgradient of the County Landfill and represent the current point-of-compliance (POC) monitoring points for the facility. Table 3-2 provides additional construction details for the County Landfill's current groundwater monitoring wells. The location of each groundwater monitoring well is shown in Figure 2-1.

3.1.2 City Landfill

3.1.2.1 Groundwater Monitoring Wells

The current groundwater monitoring well network for the City Landfill includes 12 monitoring wells (MW-1, MW-2A, MW-2B, MW-5, MW-6, MW-9, MW-13R, MW-14, DW-1, DW-2, DW-3, DW-4). With the exception of DW-2 and DW-3, all of these groundwater monitoring wells are designated in MRP CI-2043 as downgradient monitoring points for the City Landfill.³ Table 3-2 provides additional construction details regarding the current groundwater monitoring wells for the City Landfill. The approximate groundwater monitoring well locations are shown in Figure 2-1.

3.1.2.2 Extraction Trench

In 1990, a groundwater extraction trench was installed across the main alluvial canyon downgradient of City Landfill Unit I. The extraction trench was constructed with vertical collection risers and an automatic pumping system which allows the removal of impacted groundwater from the shallow alluvial groundwater zone. Since late 2002, the extraction trench has been utilized as a formal downgradient monitoring point for the City Landfill. The extraction trench liquid samples have historically been collected from a port on the piping leading from the extraction trench risers

³ In MRP CI-2043, Monitoring Wells DW-2 and DW-3 are designated as side-gradient monitoring points; Monitoring Well MW-14 may also be somewhat side-gradient of the City Landfill.

to the City Landfill treatment skid. The liquid samples collected from this sample port between 1990 and 2004 were therefore representative of groundwater in the general vicinity of the extraction trench.

In mid-2004, the City Landfill's corrective action program (CAP) was upgraded to include an impermeable "cutoff wall" located downgradient of the extraction trench (A-Mehr, 2004a). Impacted groundwater accumulates behind the cutoff wall and is removed using both the original extraction trench and a series of vertical "cutoff wall extraction wells" (EW-1 through EW-5). As a result of these CAP modifications, the liquid samples collected from the "extraction trench" monitoring point are currently representative of the combined flow from the groundwater extraction trench and various extraction wells. With these changes, the monitoring function of the "extraction trench" monitoring port has also substantially changed; from monitoring of a relatively distinct subsurface area near the extraction trench to monitoring of groundwater removed from a variety of subsurface areas. Further discussion of water-quality results for the "extraction trench" monitoring point has therefore been included in Section 8 of this semi-annual monitoring report, along with discussion of other monitoring activities related to extracted groundwater.

3.2 Monitoring Parameters

3.2.1 Constituents of Concern

The MRP (Section II.B.2) establish the initial constituents of concern (COC) for the City and County landfill facilities. Section II.B.2 also outlines the methods by which each facility's COC list is to be updated. The current COC for the City and County Landfills are listed in Table 3-3. No new COC were established during the first semi-annual monitoring period.

3.2.2 Indicator Parameters

The MRP (Section II.B.3.a) define and establish the indicator parameters for the landfill facilities. The current indicator parameters are listed in Table 3-3.

3.2.3 Supplemental Monitoring Parameters

The MRP (Section II.B.3.b) define and establish the supplemental monitoring parameters for the landfills. The current supplemental monitoring parameters for the City and County Landfills are listed in Table 3-3.

3.3 Water Quality Protection Standards

3.3.1 Current Concentration Limits

The MRP (Section II.B.5) establish the site Water Quality Protection Standards (WQPS) for constituents of concern (COC) as the natural background groundwater quality, which it defines as either the statistically predicted value (for naturally occurring COC) or the laboratory detection limit (for non-naturally occurring COC). The current concentration limits for the City Landfill are listed in Table 3-4A. The currently proposed concentration limits for the County Landfill are listed in Table 3-4B.

3.3.1.1 Concentration Limits for Non-Naturally Occurring COC

For both the City and County Landfills, concentration limits for non-naturally occurring COC (e.g., VOC) are established based on comparison of detected concentration(s) to the analytical laboratory's method detection limits (MDL) and practical quantitation limits (PQL).⁴

3.3.1.2 Concentration Limits for Naturally Occurring COC

The concentration limits established for the City Landfill (Table 3-4A) are intra-well prediction limits calculated using background data collected between January 1, 1997 and December 31, 2004 (Herst and Associates, 2005). Consistent with MRP CI-2043, no concentration limit updates were required for the City Landfill during the first semi-annual monitoring period.

During 2005, former POC monitoring wells MW-11 and CM-14 were decommissioned and replaced with three new POC Monitoring Wells (CM-15, CM-16, and CM-17). Given that a complete set of "intra-well" background data was not available for inorganic parameters at the time of these monitoring network modifications, inter-well concentration limits were calculated for the new POC monitoring wells using historical monitoring results from upgradient Monitoring Wells CM-9R3, CM-10, and CM-11R (A-Mehr, 2005a). The proposed concentration limits are shown in Table 3-4B.

⁴ Specifically, the detection of a non-naturally occurring COC in a groundwater sample above its PQL, or the detection of two COC above their MDL, is considered to represent a tentative exceedance of site concentration limits.

3.3.2 Updating of Concentration Limits

3.3.2.1 *City Landfill*

Section II.B.6 of MRP CI-2043 requires that BFI establish updated concentrations limits for the City Landfill every two years and that these updates be submitted as part of the facilities' annual groundwater monitoring reports. It is anticipated that proposed updated concentration limits for the City Landfill will be submitted with the 2006 annual monitoring report.

3.3.2.2 *County Landfill*

A report describing proposed concentration limits for the County Landfill (see Table 3-4B) was submitted to the RWQCB for approval in November of 2005 (A-Mehr, 2005a). Following its review of that report, the RWQCB requested that BFI initiate a series of monthly background monitoring events as necessary to facilitate calculation of intra-well concentration limits for the County Landfill. These monthly background events were initiated in April of 2006 and are expected to continue until sufficient intra-well background data sets are available at each of the current County Landfill POC monitoring wells.

3.4 Summary of Groundwater Monitoring Activities

The MRP (Sections I.A.4 and I.A.5) require that BFI provide a discussion of the groundwater monitoring activities and results from each semi-annual monitoring period. The following paragraphs provide information regarding the groundwater monitoring activities and results from the first semi-annual monitoring period.

3.4.1 Procedures for Groundwater Quality Monitoring

The groundwater monitoring activities conducted for the first quarter 2006 monitoring period were performed in accordance with standard site sampling protocol (BFI, 1993). Beginning in April of 2006, groundwater wells were purged and sampled using "low-flow" procedures as described in BFI's letter to the RWQCB dated May 9, 2006 (BFI, 2006c). Table 3-5A provides an overview of the groundwater field monitoring activities conducted for the City and County Landfills, and lists the dates, sampling points, and field personnel for each monitoring event. Additional information regarding field sampling procedures and equipment is presented in Table 3-5B. Table 3-6 provides information regarding the field sample containers and preservatives used for groundwater sampling.

The groundwater analyses for the first semi-annual monitoring period were performed by Severn Trent Laboratories, in Denver, Colorado (STL-Denver). STL-Denver is certified by the State of California to perform the groundwater analyses required for the City and County Landfills. The analytical methods and associated reporting limits (method detection limits [MDL] and practical quantitation limits [PQL]) used by STL-Denver are shown in Table 3-7. Several of the MDL and PQL utilized by STL-Denver for laboratory analyses are slightly higher or lower than those used during previous monitoring periods. These modifications reflect the recent change in BFI's contract laboratory from Calscience Environmental Laboratories, Inc. to STL-Denver. Following the April 2006 monitoring event, the RWQCB requested that BFI lower the PQL used by STL-Denver for vinyl chloride from 1.0 ug/L to 0.5 ug/L. Consistent with BFI's letter to the RWQCB dated May 16, 2006 (BFI, 2006e), this change was implemented beginning with the May 2006 monitoring event.

3.4.2 Quarterly Groundwater Monitoring

The MRP (Section II.B.7.a) require that BFI conduct quarterly groundwater quality monitoring of select monitoring wells at each landfill. Pursuant to Section II.B.7.of the MRP, the majority of the quarterly groundwater quality monitoring was conducted for the City and County Landfills during March and June of 2006. The quarterly monitoring events for the City Landfill included Monitoring Wells MW-1, MW-5, MW-6, MW-9, MW-13R, MW-14, DW-1, and DW-4. Monitoring Well MW-6 had insufficient water to sample during the March 2006 monitoring event, and was subsequently sampled during April of 2006. Quarterly groundwater monitoring for the County Landfill was conducted during March and June of 2006 and included downgradient monitoring wells CM-15, CM-16, and CM-17. Consistent with the MRP, the quarterly groundwater samples from these monitoring wells were analyzed for each of the indicator parameters listed in Table 3-3.⁵ Analytical results for quarterly groundwater samples are summarized in Table 3-12.

3.4.3 Semi-Annual Monitoring

The MRP (Section II.B.7.b) require that BFI conduct semi-annual monitoring at each of the facilities' applicable monitoring wells. Pursuant to Section II.B.7.b of the MRP, semi-annual monitoring was conducted for the City and County Landfills during June of 2006. The semi-annual event for the City Landfill included each of the current City Landfill monitoring wells. The semi-annual monitoring event for the County landfill included downgradient Monitoring Wells CM-15, CM-16, and CM-17. Consistent with the MRP, the semi-annual groundwater samples were

⁵ Due to a broken sample container, the sample collected from upgradient Monitoring Well CM-10 during May 2006 could not be analyzed for 1,4-dioxane.

analyzed for each of the supplemental monitoring parameters listed in Table 3-3. Analytical results for semi-annual groundwater samples are included in Table 3-12.

3.4.4 Five-Year COC Scans

The MRP (Section II.B.7.c) require that BFI perform “COC Scans” for each groundwater monitoring well at least once every five years. No five-year COC scans were required, or performed, during the first semi-annual monitoring period. Consistent with the MRP, the next 5-year COC Scan for both facilities will be performed in 2007.

3.4.5 Full Appendix II Scans

The MRP (Section II.B.1) require that “full Appendix II scans” be performed for all newly installed monitoring wells. No new monitoring wells were installed during the first semi-annual monitoring period of 2006.

3.4.6 Ongoing Background Well Testing

The MRP (Section II.B.4) require ongoing background well testing (i.e., sampling and analysis) of upgradient groundwater monitoring wells. Specifically, Section II.B.4 of the MRP requires that upgradient groundwater monitoring wells be monitored in the same manner as downgradient wells. Given the lack of upgradient groundwater monitoring wells at the City Landfill, no background groundwater monitoring was required or conducted for that facility during the first semi-annual monitoring period. Consistent with MRP CI-7059, quarterly background groundwater monitoring for the County Landfill was conducted during May and June of 2006 at upgradient Monitoring Wells CM-9-R3, CM-10, and CM-11R. With the exception of Monitoring Well CM-10, each sample was analyzed for the required background parameters.⁶

As discussed in Section 3.3.2.2 of this report, BFI is currently implementing a monthly background monitoring program for the County Landfill. The monthly background events were initiated in April of 2006 and included the analysis of groundwater samples from Monitoring Wells CM-9R3, CM-10, and CM-11R for select water-quality parameters.

⁶ Due to a broken sample container, the sample collected from upgradient Monitoring Well CM-10 during May 2006 could not be analyzed for 1,4-dioxane.

3.4.7 QA/QC Sampling and Analysis

Table 3-5 includes a listing of the quality assurance/quality control (QA/QC) field sampling activities conducted during the first semi-annual monitoring period. Table 3-10 lists the COC that were detected in trip blank, field blank, equipment blank, and method blank samples during the first semi-annual monitoring period. The detected parameters and concentrations are generally consistent with past monitoring events. Table 3-11 summarizes the analytical results for field duplicate samples collected during the first semi-annual monitoring period. As shown in Table 3-11, the duplicate results indicate a relatively high degree of accuracy for most of the laboratory analyses.

3.5 Data Evaluation and Results for the County Landfill

3.5.1 Overview

The analytical results for groundwater samples collected at the County Landfill during the first semi-annual monitoring period are summarized in Table 3-12. MRP CI-7059 (Section II.B.8.f) establishes the general approach by which groundwater monitoring data from the County Landfill is to be evaluated. Pursuant to Section II.B.8.f, groundwater constituent/well pairs that have previously produced confirmed exceedances of site WQPS (i.e., concentration limits) are considered to be in “tracking mode” and are used during subsequent monitoring events primarily to verify the suitability and effectiveness of the ongoing corrective action program (CAP). Conversely, those groundwater constituent/well pairs which have not shown confirmed exceedances of site concentration limits are considered to be in “detection mode”, and are evaluated for evidence of landfill impacts using either statistical or non-statistical methods.

3.5.2 “Tracking Mode” Data Evaluation

There are currently no groundwater well/constituent pairs in tracking mode at the County Landfill.

3.5.3 “Detection Mode” Data Evaluation

3.5.3.1 *Non-Naturally Occurring COC*

As indicated in Table 3-4B, concentrations of non-naturally occurring COC reported for County Landfill groundwater samples were evaluated based on comparison to the constituent-specific MDL and PQL reported by the analytical laboratory. During the second quarter monitoring event, there were no exceedances of site concentration limits for non-naturally occurring groundwater constituents in County groundwater samples. During the first quarter monitoring event, the

following tentative exceedances were reported by the laboratory for non-naturally occurring COC in groundwater Monitoring Well CM-17:

- Acetone at 3.0 micrograms per Liter (ug/L);
- Carbon disulfide at 0.26 ug/L;
- Ethylbenzene at 0.18 ug/L;
- Toluene at 0.22 ug/L; and
- Total Xylenes at 0.90 ug/L.

The RWQCB was notified of the tentative exceedances from the first quarter monitoring event in a letter from BFI dated May 9, 2006 (BFI, 2006b). That letter also outlined BFI's proposed resampling strategy for these tentative exceedances. Resampling activities related to these tentative exceedances were performed during April and May of 2006. None of the initial tentative exceedances noted for Monitoring Well CM-17 were confirmed during the resampling activities. The RWQCB was notified of the resampling results in a letter dated June 20, 2006 (BFI, 2006f).

3.5.3.2 *Naturally Occurring COC*

Concentrations of naturally occurring COC detected during the first semi-annual monitoring period in County Landfill groundwater samples were evaluated based on comparison to the proposed concentrations limits shown in Table 3-4B (A-Mehr, 2005a). During the first semi-annual monitoring period there were no exceedances of these proposed concentration limits.

3.5.3.3 *Tentative Identified Compounds*

Consistent with the MRP CI-7059, each VOC analysis included a check for tentatively identified compounds (TICs). Table 3-13 lists the TIC detections noted for the County Landfill during the first semi-annual monitoring period.

3.6 Data Evaluation and Results for the City Landfill

3.6.1 Overview

The analytical results for groundwater samples collected at the City Landfill during the first semi-annual monitoring period are summarized in Table 3-12. MRP CI-2043 (Section II.B.8.f) establishes the general approach by which groundwater monitoring data from the City Landfill is to be evaluated. Pursuant to Section II.B.8.f of the MRP, groundwater constituent/well pairs that have previously produced confirmed exceedances of site concentration limits are considered to be in "tracking mode" and are evaluated during subsequent monitoring events primarily to verify the

suitability and effectiveness of the facility's ongoing corrective action program. Conversely, those groundwater constituent/well pairs which have not shown confirmed exceedances of site concentration limits are considered to be in "detection mode", and are evaluated for evidence of landfill impacts using either statistical or non-statistical methods.

3.6.2 "Tracking Mode" Data Evaluation

The following groundwater constituent/well pairs have previously shown confirmed exceedances of site concentration limits at the City Landfill and are therefore considered to be in "tracking mode":

- 1,4-Dioxane at Monitoring Wells MW-1, MW-2A, MW-5, MW-9, and MW-13R, and the Extraction Trench;
- Chlorobenzene, cis-1,2-dichloroethane (cis-1,2-DCA), 1,4-dichlorobenzene, and MtBE at the Extraction Trench; and
- MtBE, cis-1,2-DCA, 1,1-dichloroethane, MtBE, and ammonia-nitrogen at Monitoring Well MW-9.

Chloride and chemical oxygen demand (COD) at Monitoring Well MW-2A were moved to tracking mode following the fourth quarter 2005 monitoring event. However, neither of these parameter exceeded the well-specific concentration limits at Monitoring Well MW-2A during the first semi-annual monitoring period.

3.6.3 "Detection Mode" Data Evaluation

3.6.3.1 Non-Naturally Occurring COC

As indicated in Table 3-4A, concentrations of non-naturally occurring constituents in City Landfill groundwater samples were evaluated based on comparison to the analytical laboratory's constituent-specific MDL and PQL. During the first quarter 2006 monitoring event for the City Landfill the following tentative exceedances of site concentration limits were noted for non-naturally occurring constituents:

- Acetone (trace at 5.3 ug/L) and cis-1,2-dichloroethene (trace at 0.28 ug/L) at Monitoring Well MW-1.
- Acetone (trace at 3.6 ug/L) and carbon disulfide (trace at 2.1 ug/L) at Monitoring Well MW-13R;

- Acetone (trace at 2.1 ug/L), vinyl chloride (trace at 0.62 ug/L), and carbon disulfide (trace at 0.45 ug/L) at Monitoring Well MW-14; and
- Acetone (trace at 6.5 ug/L), vinyl chloride (trace at 0.97 ug/L), and carbon disulfide (trace at 0.63 ug/L) at Monitoring Well MW-6.

The RWQCB was notified of these tentative exceedances in a letters from BFI dated May 9 and May 16, 2006 (BFI 2006a&d). Consistent with the proposed scope of work described in these letters, no resampling was conducted related to these tentative exceedances.

During the second quarter 2006 monitoring event for the City Landfill the following tentative exceedances of site concentration limits were noted for non-naturally occurring constituents:

- Acetone (11 ug/L) and carbon disulfide (2.0 ug/L) at Monitoring Well MW-6;
- Acetone (82 ug/L), 2-butanone (6.8 ug/L), and carbon disulfide (4.1 ug/L) at Monitoring Well MW-13R;
- Acetone (19 ug/L) and carbon disulfide (trace at 1.4 ug/L) at Monitoring Well MW-14;
- Acetone (11 ug/L) and carbon disulfide (trace at 0.83 ug/L) at Monitoring Well DW-2;

The RWQCB was subsequently notified of these tentative exceedances in a letter from BFI dated August 4, 2006 (BFI, 2006h). That letter also served to notify the RWQCB of BFI's intent to conduct resampling and outlined a proposed scope of work for the resampling activities. The proposed resampling activities are expected to be implemented during August of 2006.

3.6.3.2 Naturally Occurring COC

No detection mode exceedances of naturally occurring COC were noted at the City Landfill during the first semi-annual monitoring period of 2006.

3.6.3.3 Tentative Identified Compounds

Consistent with the City MRP, each VOC analysis included a check for tentatively identified compounds (TICs). Table 3-13 lists the TIC detections noted for the City Landfill during the first semi-annual monitoring period.

3.7 Groundwater Flow Monitoring

The City and County MRP (Section II.B.12) require that BFI perform depth-to-groundwater measurements and related groundwater flow calculations on a quarterly basis. The remainder of this section discusses groundwater flow monitoring activities conducted during the first semi-annual monitoring period.

3.7.1 Horizontal Groundwater Flow

During the first semi-annual monitoring period, depth-to-groundwater measurements were made at least quarterly in each of the current groundwater monitoring wells for the City and County Landfills. Table 3-8 summarizes the results of these measurements. Quarterly groundwater contour maps indicating the inferred direction of groundwater flow for the City Landfill are presented in Figures 3-1 and 3-2. The inferred direction of groundwater flow near the County Landfill POC is shown in Figure 2-1. Consistent with past monitoring results, shallow groundwater flow in the vicinity of both landfills is directed down-canyon and generally follows the corresponding topography. Table 3-9 presents the calculated horizontal groundwater gradients and flow velocities for the City and County Landfills.

3.7.2 Vertical Groundwater Flow

Monitoring Wells MW-2A, MW-2B, and DW-4 comprise a multi-depth well cluster located approximately 240 feet up-canyon from the City Landfill extraction trench (Figure 3-1). These monitoring wells range in depth from 19.5 feet to 110 feet below surface (see Table 3-2) and provide information regarding vertical groundwater gradients beneath the Sunshine Canyon facility. Table 3-9 lists calculated vertical gradients and related flow velocities based on quarterly depth to groundwater measurements collected during the first semi-annual monitoring period at Monitoring Wells MW-2A, MW-2B, and DW-4.

4. VADOSE ZONE MONITORING

4.1 General

This section of the report describes the current vadose zone monitoring program for the City and County Landfills and presents the results of subdrain liquid, lysimeter liquid, and monthly soil gas monitoring activities conducted during the first semi-annual monitoring period. The remainder of this section is organized in three parts, as follows:

- Subdrain Liquid Monitoring;
- Lysimeter Monitoring; and
- Monthly Soil Gas Monitoring.

Table 4-1 presents an overview of the current vadose zone monitoring requirements for the City and County Landfills, and summarizes the associated data evaluation methods and notification/response criteria.

4.2 Subdrain Liquid Monitoring

4.2.1 Monitoring Points

4.2.1.1 County Landfill

Consistent with MRP CI-7059, subdrain liquid monitoring for the County Landfill is currently conducted at eight subdrain outfalls (designated as Subdrains A, B, C, E, F, J, K, & L). Additional information regarding each subdrain liquid monitoring point is presented in Table 4-2. The approximate locations of the subdrain liquid monitoring points are shown in Figure 2-1.

4.2.1.2 City Landfill

As shown in Table 4-2, subdrain liquid monitoring for the City Landfill is currently conducted at one subdrain outfall (designated as “Subdrain N”) located at the northern end of the City Landfill permanent sedimentation basin. The approximate location of the “Subdrain N” monitoring point is shown in Figure 4-2. “Subdrain N” was added to the subdrain liquid monitoring program during the third quarter of 2005 and provides monitoring of Cell A of City Landfill Unit 2.

4.2.2 Monitoring Parameters and Frequency

The City and County MRP (Section II.B.12.a) require that BFI conduct quarterly monitoring of subdrain outfalls at both facilities for site indicator parameters. Subdrain liquid samples are to be analyzed for the supplemental monitoring parameters on a semi-annual basis. Monthly monitoring of County Landfill subdrain liquids for VOC is also conducted, pursuant to an informal agreement with the facility's LEA.

4.2.3 Summary of Monitoring Activities

During the first semi-annual monitoring period, subdrain liquid monitoring activities were conducted in accordance with the City and County MRP, standard site sampling protocol (BFI, 1993), and previous agreements with the County Landfill LEA (regarding monthly VOC analyses). Table 4-3 summarizes the vadose zone monitoring activities conducted during the first semi-annual monitoring period, and includes monitoring dates, sampling points, and field personnel for each subdrain liquid monitoring event. Additional information regarding subdrain liquid field sampling procedures and equipment is presented in Table 3-5B. Table 3-6 provides information regarding field sampling containers, and preservatives used for subdrain liquid sampling.

Laboratory analyses for subdrain liquid samples collected during the first semi-annual monitoring period were performed by Calscience (January and February) and STL-Denver (March through June). The analytical methods used by these laboratories are shown in Table 3-7. Calscience and STL-Denver are certified by the State of California to perform the subdrain liquid analyses required for the City and County Landfills.

4.2.4 Summary of Monitoring Results

The analytical results for subdrain liquid samples collected during the first semi-annual monitoring event are summarized in Table 4-4.

4.2.4.1 City Landfill

Consistent with MRP CI-2043, "Subdrain N" was monitored on a quarterly frequency during the first semi-annual monitoring period. During the first and second quarter monitoring events no flow was observed at the "Subdrain N" outfall. No subdrain liquid samples were therefore required, or collected, for laboratory analysis from this subdrain liquid monitoring point.

4.2.4.2 County Landfill

Analytical results for subdrain liquid samples collected at the County Landfill during the first semi-annual monitoring period are generally consistent with previous monitoring periods. Significant findings from the first semi-annual monitoring period are discussed below.

- Detectable concentrations of several VOC were again noted in liquid samples collected from Subdrains A, B, and C. The VOC detected and their associated concentrations are shown in Table 4-4. The type and magnitude of VOC detections noted in Subdrains A, B, and C liquid samples are considered consistent with impacts to subdrain liquids by migrating landfill gas.
- During the first semi-annual monitoring period, liquid discharge from Subdrain J continued to show low-level detections of benzene, cis-1,2-DCA, and vinyl chloride (see Table 4-4). These VOC detections are also consistent with landfill gas impacts to subdrain liquid. Some or all of the benzene detections may be related to natural crude oil deposits known to exist beneath this portion of the County Landfill.
- Subdrains K and L drain portions of the native bedrock beneath the Phase IV disposal area which are characterized by significant crude oil seeps. During the first semi-annual monitoring period, liquids from Subdrain L continued to contain detectable concentrations of several crude oil-related compounds, including benzene, toluene, ethylbenzene, and xylenes. No significant VOCs detections were noted at Subdrain K during the first semi-annual monitoring period.

Discharge from Subdrains A, B, C, J, and L is currently collected and managed at the County Landfill LTP. Section 8 of this semi-annual report addresses required monitoring of subdrain liquid discharge volumes and management of VOC impacted subdrain liquids.

4.3 Lysimeter Liquid Monitoring

The City and County MRP (Section II.B.12.b) require that BFI conduct liquid monitoring of lysimeters established beneath newly constructed leachate sumps. This section of the semi-annual report describes the results of lysimeter liquid monitoring activities conducted at the City and County Landfills during the first semi-annual monitoring period.

4.3.1 Monitoring Points

There are currently two lysimeters which require monitoring pursuant to Section II.B.12.b. Monitoring Point LY-6 (a.k.a. Sample Point P-IV) provides monitoring of unsaturated zone conditions beneath the leachate sump for Phase IV of the County Landfill. Lysimeter LY-6 is accessed from the east side of the Phase IV disposal area through a 252-foot long inclined riser pipe.

Lysimeter LY-7 provides monitoring of subsurface conditions beneath the City Landfill Unit II, Cell A leachate sump, between the primary and secondary liners. Lysimeter LY-7 is accessed from the east side of Cell A through a 360-foot long inclined riser pipe. The approximate locations of the Lysimeters LY-6 and LY-7 are shown in Figure 2-1.

4.3.2 Monitoring Parameters and Frequency

The City and County MRP (Section II.B.12.b) require that BFI conduct quarterly monitoring of Lysimeters LY-6 and LY-7 for the presence of liquids. If liquids are present in sufficient quantities, a liquid sample is to be collected and analyzed, to the extent feasible, for the site COC listed in Table 3-3 of this semi-annual report.

4.3.3 Summary of Monitoring Activities

During the first semi-annual monitoring period, lysimeter liquid monitoring was conducted pursuant the City and County MRP and standard site sampling protocol (BFI, 1993). Table 4-3 lists the lysimeter liquid monitoring activities conducted during the first semi-annual monitoring period, and includes monitoring dates, sampling points, and field personnel for each monitoring event. Table 3-6 provides information regarding field sampling containers and preservatives used for lysimeter liquid sampling. The lysimeter liquid analyses for the first semi-annual monitoring period were performed by STL-Denver. The analytical methods used by STL-Denver are shown in Table 3-7. STL-Denver is certified by the State of California to perform the subdrain liquid analyses required for the City and County Landfills.

4.3.4 Summary of Monitoring Results

The results of the lysimeter liquid monitoring activities from the first semi-annual monitoring period are summarized in Table 4-5.

During the prior monitoring period (fourth quarter of 2005), low levels of benzene and dichlorodifluoromethane (DCDFM) were detected in a liquid sample collected from Lysimeter LY-

7. During February of 2006, Lysimeter LY-7 was resampled for these compounds. No benzene or DCDFM were detected in the resample.

During the second quarter of 2006, trace concentrations of benzene and 1,1-dichloroethane (1,1-DCA) were detected in the liquid sample collected from Lysimeter LY-7. BFI subsequently notified the RWQCB of these detections in a letter dated August 4, 2006 (BFI, 2006h). That letter describes a proposed resampling protocol which is expected to be implemented at Lysimeter LY-7 during August of 2006. The results of the resampling activities at LY-7 will be forwarded to the RWQCB under separate cover.

During the second quarter of 2006, measurable liquid was detected for the first time in Lysimeter LY-6. BFI subsequently notified the RWQCB of the liquid detections in a letter dated July 6, 2006 (BFI, 2006g). The detection of liquid in the LY-6 lysimeter is believed to be related to infiltration of surface water through the LY-6 surface vault. BFI has taken corrective actions to minimize the possibility of additional surface water infiltration at this monitoring point. Consistent with BFI's July 6, 2006 letter, a liquid sample was collected on July 13, 2006, and submitted to STL-Denver for laboratory analysis.

As shown in Table 4-5, the results of the LY-6 liquid sample analysis indicated trace detections of acetone, methylene chloride, and chloroform. Based on similar detections of acetone and methylene chloride in associated QA/QC samples, the detection of acetone and methylene chloride in the LY-6 lysimeter liquid sample are considered to be the result of laboratory and/or field sampling error. The RWQCB was notified of the Lysimeter LY-6 laboratory results in a letter from BFI dated August 10, 2006 (BFI, 2006j).

4.4 Landfill Gas Migration Monitoring

Monthly monitoring of perimeter gas monitoring probes is currently required at the City and County Landfills pursuant to an 1150.1 permit adopted for the facility by the South Coast Air Quality Management District (SCAQMD). The City and County MRP (Section II.B.12.c) require that BFI include in its routine semi-annual reports, those monthly gas probe monitoring results conducted in accordance with SCAQMD Rule 1150.1. Additional landfill gas monitoring requirements are included in Cleanup and Abatement Order (CAO) No. R4-2004-0080, adopted for the County Landfill on August 8, 2005. Specifically, Provision A.2 of CAO R4-2004-0080 requires that BFI include in its semi-annual reports pertinent subdrain gas monitoring results along with a discussion of the progress of gas extraction system upgrades in reducing the levels of methane within the County subdrain system.

4.4.1 Monitoring Points

Table 4-6 lists the monthly gas monitoring points for the City and County Landfills pursuant to the City and County MRP and CAO No. R4-2004-0080. The approximate locations of these gas monitoring points are shown in Figure 2-1.

4.4.2 Monitoring Parameters and Frequency

Each of the applicable gas migration monitoring points is tested in the field for methane concentration on at least a monthly basis.

4.4.3 Summary of Monitoring Activities

During the first semi-annual monitoring period, monthly soil gas monitoring was conducted pursuant to SCAQMD requirements. All monthly soil gas monitoring activities were conducted by RES Environmental Services, Inc. Table 4-3 lists the monitoring dates and associated monitoring points.

4.4.4 Summary of Monitoring Results

The results of the monthly soil gas monitoring activities conducted during the first semi-annual monitoring period are summarized in Table 4-7. During the first semi-annual monitoring period, there were no field methane readings exceeding 5% by volume at any of the subdrain termination monitoring points or perimeter gas monitoring probes. Consistent with previous monitoring periods, field methane readings in excess of 5% by volume were noted at various depths within two of the temporary probes (GP-1T and GP-2T) located at the County Landfill.

4.4.5 Landfill Gas System Upgrades

CAO R4-2004-0080 requires that BFI take adequate measures to prevent landfill gas from entering into the County Landfill subdrain system. Provision A.2 of that document requires that the progress of any gas extraction system upgrades at the County Landfill be described in the semi-annual reports submitted to the RWQCB. During the first semi-annual monitoring period of 2006, BFI upgraded the County Landfill gas collection system by installing approximately 750 liner feet of additional lateral collection headers.

5. MONITORING OF SURFACE WATER QUALITY

This section of the report describes the current surface water monitoring programs for the City and County Landfills, and presents the results of the stream water, spring water, storm water, and stream diversion monitoring activities conducted during the first semi-annual monitoring period. The remainder of this section is organized in four parts, as follows:

- Stream Water Monitoring;
- Spring Water Monitoring;
- NPDES Water Quality Monitoring; and
- Stream Diversion Water Quality Monitoring.

Table 5-1 provides an overview of the current surface water monitoring requirements and summarizes the associated data evaluation methods and notification/response criteria. Table 5-2 describes the current surface water monitoring points for the City and County Landfills. The locations of the surface water monitoring points are shown in Figure 2-1. Table 5-3 provides an overview of the surface water monitoring activities conducted during the first semi-annual monitoring period, and lists the dates, sampling points, and field personnel for each monitoring event.

5.1 Stream Water Monitoring

MRP CI-2043 (Section II.B.13) requires that BFI perform semi-annual monitoring of stream water quality at the City Landfill.⁷ During each semi-annual monitoring event, stream water samples are to be collected at the four sampling stations shown in Figure 2-1 (S-AR, S-B, S-C, and S-D). Each sample is to be analyzed for the current site indicator parameters listed in Table 3-3. Samples are collected and analyzed, as feasible, based on the stream water flow conditions existing at the time of the semi-annual monitoring events.

As part of the first semi-annual monitoring requirements, stream water monitoring was conducted at the City Landfill on July 1, 2006. All stream water monitoring activities were conducted in accordance with MRP CI-2043 and standard site sampling protocol (BFI, 1993). During this semi-annual monitoring event, field monitoring personnel from BBC visited each of the required monitoring points and recorded the required observations regarding stream water flow. Samples were subsequently collected for laboratory analyses from Stream Water Monitoring Stations S-AR and S-B. Surface water flow at Sampling Stations S-C and S-D was insufficient to allow sample

⁷ No stream water monitoring is required for the County Landfill beyond that required pursuant to the facility's NPDES permit.

collection. Additional information regarding field sampling procedures and equipment is presented in Table 5-3B. Table 3-6 provides information regarding field sample containers and preservatives used for stream water monitoring.

The stream water samples collected during the first semi-annual monitoring period were each analyzed for the facility's current indicator parameters and supplemental parameters (see Table 3-3). The stream water sample analyses were performed by STL-Denver using the methods shown in Table 3-7. The stream water monitoring results from the first semi-annual monitoring period are summarized in Table 5-4.

During the second quarter of 2006, trace detections of 1,4-dioxane were noted in the stream water samples collected at Stream Water Monitoring Stations S-AR and S-B. No other organic compounds were noted in these samples. The RWQCB was notified of the 1,4-dioxane detections at Stream Water Monitoring Station S-AR and S-B in a letter dated August 4, 2006 (BFI, 2006h). On August 2, 2006, Surface Water Monitoring Stations S-AR and S-B were resampled for 1,4-dioxane. The results of the resampling activities are pending and will be forwarded to the RWQCB under separate cover.

5.2 Spring Water Sampling

During June of 2006, BFI conducted soil excavation related to the replacement of an electric power line in the area south of the County Landfill LTP. During these excavation activities, a small spring was encountered. On June 16, 2006, A-Mehr collected a sample of the spring water for laboratory analysis (sample designated ESR-1). The results of these analyses are summarized in Table 5-4. The results of the analyses are generally consistent with results from groundwater samples collected at the County Landfill. No VOCs or 1,4-dioxane were detected in the spring water sample.

5.3 NPDES Water Quality Monitoring

BFI periodically monitors the quality of storm water as part of the general NPDES permit adopted for the Sunshine Canyon Landfill. MRP CI-2043 requires that BFI include water quality data collected as part of the NPDES storm water monitoring program in the subsequent semi-annual groundwater reports. In addition, Provision F of CAO No. R4-2004-0080 requires that BFI's semi-annual groundwater reports include a discussion of any noncompliance with the General NPDES permit. Table 5-5 summarizes the results laboratory analyses performed for an NPDES storm water sample collected by BFI on February 27, 2006. No evidence of non-compliance with NPDES permit requirements are indicated by the results of the NPDES storm water analyses (Table 5-5).

5.4 Stream Diversion Water Quality Monitoring

During the first semi-annual monitoring period, ongoing construction activities for City Landfill Unit II were subject to requirements of Stream Bed Alteration Agreement #R5-2003-0005, adopted by the California Department of Fish and Game (CDF&G). Pursuant to this permit, BFI is required to conduct periodic monitoring of stream water quality at one or more diversion discharge points in the Unit II construction area. During the first semi-annual monitoring period, periodic monitoring was conducted for waters discharging from the hydraulic relief valve located between the City Landfill sedimentation basin and San Fernando Road. Consistent with Stream Bed Alteration Agreement #R5-2003-0005, the results of the stream diversion monitoring activities are submitted to the CDF&G in weekly submittals. Although not a specific requirement of MRP CI-2043, RWQCB staff have requested that the stream diversion monitoring results be tabulated and included in the facility's semi-annual monitoring reports. Table 5-6 includes a summary of the available stream diversion monitoring results for the first semi-annual monitoring period.

6. MONITORING OF LEACHATE QUALITY ⁸

The City and County MRP (Section B.II.11) require that BFI conduct leachate-quality monitoring and related retesting on at least an annual basis. Annual monitoring is to be completed during October, with follow-up retesting, if necessary, during the following April. Annual leachate samples for the County Landfill are collected from the combined flow from Phases I through IV. For the City Landfill, annual leachate samples are collected from Leachate Well LR-2 (City Landfill Unit I) and from the Cell A leachate sump (City Landfill Unit II).

No leachate quality monitoring was required for the City and County Landfills during the first semi-annual monitoring period.

7. ON-SITE WATER USE MONITORING

This section addresses MRP requirements related to the onsite use of water for dust control and irrigation at the City and County Landfills. The remainder of this section is organized in 2 parts, as follows:

- Volume of Water Used Onsite for Dust Control and Irrigation; and
- Quality of Water Used Onsite for Dust Control and Irrigation.

⁸ This section of the report discusses the results of annual leachate quality monitoring and associated retesting activities conducted pursuant to Section II.B.11 of the City and County Landfill MRP. Monitoring activities related to monitoring of leachate volumes and management of leachate are addressed in Section 8 of this report.

7.1 Volume of Water Use Onsite for Dust Control and Irrigation

The City and County MRP (Sections I.A.7 & II.B.14) require that BFI record, on a monthly basis, the source and volume of waters used on site for dust control and irrigation. Pursuant to Sections I.A.7 and II.B.14, the volume of water used at each landfill for dust control and irrigation was recorded on a monthly basis. The results of these monitoring activities are discussed below.

7.1.1 County Landfill

An estimated total of 13,772,284 gallons of water were used for dust control and irrigation at the County Landfill during the first semi-annual monitoring period (Table 7-1). Approximately 9,840,796 gallons of this water was collected from the County Landfill subdrain system and an estimated 3,931,488 gallons was potable water purchased from the Los Angeles County Department of Water and Power (LACDWP). The amount of subdrain liquid used is based on the total amount of groundwater collected from Subdrains A, B, C, and J during the first semi-annual monitoring period (minus the amount of subdrain liquid discharged to the City of Los Angeles sewer connection). The amount of potable water used is an estimate, based on one-half of the total water purchased from the City of Los Angeles Department of Water and Power (LACDWP) during the first semi-annual monitoring period.

7.1.2 City Landfill

An estimated 7,606,383 gallons of water was used at the City Landfill during the first semi-annual monitoring period (Table 7-1). Of this amount, approximately 3,674,895 gallons was collected from the City Landfill groundwater extraction trench and associated cutoff wall extraction wells (EW-1 through EW-5). The remaining water used (approximately 3,931,488 gallons) was potable water purchased from the LACDWP. The amount of potable water used at the City Landfill is an estimate based on one-half of the total water purchased from the City of Los Angeles during the first semi-annual monitoring period.

7.2 Quality of Water Used On Site for Dust Control and Irrigation

The City and County MRP (Sections I.A.7 & II.B.14) require that BFI monitor all waters used on site on a quarterly basis for pH, heavy metals, nitrate, and VOC. In addition, all such waters must meet applicable drinking water standard established by the State of California. The current waste discharge requirements for the County Landfill (RWQCB Order 91-091) contain additional onsite water-use limitations related to heavy metals, VOC, semi-volatile organic compounds, chemical oxygen demand, and oil and grease. The applicable water use limits are indicated in Tables 7-2 and 7-3.

7.2.1 County Landfill

Pursuant to MRP requirements, samples of the water used at the County Landfill for dust control and irrigation were collected on a quarterly basis for laboratory analysis.⁹ The quarterly water-use testing was conducted on samples collected from the effluent from Tank T-210B at the County Landfill leachate treatment plant. Additional information regarding field sampling procedures and equipment is presented in Table 3-5B. Table 3-6 provides information regarding field sampling containers and preservatives used for water-use liquid sampling. The water-use sample analyses were conducted by STL-Denver using the analytical methods shown in Table 3-7.

Table 7-2 summarizes the results of the water-use sample analyses conducted for the County Landfill during the first semi-annual monitoring period. During the first quarter of 2006, the reported lead concentration for the County Landfill water-use sample (15.4 ug/L) slightly exceeded the site-specific limit of 15 ug/L. During March of 2006, a water-use resample was collected and analyzed for total lead. The lead concentration reported for the water use resample was below the site-specific limit.

During the second quarter of 2006, the benzene (1.1 ug/L) and vinyl chloride concentrations reported for the County Landfill water-use sample were slightly above the site-specific limits for these compounds (1.0 and 0.5 ug/L, respectively). In addition, Appendix II metals and oil & grease analyses were inadvertently not requested for the County Landfill water-use sample collected during the second quarter 2006 monitoring event. The County water-use monitoring point was subsequently sampled for these parameters during July of 2006. The results of these analyses are pending and will be included in the next semi-annual monitoring report.

7.2.2 City Landfill

Pursuant to MRP CI-2043, samples of the water used at the City Landfill for dust control and irrigation were collected on a quarterly basis for laboratory analysis. The quarterly City Landfill water-use analyses were conducted on samples collected from a sample port on the piping leading from the City Landfill treatment system. Additional information regarding field sampling procedures and equipment is presented in Table 3-5B. Table 3-6 provides information regarding field sampling containers and preservatives used for water use sampling. The City Landfill water-use samples were analyzed by STL-Denver for the parameters shown in Table 7-3. The analytical methods used by STL-Denver are shown in Table 3-7.

⁹ Consistent with the City and County MRP, no testing of potable water purchased from the City of Los Angeles Department of Water and Power was performed.

Table 7-3 summarizes the results of the City Landfill water-use sample analyses conducted during the first semi-annual monitoring period. As shown in Table 7-3, there were no exceedances of water use limits noted for the City Landfill during the first semi-annual monitoring period.

8. LIQUID GENERATION AND MANAGEMENT

8.1 General

Ongoing waste disposal operations at the City and County Landfills result in the generation of significant volumes of liquids. The liquids generated at these facilities include leachate, landfill gas condensate, collected subdrain liquids, extracted groundwater, and monitoring well purge water. The City and County MRP (Section I.A.7) require that BFI report the volume, on a monthly basis, of the liquids generated at each landfill during each semi-annual monitoring period. The semi-annual reports are to include monthly volumes for each landfill, as well as, a description of how the liquid from each source was managed.

Table 8-1 summarizes the monitoring requirements associated with the onsite generation and management of liquids at the City and County Landfills. Table 8-2 shows the volumes and sources of liquids generated at the City and County Landfills during the first semi-annual monitoring period. Table 8-3 shows the volumes and sources of water from the City and County Landfills which were managed through the City of Los Angeles sewer connection during the first semi-annual monitoring period. Waters used on site for dust control and irrigation at the City and County Landfills are addressed in Section 7.

8.2 Landfill Leachate and Gas Condensate

Table 8-2 shows the monthly totals of landfill leachate and gas condensate collected at the City and County Landfills during the first semi-annual monitoring period. Pertinent information regarding the collection and management of these landfill liquids are presented below:

- Approximately 795,940 gallons of landfill leachate and 278,707 gallons of landfill gas condensate was removed from the County Landfill during the first semi-annual monitoring period (Table 8-2). These liquids were managed at the County Landfill leachate treatment plant and subsequently discharged to the City of Los Angeles sewer connection (Table 8-3).
- Consistent with past monitoring periods, no leachate was removed from City Landfill Unit I during the first semi-annual monitoring period.

- Approximately 907,961 gallons of landfill leachate was removed from City Landfill Unit II during the first semi-annual monitoring period (Table 8-2). These liquids were managed at the County Landfill leachate treatment plant and subsequently discharged to the City of Los Angeles sewer connection (Table 8-3).
- Approximately 150,928 gallons of landfill gas condensate was removed from City Landfill Units I and II during the first semi-annual monitoring period (see Table 8-2). These were passed through a clarifier prior to being discharged to the City of Los Angeles sewer connection (Table 8-3).

8.3 Extracted Groundwater

BFI is currently extracting impacted groundwater from various areas of the City Landfill as part of that facility's ongoing corrective action program (CAP). Current areas of groundwater extraction include the extraction trench, the cutoff wall extraction wells, the 24-inch inclined riser, and the "City Seep" collection system. Each area of groundwater extraction is discussed below.

8.3.1 Extraction Trench and Cutoff Wall Extraction Wells

During the first semi-annual monitoring period, the combined flow from the extraction trench and cutoff wall extraction wells was approximately 3,674,895. The monthly groundwater volumes extracted from this source are shown in Table 8-2. During the first semi-annual monitoring period, this extracted groundwater was pumped to the City Landfill treatment system where it was processed and subsequently used for onsite dust control and irrigation (Table 8-3).¹⁰

During the first semi-annual monitoring period, liquid samples (designated as "Extraction Trench" or "Trench" on the laboratory reports) were collected for laboratory analysis on a quarterly basis from the combined flow from the extraction trench and cutoff wall extraction wells. Pursuant to MRP CI-2043, these samples were analyzed similarly to the quarterly groundwater samples. The results of the laboratory analyses are presented in Table 8-4.

¹⁰ Although not applicable during this monitoring period, the facility's current liquid management plan provides for the discharge of some of this flow through the City of Los Angeles sewer connection.

8.3.2 “City Seep” Collection System

During March of 1997, a seep was identified along the northern margin of City Landfill Unit I. Subsequent investigation of this seep (historically designated as the “City Seep”) indicated that it was associated with a pre-disposal canyon which underlies the northern portion of City Landfill Unit I. A seep water collection system was subsequently constructed to collect the impacted liquids discharging from the “City Seep” and samples were collected on a quarterly basis for laboratory analyses. The “City Seep” collection system was later upgraded and currently includes of two risers which serve to extract groundwater directly from the underlying pre-disposal alluvial canyons. The first of these extraction points is located near the location of the “original” City Seep collection system and consist of an approximately 18 feet deep vertical riser and associated automated pumping system. A second groundwater extraction point is located along the east side of the main access road, approximately 200 feet northwest of the City Landfill Unit II scale house. This groundwater extraction point consists of a 24-inch diameter, inclined riser fitted with an automated pumping system.

The city seep vertical riser and 24-inch inclined riser collectively comprise what is currently designated as the “City Seep Collection System” or “City Seep”. Consistent with MRP CI-2043, the total volume of liquid collected from the “City Seep” is monitored on a monthly basis. During the first semi-annual monitoring period, the total volume collected from the combined “City Seep” was 463,538 gallons. Monthly volumes collected from this source are shown in Table 8-2. The liquids collected from the vertical “City Seep” riser during the first semi-annual monitoring period were initially pumped to the County Landfill leachate treatment plant and subsequently discharged to the City of Los Angeles sewer connection (Table 8-3). Liquids removed from the 24-inch inclined riser during the first semi-annual monitoring period were discharged directly to the City of Los Angeles sewer connection (Table 8-3).

During the first semi-annual monitoring period, liquid samples from the combined “City Seep” were collected for laboratory analysis on a quarterly basis. The results of the laboratory analyses are shown in Table 8-4.

8.4 Collected Subdrain Liquids

Liquids from County Subdrains A, B, C, J, and L are currently collected and managed as part of the County Landfill’s ongoing corrective action program.¹¹ During the first semi-annual monitoring period, approximately 10,676,563 gallons of subdrain liquid was collected from Subdrains A, B, C, J, and L (Table 8-2). The collected subdrain liquids were initially pumped to the County Landfill

¹¹ No subdrain liquids were collected from the City Landfill during the first semi-annual monitoring period.

leachate treatment plant. The majority of this liquid (approximately 9,840,796 gallons) was then used for onsite dust control and irrigation (Table 7-1). The remaining liquid (approximately 835,767 gallons) was discharged to the City of Los Angeles sewer connection.

8.5 Monitoring Well Purge Water

Approximately 981 gallons of groundwater were collected during purging operations at various City and County Landfill monitoring wells during the first semi-annual monitoring period (Table 8-2). This water was transferred to the County Landfill LTP and ultimately discharged to the City sewer connection (Table 8-3).

9. DRAINAGE STRUCTURE MONITORING AND RELATED OBSERVATIONS

The City and County MRP require that BFI conduct periodic site inspections as part of its current NPDES storm water permit. During the “wet season” (October to April), the inspections are to be made following each storm that produces significant runoff or, if no storm occurs during a particular month, on a monthly basis. During the “dry season” (May to September), these inspections are to be made on a quarterly basis. Pursuant to MRP requirements, each inspection is to include the following “standard observations”:

- Evidence of surface water leaving or entering the unit, including an estimate of the size of the affected area and the estimated flow rate;
- Presence or absence of odors, including characterization, source, and distance of travel from the source;
- Evidence of erosion and/or exposed refuse;
- Inspection of all storm water discharge locations for evidence of non-storm water discharges (during dry season) and integrity (during wet season);
- Evidence of ponded water at any point on the waste management facility (show affected areas on a map);
- Assessment of compliance with the facility’s Storm Water Pollution Prevention Plan, including proper implementation of the terms of the General NPDES Storm Water Permit; and

During the first semi-annual monitoring period, standard observations were made for the City and County Landfills on at least a quarterly frequency. No significant issues were noted during these standard observations. A summary and certification of completion of the standard observations was submitted to the RWQCB under separate cover (BFI, 2006i).

10. WASTE DISPOSAL MONITORING

This section of the report addresses waste disposal monitoring conducted for the City and County Landfills during the first semi-annual monitoring period of 2006. The remainder of this section is organized in six parts, as follows:

- Waste Disposal Quantities and Locations;
- Remaining Landfill Capacity;
- Certification of Waste Disposal;
- Location and Rate of Flow for Seeps and Springs;
- Estimated Volume of Water Used for Dust Control and Irrigation; and
- Waste Load Checking Program;

10.1 Waste Disposal Quantities and Locations

The City and County MRP (Section I.A.8.a) require that the semi-annual reports include a tabular list of the estimated monthly quantities of waste deposited at each facility. During the first semi-annual monitoring period, the quantities of municipal solid waste deposited at the City and County Landfills were monitored daily. The monthly quantities of waste deposited at each facility during the first semi-annual monitoring period are summarized in Table 10-1, along with estimated volumes.

10.2 Remaining Landfill Capacity

The City and County MRP (Section I.A.8.b) require that the semi-annual reports include an estimate of the remaining capacity and site life for each facility. The estimated remaining landfill capacity for the County Landfill, as of June 30, 2006, is approximately 2,806,412 cubic yards. The estimated remaining life of County Landfill is approximately 2 years, from June 30, 2006.

City Landfill Unit I is closed. City Landfill Unit II, which began waste disposal operations in July of 2005, is estimated to have 9,234,568 cubic yards of remaining airspace capacity as of June 30, 2006. The estimated remaining life of the City Landfill Unit II is approximately 4 years, from June 30, 2006.

10.3 Certification of Waste Disposal

The City and County MRP (Section I.A.8.c) require that the semi-annual reports include a certification that all wastes were deposited in compliance with the RWQCB's requirements and that no wastes were deposited outside of the permitted waste management areas. Pursuant to Section I.A.8.c, the required certification has been included in BFI's letter of transmittal.

10.4 Location and Rate of Flow for Seeps and Springs

The City and County MRP (Section I.A.8.d) require that the semi-annual reports include a description of the location and an estimated seepage rate for all known leachate seeps at the facilities. The City and County Landfills were surveyed periodically for evidence of significant new leachate seeps as part of the facility's NPDES permit requirements. No new leachate seeps were encountered at the City or County Landfill during the first semi-annual monitoring period. As noted in Section 5.2 of this report a small seep/spring was noted during soil excavation activities just south of the County Landfill LTP. The estimated flows associated with this natural spring/seep was estimated at less than 1 gallon per minute. Additional information regarding this seep is presented in Section 5.2 of this report.

10.5 Estimated Amount of Water Used for Dust Control and Irrigation

The City and County MRP (Section I.A.8.e) require that the semi-annual reports include an estimate of the amount of water used at each facility for dust control and irrigation during each month. The monthly volumes are shown in Table 7-1.

10.6 Waste Load Checking Program

The City and County MRP (Section I.A.8.f) require that BFI provide information regarding any unacceptable wastes received at the facilities. Waste disposal is monitored at both facilities to confirm that waste types deposited conform to the appropriate federal and state restrictions and the requirements contained in RWQCB Orders 91-091 (County Landfill) and R4-2003-0155 (City Landfill). No unacceptable wastes were accepted at the City or County Landfills during the first semi-annual monitoring period.

REFERENCES

- A-Mehr, 2002, "Draft Joint Technical Document, Sunshine Canyon County Extension Landfill, Sylmar, California," December 2002.
- A-Mehr, 2003a, "Delineation Assessment Report, Updated Engineering Feasibility Study, and Amended Report of Waste Discharge for the Site Entrance Area, Sunshine Canyon City Side Landfill, Sylmar, California," report dated February 14, 2003.
- A-Mehr, 2003b, "Proposed Data Evaluation Methods for Groundwater and Surface Water, Sunshine Canyon City Side Landfill, Sylmar, California," report dated February 14, 2003.
- A-Mehr, 2003c, "Optional Demonstration Report for Low-Level Acetone Detections, Surface water Monitoring Stations S-A and S-C, Sunshine Canyon City Side Landfill, Sylmar, California," report dated July 2003.
- A-Mehr, 2003d, "Delineation Assessment Report, Sunshine Canyon County Extension Landfill, Sylmar, California (RWQCB File No. 91-091)," report dated July 10, 2003.
- A-Mehr, 2003e, "Evaluation of Carbon Disulfide Detections in Liquid Samples, Sunshine Canyon City Side Landfill (RWQCB File No. 58-76) and Sunshine Canyon County Extension Landfill (RWQCB File No. 91-091), Sylmar, California," letter report dated November 14, 2003.
- A-Mehr, 2004a, "Construction Quality Assurance Report, Subsurface Barrier and Extraction System, Sunshine Canyon Landfill," report dated September 30, 2004.
- A-Mehr, 2005a, "Proposed Concentration Limits, Groundwater Monitoring Wells CM-15, CM-16, and CM-17, Sunshine Canyon County Extension Landfill, Sylmar, California (RWQCB File No. 58-76)," letter report dated November 22, 2005.
- BFI, 1993, "Standard Operating Procedures for Sampling and Analysis of Groundwater Monitoring Wells", dated September 1993.
- BFI, 2006a, "Revised Notification of Tentative Exceedances, First Quarter 2006 Groundwater Monitoring Event, Sunshine Canyon City Landfill, Sylmar, California (RWQCB File No. 58-076)", letter dated May 9, 2006.

- BFI, 2006b, “Revised Notification of Tentative Exceedances, First Quarter 2006 Groundwater Monitoring Event, Sunshine Canyon County Landfill, Sylmar, California (RWQCB File No. 58-076)”, letter dated May 9, 2006.
- BFI, 2006c, “Proposed Changes to Groundwater Well Purging Procedures, Sunshine Canyon City and County Landfills, Sylmar, California (RWQCB File No. 58-076)”, letter dated May 9, 2006.
- BFI, 2006d, “Notification of Tentative Exceedances from the April 2006 Groundwater Monitoring Event, Sunshine Canyon City Landfill, Sylmar, California (RWQCB File No. 58-076)”, letter dated May 16, 2006.
- BFI, 2006e, “Reporting Limit for Vinyl Chloride Analyses, Sunshine Canyon City and County Landfills, Sylmar, California (RWQCB File No. 58-076)”, letter dated May 16, 2006.
- BFI, 2006f, “Results of Resampling Activities Related to the First Quarter 2006 Groundwater Monitoring Event, Sunshine Canyon County Extension Landfill, Sylmar, California (RWQCB File No. 58-076)”, letter dated June 20, 2006.
- BFI, 2006g, “Notification of Liquid Detection at Lysimeter LY-6, Sunshine Canyon County Extension Landfill, Sylmar, California (RWQCB File No. 58-076)”, letter dated July 6, 2006.
- BFI, 2006h, “Notification of Tentative Exceedances, Second Quarter 2006 Groundwater Monitoring Event, Sunshine Canyon City Landfill, Sylmar, California (RWQCB File No. 58-076)”, letter dated August 4, 2006.
- BFI, 2006i, “2005-2006 Annual Industrial Storm Water Report, Sunshine Canyon Landfill (ID # 419S001306)”, report dated June 29, 2006.
- BFI, 2006j, “Results of Liquid Sampling at Lysimeter LY-6, Sunshine Canyon County Extension Landfill, Sylmar, California (RWQCB File No. 58-076)”, letter dated August 10, 2006.
- Brown, G. A., 1975, “Groundwater Geology of the San Fernando Valley,” in San Fernando Valley Earthquake of 9 February 1971, Bulletin 196, California Division of Mines and Geology, Sacramento, California.
- ETC, 1988a, “Solid Waste Assessment Test (SWAT) Report, Sunshine Canyon Sanitary Landfill, Sylmar, California”, report dated July 1, 1988.

ETC, 1988b, “Final Draft: Hydrogeologic Assessment of Proposed Sunshine Canyon Landfill Extension, Sylmar, California”, report dated September 20, 1988.

PRA Group, 1991, “Groundwater Extraction Trench Test Results, Sunshine Canyon Sanitary Landfill, Sylmar, California”, report dated May 21, 1991.

RWQCB, 1991, “Order No. 91-091, Waste Discharge Requirements for Browning-Ferris Industries of California, Inc. (Sunshine Canyon County Extension), File No. 58-76”, revised July 22, 1991.

RWQCB, 2003a, “Monitoring and Reporting Program (No. CI-2043) for Browning-Ferris Industries of California, Inc. (Sunshine Canyon City Landfill)”, revised November 20, 2003.

RWQCB, 2003b, “Corrective Action Program Waste Discharge Requirements, Order No. R4-2003-0155 for Browning-Ferris Industries of California, Inc. (Sunshine Canyon City Landfill), File No. 58-076”, adopted December 4, 2003.

RWQCB, 2004a, “Cleanup and Abatement Order No. R4-2004-0080 for Browning-Ferris Industries of California, Inc. (Sunshine Canyon County Extension Landfill)(File No. 58-076)”, adopted August 16, 2004.

RWQCB, 2004b, “Monitoring and Reporting Program (No. CI-7059) for Browning-Ferris Industries of California, Inc. (Sunshine Canyon County Extension Landfill)”, adopted August 16, 2004.

RWQCB, 2006, “Groundwater Monitoring Program, Sunshine Canyon County Extension Landfill, (File No. 58-076, CI 7059)”; letter to BFI dated May 1, 2006.

TABLE 1-1
INDEX TO SEMI-ANNUAL REPORTING REQUIREMENTS
MONITORING AND REPORTING PROGRAMS CI-2034 AND CI-7059
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| SEMI-ANNUAL REPORTING REQUIREMENTS | LOCATION WITHIN COMBINED REPORT | |
|---|---------------------------------|---------------------------------|
| | COUNTY LANDFILL (CI-7059) | CITY LANDFILL (CI-2043) |
| 1. Transmittal Letter | -- | -- |
| Statement regarding accuracy and completeness | BFI Transmittal Letter | BFI Transmittal Letter |
| Signature of Company Official | BFI Transmittal Letter | BFI Transmittal Letter |
| Discussion of any violations/planned actions | Executive Summary | Executive Summary |
| Signature of Registered Civil Engineer or Geologist | A-Mehr, Inc. Transmittal Letter | A-Mehr, Inc. Transmittal Letter |
| 2. Summary of Non-Compliance | Executive Summary | Executive Summary |
| 3. Site Conditions | Section 2 | Section 2 |
| 4. Narrative Description | -- | -- |
| Full Appendix II Scan | Section 3.4.5 | Section 3.4.5 |
| COC List | Sections 3.2.1 | Sections 3.2.1 |
| Monitoring Parameters | Section 3.2 | Section 3.2 |
| Ongoing Background Well Testing | Section 3.4.2 | n/a |
| Water Quality Protection Standards | Section 3.3 | Section 3.3 |
| Development and Updating of Concentration Limits | Section 3.3 | Section 3.3 |
| Groundwater Quality Monitoring | Section 3 | Section 3 |
| Statistical Data Analysis | Section 3.5 | Section 3.6 |
| Non-Statistical Data Analysis | Section 3.5 | Section 3.6 |
| Groundwater Flow Monitoring | Section 3.7 | Section 3.7 |
| Leachate Quality Monitoring | Section 6 | Section 6 |
| Vadose Zone Monitoring - Subdrain Liquids | Section 4.2 | Section 4.2 |
| Vadose Zone Monitoring - Lysimeter Liquids | Section 4.3 | Section 4.3 |
| Vadose Zone Monitoring - Monthly Soil Gas | Section 4.4 | Section 4.4 |
| Surface Water Monitoring | Section 5 | Section 5 |
| Onsite Water Use Monitoring | Section 7 | Section 7 |

TABLE 1-1
INDEX TO SEMI-ANNUAL REPORTING REQUIREMENTS
MONITORING AND REPORTING PROGRAMS CI-2034 AND CI-7059
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| SEMI-ANNUAL REPORTING REQUIREMENTS | LOCATION WITHIN COMBINED REPORT | |
|--|---------------------------------|-------------------------|
| | COUNTY LANDFILL (CI-7059) | CITY LANDFILL (CI-2043) |
| 5. Laboratory Results | -- | -- |
| Groundwater | Table 3-12 | Table 3-12 |
| Subdrain Liquid | Table 4-4 | Table 4-4 |
| Lysimeter Liquid | Table 4-5 | Table 4-5 |
| Stream/Seep Water | Table 5-4 | Table 5-4 |
| Storm Water (NPDES) | Table 5-5 | Table 5-5 |
| Stream Diversion (CDF&G) | Table 5-6 | Table 5-6 |
| Leachate | n/a | n/a |
| Water-Use | Table 7-2 | Table 7-3 |
| Extracted Groundwater | n/a | Table 8-4 |
| Tentatively Identified Compounds | Table 3-13 | Table 3-13 |
| QA/QC Sample Results | Table 3-10 & 3-11 | Table 3-10 & 3-11 |
| 6. Standard Observations | Section 9 | Section 9 |
| 7. Liquid Generation and Management | -- | -- |
| Leachate | Section 8.2 | Section 8.2 |
| Landfill Gas Condensate | Section 8.2 | Section 8.2 |
| Extracted Groundwater | n/a | Section 8.3 |
| Collected Subdrain Liquids | Section 8.4 | n/a |
| 8. Waste Disposal Reporting | -- | -- |
| Waste Volumes Deposited & Locations | Section 10.1 | Section 10.1 |
| Remaining Waste Capacity and Site Life | Section 10.2 | Section 10.2 |
| Certification of Waste Placement | Section 10.3 | Section 10.3 |
| Location and Seepage Rate of Seeps and Springs | Section 10.4 | Section 10.4 |
| Estimated Onsite Water Use | Section 10.5 | Section 10.5 |
| Unacceptable Wastes Received | Section 10.6 | Section 10.6 |
| 9. Map(s) | Figure 2-1 | Figures 2-1, 3-1, & 3-2 |

TABLE 3-1
SUMMARY OF GROUNDWATER MONITORING REQUIREMENTS
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| MONITORING REQUIREMENTS | | | | |
|---|--|--|--|--|
| TYPE OF MONITORING | MONITORING FREQUENCY | MONITORING PARAMETERS | MONITORING POINTS | |
| | | | COUNTY LANDFILL | CITY LANDFILL |
| Routine groundwater monitoring | Quarterly | Indicator parameters | CM-15, CM-16, & CM-17 | MW-1, MW-5, MW-6, MW-9, MW-13R, MW-14, DW-1, DW-4, & Extraction Trench |
| | Semi-annual | Indicator parameters and supplemental parameters | | All quarterly points, plus MW-2A, MW-2B, DW-2, & DW-3 |
| Background monitoring | Same as above for routine groundwater monitoring | | CM-9R3, CM-10, & CM-11R | None |
| Appendix II scan | Within 30 days of well completion | Appendix II constituents | All "newly installed" groundwater monitoring wells | |
| 5-year COC monitoring | Every fifth year | Constituents of concern | All groundwater monitoring wells | |
| DATA EVALUATION METHODS | | | | AGENCY NOTIFICATION AND RESPONSE ACTIVITIES |
| COC in detection mode | Compare each new result for naturally-occurring COC to prediction limit-based concentration limits. | | Result above a statistical limit will normally be considered as a "tentative exceedance" of WQPS & trigger agency notification and response activities. | |
| | Compare each new result for non-naturally occurring COC to laboratory reporting limits (MDL/PQL). | | Two or more detections above MDL, or one detection above PQL, will be considered "tentative exceedance" of WQPS & trigger agency notification and response activities. | |
| COC in tracking mode | Track concentration trends. | | Note trends in next semi-annual report. Additional agency notification and response necessary only if significant increasing trends are noted. | |
| Supplemental monitoring parameters | Track concentrations trends. | | Note trends in next semi-annual report. Additional agency notification and response necessary only if considered likely to be landfill related. | |
| Common field or laboratory contaminants | Track concentrations of COC for which an Alternative Source Demonstration Report has been submitted (i.e., carbon disulfide, methylene chloride, acetone). | | Flag detections in semi-annual reports. Additional agency notification and response performed only if detections are considered likely to be landfill related. | |
| Tentatively identified compounds (TICs) | Track TIC detections and assess on a case-by-case basis. | | Note TICs in next semi-annual report. Additional agency notification and response performed only if considered likely to be landfill related. | |

TABLE 3-2
GROUNDWATER MONITORING WELL NETWORKS
SUNSHINE CANYON CITY AND COUNTY LANDFILLS
First Semi-Annual Monitoring Period of 2006

| WELL TYPE | WELL ID | WELL DEPTH (feet) ⁽¹⁾⁽²⁾ | SCREEN INTERVAL (feet) ⁽¹⁾⁽²⁾ | CASING DIAMETER (Inches) ⁽²⁾ | GROUND-WATER ZONE ⁽³⁾ |
|-------------------------|---------|--|---|--|----------------------------------|
| COUNTY MONITORING WELLS | CM-9R3 | 28.1 | 8 - 28 | 4 | SGWZ |
| | CM-10 | 39.2 | 26 - 39 | 4 | |
| | CM-11R | 30.7 | 21 - 31 | 4 | DGWZ |
| | CM-15 | 30.5 | 5 - 30 | 4 | SGWZ |
| | CM-16 | 142 | 91 - 141 | 4 | DGWZ |
| | CM-17 | 79.7 | 39 - 79 | 4 | |
| CITY MONITORING WELLS | MW-1 | 28.7 | 8 - 28 | 4 | SGWZ |
| | MW-2A | 19.5 | 9 - 19 | 4 | |
| | MW-5 | 30.9 | 10 - 30 | 2 | |
| | MW-6 | 30.5 | 10 - 30 | 2 | |
| | MW-9 | 25.7 | 10 - 25 | 4 | |
| | MW-13R | 28.1 | 13 - 28 | 4 | |
| | MW-14 | 27.5 | 12 - 27 | 4 | |
| | MW-2B | 48 | 28 - 48 | 4 | DGWZ |
| | DW-1 | 211 | 190 - 210 | 4 | |
| | DW-2 | 70.8 | 50 - 70 | 4 | |
| | DW-3 | 255 | 235 - 255 | 4 | |
| | DW-4 | 110 | 89 - 109 | 4 | |

Notes: (1) Measured from top of PVC casing; (2) Data obtained from well installation records; (3) SGWZ = shallow groundwater zone; DGWZ = deep groundwater zone (see Section 2 for a description of groundwater zones).

TABLE 3-3
CURRENT INDICATOR PARAMETERS, CONSTITUENTS OF
CONCERN, AND SUPPLEMENTAL PARAMETERS
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| INORGANIC INDICATOR PARAMETERS | SUPPLEMENTAL PARAMETERS | |
|---|-------------------------|-----------------------------|
| Alkalinity, total | Bicarbonate | Magnesium, total |
| Ammonia, Nitrogen | Bromide | Iron, total |
| Chemical Oxygen Demand | Sulfate | Manganese, total |
| Chloride | Nitrate | Spec.Cond., Field |
| Potassium, total | Fluoride | Temperature, Field |
| Total Dissolved Solids | Calcium, total | Turbidity, Field |
| Total Organic Carbon | Sodium, total | pH, field |
| ORGANIC INDICATOR PARAMETERS (APP. I VOC, DCDFM, MTBE & 1,4-Dioxane) ⁽²⁾ | | |
| 1,1,1,2-Tetrachloroethane | Acetone | Ethylbenzene |
| 1,1,1-Trichloroethane | Acrylonitrile | Iodomethane |
| 1,1,2,2-Tetrachloroethane | Benzene | Methylene Chloride |
| 1,1,2-Trichloroethane | Bromochloromethane | Methyl-t-Butyl Ether (MTBE) |
| 1,1-Dichloroethane | Bromodichloromethane | Xylenes |
| 1,1-Dichloroethene | Bromoform | 1,4-Dioxane |
| 1,2,3-Trichloropropane | Bromomethane | Styrene |
| 1,2-Dibromo-3-Chloropropane | c-1,2-Dichloroethene | t-1,2-Dichloroethene |
| 1,2-Dibromoethane | c-1,3-Dichloropropene | t-1,3-Dichloropropene |
| 1,2-Dichlorobenzene | Carbon Disulfide | t-1,4-Dichloro-2-Butene |
| 1,2-Dichloroethane | Carbon Tetrachloride | Tetrachloroethene |
| 1,2-Dichloropropane | Chlorobenzene | Toluene |
| 1,4-Dichlorobenzene | Chloroethane | Trichloroethene |
| 2-Butanone | Chloroform | Trichlorofluoromethane |
| 2-Hexanone | Chloromethane | Vinyl Acetate |
| 4-Methyl-2-Pentanone | Dibromochloromethane | Vinyl Chloride |
| Dibromomethane | Dichlorodifluoromethane | Carbon Disulfide |
| OTHER COMPOUNDS CONFIRMED IN SITE GROUNDWATER OR LEACHATE | | |
| 1,3-dichlorobenzene | Beryllium, total | Selenium, total |
| 2,4-dimethylphenol ⁽¹⁾ | Barium, total | Silver, total |
| Acenaphthene ⁽¹⁾ | Cadmium, total | Thallium, total |
| Bis(2-ethylhexyl)phthalate ⁽¹⁾ | Chromium, total | Tin, total |
| Fluorene ⁽¹⁾ | Cobalt, total | Vanadium, total |
| Naphthalene ⁽¹⁾ | Copper, total | Zinc, total |
| Phenanthrene ⁽¹⁾ | Lead, total | Total Sulfide |
| Antimony, total | Mercury, total | Total Cyanide |
| Arsenic, total | Nickel, total | |

(1) These are COCs for the City Landfill only.

TABLE 3-4A
CONCENTRATION LIMITS FOR CONSTITUENTS OF CONCERN
GROUNDWATER MONITORING POINTS
SUNSHINE CANYON CITY LANDFILL

| ANALYTES | MONITORING POINT I.D. | | | | | | |
|--|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| | MW-1 | MW-5 | MW-6 | MW-9 | MW-13R | MW-14 | Trench |
| Alkalinity | 1,049 | 921.1 | 586.8 | 890 | 994.4 | tbd ⁽¹⁾ | 3900 |
| Ammonia Nitrogen | 15 | tbd ⁽¹⁾ | tbd ⁽¹⁾ | 3.37 | 9.536 | tbd ⁽¹⁾ | 16 |
| COD | 287 | 333.2 | 67 | 320.1 | 372.8 | tbd ⁽¹⁾ | 568.2 |
| Chloride | 669.6 | 472.6 | 115.1 | 464.9 | 496.3 | tbd ⁽¹⁾ | 654.8 |
| Potassium | 60.48 | 22.3 | 10.7 | 59.62 | 82.63 | tbd ⁽¹⁾ | 113.1 |
| TDS | 5,721 | 5,271 | 4,658 | 4,978 | 4,726 | tbd ⁽¹⁾ | 4,291 |
| TOC | 90 | 96.98 | 79 | 148.1 | 80.25 | tbd ⁽¹⁾ | 253.2 |
| Appendix II Heavy Metals, Sulfide, & Cyanide | tbd ⁽²⁾ | tbd ⁽²⁾ | tbd ⁽²⁾ | tbd ⁽²⁾ | tbd ⁽²⁾ | tbd ⁽²⁾ | tbd ⁽²⁾ |
| Appendix II Organics | mdl/pql ⁽³⁾ | mdl/pql ⁽³⁾ | mdl/pql ⁽³⁾ | mdl/pql ⁽³⁾ | mdl/pql ⁽³⁾ | mdl/pql ⁽³⁾ | mdl/pql ⁽³⁾ |
| ANALYTES | MONITORING POINT I.D. | | | | | | |
| | MW-2A | MW-2B | DW-1 | DW-2 | DW-3 | DW-4 | -- |
| Alkalinity | 593.7 | 386.1 | 640 | 760 | 221.5 | 368.5 | -- |
| Ammonia Nitrogen | 3.619 | 3.2 | 2.008 | 2.265 | 0.7446 | 4.327 | -- |
| COD | 63.64 | 30 | 45 | 26 | 420 | 40 | -- |
| Chloride | 114.1 | 15.96 | 21 | 21.3 | 26.1 | 16.65 | -- |
| Potassium | 16.35 | 8.7 | 5.93 | 8.92 | 14.01 | 15.30 | -- |
| TDS | 3,804 | 3,280 | 3,390 | 2,094 | 2,226 | 3,164 | -- |
| TOC | 26.3 | 7.600 | 10.7 | 9.6 | 18 | 28 | -- |
| Appendix II Heavy Metals, Sulfide, & Cyanide | tbd ⁽²⁾ | tbd ⁽²⁾ | tbd ⁽²⁾ | tbd ⁽²⁾ | tbd ⁽²⁾ | tbd ⁽²⁾ | -- |
| Appendix II Organics | mdl/pql ⁽³⁾ | mdl/pql ⁽³⁾ | mdl/pql ⁽³⁾ | mdl/pql ⁽³⁾ | mdl/pql ⁽³⁾ | mdl/pql ⁽³⁾ | -- |

Notes:

- (1) Consistent with the MRP, concentration limits for these wells/parameters will be updated every two years.
- (2) Concentration Limits for these COC will be established prior to the next required COC scan.
- (3) Organic detections are compared to the laboratory's MDLs and PQLs.

TABLE 3-4B
 PROPOSED INTER-WELL CONCENTRATION LIMITS
 FOR GROUNDWATER MONITORING POINTS
 SUNSHINE CANYON COUNTY LANDFILL

| ANALYTES | MONITORING POINT I.D. | |
|---|-----------------------|------------------------|
| | UNIT | PROPOSED LIMIT |
| Alkalinity | mg/L | 766.08 |
| Ammonia Nitrogen | mg/L | 7.95 |
| COD | mg/L | 239.85 |
| Chloride | mg/L | 71.65 |
| Potassium | mg/L | 32.21 |
| TDS | mg/L | 6,167.77 |
| TOC | mg/L | 34.36 |
| 1,4-Dioxance | ug/L | mdl/pql ⁽¹⁾ |
| Appendix II Heavy Metals, Sulfide, & Cyanide | mg/L | tbd ⁽²⁾ |
| Appendix II Organics | ug/L | mdl/pql ⁽¹⁾ |

Notes:

- (1) Results for these compounds will be compared to the laboratory's MDLs & PQLs.
- (2) Concentration Limits for these COC will be established prior to the next required COC scan.

TABLE 3-5A
SUMMARY OF GROUNDWATER FIELD MONITORING ACTIVITIES
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| FACILITY | DATE | MONITORING POINTS | FIELD PERSONNEL |
|-----------------|---------|--|-----------------|
| COUNTY LANDFILL | 3/27/06 | CM-15, CM-17, Duplicate, & Trip Blank | BBC |
| | 3/28/06 | CM-16, Field Blank Equipment Blank, & Trip Blank | BBC |
| | 4/25/06 | CM-15, CM-16, CM-17, Duplicate, Equipment Blank, Trip Blank, and Field Blank | BBC |
| | 5/23/06 | CM-15, CM-16, Equipment Blank, Trip Blank, and Field Blank | BBC |
| | 5/24/06 | CM-17, CM-9R3, CM-10, & CM-11R, Equipment Blank, Trip Blank, and Field Blank | BBC |
| | 6/26/06 | CM-9R3, CM-10, CM-11R, CM-15, CM-16, CM-17 | BBC |
| | 6/27/06 | COSUB-CF, WU-CO | BBC |
| CITY LANDFILL | 3/27/06 | MW-1, MW-5, MW-9, MW-13R, MW-14, DW-1, Duplicate, & Trip Blank | BBC |
| | 3/28/06 | DW-4, Equipment Blank, Field Blank, & Trip Blank | BBC |
| | 4/25/06 | MW-6, Equipment Blank, Field Blank, & Trip Blank | BBC |
| | 6/26/06 | MW-1, MW-2A, MW-2B, MW-5, MW-9, DW-1, DW-3, DW-4 | BBC |
| | 6/27/06 | MW-6, MW-13R, MW-14, DW-2 | BBC |

TABLE 3-5B
SUMMARY OF FIELD SAMPLING INFORMATION
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| Sample Point | Date Purged (2006) | Date Sampled (2006) | Company | Personnel | Purge Method | Tubing Type | Volume Purged (Gallons) | Purge Time (min) | Sample Method | Starting DTW (ft-bgs) | Drawdown (ft-bgs) | Weather | Sample Characteristics |
|--------------|--------------------|---------------------|---------|-----------|--------------|-------------|-------------------------|------------------|---------------|-----------------------|-------------------|---------|------------------------|
| MW-1 | 3/27 | 3/27 | BBC | SEL | DP,3V | DP | 24.9 | 15 | DP | 15.88 | 16.85 | O,60 | Y, StO |
| MW-1 | 6/26 | 6/26 | BBC | SEL | PP,MD | DP | 1.8 | 15 | PP | 16.67 | 17.04 | S, 95 | T, NO |
| MW-2A | 6/26 | 6/26 | BBC | SEL | PP,MD | DP | 0.7 | 15 | PP | 21.63 | 22.05 | S, 90 | C, NO |
| MW-2B | 6/26 | 6/26 | BBC | SEL | PP,MD | DP | 1.5 | 15 | PP | 7.69 | 8.99 | S, 85 | T, NO |
| MW-5 | 3/27 | 3/27 | BBC | SEL | DP,3V | DP | 6.6 | 6 | DP | 18.34 | 21.90 | Cl,60 | Y, SO |
| MW-5 | 6/26 | 6/26 | BBC | SEL | PP,MD | DP | 1.3 | 15 | PP | 18.50 | 19.12 | O, 90 | T, NO |
| MW-6 | 3/27 | 3/27 | BBC | SEL | Dry | -- | -- | -- | Dry | -- | -- | -- | -- |
| MW-6 | 4/25 | 4/25 | BBC | SEL | PP,MD | DP | 0.9 | 15 | PP | 14.46 | 14.68 | S, 60 | G, H2S |
| MW-6 | 6/27 | 6/27 | BBC | SEL | PP,MD | DP | 1.4 | 15 | PP | 14.80 | 15.45 | O, 80 | H2S |
| MW-9 | 3/27 | 3/27 | BBC | SEL | PP,3V | P | 9.0 | 6 | B | 18.03 | 18.90 | O, 60 | C, NO |
| MW-9 | 6/26 | 6/26 | BBC | SEL | PP,MD | DP | 1.5 | 15 | PP | 17.27 | 18.35 | O, 90 | C, NO |
| MW-13R | 3/27 | 3/27 | BBC | SEL | PP,3V | P | 21.0 | 15 | B | 17.33 | 24.30 | O, 65 | C,H2S |
| MW-13R | 6/27 | 6/27 | BBC | SEL | PP,MD | DP | 1.6 | 15 | PP | 17.68 | 18.39 | S, 85 | H2S |
| MW-14 | 3/27 | 3/27 | BBC | SEL | PP,3V | P | 30.6 | 17 | B | 12.81 | 16.81 | Cl, 65 | C, NO |
| MW-14 | 6/27 | 6/27 | BBC | SEL | PP,MD | DP | 1.6 | 15 | PP | 13.08 | 13.99 | S, 85 | C, NO |
| DW-1 | 3/27 | 3/27 | BBC | SEL | PP,100 | P | 100 | 38 | B | 4.43 | 133.08 | Cl, 65 | C, NO |
| DW-1 | 6/26 | 6/26 | BBC | SEL | PP,MD | DP | 1.6 | 15 | PP | 4.44 | 5.32 | S, 95 | C, NO |
| DW-2 | 6/27 | 6/27 | BBC | SEL | PP,MD | DP | 1.3 | 15 | PP | 21.52 | 21.99 | O, 95 | T, NO |
| DW-3 | 6/26 | 6/26 | BBC | SEL | PP,MD | DP | 1.0 | 15 | PP | 143.52 | 144.32 | S, 80 | C, NO |
| DW-4 | 3/27 | 3/27 | BBC | SEL | PP,PTD | N/A | 83.0 | 33 | B | 5.65 | 114 | R | C, NO |
| DW-4 | 6/26 | 6/26 | BBC | SEL | PP,MD | DP | 1.1 | 15 | PP | 5.44 | 6.01 | S, 85 | C, NO |
| CM-9R3 | 5/24 | 5/24 | BBC | SEL | PP,MD | DP | 1.1 | 15 | PP | 9.52 | 10.97 | S, 85 | T, NO |
| CM-9R3 | 6/26 | 6/26 | BBC | WBC | PP,MD | DP | 0.8 | 15 | PP | 9.62 | 10.08 | C, B | C |
| CM-10 | 5/24 | 5/24 | BBC | SEL | PP,MD | DP | 1.5 | 15 | PP | 29.65 | 30.55 | S, 90 | C, NO |
| CM-10 | 6/26 | 6/26 | BBC | WBC | PP,MD | DP | 1.0 | 15 | PP | 30.58 | 30.90 | O, H | C |
| CM-11R | 5/24 | 5/24 | BBC | SEL | PP,MD | DP | 1.0 | 15 | PP | 15.67 | 16.36 | S, 70 | -- |
| CM-11R | 6/26 | 6/26 | BBC | WBC | PP,MD | DP | 1.3 | 15 | PP | 17.51 | 17.86 | C, B | C |
| CM-15 | 3/27 | 3/27 | BBC | WBC | PP,3V | P | 1.3 | 48 | B | 5.57 | 5.73 | S,65,B | G, SO |
| CM-15 | 4/25 | 4/25 | BBC | SEL | PP,MD | DP | 1.1 | 15 | PP | 5.57 | 5.73 | S,65,B | G, SO |
| CM-15 | 5/23 | 5/23 | BBC | SEL | PP,MD | DP | 0.8 | 15 | PP | 5.20 | 5.28 | S, 75 | G, H2S |
| CM-15 | 6/26 | 6/26 | BBC | WBC | PP,MD | DP | 1.3 | 15 | PP | 6.12 | 6.47 | O, H, B | G, MO |
| CM-16 | 3/27 | 3/27 | BBC | WBC | PP,PTD | P | 1.4 | 55 | B | 84.01 | 136.8 | R,B | C |
| CM-16 | 4/25 | 4/25 | BBC | SEL | PP,MD | DP | 1.4 | 15 | PP | 84.02 | 84.71 | S,55 | C, NO |
| CM-16 | 5/23 | 5/23 | BBC | SEL | PP,MD | DP | 0.9 | 15 | PP | 84.53 | 85.05 | S, 80 | C, NO |
| CM-16 | 6/26 | 6/26 | BBC | WBC | PP,MD | DP | 0.9 | 15 | PP | 80.64 | 80.77 | O, H | C |
| CM-17 | 3/27 | 3/27 | BBC | WBC | PP,PTD | DP | 36.0 | 19 | PP | 48.42 | 77.0 | O,62,B | -- |
| CM-17 | 4/25 | 4/25 | BBC | SEL | PP,MD | DP | 1.1 | 15 | PP | 48.29 | 48.95 | S,65 | G, H2S |

TABLE 3-5B
SUMMARY OF FIELD SAMPLING INFORMATION
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| Sample Point | Date Purged (2006) | Date Sampled (2006) | Company | Personnel | Purge Method | Tubing Type | Volume Purged (Gallons) | Purge Time (min) | Sample Method | Starting DTW (ft-bgs) | Drawdown (ft-bgs) | Weather | Sample Characteristics |
|--------------|--------------------|---------------------|---------|-----------|--------------|-------------|-------------------------|------------------|---------------|-----------------------|-------------------|---------|------------------------|
| CM-17 | 5/24 | 5/24 | BBC | SEL | PP,MD | DP | 0.8 | 15 | PP | 49.41 | 50.20 | S, 95 | C, H2S |
| CM-17 | 6/26 | 6/26 | BBC | WBC | PP,MD | DP | 1.3 | 15 | PP | 49.29 | 49.60 | O, H | G, MO |
| TRENCH | N/A | 3/27 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | O,60 | Y, StO |
| TRENCH | N/A | 6/27 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S, 90 | R, NO |
| SEEP | N/A | 3/27 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | O,60 | R, NO |
| SEEP | N/A | 6/26 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S, 90 | R, NO |
| SUBDRAIN A | N/A | 2/22 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | S,W,B | -- |
| SUBDRAIN B | N/A | 2/22 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | S,W,B | -- |
| SUBDRAIN C | N/A | 2/22 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | S,W,B | -- |
| SUBDRAIN E | N/A | 1/24 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | -- | -- |
| SUBDRAIN E | N/A | 2/22 | BBC | WBC | G | N/A | N/A | N/A | G | N/A | N/A | S,W,B | -- |
| SUBDRAIN E | N/A | 3/27 | BBC | WBC | G | N/A | N/A | N/A | G | N/A | N/A | O,60 | C |
| SUBDRAIN E | N/A | 4/25 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S,65,B | Y, NO |
| SUBDRAIN E | N/A | 5/23 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S, 80 | Y, NO |
| SUBDRAIN E | N/A | 6/26 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S, 85 | T, MO |
| SUBDRAIN F | N/A | 1/24 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | -- | -- |
| SUBDRAIN F | N/A | 2/22 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | S,W,B | T |
| SUBDRAIN F | N/A | 3/27 | BBC | WBC | G | N/A | N/A | N/A | G | N/A | N/A | O,60 | C |
| SUBDRAIN F | N/A | 4/25 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S,65,B | C, NO |
| SUBDRAIN F | N/A | 5/23 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S, 80 | C, NO |
| SUBDRAIN F | N/A | 6/26 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | Cl, 90 | C, MO |
| SUBDRAIN J | N/A | 1/17 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | -- | -- |
| SUBDRAIN J | N/A | 3/27 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | O,60 | C, NO |
| SUBDRAIN J | N/A | 4/25 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S,65,B | C,NO |
| SUBDRAIN J | N/A | 5/23 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S, 80 | F, SO |
| SUBDRAIN J | N/A | 6/26 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S, 85 | C, H2S |
| SUBDRAIN K | N/A | 1/24 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | -- | -- |
| SUBDRAIN K | N/A | 2/22 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | S,W,B | T |
| SUBDRAIN K | N/A | 3/27 | BBC | WBC | G | N/A | N/A | N/A | G | N/A | N/A | O,60,B | C |
| SUBDRAIN K | N/A | 4/25 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S,60 | C, NO |
| SUBDRAIN K | N/A | 5/23 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S, 80 | C, NO |
| SUBDRAIN K | N/A | 6/26 | BBC | WBC | G | N/A | N/A | N/A | G | N/A | N/A | O, H | -- |
| SUBDRAIN L | N/A | 1/24 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | -- | -- |
| SUBDRAIN L | N/A | 2/22 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | S,W,B | T |
| SUBDRAIN L | N/A | 3/27 | BBC | WBC | G | N/A | N/A | N/A | G | N/A | N/A | O,62,B | Y |
| SUBDRAIN L | N/A | 4/25 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S,60 | C,F |
| SUBDRAIN L | N/A | 5/23 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S, 85 | F, Y |

TABLE 3-5B
SUMMARY OF FIELD SAMPLING INFORMATION
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| Sample Point | Date Purged (2006) | Date Sampled (2006) | Company | Personnel | Purge Method | Tubing Type | Volume Purged (Gallons) | Purge Time (min) | Sample Method | Starting DTW (ft-bgs) | Drawdown (ft-bgs) | Weather | Sample Characteristics |
|--------------|--------------------|---------------------|---------|-----------|--------------|-------------|-------------------------|------------------|---------------|-----------------------|-------------------|---------|------------------------|
| SUBDRAIN L | N/A | 6/26 | BBC | WBC | G | N/A | N/A | N/A | G | N/A | N/A | O, H | MO |
| SUBDRAIN L | N/A | 7/1 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | S, W | Ts, NO |
| SUBDRAIN O | N/A | 3/27 | BBC | SEL | DRY | -- | -- | -- | DRY | -- | -- | -- | -- |
| SUB-ABC | N/A | 1/24 | BBC | WBC | G | N/A | N/A | N/A | G | N/A | N/A | WD,C,65 | -- |
| COSUB-CF | N/A | 3/28 | BBC | WBC | G | N/A | N/A | N/A | G | N/A | N/A | O,60,R | -- |
| COSUB-CF | N/A | 4/25 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S,65,B | C,NO |
| COSUB-CF | N/A | 5/23 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S, 80 | C,NO |
| COSUB-CF | N/A | 6/27 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S, 95 | T, MO |
| CO-WU | N/A | 1/24 | BBC | WBC | G | N/A | N/A | N/A | G | N/A | N/A | -- | -- |
| WU-CO | N/A | 3/14 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | -- | -- |
| WU-CO | N/A | 6/27 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | S, 90 | C, MO |
| WU-CITY | N/A | 3/28 | BBC | SEL | G | N/A | N/A | N/A | G | N/A | N/A | R | Y, NO |
| WU-CITY | N/A | 7/1 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | S, W | Ts, NO |
| LY-7 | N/A | 2/21 | A-Mehr | MM | G | N/A | N/A | N/A | G | 352.3 | N/A | -- | -- |
| LY-7 | N/A | 2/24 | A-Mehr | MM | G | N/A | N/A | N/A | G | 352.14 | N/A | -- | -- |
| LY-7 | N/A | 3/27 | A-Mehr | MM | G | N/A | N/A | N/A | G | 349.11 | N/A | -- | -- |
| LY-7 | N/A | 6/30 | A-Mehr | MM | G | N/A | N/A | N/A | G | 342.05 | N/A | S, H | C, NO |
| LY-6 | N/A | 7/13 | A-Mehr | MM | G | N/A | N/A | N/A | G | 251.1 | N/A | S,W | Ts, NO |
| S-AR | N/A | 7/1 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | S, W | Ts, NO |
| S-B | N/A | 7/1 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | S, W | Ts, NO |
| S-C | N/A | 7/1 | A-Mehr | MM | Dry | N/A | N/A | N/A | Dry | N/A | N/A | Dry | Dry |
| S-D | N/A | 7/1 | A-Mehr | MM | Dry | N/A | N/A | N/A | Dry | N/A | N/A | Dry | Dry |
| ESR-1 | N/A | 6/16 | A-Mehr | MM | G | N/A | N/A | N/A | G | N/A | N/A | S,W | Th, NO |

TABLE ABBREVIATIONS:

Purge Method: G = grab sample, no purging required; PP = portable pump; MD = minimal drawdown; PTD = purged to dryness; 3V = 3 casing volumes.

Tubing Type: P = polyethylene, D = dedicated.

Sample Method: G = grab sample; PP = portable pump; DP = dedicated pump.

Weather: O = overcast; S = sunny; Cl = cloudy; H = hot; W = warm; B = breezy; WD = windy; Number indicates approximate temperature in degrees Fahrenheit.

Sample Characteristics: Y = yellowish; StO = strong odor; NO = no odor; T = turbid; C = clear; SO = slight odor; G = grey; H2S = hydrogen sulfide odor; Ts = slightly turbid; Th = high turbidity.

TABLE 3-6
SUMMARY OF SAMPLE CONTAINERS AND PRESERVATIVES
SUNSHINE CANYON CITY AND COUNTY LANDFILLS
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| ANALYTE | SAMPLE CONTAINER(S) | | | PRESERVATIVE | | FIELD FILTERING |
|---|---------------------|--------------|--------|--------------------------------|-----|-----------------|
| | SIZE | MATERIAL | NUMBER | CHEMICAL | ICE | |
| Nitrate-Nitrite | 500 mL | Amber Glass | 1 | H ₂ SO ₄ | Yes | No |
| Ammonia Nitrogen | | | | | | |
| Total Organic Carbon (TOC) | 500 mL | Amber Glass | 1 | H ₂ SO ₄ | Yes | No |
| Chemical Oxygen Demand (COD) | | | | | | |
| Total Dissolved Solids (TDS) | | | | | | |
| Total Alkalinity | 1 Liter | Polyethylene | 1 | None | Yes | No |
| HCO ₃ , Br, Cl, F, NO ₃ , SO ₄ , & CO ₂ | | | | | | |
| Appendix II Metals | | | | | | |
| Major Cations (B, Ca, Fe, K, Mg, Mn, Na) | 500 mL | Polyethylene | 1 | HNO ₃ | Yes | No |
| 1,4-Dioxane (8270C) | 1 L | Amber Glass | 1 | None | Yes | No |
| Appendix I Volatile Organic Compounds | 40 mL | Amber Glass | 3 | HCl | Yes | No |
| Total Sulfide | 250 mL | Polyethylene | 1 | NaOH | Yes | No |
| Total Cyanide | 500 mL | Polyethylene | 1 | NaOH & ZnAC ₂ | Yes | No |
| Semi-Volatile Organic Compounds (8270C) | 1 L | Amber Glass | 1 | None | Yes | No |

TABLE 3-7
SUMMARY OF LABORATORY METHODS
SUNSHINE CANYON CITY AND COUNTY LANDFILLS
First Semi-Annual Monitoring Period of 2006

| PARAMETER | LABORATORY METHOD |
|--|---------------------|
| Alkalinity (Bicarbonate & Total) | MCAWW 310.1 |
| Ammonia as Nitrogen | MCAWW 350.1 |
| Chloride | MCAWW 300.0A |
| Nitrate-Nitrite | MCAWW 353.2 |
| Bromide, Chloride, Sulfate | EPA 300.0A |
| Carbon Dioxide | 4500-CO2 C |
| Chemical Oxygen Demand (COD) | MCAWW 410.4 |
| Major Cations (Ca, Mg, Na, K, Fe, Mn, B) | MCAWW 200.7 & 200.8 |
| Total Dissolved Solids | MCAWW 160.1 |
| Total Organic Carbon (TOC) | MCAWW 415.1 |
| Appendix II Metals ⁽¹⁾ (except Mercury) | MCAWW 200.7 & 200.8 |
| Mercury | MCAWW 245.1 |
| Total Cyanide | EPA 335.4 |
| Total Sulfide | EPA 376.1 |
| 1,4-Dioxane | SW846 8270C/3520C |
| Appendix II VOCs plus MtBE | SW846 8260B/5030B |
| Appendix II SVOCs | SW846 8270C |
| Specific Cond., pH, Temperature, Turbidity | Field |

Notes:

(1) The Appendix II metals include Arsenic, Antimony, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Nickel, Selenium, Silver, Tin, Thallium, Vanadium, Zinc.

MCAWW = "Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent amendments.

SW846 = "Test Methods for the Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TABLE 3-8
SUMMARY OF GROUNDWATER ELEVATION DATA
SUNSHINE CANYON CITY & COUNTY LANDFILLS
2006 Annual Monitoring Period

| FACILITY | WELL ID | REFERENCE POINT ELEVATION (feet msl) | DATE | DEPTH TO GROUND WATER FROM REFERENCE POINT (feet) | GROUNDWATER ELEVATION (feet msl) |
|---------------------|---------------------|--------------------------------------|----------|---|----------------------------------|
| CITY LANDFILL | MW-1 | 1,340.35 | 03/02/06 | 15.80 | 1,324.55 |
| | | | 05/03/06 | 15.42 | 1,324.93 |
| | MW-2A | 1,377.69 | 03/02/06 | 21.69 | 1,356.00 |
| | | | 05/03/06 | 21.41 | 1,356.28 |
| | MW-2B | 1,378.00 | 03/02/06 | 7.95 | 1,370.05 |
| | | | 05/03/06 | 7.54 | 1,370.46 |
| | MW-5 | 1,337.30 | 03/02/06 | 18.24 | 1,319.06 |
| | | | 05/03/06 | 17.98 | 1,319.32 |
| | MW-6 | 1,341.59 | 03/02/06 | 14.16 | 1,327.43 |
| | | | 05/03/06 | 16.87 | 1,324.72 |
| | MW-8 ^(S) | 1,361.87 | 03/02/06 | 16.48 | 1,345.39 |
| | | | 05/03/06 | 15.81 | 1,346.06 |
| | MW-9 | 1,359.15 | 03/02/06 | 18.12 | 1,341.03 |
| | | | 05/03/06 | 17.04 | 1,342.11 |
| | MW-13R | 1,341.42 | 03/02/06 | 17.33 | 1,324.09 |
| | | | 05/03/06 | 17.10 | 1,324.32 |
| | MW-14 | 1,350.02 | 03/02/06 | 12.51 | 1,337.51 |
| | | | 05/03/06 | 12.69 | 1,337.33 |
| | DW-1 | 1,348.58 | 03/02/06 | 4.59 | 1,343.99 |
| | | | 05/03/06 | 4.68 | 1,343.90 |
| DW-2 | 1,518.67 | 03/02/06 | 22.36 | 1,496.31 | |
| | | 05/03/06 | nm | nm | |
| DW-3 | 1,678.93 | 03/02/06 | 142.80 | 1,536.13 | |
| | | 05/03/06 | 143.09 | 1,535.84 | |
| DW-4 | 1,377.98 | 03/02/06 | 5.63 | 1,372.35 | |
| | | 05/03/06 | 6.12 | 1,371.86 | |
| PZ-1 ^(P) | 1,643.30 | 03/02/06 | 83.60 | 1,559.70 | |
| | | 05/23/06 | 84.31 | 1,558.99 | |

TABLE 3-8 (Continued)
SUMMARY OF GROUNDWATER ELEVATION DATA
SUNSHINE CANYON CITY & COUNTY LANDFILLS
2006 Annual Monitoring Period

| FACILITY | WELL ID | REFERENCE POINT ELEVATION (feet msl) | DATE | DEPTH TO GROUND WATER FROM REFERENCE POINT (feet) | GROUNDWATER ELEVATION (feet msl) |
|---------------------------|---------------------|--------------------------------------|----------|---|----------------------------------|
| CITY LANDFILL (CONTINUED) | PZ-2 ^(P) | 1,556.31 | 03/02/06 | 117.73 | 1,438.58 |
| | | | 05/23/06 | 118.35 | 1,437.96 |
| | PZ-3 ^(P) | 2,028.56 | 03/02/06 | 214.31 | 1,814.25 |
| | | | 05/23/06 | 215.12 | 1,813.44 |
| | PZ-4 ^(P) | 1,791.77 | 03/02/06 | 111.82 | 1,679.95 |
| | | | 05/23/06 | 112.50 | 1,679.27 |
| | OM-1 ^(O) | 1,331.5 | 03/02/06 | 37.9 ⁽¹⁾ | 1,334.66 |
| | | | 05/23/06 | 40.3 ⁽¹⁾ | 1,334.86 |
| | OM-2 ^(O) | 1,324.0 | 03/02/06 | 110.2 ⁽¹⁾ | 1,333.18 |
| | | | 05/23/06 | 112.4 ⁽¹⁾ | 1,333.37 |
| | OM-3 ^(O) | 1,324.0 | 03/02/06 | 107.7 ⁽¹⁾ | 1,334.38 |
| | | | 05/23/06 | 99.3 ⁽¹⁾ | 1,333.68 |
| COUNTY LANDFILL | CM-9R3 | 1,897.54 | 03/02/06 | 8.73 | 1,888.81 |
| | | | 05/03/06 | 8.68 | 1,888.86 |
| | CM-10 | 1,873.57 | 03/02/06 | 22.44 | 1,851.13 |
| | | | 05/03/06 | 26.48 | 1,847.09 |
| | CM-11R | 2,006.13 | 03/02/06 | nm | nm |
| | | | 05/03/06 | 13.99 | 1,992.14 |
| | CM-15 | 1,490.90 | 03/02/06 | 4.89 | 1,486.01 |
| | | | 05/03/06 | 5.34 | 1,485.56 |
| | CM-16 | 1,692.73 | 03/02/06 | 83.99 | 1,608.74 |
| | | | 05/03/06 | 83.87 | 1,608.86 |
| | CM-17 | 1,597.73 | 03/02/06 | 47.41 | 1,550.32 |
| | | | 05/03/06 | 48.39 | 1,549.34 |
| CM-5 ^(P) | 1,490.84 | 03/02/06 | 17.99 | 1,472.85 | |
| | | 05/03/06 | 14.09 | 1,476.75 | |
| MW-11 ^(P) | 1,490.84 | 03/02/06 | 14.00 | 1,476.84 | |
| | | 05/03/06 | 13.24 | 1,477.60 | |

Notes: (1) These value represents height of water column (in inches) above reference point.

(P): Piezometer; (O) observation well; (S) Standby Well; NM = not measured.

TABLE 3-9
GROUNDWATER GRADIENT AND FLOW VELOCITY CALCULATIONS
SUNSHINE CANYON CITY AND COUNTY LANDFILLS
First Semi-Annual Monitoring Period of 2006

| FACILITY | MONITORING PERIOD | WELL PAIR | HEAD DIFFERENCE (feet) | GRADIENT ⁽¹⁾ | VELOCITY ⁽²⁾ (feet/day) | GENERAL DIRECTION |
|--|-------------------|---------------|------------------------|-------------------------|------------------------------------|-------------------|
| Gradient and Velocity Calculations for Horizontal Groundwater Flow | | | | | | |
| COUNTY LANDFILL | 1Q06 (3/2/06) | CM-15 - MW-11 | 9.17 | 0.092 | 0.013 | SOUTH |
| | 2Q06 (5/3/06) | CM-15 - MW-11 | 7.96 | 0.080 | 0.011 | |
| CITY LANDFILL | 1Q06 (3/2/06) | OM-2 - MW-13R | 9.09 | 0.026 | 0.004 | EAST |
| | 2Q06 (5/23/06) | OM-2 - MW-13R | 9.05 | 0.026 | 0.004 | |
| Gradient and Velocity Calculations for Vertical Groundwater Flow | | | | | | |
| MW-2A/MW-2B/DW-4 WELL CLUSTER | 1Q06 (3/2/06) | MW-2A - MW-2B | 14.05 | 1.56 | 0.022 | UPWARD |
| | | MW-2B - DW-4 | 2.30 | 0.06 | 0.001 | |
| | | MW-2A - DW-4 | 16.35 | 0.23 | 0.003 | |
| OM-3/DW-1 WELL PAIR | 2Q06 (5/3/06) | MW-2A - MW-2B | 14.18 | 1.58 | 0.022 | UPWARD |
| | | MW-2B - DW-4 | 1.40 | 0.03 | 0.0005 | |
| | | MW-2A - DW-4 | 15.58 | 0.223 | 0.003 | |
| OM-3/DW-1 WELL PAIR | 1Q06 (3/2/06) | OM-3 - DW-1 | 9.61 | 0.05 | 0.001 | UPWARD |
| | 2Q06 (5/23/06) | OM-3 - DW-1 | 10.22 | 0.15 | 0.002 | |

(1) Gradient is the head difference divided by the distance between wells (for horizontal gradients) or divided by the vertical distance between the center point of well screens (for vertical gradients).

(2) Calculated using KI/ne . Where K = estimated hydraulic conductivities of 0.0283 feet/day for horizontal (from ETC, 1988); and 0.00283 for vertical (10X horizontal); I = gradient; and ne = an estimated effective porosity of 0.2.

TABLE 3-10
SUMMARY OF ANALYTICAL RESULTS
APPENDIX II PARAMETERS DETECTED IN QA/QC SAMPLES
SUNSHINE CANYON CITY AND COUNTY LANDFILLS
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| APPENDIX II ANALYTE DETECTED | UNIT | MAXIMUM CONCENTRATION DETECTED IN QA/QC SAMPLES | NUMBER OF DETECTIONS BY QA/QC SAMPLE TYPE | | | |
|------------------------------------|------|--|--|-----------------|------------------|----------------|
| | | | METHOD BLANKS | FIELD BLANKS | EQUIP. BLANKS | TRIP BLANKS |
| Methylene Chloride | ug/L | 8.5 | 9 | 2 | 2 | 6 |
| Acetone | ug/L | 7.8 J | 2 | 3 | 4 | 5 |
| Benzene | ug/L | 0.38 J | 1 | 1 | 1 | 0 |
| Dichlorodifluoromethane | ug/L | 0.86 | 0 | 4 | 4 | 0 |
| Carbon Disulfide | ug/L | 2.1 | 0 | 0 | 0 | 1 |
| Chloromethane | ug/L | 0.64 J | 0 | 0 | 2 | 1 |
| 1,2-Dichlorobenzene | ug/L | 0.12 J | 0 | 1 | 0 | 0 |
| Antimony | ug/L | 0.63 B | 4 | -- | -- | -- |
| Barium | ug/L | 0.23 B | 3 | -- | -- | -- |
| Chromium | ug/L | 1.8 B | 3 | -- | -- | -- |
| Copper | ug/L | 1.3 B | 3 | -- | -- | -- |
| Thallium | ug/L | 0.018 B | 1 | -- | -- | -- |
| Tin | ug/L | 0.36 B | 3 | -- | -- | -- |
| Vanadium | ug/L | 2.1 B | 5 | -- | -- | -- |
| Zinc | ug/L | 2.8 B | 5 | -- | -- | -- |

Notes:

B or J = trace concentration; value falls between the method detection limit and laboratory reporting limit.

-- = not analyzed

TABLE 3-11
SUMMARY OF ANALYTICAL RESULTS FOR DUPLICATE SAMPLES
SUNSHINE CANYON CITY AND COUNTY LANDFILLS - FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| ANALYTE | UNIT | FIRST QUARTER 2006 | | | | | | SECOND QUARTER 2006 | | | | | |
|----------------------|------|--------------------|-----------|-------------------------|-----------|--------------------|-----------|---------------------|-----------|-------------------------|-----------|-----------|-----------|
| | | (Seep on 3/27/06) | | (Subdrain F on 3/27/06) | | (CM-17 on 4/25/06) | | (MW-1 on 6/26/06) | | (Subdrain L on 6/26/06) | | | |
| | | Original | Duplicate | Original | Duplicate | Original | Duplicate | Original | Duplicate | Original | Duplicate | | |
| MtBE | ug/L | 0.91 J | 0.89 J | < 0.25 | < 0.25 | -- | -- | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 |
| Acetone | ug/L | 3.0 J | 3.3 J | < 1.9 | 2.8 J | -- | -- | < 1.9 | < 1.9 | < 1.9 | < 1.9 | < 1.9 | 5.8 J |
| Benzene | ug/L | 0.26 J | 0.26 J | < 0.16 | < 0.16 | -- | -- | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | 0.49 J |
| Bromodichloromethane | ug/L | 0.21 J | 0.21 J | < 0.17 | < 0.17 | -- | -- | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 |
| Dibromochloromethane | ug/L | 0.42 J | 0.46 J | < 0.16 | < 0.16 | -- | -- | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| Chloroform | ug/L | 0.50 J | 0.53 J | < 0.16 | < 0.16 | -- | -- | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| Chloromethane | ug/L | 1.5 | 1.5 | < 0.13 | < 0.13 | -- | -- | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 |
| Total Xylenes | ug/L | 1.6 | 1.6 | < 0.16 | < 0.16 | -- | -- | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | 0.20 J |
| 1,4-Dioxane | ug/L | 52 | 44 | < 0.30 | < 0.30 | -- | -- | 8.0 | 12 | < 0.090/0.18J | < 0.090 | < 0.090 | < 0.090 |
| Potassium | ug/L | 16,000 | 16,000 | 16,000 | 16,000 | 8,300 | 8,500 | 45,000 | 45,000 | 22,000 | 22,000 | 22,000 | 22,000 |
| Ammonia | mg/L | 6.2 | 6.2 | 1.5 | 1.5 | 0.84 | 0.86 | 8.2 | 6.4 | 14 | 15 | 15 | 15 |
| COD | mg/L | 85 | 120 | 98 | 100 | 31 | 39 | 120 | 110 | 86 | 89 | 89 | 89 |
| Chloride | mg/L | 330 | 330 | 15 | 15 | 17 | 17 | 150 | 150 | 42 | 42 | 42 | 42 |
| Alkalinity, total | mg/L | 230 | 220 | 490 | 490 | 340 | 340 | 620 | 610 | 1,200 | 1,200 | 1,200 | 1,200 |
| TDS | mg/L | 4,100 | 4,200 | 3,300 | 3,300 | 3,100 | 3,100 | 3,300 | 3,600 | 6,700 | 6,700 | 6,700 | 6,700 |
| TOC | mg/L | 29 | 40 | 32 | 33 | 11 | 8.2 | 39 | 37 | 27 | 27 | 27 | 27 |
| Bicarbonate | mg/L | -- | -- | -- | -- | -- | -- | 620 | 610 | 1,200 | 1,200 | 1,200 | 1,200 |
| Boron | mg/L | -- | -- | -- | -- | -- | -- | 1,200 | 1,200 | 5,200 | 5,200 | 5,200 | 5,200 |
| Bromide | mg/L | -- | -- | -- | -- | -- | -- | 2.2 | 2.2 | 0.82 B | 0.82 B | 0.82 B | 0.82 B |
| Calcium | mg/L | -- | -- | -- | -- | -- | -- | 410,000 | 390,000 | 250,000 | 240,000 | 240,000 | 240,000 |
| Carbon Dioxide | mg/L | -- | -- | -- | -- | -- | -- | 88 | 79 | 100 | 93 | 93 | 93 |
| Fluoride | mg/L | -- | -- | -- | -- | -- | -- | 2.7 | 2.3 | 0.73 B | 0.69 B | 0.69 B | 0.69 B |
| Iron | mg/L | -- | -- | -- | -- | -- | -- | 51,000 | 51,000 | 6,500 | 5,100 | 5,100 | 5,100 |
| Magnesium | mg/L | -- | -- | -- | -- | -- | -- | 200,000 | 210,000 | 180,000 | 170,000 | 170,000 | 170,000 |
| Manganese | mg/L | -- | -- | -- | -- | -- | -- | 2,800 | 2,800 | 140 | 130 | 130 | 130 |
| Sodium | mg/L | -- | -- | -- | -- | -- | -- | 300,000 | 300,000 | 1,900,000 | 1,800,000 | 1,800,000 | 1,800,000 |
| Sulfate | mg/L | -- | -- | -- | -- | -- | -- | 1,900 | 1,800 | 3,600 | 3,600 | 3,600 | 3,600 |

TABLE 3-12A
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS FOR ORGANIC COMPOUNDS
SUNSHINE CANYON COUNTY & CITY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| ANALYTE | UNIT | CITY LANDFILL | | | | | | | | | | | | | |
|------------------------|------|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | MW-1 | | MW-2A | | MW-2B | | MW-5 | | MW-6 | | MW-9 | | MW-13R | |
| | | 3/27/06 | 6/26/06 | 6/26/06 | 6/26/06 | 6/26/06 | 3/27/06 | 6/26/06 | 4/25/06 | 6/27/07 | 3/27/06 | 6/26/06 | 3/27/06 | 6/26/06 | 3/27/06 |
| Acetone | ug/L | 5.3 J | < 0.19 | < 0.19 | < 0.19 | < 0.19 | 2.5 J | < 0.19 | 6.5 J | 11 | 4.5 J | < 1.9 | < 1.9 | 3.6 J | 82 |
| Benzene | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| 2-Butanone | ug/L | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | 6.8 |
| Carbon Disulfide | ug/L | < 0.18 | < 0.18 | < 0.18 | < 0.18 | < 0.18 | < 0.18 | < 0.18 | 0.63 J | 2.0 | < 0.18 | 3.7 | 3.7 | 2.1 | 4.1 |
| 1,1-Dichloroethane | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | 0.87 J | 0.74 J | 0.74 J | < 0.16 | < 0.16 |
| 1,2-Dichloroethane | ug/L | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | 0.32 J | 0.28 J | 0.28 J | < 0.13 | < 0.13 |
| cis-1,2-Dichloroethene | ug/L | 0.28 J | 0.24 J | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | 2.8 | 3.4 | 3.4 | < 0.15 | < 0.15 |
| Ethylbenzene | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| MTBE | ug/L | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | 0.97 J | 0.45 J | 0.45 J | < 0.25 | < 0.25 |
| Toluene | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 |
| Vinyl Chloride | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | 0.97 J | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 |
| Total Xylenes | ug/L | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 |
| Other App. I VOC | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,4-Dioxane | ug/L | 17 | 8.0 | 2.4 | < 0.090 | 16 | 0.39 J | < 0.30 | < 0.090 | 45 | 41 | 12 | 11 | | |

Notes: ug/L = micrograms per liter; -- = not analyzed; ND = not detected.

TABLE 3-12A (continued)
 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS FOR ORGANIC COMPOUNDS
 SUNSHINE CANYON COUNTY & CITY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| ANALYTE | UNIT | CITY LANDFILL | | | | | | | | COUNTY LANDFILL | | | | |
|------------------------|------|---------------|---------|---------|---------|---------|---------|---------|---------|-----------------|---------|---------|---------|--------|
| | | MW-14 | | DW-1 | | DW-2 | DW-3 | DW-4 | | CM-9R3 | | CM-10 | | |
| | | 3/27/06 | 6/27/06 | 3/27/06 | 6/26/06 | 6/27/06 | 6/26/06 | 3/28/06 | 6/26/06 | 5/23/06 | 6/26/06 | 5/23/06 | 6/26/06 | |
| Acetone | ug/L | 2.1 J | 19 | < 1.9 | < 1.9 | 11 | 2.2 J | < 1.9 | < 1.9 | < 1.9 | 4.2 | 2.5 J | 3.7 J | < 1.9 |
| Benzene | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | 0.46 J |
| 2-Butanone | ug/L | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 |
| Carbon Disulfide | ug/L | < 0.45 J | 1.4 J | < 0.18 | < 0.18 | 0.83 J | < 0.18 | < 0.18 | < 0.18 | < 0.18 | < 0.18 | < 0.45 | < 0.18 | < 0.18 |
| 1,1-Dichloroethane | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| 1,2-Dichloroethane | ug/L | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 |
| cis-1,2-Dichloroethene | ug/L | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 |
| Ethylbenzene | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| MTBE | ug/L | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 |
| Toluene | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 |
| Vinyl Chloride | ug/L | 0.62 J | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 |
| Total Xylenes | ug/L | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 |
| Other App. I VOC | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,4-Dioxane | ug/L | < 0.30 | < 0.090 | < 0.30 | < 0.090 | < 0.090 | < 0.090 | < 0.30 | < 0.090 | < 0.090 | < 0.30 | < 0.090 | Broken | NA |

Notes: ug/L = micrograms per liter; -- = not analyzed; ND = not detected.

TABLE 3-12A (Continued)
 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS FOR ORGANIC COMPOUNDS
 SUNSHINE CANYON COUNTY & CITY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| ANALYTE | UNIT | CM-11R | | CM-15 | | CM-16 | | CM-17 | | -- | -- |
|------------------------|------|---------|---------|---------|---------|---------|---------|-----------|---------|----|----|
| | | 5/23/06 | 6/26/06 | 3/27/06 | 6/26/06 | 3/28/06 | 6/26/06 | 3/27/06 | 6/26/06 | | |
| Acetone | ug/L | < 1.9 | < 1.9 | < 1.9 | < 1.9 | < 1.9 | < 1.9 | 3.0 J | 4.7 J | -- | -- |
| Benzene | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | -- | -- |
| 2-Butanone | ug/L | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | -- | -- |
| Carbon Disulfide | ug/L | < 0.18 | < 0.18 | < 0.18 | < 0.18 | < 0.18 | < 0.18 | 0.26 J | < 0.18 | -- | -- |
| 1,1-Dichloroethane | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | -- | -- |
| 1,2-Dichloroethane | ug/L | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | < 0.13 | -- | -- |
| cis-1,2-Dichloroethene | ug/L | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | -- | -- |
| Ethylbenzene | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | 0.18 J(1) | < 0.16 | -- | -- |
| MTBE | ug/L | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | -- | -- |
| Toluene | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | 0.22 J(1) | < 0.17 | -- | -- |
| Vinyl Chloride | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | -- | -- |
| Total Xylenes | ug/L | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | 0.90 J(1) | < 0.19 | -- | -- |
| Other App. I VOC | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- |
| 1,4-Dioxane | ug/L | < 0.30 | < 0.090 | < 0.30 | < 0.090 | < 0.30 | < 0.090 | < 0.30 | < 0.090 | -- | -- |

Notes: ug/L = micrograms per liter; -- = not analyzed; ND = not detected; (1) Monitoring Well CM-17 was resampled twice for these compounds; no detections were noted in the resamples

TABLE 3-12B
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS FOR INORGANIC INDICATORS AND FIELD PARAMETERS
SUNSHINE CANYON CITY & COUNTY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| ANALYTES | UNIT | CITY LANDFILL | | | | | | | | | | | |
|--------------------|-----------|---------------|---------|---------|---------|---------|---------|---------|---------|--|--|--|--|
| | | MW-1 | | MW-2A | MW-2B | MW-5 | | MW-6 | | | | | |
| | | 3/27/06 | 6/26/06 | 6/26/06 | 6/26/06 | 3/27/06 | 6/26/06 | 4/25/06 | 6/27/06 | | | | |
| Potassium | ug/L | 44,000 | 45,000 | 6,700 | 5,200 | 14,000 | 15,000 | 6,900 | 7,200 | | | | |
| Ammonia as N | mg/L | 8.8 | 8.2 | 2.2 | 2.6 | 2.2 | 1.5 | 0.67 | 0.65 | | | | |
| COD | mg/L | 120 | 120 | 30 | 7.0 B | 73 | 100 | 37 | 31 | | | | |
| Chloride | mg/L | 170 | 150 | 44 | 14 | 310 | 310 | 47 | 53 | | | | |
| Alkalinity, total | mg/L | 640 | 620 | 350 | 330 | 560 | 570 | 480 | 490 | | | | |
| TDS | mg/L | 3,700 | 3,300 | 2,900 | 2,700 | 3,200 | 3,300 | 3,400 | 3600 | | | | |
| TOC | mg/L | 45 | 39 | 11 | 1.9 | 42 | 37 | 16 | 6.0 | | | | |
| Temperature, field | Celcius | 18.9 | 20.07 | 27.69 | 22.71 | 16.2 | 20.47 | 20.14 | 22.25 | | | | |
| pH, field | std units | 7.0 | 6.95 | 6.60 | 7.23 | 7.0 | 6.90 | 7.0 | 6.89 | | | | |
| Spec. Cond., field | umhos/cm | 1,539 | 3,912 | 3,692 | 3,276 | 1,435 | 3,751 | 3,463 | 3,629 | | | | |
| Turbidity, field | NTU | 6.95 | 54.5 | 1.1 | 21.0 | 57.1 | 6.37 | 4.8 | 18.7 | | | | |
| ANALYTES | UNIT | CITY LANDFILL | | | | | | | | | | | |
| | | MW-9 | | MW-13R | | MW-14 | | DW-1 | | | | | |
| | | 3/27/06 | 6/26/06 | 3/27/06 | 6/27/06 | 3/27/06 | 6/27/06 | 3/27/06 | 6/26/06 | | | | |
| Potassium | ug/L | 24,000 | 26,000 | 22,000 | 24,000 | 9,500 | 10,000 | 2,600 | 1,900 B | | | | |
| Ammonia as N | mg/L | 4.8 | 3.4 | 6.5 | 5.2 | 0.032 | 0.031 B | 1.8 | 1.5 | | | | |
| COD | mg/L | 120 | 130 | 200 | 260 | 7.4 | 15 B | 4.8 | 12 B | | | | |
| Chloride | mg/L | 220 | 240 | 160 | 140 | 31 | 33 | 14 | 14 | | | | |
| Alkalinity, total | mg/L | 780 | 790 | 510 | 550 | 330 | 310 | 520 | 510 | | | | |
| TDS | mg/L | 4,000 | 4,100 | 1,900 | 2,200 | 3,500 | 4,000 | 2,700 | 2,800 | | | | |
| TOC | mg/L | 46 | 46 | 33 | 31 | 5.5 | 5.3 | 2.7 | 3.0 | | | | |
| Temperature, field | Celcius | 17.9 | 22.2 | 19.2 | 23.29 | 20.3 | 22.87 | 18.6 | 24.2 | | | | |
| pH, field | std units | 6.9 | 6.66 | 8.1 | 8.52 | 7.0 | 6.95 | 9.5 | 8.87 | | | | |
| Spec. Cond., field | umhos/cm | 1,561 | 4,591 | 1,401 | 2,911 | 1,375 | 2,085 | 1,760 | 4,067 | | | | |
| Turbidity, field | NTU | 65.9 | 5.4 | 7.25 | 17.8 | 45.7 | 20.7 | 44.0 | 1.3 | | | | |

Notes: ug/L = micrograms per liter; mg/L - milligrams per liter; -- = not analyzed; ND = not detected.

TABLE 3-12B (Continued)
 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS FOR INORGANIC INDICATORS AND FIELD PARAMETERS
 SUNSHINE CANYON CITY & COUNTY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| ANALYTES | UNIT | CITY LANDFILL | | | | COUNTY LANDFILL | | | |
|--------------------|-----------|---------------|---------|---------|---------|-----------------|---------|---------|---------|
| | | DW-2 | DW-3 | DW-4 | | CM-9R3 | | CM-10 | |
| | | 6/27/06 | 6/26/06 | 3/27/06 | 6/26/06 | 5/24/06 | 6/26/06 | 5/24/06 | 6/26/06 |
| Potassium | ug/L | 4,500 | 11,000 | 5,000 | 5,200 | 12,000 | 12,000 | 11,000 | 14,000 |
| Ammonia as N | mg/L | 1.4 | 0.33 | 4.1 | 3.5 | 5.4 | 4.6 | 0.74 | 0.26 |
| COD | mg/L | 10 B | < 4.1 | < 4.1 | 8.0 B | 21 | 21 | 24 | 29 |
| Chloride | mg/L | 11 | 15 | 13 | 14 | 14 | 14 | 17 | 15 |
| Alkalinity, total | mg/L | 370 | 130 | 330 | 330 | 200 | 200 | 440 | 260 |
| TDS | mg/L | 1,900 | 1,900 | 2,800 | 3,000 | 3,500 | 3,400 | 4,100 | 3,500 |
| TOC | mg/L | 1.5 | < 0.16 | 1.8 | 1.9 | 6.3 | 6.2 | 9.3 | 9.4 |
| Temperature, field | Celcius | 22.65 | 21.40 | 20.1 | 23.09 | 16.69 | 18.8 | 20.58 | 18.82 |
| pH, field | std units | 7.02 | 7.38 | 7.6 | 7.27 | 6.44 | 7.49 | 6.73 | 7.70 |
| Spec.Cond., field | umhos/cm | 3,591 | 2,001 | 1,576 | 3,527 | 3,314 | 3,347 | 4,693 | 4,082 |
| Turbidity, field | NTU | 97.2 | 9.5 | 10.3 | 2.8 | 53.0 | 16.0 | 5.7 | 9.0 |
| COUNTY LANDFILL | | | | | | | | | |
| ANALYTES | UNITS | CM-11R | | CM-15 | | | | | |
| | | 5/24/06 | 6/26/06 | 3/27/06 | 4/25/06 | 5/23/06 | 6/26/06 | | |
| Potassium | ug/L | 12,000 | 14,000 | 7,500 | 2,500 B | 3,100 | 3,700 | -- | -- |
| Ammonia as N | mg/L | 0.046 B | 0.17 | 3.6 | 2.9 | 3.6 | 3.0 | -- | -- |
| COD | mg/L | 10 B | 10 B | 42 | 20 | 20 | 19 B | -- | -- |
| Chloride | mg/L | 11 | 12 | 15 | 13 | 14 | 15 | -- | -- |
| Alkalinity, total | mg/L | 7.0 | 22 | 580 | 540 | 550 | 570 | -- | -- |
| TDS | mg/L | 2,800 | 3,400 | 2,700 | 2,500 | 2,600 | 2,600 | -- | -- |
| TOC | mg/L | 3.8 | 3.6 | 3.0 | 10 | 3.1 | 2.9 | -- | -- |
| Temperature, field | Celcius | 17.96 | 21.66 | 16.5 | 18.41 | 19.98 | 19.25 | -- | -- |
| pH, field | std units | 5.19 | 5.51 | 8.7 | 8.42 | 8.41 | 8.88 | -- | -- |
| Spec.Cond., field | umhos/cm | 3,553 | 3,812 | 1,401 | 3,173 | 3,342 | 3,364 | -- | -- |
| Turbidity, field | NTU | 0.9 | 0.9 | > 1,000 | 30.1 | 29.4 | 19.4 | -- | -- |

Notes: ug/L = micrograms per liter; mg/L - milligrams per liter; -- = not analyzed; ND = not detected; B = trace detection.

TABLE 3-12B (Continued)
 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS FOR INORGANIC INDICATORS AND FIELD PARAMETERS
 SUNSHINE CANYON CITY & COUNTY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| ANALYTES | UNIT | COUNTY LANDFILL | | | | | | | | | |
|--------------------|-----------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| | | CM-16 | | | | | CM-17 | | | | |
| | | 3/28/06 | 4/25/06 | 5/23/06 | 6/26/06 | 3/27/06 | 4/25/06 | 5/23/06 | 6/26/06 | | |
| Potassium | ug/L | 7,200 | 3,700 | 3,800 | 3,500 | 12,000 | 3,700 | 8,600 | 8,600 | 6/26/06 | |
| Ammonia as N | mg/L | 2.6 | 2.2 | 2.7 | 2.3 | 1.2 | 0.84 | 1.1 | 0.80 | | |
| COD | mg/L | 6.1 B | <4.1 | 6.4 B | <4.1 | 20 | 31 | 36 | 35 | | |
| Chloride | mg/L | 5.5 | 6.2 | 6.0 | 12 | 18 | 17 | 17 | 18 | | |
| Alkalinity, total | mg/L | 470 | 500 | 510 | 510 | 400 | 340 | 360 | 360 | | |
| TDS | mg/L | 760 | 870 | 850 | 880 | 3,100 | 3,100 | 3,100 | 3,100 | | |
| TOC | mg/L | 0.72 B | 10 | 1.2 | 1.2 | 4.7 | 11 | 4.8 | 4.5 | | |
| Temperature, field | Celcius | 17.3 | 17.70 | 21.51 | 21.49 | 17.3 | 18.83 | 23.09 | -- | | |
| pH, field | std units | 8.2 | 7.30 | 7.34 | 7.60 | 7.5 | 6.78 | 6.83 | 7.68 | | |
| Spec. Cond., field | umhos/cm | 1,211 | 1,191 | 1,291 | 1,303 | 1,927 | 2,992 | 3,378 | 3,214 | | |
| Turbidity, field | NTU | 32.1 | 10.70 | 5.0 | 32.8 | 226.0 | 7.0 | 7.2 | 9.2 | | |

Notes: ug/L = micrograms per liter; mg/L - milligrams per liter; -- = not analyzed; ND = not detected; B= trace detection.

TABLE 3-12C
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS FOR SUPPLEMENTAL PARAMETERS
SUNSHINE CANYON CITY & COUNTY LANDFILLS
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| ANALYTE | UNIT | MW-1 | MW-2A | MW-2B | MW-5 | MW-6 | MW-9 | MW-13R | MW-14 | DW-1 |
|------------------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 6/26/06 | 6/26/06 | 6/26/06 | 6/26/06 | 6/26/06 | 6/26/06 | 6/26/06 | 6/27/06 | 6/27/06 |
| Bicarbonate Alkalinity | mg/L | 620 | 350 | 330 | 570 | 490 | 790 | 550 | 310 | 410 |
| Boron | ug/L | 1,200 | 610 | 570 | 1,200 | 750 | 1,100 | 1,200 | 370 | 1,900 |
| Bromide | mg/L | 2.2 | 0.81 | 0.33 B | 4.6 | 1.1 | <0.27 | 2.0 | 0.69 | 0.28 B |
| Calcium, Total | ug/L | 410,000 | 230,000 | 180,000 | 410,000 | 380,000 | 430,000 | 150,000 | 490,000 | 2,000 |
| CO ₂ , Lab | mg/L | 88 | 39 | 12 | 63 | 42 | 190 | 12 | 38 | 0.66 B |
| Fluoride | mg/L | 2.7 | 1.2 | 0.86 B | 1.6 | 1.6 | 1.5 | 0.46 B | 1.5 | 2.2 |
| Iron, Total | ug/L | 51,000 | 1,800 | 1,600 | 13,000 | 2,500 | 41,000 | <22 | 720 | 170 |
| Magnesium, Total | ug/L | 200,000 | 130,000 | 110,000 | 170,000 | 220,000 | 250,000 | 190,000 | 260,000 | 1,200 |
| Manganese, Total | ug/L | 2,800 | 1,600 | 120 | 4,900 | 730 | 6,200 | <1.8 | 5,800 | 2.6 B |
| Nitrate-Nitrite | mg/L | <0.019 | <0.019 | <0.019 | <0.019 | 0.023 B | <0.019 | 0.34 | 0.30 | 0.15 |
| Sodium, Total | ug/L | 300,000 | 440,000 | 490,000 | 290,000 | 370,000 | 350,000 | 250,000 | 300,000 | 920,000 |
| Sulfate | mg/L | 1,900 | 1,700 | 1,600 | 1,500 | 2,100 | 1,900 | 940 | 2,600 | 1,500 |

| ANALYTE | UNIT | DW-2 | DW-3 | DW-4 | CM-9R3 | CM-10 | CM-11R | CM-15 | CM-16 | CM-17 |
|------------------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 6/27/06 | 6/26/06 | 6/26/06 | 6/26/06 | 6/26/06 | 6/26/06 | 6/26/06 | 6/26/06 | 6/26/06 |
| Bicarbonate Alkalinity | mg/L | 370 | 130 | 330 | 200 | 260 | 22 | 560 | 510 | 360 |
| Boron | ug/L | 610 | 49 B | 530 | 1,400 | 1,700 | 1,300 | 1,700 | 200 | 750 |
| Bromide | mg/L | 0.22 | <0.13 | 0.35 B | 0.28 B | 0.33 B | <0.27 | 0.30 B | <0.27 | 0.35 B |
| Calcium, Total | ug/L | 66,000 | 270,000 | 200,000 | 310,000 | 340,000 | 240,000 | 20,000 | 37,000 | 360,000 |
| CO ₂ , Lab | mg/L | 9.9 | 5.2 | 13 | 60 | 71 | 120 | 4.5 B | 15 | 40 |
| Fluoride | mg/L | 0.57 | 0.42 B | 0.57 B | 0.99 B | 0.37 B | 0.83 B | 0.97 B | 0.74 B | 1.7 |
| Iron, Total | ug/L | 5,600 | 3,300 | 1,500 | 9,900 | 910 | 42 B | 900 | 180 | 800 |
| Magnesium, Total | ug/L | 44,000 | 94,000 | 130,000 | 200,000 | 160,000 | 150,000 | 38,000 | 24,000 | 190,000 |
| Manganese, Total | ug/L | 94 | 50 | 130 | 1,900 | 920 | 2,300 | 41 | 78 | 49 |
| Nitrate-Nitrite | mg/L | 0.46 | <0.019 | <0.019 | <0.019 | 0.18 | 0.64 | 0.068 B | 0.16 | 0.030 B |
| Sodium, Total | ug/L | 530,000 | 70,000 | 480,000 | 370,000 | 420,000 | 470,000 | 790,000 | 230,000 | 220,000 |
| Sulfate | mg/L | 1,000 | 1,200 | 2,100 | 2,300 | 2,200 | 2,400 | 1,400 | 400 | 1,900 |

Note: B = trace concentration

TABLE 3-12D
 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS FOR ADDITIONAL APPENDIX II PARAMETERS
 SUNSHINE CANYON CITY & COUNTY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| ANALYTE | UNIT | CITY LANDFILL | | | | | | | | | | | | | | |
|-----------|------|---------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | | MW-1 | MW-2A | MW-2B | MW-5 | MW-6 | MW-9 | MW-13R | MW-14 | DW-1 | DW-2 | | | | | |
| Silver | ug/L | < 0.020 | < 0.020 | < 0.020 | < 0.020 | 6/26/06 | 6/26/06 | 6/26/06 | < 0.020 | 6/27/06 | < 0.020 | < 0.020 | 6/27/06 | < 0.020 | 6/27/06 | < 0.020 |
| Arsenic | ug/L | 13 | 3.2 B | 0.63 B | 11 | 2.4 B | 19 | 3.6 B | 1.3 B | 0.54 B | 0.84 B | | | | | |
| Barium | ug/L | 78 | 13 | 13 | 53 | 23 | 35 | 19 | 27 | 14 | 14 | | | | | |
| Beryllium | ug/L | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 |
| Cadmium | ug/L | 0.084 B | 0.042 B | < 0.040 | 0.061 B | < 0.040 | 0.12 B | < 0.040 | 1.7 | < 0.040 | 0.058 B | | | | | |
| Cobalt | ug/L | 10 | 2.6 | 0.48 B | 12 | 1.2 | 19 | 2.8 | 4.2 | 0.062 B | 0.48 B | | | | | |
| Chromium | ug/L | 1.4 B | 1.4 B | 1.3 B | 2.4 | 1.9 B | 1.6 B | 2.8 | 2.0 | < 0.88 | 1.8 B | | | | | |
| Copper | ug/L | 5.9 | 19 | 5.3 | 6.5 | 3.0 | 9.1 | 2.0 | 6.8 | 2.5 | 7.3 | | | | | |
| Nickel | ug/L | 36 | 12 | 3.8 | 47 | 11 | 46 | 8.7 | 28 | 0.53 B | 2.5 | | | | | |
| Lead | ug/L | < 0.10 | 0.46 B | 0.19 B | 0.40 B | < 0.10 | 0.15 B | < 0.10 | 0.28 B | 0.15 B | 0.82 B | | | | | |
| Antimony | ug/L | 0.075 B | < 0.060 | < 0.060 | 0.090 B | < 0.060 | 0.067 B | < 0.060 | 0.089 B | < 0.060 | 0.22 B | | | | | |
| Selenium | ug/L | 4.9 B | 2.2 B | 1.1 B | 6.4 | 2.0 B | 6.9 | 2.9 B | 1.8 B | 1.1 B | < 1.0 | | | | | |
| Tin | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| Thallium | ug/L | < 0.010 | < 0.010 | < 0.010 | 0.062 B | < 0.010 | < 0.010 | < 0.010 | 0.014 B | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| Vanadium | ug/L | 3.5 B | 2.7 B | 2.3 B | 4.2 B | 3.3 B | 3.4 B | 7.2 | 3.6 B | 2.3 B | 3.2 B | | | | | |
| Zinc | ug/L | 12 | 38 | 22 | 15 | 4.2 B | 18 | 4.9 B | 11 | 2.7 B | 50 | | | | | |
| Mercury | ug/L | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 |
| Cyanide | mg/L | < 0.0056 | < 0.0056 | < 0.0056 | < 0.0056 | < 0.0056 | < 0.0056 | < 0.0056 | < 0.0056 | < 0.0056 | < 0.0056 | < 0.0056 | < 0.0056 | < 0.0056 | < 0.0056 | < 0.0056 |
| Sulfide | mg/L | < 0.50 | < 0.50 | < 0.50 | < 0.50 | 4.0 | 2.0 | 57 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |

TABLE 3-12D
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS FOR APPENDIX II INORGANICS
SUNSHINE CANYON CITY & COUNTY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| ANALYTE | UNIT | COUNTY LANDFILL | | | | | | | | | | | | | | | |
|-----------|------|-----------------|----------|----------|----------|----------|----------|----------|----------|---------|----------|---------|---------|---------|---------|---------|---------|
| | | CITY LANDFILL | | | CM-9R3 | | | CM-10 | | | CM-11R | | | CM-15 | | | |
| | | DW-3 | DW-4 | | 5/24/06 | 6/26/06 | | 5/24/06 | 6/26/06 | | 5/24/06 | 6/26/06 | | 5/24/06 | 6/26/06 | 3/27/06 | 4/25/06 |
| Silver | ug/L | 0.067 B | < 0.020 | < 0.020 | < 0.020 | < 0.020 | < 0.020 | < 0.020 | < 0.020 | < 0.020 | < 0.020 | < 0.020 | < 0.020 | < 0.020 | < 0.020 | 0.096 B | < 0.020 |
| Arsenic | ug/L | 5.6 | < 0.50 | < 0.50 | 0.54 B | 1.7 B | 0.99 B | 0.76 B | 0.70 B | 0.76 B | 0.70 B | 0.76 B | 0.70 B | 0.76 B | 2.6 B | 1.2 B | 1.2 B |
| Barium | ug/L | 25 | 7.6 | 12 | 11 | 17 | 18 | 15 | 12 | 15 | 12 | 110 | 21 | | | | |
| Beryllium | ug/L | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | 2.4 | < 0.15 | < 0.15 |
| Cadmium | ug/L | 0.083 B | < 0.040 | 2.0 | 2.2 | 0.73 B | 1.7 | 11 | 9.7 | 0.59 B | < 0.040 | | | | | | |
| Cobalt | ug/L | 0.90 B | 0.53 B | 8.4 | 7.4 | 1.4 | 2.0 | 17 | 13 | 5.2 | 0.16 B | | | | | | |
| Chromium | ug/L | 2.9 | 1.3 B | 2.8 | 1.2 B | 3.3 | 1.9 B | 3.2 | 1.3 B | 20 | 2.2 | | | | | | |
| Copper | ug/L | 3.7 | 5.3 | 19 | 4.1 | 26 | 6.7 | 36 | 8.2 | 19 | 4.2 | | | | | | |
| Nickel | ug/L | 7.7 | 7.9 | 79 | 62 | 29 | 38 | 170 | 140 | 17 | 1.2 B | | | | | | |
| Lead | ug/L | 1.0 | 0.14 B | 0.21 B | 0.19 B | 0.13 B | 0.30 B | 0.30 B | 0.43 B | 17 | 1.0 | | | | | | |
| Antimony | ug/L | 0.33 B | < 0.060 | 0.084 B | < 0.060 | 0.22 B | 0.11 B | 0.078 B | < 0.060 | 0.42 B | 0.12 B | | | | | | |
| Selenium | ug/L | < 1.0 | 1.2 B | 3.5 B | 1.9 B | 4.8 B | 1.5 B | 7.2 | 5.0 | 0.80 B | 2.5 B | | | | | | |
| Tin | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | 1.1 B | 0.27 B | | | | | | |
| Thallium | ug/L | 0.020 B | < 0.010 | 0.013 B | 0.044 B | 0.026 B | 0.050 B | 0.14 B | 0.16 B | 0.23 B | < 0.010 | | | | | | |
| Vanadium | ug/L | 3.6 B | 2.8 B | 3.1 B | 2.3 B | 4.1 B | 3.7 B | 2.5 B | 2.4 B | 24 | 1.9 B | | | | | | |
| Zinc | ug/L | 50 | 11 | 35 | 22 | 29 | 25 | 160 | 100 | 56 | 5.5 B | | | | | | |
| Mercury | ug/L | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 | 0.045 B | < 0.027 | | | | | | |
| Cyanide | mg/L | < 0.0056 | < 0.0056 | < 0.0024 | < 0.0056 | < 0.0024 | < 0.0056 | 0.0036 B | < 0.0056 | NA | < 0.0024 | | | | | | |
| Sulfide | mg/L | < 0.50 | < 0.50 | 0.60 B | < 0.50 | < 0.50 | < 0.50 | 0.60 B | < 0.50 | NA | < 0.50 | | | | | | |

TABLE 3-12D
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS FOR APPENDIX II INORGANICS
SUNSHINE CANYON CITY & COUNTY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| ANALYTE | UNIT | COUNTY LANDFILL | | | | | | | | | | | |
|-----------|------|-----------------|----------|---------|----------|----------|----------|---------|----------|----------|----------|----------|----------|
| | | CM-15 (cont.) | | CM-16 | | | | CM-17 | | | | | |
| | | 5/23/06 | 6/26/06 | 3/27/06 | 4/25/06 | 5/23/06 | 6/26/06 | 3/27/06 | 4/25/06 | 5/24/06 | 6/26/06 | | |
| Silver | ug/L | < 0.010 | < 0.027 | 0.086 B | < 0.020 | < 0.040 | < 0.020 | < 0.040 | < 0.020 | 0.074 B | < 0.020 | < 0.040 | < 0.020 |
| Arsenic | ug/L | < 2.5 | 0.80 B | 6.7 | 3.0 B | 2.9 B | 3.9 B | 3.0 B | 3.9 B | 30 | 3.1 B | 1.8 B | 2.4 B |
| Barium | ug/L | 37 | 34 | 90 | 19 | 20 | 17 | 68 | 13 | 11 | 11 | 11 | 11 |
| Beryllium | ug/L | < 0.75 | 0.20 B | 0.54 B | < 0.15 | < 0.30 | < 0.15 | 0.63 B | < 0.15 | < 0.30 | < 0.15 | < 0.30 | < 0.15 |
| Cadmium | ug/L | < 0.20 | < 0.040 | 0.25 B | 0.053 B | < 0.080 | < 0.040 | 0.22 B | < 0.040 | < 0.080 | < 0.040 | < 0.080 | < 0.040 |
| Cobalt | ug/L | 0.25 B | 0.26 B | 3.9 | 0.36 B | 0.41 B | 0.24 B | 4.9 | 1.4 | 1.9 B | 1.4 | 1.9 B | 1.3 |
| Chromium | ug/L | < 4.4 | 1.4 B | 23 | 3.1 | 2.7 B | 1.8 B | 14 J | 3.1 | 3.5 B | 3.1 | 3.5 B | 1.9 B |
| Copper | ug/L | 11 | 2.7 | 11 | 10 | 14 | 3.4 | 13 J | 6.8 | 14 | 6.8 | 14 | 4.0 |
| Nickel | ug/L | 2.6 B | 1.3 B | 12 | 2.5 | 4.2 | 1.9 B | 9.3 | 12 | 26 | 12 | 26 | 11 |
| Lead | ug/L | 2.6 B | 2.2 | 4.6 | 0.77 B | < 0.20 | 0.23 B | 6.8 | 0.31 B | < 0.20 | 0.31 B | < 0.20 | 0.28 B |
| Antimony | ug/L | < 0.30 | < 0.060 | 0.76 B | 0.48 B | 0.31 B | 0.20 B | 0.59 B | 0.091 B | < 0.12 | 0.091 B | < 0.12 | < 0.060 |
| Selenium | ug/L | < 5.0 | 1.7 B | 0.84 B | < 0.48 | < 2.0 | < 1.0 | 1.3 B | 1.8 B | < 2.0 | 1.8 B | < 2.0 | 1.5 B |
| Tin | ug/L | < 0.80 | < 0.16 | 1.7 B | 0.26 B | 0.36 B | < 0.16 | 1.0 B | 0.21 B | < 0.32 | 1.0 B | < 0.32 | < 0.16 |
| Thallium | ug/L | < 0.050 | 0.019 B | 0.13 B | < 0.010 | < 0.020 | < 0.010 | 0.096 B | 0.010 B | < 0.020 | 0.010 B | < 0.020 | < 0.010 |
| Vanadium | ug/L | < 5.6 | 2.6 B | 25 | 4.9 B | 5.8 B | 4.4 B | 22 | 3.2 B | 4.3 B | 3.2 B | 4.3 B | 3.3 B |
| Zinc | ug/L | 11 B | 5.9 B | 50 | 13 | 13 B | 5.9 B | 47 | 7.4 B | 5.9 B | 7.4 B | 5.9 B | 9.0 B |
| Mercury | ug/L | < 0.027 | < 0.027 | 0.053 B | < 0.027 | < 0.027 | < 0.027 | 0.065 B | < 0.027 | < 0.027 | < 0.027 | < 0.027 | < 0.027 |
| Cyanide | mg/L | < 0.0024 | < 0.0056 | NA | < 0.0024 | < 0.0024 | < 0.0056 | NA | < 0.0024 | 0.0030 B | < 0.0024 | 0.0030 B | < 0.0056 |
| Sulfide | mg/L | < 0.50 | 4.0 | NA | < 0.50 | < 0.50 | < 0.50 | NA | 0.80 B | < 0.50 | 0.80 B | < 0.50 | 6.7 |

TABLE 3-13

SUMMARY OF ANALYTICAL RESULTS FOR TENTATIVELY IDENTIFIED COMPOUNDS (TIC)
 SUNSHINE CANYON CITY AND COUNTY LANDFILLS - FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| TENTATIVE IDENTITY | CAS # or RETENTION TIME | SAMPLE POINT ID | ESTIMATED CONCENTRATION (ug/L) |
|-------------------------------|-------------------------|---------------------|--------------------------------|
| 1-Chloro-1-Fluoroethane | CAS 1615-75-4 | MW-14 | 1.6 J |
| | | COSUB-CF | 1.8 J |
| | | SUBDRAIN E | 2.5 J |
| | | SUBDRAIN F | 2.3 J |
| | | CO-DUP | 2.4 J |
| | | SUBDRAIN J | 2.4 J |
| Chloriodomethane | CAS 593-71-5 | MW-6 | 1.9 J |
| Cyclohexane | CAS 110-82-7 | MW-6 | 1.8 J |
| Ethyl Ether | CAS 60-29-7 | MW-9 | 2.9 J |
| | | SEEP | 45 J |
| 2-Ethylhexyl Este Acetic Acid | CAS 103-09-3 | DW-4 | 3.4 J |
| | | COSUB-CF | 2.2 J |
| | | SUBDRAIN E | 14 J & 20 J |
| | | SUBDRAIN F | 14 J |
| | | SUBDRAIN K | 16 J |
| | | SUBDRAIN L | 6.1 J |
| | | WU-CITY | 2.5 J |
| | | County Trip Blank | 1.6 J |
| | | County Field Blank | 15 J |
| | | County Equip. Blank | 4.0 J & 11 J |
| | | Method Blank | 1.3, 1.5, & 16 J |
| | | Method Blank | 1.5 J |
| 3-Methylheptyl Acetate | CAS 72218-58-7 | CM-15 | 16 J |
| | | CM-16 | 21 J |
| | | CM-17 | 7.0 J |
| | | CO-DUP | 22 J |
| | | COSUB-CF | 20 J |
| | | SUBDRAIN J | 3.6 J & 21 J |
| | | SUBDRAIN L | 24 J |
| | | County Field Blank | 13 J |
| | | County Trip Blank | 17 J |
| | | Method Blank | 13 J |
| Hexamethyl-Cyclotrisiloxane | CAS 541-05-9 | County Trip Blank | 13 J |
| | | SUBDRAIN K | 1.5 J |
| | | SUBDRAIN L | 2.0 J |
| | | CM-10 | 1.9 J |
| | | CM-15 | 1.3 J |
| | | CM-16 | 1.7 J |
| | | CM-17 | 1.4 J |
| | | MW-1 | 2.5 J |
| | | MW-2A | 2.5 J |
| | | MW-2B | 1.9 J |
| | | MW-5 | 2.4 J |
| | | MW-9 | 1.9 J |
| | | DW-3 | 1.3 J |
| | | DW-4 | 2.0 J |
| | | LY-6 | 1.6 J |
| | | SEEP | 3.5 J |
| | | CITY-DUP | 3.2 J |
| | | City Trip Blank | 2.5 J |
| City Field Blank | 2.9 J | | |
| Method Blank | 1.3 J | | |
| Method Blank | 1.3 J | | |

TABLE 3-13

SUMMARY OF ANALYTICAL RESULTS FOR TENTATIVELY IDENTIFIED COMPOUNDS (TIC)
SUNSHINE CANYON CITY AND COUNTY LANDFILLS - FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| TENTATIVE IDENTITY | CAS # or RETENTION TIME | SAMPLE POINT ID | ESTIMATED CONCENTRATION (ug/L) |
|--------------------------------|-------------------------|--------------------|--------------------------------|
| Octamethyl-Cyclotetrasiloxane | CAS 556-67-2 | CM-16 | 2.6 J |
| | | CM-10 | 3.9 J |
| | | SUBDRAIN E | 2.6 J & 4.6 |
| | | SUBDRAIN F | 3.1 J |
| | | SUBDRAIN J | 3.4 J |
| | | SUBDRAIN K | 1.8 J & 1.8 J |
| | | LY-6 | 1.6 J |
| | | CO-DUP | 4.1 J |
| | | County Field Blank | 1.3 J -1.9 J |
| | | City Trip Blank | 1.3 J |
| | | City Trip Blank | 1.3 J |
| | | City Equip. Blank | 3.5 J |
| Propane | CAS 74-98-6 | Method Blank | 1.7 J |
| | | County Trip Blank | 1.3 J |
| | | County Trip Blank | 33 J |
| | | City Trip Blank | 4.4 J |
| | | City Trip Blank | 15 J |
| Propane, 2-isothiocyanato-2-me | CAS 590-42-1 | COSUB-CF | 1.5 J |
| 1-Propene, 1,1,2-trichloro | CAS 21400-25-9 | Method Blank | 26 J |
| Tert-Butyl Alcohol | CAS 76-65-0 | MW-9 | 51 J |
| | | SEEP | 54 J |
| Tetrahydrofuran | CAS 109-99-9 | MW-9 | 9.6 J |
| | | SEEP | 9.7 J |
| Trimethyl-Siloanol | CAS 1066-40-6 | SEEP | 1.3 J |
| Undecane | CAS 1120-21-4 | Method Blank | 1.4 J |
| Unknown | 1.39326 | Method Blank | 5.9 J |
| | 2.4087 | County Trip Blank | 5.7 J |
| | 2.4099 | City Trip Blank | 5.5 J |
| | 2.405 | City Trip Blank | 4.0 J |
| | 2.4042 | City Field Blank | 4.5 J |
| | 2.4 | City Equip. Blank | 4.3 J |
| | 2.644 | Method Blank | 1.4 J |
| | 2.9275 | Method Blank | 1.3 J |
| | 3.3982 | Method Blank | 3.3 J |
| | 3.3983 | MW-6 | 1.3 J |
| | 3.8261 | Method Blank | 4.9 J |
| | 4.2629 | CM-10 | 1.9 J |
| | 4.1942 | CM-15 | 470 J |
| | 4.2045 | CM-16 | 670 J |
| | 4.2018 | CM-17 | 600 J |
| | 4.2366 | DW-4 | 2.8 J |
| | 4.1998 | COSUB-CF | 720 J |
| | 4.2511 | COSUB-CF | 10 J |
| | 4.1973 | SUBDRAIN F | 770 J |
| | 4.2201 | SUBDRAIN F | 7.7 J |
| | 4.2522 | SUBDRAIN E | 6.8 J |
| | 4.1975 | SUBDRAIN J | 790 J |
| | 4.2621 | SUBDRAIN J | 2.9 J |
| | 4.2081 | SUBDRAIN K | 320 J |
| | 4.2359 | SUBDRAIN K | 6.9 J |
| | 4.2129 | SUBDRAIN L | 450 J |
| | 4.2206 | SUBDRAIN L | 5.9 J |
| 4.1917 | WU-CO | 3.1 J | |
| 4.2164 | CO-DUP | 840 J | |

TABLE 3-13

SUMMARY OF ANALYTICAL RESULTS FOR TENTATIVELY IDENTIFIED COMPOUNDS (TIC)
SUNSHINE CANYON CITY AND COUNTY LANDFILLS - FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| TENTATIVE IDENTITY | CAS # or RETENTION TIME | SAMPLE POINT ID | ESTIMATED CONCENTRATION (ug/L) |
|---------------------|-------------------------|---------------------|--------------------------------|
| Unknown (Continued) | 4.2647 | CO-DUP | 2.2 J |
| | 4.1309 | Method Blank | 1.6 J |
| | 4.1521 | Method Blank | 95 J |
| | 4.1672 | Method Blank | 88 J |
| | 4.1768 | County Field Blank | 290 J |
| | 4.1771 | County Trip Blank | 240 J |
| | 4.179 | County Trip Blank | 240 J |
| | 4.1829 | County Equip. Blank | 250 J |
| | 4.4944 | MW-13R | 3.2 J |
| | 4.6267 | SUBDRAIN L | 2.3 J |
| | 4.6419 | SUBDRAIN L | 2.6 J |
| | 4.6431 | SUBDRAIN K | 1.6 J |
| | 4.6439 | CO-DUP | 2.3 J |
| | 4.7782 | County Field Blank | 3.3 J |
| | 5.1052 | SUBDRAIN K | 4.3 J |
| | 5.1338 | Method Blank | 4.3 J |
| | 5.0284 | ESR-1 | 5.7 J |
| | 5.0804 | SUBDRAIN L | 6.3 J |
| | 5 | Method Blank | 3.4 J |
| | 6.5709 | TRENCH | 1.3 J |
| | 6.571 | WU-CITY | 1.3 J |
| | 6.9765 | MW-6 | 11 J |
| | 9.4017 | CM-11R | 1.4 J |
| | 9.4182 | DW-1 | 1.6 J |
| | 10.905 | CM-17 | 2.1 J |
| | 10.963 | SUBDRAIN L | 2.5 J |
| | 10.964 | COSUB-CF | 5.1 J |
| | 10.964 | WU-CO | 4.8 J |
| | 10.818 | SEEP | 1.4 J |
| | 10.818 | CITY-DUP | 1.3 J |
| | 10.916 | County Equip. Blank | 2.0 J |
| | 10.922 | County Trip Blank | 2.6 J |
| | 12.517 | Method Blank | 2.0 J |
| | 12.539 | COSUB-CF | 1.3 J |
| | 12.974 | TRENCH | 1.5 J |
| | 12.974 | MW-13R | 1.5 J |
| | 13.041 | SUBDRAIN E | 2.0 J |
| | 13.05 | SUBDRAIN F | 1.3 J |
| | 13.051 | SUBDRAIN K | 2.1 J |
| | 13.059 | Method Blank | 2.8 J |
| 14.042 | WU-CITY | 5.0 J | |
| 14.249 | DW-4 | 2.3 J | |
| 14.248 | SUBDRAIN L | 4.9 J | |
| 14.241 | SUBDRAIN J | 2.3 J | |
| 14.242 | COSUB-CF | 2.2 J | |
| 14.242 | SUBDRAIN E | 4.6 J | |
| 14.242 | County Field Blank | 9.1 J | |
| 14.242 | County Equip. Blank | 3.9 J | |
| 14.242 | Method Blank | 4.8 J | |
| 14.659 | SEEP | 2.0 J | |
| 15.433 | CM-15 | 5.7 J | |
| 15.433 | CM-16 | 5.0 J | |
| 15.43 | CM-17 | 1.4 J | |
| 15.428 | COSUB-CF | 4.3 J | |
| 15.427 | SUBDRAIN E | 3.3 J | |

TABLE 3-13

SUMMARY OF ANALYTICAL RESULTS FOR TENTATIVELY IDENTIFIED COMPOUNDS (TIC)
 SUNSHINE CANYON CITY AND COUNTY LANDFILLS - FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| TENTATIVE IDENTITY | CAS # or RETENTION TIME | SAMPLE POINT ID | ESTIMATED CONCENTRATION (ug/L) |
|---------------------|-------------------------|---------------------|--------------------------------|
| Unknown (Continued) | 15.436 | SUBDRAIN F | 2.1 J |
| | 15.436 | SUBDRAIN J | 3.8 J |
| | 15.447 | SUBDRAIN K | 3.6 J |
| | 15.432 | SUBDRAIN L | 4.0 J |
| | 15.445 | CO-DUP | 4.7 J |
| | 15.445 | County Field Blank | 3.9 J |
| | 15.445 | Method Blank | 3.0 J |
| | 15.455 | County Trip Blank | 2.8 J |
| | 15.447 | County Trip Blank | 3.8 J |
| | 15.447 | County Equip. Blank | 2.5 J |
| | 16.498 | MW-1 | 1.4 J |
| | 16.497 | City Equip. Blank | 1.6 J |

TABLE 4-1
SUMMARY OF VADOSE ZONE MONITORING REQUIREMENTS
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| TYPE OF MONITORING | MONITORING FREQUENCY | MONITORING PARAMETERS | MONITORING POINTS | |
|-----------------------------|---------------------------------------|--|--|---|
| | | | COUNTY LANDFILL | CITY LANDFILL |
| Subdrain Liquid Monitoring | Quarterly | Indicator Parameters and Supplemental Parameters | Subdrains A, B, C, E, F, J, K, L | Subdrain "O" ⁽¹⁾ |
| | Monthly | VOCs Only | | |
| Soil Gas Monitoring | Monthly (Perimeter Probes) | Field Methane | P-201 through P-212, P203D, P-204D, P-207D, P-208D, P-211D, & P-212D | P-213 to P-216, P-217, P-217R, P-218, P-219, P-220A, P-220B, & P-221 to P-231 |
| Lysimeter Liquid Monitoring | Quarterly | Presence/Absence of Liquids, Indicator and Supplemental Parameters | Phase IV Lysimeter | Cell A Interstitial Liquid (Monitoring Point LY-7) |
| SAMPLE TYPE | ANALYTES | DATA EVALUATION METHOD | AGENCY NOTIFICATION AND RESPONSE ACTIVITIES | |
| | | | COUNTY LANDFILL | CITY LANDFILL |
| Subdrain Liquid Monitoring | All Indicator Supplemental Parameters | Track Changes in Concentrations Using Time-Series Graphs. | Note significant detections or trends in next semi-annual report. | |
| Soil Gas Monitoring | Field Methane | Compare Concentrations to 5% limit. | Note significant detections or trends in next semi-annual report. | |
| | Fluid Level | Assess Presence/Absence of Liquids | Sample if significant liquids are present. | |
| Lysimeter Monitoring | COCs and Supplemental Parameters | Assess Results Geochemically | Evaluate significance of results on a case-by-case basis. | |

TABLE 4-2
SUMMARY OF VADOSE ZONE MONITORING NETWORKS
SUNSHINE CANYON CITY & COUNTY LANDFILLS
 2005 Annual Monitoring Period

| LANDFILL | MONITORING POINT ID | AREA MONITORED | MONITORING LOCATION | MONITORING POINT DESCRIPTION |
|---------------------------------|----------------------------------|-------------------------------------|--|--|
| COUNTY | Subdrain A | Southwest Canyon | West Side of County Sedimentation Basin | Sample Ports on Collection Manifold Below Subdrain Outfall Pipes |
| | Subdrain B | Area Upgradient of Grout Curtain | | |
| | Subdrain C | Northwest Canyon | | |
| | Subdrain D ⁽²⁾ | Area Downgradient of Grout Curtain | | |
| | Subdrain E | North Canyon | North Side of County Sedimentation Basin | Subdrain Outfall Pipes |
| | Subdrain F | | | |
| | Subdrain J | Phase IV Disposal Area | Northwest Side of County Sedimentation Basin | Sample Port on Collection Piping |
| | Subdrain K | | | |
| | Subdrain L ⁽¹⁾ | | | |
| | Lysimeter LY-6 | Various Depths | East of Phase IV Disposal Area. | Temporary Outfall Pipe |
| P-201 to P-212 & GP-1T to GP-6T | Valve on Collection Piping | | | |
| P-203D, P-204D, P-211D, P-212D | Inclined Riser Pipe | | | |
| Lysimeter LY-7 | Various Depths | Perimeter of County Landfill | Gas Monitoring Probes | |
| "Subdrain O" | | | Subdrain Termination Points | |
| CITY | P-213 to P-231, P217R, & P-220B. | Interstitial Liquids Beneath Cell A | Southwest Corner of Cell A | Inclined Riser Pipe |
| | | Northern Portion of Cell A | Outfall at City Sedimentation Basin | Port on Outfall Pipe |
| | | Various Depths | Perimeter of County Landfill | Gas Monitoring Probes |

(1) Subdrain L is a temporary sampling point used for informational purposes only.

(2) Subdrain D underlies an area that has not yet received waste and has not yet been added to the formal vadose zone monitoring program.

TABLE 4-3

SUMMARY OF VADOSE ZONE FIELD MONITORING ACTIVITIES
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| FACILITY | DATE | ACTIVITY | MONITORING POINTS | FIELD PERSONNEL |
|-----------------|---------|--------------------------------|---|-----------------|
| COUNTY LANDFILL | 1/17/06 | Monthly Subdrain Sampling | SUBDRAIN J | A-Mehr |
| | 1/19/06 | Monthly Gas Probe Monitoring | P-201 - P-212, P-203D, P-204D, P-207D, P-208D, P-211D, & P-212D | RES |
| | 1/24/06 | Monthly Subdrain Sampling | Subdrains E, F, K, L & SUBABC (aka, COSUB-CF) | BBC |
| | 2/16/06 | Monthly Gas Probe Monitoring | P-201 - P-212, P-203D, P-204D, P-207D, P-208D, P-211D, & P-212D | RES |
| | 2/22/06 | Monthly Subdrain Sampling | Subdrains A, B, C, E, F, J, K, L | A-Mehr |
| | 3/2/06 | Quarterly Lysimeter Monitoring | Lysimeter LY-6 | BFI |
| | 3/23/06 | Monthly Gas Probe Monitoring | P-201 - P-212, P-203D, P-204D, P-207D, P-208D, P-211D, & P-212D | RES |
| | 3/27/06 | Quarterly Subdrain Sampling | Subdrains E, F, J, K, & L | BBC |
| | 3/28/06 | Quarterly Subdrain Sampling | COSUB-CF | BBC |
| | 4/21/06 | Monthly Gas Probe Monitoring | P-201 - P-212, P-203D, P-204D, P-207D, P-208D, P-211D, & P-212D | RES |
| | 4/25/06 | Quarterly Subdrain Sampling | Subdrains E, F, J, K, L, & COSUB-CF | BBC |
| | 5/17/06 | Monthly Gas Probe Monitoring | P-201 - P-212, P-203D, P-204D, P-207D, P-208D, P-211D, & P-212D | RES |
| | 5/23/06 | Quarterly Subdrain Sampling | Subdrains E, F, J, K, L, & COSUB-CF | BBC |
| | 6/15/06 | Monthly Gas Probe Monitoring | P-201 - P-212, P-203D, P-204D, P-207D, P-208D, P-211D, & P-212D | RES |
| | 6/26/06 | Quarterly Subdrain Sampling | E, F, J, K, L | BBC |
| | 6/27/06 | Quarterly Subdrain Sampling | COSUB-CF | BBC |
| | 6/30/06 | Quarterly Lysimeter Monitoring | Lysimeter LY-6 | BFI |
| CITY LANDFILL | 1/23/06 | Monthly Gas Probe Monitoring | Probes P-213 to P-231, P-217R, & P-220B | RES |
| | 2/21/06 | Quarterly Lysimeter Monitoring | LY-7, equipment blank, and field blank. | A-Mehr |
| | 2/24/06 | Lysimeter Re-Monitoring | LY-7 (fluid level only) | A-Mehr |
| | 2/27/06 | Monthly Gas Probe Monitoring | Probes P-213 to P-231, P-217R, & P-220B | RES |
| | 3/23/06 | Monthly Gas Probe Monitoring | Probes P-213 to P-231, P-217R, & P-220B | RES |
| | 3/27/06 | Quarterly Lysimeter Monitoring | LY-7 (fluid level only) | A-Mehr |
| | 3/27/06 | Quarterly Subdrain Sampling | Subdrain O | BBC |
| | 4/24/06 | Monthly Gas Probe Monitoring | Probes P-213 to P-231, P-217R, & P-220B | RES |
| | 5/17/06 | Monthly Gas Probe Monitoring | Probes P-213 to P-231, P-217R, & P-220B | RES |
| | 6/20/06 | Monthly Gas Probe Monitoring | Probes P-213 to P-231, P-217R, & P-220B | RES |
| | 6/26/06 | Quarterly Subdrain Sampling | Subdrain O | BBC |
| | 7/1/06 | Quarterly Lysimeter Monitoring | LY-7 | A-Mehr |

Note: "RES" = RES Environmental, Inc.

TABLE 4-4A
SUMMARY OF SUBDRAIN LIQUID ANALYTICAL RESULTS FOR INDICATOR PARAMETERS
SUNSHINE CANYON CITY & COUNTY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| PARAMETER | UNIT | SUBDRAIN A | | SUBDRAIN B | | SUBDRAIN C | | SUBDRAIN COSUB-CF | | | | | SUBDRAIN E | |
|----------------------|------|------------|---------|------------|---------|------------------------|------------------------|------------------------|------------------------|---------|---------|---------|------------|--|
| | | 2/22/06 | 2/22/06 | 2/22/06 | 2/22/06 | 1/24/06 ⁽¹⁾ | 3/27/06 ⁽¹⁾ | 4/25/06 ⁽¹⁾ | 5/23/06 ⁽¹⁾ | 6/27/06 | 1/24/06 | 2/22/06 | | |
| Acetone | ug/L | < 3.1 | < 3.1 | < 3.1 | < 3.1 | 3.3 J | 2.5 J | 4.9 J | < 1.9 | < 1.9 | 3.8 J | 4.6 J | | |
| Benzene | ug/L | 2.5 | 0.74 | < 3.1 | < 3.1 | 0.79 | 1.1 | 0.52 J | 0.98 J | 2.4 | < 0.13 | < 0.13 | | |
| Bromodichloromethane | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | | |
| Carbon Disulfide | ug/L | < 0.52 | < 0.52 | < 0.52 | < 0.52 | < 0.52 | 0.29 J | 0.63 J | 0.72 J | < 0.45 | < 0.52 | < 0.52 | | |
| Dibromochloromethane | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | | |
| Chloroform | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | | |
| Chloromethane | ug/L | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | 0.38 J | < 0.30 | < 0.30 | | |
| 1,4-DCB | ug/L | 0.69 | 0.23 J | 1.0 | 0.28 J | 0.34 J | 0.31 J | 0.31 J | 0.34 J | 0.57 J | < 0.15 | < 0.15 | | |
| DCDFM | ug/L | < 0.13 | < 0.13 | < 0.13 | 0.44 J | < 0.31 | 0.64 J | < 0.31 | < 0.31 | < 0.31 | 0.15 J | < 0.13 | | |
| 1,1-DCA | ug/L | 1.5 | 0.44 J | 1.6 | 0.56 | 0.66 J | 0.66 J | 0.56 J | 0.61 J | 1.3 | < 0.26 | < 0.26 | | |
| cis-1,2-DCE | ug/L | 7.6 | 1.9 | 8.5 | 2.7 | 3.6 | 3.6 | 2.7 | 3.0 | 5.8 | < 0.17 | < 0.17 | | |
| trans-1,2-DCE | ug/L | 0.37 J | < 0.15 | 0.38 J | 0.17 J | 0.19 J | 0.19 J | < 0.15 | < 0.15 | 0.26 J | < 0.15 | < 0.15 | | |
| 1,1-DCE | ug/L | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | 0.18 J | 0.21 J | 0.46 J | < 0.15 | < 0.15 | | |
| Ethylbenzene | ug/L | 0.39 J | 0.11 J | 0.43 J | < 0.087 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.087 | < 0.087 | | |
| Methylene Chloride | ug/L | 5.1 | 5.1 | 5.1 | < 1.3 | < 0.32 | < 0.32 | < 0.32 | < 0.32 | < 0.32 | < 1.3 | 5.4 | | |
| MtBE | ug/L | 1.9 | 0.77 | 3.7 | 1.4 | 1.2 J | 1.2 J | 1.1 J | 1.1 J | 2.1 J | < 0.15 | < 0.15 | | |
| PCE | ug/L | 0.56 | 0.28 J | 0.57 | < 0.15 | < 0.15 | < 0.20 | < 0.20 | < 0.20 | 0.24 J | < 0.15 | < 0.15 | | |
| Toluene | ug/L | 0.42 J | < 0.17 | 0.54 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | 0.19 J | < 0.17 | < 0.17 | | |
| TCE | ug/L | 2.3 | 0.90 | 2.4 | 0.9 | 0.9 | 1.1 | 0.81 J | 0.78 J | 1.8 | < 0.15 | < 0.15 | | |
| Vinyl Chloride | ug/L | 2.9 | 2.2 | 2.9 | 1.6 | 2.0 | 2.0 | 2.8 | 1.7 | 4.6 | < 0.17 | < 0.17 | | |
| Total Xylenes | ug/L | 0.57 | < 0.19 | 0.66 | 0.11 J | < 0.19 | < 0.19 | < 0.19 | < 0.19 | 0.26 J | < 0.19 | < 0.19 | | |
| 1,4-Dioxane | ug/L | -- | -- | -- | -- | -- | < 0.30 | -- | -- | < 0.090 | -- | -- | | |
| Potassium | ug/L | -- | -- | -- | -- | -- | 13,000 | -- | -- | 14,000 | -- | -- | | |
| Ammonia | mg/L | -- | -- | -- | -- | -- | 1.9 | -- | -- | 2.5 | -- | -- | | |
| COD | mg/L | -- | -- | -- | -- | -- | 77 | -- | -- | 59 | -- | -- | | |
| Chloride | mg/L | -- | -- | -- | -- | -- | 17 | -- | -- | 16 | -- | -- | | |
| Total Alkalinity | mg/L | -- | -- | -- | -- | -- | 440 | -- | -- | 450 | -- | -- | | |
| TDS | mg/L | -- | -- | -- | -- | -- | 3200 | -- | -- | 3,400 | -- | -- | | |
| TOC | mg/L | -- | -- | -- | -- | -- | 18 | -- | -- | 18 | -- | -- | | |

TABLE 4-4A (Continued)
 SUMMARY OF SUBDRAIN LIQUID ANALYTICAL RESULTS FOR INDICATOR PARAMETERS
 SUNSHINE CANYON CITY & COUNTY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| PARAMETER | UNIT | SUBDRAINE | | | | | SUBDRAIN F | | | | |
|----------------------|------|-----------|------------------------|------------------------|---------|---------|------------|---------|------------------------|------------------------|---------|
| | | 3/27/06 | 4/25/06 ⁽¹⁾ | 5/23/06 ⁽¹⁾ | 6/27/06 | 1/24/06 | 2/22/06 | 3/27/06 | 4/25/06 ⁽¹⁾ | 5/23/06 ⁽¹⁾ | 6/26/06 |
| Acetone | ug/L | 3.4 J | < 1.9 | 9.4 J | 4.0 J | < 3.1 | < 3.1 | < 1.9 | 6.7 J | 9.2 J | < 1.9 |
| Benzene | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.13 | < 0.13 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| Bromodichloromethane | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 |
| Carbon Disulfide | ug/L | 0.30 J | < 0.45 | < 0.45 | < 0.45 | < 0.52 | < 0.52 | < 0.18 | < 0.45 | 1.5 J | < 0.18 |
| Dibromochloromethane | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 |
| Chloroform | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| Chloromethane | ug/L | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| 1,4-DCB | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.15 | < 0.15 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| DCDFM | ug/L | < 0.31 | < 0.31 | < 0.31 | < 0.31 | < 0.13 | < 0.13 | < 0.31 | < 0.31 | < 0.31 | < 0.31 |
| 1,1-DCA | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.26 | < 0.26 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| cis-1,2-DCE | ug/L | < 0.15 | 0.23 J | < 0.15 | < 0.15 | < 0.17 | < 0.17 | < 0.15 | < 0.15 | < 0.15 | < 0.15 |
| trans-1,2-DCE | ug/L | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 |
| 1,1-DCE | ug/L | < 0.14 | < 0.14 | < 0.14 | < 0.14 | < 0.26 | < 0.26 | < 0.14 | < 0.14 | < 0.14 | < 0.14 |
| Ethylbenzene | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.087 | < 0.087 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| Methylene Chloride | ug/L | < 0.32 | < 0.32 | < 0.32 | < 0.32 | < 1.3 | 5.8 | < 0.32 | < 0.32 | < 0.32 | < 0.32 |
| MtBE | ug/L | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.15 | < 0.15 | < 0.25 | < 0.25 | < 0.25 | < 0.25 |
| PCE | ug/L | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.15 | < 0.15 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| Toluene | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 |
| TCE | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.15 | < 0.15 | < 0.16 | < 0.16 | < 0.16 | < 0.16 |
| Vinyl Chloride | ug/L | < 0.17 | 1.4 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | 0.43 J |
| Total Xylenes | ug/L | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 |
| 1,4-Dioxane | ug/L | < 0.30 | -- | -- | < 0.090 | -- | -- | < 0.30 | -- | -- | < 0.090 |
| Potassium | ug/L | 14,000 | -- | -- | 15,000 | -- | -- | 16,000 | -- | -- | 15,000 |
| Ammonia | mg/L | 1.6 | -- | -- | 1.5 | -- | -- | 1.5 | -- | -- | 1.3 |
| COD | mg/L | 93 | -- | -- | 95 | -- | -- | 98 | -- | -- | 100 |
| Chloride | mg/L | 18 | -- | -- | 19 | -- | -- | 15 | -- | -- | 16 |
| Total Alkalinity | mg/L | 670 | -- | -- | 680 | -- | -- | 490 | -- | -- | 600 |
| TDS | mg/L | 3500 | -- | -- | 3,500 | -- | -- | 3,300 | -- | -- | 3,500 |
| TOC | mg/L | 29 | -- | -- | 31 | -- | -- | 32 | -- | -- | 31 |

TABLE 4-4A (Continued)
 SUMMARY OF SUBDRAIN LIQUID ANALYTICAL RESULTS FOR INDICATOR PARAMETERS
 SUNSHINE CANYON CITY & COUNTY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| PARAMETER | UNIT | SUBDRAIN J | | | | | | SUBDRAIN K | | | | | |
|----------------------|------|------------|---------|---------|---------|---------|---------|------------|---------|---------|---------|--------|--|
| | | 1/24/06 | 2/22/06 | 3/27/06 | 4/25/06 | 5/23/06 | 6/26/06 | 1/24/06 | 2/22/06 | 3/27/06 | 4/25/06 | | |
| Acetone | ug/L | < 3.1 | < 3.1 | < 3.1 | 4.1 J | < 1.9 | < 1.9 | 3.1 J | < 3.1 | < 3.1 | < 3.1 | 4.9 J | |
| Benzene | ug/L | 0.27 | 0.17 J | 0.26 J | < 0.16 | 0.25 J | 0.25 J | < 0.13 | < 0.13 | < 0.16 | < 0.16 | < 0.16 | |
| Bromodichloromethane | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | |
| Carbon Disulfide | ug/L | < 0.52 | < 0.52 | < 0.18 | 1.9 J | < 0.45 | 2.3 | < 0.52 | < 0.52 | < 0.18 | < 0.18 | < 0.18 | |
| Dibromochloromethane | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | |
| Chloroform | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | |
| Chloromethane | ug/L | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | |
| 1,4-DCB | ug/L | < 0.15 | < 0.15 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.15 | < 0.15 | < 0.16 | < 0.16 | < 0.16 | |
| DCDFM | ug/L | 0.36 J | < 0.13 | 0.32 J | < 0.31 | < 0.31 | < 0.31 | < 0.13 | < 0.13 | < 0.31 | < 0.31 | < 0.31 | |
| 1,1-DCA | ug/L | < 0.26 | < 0.26 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.26 | < 0.26 | < 0.16 | < 0.16 | < 0.16 | |
| cis-1,2-DCE | ug/L | 0.26 J | < 0.17 | 0.27 J | < 0.15 | 0.22 J | 0.26 J | < 0.17 | < 0.17 | < 0.15 | < 0.15 | < 0.15 | |
| trans-1,2-DCE | ug/L | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | |
| 1,1-DCE | ug/L | < 0.26 | < 0.26 | < 0.14 | < 0.14 | < 0.14 | < 0.14 | < 0.26 | < 0.26 | < 0.14 | < 0.14 | < 0.14 | |
| Ethylbenzene | ug/L | < 0.087 | < 0.087 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.087 | < 0.087 | < 0.16 | < 0.16 | < 0.16 | |
| Methylene Chloride | ug/L | < 1.3 | 5.7 | < 0.32 | < 0.32 | < 0.32 | < 0.32 | < 1.3 | 5.7 | < 0.32 | < 0.32 | < 0.32 | |
| MtBE | ug/L | 0.16 J | 0.16 J | < 0.25 | < 0.25 | < 0.25 | < 0.25 | < 0.15 | < 0.15 | < 0.25 | < 0.25 | < 0.25 | |
| PCE | ug/L | < 0.15 | < 0.15 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.15 | < 0.15 | < 0.20 | < 0.20 | < 0.20 | |
| Toluene | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | |
| TCE | ug/L | 0.17 J | < 0.15 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.15 | < 0.15 | < 0.16 | < 0.16 | < 0.16 | |
| Vinyl Chloride | ug/L | 1.1 | 0.55 | 0.78 J | < 0.17 | 0.69 | 1.4 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | |
| Total Xylenes | ug/L | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | < 0.19 | |
| 1,4-Dioxane | ug/L | -- | -- | < 0.30 | -- | -- | < 0.090 | -- | -- | < 0.30 | -- | -- | |
| Potassium | ug/L | -- | -- | 9,400 | -- | -- | 9,400 | -- | -- | 20,000 | -- | -- | |
| Ammonia | mg/L | -- | -- | 3.2 | -- | -- | 2.7 | -- | -- | 12 | -- | -- | |
| COD | mg/L | -- | -- | 7.8 B | -- | -- | 17 B | -- | -- | 46 | -- | -- | |
| Chloride | mg/L | -- | -- | 12 | -- | -- | 12 | -- | -- | 33 | -- | -- | |
| Total Alkalinity | mg/L | -- | -- | 420 | -- | -- | 400 | -- | -- | 980 | -- | -- | |
| TDS | mg/L | -- | -- | 2,900 | -- | -- | 3,000 | -- | -- | 5,100 | -- | -- | |
| TOC | mg/L | -- | -- | 2.3 | -- | -- | 2.3 | -- | -- | 16 | -- | -- | |

TABLE 4-4A (Continued)
 SUMMARY OF SUBDRAIN LIQUID ANALYTICAL RESULTS FOR INDICATOR PARAMETERS
 SUNSHINE CANYON CITY & COUNTY LANDFILLS - 2006 ANNUAL MONITORING PERIOD

| PARAMETER | UNIT | SUBDRAIN K | | | | SUBDRAIN L | | | | | | |
|----------------------|------|------------|---------|---------|---------|------------|---------|---------|---------------|--|--|----|
| | | 5/23/06 | 6/26/06 | 1/24/06 | 2/22/06 | 3/27/06 | 4/25/06 | 5/23/06 | 6/26/06 | | | |
| Acetone | ug/L | < 1.9 | < 1.9 | < 3.1 | < 3.1 | 40 | 4.0 J | < 1.9 | < 1.9 | | | -- |
| Benzene | ug/L | < 0.16 | < 0.16 | 0.28 | 0.27 | 0.30 J | < 0.16 | 0.23 J | 0.80 J | | | -- |
| Bromodichloromethane | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | 0.30 J | | | -- |
| Carbon Disulfide | ug/L | 0.91 J | < 0.45 | < 0.52 | < 0.52 | < 0.18 | < 0.18 | < 0.18 | < 0.45 | | | -- |
| Dibromochloromethane | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | 0.22 J | | | -- |
| Chloroform | ug/L | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | 0.67 J | | | -- |
| Chloromethane | ug/L | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | 0.61 J | | | -- |
| 1,4-DCB | ug/L | < 0.16 | < 0.16 | < 0.15 | < 0.15 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | | | -- |
| DCDFM | ug/L | < 0.31 | < 0.31 | < 0.13 | < 0.13 | < 0.31 | < 0.31 | < 0.31 | < 0.31 | | | -- |
| 1,1-DCA | ug/L | < 0.16 | < 0.16 | < 0.26 | < 0.26 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | | | -- |
| cis-1,2-DCE | ug/L | < 0.15 | < 0.15 | < 0.17 | < 0.17 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | | | -- |
| trans-1,2-DCE | ug/L | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | | | -- |
| 1,1-DCE | ug/L | < 0.14 | < 0.14 | < 0.26 | < 0.26 | < 0.14 | < 0.14 | < 0.14 | < 0.14 | | | -- |
| Ethylbenzene | ug/L | < 0.16 | < 0.16 | 0.10 J | < 0.087 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | | | -- |
| Methylene Chloride | ug/L | < 0.32 | < 0.32 | < 1.3 | 5.9 | < 0.32 | < 0.32 | < 0.32 | < 0.32 | | | -- |
| MtBE | ug/L | < 0.25 | < 0.25 | < 0.15 | < 0.15 | < 0.25 | < 0.25 | < 0.25 | < 0.25 | | | -- |
| PCE | ug/L | < 0.20 | < 0.20 | < 0.15 | < 0.15 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | | | -- |
| Toluene | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | | | -- |
| TCE | ug/L | < 0.16 | < 0.16 | < 0.15 | < 0.15 | < 0.16 | < 0.16 | < 0.16 | < 0.16 | | | -- |
| Vinyl Chloride | ug/L | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | < 0.17 | | | -- |
| Total Xylenes | ug/L | < 0.19 | < 0.19 | 0.41 J | 0.28 J | 0.29 J | 0.28 J | 0.24 J | 0.19 J | | | -- |
| 1,4-Dioxane | ug/L | -- | < 0.090 | -- | -- | < 0.30 | -- | -- | < 0.090/0.181 | | | -- |
| Potassium | ug/L | -- | 18,000 | -- | -- | 23,000 | -- | -- | 22,000 | | | -- |
| Ammonia | mg/L | -- | 11 | -- | -- | 16 | -- | -- | 14 | | | -- |
| COD | mg/L | -- | 49 | -- | -- | 88 | -- | -- | 86 | | | -- |
| Chloride | mg/L | -- | 29 | -- | -- | 47 | -- | -- | 42 | | | -- |
| Total Alkalinity | mg/L | -- | 920 | -- | -- | 1,200 | -- | -- | 1,200 | | | -- |
| TDS | mg/L | -- | 5,400 | -- | -- | 6,600 | -- | -- | 6,700 | | | -- |
| TOC | mg/L | -- | 15 | -- | -- | 29 | -- | -- | 27 | | | -- |

TABLE 4-4B
SUMMARY OF ANALYTICAL RESULTS FOR SUBDRAIN LIQUID SAMPLES
SUPPLEMENTAL MONITORING PARAMETERS
SUNSHINE CANYON COUNTY LANDFILL

First Semi-Annual Monitoring Period of 2006

| ANALYTE | UNITS | COSUB-CF | SUBDRAIN E | SUBDRAIN F | SUBDRAIN J | SUBDRAIN K | SUBDRAIN L |
|----------------------|-----------|----------|------------|------------|------------|------------|------------|
| | | 6/27/06 | 6/26/06 | 6/26/06 | 6/26/06 | 6/26/06 | 6/26/06 |
| Bicarbonate | mg/L | 450 | 680 | 600 | 400 | 920 | 1,200 |
| Boron | mg/L | 740 | 950 | 990 | 640 | 3,500 | 5,200 |
| Bromide | mg/L | 0.46 | 0.94 | 0.87 | < 0.27 | < 0.66 | 0.82 B |
| Calcium | mg/L | 420,000 | 530,000 | 510,000 | 300,000 | 250,000 | 250,000 |
| Carbon Dioxide | mg/L | 300 | 340 | 340 | 120 | 110 | 100 |
| Fluoride | mg/L | 1.5 | 1.4 | 1.4 | 1.6 | 1.2 B | 0.73 B |
| Iron | mg/L | 60,000 | 82,000 | 74,000 | 3,100 | 170 | 6,500 |
| Magnesium | mg/L | 220,000 | 200,000 | 180,000 | 210,000 | 260,000 | 180,000 |
| Manganese | mg/L | 9,200 | 16,000 | 16,000 | 450 | 380 | 140 |
| Nitrate+Nitrite | mg/L | < 0.019 | < 0.019 | < 0.019 | < 0.019 | 0.087 B | < 0.019 |
| Sodium | mg/L | 270,000 | 220,000 | 210,000 | 250,000 | 1,100,000 | 1,900,000 |
| Sulfate | mg/L | 2,000 | 1,900 | 1,900 | 1,800 | 3,300 | 3,600 |
| Temperature | Celcius | 22.91 | 29.68 | 21.05 | 18.10 | 28.77 | 30.97 |
| pH | Std Units | 6.42 | 6.42 | 6.69 | 6.70 | 7.45 | 7.65 |
| Specific Conductance | umhos/cm | 4,021 | 3,798 | 3,544 | 1,591 | 7,236 | 9,167 |
| Turbidity | NTU | 10.2 | 60.5 | 3.9 | 5.2 | 6.9 | 55.9 |

TABLE 4-5A
SUMMARY OF LYSIMETER MONITORING RESULTS - LIQUID SOUNDINGS
SUNSHINE CANYON CITY & COUNTY LANDFILLS

| LYSIMETER | DATE OF MEASUREMENT | DEPTH TO LIQUID (FT) | TOTAL DEPTH (FT) | WAS LYSIMETER LIQUID SAMPLE COLLECTED? |
|-----------|---------------------|----------------------|------------------|---|
| LY-6 | 3/2/06 | n/a | 252.5 | No Liquid Present |
| | 6/30/06 | 250.4 | 252.5 | No |
| | 7/13/06 | 251.1 | n/m | Collected Second Quarter Sample |
| LY-7 | 2/21/06 | 352.50 | 360.4 | Collected Resample from the Fourth Quarter 2005 Event |
| | 3/27/06 | 346.8 | 359.8 | No Liquid Could Be Retrieved |
| | 6/30/06 | 342.0 | n/m | Collected Second Quarter Sample |

Note: n/a = not applicable; n/m = not measured.

TABLE 4-5B
SUMMARY OF ANALYTICAL RESULTS FOR LYSIMETER LIQUID SAMPLES
SUNSHINE CANYON CITY & COUNTY LANDFILLS
First Semi-Annual Monitoring Period of 2006

| PARAMETER | UNIT | LY-6 | | LY-7 | |
|--------------------------|------|-----------------------|---------|------------------------|---------------|
| | | 3/2/06 ⁽¹⁾ | 7/13/06 | 2/21/06 ⁽¹⁾ | 6/30/06 |
| Acetone | ug/L | -- | 3.2 J | -- | < 1.9 |
| Benzene | ug/L | -- | < 0.16 | 0.21 J | 0.24 J |
| 2-Butanone | ug/L | -- | < 1.8 | -- | < 1.8 |
| Chlorobenzene | ug/L | -- | < 0.17 | -- | < 0.17 |
| Chloroform | ug/L | -- | 0.25 J | -- | < 0.16 |
| 1,2-Dichlorobenzene | ug/L | -- | < 0.13 | -- | < 0.13 |
| 1,3-Dichlorobenzene | ug/L | -- | < 0.16 | -- | < 0.16 |
| 1,4-Dichlorobenzene | ug/L | -- | < 0.16 | -- | < 0.16 |
| Dichlorodifluoromethane | ug/L | -- | < 0.31 | < 0.13 | < 0.31 |
| 1,1-Dichloroethane | ug/L | -- | < 0.16 | -- | 0.15 J |
| 1,2-Dichloroethane | ug/L | -- | < 0.13 | -- | < 0.13 |
| cis-1,2-Dichloroethene | ug/L | -- | < 0.15 | -- | < 0.15 |
| trans-1,2-Dichloroethene | ug/L | -- | < 0.15 | -- | < 0.15 |
| Ethylbenzene | ug/L | -- | < 0.16 | -- | < 0.16 |
| Methylene Chloride | ug/L | -- | 0.50 J | -- | < 0.32 |
| Styrene | ug/L | -- | < 0.17 | -- | < 0.17 |
| Tetrachloroethene | ug/L | -- | < 0.20 | -- | < 0.20 |
| Toluene | ug/L | -- | < 0.17 | -- | < 0.17 |
| Trichloroethene | ug/L | -- | < 0.16 | -- | < 0.16 |
| Isobutyl Alcohol | ug/L | -- | < 36 | -- | < 36 |
| Vinyl Chloride | ug/L | -- | < 0.17 | -- | < 0.17 |
| p/m-Xylene | ug/L | -- | < 0.19 | -- | < 0.19 |
| Methyl-t-Butyl Ether | ug/L | -- | < 0.25 | -- | < 0.25 |
| Other Appendix I VOC | ug/L | -- | ND | -- | ND |
| 1,4-Dioxane | ug/L | -- | -- | -- | <0.090/<0.090 |
| Alkalinity, total | mg/L | -- | -- | -- | 700 |
| Ammonia Nitrogen | mg/L | -- | -- | -- | 0.10 |
| COD | mg/L | -- | -- | -- | 18 B |
| Chloride | mg/L | -- | -- | -- | 28 |
| Potassium | ug/L | -- | -- | -- | 22,000 |
| TDS | mg/L | -- | -- | -- | 1,300 |
| TOC | mg/L | -- | -- | -- | 4.6 |

TABLE 4-5B
SUMMARY OF ANALYTICAL RESULTS FOR LYSIMETER LIQUID SAMPLES
SUNSHINE CANYON CITY & COUNTY LANDFILLS
First Semi-Annual Monitoring Period of 2006

| PARAMETER | UNIT | LY-6 | | LY-7 | |
|---------------------|------|-----------------------|---------|------------------------|---------|
| | | 3/2/06 ⁽¹⁾ | 6/30/06 | 2/21/06 ⁽¹⁾ | 6/30/06 |
| Bicarbonate | mg/L | -- | -- | -- | 700 |
| Boron | ug/L | -- | -- | -- | 920 |
| Bromide | mg/L | -- | -- | -- | 0.15 B |
| Calcium, Total | ug/L | -- | -- | -- | 75,000 |
| Carbon Dioxide, Lab | mg/L | -- | -- | -- | 16 |
| Fluoride | mg/L | -- | -- | -- | 0.52 |
| Iron, Total | ug/L | -- | -- | -- | 8,800 |
| Magnesium, Total | ug/L | -- | -- | -- | 13,000 |
| Manganese, Total | ug/L | -- | -- | -- | 270 |
| Nitrate+Nitrite | mg/L | -- | -- | -- | 0.34 |
| Sodium, Total | mg/L | -- | -- | -- | 390,000 |
| Sulfate | mg/L | -- | -- | -- | 270 |
| Antimony | ug/L | -- | -- | -- | 5.6 |
| Arsenic | ug/L | -- | -- | -- | 11 |
| Barium | ug/L | -- | -- | -- | 220 |
| Beryllium | ug/L | -- | -- | -- | < 0.15 |
| Cadmium | ug/L | -- | -- | -- | 0.55 B |
| Chromium | ug/L | -- | -- | -- | 21 |
| Cobalt | ug/L | -- | -- | -- | 2.7 |
| Copper | ug/L | -- | -- | -- | 25 |
| Lead | ug/L | -- | -- | -- | 6.8 |
| Nickel | ug/L | -- | -- | -- | 21 |
| Selenium | ug/L | -- | -- | -- | < 1.0 |
| Silver | ug/L | -- | -- | -- | 0.041 B |
| Thallium | ug/L | -- | -- | -- | 0.076 B |
| Tin | ug/L | -- | -- | -- | 0.73 B |
| Vanadium | ug/L | -- | -- | -- | 12 |
| Zinc | ug/L | -- | -- | -- | 520 |
| Sulfide | mg/L | -- | -- | -- | -- |

Notes: J or B = trace concentration.

**TABLE 4-6
INTERVAL DESIGNATIONS AND DEPTHS FOR MONTHLY SOIL GAS MONITORING PROBES
SUNSHINE CANYON CITY AND COUNTY LANDFILLS**

| PROBE ID | INTERVAL | DEPTH (ft-bgs) | PROBE ID | INTERVAL | DEPTH (ft-bgs) | PROBE ID | INTERVAL | DEPTH (ft-bgs) | PROBE ID | INTERVAL | DEPTH (ft-bgs) |
|-----------------------------------|----------|-------------------|---|-----------|-------------------|---|-----------|-------------------|-----------------------------------|-----------|-------------------|
| County LF Permanent Probes | | | County LF Permanent Probes (continued) | | | County LF Permanent Probes (continued) | | | County LF Temporary Probes | | |
| P-201 to P-212 | A | 10 - 15 | P-220A | A | 6.9 - 14 | P-225 | A | 7 - 14 | GP-1T | A | 23 - 28 |
| | B | 25 - 30 | | B | 44 - 51 | | B | 65 - 73 | | B | 39 - 44 |
| | C | 40 - 45 | | C | 79 - 88 | | C | 124 - 133 | | C | 55 - 60 |
| City LF Permanent Probes | | | | D | 117 - 127 | | D | 184 - 192 | | D | 73 - 83 |
| P-213 | A | 7 - 15 | | E | 150 - 159 | | E | 243 - 250 | A | 10 - 15 | GP-2T |
| | B | 23 - 31 | A | 8 - 15 | A | 7 - 14 | B | 25 - 30 | B | 25 - 30 | |
| | C | 39 - 47 | B | 32 - 39 | B | 58 - 68 | C | 40 - 55 | C | 40 - 55 | |
| | P-214 | D | 55 - 62 | C | 56 - 61 | C | 108 - 117 | D | 158 - 168 | A | 9 - 14 |
| | | E | 71 - 80 | D | 80 - 87 | D | 158 - 168 | E | 202 - 209 | A | 9 - 14 |
| A | | 7 - 16 | E | 104 - 111 | E | 202 - 209 | A | 8 - 13 | A | 8 - 13 | |
| P-215 | B | 23 - 32 | A | 5 - 14 | A | 6 - 15 | A | 6 - 15 | B | 28 - 30 | |
| | C | 42 - 51 | B | 49 - 58 | B | 46 - 55 | B | 46 - 55 | B | 28 - 30 | |
| | A | 7 - 14 | C | 91 - 101 | C | 85 - 95 | C | 85 - 95 | C | 48 - 53 | |
| P-216 | B | 24 - 31 | D | 134 - 143 | D | 134 - 143 | D | 126 - 134 | A | 13 - 23 | |
| | C | 41 - 48 | E | 176 - 186 | E | 176 - 186 | E | 164 - 172 | B | 38 - 48 | |
| | D | 58 - 65 | A | 7 - 15 | A | 7 - 15 | A | 7 - 14 | C | 68 - 78 | |
| P-217R | E | 75 - 82 | B | 48 - 57 | B | 48 - 57 | B | 56 - 65 | D | 158 - 168 | |
| | A | 8 - 15 | C | 88 - 98 | C | 88 - 98 | C | 107 - 115 | | | |
| | B | 32 - 37 | D | 132 - 141 | D | 132 - 141 | D | 156 - 165 | | | |
| | C | 56 - 63 | E | 173 - 181 | E | 173 - 181 | E | 203 - 214 | | | |
| | D | 80 - 87 | A | 7 - 15 | A | 7 - 15 | A | 4 - 15 | | | |
| P-218 | E | 104 - 111 | B | 32 - 41 | B | 32 - 41 | B | 42 - 50 | | | |
| | A | 7 - 14 | C | 51 - 64 | C | 51 - 64 | C | 77 - 86 | | | |
| | A | 6 - 11 | D | 78 - 88 | D | 78 - 88 | D | 106 - 115 | | | |
| P-219 | B | 16 - 21 | E | 100 - 113 | E | 100 - 113 | E | 150 - 159 | | | |
| | A | 5 - 8 | A | 5 - 14 | A | 5 - 14 | A | 7 - 14 | | | |
| | A | 7 - 15 | B | 60 - 70 | B | 60 - 70 | B | 4 - 14 | | | |
| | B | 57 - 66 | C | 115 - 125 | C | 115 - 125 | C | 20 - 27 | | | |
| | C | 109 - 117 | D | 168 - 180 | D | 168 - 180 | D | 33 - 40 | | | |
| P-220 | D | 158 - 167 | E | 223 - 236 | E | 223 - 236 | E | 45 - 53 | | | |
| | E | 209 - 218 | | | | | 58 - 67 | | | | |
| | | | | | | | | | | | |

TABLE 4-7
SUMMARY OF MONTHLY GAS PROBE MONITORING RESULTS
SUNSHINE CANYON CITY AND COUNTY LANDFILLS
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| COUNTY LANDFILL PERMANENT GAS MONITORING PROBES | | | | | | | |
|--|----------|--|---------|---------|---------|---------|---------|
| MONITORING POINT | INTERVAL | METHANE CONCENTRATION (ppm unless noted otherwise) | | | | | |
| | | 1/19/06 | 2/16/06 | 3/23/06 | 4/21/06 | 5/17/06 | 6/15/06 |
| P-201 | A | 2,480 | 3,420 | 5,120 | 3,720 | 4,200 | 3,900 |
| | B | 20 | 540 | 2,360 | 1,140 | 2,160 | 1,540 |
| | C | 100 | 460 | 1,840 | 1,090 | 1,900 | 1,300 |
| P-202 | A | 2,760 | 3,620 | 3,680 | 3,228 | 1,400 | 3,360 |
| | B | 1,780 | 920 | 2,600 | 2,360 | 3,340 | 2,540 |
| | C | 280 | 2,340 | 1,080 | 1,140 | 2,200 | 1,140 |
| P-203 | A | 2,380 | 3,040 | 3,320 | 398 | 3,320 | 3,220 |
| | B | 2,900 | 3,480 | 3,440 | 3,460 | 3,400 | 3,000 |
| | C | 2,720 | 2,800 | 2,900 | 3,510 | 3,260 | 3,160 |
| P-204 | A | 2,680 | 3,420 | 2,000 | 1,240 | 1,420 | 3,340 |
| | B | 1,800 | 2,840 | 780 | 1,420 | 1,580 | 1,180 |
| | C | 780 | 780 | 3,540 | 1,080 | 1,540 | 920 |
| P-205 | A | 3,140 | 3,870 | 4,000 | 4,620 | 4,420 | 2,980 |
| | B | 2,460 | 5,340 | 4,980 | 5,100 | 5,420 | 4,890 |
| | C | 3,080 | 2,140 | 2,820 | 4,300 | 2,780 | 2,160 |
| P-206 | A | 5,240 | 3,960 | 3,740 | 3,560 | 3,780 | 3,160 |
| | B | 4,600 | 3,664 | 3,980 | 3,440 | 3,620 | 3,020 |
| | C | 4,280 | 3,960 | 3,600 | 3,460 | 3,660 | 3,180 |
| P-207 | A | 3,126 | 700 | 1,120 | 3,700 | 1,920 | 3,120 |
| | B | 820 | 3,860 | 3,740 | 1,600 | 3,760 | 1,060 |
| | C | 3,440 | 4,120 | 5,600 | 4,320 | 4,840 | 4,220 |
| P-208 | A | 3,060 | 3,800 | 3,585 | 3,520 | 3,680 | 3,300 |
| | B | 3,100 | 3,900 | 3,560 | 3,440 | 4,230 | 1,360 |
| | C | 2,940 | 3,020 | 1,720 | 2,660 | 2,700 | 3,250 |
| P-209 | A | 2,180 | 4,600 | 4,100 | 3,940 | 4,380 | 4,060 |
| | B | 3,296 | 4,480 | 4,060 | 3,906 | 4,260 | 4,900 |
| | C | 2,500 | 4,900 | 3,940 | 3,880 | 4,290 | 7,920 |
| P-210 | A | 2,068 | 2,540 | 3,040 | 3,040 | 3,220 | 2,600 |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 2.0 % | 2.7 % | 3.0 % | 2.1 % | 2.6 % | 2.5 % |
| P-211 | A | 2,840 | 3,440 | 3,120 | 800 | 3,220 | 2,940 |
| | B | 420 | 960 | 740 | 3,060 | 1,520 | 1,160 |
| | C | 380 | 840 | 600 | 920 | 1,480 | 800 |
| P-212 | A | 3,040 | 1,820 | 2,540 | 2,380 | 3,780 | 1,908 |
| | B | 2,820 | 1,240 | 1,440 | 3,680 | 3,270 | 1,860 |
| | C | 2,400 | 4,020 | 3,580 | 2,180 | 2,820 | 3,200 |

TABLE 4-7 (continued)
SUMMARY OF MONTHLY GAS PROBE MONITORING RESULTS
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| CITY LANDFILL PERIMETER GAS MONITORING PROBES | | | | | | | |
|--|----------|--|---------|---------|---------|---------|---------|
| MONITORING POINT | INTERVAL | METHANE CONCENTRATION (ppm unless noted otherwise) | | | | | |
| | | 1/23/06 | 2/27/06 | 3/20/06 | 4/24/06 | 5/24/06 | 6/20/06 |
| P-213 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-214 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-215 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.1 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-216 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-217 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-217R | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-218A | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-219 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-220A | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-220B | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |

TABLE 4-7 (continued)
SUMMARY OF MONTHLY GAS PROBE MONITORING RESULTS
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| CITY LANDFILL PERIMETER GAS MONITORING PROBES (CONTINUED) | | | | | | | |
|--|----------|--|---------|---------|---------|---------|---------|
| MONITORING POINT | INTERVAL | METHANE CONCENTRATION (ppm unless noted otherwise) | | | | | |
| | | 1/23/06 | 2/27/06 | 3/20/06 | 4/24/06 | 5/24/06 | 6/20/06 |
| P-221 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-222 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-223 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-224 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-225 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-226 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-227 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |

TABLE 4-7 (continued)
SUMMARY OF MONTHLY GAS PROBE MONITORING RESULTS
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| CITY LANDFILL PERIMETER GAS MONITORING PROBES (CONTINUED) | | | | | | | |
|---|----------|--|---------|---------|---------|---------|---------|
| MONITORING POINT | INTERVAL | METHANE CONCENTRATION (ppm unless noted otherwise) | | | | | |
| | | 1/23/06 | 2/27/06 | 3/20/06 | 4/24/06 | 5/24/06 | 6/15/06 |
| P-228 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-229 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-230 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-231 | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | D | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | E | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| COUNTY LANDFILL SUBDRAIN TERMINATION GAS MONITORING POINTS | | | | | | | |
| P-203D | N/A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-204D | N/A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-207D | N/A | 30 | 10 | 200 | 1,000 | 500 | 10,000 |
| P-208D | N/A | 4 | 20 | 10,000 | 10 | 3,000 | 5 |
| P-211D | N/A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| P-212D | N/A | 5 | 5 | 3 | 10 | 5 | 0.0 % |
| COUNTY LANDFILL TEMPORARY GAS MONITORING PROBES | | | | | | | |
| GP-1T | A | 0.0 % | 2.9 % | 29.6 % | 30.3 % | 29.7 % | 26.9 % |
| | B | 48.8 % | 0.2 % | 50.9 % | 50.5 % | 50.4 % | 50.6 % |
| | C | 54.1 % | 49.6 % | 58.2 % | 57.9 % | 59.4 % | 57.0 % |
| | D | 1.8 % | 31.0 % | 44.0 % | 3.2 % | 42.8 % | 40.1 % |
| GP-2T | A | 17.8 % | 14.8 % | 19.0 % | 17.9 % | 29.5 % | 22.9 % |
| | B | 2.0 % | 0.0 % | 11.9 % | 15.1 % | 11.3 % | 13.6 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| GP-3T | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| GP-4T | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| GP-5T | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| GP-6T | A | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | B | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| | C | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |

TABLE 5-1
 SURFACE WATER MONITORING POINTS
 SUNSHINE CANYON CITY AND COUNTY LANDFILLS
 First Semi-Annual Monitoring Period of 2006

| FACILITY | TYPE OF MONITORING STATION | MONITORING POINT DESIGNATION | MONITORING POINT DESCRIPTION | DATA EVALUATION METHODS/NOTIFICATION |
|---------------------------|-----------------------------|------------------------------|--|--|
| CITY LANDFILL | STREAM MONITORING | S-AR | Stormwater Outfall from City Sedimentation Basin | No specific data evaluation procedures or notification triggers are contained in current site WDR or MRP. Data are evaluated geochemically and resampling/notification is conducted on a case-by-case basis. |
| | | S-B | Stormwater Outfall at North End of City Sedimentation Basin | |
| | | S-C | North Canyon Upstream from Monitoring Well CM-9R3 | |
| | | S-D | Canyon West of Soil Gas Monitoring Probe P-231 | |
| CITY AND COUNTY LANDFILLS | SPRING WATER MONITORING | ESR-1 | One-Time Monitoring of Liquids from Excavation Related to Repositioning of Electric Standard | Data was evaluated informally to assess source of liquids. |
| | STREAM DIVERSION MONITORING | CHRV-1 | Hydraulic Relief Valve at Southeast End of City Sedimentation Basin | This monitoring is conducted pursuant to California Department of Fish & Game permit requirements. Current WDR/MRPs require only that data be included in the applicable semi-annual monitoring reports. |
| | STORMWATER MONITORING | Stormwater | Same as S-AR | This monitoring is conducted for the facility's NPDES stormwater monitoring permit. |

TABLE 5-2
SUMMARY OF SURFACE WATER MONITORING REQUIREMENTS
SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| TYPE OF MONITORING | MONITORING FREQUENCY | MONITORING PARAMETERS | MONITORING POINTS | |
|--------------------------|----------------------|---|---|------------------------------------|
| | | | COUNTY LANDFILL | CITY LANDFILL |
| Stream Water | Semi-Annual | Indicator Parameters and Supplemental Parameters | n/a | S-AR, S-B, S-C, and S-D |
| Spring Water | As Detected | Various Informational | n/a | ESR-1 |
| Stream Diversion (CDF&G) | Daily, Plus Various | TSS, pH, Temperature, Turbidity, Dissolved O ₂ , & EC. | n/a | Various stream diversion locations |
| Storm Water (NPDES) | During Storms | Iron, O&G, TSS, pH, TOC, & EC. | Inspections cover various locations. Samples are collected at culvert southeast of City Sedimentation Basin | |

| SAMPLE TYPE | ANALYTES | DATA EVALUATION METHOD | AGENCY NOTIFICATION AND RESPONSE ACTIVITIES |
|-------------------------------------|-------------------------|---|---|
| Stream Water Monitoring | COC | Evaluate Concentrations on a Case-by-Case Basis. | Note detections in semi-annual reports. Additional agency notification and response activities if significant detections are noted. |
| | Supplemental Parameters | Track Changes in Concentrations Using Time-Series Graphs. | |
| Spring Water Monitoring | Various | Data is Summarized in Table | Note detections in semi-annual reports. Additional agency notification and response activities if significant detections are noted. |
| Stream Diversion Monitoring (CDF&G) | Various | Data is Summarized in Table | Agency notification and response activities are performed under the facility's CDF&G Permit. |
| Storm Water (NPDES) | Various | Data is Summarized in Table | Agency notification and response activities are performed under the facility's NPDES Permit. |

TABLE 5-3

SUMMARY OF SURFACE WATER FIELD MONITORING ACTIVITIES
 FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006
 SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| FACILITY | DATE | ACTIVITY | MONITORING POINTS | FIELD PERSONNEL |
|------------------------|--------------------------------|------------------------------|-------------------------|---|
| CITY LANDFILL | Various from 1/1/06 to 6/30/06 | Stream Diversion Monitoring | CHRV-1 | BFI |
| CITY & COUNTY LANDFILL | 1/3/06 | NPDES Stormwater Inspection | Various | |
| | 2/27/06 | | | City Landfill Sedimentation Basin Outfall |
| | 3/21/06 | NPDES Stormwater Inspection | Various | BFI |
| | 4/4/06 | | | |
| | 5/22/06 | | | |
| | CITY LANDFILL | 6/16/06 | Spring Water Monitoring | ESR-1 |
| 6/26/06 | | Spring/Seep Water Monitoring | CITY SEEP | BBC |
| 7/1/06 | | Stream Water Monitoring | S-AR, S-B, S-C, & S-D | A-MEHR |

TABLE 5-4
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006
SUNSHINE CANYON CITY LANDFILL

| PARAMETER | UNIT | S-AR | S-B | S-C | S-D | ESR-1 |
|-----------------------|-----------|---------|---------|--------|--------|---------|
| | | 7/1/06 | 7/1/06 | 7/1/06 | 7/1/06 | 6/16/06 |
| Alkalinity, total | mg/L | 130 | 240 | -- | -- | 250 |
| Ammonia | mg/L | 0.43 | 0.053 B | -- | -- | 0.44 |
| COD | mg/L | 95 | 70 | -- | -- | 34 |
| Chloride | mg/L | 44 | 33 | -- | -- | 170 |
| Potassium | ug/L | 27,000 | 19,000 | -- | -- | 7,600 |
| TDS | mg/L | 4,600 | 3,800 | -- | -- | 4,900 |
| TOC | mg/L | 30 | 23 | -- | -- | 12 |
| Bicarbonate | mg/L | 130 | 240 | -- | -- | 250 |
| Boron | ug/L | 1,100 | 890 | -- | -- | 260 |
| Bromide | mg/L | 0.80 | 0.63 | -- | -- | < 0.27 |
| Calcium, Total | ug/L | 480,000 | 430,000 | -- | -- | 610,000 |
| Carbon Dioxide, Lab | mg/L | 3.0 B | 2.8 B | -- | -- | 70 |
| Fluoride | mg/L | 1.7 | 1.5 | -- | -- | 0.34 B |
| Iron, Total | ug/L | 3,600 | 480 | -- | -- | 5,900 |
| Magnesium, Total | ug/L | 350,000 | 280,000 | -- | -- | 420,000 |
| Manganese, Total | ug/L | 1,300 | 2,500 | -- | -- | 1,200 |
| Nitrate+Nitrite | mg/L | 0.39 | 2.0 | -- | -- | -- |
| Sodium, Total | ug/L | 300,000 | 240,000 | -- | -- | 130,000 |
| Sulfate | mg/L | 3,100 | 2,300 | -- | -- | 2,900 |
| Temperature, field | mg/L | 29.1 | -- | -- | -- | 25.0 |
| pH, field | std units | 7.46 | 7.39 | -- | -- | 6.76 |
| Specific Cond., field | umhos/cm | 2,830 | 4,060 | -- | -- | 28,600 |
| Turbidity, field | NTU | 113 | 273 | -- | -- | 354 |
| Antimony, total | ug/L | 0.20 B | < 0.12 | -- | -- | -- |
| Arsenic, total | ug/L | 4.5 B | 2.3 B | -- | -- | -- |

TABLE 5-4
SUMMARY OF ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006
SUNSHINE CANYON CITY LANDFILL

| PARAMETER | UNIT | S-AR | S-B | S-C | S-D | ESR-1 |
|-----------------|------|-----------------|-----------------|--------|--------|---------|
| | | 7/1/06 | 7/1/06 | 7/1/06 | 7/1/06 | 6/16/06 |
| Barium, total | ug/L | 22 | 8.3 | -- | -- | -- |
| Cadmium, total | ug/L | 0.14 B | 0.40 B | -- | -- | -- |
| Chromium, total | ug/L | 3.4 B | 3.3 B | -- | -- | -- |
| Cobalt, total | ug/L | 5.0 | 11 | -- | -- | -- |
| Copper, total | ug/L | 9.9 | 7.2 | -- | -- | -- |
| Lead, total | ug/L | 0.36 B | 0.32 B | -- | -- | -- |
| Nickel, total | ug/L | 47 | 84 | -- | -- | -- |
| Selenium, total | ug/L | 2.8 B | 2.9 B | -- | -- | -- |
| Thallium, total | ug/L | 0.11 B | 0.069 B | -- | -- | -- |
| Tin, total | ug/L | < 0.32 | 0.45 B | -- | -- | -- |
| Vanadium, total | ug/L | 4.3 B | 2.2 B | -- | -- | -- |
| Zinc, total | ug/L | -- | 29 | -- | -- | -- |
| Acetone | ug/L | 14 | 5.8 J | -- | -- | 2.7 J |
| Other VOCs | ug/L | ND | ND | -- | -- | ND |
| 1,4-Dioxane | ug/L | 0.36 J / 0.41 J | 0.50 J / 0.30 J | -- | -- | < 0.090 |

Notes:: (1) Surface water flow was not present at S-C & S-D during the second quarter 2006 monitoring event.

J = trace concentration; nd = not detected; na = not analyzed.

TABLE 5-5
SUMMARY OF ANALYTICAL RESULTS FOR
NPDES STORM WATER SAMPLES
SUNSHINE CANYON LANDFILL
First Semi-Annual Monitoring Period of 2006

| ANALYTE | UNIT | STORM WATER SAMPLE |
|---------------------------|----------|--------------------|
| | | 2/27/06 |
| Iron | mg/L | 6.41 |
| pH, lab | pH units | 7.24 |
| Specific Conductance, lab | umhos/cm | 2,300 |
| Total Organic Carbon | mg/L | 30 |
| Oil and Grease | mg/L | 2.0 |
| Total Suspended Solids | mg/L | 69 |

* The samples were collected from the center outfall at the new sedimentation basin spill way.

TABLE 5-6
FIELD & LABORATORY RESULTS FOR
STREAM DIVERSION SAMPLES
SUNSHINE CANYON CITY SIDE LANDFILL
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| Sample I.D. | Date | TSS (mg/L) | pH (su) | Conductivity (umhos/cm) | Turbidity (ntu) | Temp. (deg_c) | D.O. (mg/l) |
|-------------|------------------|---|---------|-------------------------|-----------------|---------------|-------------|
| CHRV-1 | 1/2/06 - 1/6/06 | - No sampling due to heavy flow in stormwater channel - | | | | | |
| CHRV-1 | 1/9/06 | 39 | 6.83 | 3,110 | 99 | 15.9 | 19.99 |
| CHRV-1 | 1/10/06 | 26 | 6.97 | 3,830 | 24 | 16.1 | 19.99 |
| CHRV-1 | 1/11/06 | 24 | 6.88 | 3,640 | 66 | 16.2 | 17.99 |
| CHRV-1 | 1/12/06 | 13 | 7.01 | 3,930 | 112 | 16.2 | 19.99 |
| CHRV-1 | 1/13/06 | 12 | 6.76 | 3,760 | -10 | 16.5 | 5.76 |
| CHRV-1 | 1/16/06 | 41 | 6.14 | 3,660 | 24 | 15.9 | 5.79 |
| CHRV-1 | 1/17/06 | 41 | 6.32 | 3,670 | -10 | 14.5 | 4.99 |
| CHRV-1 | 1/18/06 | 33 | 6.28 | 3,650 | -10 | 15.2 | 5.36 |
| CHRV-1 | 1/19/06 | 23 | 6.2 | 3,580 | -10 | 14.1 | 4.87 |
| CHRV-1 | 1/20/06 | 10 | 6.36 | 3,620 | -10 | 14.1 | 4.99 |
| CHRV-1 | 1/23/06 | 37 | 6.37 | 3,650 | 115 | 15.2 | 4.87 |
| CHRV-1 | 1/24/06 | 36 | 5.95 | 3,610 | 147 | 15.8 | 9.17 |
| CHRV-1 | 1/25/06 | 38 | 6.11 | 3,610 | 133 | 15.6 | 5.99 |
| CHRV-1 | 1/26/06 | 40 | 7.09 | 3,660 | 195 | 16.7 | 11.46 |
| CHRV-1 | 1/27/06 | 18 | 7.44 | 3,930 | 199 | 11 | 19.99 |
| CHRV-1 | 1/30/06 | 36 | 7.31 | 3,750 | 199 | 15.8 | 19.99 |
| CHRV-1 | 1/31/06 | 44 | 7.44 | 3,570 | 196 | 176 | 13.62 |
| CHRV-1 | 2/1/06 | 30 | 7.41 | 3,610 | 195 | 16.9 | 14.25 |
| CHRV-1 | 2/2/06 | 28 | 7.43 | 3,930 | 201 | -10 | 10.63 |
| CHRV-1 | 2/3/06 | 11 | 7.38 | 17,700 | 198 | -10 | 19.99 |
| CHRV-1 | 2/6/06 | 40 | 7.39 | 16,800 | 200 | 16.6 | 19.99 |
| CHRV-1 | 2/7/06 | 38 | 6.3 | 18,400 | 772 | 16.9 | 10.09 |
| CHRV-1 | 2/8/06 | 29 | 6.89 | 17,600 | 442 | 16.9 | 19.99 |
| CHRV-1 | 2/9/06 | 29 | 5.95 | 3,870 | 188 | 20.5 | 9.75 |
| CHRV-1 | 2/10/06 | 13 | 5.81 | 3,780 | 95 | 17.1 | 10.84 |
| CHRV-1 | 2/13/06 | 42 | 6.31 | 19,100 | 95 | -10 | 19.99 |
| CHRV-1 | 2/14/06 | 46 | 6.25 | 17,200 | 105 | -10 | 19.99 |
| CHRV-1 | 2/15/06 | 51 | 6.24 | 18,300 | 182 | 16.1 | 8.44 |
| CHRV-1 | 2/16/06 | 48 | 6.81 | 3,770 | 97 | 15.5 | 8.86 |
| CHRV-1 | 2/17/06 | 45 | 6.89 | 18,400 | 96 | -10 | 19.99 |
| CHRV-1 | 2/20/06 | 53 | 7.04 | 19,600 | 127 | -10 | 19.99 |
| CHRV-1 | 2/21/06 | 50 | 7.23 | 3,780 | 92 | 19 | 11.77 |
| CHRV-1 | 2/22/06 | 44 | 7.11 | 3,840 | 128 | 17 | 14.76 |
| CHRV-1 | 2/23/06 | 44 | 6.88 | 3,720 | 105 | 24.1 | 12.44 |
| CHRV-1 | 2/24/06 | 18 | 6.7 | 19,400 | 93 | -10 | 19.99 |
| CHRV-1 | 2/7/06 - 3/12/06 | No Monitoring Due to Stormwater Flow | | | | | |
| CHRV-1 | 3/14/06 | 52 | 6.26 | 3,810 | 157 | 18.7 | 15.81 |
| CHRV-1 | 3/15/06 | 42 | 7.94 | 17,300 | 106 | 17.6 | 19.99 |
| CHRV-1 | 3/16/06 | 45 | 7.16 | 6,620 | 76 | 18.2 | 19.99 |
| CHRV-1 | 3/17/06 | 40 | 7.48 | 18,100 | 95 | -10 | 19.99 |
| CHRV-1 | 3/20/06 | 47 | 6.89 | 3,710 | 93 | -10 | 14.07 |

TABLE 5-6
FIELD & LABORATORY RESULTS FOR
STREAM DIVERSION SAMPLES
SUNSHINE CANYON CITY SIDE LANDFILL
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| Sample I.D. | Date | TSS (mg/L) | pH (su) | Conductivity (umhos/cm) | Turbidity (ntu) | Temp. (deg_c) | D.O. (mg/l) | |
|-------------|-------------------|--------------------------------------|---------|-------------------------|-----------------|---------------|-------------|--|
| CHRV-1 | 3/21/06 | 52 | 6.61 | 18,200 | 96 | -10 | 7.46 | |
| CHRV-1 | 3/22/06 | 45 | 6.77 | 3,650 | 99 | 17.7 | 7.88 | |
| CHRV-1 | 3/23/06 | 29 | 6.82 | 3,650 | 90 | 17.9 | 7.53 | |
| CHRV-1 | 3/24/06 | 13 | 6.71 | 3,730 | 98 | 17.5 | 7.62 | |
| CHRV-1 | 3/27/06 | 55 | 7 | 3,700 | 96 | 21 | 7.69 | |
| CHRV-1 | 3/28/06 - 3/30/06 | No Monitoring Due to Stormwater Flow | | | | | | |
| CHRV-1 | 3/31/06 | 31 | 7.37 | 3,740 | 149 | 17 | 8.34 | |
| CHRV-1 | 4/3/06 - 4/5/06 | No Monitoring Due to Stormwater Flow | | | | | | |
| CHRV-1 | 4/7/06 | 42.0 | 7.34 | 18,000 | 104 | -10 | 19.99 | |
| CHRV-1 | 4/10/06 | 39 | 7.33 | 17,700 | 97.00 | 18.1 | 8.66 | |
| CHRV-1 | 4/11/06 | 42 | 7.02 | 3,400 | 105.00 | 17.9 | 9.22 | |
| CHRV-1 | 4/12/06 | 42 | 7.36 | 3,770 | 155.00 | 18 | 9.08 | |
| CHRV-1 | 4/13/06 | 27 | 7.27 | 3,640 | 82.00 | 18.2 | 8.83 | |
| CHRV-1 | 4/14/06 | 14 | 7.13 | 3,890 | 128 | 18.4 | 9.11 | |
| CHRV-1 | 4/17/06 | 40 | 7.23 | 3,580 | 126 | 17.3 | 9.22 | |
| CHRV-1 | 4/18/06 | 35 | 7.18 | 3,220 | 98 | 17.9 | 8.68 | |
| CHRV-1 | 4/19/06 | 44 | 7.13 | 3,610 | 95 | 19 | 9.41 | |
| CHRV-1 | 4/20/06 | 21 | 7.25 | 3,620 | 91 | 18.7 | 9.33 | |
| CHRV-1 | 4/21/06 | 18 | 7.47 | 3,920 | 97 | 18.4 | 9.74 | |
| CHRV-1 | 4/24/06 | 42 | 7.14 | 3590.00 | 156.00 | 19.4 | 11.33 | |
| CHRV-1 | 4/25/06 | 31 | 7.08 | 4,140 | 122 | 18.9 | 10.98 | |
| CHRV-1 | 4/26/06 | 34.0 | 7.26 | 19,300 | 103 | 18.7 | 10.27 | |
| CHRV-1 | 4/27/06 | 22 | 7.11 | 17,800 | 99 | 18.9 | 10.33 | |
| CHRV-1 | 4/28/06 | 18 | 7.53 | 18,600 | 91 | -10 | 19.99 | |
| CHRV-1 | 5/1/06 | 47 | 6.93 | 18,800 | 102 | -10 | 19.99 | |
| CHRV-1 | 5/2/06 | 45 | 6.74 | 5,040 | 127 | 17.3 | 15.57 | |
| CHRV-1 | 5/3/06 | 29 | 6.78 | 18,800 | 102 | 19.9 | -10 | |
| CHRV-1 | 5/4/06 | 16 | 6.86 | 18,800 | 116 | 18.74 | -10 | |
| CHRV-1 | 5/5/06 | 22 | 7.06 | 3,680 | 125 | -10 | 19.2 | |
| CHRV-1 | 5/8/06 | 46 | 7.15 | 3,720 | 365 | -10 | 15.39 | |
| CHRV-1 | 5/9/06 | 46 | 7.32 | 4,050 | 229 | 22.4 | 11.06 | |
| CHRV-1 | 5/10/06 | 37 | 7.19 | 3,760 | 101 | 21 | 9.43 | |
| CHRV-1 | 5/11/06 | 20 | 7.28 | 4,010 | 98 | 23.6 | 9.22 | |
| CHRV-1 | 5/12/06 | 21 | 7.37 | 19,000 | 99 | 19.9 | -10 | |
| CHRV-1 | 5/15/06 | 7.8 | 6.57 | 3,980 | -10 | 21.2 | 10.2 | |
| CHRV-1 | 5/16/06 | 37 | 7.03 | 3,670 | 56 | 20.7 | 9.62 | |
| CHRV-1 | 5/17/06 | 30 | 6.83 | 4,210 | -10 | 20.2 | 9.61 | |
| CHRV-1 | 5/18/06 | 8 | 7.13 | 3,850 | -10 | 21.4 | 10.11 | |
| CHRV-1 | 5/19/06 | 23 | 7.31 | 3,780 | 114 | 19.9 | 22.2 | |
| CHRV-1 | 5/22/06 | No Monitoring Due to Stormwater Flow | | | | | | |
| CHRV-1 | 5/23/06 | 15 | 7.1 | 3,770 | 187 | 21.6 | 10.58 | |
| CHRV-1 | 5/24/06 | 51 | 7.23 | 3,620 | 106 | 22.1 | 9.72 | |

TABLE 5-6
 FIELD & LABORATORY RESULTS FOR
 STREAM DIVERSION SAMPLES
 SUNSHINE CANYON CITY SIDE LANDFILL
 FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| Sample I.D. | Date | TSS (mg/L) | pH (su) | Conductivity (umhos/cm) | Turbidity (ntu) | Temp. (deg_c) | D.O. (mg/l) |
|-------------|---------|--|---------|----------------------------|--------------------|------------------|----------------|
| CHRV-1 | 5/25/06 | 34 | 7.61 | 3,970 | 117 | 26.9 | 10.21 |
| CHRV-1 | 5/26/06 | 43 | 7.44 | 3,860 | 121 | 24.7 | 10.46 |
| CHRV-1 | 5/29/06 | Memorial Day Holiday - No Sample Collected | | | | | |
| CHRV-1 | 5/30/06 | 46 | 7.49 | 3,740 | 97 | 19.4 | 9.4 |
| CHRV-1 | 5/31/06 | 31 | 7.29 | 3,860 | 103 | 20.6 | 9.11 |
| CHRV-1 | 6/1/06 | 23 | 7.37 | 3,620 | 86 | 22.1 | 8.76 |
| CHRV-1 | 6/2/06 | 26 | 7.22 | 20,500 | 101 | -10 | 19.99 |
| CHRV-1 | 6/5/06 | 47 | 6.25 | 22,500 | 215 | -10 | 19.99 |
| CHRV-1 | 6/6/06 | 44 | 6.89 | 19,900 | 125 | 21.6 | 19.99 |
| CHRV-1 | 6/7/06 | 34 | 6.46 | 21,800 | 186 | 22.1 | 19.99 |
| CHRV-1 | 6/8/06 | 24 | 6.28 | 22 | 192 | 22.3 | 19.99 |
| CHRV-1 | 6/9/06 | 30 | 6.53 | 20,500 | 206 | -10 | 19.99 |
| CHRV-1 | 6/12/06 | 43 | 6.67 | 3,780 | 141 | 24 | 8.43 |
| CHRV-1 | 6/13/06 | 44 | 6.60 | 4,190 | 348 | 25 | 8.88 |
| CHRV-1 | 6/14/06 | 33 | 6.72 | 3,860 | 201 | 22 | 8.26 |
| CHRV-1 | 6/15/06 | 18 | 6.67 | 3,790 | 156 | 24 | 8.39 |
| CHRV-1 | 6/16/06 | 21 | 6.69 | 22,500 | 133 | -10 | 19.99 |
| CHRV-1 | 6/19/06 | 50 | 6.55 | 4,870 | 105 | 23.5 | 10.80 |
| CHRV-1 | 6/20/06 | 40 | 7.04 | 5,110 | 126 | 23.1 | 10.16 |
| CHRV-1 | 6/21/06 | 37 | 6.89 | 4,330 | 111 | 23.8 | 9.99 |
| CHRV-1 | 6/22/06 | 27 | 6.67 | 4,720 | 97 | 23.5 | 10.52 |
| CHRV-1 | 6/23/06 | 25 | 6.60 | 21,300 | 232 | -10 | 19.99 |
| CHRV-1 | 6/26/06 | 47 | 6.30 | 3,890 | 216 | 24 | 9.74 |
| CHRV-1 | 6/27/06 | 36 | 6.77 | 3,620 | 186 | 24 | 9.99 |
| CHRV-1 | 6/28/06 | 36 | 6.24 | 3,520 | 191 | 24 | 8.77 |
| CHRV-1 | 6/29/06 | 29 | 6.48 | 4,270 | 212 | 25 | 9.99 |
| CHRV-1 | 6/30/06 | 25 | 6.23 | 3,610 | 171 | 24.4 | 9.68 |

Notes:

CHRV-1: Hydraulic Relief Valve east of City Sedimentation Basin

Settleable solids data is from Calscience laboratory reports; all data is based on field measurements using an Horiba U-10 Water Quality Meter and as presented in weekly reports to the Deptment of Fish and Game.

TABLE 7-1
 ONSITE WATER-USE VOLUMES⁽¹⁾
 SUNSHINE CANYON CITY AND COUNTY LANDFILLS
 FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| MONTH | COUNTY LANDFILL (GALLONS) | | | CITY LANDFILL (GALLONS) | | |
|---------------|--------------------------------|-------------------------------|-------------------|--------------------------------|----------------------------------|------------------|
| | Purchased Water ⁽²⁾ | Subdrain Water ⁽³⁾ | County Totals | Purchased Water ⁽²⁾ | Extraction Trench ⁽³⁾ | City Totals |
| January | 577,456 | 1,615,620 | 2,193,076 | 577,456 | 613,234 | 1,190,690 |
| February | 667,964 | 1,394,089 | 2,062,053 | 667,964 | 565,465 | 1,233,429 |
| March | 187,374 | 1,598,190 | 1,785,564 | 187,374 | 591,074 | 778,448 |
| April | 246,840 | 1,848,674 | 2,095,514 | 246,840 | 578,053 | 824,893 |
| May | 577,082 | 1,829,984 | 2,407,066 | 577,082 | 703,671 | 1,280,753 |
| June | 1,674,772 | 1,554,239 | 3,229,011 | 1,674,772 | 623,398 | 2,298,170 |
| TOTALS | 3,931,488 | 9,840,796 | 13,772,284 | 3,931,488 | 3,674,895 | 7,606,383 |

Notes:

- (1) The waters shown were used primarily for onsite for dust control and irrigation.
- (2) Potable water values for each facility are based on an estimated one-half of the total potable water purchased from the City of Los Angeles Department of Water and Power. Monthly values are estimated from invoices and typically cover monthly periods from the 23rd day of the month to the 22nd day of the following month.
- (3) Includes only that portion of the collected liquids which are not managed through the City of Los Angeles sewer connection.

TABLE 7-2
SUMMARY OF ANALYTICAL RESULTS FOR WATER USE SAMPLES⁽¹⁾
SUNSHINE CANYON COUNTY LANDFILL

| ANALYTE | UNITS | MCL ^(a) | LIMIT ⁽¹⁾ | COUNTY WATER-USE SAMPLES | | |
|-----------------------------------|-----------|--------------------|----------------------|--------------------------|---------|---------------------|
| | | | | 1/24/06 | 3/14/06 | 6/27/06 |
| Oil & Grease | mg/L | -- | 15 | < 0.77 | -- | -- |
| COD | mg/L | -- | 300 | 66 | -- | 59 ⁽⁶⁾ |
| pH | std units | -- | 6.0-9.0 | 6.9 | -- | 6.42 ⁽⁶⁾ |
| TOTAL SVOCs ⁽²⁾ | ug/L | -- | 100 | all ND | -- | nd |
| Nitrate+Nitrite | mg/L | 45 | 45 | 0.32 | -- | 0.041 B |
| TOTAL HEAVY METALS ⁽³⁾ | ug/L | -- | 1,500 | 322 | -- | -- |
| Aluminum | ug/L | 1,000 | -- | -- | -- | 30 B |
| Antimony | ug/L | 6 | -- | < 2.09 | -- | -- |
| Arsenic | ug/L | 50 | -- | < 3.08 | -- | -- |
| Barium | ug/L | 1,000 | -- | 17.4 | -- | -- |
| Beryllium | ug/L | 4 | -- | < 0.176 | -- | -- |
| Cadmium | ug/L | 5 | -- | < 0.350 | -- | -- |
| Chromium | ug/L | 50 | -- | < 0.350 | -- | -- |
| Cobalt | ug/L | -- | -- | 28.6 | -- | -- |
| Copper | ug/L | 1,300 | -- | 2.21 J | -- | -- |
| Lead | ug/L | 15 | -- | 15.4 | 1.8 | -- |
| Mercury | ug/L | 2 | -- | < 0.0672 | -- | -- |
| Molybdenum | ug/L | -- | -- | 11.1 | -- | -- |
| Nickel | ug/L | 100 | -- | 77.2 | -- | -- |
| Selenium | ug/L | 50 | -- | 26.7 | -- | -- |
| Silver | ug/L | 100 | -- | < 0.400 | -- | -- |
| Thallium | ug/L | 2 | -- | < 2.33 | -- | -- |
| Tin | ug/L | -- | -- | -- | -- | -- |
| Vanadium | ug/L | -- | -- | < 0.314 | -- | -- |
| Zinc | ug/L | 5,000 | -- | 12.4 | -- | -- |

TABLE 7-2 (Continued)
SUMMARY OF ANALYTICAL RESULTS FOR WATER USE SAMPLES⁽¹⁾
SUNSHINE CANYON COUNTY LANDFILL

| ANALYTE | UNITS | MCL ^(a) | LIMIT ⁽¹⁾ | COUNTY WATER-USE SAMPLES | | |
|-----------------------------------|-------|--------------------|----------------------|--------------------------|---------|---------|
| | | | | 1/24/06 | 3/14/06 | 6/27/06 |
| PURGEABLE ORGANICS ⁽⁴⁾ | ug/L | -- | 45 | 2.84 | -- | 9.39 |
| Acetone | ug/L | -- | 9 ⁽⁵⁾ | < 3.1 | -- | < 1.9 |
| Benzene | ug/L | 1 | 9 ⁽⁵⁾ | 0.25 | -- | 1.1 |
| Carbon Disulfide | ug/L | -- | 9 ⁽⁵⁾ | < 0.52 | -- | < 0.45 |
| DCDFM | ug/L | -- | 9 ⁽⁵⁾ | < 0.13 | -- | < 0.31 |
| 1,4-DCB | ug/L | 5 | 9 ⁽⁵⁾ | 0.21 J | -- | 1.2 |
| 1,1-DCA | ug/L | 5 | 9 ⁽⁵⁾ | < 0.26 | -- | 0.60 J |
| cis-1,2-DCE | ug/L | 6 | 9 ⁽⁵⁾ | 1.3 | -- | 2.8 |
| trans-1,2-DCE | ug/L | 10 | 9 ⁽⁵⁾ | < 0.15 | -- | < 0.15 |
| Ethylbenzene | ug/L | 300 | 9 ⁽⁵⁾ | < 0.087 | -- | < 0.16 |
| Methylene Chloride | ug/L | 5 | 9 ⁽⁵⁾ | < 1.3 | -- | < 0.32 |
| PCE | ug/L | 5 | 9 ⁽⁵⁾ | < 0.15 | -- | < 0.20 |
| TCE | ug/L | 5 | 9 ⁽⁵⁾ | < 0.15 | -- | 0.63 J |
| Vinyl Chloride | ug/L | 0.5 | 9 ⁽⁵⁾ | 0.20 J | -- | 0.71 |
| Total Xylenes | ug/L | 1,750 | 9 ⁽⁵⁾ | < 0.19 | -- | 0.45 J |
| Styrene | ug/L | -- | 9 ⁽⁵⁾ | -- | -- | 0.40 J |
| MtBE | ug/L | 13 | 9 ⁽⁵⁾ | 0.88 | -- | 1.5 J |
| Other VOCs | ug/L | various | various | ND | -- | ND |

Notes:

--= Not analyzed; J = Trace concentration;

(a) Per Provision E.8 of Order 91-091 water used on site may not exceed the MCLs for drinking water in CCR Title 22.

(1) Provision E.7 of Order 91-091 specifies numerical limits for the quality of water used on site for dust suppression and irrigation.

(2) This is the combined concentration of detected priority pollutants using EPA Method 8270C.

(3) This is the combined sum of the detected concentrations of following metals: arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc.

(4) This is the combined concentration of detected VOC using EPA Method 8260B.

(5) Order 91-091 specifies that none of the individual purgeable organic compounds shall exceed 20% of the total limit.

(6) These were measured in the influent to the LTP.

TABLE 7-3
SUMMARY OF ANALYTICAL RESULTS FOR WATER-USE SAMPLES
SUNSHINE CANYON CITY LANDFILL

| ANALYTE | UNITS | LIMIT ⁽¹⁾ | CITY WATER USE SAMPLES | |
|------------------------|-----------|----------------------|------------------------|---------|
| | | | 3/28/06 | 7/1/06 |
| PH, Field | std units | 6.0-9.0 | 7.0 | 6.91 |
| Nitrate+Nitrite | mg/L | 45(a) | < 0.019 | 0.022 B |
| Aluminum | ug/L | 1,000 | 21 | 21 B |
| Antimony | ug/L | 6(a) | 0.29 J | 0.62 B |
| Arsenic | ug/L | 50(a) | 23 | 16 |
| Barium | ug/L | 1,000(a) | 50 J | 55 |
| Chromium | ug/L | 50(a) | 3.7 J | 4.4 |
| Cobalt | ug/L | -- | 13 | 15 |
| Copper | ug/L | 1,300(a) | 11 J | 3.8 B |
| Lead | ug/L | 15(a) | 0.13 | < 0.20 |
| Nickel | ug/L | 100(a) | 34 | 34 |
| Selenium | ug/L | 50(a) | 2.1 | < 2.0 |
| Silver | ug/L | 100(a) | 0.030 | < 0.040 |
| Vanadium | ug/L | -- | 5.9 J | 4.7 B |
| Zinc | ug/L | 500(a) | 21 J | 9.5 B |
| Tin | ug/L | -- | 0.41 J | < 0.32 |
| Acetone | ug/L | -- | 2.6 J | 11 |
| 1,1-Dichloroethane | ug/L | 5(a) | 0.55 J | < 0.16 |
| cis-1,2-Dichloroethene | ug/L | 6(a) | 1.2 | < 0.15 |
| MtBE | ug/L | 13(a) | 0.92 J | < 0.25 |
| Other Appendix I VOC | ug/L | various | nd | ND |

Notes:

-- = Not analyzed; J = Trace concentration; B = Considered a laboratory contaminant, as compound was also detected in the associated method

(a) California Maximum contaminant level (MCL) for drinking water (Title 22 California Code of Regulations)

(1) Limits are based on requirements listed in Provisions J.10 and J.11 in MRP CI-2043.

(2) The dust control samples are collected from a port on the piping leading from the City Treatment Skid; these three results were obtained from the influent to the City Treatment Skid..

TABLE 8-1
 REQUIREMENTS FOR LIQUID GENERATION & MONITORING
 SUNSHINE CANYON CITY AND COUNTY LANDFILLS

| FACILITY | MONITORING POINT | DESCRIPTION | REQUIRED MONITORING | |
|-----------------|-------------------|--|---------------------|---|
| | | | VOLUME | QUALITY ⁽¹⁾ |
| CITY LANDFILL | TRENCH | Combined flow from extraction trench risers ET-1 & ET-2 and cutoff wall extraction wells EW-1 to EW-5 | Recorded Monthly | Liquid samples analyzed quarterly for indicator and supplementary parameters. |
| | CITY SEEP | Flow from collection systems that extract groundwater from pre-disposal canyons east of City Landfill Unit 1 | | |
| | CITY CONDENSATE | Condensate from City Landfill gas collection system | | None |
| | CA-L | Leachate From Cell A Leachate Sump | | Tested annually to updated site COC list. ⁽¹⁾ |
| | PURGE WATER | Purge water from City Landfill groundwater sampling. | | None ⁽²⁾ |
| COUNTY LANDFILL | LEACHATE | Leachate from County Landfill leachate collection system | | Tested annually to updated site COC list. |
| | COUNTY CONDENSATE | Condensate from County Landfill gas collection system | | None |
| | COUNTY SUBDRAINS | Collected flow from Subdrains A, B, C, and J. | | None ⁽³⁾ |
| | PURGE WATER | Purge water from County Landfill groundwater sampling. | | None ⁽²⁾ |

Notes: (1) This table address monitoring required pursuant to current site WDR and MRP. There maybe additional water quality testing requirements for Permit No. 464583 which are not addressed in this report.
 (2) Monitoring well purge waters are ultimately managed at the County Landfill leachate treatment plant.
 (3) Liquids from these subdrains are tested individually for VOCs on a monthly frequency.

TABLE 8-2
SUMMARY OF WATER SOURCES
SUNSHINE CANYON CITY AND COUNTY LANDFILLS
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| MONTH | VOLUME IN GALLONS | | | | | | | | | |
|---------------|--------------------------------------|----------------------------|-----------------|-------------------|------------------------|----------------|----------------|-----------------|---------------------------|--|
| | Total Purchased Water ⁽¹⁾ | County Subdrains A, B, & C | County Leachate | County Condensate | City Extraction Trench | City Seep | City Leachate | City Condensate | Ground-water Well Purging | |
| January | 1,154,912 | 1,952,486 | 134,445 | 44,411 | 613,234 | 48,285 | 40,057 | 22,296 | 500 | |
| February | 1,335,928 | 1,634,821 | 94,016 | 35,892 | 565,465 | 41,325 | 21,537 | 23,269 | 0 | |
| March | 374,748 | 1,847,211 | 151,206 | 54,052 | 591,074 | 48,001 | 156,248 | 35,289 | 461 | |
| April | 493,680 | 1,282,097 | 192,226 | 52,153 | 578,053 | 87,299 | 597,765 | 30,207 | 5 | |
| May | 1,154,164 | 2,073,502 | 117,257 | 48,654 | 703,671 | 93,436 | 57,447 | 25,212 | 10 | |
| June | 3,349,544 | 1,886,446 | 106,790 | 43,545 | 623,398 | 118,192 | 34,907 | 14,655 | 5 | |
| Totals | 7,862,976 | 10,676,563 | 795,940 | 278,707 | 3,674,895 | 436,538 | 907,961 | 150,928 | 981 | |

Notes:

(1) Total from LACDWP invoices for meters 01, 02, and 03.

TABLE 8-3
LIQUIDS MANAGED THROUGH THE CITY OF LOS ANGELES SEWER CONNECTION
SUNSHINE CANYON CITY AND COUNTY LANDFILLS
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| MONTH | City Seep Water & Leachate | City Condensate | Combined Flow from County LTP | Total Volume to City Sewer |
|---------------|----------------------------|-----------------|-------------------------------|----------------------------|
| January | 643,520 | 22,296 | 717,294 | 1,383,110 |
| February | 618,426 | 23,269 | 510,114 | 1,151,809 |
| March | 805,806 | 35,289 | 792,786 | 1,633,881 |
| April | 390,519 | 30,207 | 1,184,770 | 1,605,496 |
| May | 506,422 | 25,212 | 865,537 | 1,397,171 |
| June | 624,914 | 14,655 | 1,000,301 | 1,639,870 |
| TOTALS | 3,589,607 | 150,928 | 5,070,802 | 8,811,337 |

TABLE 8-4
SUMMARY OF ANALYTICAL RESULTS FOR EXTRACTED GROUNDWATER
SUNSHINE CANYON CITY LANDFILL

| PARAMETER | UNIT | EXTRACTION TRENCH ⁽¹⁾ | | SEEP WATER COLLECTION POINT | |
|---------------------------|------|----------------------------------|---------|-----------------------------|---------|
| | | 3/27/06 | 6/27/06 | 3/27/06 | 6/26/06 |
| Acetone | ug/L | 6.8 J | 27 | 3.0 J | < 1.9 |
| Benzene | ug/L | < 0.16 | < 0.16 | 0.26 J | 0.31 J |
| Carbon Disulfide | ug/L | < 0.45 | 0.61 J | < 0.45 | 0.21 J |
| Chlorobenzene | ug/L | 0.32 J | 0.19 J | 0.21 J | 0.21 J |
| 1,4-DCB | ug/L | 0.19 J | < 0.16 | 0.42 J | 0.21 J |
| 1,1-DCA | ug/L | 0.61 J | 0.49 J | 0.50 J | 0.46 J |
| 1,2-DCA | ug/L | < 0.13 | < 0.13 | 1.5 | 2.3 |
| cis-1,2-DCE | ug/L | 2.1 | 1.8 | 16 | 26 |
| trans-1,2-DCE | ug/L | < 0.15 | < 0.15 | 1.5 | 2.6 |
| 1,2-Dichloropropane | ug/L | < 0.13 | < 0.13 | 0.31 J | 0.35 J |
| Ethylbenzene | ug/L | < 0.16 | 0.16 J | < 0.16 | < 0.16 |
| Methylene Chloride | ug/L | < 0.32 | < 0.32 | < 0.32 | 0.41 J |
| MIBK | ug/L | < 0.49 | 2.5 J | < 0.49 | < 0.49 |
| MTBE | ug/L | 0.91 J | < 0.25 | 0.91 J | < 0.25 |
| PCE | ug/L | < 0.20 | < 0.20 | 1.7 | 3.0 |
| TCE | ug/L | < 0.16 | < 0.16 | 1.6 | 3.1 |
| Vinyl Chloride | ug/L | < 0.17 | < 0.17 | < 0.17 | 0.45 J |
| Total Xylenes | ug/L | < 0.19 | 1.1 J | < 0.19 | < 0.19 |
| Other VOCs ⁽²⁾ | ug/L | nd | nd | nd | nd |

Notes: (1) These samples are from the combined flow of the City extraction trench and Cutoff Wall Extraction Wells EW-1 through EW-5. (2) The samples were analyzed for the VOCs listed in Appendix I to 40CFR Part 258.

TABLE 8-4 (continued)
SUMMARY OF ANALYTICAL RESULTS FOR EXTRACTED GROUNDWATER
SUNSHINE CANYON CITY LANDFILL

| PARAMETER | UNIT | EXTRACTION TRENCH ⁽¹⁾ | | SEEP WATER COLLECTION POINT | |
|-------------------|-------------|----------------------------------|---------|-----------------------------|----------|
| | | 3/27/06 | 6/27/06 | 3/27/08 | 6/26/06 |
| Alkalinity, total | mg/L | 1,000 | 1,100 | 230 | 69 |
| Ammonia | mg/L | 7.3 | 7.2 | 6.2 | 0.91 |
| COD | mg/L | 270 | 300 | 85 | 430 |
| Chloride | mg/L | 430 | 420 | 330 | 450 |
| Potassium | ug/L | 36,000 | 38,000 | 16 | 13,000 B |
| TDS | mg/L | 4,100 | 4,300 | 4,100 | 4,100 |
| TOC | mg/L | 94 | 89 | 29 | 140 |
| Bicarbonate | mg/L | -- | 1,100 | -- | 69 |
| Boron | ug/L | -- | 1,800 | -- | 790 |
| Bromide | mg/L | -- | 6.6 | -- | 5.4 |
| Calcium | ug/L | -- | 480,000 | -- | 470,000 |
| Carbon Dioxide | mg/L | -- | 160 | -- | 190 |
| Fluoride | mg/L | -- | 2.1 | -- | 1.4 |
| Iron | ug/L | -- | 52,000 | -- | 310,000 |
| Magnesium | ug/L | -- | 260,000 | -- | 240,000 |
| Manganese | ug/L | -- | 4,500 | -- | 12,000 |
| Nitrate + Nitrite | mg/L | -- | < 0.019 | -- | 0.41 |
| Sodium | ug/L | -- | 450,000 | -- | 180,000 |
| Sulfate | mg/L | -- | 1,600 | -- | 2,200 |
| 1,4-Dioxane | ug/L | 52 | 46 | 52 | 66 |
| Temperature | deg Celcius | 18.1 | 20.7 | 18 | 29.13 |
| pH | std units | 6.8 | 6.91 | 6.7 | 5.66 |
| Sp.Cond. | umhos/cm | 1,521 | 2,715 | 14 | 4,973 |
| Turbidity | NTU | 13.7 | 69.7 | 942 | > 2000 |

Notes: (1) These samples are from the combined flow of the City extraction trench and Cutoff Wall Extraction Wells EW-1 through EW-5. (2) The sample was analyzed for the VOCs listed in Appendix 1 to 40CFR Part 258.

TABLE 8-4C
SUMMARY OF ANALYTICAL RESULTS FOR EXTRACTED GROUNDWATER
ADDITIONAL APPENDIX II PARAMETERS
SUNSHINE CANYON CITY & COUNTY LANDFILLS
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| ANALYTE | UNIT | EXTRACTION TRENCH ⁽¹⁾ | SEEP WATER COLLECTION POINT |
|-----------|------|----------------------------------|-----------------------------|
| | | 6/27/06 | 6/26/06 |
| Silver | ug/L | < 0.10 | < |
| Arsenic | ug/L | 19 B | 11 |
| Barium | ug/L | 45 | 53 |
| Beryllium | ug/L | < 0.75 | < |
| Cadmium | ug/L | < 0.20 | 0.061 B |
| Cobalt | ug/L | 12 | 12 |
| Chromium | ug/L | < 4.4 | 2.4 |
| Copper | ug/L | 2.9 B | 6.5 |
| Nickel | ug/L | 43 | 47 |
| Lead | ug/L | < 5.0 | 0.40 B |
| Antimony | ug/L | < 0.30 | 0.090 B |
| Selenium | ug/L | 8.9 B | 6.4 |
| Tin | ug/L | < 0.80 | < |
| Thallium | ug/L | < 0.050 | 0.062 B |
| Vanadium | ug/L | < 5.6 | 4.2 B |
| Zinc | ug/L | 24 B | 15 |
| Mercury | ug/L | < 0.027 | < |
| Cyanide | mg/L | 0.0058 B | < |
| Sulfide | mg/L | < 0.50 | < |

TABLE 10-1
WASTE DISPOSAL QUANTITIES AND VOLUMES
SUNSHINE CANYON CITY AND COUNTY LANDFILLS
FIRST SEMI-ANNUAL MONITORING PERIOD OF 2006

| MONTH | APPROXIMATE QUANTITY OF WASTE DISPOSED | | | |
|--------------|--|--|------------------|--|
| | COUNTY LANDFILL | | CITY LANDFILL | |
| | WEIGHT (tons) | VOLUME ⁽¹⁾ (cubic yards) | WEIGHT (tons) | VOLUME ⁽¹⁾ (cubic yards) |
| JANUARY | 77,274 | 100,456 | 96,102 | 124,932 |
| FEBRUARY | 58,110 | 75,542 | 106,470 | 138,411 |
| MARCH | 84,447 | 109,781 | 103,361 | 134,370 |
| APRIL | 88,488 | 115,035 | 85,569 | 111,239 |
| MAY | 91,845 | 119,399 | 123,381 | 160,395 |
| JUNE | 88,750 | 115,375 | 116,219 | 151,085 |
| TOTAL | 488,914 | 635,588 | 631,102 | 820,432 |

Note: ⁽¹⁾ Waste volumes were calculated using an assumed 1.3 cubic yards per ton of waste.