2012 OPERATIONS, MAINTENANCE & MONITORING ANNUAL REPORT

DEL AMO WASTE PITS
LOS ANGELES, CALIFORNIA

PREPARED FOR:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PREPARED ON BEHALF OF:

THE DEL AMO RESPONDENTS

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AO	Administrative Order
Annual Report	2012 OM&M Annual Report
ASTM	American Society of Testing and Materials
C_1	Carbon Vessel 1
Cap Gas System	Cap Gas Collection and Treatment System
CO_2	carbon dioxide
COC	constituents of concern
CPT	Cone Penetro Meter Test
kg	kilograms
lbs	pounds
LEL	lower explosive limit
mcl	maximum contaminant level
msl	mean sea level
ND	non-detect
O_2	oxygen
OM&M	Operations, Maintenance and Monitoring
OM&M Manual	Operations, Maintenance and Monitoring Manual
PID	photo ionization detector
PLC	programmable logic controller
PME	Performance Monitoring Event
ppm	parts per million
RAO	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SCAQMD	South Coast Air Quality Management District
scf	standard cubic feet
scfm	standard cubic feet per minute
SVE/IBT	Soil Vapor Extraction/Insitu Biodegradation Technology
SVOCs	semi-volatile organic compound
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
WT	water table
Waste Pits OU	Del Amo Waste Pits Operable Unit

1.0 INTRODUCTION

This 2012 Operations, Maintenance, and Monitoring (OM&M) Annual Report (Annual Report) has been prepared by C2 REM on behalf of the Del Amo Respondents to summarize the OM&M activities conducted at the Del Amo Waste Pits Operable Unit (Waste Pits OU) site located in Torrance, California, pursuant to requirements in the *Administrative Order (AO) for Remedial Action, Docket No. 99-08, Del Amo Waste Pits Operable Unit, Torrance, California,* United States Environmental Protection Agency (USEPA), 1999, and the *Operations, Maintenance and Monitoring Manual, Del Amo Waste Pits Operable Unit, Torrance, California,* (C2 REM, 2012a) (OM&M Manual).

This Annual Report provides a summation of the OM&M activities conducted from January through December 2012 at the Waste Pits OU during the 13th year of operation of the Phase I remedy (e.g., multi-layer cap, soil vapor monitoring probes) and the 6th year of operation of the Phase II remedy (i.e., Soil Vapor Extraction/In-Situ Biodegradation Technology System [SVE/IBT System]).

This Annual Report includes discussions on:

- OM&M activities for the Cap Gas Collection and Treatment System (Cap Gas System) and SVE/IBT System;
- Inspections (pursuant to both quarterly, post-seismic, and post-rain requirements) of the cover system, drainage systems, Cap Gas System, SVE/IBT System and general physical site characteristics,
- Summaries of maintenance and repairs; and,
- Performance Monitoring Event (PME) activities.

The remainder of this Annual Report is outlined in the following sections:

2.0 Site History
3.0 Systems Operation and Monitoring
4.0 Inspections
5.0 Routine Maintenance
6.0 Non-Routine Maintenance
7.0 Groundwater Monitoring
8.0 Waste Disposal
9.0 Conclusions and Recommendations
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2.0 SITE HISTORY

The Waste Pits OU includes Lots 36 and 37 of the Los Angeles County Assessor's Map of Tract 4671 and is bound by Vermont Avenue to the east and Normandie Avenue to the west (see Figure 1.0). The northern boundary of the property is a Los Angeles Department of Water and Power easement, and the southern boundary is Del Amo Boulevard. One major petroleum/petrochemical pipeline corridor is located within the property near the southern boundary of the Waste Pits OU.

The Waste Pits OU includes two adjoining parcels of land (Lots 36 and 37), which previously contained six small rectangular pits (2-series pits) and three large rectangular impoundments (1-series pits) (see Figure 2.0). Both the 1-series and the 2-series pits were used for the disposal of wastes and waste liquids during operation of a synthetic rubber manufacturing facility which operated until 1971. The 2-series pits were located on the western side of Lot 36 and the 1-series pits, 1-B and 1-C, were located on the eastern side of Lot 36. Immediately east of Lot 36 is Lot 37, which contains a former large, rectangular impoundment designated as Pit 1-A. Impacted soils from Pit 1-A were excavated in four phases from 1982 – 1984 to a depth of 6 feet at the east side of the pit and to a depth of 25 feet at the west side of the pit. This excavation process was completed under the direction of the California Department of Health Services.

As outlined in the *Remedial Design Work Plan, Del Amo Pits Operable Unit, Torrance, California*, Dames and Moore, 1998, the USEPA provided oversight for the construction and installation of the Phase I remedy including installation of the SVE wells (a component of the Phase II remedy). The Phase I remedy, which was performed on the 1-series and 2-series pits, consisted of a Resource Conservation and Recovery Act (RCRA)-equivalent multi-layer cap, soil vapor monitoring probes, a Cap Gas System, security fences, deed restrictions, and surface and subsurface drainage features. During 2006, the treatment technology for site vapor was selected, designed, and installed. The Phase II remedy, which is the SVE/IBT System, was placed into optimization testing and full-time operation on August 7, 2006.

3.0 SYSTEMS OPERATION AND MONITORING

3.1 CAP GAS SYSTEM OVERVIEW

The Cap Gas System utilizes a series of perforated pipes within the sand layer of the multi-layer cap to extract vapors that may accumulate beneath the cap. The extracted vapors are treated by two series of 55 gallon carbon vessels. C2 REM conducted Cap Gas System monitoring activities in 2012 pursuant to the requirements as approved by the USEPA and as presented in the report entitled *Cap Gas Collection and Treatment Baseline Monitoring and Long-term Monitoring Recommendations Report, Del Amo Waste Pits Operable Unit, Los Angeles County, California,* C2 REM 2000. These monitoring activities were conducted to assess the efficiency of the Cap Gas System in the collection and treatment of fugitive soil vapor emissions from the sand layer within the cap (see Figure 3.0).

The Cap Gas System operates for 4 hours a day (10:00 am - 2:00 pm), 5 days a week (Monday - Friday). The Cap Gas System is controlled via a programmable logic controller (PLC) unit with capabilities for remote start and stop. In an effort to assess the efficiency and performance of the carbon units of the Cap Gas System, biweekly monitoring was conducted with periods of weekly monitoring to better assess System performance from four sample locations: 1) system influent, 2) effluent of the lead carbon vessel, 3) effluent of the secondary carbon vessel, and 4) system effluent.

3.1.1 Cap Gas System Field Monitoring Results

A photo ionization detector (PID) (calibrated to 5 parts per million [ppm] benzene) was used to measure total volatile organic compound (VOC) concentrations at each of the four sample locations. As indicated in Table 1.0, influent sample concentrations ranging from 0 ppm to 43.6 ppm, and system effluent concentrations ranging from 0.0 ppm to 0.2 ppm (see Figure 4.0). The average VOC concentration at the influent in 2012 was 5.4 ppm. The field forms used to record results of the Cap Gas System monitoring events are presented in Appendix A.

As outlined in the OM&M Manual and the USEPA-approved carbon bed change-out protocol, when VOC concentrations at the effluent of the Cap Gas System are greater than 5 ppm and/or when the lead vessel efficiency (in relation to the system influent) falls within Zone 2 (for two consecutive monitoring events) or Zone 3, carbon shall be replaced to ensure the Cap Gas System is operating within compliance (see Figure 5.0). Based upon this protocol, the lead and/or secondary carbon canisters were changed out once during 2012 (i.e., based on February 23, 2012 sample data). Low influent concentrations in the Cap Gas System during most of 2012 equated to very little carbon usage and based upon the protocol, operational compliance was met.

3.1.2 Cap Gas System Laboratory Confirmation Sampling

The scope and frequency of the annual confirmation sampling event for the Cap Gas System were modified, with the approval of the USEPA (December 4, 2002), from an annual program to once every 5 years. In addition, South Coast Air Quality Management District (SCAQMD) Method 25.1 has been eliminated from the required list of analyses for collected Cap Gas System samples due to the lack of relevant information obtained from the method, as well as the redundancy of using both SCAQMD Method 25.1 and USEPA Method 8260B (the latter of which provides an adequately detailed analysis of site constituents of concern [COC] and other related compounds).

A confirmation sampling event of the Cap Gas System was last conducted on September 11, 2010 and concluded that the correlation between the PID data and laboratory data is 99.9%, therefore ensuring the effectiveness of field monitoring. The next confirmation sampling event will be conducted during the second quarter of 2015 (to coincide with the 3rd 5-year review) and thereafter in 2020.

3.2 SVE/IBT SYSTEM OVERVIEW

The SVE/IBT System was placed into optimization testing and full-time operation on August 7, 2006. SVE/IBT System monitoring activities were conducted pursuant to the requirements as approved by the USEPA and as presented in the report entitled *SVE/IBT Operations, Maintenance and Monitoring Manual*, C2 REM 2006. Additional information regarding the design and construction of the SVE/IBT System can be found in the following documents:

- *Remedial Design Work Plan Addendum,* C2 REM 2005
- *SVE/IBT Pre-Final Design Report Addendum,* C2 REM 2005
- *Process Hazard Analysis Report* ,Webb, Murray, & Associates 2005
- *SVE/IBT Operations, Maintenance, & Monitoring Manual,* C2 REM 2006
- *SVE/IBT Final Design Report,* C2 REM 2006
- *SVE/IBT Construction Quality Assurance Plan,* C2 REM 2006
- *SVE/IBT Remedial Action Workplan,* C2 REM 2006

The SVE/IBT System utilizes the existing extraction/monitoring well network to extract vapors at the outer edges of the Waste Pits OU and inject re-circulated vapors along with generated oxygen (O_2) to allow for enhanced vadose zone biodegradation in order to comply with the Record of Decision (ROD). The intent of the ROD cleanup goal is to prevent the migration of contaminants, primarily benzene, from the Waste Pits OU such that they do not contribute more than a 0.5% increase in contaminant concentration of the existing impacted groundwater underlying the Waste Pits OU.

The SVE/IBT System final design includes O_2/vapor injection at four SVE wells (3, 4, 8, and 9) and extraction at nine SVE wells (1, 2, 5, 6, 7, 10, 11, 12, and 20A) to treat a portion of the extracted vapors and to enhance the natural aerobic degradation observed within the vadose zone.

The SVE/IBT System normally operates 8 hours per day (8:00 am – 4:00 pm), 5 days per week (Monday – Friday). The SVE/IBT System is controlled via a PLC unit with capabilities for remote start and stop as well as alarm/emergency shutdown protocols. The results of both the pre-system and short-term operations are presented in the *Summary of SVE/IBT Pre-System Startup Operations Technical Memorandum,* C2 REM 2007 and the *Summary of SVE/IBT 3-Month Short-Term Operations Technical Memorandum,* C2 REM 2006.

On November 8, 2006, short-term operations ended and the SVE/IBT System has been in long-term OM&M since then. The results from the 6th year of long-term OM&M for the SVE/IBT System are presented in this Annual Report. Benzene is not the only constituent detected at the Waste Pits OU; however, it is detected at concentrations in significant excess of other COCs (e. g. monthly laboratory results for benzene at the inlet of the SVE/IBT System average 10,150 ppm versus the ethylbenzene average of 400 ppm during this period). Therefore, given that the current SVE/IBT System performance parameters

are chemical specific, benzene was selected for discussion purposes. A portion of the laboratory data collected from the SVE/IBT System is provided in Table 2.0.

Information related to the SVE/IBT System collected during this period includes field monitoring results (see Appendix A), field reports (see Appendix B), SVE/IBT System laboratory data (see Appendix C), and in-line sensor data (see Appendix D), which are discussed in detail in the following subsections.

3.2.1 SVE/IBT System OM&M Activities

The 6th year of the long-term OM&M activities began in 2012 and included bi-weekly field monitoring and monthly laboratory sampling of the SVE/IBT System.

In 2012 the SVE/IBT System normal operations were temporarily discontinued to perform the USEPA-approved PME activities which are laid out in the revised OM&M Manual (C2 REM, 2012a), and discussed further in Section 3.2.3. A timeline is provided below:

- Normal Operations
  - January 1 – February 12, 2012; and,
- PME Activities
  - February 13 – June 25, 2012 – SVE-only mode; and,
  - June 26 – December 31, 2012 – Stand-by mode (non-operation mode)

Additionally, full-scale field monitoring was conducted quarterly and its scope included taking readings from the Site's soil vapor monitoring locations (perimeter, vacuum performance, and cluster wells [see Figure 6.0]). Furthermore, perimeter wells were monitored monthly (wells A, B, C, D, and H) and quarterly (wells E, F, G, I, J, K, L) for VOCs, O_2, and CO_2 to ensure that soil vapors do not migrate beyond the cap boundaries.[1] The procedures for monitoring all wells include measuring well pressure (inches of water), purging the appropriate well volume and analyzing vapors from each well for VOCs, O_2, LEL, and CO_2 with a PID calibrated to benzene and a multi-gas instrument (i.e., RKI) (see Appendix A). These measurements are discussed in more detail in Sections 3.4 – 3.7.

3.2.2 SVE/IBT System Normal Operations

The SVE/IBT System was monitored at the following four stations (see Figure 7.0):

- Station 1 - Influent: (the combined flow of the nine extraction wells);
- Station 2 - Post Ambient Air: the diversion loop (to the granulated activated carbon beds) just after the ambient air intake;
- Station 3 - Carbon Vessel 1 (C_1): at the effluent of the primary carbon vessel; and,
- Station 4 - Effluent: the effluent stack.

[1] Pursuant to USEPA request (August 15, 2008), C2 REM began monitoring perimeter wells A, B, C, D, and H monthly starting in August 2008.

These four measurement points were monitored for VOCs, O_2, carbon dioxide (CO_2), and flow rate using hand-held monitoring equipment. Along with the field monitoring, samples were obtained at the four sample stations once a month and analyzed for VOCs using USEPA Method 8260B and for fixed gases (i.e., O_2, CO_2, nitrogen, carbon monoxide, and methane) using American Society of Testing and Materials (ASTM) Method 1946 (see Table 2.0 and Appendix C). Corresponding in-line measurements from the PLC unit were also recorded where applicable. The SVE/IBT System in-line sensors record the following parameters: O_2, flow rate, % lower explosive limit (LEL), temperature, relative humidity, and benzene (ppm). Figure 7.0 shows the location of each in-line sensor and its average reading during normal operations in 2012.

Based on laboratory results during normal operations, the benzene concentrations at the SVE/IBT System influent ranged from 9,300 ppm to 11,000 ppm with an average of 10,150 ppm. The benzene concentrations detected at the post ambient air location ranged from 900 ppm to 2,100 ppm. The benzene concentrations at the outlet of C_1 ranged from non-detect (ND<1.6 ppm) to 950 ppm. The benzene concentrations at the effluent ranged from ND (<1.6 ppm) to 12 ppm (see Table 2.0). Benzene concentrations at Stations 1-4 demonstrated that the SVE/IBT System was effective in controlling LEL conditions and maintaining acceptable emission limits (i.e., less than 50 ppm) (see Figure 8.0). O_2 concentration at the influent ranged from 7.5% to 7.9% with an average of 7.7%. CO_2 concentration at the influent ranged from 19% to 20% with an average of 19.5%. The oxygen generator operated concurrently with the SVE/IBT System during normal operations in 2012.

During normal operations, the SVE/IBT System operated for 205.5 hours out of 256 possible hours (assuming 8 hours/day, Monday-Friday). The continuous operating time of the O_2 generator with the SVE/IBT System operation, coupled with a continuing inverse relationship between O_2 and CO_2 from 2009 to 2012, provide strong indications of a sustained microbial population removing benzene through biodegradation (see Figure 9.0). Downtime during this period is attributed to carbon change-outs, monitoring, and routine system maintenance (see Table 3.0).

Total estimated normal operation parameters are as follows:

- Injected re-circulated air volume - approximately 408,123 standard cubic feet (scf) at an average flow rate of 33.1standard cubic feet per minute (scfm);
- Generated O_2 gas injected - approximately 33,291 scf at an average flow rate of 2.7 scfm and 91% purity;
- Extracted air volume - approximately 490,734 scf at an average flow rate of 39.8 scfm; and,
- Treated air volume - approximately 82,611 scfm at an average flow rate of 6.7 scfm.

The SVE/IBT System operated in a manner consistent with design parameters and has effectively removed approximately 600 kilograms (kg) (1,320 pounds [lbs]) of benzene through degradation (523 kg [1,151 lbs]) and adsorption (77 kg [169 lbs]). Table 4.0

provides the parameters and calculations used to estimate the total mass of benzene removed through degradation and adsorption. Based on in-line sensor treatment rate data, the SVE/IBT System is adsorbing approximately 3.0 kg/day (6.6 lbs/day) of benzene through the carbon beds (based upon the operational hours stated above), and is degrading approximately 12.2 kg/day (26.8 lbs/day) of benzene *insitu* as measured by O_2 utilization (based upon continual [24 hrs/day] degradation).

3.2.3 PME Activities

The PME activities that took place allowed for a more representative evaluation of the concentrations of VOCs in each vertical soil profile. Results of the PME activities are summarized in the Draft PME Report of Findings submitted to the USEPA on December 10, 2012 (C2 REM, 2012b).

3.2.3.1 SVE-Only Mode

On February 13, 2012, the SVE/ IBT System was converted and operated in an SVE-only mode (Monday -Friday, 12 hours a day) to purge the vadose zone of 10 pore volumes before performing rebound monitoring as directed in the PME scope of work. Figure 10.0 displays the average readings at each in-line sensor location during the SVE-only mode purge period.

During SVE-only mode, laboratory samples were obtained at the influent seven times and analyzed for VOCs using USEPA Method 8260B and for fixed gases (i.e., O_2, CO_2, nitrogen, carbon monoxide, and methane) using ASTM Method 1946 (see Table 2.0 and Appendix C). Based on laboratory results, the benzene concentrations at the SVE-only System influent ranged from 4,900 ppm to 30,000 ppm with an average of 13,990 ppm. O_2 concentration at the influent ranged from 6.5% to 14.5% with an average of 8.4%. CO_2 concentration at the influent ranged from 9.37% to 21% with an average of 18%. The oxygen generator was not operated during the SVE-only mode purge period.

Total estimated operating parameters during the SVE-only mode purge period are as follows:

- There was no injected re-circulated air volume;
- There was no generated O_2 gas injected;
- Extracted/Treated air volume - approximately 2,100,336 scf at an average flow rate of 37.6 scfm;

The SVE-only mode removed approximately 2,697 kg (5,933 lbs) through adsorption. Table 4.0 provides the parameters and calculations used to estimate the total mass of benzene removed through adsorption. Based on in-line sensor treatment rate data, the SVE-only System adsorbed approximately 34.8 kg/day (76.6 lbs/day) of benzene through the carbon beds (based upon the operational hours). The calculated benzene degradation presented in Table 4.0 is dependent on the oxygen content of the injection stream as well as the residence time; therefore, it is unknown how much degradation occurred during

SVE-only mode as there was no oxygen injection or recirculation of the extracted vapor. However, it is appropriate to assume that some degradation did occur, further reducing the benzene quantity in the subsurface. Also, the current oxygen utilization rate is not applicable due to depleting subsurface oxygen concentrations and the decreasing microbial population inherent during the extraction only process.

3.2.3.2 Stand-By Mode

On June 26, 2012, the System was shut-down to begin the PME rebound monitoring and the System did not operate through the rest of 2012. The SVE/IBT System remained in a stand-by mode (non-operation) in the possible event that elevated benzene levels from specified monitoring wells triggered a System restart. Based on the SVE/IBT System being non-operable during this period, no adsorption or degradation was calculated; however, it is justified to assume that some degradation did occur during this period.

3.3 SVE/IBT SYSTEM OPERATION SUMMARY

Fresh and spent carbon weights are recorded before and after each SVE/IBT System carbon change-out. Based on these weight comparisons, approximately 5,163 kg (11,299 lbs) of site constituents (primarily benzene) and SVE/IBT System condensate were absorbed to both the primary and secondary vessels. There were fourteen carbon change-outs conducted during 2012 resulting in an average of 369 kg (812 lbs) of site constituents (primarily benzene) and SVE/IBT System condensate adsorbed per carbon change-out (see Table 5.0)[2]. All carbon was transported offsite to a certified carbon facility for reactivation (see Appendix E).

Since the startup of the SVE/IBT System on August 6, 2006, a total of approximately 50,420 kg (110,924 lbs) of benzene have been removed from the Waste Pits OU (approximately 37,305 kg [82,071 lbs] through degradation and approximately 13,116 kg [28,855 lbs] through adsorption to carbon) (see Figure 11.0).

3.4 CLUSTER WELL MONITORING RESULTS

The primary function of the cluster wells is to assist in determining vertical soil vapor concentration profiles and evaluate the effectiveness of the SVE/IBT System.
The quarterly field data collected from the cluster wells during this operation period is presented in Table 6.0. O_2 concentrations ranged from 0% to 20.9% with an average of 15.7%. CO_2 concentrations ranged from 0% to 26.6% with an average of 4.3%. VOC concentrations ranged from 0 ppm to greater than 15,000 ppm (Note: PID range is 0-15,000 ppm).

[2] Note: Approximately 12 of the 14 carbon change-outs performed in 2012 were during the SVE-only mode due to all extracted flow being diverted to carbon.

3.5 VACUUM PERFORMANCE WELL MONITORING RESULTS

The field data collected from the vacuum performance wells during this operation period is presented in Table 7.0. O_2 concentrations ranged from 0.3% to 20.9% with an average of 12.4%. CO_2 concentrations ranged from 0% to 23.8% with an average of 6.1%. VOC concentrations ranged from 0 ppm to greater than 15,000 ppm (Note: PID range is 0-15,000 ppm).

The primary function of the vacuum performance wells is to measure the pressure response to extraction throughout the targeted zone of remediation (+10 ft. mean sea level (msl) layer). Additionally, the vacuum performance wells can be used to assess the radius of influence of the SVE/IBT System. Due to the PME activities, all pressure readings in 2012 were recorded as static condition and were not evaluated to measure the pressure response to extraction and radius of influence of the extraction wells.

3.6 SVE WELL MONITORING RESULTS

Field and laboratory data were not collected from the SVE wells during 2012 due to the nature of the PME activities that occurred throughout the calendar year.

3.7 PERIMETER WELL MONITORING RESULTS

The field data collected from the perimeter wells during this operational period is presented in Table 8.0. O_2 concentrations ranged from 2.0% to 20.9% with an average of 18.3%. CO_2 concentrations ranged from 0% to 12.6% with an average of 2.7%. VOC concentrations measured with a PID ranged from 0 ppm to 3.0 ppm. The average VOC concentration for the perimeter wells is 0.24 ppm.

The continued low concentrations of VOCs detected at the perimeter wells indicate the cover system is performing as designed, and the contaminated soil vapors are not migrating beyond the cap boundaries (see Figure 12.0).

4.0 INSPECTIONS

Quarterly inspections were conducted in accordance with the OM&M Manual (Section 4.0) on March 26, 2012; June 26, 2012; September 28, 2012; and December 4, 2012, for the cover system, the Cap Gas System, the SVE/IBT System, surface and subsurface water drainage systems, security fences, and access roads.

Additionally, all SVE well heads, not connected and connected to the SVE/IBT System, were inspected and monitored for leaks utilizing a PID calibrated to benzene. These inspections are conducted quarterly and will continue at this frequency throughout the SVE/IBT System's operations (see OM&M Manual, Section 6.2.1).

Post-rain inspection events were conducted on March 26, 2012 and April 16, 2012 to identify any matters of concern and/or areas in need of repair. Post-rain inspection events are conducted following periods of heavy rainfall, defined as 1 inch or greater within a 24-

hour period. The completed inspection forms used during quarterly and post-rain inspection events are presented in Appendix F.

4.1 SUMMARY OF COVER SYSTEM INSPECTION EVENTS

During the cover system inspection events, no unusual or significant settlement, erosion, sediment build-up, slope instability, or shifting were observed. A few areas exhibited some evidence of burrowing animals, seasonal vegetation stress, and some areas of ponding, which were tended to during routine site maintenance and/or through ongoing monitoring/observation. The temporary above-ground irrigation system, which was installed in July of 2007 to assist with maintaining the cover system vegetation, has performed well in preventing excessive vegetation die-back. The results of the cover system inspection events are presented in Table 9.0. In addition, the cover system is subject to monument elevation measurements to monitor and track historical ground movement and settlement. The most recent monument survey was conducted in March, 2010. The next survey event is scheduled for the 1st Quarter of 2015.

4.2 SUMMARY OF CAP GAS SYSTEM INSPECTIONS

Inspection of the Cap Gas System included observations of the above-ground components including: air intake and outlet collection headers, inlet and outlet valves, hoses and fittings, two 55-gallon carbon canisters, an extraction blower, sampling ports, and a moisture separator canister. The results of the Cap Gas System inspection events are presented in Table 10.0. Some rust was observed on a couple of the Cap Gas System components and the extraction blower is being closely monitored due to its operational age and increased operational noise; however, no significant repair/maintenance issues were observed with the Cap Gas System in 2012.

4.3 SUMMARY OF SURFACE AND SUBSURFACE DRAINAGE INSPECTIONS

The concrete-lined drainage swales, catch basins, and drainage culverts were visually inspected to identify the presence of cracks, soil slumping, sediment build-up, separation, and the accumulation of vegetative debris (see Tables 11.0 and 12.0). The results of the surface and subsurface drainage inspection events did not reveal any significant issues with cracking, soil slumping, sediment build-up, separation, or the accumulation of vegetation, and minor repairs were made during routine site maintenance.

4.4 SUMMARY OF SECURITY FENCE AND ACCESS ROAD INSPECTIONS

Visual inspections of the security fence and gates were performed to identify breaks, vandalism, settlement damage, loose tension, and corrosion (see Table 13.0). Approximately 300' of heavily rusted perimeter fencing and several loose tension posts in the Northwest portion of the Waste Pits OU were identified during site inspections and replaced with new materials in November of 2012. All other breaks, vandalism, and general signs of deterioration of the perimeter fence were repaired as part of routine maintenance.

The gravel access road was inspected to identify dispersion of gravel and/or vegetation overgrowth. Dispersed gravel was periodically swept off the concrete drive-way entering the site back onto the gravel roadway on-site; but, no significant repair issues regarding the access road were observed (see Table 14.0).

4.5 SUMMARY OF SVE/IBT INSPECTIONS

Inspection of the SVE/IBT System included visual assessments of system conditions as well as mechanical assessments on an as-needed basis (see Table 15.0). Visual inspections were conducted on above-ground components and included the following:

- SVE wellheads;
- Ball valves;
- Sampling ports;
- Fittings;
- Carbon absorber vessels;
- Blowers A & B;
- O_2 generator;
- System in-line sensors; and,
- PLC unit and data recorders.

No significant repairs were made to the SVE/IBT System in 2012. Calibration and maintenance were performed on the in-line sensors while the System was in non-operations during the PME activities to ensure proper functioning of these components in anticipation for a potential System re-start. Sensors that needed repair were returned to the manufacturer and re-installed following corrective measures.

5.0 ROUTINE MAINTENANCE

C2 REM conducted routine system maintenance to: 1) ensure that the integrity of the containment system is maintained; 2) reduce the probability of malfunction; 3) provide a mechanism for early detection of system failures; 4) repair identified system failures; and, 5) ensure the efficient management of OM&M activities (see Appendix B for field daily reports). Repairs of failed and non-functional components of the Phase I and Phase II remedies were conducted pursuant to Section 10.0 of the OM&M Manual.

5.1 COVER SYSTEM

Routine maintenance of the cover system included control of weeds, vegetation (turf height), and burrowing animals. Regularly scheduled mowing of the grass (California mix) on the cap and the surrounding areas has maintained the required turf height (less than 1 foot) and helped control potential fire outbreaks by eliminating the build-up of dry grass thatch. The occurrence of burrowing animals is regulated via a pest control company in order to prevent potential damage to the cover system. Stressed vegetation has been addressed with the installation of an above-ground irrigation system which is routinely operated during the dry season.

5.2 GAS COLLECTION AND TREATMENT SYSTEM

Weekly visual observations of the Cap Gas System's above-ground components and system enclosure were conducted to identify potential maintenance requirements and/or repairs. The PLC unit was routinely accessed to ensure that the mechanical components of the blower motor and control unit were operating as designed to reduce the probability of malfunction.

5.3 SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

As part of the scheduled landscape and maintenance of the cover system, the surface and subsurface drainage systems were routinely inspected for any cracking, settlement, and/or debris build-up. C2 REM regularly cleaned the surface drainage swales and catch basins of vegetative debris or sediment build-up. Minor caulking repairs were made to v-ditch joints that showed signs of weathering; however, no additional maintenance or repair of the surface and subsurface drainage systems was required in 2012.

5.4 SECURITY AND PERIMETER FENCE

The perimeter fence was routinely inspected for damage/vandalism as part of the normal property maintenance. C2 REM periodically repaired sections of the perimeter fence and signage exhibiting breaks, vandalism, or structure damage in 2012.

5.5 ACCESS ROAD

The gravel access road was routinely inspected for the dispersion of gravel and/or vegetation overgrowth. The access road was regularly cleared of encroaching vegetative material during scheduled landscape maintenance activities. The existing gravel access road was well-maintained and no repair was required in 2012.

5.6 SVE/IBT SYSTEM

SVE/IBT components that require routine maintenance and monitoring to ensure proper functioning include the following inline meters: five O_2, five LEL, five flow/temperature, three temperature, one relative humidity, one pressure sensor, two air-moisture separator level switches, and one effluent PID. Also included as part of the SVE/IBT components

are one O_2 generator, two blowers, and four automated check valves. C2 REM performs daily visual confirmation of the functioning and trends of each component through accessing the PLC unit remotely from the office to assure that these components are operating as designed to reduce the probability of malfunction. C2 REM conducted bi-weekly onsite visual observations of the SVE/IBT System's above-ground components and system enclosure to identify potential maintenance requirements and/or repairs.

Routine maintenance items conducted on the SVE/IBT System in 2012 included replacement of sample ports, replacement of portions of the piping insulation, change-out of carbon, calibration/maintenance of in-line sensors, and lubrication of the O_2 generator blower. Additionally, bi-weekly SVE/IBT field monitoring was conducted to compare the readings with the in-line meters to assess any significant deviations during System operations (January 1 – June 25, 2012). Furthermore, C2 REM performs routine calibration of the O_2, LEL, and effluent PID meters to ensure ideal gas ranges are present in each meter.

5.7 ONSITE TRAILERS AND STORAGE BIN

The onsite trailer and storage bin are routinely inspected for damage and incidents of vandalism. In an effort to further deter individuals from approaching onsite structures and to protect integral remedial system components, cameras, motion detection sensors, and an alarm system were installed in 2009. C2 REM did not observe any incidents of vandalism on the property during 2012.

6.0 NON-ROUTINE MAINTENANCE

Although not outlined in the revised 2012 OM&M Manual, C2 REM performs an annual pressure test on the SVE/IBT System conveyance piping to assist in the early identification of possible repair issues with limited system operation interruption. This activity checks for pressure irregularities within an individual pipe segment to indicate potential pipe, joint, or O-ring degradation. When a pressure irregularity is encountered, C2 REM identifies and repairs the subject area. C2 REM has noted that the quantity of repairs has increased over the last several years, which may indicate replacement of the conveyance piping will be necessary in the near future.

7.0 GROUNDWATER MONITORING

7.1 INTRODUCTION

Annual groundwater monitoring, including gauging and sampling of eleven groundwater monitoring wells was conducted in accordance with the recommendations contained within the *Second Five Year Review Report*, USEPA, September, 2010. The groundwater monitoring event occurred on September 5, 2012.

Monitoring events were conducted pursuant to requirements in the *AO for Remedial Action, Docket No. 99-08, Del Amo Waste Pits Operable Unit, Torrance, California,*

USEPA, 1999 and the *Operations and Monitoring Manual for the Del Amo Waste Pits Operable Unit, Torrance, California*, (C2 REM, 2012a).

7.2 BACKGROUND

Nineteen groundwater monitoring locations around the Del Amo Waste Pits area were utilized to provide means of monitoring the Water Table (WT) Aquifer which assisted in developing Waste Pits OU Remedial Action Objectives (RAO) in 1998. Groundwater data collected in 1998 were used to calculate the baseline average groundwater concentration in each of the four sub-areas. Of these 19 groundwater monitoring well locations, some were one-time Cone Penetrometer Test (CPT) locations and others have been abandoned, leaving 11 wells remaining. These 11 wells were identified for sampling during monitoring events (see Figure 13.0).

Groundwater monitoring was conducted in connection with the Del Amo and Montrose Chemical superfund groundwater operable units from 1994 through 2000 and again in 2004 and 2006. Not all of the 11 groundwater monitoring wells associated with the Waste Pits OU were gauged and sampled in each of the referenced events. The historical records of these events are summarized in the *Combined 2006 Baseline Monitoring / TCE and Benzene Plumes Data Acquisition Report* (URS, June 7, 2006).

7.3 OBJECTIVES

The primary objective for sampling the subject 11 groundwater monitoring wells is to verify that the specified performance standard for the Waste Pits OU is being achieved (i.e., COCs from the Waste Pits OU shall not cause an incremental groundwater contribution in excess of 0.5% of the existing groundwater COC concentration).

The Second Five Year Review Report issued on September 22, 2010, further identifies the necessity of finalizing or revising the methodology for measuring progress toward achieving the soil cleanup standard. The 2012 annual groundwater sampling provides relevant data needed to develop the finalization/revision of the Waste Pits OU RAOs.

7.4 METHODOLOGY

Groundwater gauging, sample collection, and handling of purged/redevelopment water was conducted in accordance with the Groundwater Sampling and Analysis Plan appended to the Waste Pits OM&M Manual (C2 REM, 2012a) and as amended via email to USEPA on February 10, 2012 and approved on February 18, 2012. Prior to initiation of monitoring well gauging and sample collection, the well seals were removed to allow the well to acclimate to atmospheric conditions. Upon completing this step, each of the monitoring wells were 1) gauged for groundwater elevation and, 2) field analyzed for pH, temperature, turbidity, dissolved oxygen, and conductivity (see Table 16.0).

Groundwater samples were placed into laboratory supplied sample containers then placed in a cooler and chilled to a temperature of approximately $4^{o}C$ for shipment to a laboratory

for chemical analysis. Each laboratory provided container was labeled with the following information: location, ID number, date, time, sampling personnel, and analyses required. This information was also entered on a chain-of-custody form. At the end of the sampling efforts, groundwater samples were forwarded to CalScience Analytical Laboratories, Inc., along with chain-of-custody forms, for the analysis of semi-volatile organic compounds (SVOCs) by USEPA Test Method 8270C and VOCs by USEPA Test Method 8260B.

7.5 GROUNDWATER ELEVATIONS

Groundwater elevations in the region have been rising over time due to an overall reduction of regional pumping for both potable and agricultural uses. Groundwater gauging of on-site wells in 2012 demonstrates that groundwater elevations are consistent with the 2011 4th quarter groundwater monitoring event; and groundwater elevations have an overall rising trend in relationship to previous levels, generally 1.5 to 2 feet since the 2006 sampling event (see Figure 14.0). Based upon the review of the Groundwater Monitoring Report (URS, 2012) and C2REM annual groundwater data, it appears that the regional water table gradient is generally southwesterly in the northern and central portions of the 280 acre Del Amo Superfund Site as well as further south of the Site while the site-wide gradient is more variable and predominately flat in the area of the Waste Pits OU (See Figure 15.0). Some of the deeper soil-vapor monitoring points (-10' msl), as well as the deeper intervals of the SVE wells, are at or near the saturated zone and are influenced by vapor off-gassing from groundwater.

7.6 GROUNDWATER SAMPLING RESULTS

Field data sheets and analytical laboratory results are presented in Appendices G and H, respectively; and a tabular summary of results is presented on Table 16.0-18.0.

VOCs are the primary COCs for the Waste Pits OU with benzene being the primary constituent. Review of analytical laboratory results indicates that the highest benzene concentrations were reported for samples collected from monitoring wells located to the north. and benzene concentrations decrease dramatically in samples collected from monitoring wells located to the south. (i.e., hydraulically down-gradient on a regional basis) (see Figure 16.0), with four of the five samples below laboratory detection limits (<0.5 μg/L), which is below the California maximum contaminant level (MCL) of 1 μg/L (See Table 17.0).

To further assess benzene concentration trends, a non-parametric statistical analysis was performed (Mann-Kendall analysis), which will identify either an increasing trend, no trend/stable, or a decreasing trend. Mann-Kendall is a nonparametric procedure that determines the absence or presence of trends/correlations in an ordered paired data set. The test makes no assumption as to the underlying distribution of the data set. For this purpose, Mann-Kendall test measures the difference in the probability that the two variables in the data set are in the same order versus the probability that the two variables are in different orders. For the purpose of this statistical analysis, groundwater data was treated as an annual average since monitoring frequency varied with each year.

Presented below is a summary of the Mann-Kendall trends, based on the annual averages of benzene concentrations (supporting analysis presented in Appendix I):

Well	Mann-Kendall Trend
PZL0018	No Trend
PZL0019	No Trend
PZL0020	Decreasing
PZL0022	No Trend – Results Below Detection Limits
PZL0024	Decreasing – Results Below Detection Limits
PZL0025	Decreasing – Results Below Detection Limits
SWL0008	Decreasing
SWL0044	Decreasing – Results Below Detection Limits
SWL0051	Decreasing – Results Below Detection Limits
XMW29	No Trend
XP02	No Trend – Results Below Detection Limits

Based on review of the analytical laboratory results and the Mann-Kendall analysis, the benzene concentration in the groundwater samples collected from monitoring wells PZL0018, PZL0019, PZL0022, XMW29, and XP02, had no trends. The benzene concentration in the groundwater samples collected from monitoring wells PZL0020, PZL024, PZL0025, SWL0008, SWL0044, and SWL0051 had decreasing trends and there were no wells identified with increasing trends.

Benzene was detected in samples collected from monitoring wells PZL0018, PZL0019, PZL0020, XMW29, and SWL0008; however, 2012 benzene concentrations decreased from 2011 groundwater monitoring events. There was a concentration increase in PZL0018 that occurred sometime after the 2000 sampling event. This increase is not likely associated with the Waste Pits OU as monitoring well SWL0044 is located between the Waste Pits OU and PZL0018 and reported a benzene concentration below 1 ug/L. Benzene concentrations from monitoring wells PZL0019 and PZL0020 remained high although PZL0020 had a decreasing trend. The benzene concentration from monitoring well XMW29 has fluctuated over time with a decreasing trend observed from 2004 to 2012. Monitoring well XMW29 is located north and west of the Waste Pits OU and VOC concentrations for this well are likely associated with off-site sources to the north. Lastly, monitoring well SWL0008 had a benzene concentration of 210 ug/L and has a decreasing trend.

SVOC concentrations were generally low and consistent with historical levels, with naphthalene being the only SVOC that is present in concentrations above the California Notification Level and those occurrences are within or immediately adjacent to the Waste Pits OU (see Table 18.0).

8.0 WASTE DISPOSAL

In 2012, the Waste Pits OU generated waste from different sources including purged groundwater, SVE/IBT System condensate, sampling media/personal protective

equipment, activated carbon, and decontamination water. All waste generated on-site was handled, stored, transported, and recycled/disposed in a manner consistent with current USEPA regulations. Additionally, all containerized waste was properly characterized, labeled, and then picked up from the Waste Pits OU within all required time frames by the designated primary licensed waste hauler, American Integrated Services. All waste generated at the Waste Pits OU was properly manifested using appropriate non-hazardous and hazardous waste manifest forms to track the waste from the point of generation to the point of final disposition. Lastly, all waste was shipped to an authorized waste disposal facility (see Table 19.0).

9.0 CONCLUSIONS AND RECOMMENDATIONS

Following the 13th year of operation of the Phase I remedy (e.g., multilayer cap, soil vapor monitoring probes) and the 6th year of operation of the Phase II remedy (i.e., SVE/IBT System), the Waste Pits OU remedies are functioning as designed. Provided below are conclusions and recommendations developed based on the results presented herein:

- The cover system and the other associated systems have performed well during 2012, and the required inspection requirements and monitoring frequencies are adequate to assess whether the remedies for the Waste Pits OU are functioning as designed.

- Through the end of 2012, the SVE/IBT System has removed approximately 50,420 kg (110,924 lbs) of benzene from the Waste Pits OU (approximately 37,305 kg [82,071 lbs] through degradation and approximately 13,116 kg [28,855 lbs] through adsorption to carbon).

- The frequencies of field monitoring of the Cap Gas System, SVE/IBT System, laboratory sample collection, perimeter well monitoring, and full scale monitoring of the soil vapor monitoring wells appear appropriate and no modification is proposed.

- The PME results, conclusions, and recommendations are summarized in the Draft PME Report of Findings submitted to the USEPA on December 10, 2012 (C2 REM, 2012b).

- The continued low concentrations of VOCs detected at the perimeter wells indicate the cover system and Cap Gas System are performing as designed, and the contaminated soil vapors are not migrating beyond the cap boundaries.

- Regularly scheduled maintenance and inspection activities have assisted in the early identification of possible repair issues with limited system operation interruption. Issues requiring action were quickly identified, assessed, and rectified in 2012. Close monitoring of the Phase I and II remedy components in 2013 during routine and non-routine inspections will continue as required. Continued inspections and monitoring activities for 2013 shall be conducted in accordance with the schedule provided in Figure 17.0.

- Groundwater analytical laboratory results indicate that the highest benzene concentrations were reported for samples collected from monitoring wells located to the north, and benzene concentrations decrease dramatically in samples collected from monitoring wells located to the south (i.e., hydraulically down-gradient on a regional basis) of the operable unit with four of the five samples below laboratory detection limits (<0.5 μg/L), which is below the California MCL of 1 μg/L. Mann-Kendall analysis indicated six decreasing trends and five no trends in the 11 monitoring wells included within the groundwater monitoring program and no wells with an increasing trend. In addition, six of the 11 monitoring wells identified exhibited analytical laboratory results below detection limits.

- Due to SVOC concentrations being consistently low with current and historical levels, and with naphthalene being the only SVOC that is present in concentrations above the California Notification Level, we recommend that SVOC testing be dropped from future groundwater monitoring events and while maintaining naphthalene in the analytical methodology.

- Overall, the 2012 groundwater results are very favorable, indicating that natural attenuation is occurring, the dissolved phase VOC plume is not expanding, and the Waste Pits OU is not contributing to the degradation of underlying groundwater.

10.0 REFERENCES

C2 REM, *Waste* Pits *Operation, Maintenance and Monitoring Manual, Del Amo Waste Pits*, (C2 REM, 2012a).

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USEPA, *Record of Decision for Del Amo Waste Pits Operable Unit*, September 1997.

Webb, Murray, & Associates, *Process Hazard Analysis Report*, September 2005.

Table 1.0
2012 Cap Gas System Monitoring Results
Del Amo Waste Pits OU

Date	VOCs (ppm)				Temperature (°F)		Flow (scfm)		Lead Vessel Efficiency	System Efficiency
	Influent	Effluent Lead Carbon Vessel	Effluent Secondary Carbon Vessel	Effluent	Influent	Effluent	Influent	Effluent		
1/5/2012	28.3	0.1	0	0	88	116	144	175	99.6%	100.0%
1/11/2012	22.3	0.1	0.1	0	77	110	146	172	99.6%	100.0%
1/17/2012	40	0.3	0.1	0.1	79	105	151	178	99.3%	99.8%
1/23/2012	14	0	0	0	75	105	142	173	100.0%	100.0%
1/30/2012	24.2	0.3	0.2	0.1	78	111	140	166	98.8%	99.6%
2/8/2012	43.6	0.9	0.3	0.13	85	116	142	168	97.9%	99.7%
2/23/2012	15.6	9.7	2.1	0.2	78	130	142	161	37.8%	98.7%
3/1/2012	4.9	0	0	0	70	113	142	162	100.0%	100.0%
3/8/2012	1	0	0	0	81	121	155	160	100.0%	100.0%
3/14/2012	0.5	0	0	0	83	115	146	161	100.0%	100.0%
3/30/2012	0.1	0	0	0	73.5	106	139	161	100.0%	100.0%
4/12/2012	0.4	0.1	0.1	0	78	120	143	164	75.0%	100.0%
4/19/2012	1	0.8	0.4	0.2	80	118	149	161	20.0%	80.0%
5/2/2012	0.7	0.7	0.7	0.1	68	115	140	168	0.0%	85.7%
5/9/2012	0.3	0.3	0.4	0.1	91	126	140	165	0.0%	66.7%
5/15/2012	0.3	0.3	0.3	0.1	86.2	133	138	155	0.0%	66.7%
5/23/2012	0.2	0.2	0.2	0.1	86	130	131	154	0.0%	50.0%
5/31/2012	0.4	0.4	0.4	0.2	80	128	140	164	0.0%	50.0%
6/6/2012	0.3	0.3	0.2	0.1	82	130	131	168	0.0%	66.7%
6/14/2012	0.1	0.1	0.1	0	80	120	136	156	0.0%	100.0%
6/21/2012	0.1	0.1	0.1	0	79	130	144	159	0.0%	100.0%
7/5/2012	0.1	0.1	0	0	NR	NR	149	174	0.0%	100.0%
7/12/2012	0.1	0.1	0.1	0.1	NR	NR	NR	NR	0.0%	0.0%
7/19/2012	0.1	0.1	0.1	0	92	139	134	158	0.0%	100.0%
7/27/2012	0.1	0.1	0.1	0.1	86	120	137	165	0.0%	0.0%
8/2/2012	0.2	0.2	0.1	0.1	83	127	135	160	0.0%	50.0%
8/8/2012	0.2	0.2	0.2	0.1	90	130	132	160	0.0%	50.0%
8/16/2012	0.3	0.2	0.2	0	84	148	ND	ND	33.3%	100.0%
8/29/2012	0.1	0.1	0	0	97	141	131	160	0.0%	100.0%
9/12/2012	0.1	0	0	0	82	136	133	157	100.0%	100.0%
9/18/2012	0.2	0.2	0.1	0.1	91	133	141	157	0.0%	50.0%
9/24/2012	0.1	0.1	0.1	0	89	130	145	155	0.0%	100.0%
10/4/2012	0.1	0.1	0.1	0.1	87.1	132	150	170	0.0%	0.0%
10/9/2012	0	0	0	0	83	122	143	165	NA	NA
10/18/2012	0.1	0.1	0	0	88	110	139	160	0.0%	100.0%
10/24/2012	0.1	0.1	0.1	0.1	85	115	136	164	0.0%	0.0%
10/30/2012	0.2	0.2	0.1	0.1	152	163	87	120	0.0%	50.0%

NR: Not Recorded
NA: Not Available to calculate vessel efficiencies as inlet concentration was 0.
ND: Non-Detected

Table 2.0
2012 SVE-IBT Laboratory Results
Del Amo Waste Pits OU

Date	Sample ID	Benzene (ppm)	Carbon Dioxide (%)	Oxygen (%)	Nitrogen (%)	STATION
Normal SVE Operations						
1/11/2012	Inlet	9300	19	7.9	71	1
2/8/2012	Inlet	11000	20	7.5	70	1
1/11/2012	Post Ambient Air	900 (1200)	2.3 (2.4)	19 (19)	77 (77)	2
2/8/2012	Post Ambient Air	1900 (2100)	2.4 (2.3)	20 (20)	76 (76)	2
1/11/2012	Carbon 1	950	2.5	20	76	3
2/8/2012	Carbon 1	ND<1.6	2.3	20	76	3
1/11/2012	Effluent	12	2.5	20	76	4
2/8/2012	Effluent	ND<1.6	2.6	20	76	4
PME (SVE-Only) Purge Period						
2/16/2012	Inlet	18000	19	8.1	72	1
2/23/2012	Inlet	150*	21	7.1	69	1
3/14/2012	Inlet	23000 (30000)	20 (20)	7.2 (7.2)	71 (71)	1
3/30/2012	Inlet	6000	19	7.8	72	1
4/12/2012	Inlet	14000 (14000, 4900, 11000)	15.6 (18.1, 18, 18)	9.76 (8.1, 7.8, 7.8)	68.6 (68.1, 72, 72,)	1
5/9/2012	Inlet	5000	20	6.5	73	1
6/6/2012	Inlet	14000	9.37	14.5	74.4	1
2/16/2012	Post Ambient Air	6900	9.3	15	75	2
2/23/2012	Post Ambient Air	160	11	14	73	2
3/14/2012	Post Ambient Air	6300	11	14	74	2
3/30/2012	Post Ambient Air	3400	13	13	74	2
2/23/2012	Carbon 1	9100	13	13	72	3

ND: Analyte not detected at or above the reporting limit.
( ): Dupicate sample result.
* Benzene concentration on 2/23/2012 appeared to be an outlier and was not included in the average calculation.

Table 3.0
2012 SVE/IBT System Operation Efficiency
Del Amo Waste Pits OU

Jan 1, 2012 - Feb 12, 2012	Time (in hours)
Potential Operation Hours *	256
Actual Hours	205.5
Down Time	50.5
• Carbon Change-Out	9
• Monitoring	1
• System Maintenance	40.5
Operation Efficiency	80%

* Assuming 8 hours/day, Monday - Friday

Table 4.0
2012 SVE/IBT System Operation Summary
Del Amo Waste Pits OU

Parameter	Original Design	Performance Based on Inline Monitoring Devices (SVE-IBT Normal Operations)	Performance Based on Inline Monitoring Devices (PME - SVE only mode)
System Operation Time (hours per day)[1]	8	8	12
Vapor Injection Rate (CFM)	50	35.8	NA
O2 Injection Rate (CFM)	5	2.7	NA
Injected Re-circulated Rate (CFM)	45	33.1	NA
O2 Percentage (%)	100%	91%	NA
O2 Utilization 1st Order Rate Constant (1/hr) [2]	0.0021	0.0021	NA
Extracted Vapor Concentration (ppmv)[3]	15,000	10,150	13,990
Extraction Rate (CFM)[4]	60	39.8	37.6
Treatment Rate (CFM)	15	6.7	37.6
Time for Pore Volume (days)	7.09	9.90	NA
Injected O2 Concentration 1st Order	27%	18%	NA
Benzene Degradation (kg/day)	20	12.2	NA
Total Benzene Degradation (kg)	7,355	523	NA
Benzene Removal (kg/day)	10	3.0	34.8
Total Benzene Removal (kg)	3,626	77	2,697
Benzene Removed/Degraded (kg/day)	30	15	34.8[6]
Total Benzene Removed/Degraded (kg)	10,981	600	2,697[6]
Carbon to Benzene Ratio[5]	4:1	6:1	6:1
Projected Carbon Required (kg/day)	40	18	209
Total Actual Carbon Required (kg)	**-**	**1,918**	**21,130**

[1] Normal operation is 8 hours/day, Monday-Friday, 8:00 am - 4:00 pm.

[2] 0.0021 of design value was used for oxygen utilization constant.

[3] Vapor concentration is an average of the monthly laboratory results without outliers.

[4] Extraction rate is derived from the sum of the treatment rate and the recycle rate.

[5] Benzene to carbon ratio for the 2012 monitoring period is based on actual weight adsorbed to carbon (see Table 8.0).

[6] In SVE-Only mode all benzene was removed through adsorption only and no removal from degradation is included.

The calculation used for this estimate

Q = (O2 Injection rate + Recycle rate)
$[O_2]$ = (Term1*0.20+Term2*0.91)/{1-Term3*Exp(-k*t_{pv})}
$\acute{\eta}$ = 1-Exp(-k*t_{pv})
f_{bio} = 1-(0.0035/k)

Term1 = (Recycle rate)/Q*(Excess Vapor Extraction rate)/(Treatment rate + Recycle rate)
Term2 =O2 injection rate/Q
Term3 = Recycle rate/(Treatment rate + Recycle rate)
t_{pv} (Time for Pore Volume) = 8505/Q
k = 0.0021

[Benzene] = 10150, 13990

Mass Degraded = Q*$[O_2]$* $\acute{\eta}$* f_{bio}* 5.8864
Mass Treated = Treatment rate *[Benzene]*0.000044148
Mass Total = Mass Degraded + Mass Treated

Table 5.0
2012 SVE/IBT System Carbon Change-Out Summary
Del Amo Waste Pits OU

Date of Change-outs	Operation Period Between Change-outs	Operational Hours Between Change-outs	Fresh Carbon (kg)			Spent Carbon (kg)			Weight Adsorbed (kg)		
			Primary	Secondary	Total	Primary	Secondary	Total	Primary	Secondary	Total
1/23/2012	(1)11/22/2011 ~ 1/23/2012	190	915	945	1860	1148	1141	2289	233	196	429
2/13/2012	(2)1/23/2012 ~ 2/13/2012	131	943	0	943	1148	0	1148	205	0	205
2/23/2012	(3)2/13/2012~2/23/2012	74	962	925	1887	1203	1101	2304	242	176	418
3/5/2012	2/23/2012~3/5/2012	77	934	934	1869	1146	1122	2268	212	188	400
3/14/2012	3/5/2012~3/14/2012	80	950	953	1903	1203	1108	2311	253	156	408
3/22/2012	3/14/2012~3/22/2012	74	921	948	1869	1164	1066	2230	243	118	362
4/2/2012	3/22/2012~4/2/2012	78	936	931	1867	1193	1157	2351	258	226	484
4/12/2012	4/2/2012~4/12/2012	68	939	966	1905	1217	1114	2332	278	148	426
5/7/2012	4/12/2012~5/7/2012	85	942	941	1883	1182	1089	2271	240	148	388
5/15/2012	5/7/2012~5/15/2012	68	904	913	1818	1138	960	2098	234	47	280
5/23/2012	5/15/2012~5/23/2012	71	942	957	1899	1167	985	2152	225	28	253
6/4/2012	5/23/2012~6/4/2012	88	907	907	1814	1140	1060	2200	233	152	386
6/14/2012	6/4/2012~6/14/2012	85	907	907	1814	1095	1058	2152	187	151	338
6/28/2012	6/14/2012~6/28/2012	81	907	907	1814	1146	1055	2201	239	148	387
Average (Normal Operations)		***161***	***929***	***472***	***1401***	***1148***	***571***	***1718***	***219***	***98***	***317***
Total (Normal Operations)		***321***	***1858***	***945***	***2803***	***2295***	***1141***	***3436***	***437***	***196***	***634***
Average (PME)		***77***	***929***	***932***	***1862***	***1166***	***1073***	***2239***	***237***	***141***	***377***
Total (PME)		***929***	***11152***	***11190***	***22342***	***13995***	***12876***	***26871***	***2843***	***1686***	***4529***
Average (Annual)		***89***	***929***	***867***	***1796***	***1164***	***1001***	***2165***	***234***	***134***	***369***
Total (Annual)		***1250***	***13010***	***12135***	***25145***	***16291***	***14017***	***30308***	***3280***	***1882***	***5163***

(1) 116 hours of SVE/IBT Normal Operation in 2011 and 74 hours of Normal Operation in 2012.

(2) Carbon change-out was conducted for the primary vessel only.

(3) PME (SVE-Only mode) Purge Period begins.

Table 6.0
2012 Cluster Well Field Results
Del Amo Waste Pits OU

Date	Well ID	Pressure (in. water)	Oxygen (%)	Carbon Dioxide (%)	VOCs (ppm)
2/13/2012	A"1	-0.05	20.9	0.8	0
6/26/2012	A"1	-0.01	20.4	0.8	0.2
9/26/2012	A"1	0	18.5	0.6	0.4
11/27/2012	A"1	0	13.8	1.8	0.1
2/13/2012	A"2	0	20.9	0	0
6/26/2012	A"2	0	20.9	0.8	0.6
9/26/2012	A"2	-0.05	19	0.8	0.3
11/27/2012	A"2	0	20.9	0	0
2/13/2012	A"3	-0.05	20.9	0.8	210
6/26/2012	A"3	0	20.9	0	0.5
9/26/2012	A"3	-0.05	14	3.8	395
11/27/2012	A"3	0	20.9	0	2.4
2/13/2012	B"1	0	5.3	26.6	over
6/26/2012	B"1	-0.1	15.3	11.4	over
9/26/2012	B"1	-0.1	2.7	24.6	over
11/27/2012	B"1	-0.04	7.7	15.6	over
2/13/2012	B"2	-0.2	11.2	18.4	over
6/26/2012	B"2	-0.05	14.3	7.6	over
9/26/2012	B"2	-0.05	0.4	17	over
11/27/2012	B"2	-0.02	0.5	17	over
2/13/2012	B"3	-0.05	8	22	over
6/26/2012	B"3	-0.05	14.8	9.4	over
9/26/2012	B"3	-0.05	0.6	20.2	over
11/27/2012	B"3	-0.04	10.3	7	over
2/13/2012	C"1	-0.1	20.8	0	19
6/26/2012	C"1	0	20.9	0	12
9/26/2012	C"1	-0.05	19.6	1.4	over
11/27/2012	C"1	-0.04	19.4	1.5	over

Table 6.0
2012 Cluster Well Field Results
Del Amo Waste Pits OU

Date	Well ID	Pressure (in. water)	Oxygen (%)	Carbon Dioxide (%)	VOCs (ppm)
2/13/2012	C"2	-0.2	20	0.8	0.5
6/26/2012	C"2	0	18.4	1.8	over
9/26/2012	C"2	0	15.3	5	over
11/27/2012	C"2	-0.06	15.2	2.8	287
2/13/2012	C"3	-0.2	11.6	8.4	over
6/26/2012	C"3	0	18	2.6	over
9/26/2012	C"3	-0.2	13.3	7.2	over
11/27/2012	C"3	-0.02	17.7	2.7	over
2/13/2012	D"1	0	1.1	14.4	over
6/26/2012	D"1	-0.05	3.6	11.6	over
9/26/2012	D"1	-0.25	2	11.4	over
11/27/2012	D"1	-0.1	8	7.2	over
2/13/2012	D"2	-0.1	17.4	1.8	80
6/26/2012	D"2	0.1	20.9	0	88
9/26/2012	D"2	-0.14	14	2.4	over
11/27/2012	D"2	-0.06	16.3	1.6	over
2/13/2012	D"3	0	6.8	8.6	over
6/26/2012	D"3	0	9.3	7.2	150
9/26/2012	D"3	-0.36	0	9.6	over
11/27/2012	D"3	-0.06	10.1	4.8	over
2/13/2012	E"1	-0.1	20.9	0	0
6/26/2012	E"1	0	20.2	1	0
9/26/2012	E"1	-0.01	18.3	2.6	0.3
11/27/2012	E"1	0	20.9	0	0
2/13/2012	E"2	-0.02	20.6	0.8	0
6/26/2012	E"2	0	20.9	0	0
9/26/2012	E"2	-0.05	20.9	0.6	0.3
11/27/2012	E"2	0	18.8	0.8	0

Table 6.0
2012 Cluster Well Field Results
Del Amo Waste Pits OU

Date	Well ID	Pressure (in. water)	Oxygen (%)	Carbon Dioxide (%)	VOCs (ppm)
2/13/2012	E"3	0.1	20.9	0	0
6/26/2012	E"3	0	20.9	0	0
9/26/2012	E"3	-0.01	20.9	0	0
11/27/2012	E"3	-0.02	20.9	0	0
2/13/2012	F"1	-0.05	20.9	0	0
6/26/2012	F"1	-0.05	20.7	0.2	0.1
9/26/2012	F"1	-0.06	20.9	0.2	2
11/27/2012	F"1	-0.04	20.9	0	0
2/13/2012	F"2	-0.05	18	1.6	0.4
6/26/2012	F"2	-0.05	20.9	0	1.3
9/26/2012	F"2	0	15.1	3.8	3.2
11/27/2012	F"2	-0.04	20.9	0	0.5
2/13/2012	F"3	-0.02	20.9	0	1.7
6/26/2012	F"3	-0.05	20.9	0	7
9/26/2012	F"3	-0.02	19.4	1.2	13.9
11/27/2012	F"3	-0.02	20.9	0	4.3
2/13/2012	G"1	-0.02	16.2	3.6	0
6/26/2012	G"1	-0.05	16.5	3.4	0.3
9/26/2012	G"1	-0.04	15.8	3.4	0
11/27/2012	G"1	-0.02	19.7	0.8	0
2/13/2012	G"2	-0.05	20.6	0.4	0
6/26/2012	G"2	0	19.7	1	0
9/26/2012	G"2	-0.04	19.2	1	0
11/27/2012	G"2	0	19.9	0.6	0
2/13/2012	G"3	0	20.9	0	0
6/26/2012	G"3	-0.05	20.9	0	0
9/26/2012	G"3	-0.02	17.4	2.6	19.7
11/27/2012	G"3	0.04	20.6	0.4	0

Table 6.0
2012 Cluster Well Field Results
Del Amo Waste Pits OU

Date	Well ID	Pressure (in. water)	Oxygen (%)	Carbon Dioxide (%)	VOCs (ppm)
2/13/2012	H"1	0	20.9	0	0
6/26/2012	H"1	0	20.9	0	0
9/26/2012	H"1	0	18.5	0	11.1
11/27/2012	H"1	0	20.9	0	0
2/13/2012	H"2	-0.05	20.9	0	0
6/26/2012	H"2	-0.05	20.9	0	0
9/26/2012	H"2	-0.02	20.8	0	0
11/27/2012	H"2	-0.02	20.8	0.2	0
2/13/2012	H"3	-0.01	11.8	7.2	0
6/26/2012	H"3	0	11.9	6.2	0.1
9/26/2012	H"3	-0.04	11	6.2	0
11/27/2012	H"3	0	15.4	3.6	0.1
2/13/2012	I"1	-0.1	0.4	15	52
6/26/2012	I"1	-0.05	14.1	3.4	145
9/26/2012	I"1	-0.1	1.1	12.6	260
11/27/2012	I"1	0.08	17.5	2	92
2/13/2012	I"2	-0.04	20.9	0	0
6/26/2012	I"2	-0.1	20.9	0	0.5
9/26/2012	I"2	-0.05	20.9	0	0.7
11/27/2012	I"2	0.04	20.9	0	0.5
2/13/2012	I"3	-0.04	15.5	3	0.5
6/26/2012	I"3	-0.1	18.2	1.6	1.6
9/26/2012	I"3	-0.05	16.4	2.4	1.6
11/27/2012	I"3	0.04	20.6	0.4	0.1
2/13/2012	J"1	0	20.9	0	0
6/26/2012	J"1	-0.04	20.9	0	2.2
9/26/2012	J"1	-0.04	15.6	3.8	5.7
11/27/2012	J"1	-0.04	20.9	0	0.6

Table 6.0
2012 Cluster Well Field Results
Del Amo Waste Pits OU

Date	Well ID	Pressure (in. water)	Oxygen (%)	Carbon Dioxide (%)	VOCs (ppm)
2/13/2012	J"2	0.2	20.9	0	0.4
6/26/2012	J"2	-0.04	20.9	0	1.4
9/26/2012	J"2	-0.04	19.7	0.6	8.3
11/27/2012	J"2	-0.04	20.9	0	1.1
2/13/2012	J"3	-0.03	9.2	10.4	0
6/26/2012	J"3	-0.03	10.1	8	0.3
9/26/2012	J"3	-0.04	5	12.4	1.5
11/27/2012	J"3	-0.06	15.2	4.4	0.3
2/13/2012	K"1	0	20	1.4	0
6/26/2012	K"1	0	20.1	1.2	14.1
9/26/2012	K"1	-0.05	15.6	3	10.3
11/27/2012	K"1	0	20.9	0	0
2/13/2012	K"2	-0.05	12.7	7.4	0
6/26/2012	K"2	-0.05	14.1	5.6	0
9/26/2012	K"2	-0.05	11.9	5.6	0.6
11/27/2012	K"2	0	13.3	4.2	0.1
2/13/2012	K"3	-0.1	12.9	0	1.5
6/26/2012	K"3	-0.05	20.9	0	118
9/26/2012	K"3	-0.01	20.9	0	78.3
11/27/2012	K"3	0	20.9	0	101
2/13/2012	L"1	-0.2	2.8	20.4	over
6/26/2012	L"1	-0.03	14.4	5.4	over
9/26/2012	L"1	-0.1	5.4	15.2	over
11/27/2012	L"1	0.12	7.5	12.8	over
2/13/2012	L"2	0	8.1	13.2	over
6/26/2012	L"2	0	6.5	11.4	over
9/26/2012	L"2	-0.1	10.5	10	over
11/27/2012	L"2	0.06	10.8	9	over

Table 6.0
2012 Cluster Well Field Results
Del Amo Waste Pits OU

Date	Well ID	Pressure (in. water)	Oxygen (%)	Carbon Dioxide (%)	VOCs (ppm)
2/13/2012	L"3	-0.05	19.6	0.8	over
6/26/2012	L"3	0	6.6	11.4	over
9/26/2012	L"3	-0.05	20.9	0	over
11/27/2012	L"3	0.02	20.9	0	over
2/13/2012	M"1	-0.05	9.5	15.4	0.5
6/26/2012	M"1	0	17.4	1	0.5
9/26/2012	M"1	-0.15	6.2	9.6	1.7
11/27/2012	M"1	-0.02	7.1	8.2	0.4
2/13/2012	M"2	0	4.9	24	0.1
6/26/2012	M"2	0	15.7	6.8	0.2
9/26/2012	M"2	-0.15	6.4	10.6	1.2
11/27/2012	M"2	-0.02	8.7	7.6	0.3
2/13/2012	M"3	0	19.9	0	over
6/26/2012	M"3	0	20.9	0	over
9/26/2012	M"3	-0.1	19.8	0.8	over
11/27/2012	M"3	-0.02	20.9	0	322

"over": >15,000 ppm

Table 7.0
2012 Vacuum Performance Wells Field Results
Del Amo Waste Pits OU

Date	Well ID	Pressure (in. water)	Oxygen (%)	Carbon Dioxide (%)	VOCs (ppm)
2/13/2012	A'	0	7.5	12	30
6/26/2012	A'	-0.05	15.8	5.4	over
9/26/2012	A'	0	7	11.2	over
11/27/2012	A'	-0.04	2.9	12.8	over
2/13/2012	B'	-0.01	5.3	23.8	over
6/26/2012	B'	0	20.1	2	4.1
9/26/2012	B'	-0.04	19.1	1.4	0.2
11/27/2012	B'	0	17.9	2.6	0.5
2/13/2012	C'	-0.2	4	22.4	over
6/26/2012	C'	-0.05	5.9	11.2	over
9/26/2012	C'	-0.05	4.6	16	over
11/27/2012	C'	0.04	8.8	12	over
2/13/2012	D'	-0.4	0.3	14.2	over
6/26/2012	D'	-0.05	0.8	12	over
9/26/2012	D'	-0.25	10.8	5.8	over
11/27/2012	D'	-0.08	12.8	4.6	over
2/13/2012	E'	-0.02	8.2	8.4	0
6/26/2012	E'	-0.06	16.1	3	1.1
9/26/2012	E'	-0.1	16	3	1.2
11/27/2012	E'	0.02	16.7	3	0
2/13/2012	F'	-0.2	9.3	7.2	0
6/26/2012	F'	-0.05	15	4	0.6
9/26/2012	F'	-0.2	15.4	3.6	0.3
11/27/2012	F'	0	17.7	1.6	0.2
2/13/2012	G'	0	20.9	0	0
6/26/2012	G'	0	5.2	11.2	0.5
9/26/2012	G'	-0.12	19.9	0.2	0
11/27/2012	G'	0	20.9	0.2	0
2/13/2012	H'	-0.05	15.5	5.2	0.4
6/26/2012	H'	0	14.1	5.8	0.4

Table 7.0
2012 Vacuum Performance Wells Field Results
Del Amo Waste Pits OU

Date	Well ID	Pressure (in. water)	Oxygen (%)	Carbon Dioxide (%)	VOCs (ppm)
9/26/2012	H'	-0.06	16.8	3	0.2
11/27/2012	H'	0	18.3	2.2	0.1
2/13/2012	I'	0	3.1	3.4	over
6/26/2012	I'	-0.05	4.2	3	over
9/26/2012	I'	-0.06	3	3.2	over
11/27/2012	I'	-0.06	3.3	3.4	over
2/13/2012	J'	-0.05	12.3	6.2	1.1
6/26/2012	J'	-0.05	19.7	0.8	3.1
9/26/2012	J'	-0.05	20.4	0.2	3.2
11/27/2012	J'	0.04	20.9	0	1
2/13/2012	K'	0	8	10.4	0.2
6/26/2012	K'	-0.02	6.6	8.8	0.9
9/26/2012	K'	-0.05	14.3	4.2	1.2
11/27/2012	K'	0	16	3.4	0.1
2/13/2012	L'	-0.02	20.9	0.2	0.4
6/26/2012	L'	0	20.9	0	2.5
9/26/2012	L'	-0.05	7.3	2	6.9
11/27/2012	L'	-0.02	20.3	0.2	1.9
2/13/2012	M'	-0.1	5.8	17	over
6/26/2012	M'	0	16.5	5	over
9/26/2012	M'	-0.1	13.3	3.6	over
11/27/2012	M'	0.02	17.5	1.6	over
2/13/2012	N'	-0.1	7.5	18.8	over
6/26/2012	N'	-0.05	12.1	7.8	over
9/26/2012	N'	-0.07	13.6	5	over
11/27/2012	N'	0.06	18.6	1.2	over

"over": >15,000 ppm

Table 8.0
2012 Perimeter Well Field Results
Del Amo Waste Pits OU

Date	Well ID	Pressure (in. water)	Oxygen (%)	Carbon Dioxide (%)	VOCs (ppm)
2/13/2012	A	0	20.3	1.4	0.2
6/26/2012	A	-0.02	20.9	1	0.4
9/26/2012	A	-0.03	20.9	0.4	0.6
11/27/2012	A	-0.04	20.9	0	0.9
2/13/2012	B	0	16.1	8.4	3
6/26/2012	B	-0.02	20.1	1.8	2.3
9/26/2012	B	-0.05	18.4	2.4	1
11/27/2012	B	-0.04	19.9	2.2	0.1
2/13/2012	C	0	13.3	12.6	0.1
6/26/2012	C	0	18.6	3	0.1
9/26/2012	C	-0.05	18.8	2.4	0.1
11/27/2012	C	-0.01	19.4	2.4	0.1
2/13/2012	D	-0.03	18.3	3.2	0
6/26/2012	D	-0.04	19.1	1.8	0
9/26/2012	D	-0.05	18.8	2.2	0
11/27/2012	D	-0.02	19.5	1.6	0
2/13/2012	E	-0.05	17.5	3.6	0
6/26/2012	E	-0.02	16.9	3.4	0.1
9/26/2012	E	0	17.6	3.6	0
11/27/2012	E	0	17.7	3.8	0
2/13/2012	F	0	17.7	3.4	0
6/26/2012	F	0	17.5	3	0.1
9/26/2012	F	0	18	3.2	0
11/27/2012	F	-0.02	17.7	3.4	0
2/13/2012	G	-0.02	19.7	2	0
6/26/2012	G	-0.01	19	1.8	0.1
9/26/2012	G	-0.02	19.6	1.8	0
11/27/2012	G	0	19.9	1.4	0

Table 8.0
2012 Perimeter Well Field Results
Del Amo Waste Pits OU

Date	Well ID	Pressure (in. water)	Oxygen (%)	Carbon Dioxide (%)	VOCs (ppm)
2/13/2012	H	-0.02	18.4	2.6	0
6/26/2012	H	0	18	2.6	0
9/26/2012	H	0	17.5	3.4	0
11/27/2012	H	0	19	2.2	0
2/13/2012	I	-0.05	20	1.2	0
6/26/2012	I	-0.04	19.9	1.4	1
9/26/2012	I	-0.05	19.8	1.4	0.2
11/27/2012	I	0	19.9	1.2	0
2/13/2012	J	0	19	2	0
6/26/2012	J	0	18.5	2.4	0.5
9/26/2012	J	0	18.6	2.4	0
11/27/2012	J	0	18.8	2.2	0
2/13/2012	K	-0.02	19.4	1.8	0
6/26/2012	K	-0.01	2	0	0.5
9/26/2012	K	0	20.4	1.4	0
11/27/2012	K	0	19.5	1.6	0
2/13/2012	L	-0.02	16.6	4.2	0
6/26/2012	L	-0.04	16.6	4.6	0.1
9/26/2012	L	-0.05	16.4	4.8	0.1
11/27/2012	L	-0.02	17.3	4	0

Table 9.0
2012 Cover System Inspection Summary
Del Amo Waste Pits OU

Cover System					
Inspection Date	**March 26, 2012**	**April 16, 2012**	**June 26, 2012**	**September 28, 2012**	**December 4, 2012**
Inspection Type	1st Quarter Inspection/Post Rain Inspection	Post Rain Inspection	2nd Quarter Inspection	3rd Quarter Inspection	4th Quarter Inspection
Inspection Items					
Erosion	4	4	4	4	4
Stressed Vegetation (Plant Die-Back)	4	4	2(*)	2(*)	4
Sediment Build-Up	4	4	4	4	4
Local Subsidence or Loss of Grade	4	4	4	4	4
Water Ponding	4	4	4	4	4
Turf Height	4	4	4	4	4
Burrowing Animals	4	4	3(**)	4	4
Weeds or Undesirable Vegetation	4	4	4	4	4
Evidence of Fires or Vandalism	4	4	4	4	4
Soil Quality Check	4	4	4	4	4
Unauthorized Traffic	4	4	4	4	4
Slope Instability or Sloughing	4	4	4	4	4
Survey Monuments	4	4	4	4	4
Vertical Cracking	4	4	4	4	4
Intrusions	4	4	4	4	4
Evidence of Waste Pit Materials	4	4	4	4	4

(*) Due to nature of hydroseed "spring mix" onsite, vegetation goes dormant during the summer and fall months but grows well after first rains of season around November.

(**) Gophers active in certain areas, will advise bugman to treat these areas more aggressively.

Conditions/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Repair)

1 = Poor (Needs Immediate Repair)

Table 10.0
2012 Cap Gas Collection and Treatment System Inspection Summary
Del Amo Waste Pits OU

Cap Gas Collection Treatment System					
Inspection Date	**March 26, 2012**	**April 16, 2012**	**June 26, 2012**	**September 28, 2012**	**December 4, 2012**
Inspection Type	1st Quarter Inspection/Post Rain Inspection	Post Rain Inspection	2nd Quarter Inspection	3rd Quarter Inspection	4th Quarter Inspection
Inspection Items					
Collection System Valves					
Adequate Free Movement	4	4	4	4	4
Seals-Complete	4	4	4	4	4
Signs of Rust/Corrosion	3(*)	3(*)	3(*)	3(*)	3(*)
Condensate Collection					
Air Moisture Separator	4	4	4	4	4
Carbon Adsorbers-Vessels					
Exterior Damage	4	4	4	4	4
FRP Grating and Mesh	4	4	4	4	4
Blower					
General Motor Maintenance	4	4	4	3(**)	3(**)
Drive Maintenance	4	4	4	3(**)	3(**)
Bearing Maintenance	4	4	4	3(**)	3(**)
Lubrication	4	4	4	3(**)	3(**)
Structural Maintenance	4	4	4	3(**)	3(**)

(*) Continue observing slight rust of some components of the GCTS
(**) Continue observing and inspecting blower functioning as designed due to age of blower and increased noise during operation.

Conditions/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Repair)
1 = Poor (Needs Immediate Repair)

Table 11.0
2012 Surface Water Drainage Inspection Summary
Del Amo Waste Pits OU

Surface Water Drainage					
Inspection Date	**March 26, 2012**	**April 16, 2012**	**June 26, 2012**	**September 28, 2012**	**December 4, 2012**
Inspection Type	1st Quarter Inspection/Post Rain Inspection	Post Rain Inspection	2nd Quarter Inspection	3rd Quarter Inspection	4th Quarter Inspection
Inspection Items					
Washouts or Erosion of Contoured Grade	4	4	4	4	4
Ponding on Contoured Grade	4	4	4	4	4
Gullies and Ruts on Contoured Grade	4	4	4	4	4
Plugging of Drainage Culverts	4	4	4	4	4
Holes and Cracks in Swales or Catch Basin	4	4	4	4	4
Sediment Build-Up in Swales or Catch Basins	4	4	4	4	4
Surface Cracking of Swales/Catch Basins	4	4	4	4	4
Spalling of Swales/Catch Basins	4	4	4	4	4
Structural Failure of Swales/Catch Basins	4	4	4	4	4

Conditions/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Repair)

1 = Poor (Needs Immediate Repair)

Table 12.0
2012 Subsurface Drainage Inspection Summary
Del Amo Waste Pits OU

Subsurface Drainage					
Inspection Date	**March 26, 2012**	**April 16, 2012**	**June 26, 2012**	**September 28, 2012**	**December 4, 2012**
Inspection Type	1st Quarter Inspection/Post Rain Inspection	Post Rain Inspection	2nd Quarter Inspection	3rd Quarter Inspection	4th Quarter Inspection
Inspection Items					
Holes and Cracks in Swales, Catch Basin	4	4	4	4	4
Plugging of Drainage Inlets	4	4	4	4	4
Sediment Build-Up or Debris in Catch Basin	4	4	4	4	4
Structural Failure of Catch Basin	4	4	4	4	4

Conditions/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Repair)

1 = Poor (Needs Immediate Repair)

Table 13.0
2012 Security Fence Inspection Summary
Del Amo Waste Pits OU

Security Fence					
Inspection Date	**March 26, 2012**	**April 16, 2012**	**June 26, 2012**	**September 28, 2012**	**December 4, 2012**
Inspection Type	1st Quarter Inspection/Post Rain Inspection	Post Rain Inspection	2nd Quarter Inspection	3rd Quarter Inspection	4th Quarter Inspection
Inspection Items					
Perimeter Fence					
Breaks and Holes	4	4	4	4	4
Settlement Damage	4	4	4	4	4
Loose Posts/Tension	4	4	4	4	4
Rust/Corrosion	2(*)	2(*)	2(*)	2(*)	4
Ruts and Burrows Beneath Fence	4	4	4	4	4
Vegetation Overgrowth	4	4	3(**)	3(**)	4
General Signs of Deterioration	4	4	4	4	4
Vandalism/Animal/ Wind Damage	4	4	4	4	4
Gates					
Adequate Movement of Hinges and Gates	4	4	4	4	4
Proper Function of Lock(s)	4	4	4	4	4

(*) Sections of perimeter fencing on the northwest of the site need repair/replacement in 2012. Replacement was done in 4th Quarter 2012.

(**) Brush along perimeter fence in LADWP easment is high. Contact LAFD Fire abatement officer to notify proper entity.

Conditions/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Repair)

1 = Poor (Needs Immediate Repair)

Table 14.0
2012 Access Road Inspection Summary
Del Amo Waste Pits OU

Access Road					
Inspection Date	**March 26, 2012**	**April 16, 2012**	**June 26, 2012**	**September 28, 2012**	**December 4, 2012**
Inspection Type	1st Quarter Inspection/Post Rain Inspection	Post Rain Inspection	2nd Quarter Inspection	3rd Quarter Inspection	4th Quarter Inspection
Inspection Items					
Holes and Cracks	4	4	4	4	4
Vegetation Overgrowth	4	4	4	4	4
Settlement	4	4	4	4	4
Excessive Dispersion of Gravel	3(*)	3(*)	4	4	4
General Signs of Deterioration	4	4	4	4	4

(*) Gravel has spilled over into concrete entry way of site. Swept gravel back onto gravel roadway from concrete entry way at the front gate.

Conditions/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Repair)

1 = Poor (Needs Immediate Repair)

Table 15.0
2012 SVE/IBT System Inspection Summary
Del Amo Waste Pits OU

SVE/IBT System Inspection					
Inspection Date	**March 26, 2012**	**April 16, 2012**	**June 26, 2012**	**September 28, 2012**	**December 4, 2012**
Inspection Type	1st Quarter Inspection/Post Rain Inspection	Post Rain Inspection	2nd Quarter Inspection	3rd Quarter Inspection	4th Quarter Inspection
Inspection Items					
Manifold					
Adequate - Free Movement	4	4	4	4	4
Seals - Complete	4	4	4	4	4
Visible Damage	4	4	4	4	4
Sniff for signs of leaks	4	4	4	4	4
Condensate Collection					
Air Moisture Separator	4	4	4	4	4
Additional System Components					
Carbon Adsorber Vessels					
Exterior Damage	4	4	4	4	4
Vessel Configuration (A-B or B-A)	A-B	A-B	A-B	A-B	A-B
Blowers(*)					
General Motor Maintenance	4	4	4	4	4
Drive Maintenance	4	4	4	4	4
Bearing Maintenance	4	4	4	4	4
Oxygen Generator(**)					
Signs of Rust/Corrosion	4	4	4	4	4
Mechanical Functioning	4	4	4	4	4
Oxygen Purity	4	4	4	4	4
System Sensors(***)					
Visible Damage	4	4	4	4	4
Mechanical Functioning	2	2	2	2	2
SVE Wellheads					
Tee Flanges	4	4	4	4	4
Valves	4	4	4	4	4
Sniff for signs of leaks	4	4	4	4	4

(*) Blower B is locked-out and non-operational during PME activities.

(**) O_2 generator is locked and tagged-out and non-operational during PME activities.

(***) Certain system meters are non-operational and being maintenanced during the PME activities to streamline bringing back online in the future.

Conditions/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Repair)

1 = Poor (Needs Immediate Repair)

Table 16.0
2012 Groundwater Field Monitoring Data Summary
Del Amo Waste Pits OU

Well ID	Temp (°C)	pH	Cond (µMhos)	Turbidity	D.O. (mg/L)	GW Elevation
September 5, 2012						
PZL0018	21.96	6.75	2842	3.1	2.42	-9.22
PZL0019	30.02	6.4	4893	7.1	3.97	-9.05
PZL0020	24.47	6.41	5007	3.1	1.79	-8.94
PZL0022	22.72	6.41	2317	3.1	2.75	-8.98
PZL0024	22.63	6.58	2127	9.2	2.96	-8.82
PZL0025	22.71	6.36	3340	19.8	7.44	-9.41
SWL0008	23.14	6.76	2332	41	3.87	-8.93
SWL0044	23	6.63	24.62	8.8	1.59	-8.61
SWL0051	22.89	6.82	7060	1.9	1.71	-8.81
XMW29	21.64	6.69	2258	4.8	3.37	-9.81
XP02	22.1	6.7	1104	5.3	1.91	-9.68

Table 17.0
2012 Groundwater VOCs (USEPA Method 8260B)
Laboratory Data Summary
Del Amo Waste Pits OU

Date	SAMPLE_ID_MOD	1,1-Dichloroethene	1,2,4-Trimethylbenzene	Acetone	Benzene	Ethylbenzene	Isopropylbenzene	Naphthalene	n-Butylbenzene	n-Propylbenzene	sec-Butylbenzene	Tert-Butyl Alcohol (TBA)	Tetrachloroethene	Toluene	Trichloroethene	Xylenes (total)
California_MCL		6	NA	NA	1	300	NA	NA	NA	NA	NA	NA	5	150	5	1750
National_MCL		7	NA	NA	5	700	NA	NA	NA	NA	NA	NA	5	1000	5	10000
Notification_Level		NA	330	NA	NA	NA	770	17	260	260	260	12	NA	NA	NA	NA
9/5/2012	PZL0018	ND<20	ND<20	ND<400	2600	ND<20	ND<20	ND<200	ND<20	ND<20	ND<20	ND<200	ND<20	ND<20	ND<20	ND<20
9/5/2012	PZL0019	ND<2500	ND<2500	ND<50000	240000	ND<2500	ND<2500	ND<25000	ND<2500	ND<2500	ND<2500	ND<25000	ND<2500	ND<2500	ND<2500	ND<2500
9/5/2012	PZL0020	ND<2500	ND<2500	ND<50000	260000	4300	ND<2500	ND<25000	ND<2500	ND<2500	ND<2500	ND<25000	ND<2500	ND<2500	ND<2500	ND<2500
9/5/2012	PZL0022	ND<1.0	ND<1.0	ND<20	ND<0.50	ND<1.0	ND<1.0	ND<10	ND<1.0	ND<1.0	ND<1.0	ND<10	ND<1.0	ND<1.0	ND<1.0	ND<1.0
9/5/2012	PZL0024	ND<1.0	ND<1.0	ND<20	ND<0.50	ND<1.0	ND<1.0	ND<10	ND<1.0	ND<1.0	ND<1.0	ND<10	ND<1.0	ND<1.0	ND<1.0	ND<1.0
9/5/2012	PZL0025	ND<1.0	ND<1.0	ND<20	ND<0.50	ND<1.0	ND<1.0	ND<10	ND<1.0	ND<1.0	ND<1.0	ND<10	ND<1.0	ND<1.0	ND<1.0	ND<1.0
9/5/2012	SWL0008	ND<2.0	2.3	ND<40	210	23	64	71	28	150	28	84	ND<2.0	3.5	4.3	13
9/5/2012	SWL0008-DUP	ND<2.0	2.2	ND<40	220	24	69	76	30	170	29	94	ND<2.0	3.8	6.2	14
9/5/2012	SWL0044	ND<1.0	ND<1.0	ND<20	ND<0.50	ND<1.0	2.5	ND<10	ND<1.0	ND<1.0	2.9	ND<10	ND<1.0	1.1	ND<1.0	1
9/5/2012	SWL0051	ND<1.0	ND<1.0	20	ND<0.50	ND<1.0	ND<1.0	ND<10	ND<1.0	ND<1.0	ND<1.0	ND<10	ND<1.0	ND<1.0	8.7	ND<1.0
9/5/2012	XMW29	ND<250	ND<250	ND<5000	40000	ND<250	ND<250	ND<2500	ND<250	ND<250	ND<250	ND<2500	ND<250	ND<250	ND<250	ND<250
9/5/2012	XP02	2.1	ND<1.0	ND<20	ND<0.50	ND<1.0	1.3	ND<10	ND<1.0	ND<1.0	1.1	ND<10	3.8	ND<1.0	1.4	ND<1.0

unit: ug/L
ND: not detected at the indicated reporting limit
NA: not available

Table 18.0
2012 Groundwater SVOCs (USEPA Method 8270C)
Laboratory Data Summary
Del Amo Waste Pits OU

Date	Well ID	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Phenol
	California_MCL	NA	NA	NA	NA	NA
	National_MCL	NA	NA	NA	NA	NA
	Notification_Level	NA	NA	17	NA	NA
9/5/2012	PZL0018	ND<10	ND<10	ND<10	ND<10	ND<10
9/5/2012	PZL0019	ND<10	ND<10	56	ND<10	19
9/5/2012	PZL0020	18	28	220	14	310
9/5/2012	PZL0022	ND<10	ND<10	ND<10	ND<10	ND<10
9/5/2012	PZL0024	ND<10	ND<10	ND<10	ND<10	ND<10
9/5/2012	PZL0025	ND<10	ND<10	ND<10	ND<10	ND<10
9/5/2012	SWL0008	ND<10	ND<10	40	ND<10	ND<10
9/5/2012	SWL0044	ND<10	ND<10	ND<10	ND<10	ND<10
9/5/2012	SWL0051	ND<10	ND<10	ND<10	ND<10	ND<10
9/5/2012	XMW29	ND<10	ND<10	ND<10	ND<10	83
9/5/2012	XP02	ND<10	ND<10	ND<10	ND<10	ND<10

unit: ug/L
ND: not detected at the indicated reporting limit
NA: not available

Table 19.0
2012 Generated Waste Summary
Del Amo Waste Pits OU

Waste I.D.	Source	Media	Hazardous or Non-Haz	Waste Code	Volume	Container Type	Date of Generation	Date of Disposal	Transporter
PPEW-1	Environmental Sampling waste	PPE, tubing, etc. (solid)	Non-Haz	None	200 lbs.	Steel Drum	6/5/2011	2/9/2012	AIS
PW-1, PW-2	Groundwater wells	Purged GW (liquid)	Hazardous	135, D018	509 gal.	IBC poly-tanks to Vacuum truck	12/8/2011	2/9/2012	AIS
DAWP-3	SVE/IBT System	Condensate (liquid)	Hazardous	135, D001, D018	55 gal.	Steel Drum	12/15/2011	2/9/2012	AIS
CL-1, CL-2, CL-3	SVE/IBT System	Condensate (liquid)	Hazardous	135, D001, D018	150 gal.	Steel Drums	2/22/2012	5/2/2012	AIS
PW-1, PW-2	Groundwater wells	Purged GW	Hazardous	135, D018	444 gal.	IBC poly-tanks to Vacuum truck	9/5/2012	11/19/2012	AIS

SITE VICINITY MAP

Del Amo Waste Pits OU

Figure 1.0

An Environmental Management & Development Company

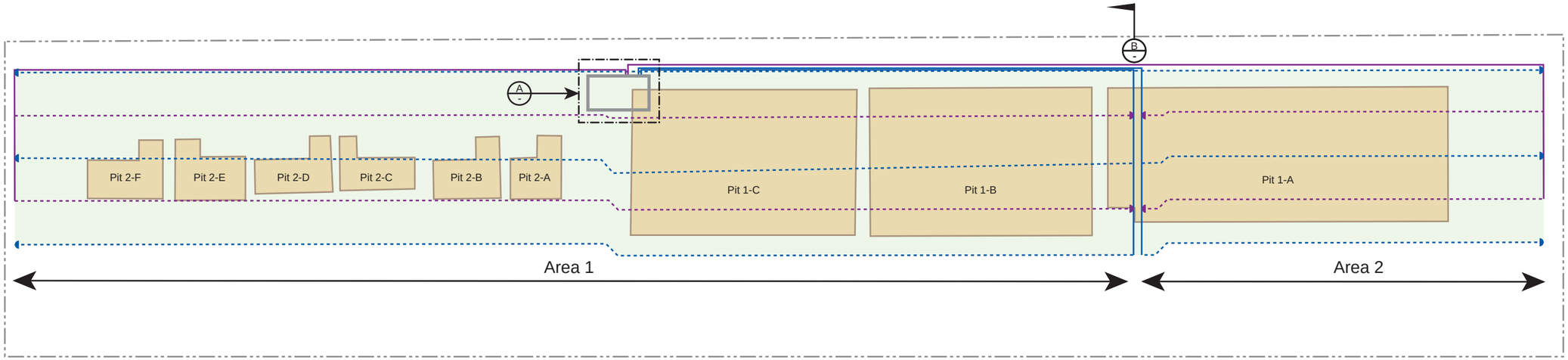
NEWPORT BEACH, CA 949.261.8098

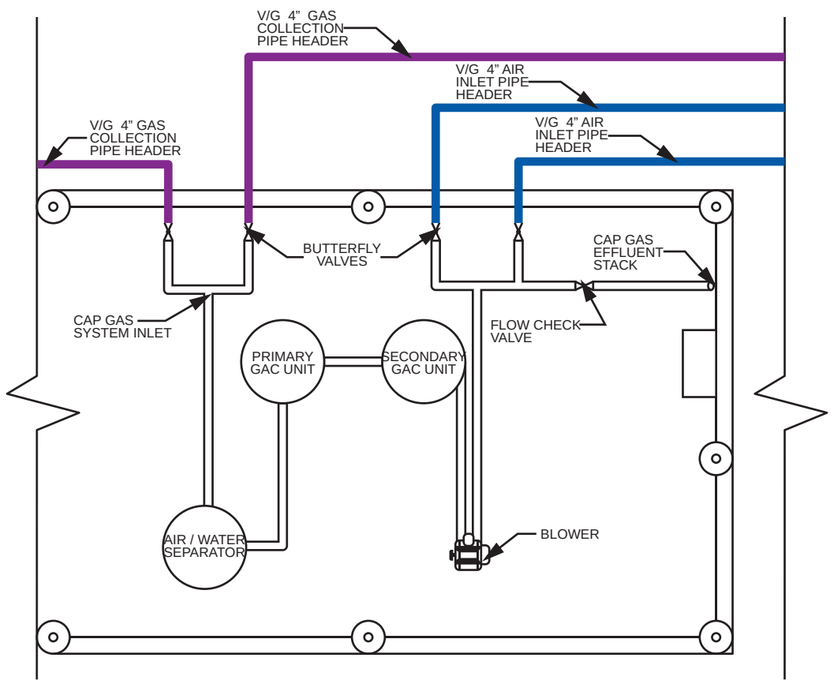
SITE MAP

Del Amo Waste Pits OU

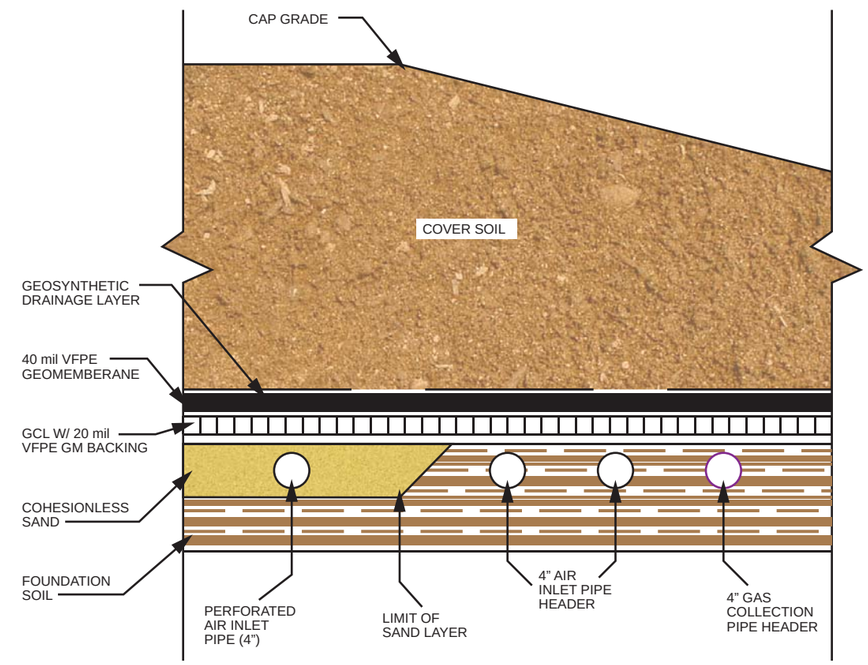
Figure 2.0

C2REM An Environmental Management & Development Company
NEWPORT BEACH, CA 949.261.8098





CAP GAS PIPING DIAGRAM (A -)
NTS - Vertically Exaggerated



CAP GAS COLLECTION PIPING CROSS SECTION (B -)
NTS - Vertically Exaggerated

Legend:

- 4" Solid Wall Gas Collection Pipe (Header)
- 4" Perforated Gas Collection Pipe
- 4" Solid Wall Air Inlet Pipe (Header)
- 4" Perforated Air Inlet Pipe
- Cap End
- Cap Gas Treatment System Enclosure
- Estimated Extent of Subsurface Impoundment
- Cap
- Del Amo Pits Site

GAS CAP TREATMENT SYSTEM PIPING PLAN

Del Amo Waste Pits OU

Figure 3.0

An Environmental Management & Development Company
NEWPORT BEACH, CA
949.261.8098

Figure 4.0
2012 Cap Gas Treatment System Monitoring Results (Influent vs. Effluent)
Del Amo Waste Pits OU

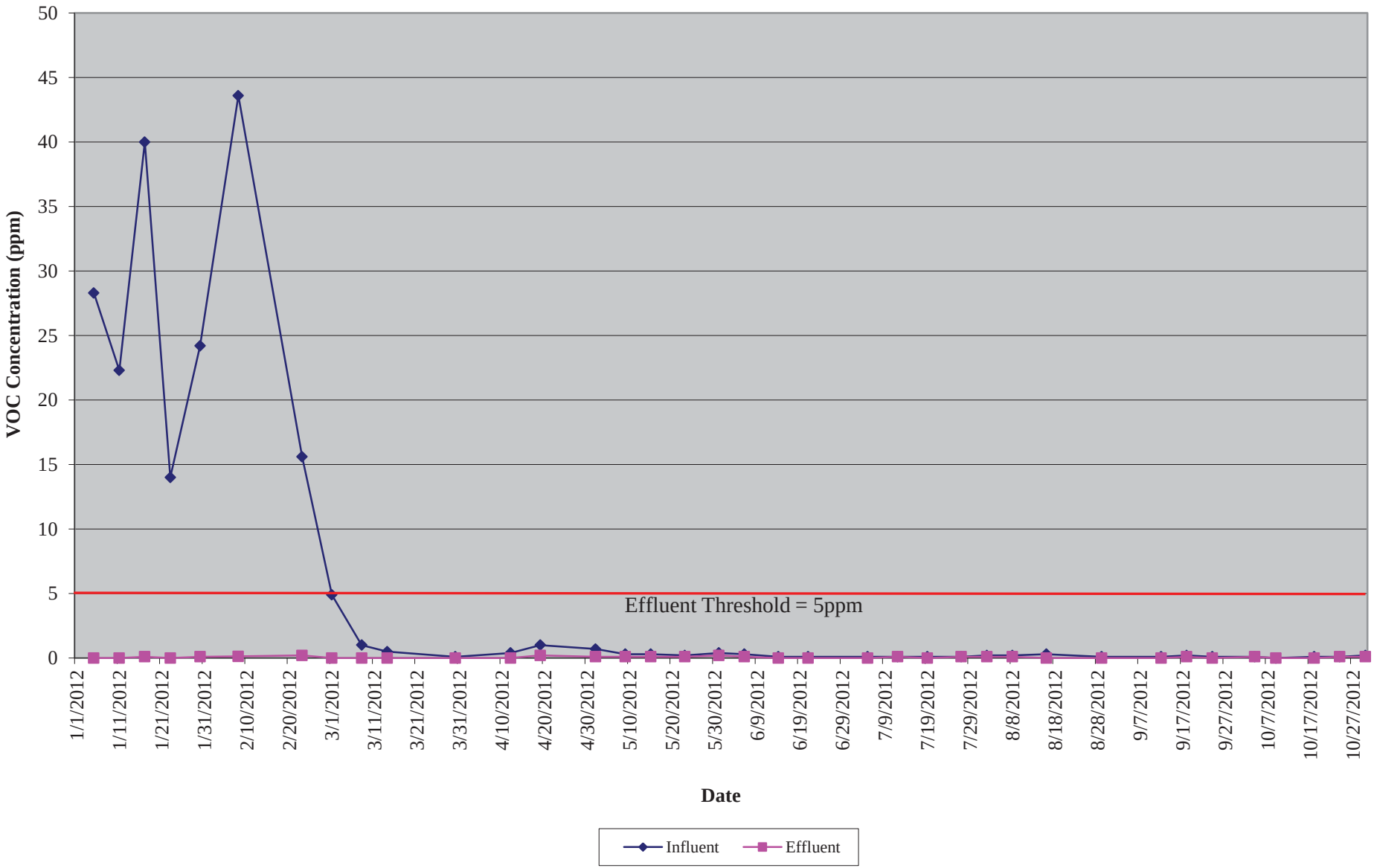
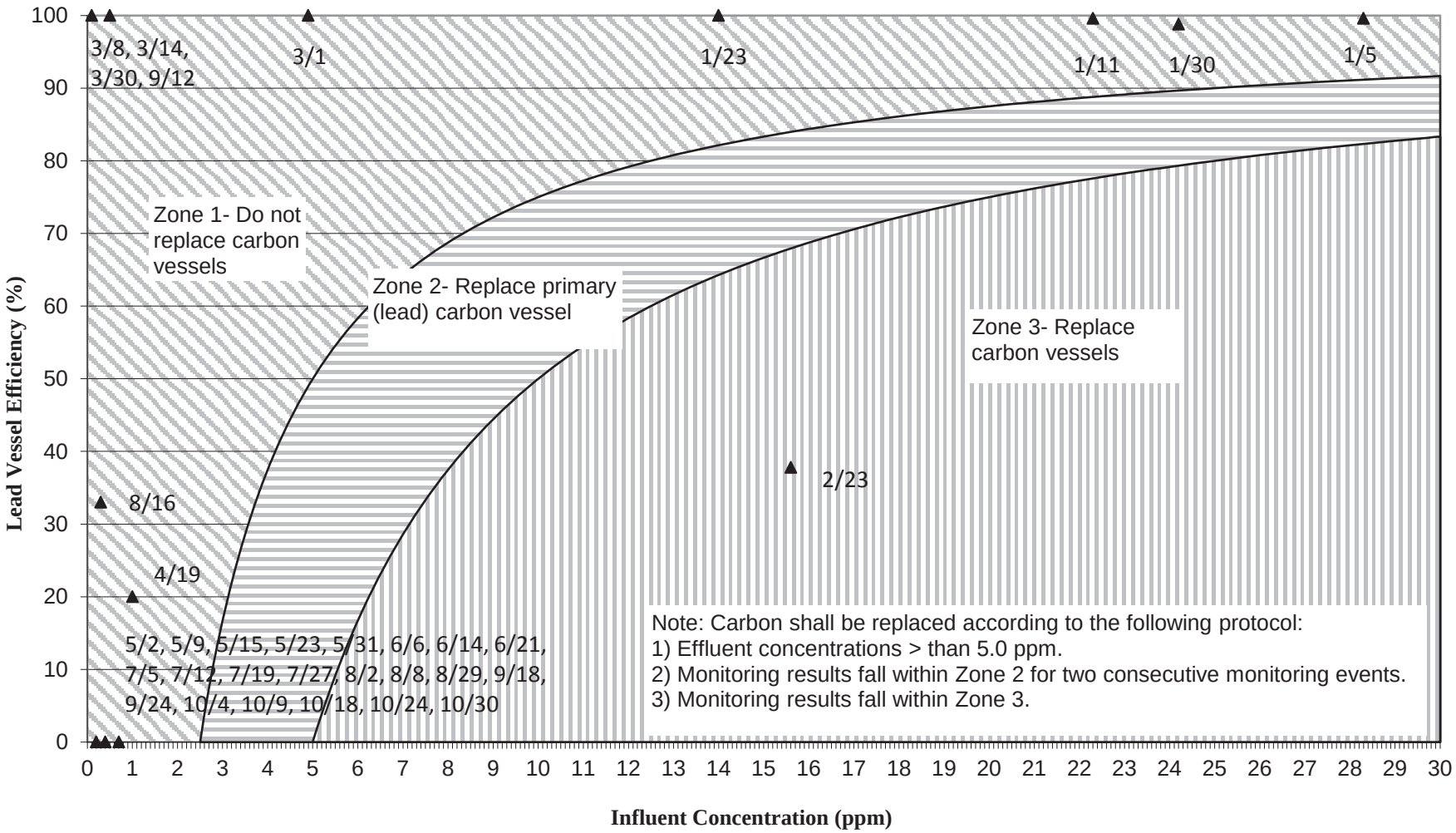


Figure 5.0
2012 Carbon Replacement Protocol
Del Amo Waste Pits OU

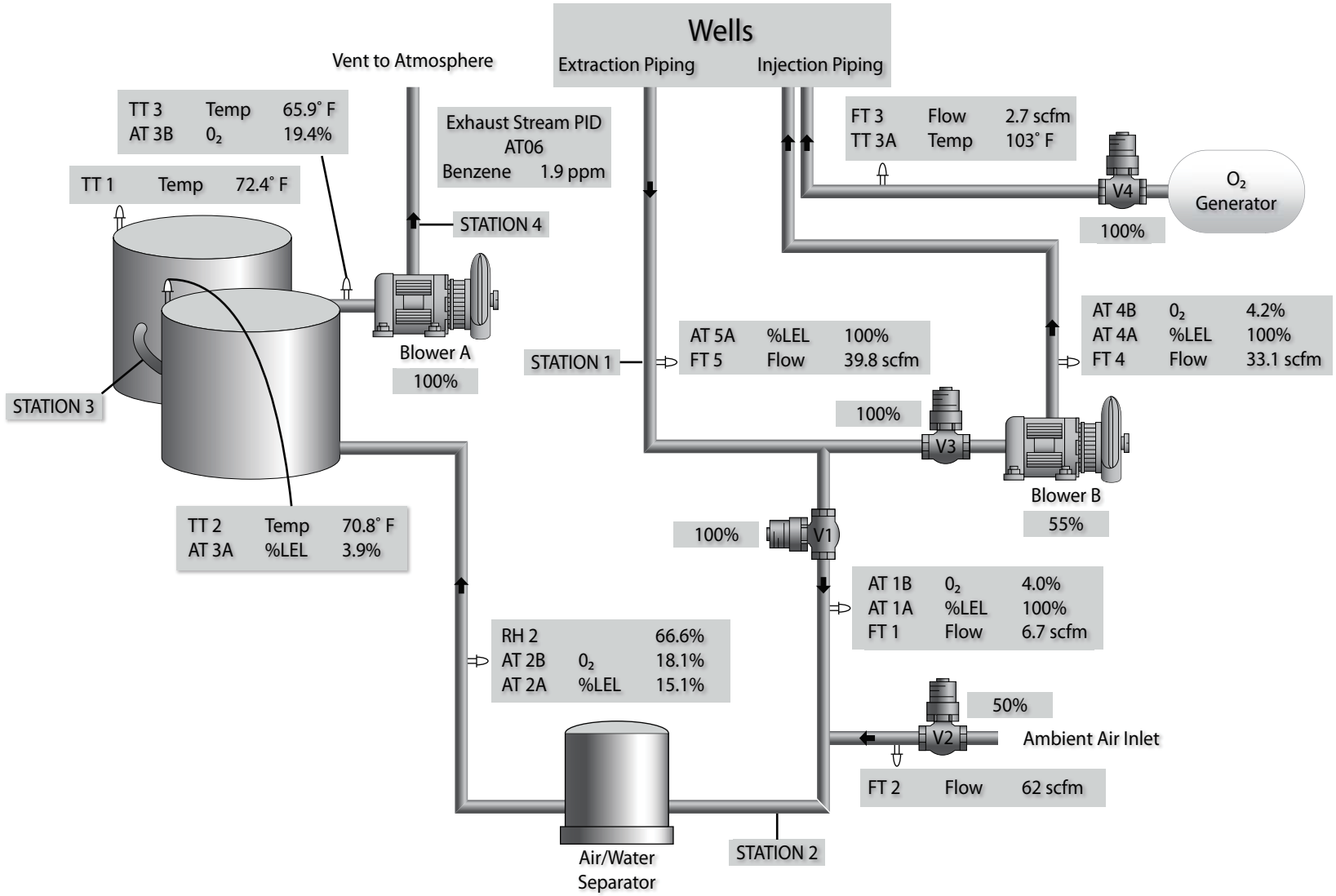


SVE & MONITORING WELL LOCATION MAP

Del Amo Waste Pits OU

Figure 6.0

C2REM
An Environmental Management & Development Company
NEWPORT BEACH, CA
949.261.8098



SVE/IBT NORMAL OPERATIONS

PLC Data Averages

January 1, 2012 - February 12, 2012

Del Amo Waste Pits OU

Figure 7.0

C2REM An Environmental Management & Development Company
NEWPORT BEACH, CA 949.261.8098

Figure 8.0
SVE/IBT System 2012 Laboratory Data Summary for Benzene
Del Amo Waste Pits

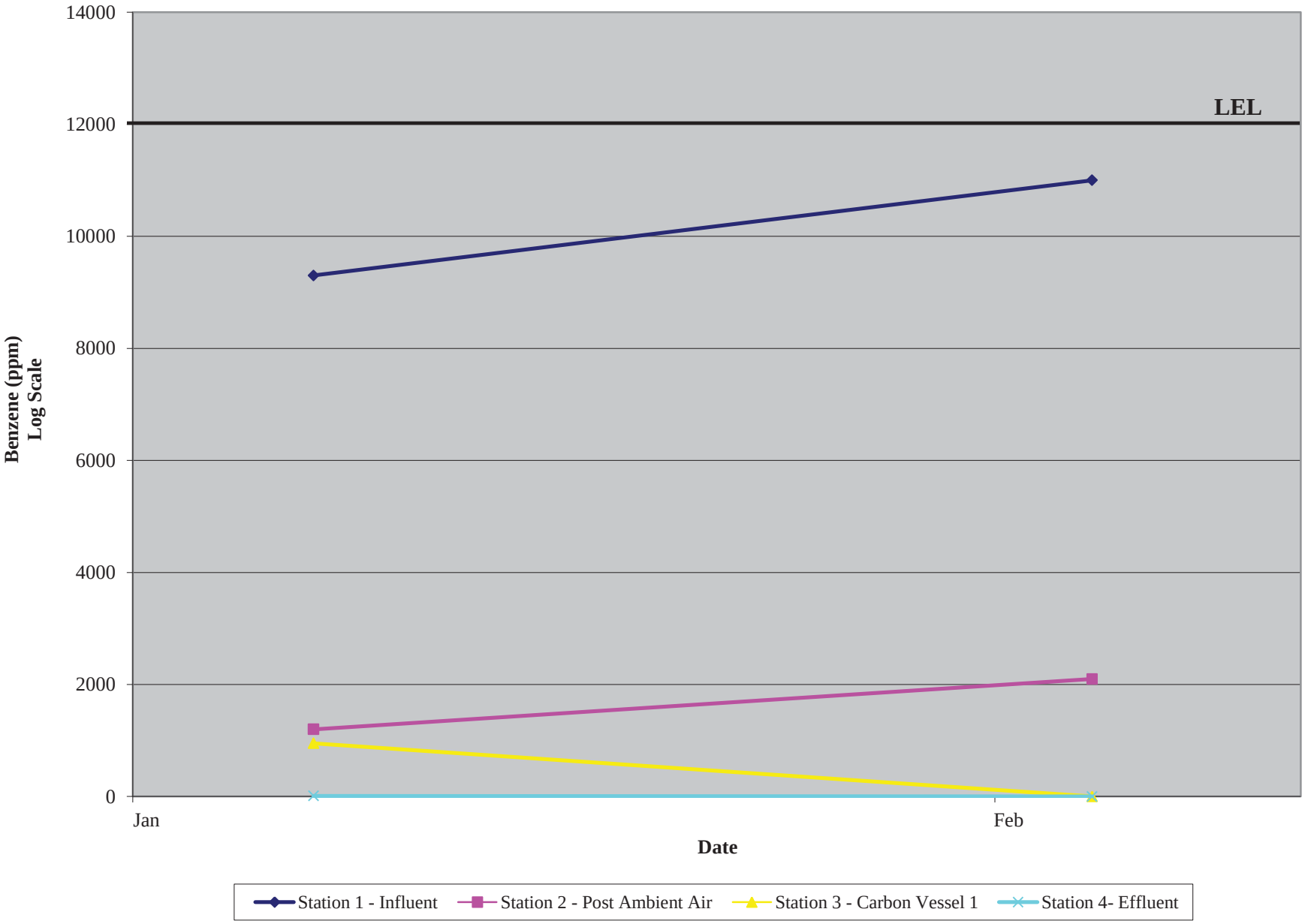
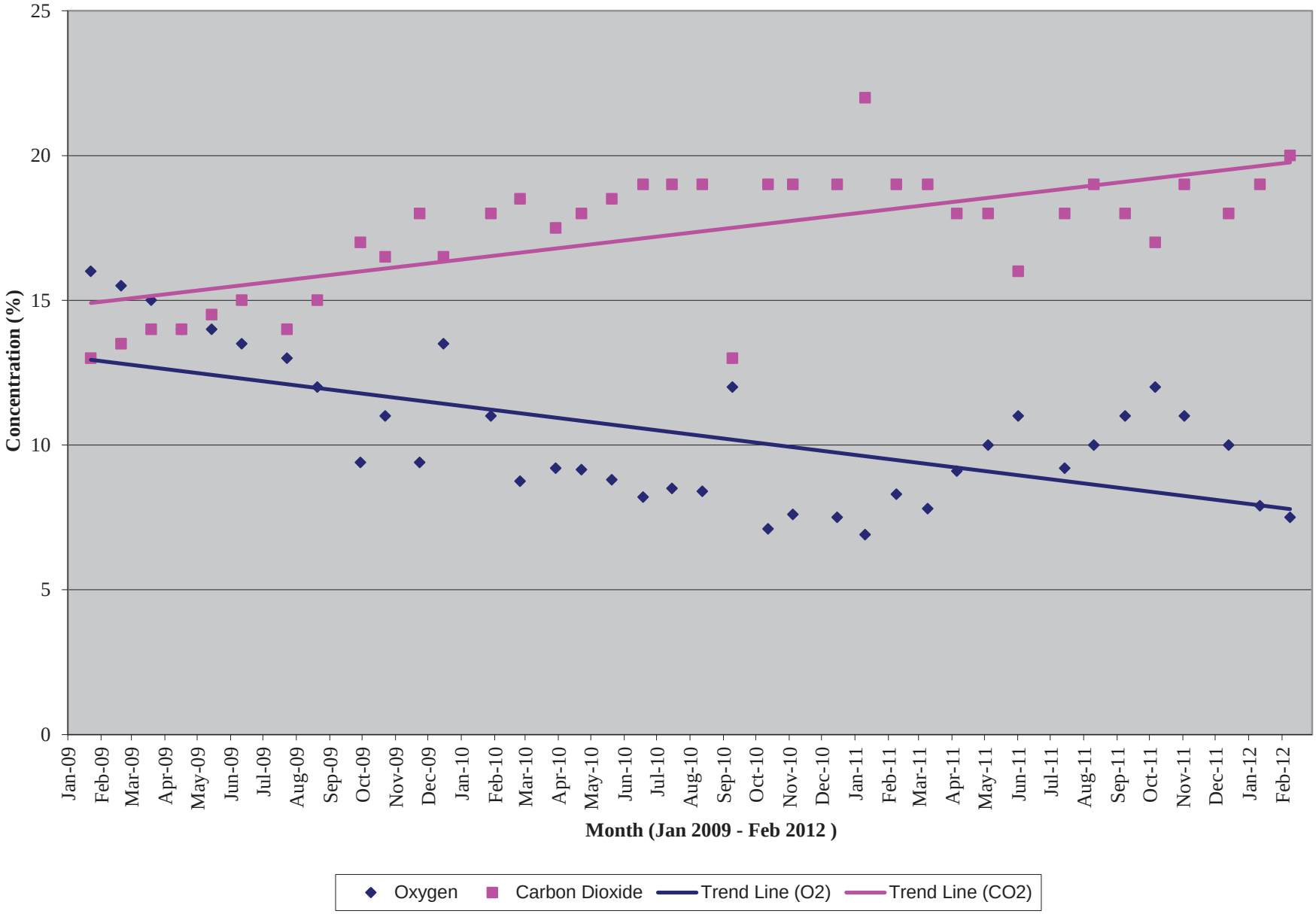
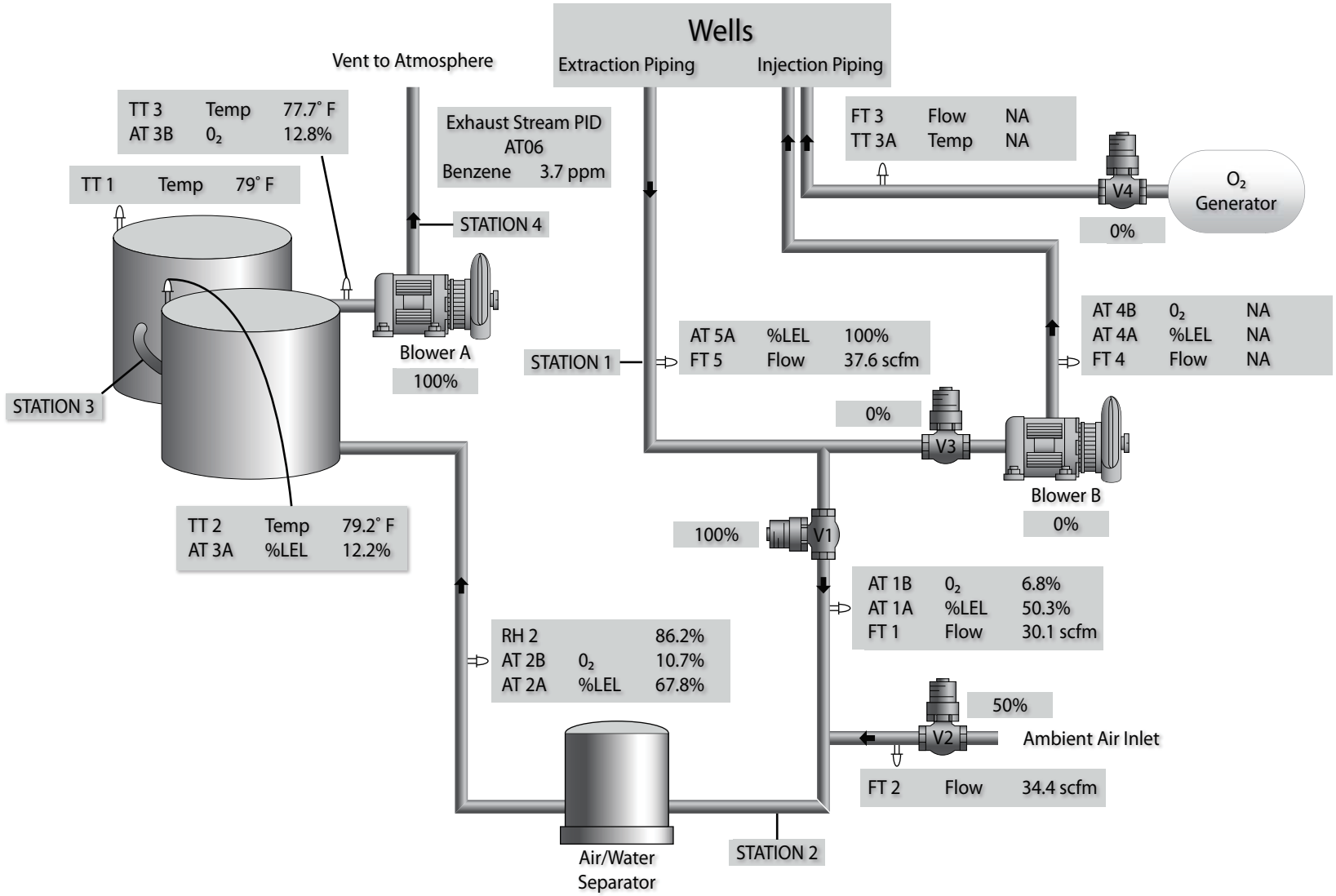


Figure 9.0
O2 vs. CO2 at SVE/IBT System Influent
Del Amo Waste Pits OU





Torrance, CA

SVE-ONLY MODE

PLC Data Averages

February 13, 2012 - June 25, 2012

Del Amo Waste Pits OU

Figure 10.0

C2REM An Environmental Management & Development Company
NEWPORT BEACH, CA 949.261.8098

Figure 11.0
SVE/IBT System Operation Total Benzene Removed
Del Amo Waste Pits OU

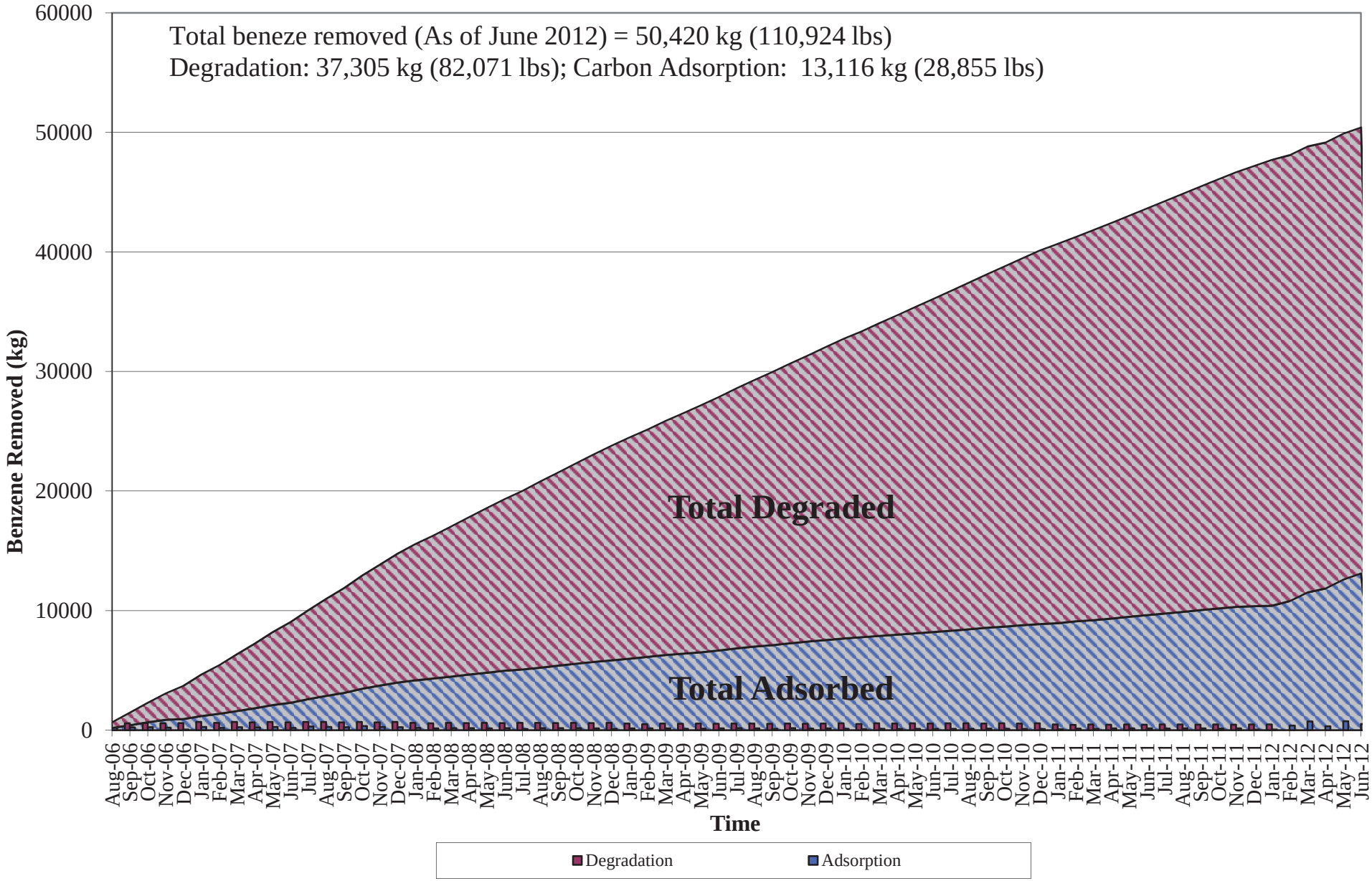
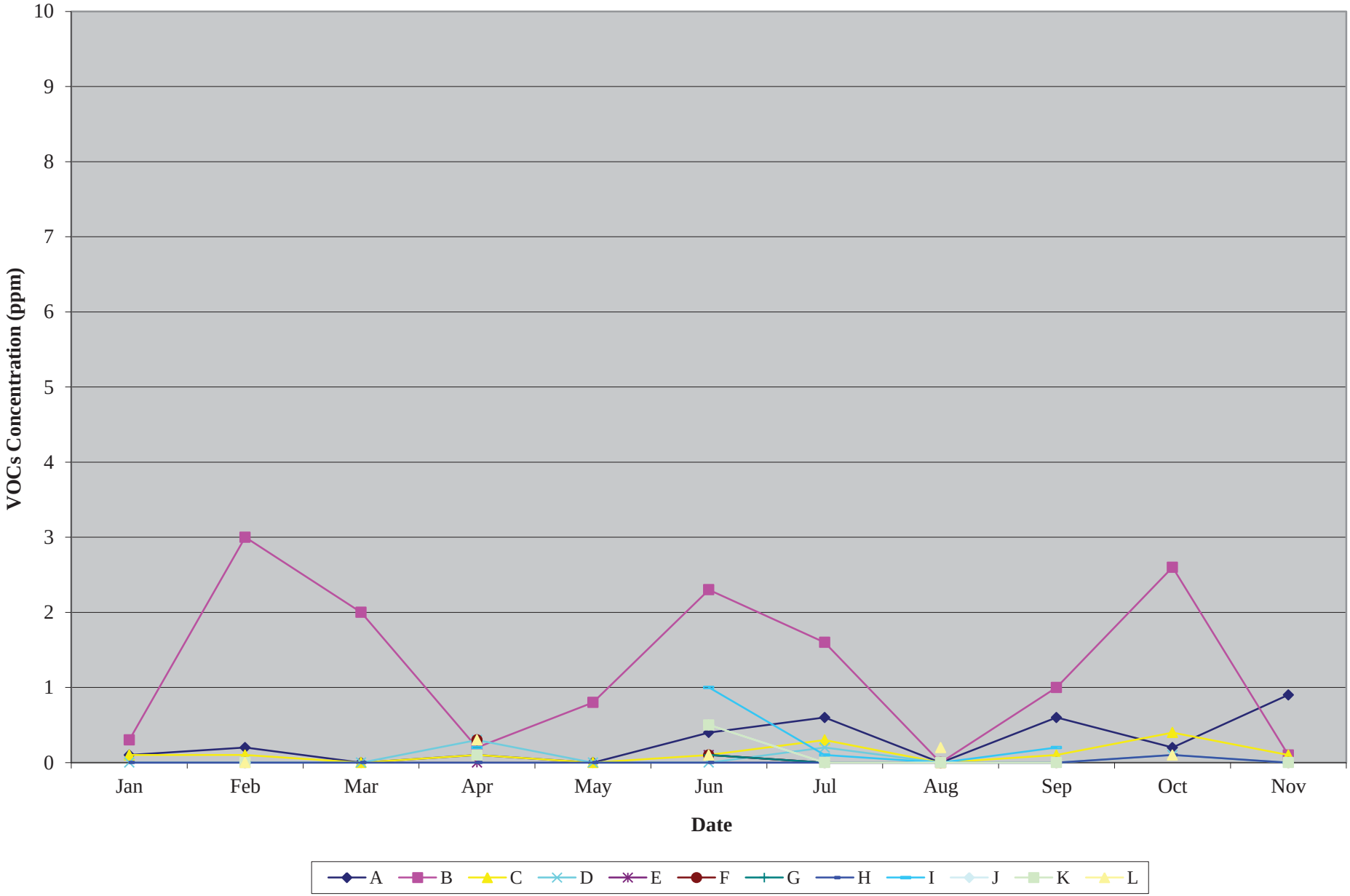
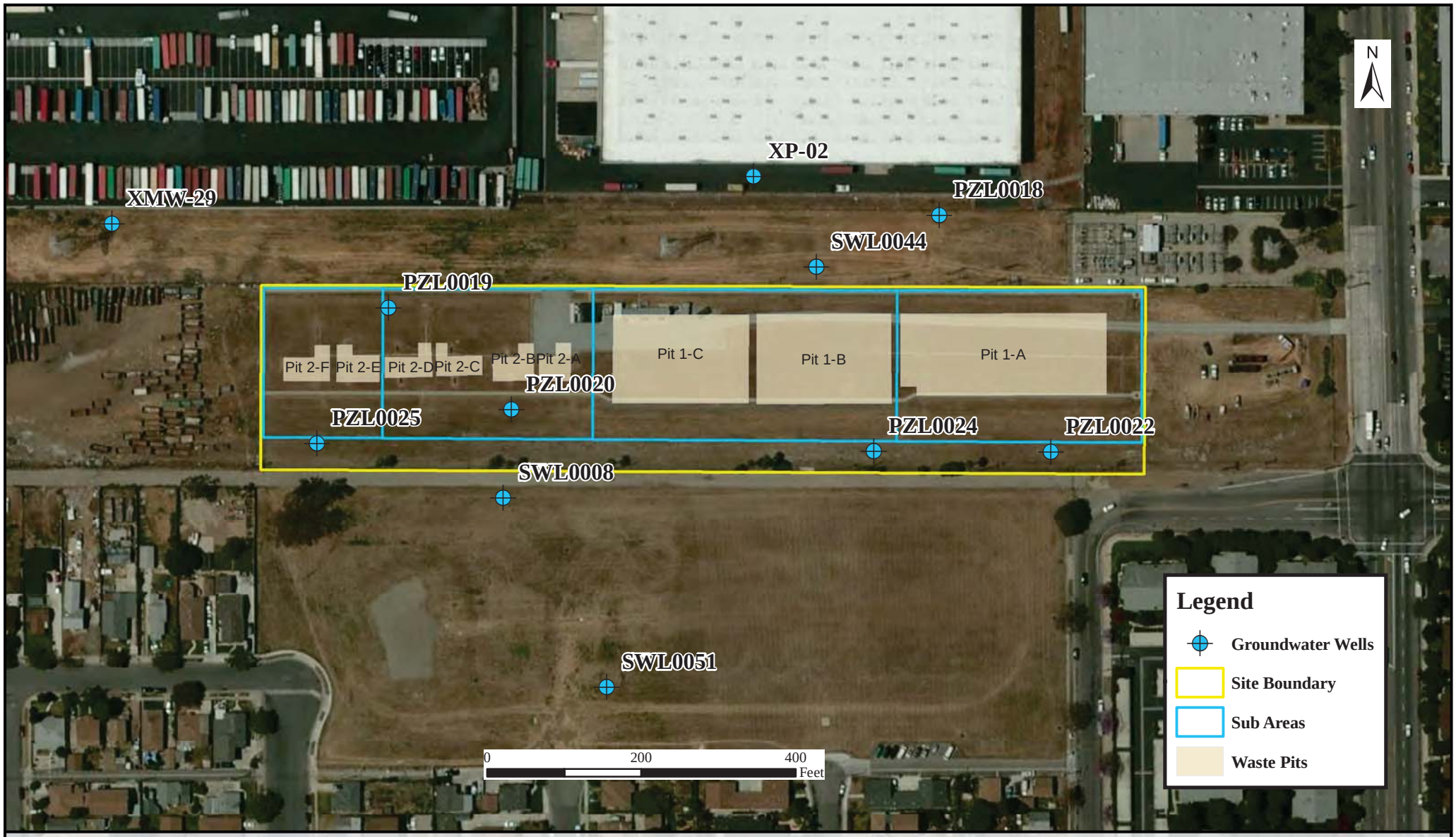


Figure 12.0
Perimeter Well Field Monitoring Results
Del Amo Waste Pits OU





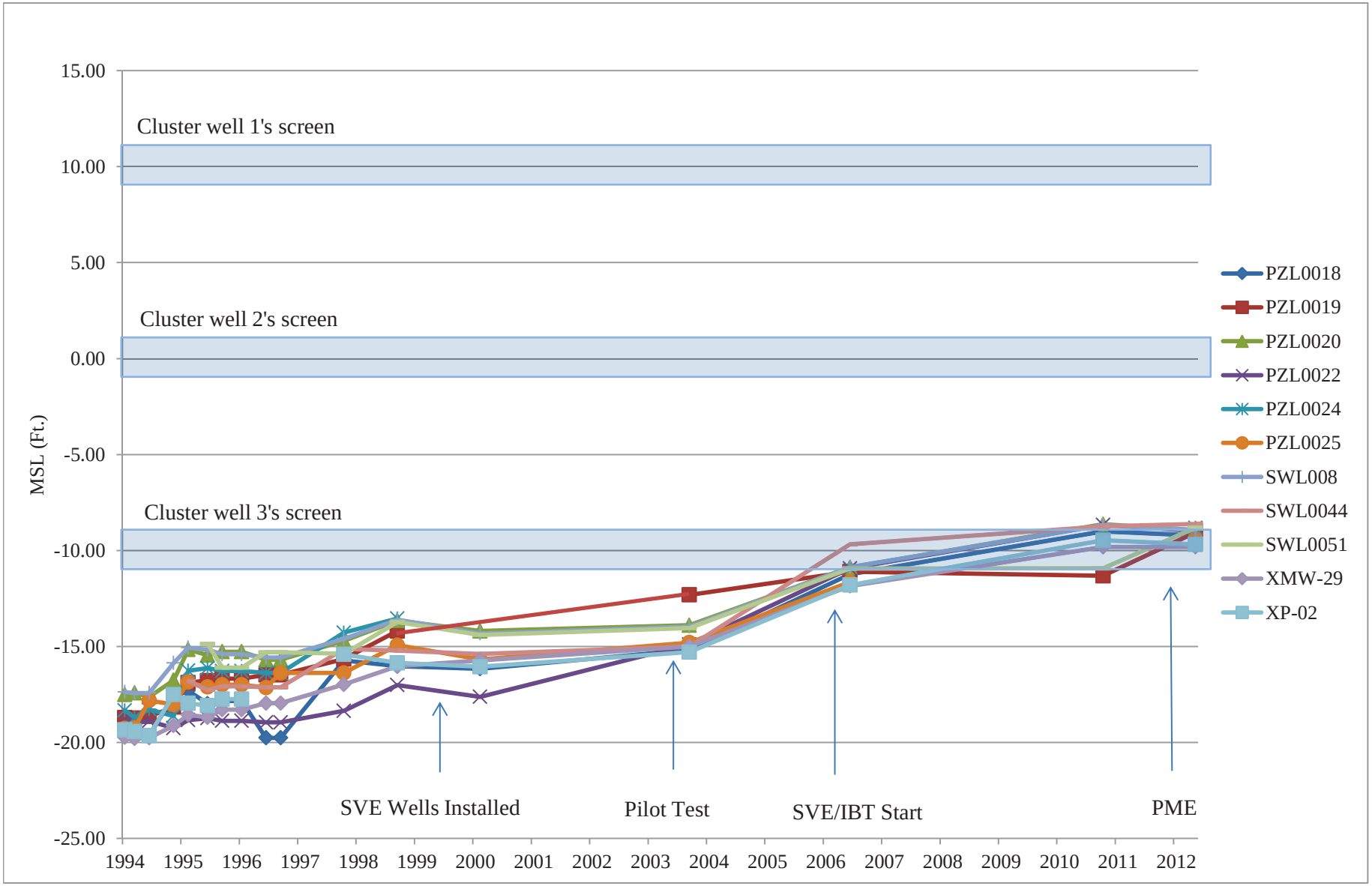
GROUNDWATER MONITORING WELL LOCATION MAP

Del Amo Waste Pits OU

Figure 13.0

C2REM
An Environmental Management & Development Company
NEWPORT BEACH, CA
949.261.8098

Figure 14.0
Groundwater Elevations (1994-2012)
Del Amo Wste Pits OU



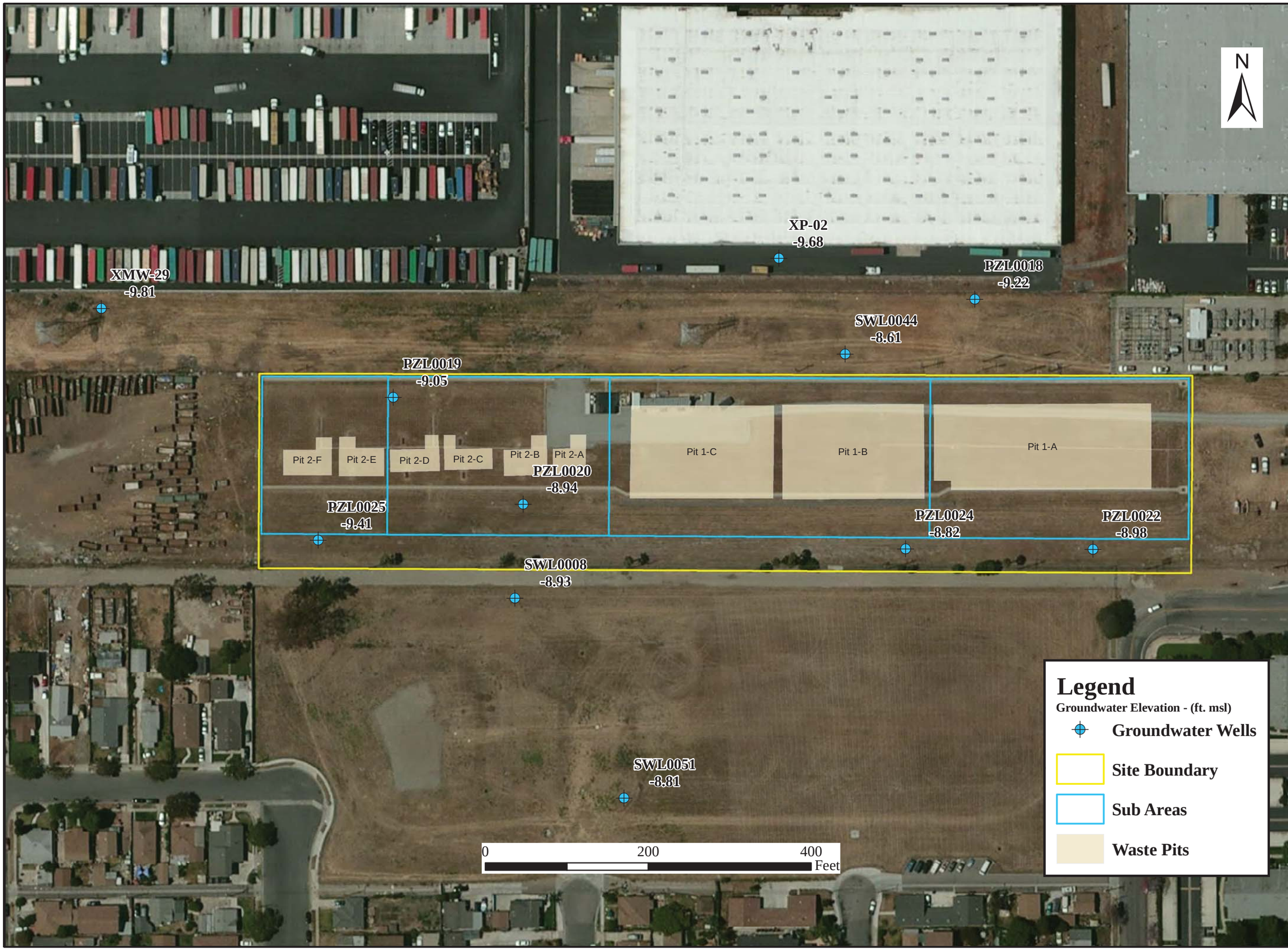


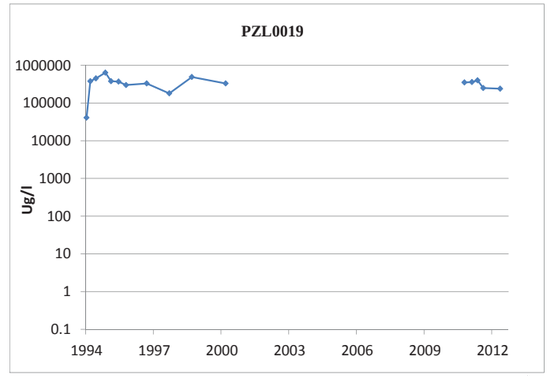
Figure 15.0

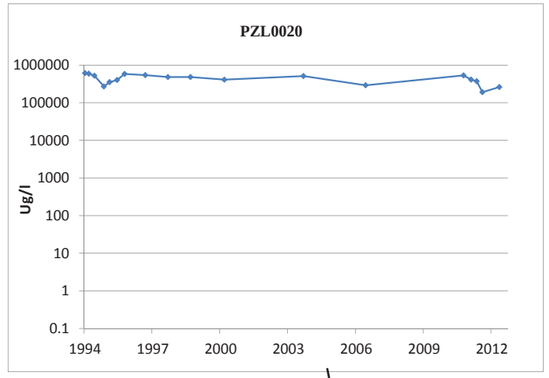
2012 GROUNDWATER ELEVATION

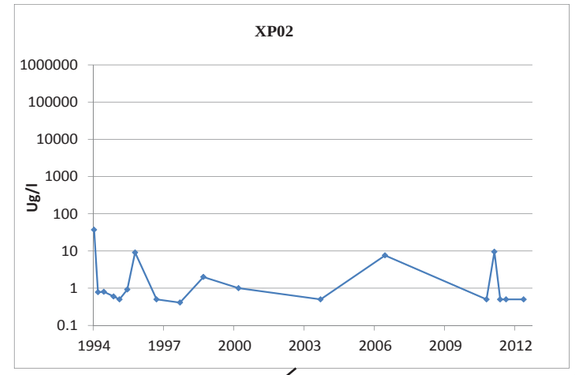
Del Amo Waste Pits OU

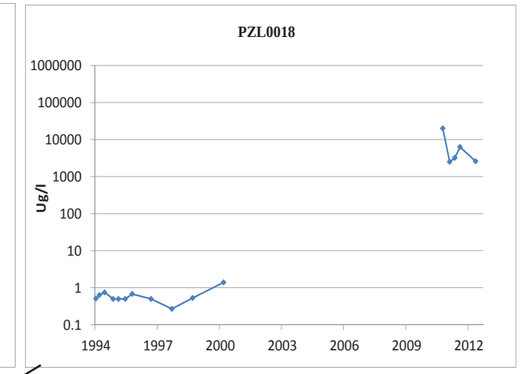
Torrance, CA

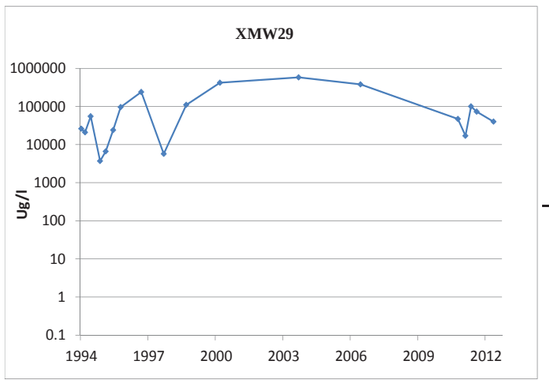
C2REM
An Environmental Management & Development Company
NEWPORT BEACH, CA
949.261.8098

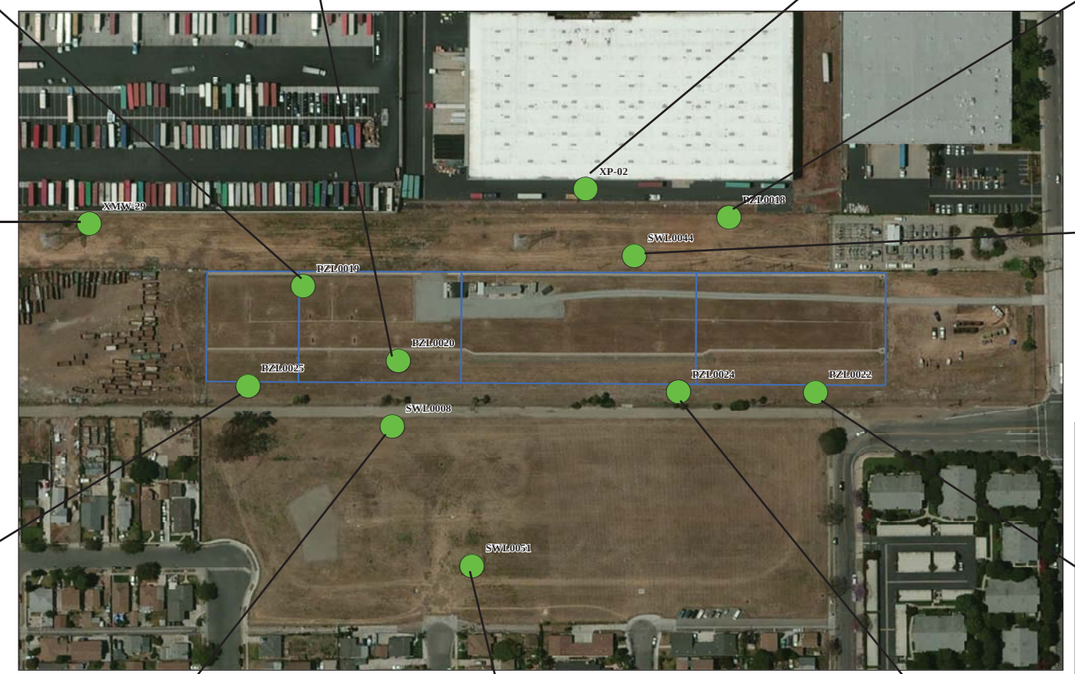


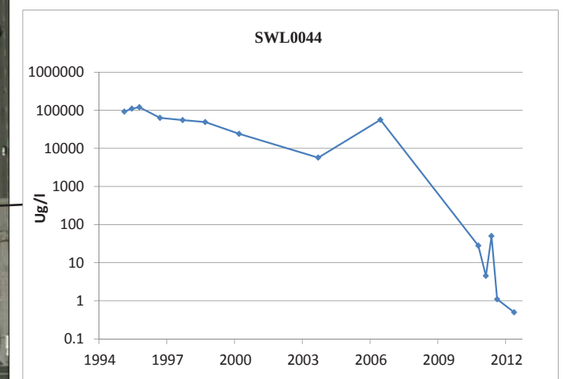


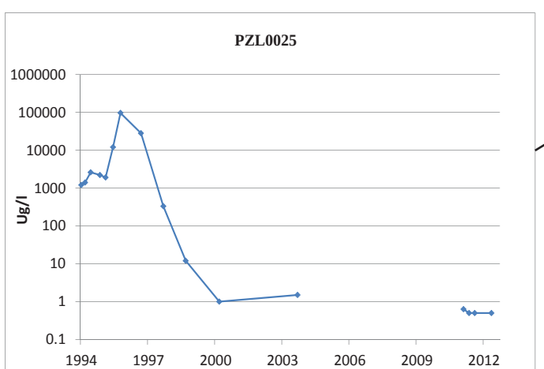


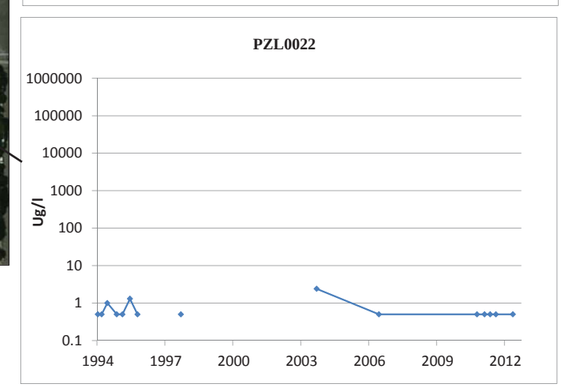


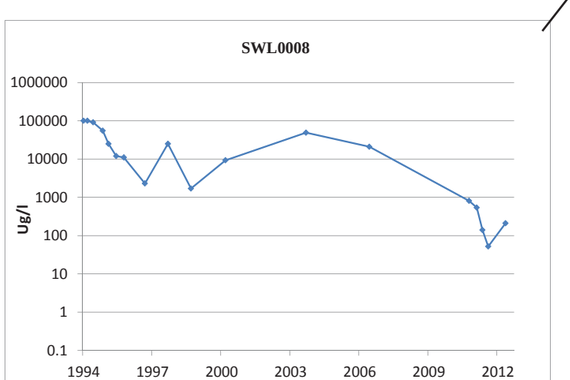


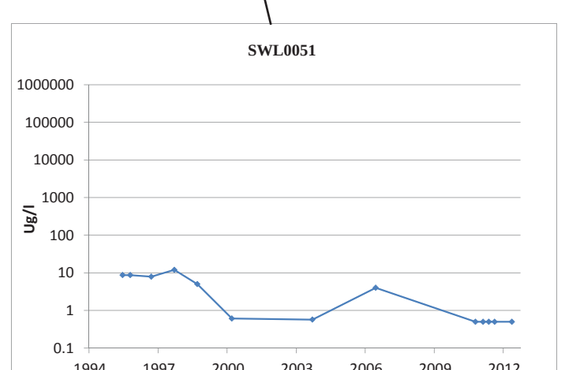


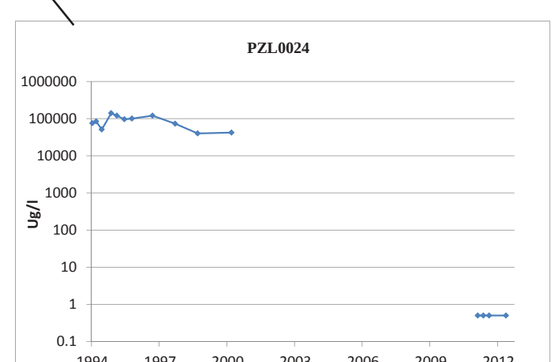












GROUNDWATER BENZENE CONCENTRATION TIMELINE TRENDS (1994-2012)

Del Amo Waste Pits OU

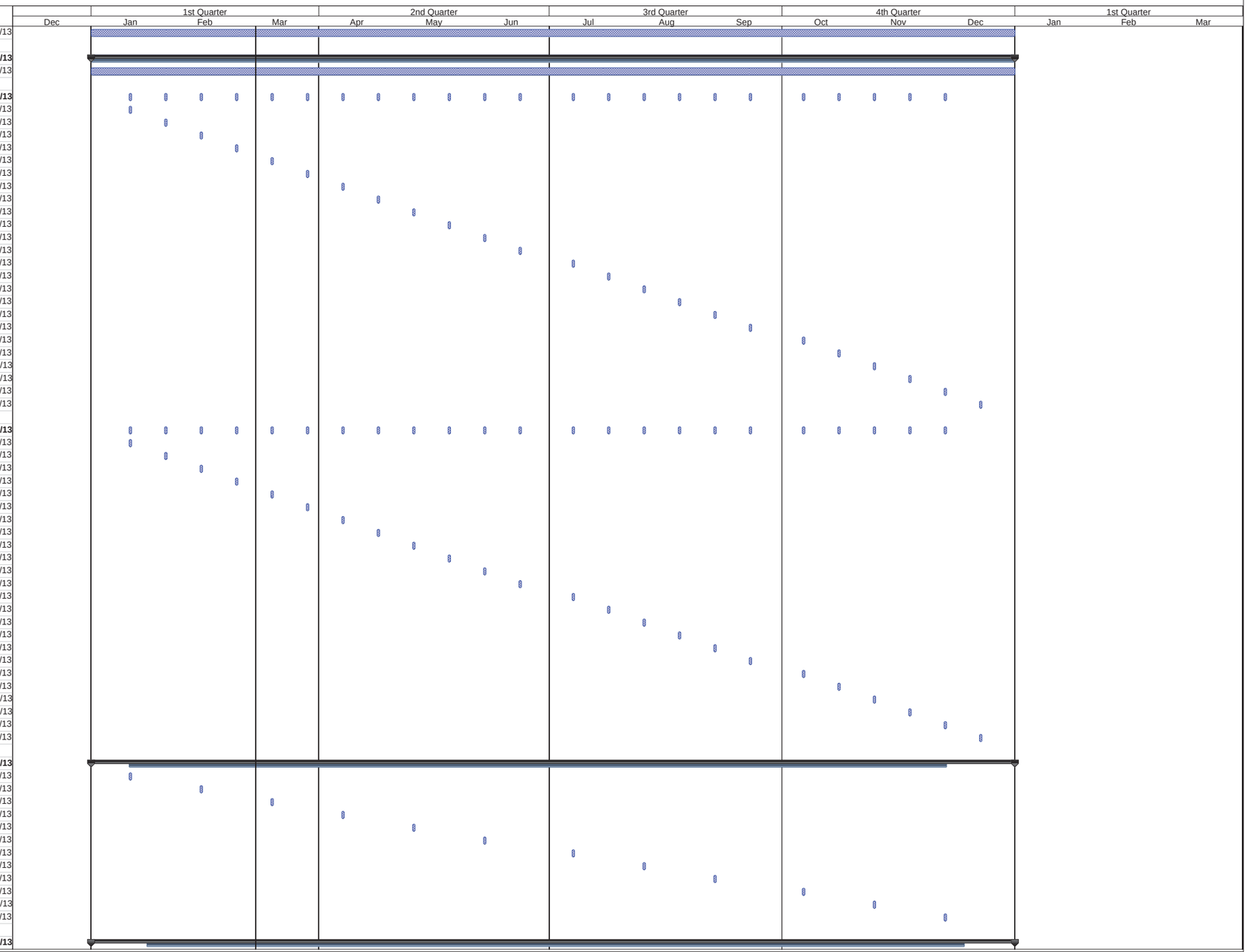
Torrance, CA

Figure 16.0

C2REM
An Environmental Management & Development Company
NEWPORT BEACH, CA
949.261.8098

Figure 17.0
2013 OM&M SCHEDULE OF ACTIVITIES
Del Amo Waste Pits OU

ID	Task Name	Duration	Start	Finish
1	Del Amo Pits Superfund Site	261 days	Tue 1/1/13	Tue 12/31/13
2				
3	**I. Project Management of OM&M Activities**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
4	Begin Project Management of OM&M Activitites	261 days	Tue 1/1/13	Tue 12/31/13
5				
6	**II. Bi-Weekly SVE/IBT System Field Monitoring**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
7	Bi-Weekly SVE/IBT System Monitoring 1	1 day	Wed 1/16/13	Wed 1/16/13
8	Bi-Weekly SVE/IBT System Monitoring 2	1 day	Wed 1/30/13	Wed 1/30/13
9	Bi-Weekly SVE/IBT System Monitoring 3	1 day	Wed 2/13/13	Wed 2/13/13
10	Bi-Weekly SVE/IBT System Monitoring 4	1 day	Wed 2/27/13	Wed 2/27/13
11	Bi-Weekly SVE/IBT System Monitoring 5	1 day	Wed 3/13/13	Wed 3/13/13
12	Bi-Weekly SVE/IBT System Monitoring 6	1 day	Wed 3/27/13	Wed 3/27/13
13	Bi-Weekly SVE/IBT System Monitoring 7	1 day	Wed 4/10/13	Wed 4/10/13
14	Bi-Weekly SVE/IBT System Monitoring 8	1 day	Wed 4/24/13	Wed 4/24/13
15	Bi-Weekly SVE/IBT System Monitoring 9	1 day	Wed 5/8/13	Wed 5/8/13
16	Bi-Weekly SVE/IBT System Monitoring 10	1 day	Wed 5/22/13	Wed 5/22/13
17	Bi-Weekly SVE/IBT System Monitoring 11	1 day	Wed 6/5/13	Wed 6/5/13
18	Bi-Weekly SVE/IBT System Monitoring 12	1 day	Wed 6/19/13	Wed 6/19/13
19	Bi-Weekly SVE/IBT System Monitoring 13	1 day	Wed 7/10/13	Wed 7/10/13
20	Bi-Weekly SVE/IBT System Monitoring 14	1 day	Wed 7/24/13	Wed 7/24/13
21	Bi-Weekly SVE/IBT System Monitoring 15	1 day	Wed 8/7/13	Wed 8/7/13
22	Bi-Weekly SVE/IBT System Monitoring 16	1 day	Wed 8/21/13	Wed 8/21/13
23	Bi-Weekly SVE/IBT System Monitoring 17	1 day	Wed 9/4/13	Wed 9/4/13
24	Bi-Weekly SVE/IBT System Monitoring 18	1 day	Wed 9/18/13	Wed 9/18/13
25	Bi-Weekly SVE/IBT System Monitoring 19	1 day	Wed 10/9/13	Wed 10/9/13
26	Bi-Weekly SVE/IBT System Monitoring 20	1 day	Wed 10/23/13	Wed 10/23/13
27	Bi-Weekly SVE/IBT System Monitoring 21	1 day	Wed 11/6/13	Wed 11/6/13
28	Bi-Weekly SVE/IBT System Monitoring 22	1 day	Wed 11/20/13	Wed 11/20/13
29	Bi-Weekly SVE/IBT System Monitoring 23	1 day	Wed 12/4/13	Wed 12/4/13
30	Bi-Weekly SVE/IBT System Monitoring 24	1 day	Wed 12/18/13	Wed 12/18/13
31				
32	**III. Bi-Weekly GCTS Field Monitoring**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
33	Bi-Weekly GCTS 1	1 day	Wed 1/16/13	Wed 1/16/13
34	Bi-Weekly GCTS 2	1 day	Wed 1/30/13	Wed 1/30/13
35	Bi-Weekly GCTS 3	1 day	Wed 2/13/13	Wed 2/13/13
36	Bi-Weekly GCTS 4	1 day	Wed 2/27/13	Wed 2/27/13
37	Bi-Weekly GCTS 5	1 day	Wed 3/13/13	Wed 3/13/13
38	Bi-Weekly GCTS 6	1 day	Wed 3/27/13	Wed 3/27/13
39	Bi-Weekly GCTS 7	1 day	Wed 4/10/13	Wed 4/10/13
40	Bi-Weekly GCTS 8	1 day	Wed 4/24/13	Wed 4/24/13
41	Bi-Weekly GCTS 9	1 day	Wed 5/8/13	Wed 5/8/13
42	Bi-Weekly GCTS 10	1 day	Wed 5/22/13	Wed 5/22/13
43	Bi-Weekly GCTS 11	1 day	Wed 6/5/13	Wed 6/5/13
44	Bi-Weekly GCTS 12	1 day	Wed 6/19/13	Wed 6/19/13
45	Bi-Weekly GCTS 13	1 day	Wed 7/10/13	Wed 7/10/13
46	Bi-Weekly GCTS 14	1 day	Wed 7/24/13	Wed 7/24/13
47	Bi-Weekly GCTS 15	1 day	Wed 8/7/13	Wed 8/7/13
48	Bi-Weekly GCTS 16	1 day	Wed 8/21/13	Wed 8/21/13
49	Bi-Weekly GCTS 17	1 day	Wed 9/4/13	Wed 9/4/13
50	Bi-Weekly GCTS 18	1 day	Wed 9/18/13	Wed 9/18/13
51	Bi-Weekly GCTS 19	1 day	Wed 10/9/13	Wed 10/9/13
52	Bi-Weekly GCTS 20	1 day	Wed 10/23/13	Wed 10/23/13
53	Bi-Weekly GCTS 21	1 day	Wed 11/6/13	Wed 11/6/13
54	Bi-Weekly GCTS 22	1 day	Wed 11/20/13	Wed 11/20/13
55	Bi-Weekly GCTS 23	1 day	Wed 12/4/13	Wed 12/4/13
56	Bi-Weekly GCTS 24	1 day	Wed 12/18/13	Wed 12/18/13
57				
58	**IV. Monthly SVE/IBT Lab Sampling**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
59	Monthly SVE/IBT Lab Sample 1	1 day	Wed 1/16/13	Wed 1/16/13
60	Monthly SVE/IBT Lab Sample 2	1 day	Wed 2/13/13	Wed 2/13/13
61	Monthly SVE/IBT Lab Sample 3	1 day	Wed 3/13/13	Wed 3/13/13
62	Monthly SVE/IBT Lab Sample 4	1 day	Wed 4/10/13	Wed 4/10/13
63	Monthly SVE/IBT Lab Sample 5	1 day	Wed 5/8/13	Wed 5/8/13
64	Monthly SVE/IBT Lab Sample 6	1 day	Wed 6/5/13	Wed 6/5/13
65	Monthly SVE/IBT Lab Sample 7	1 day	Wed 7/10/13	Wed 7/10/13
66	Monthly SVE/IBT Lab Sample 8	1 day	Wed 8/7/13	Wed 8/7/13
67	Monthly SVE/IBT Lab Sample 9	1 day	Wed 9/4/13	Wed 9/4/13
68	Monthly SVE/IBT Lab Sample 10	1 day	Wed 10/9/13	Wed 10/9/13
69	Monthly SVE/IBT Lab Sample 11	1 day	Wed 11/6/13	Wed 11/6/13
70	Monthly SVE/IBT Lab Sample 12	1 day	Wed 12/4/13	Wed 12/4/13
71				
72	**V. Monthly Perimeter Field Monitoring Wells (Wells A, B, C, D, H)**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**

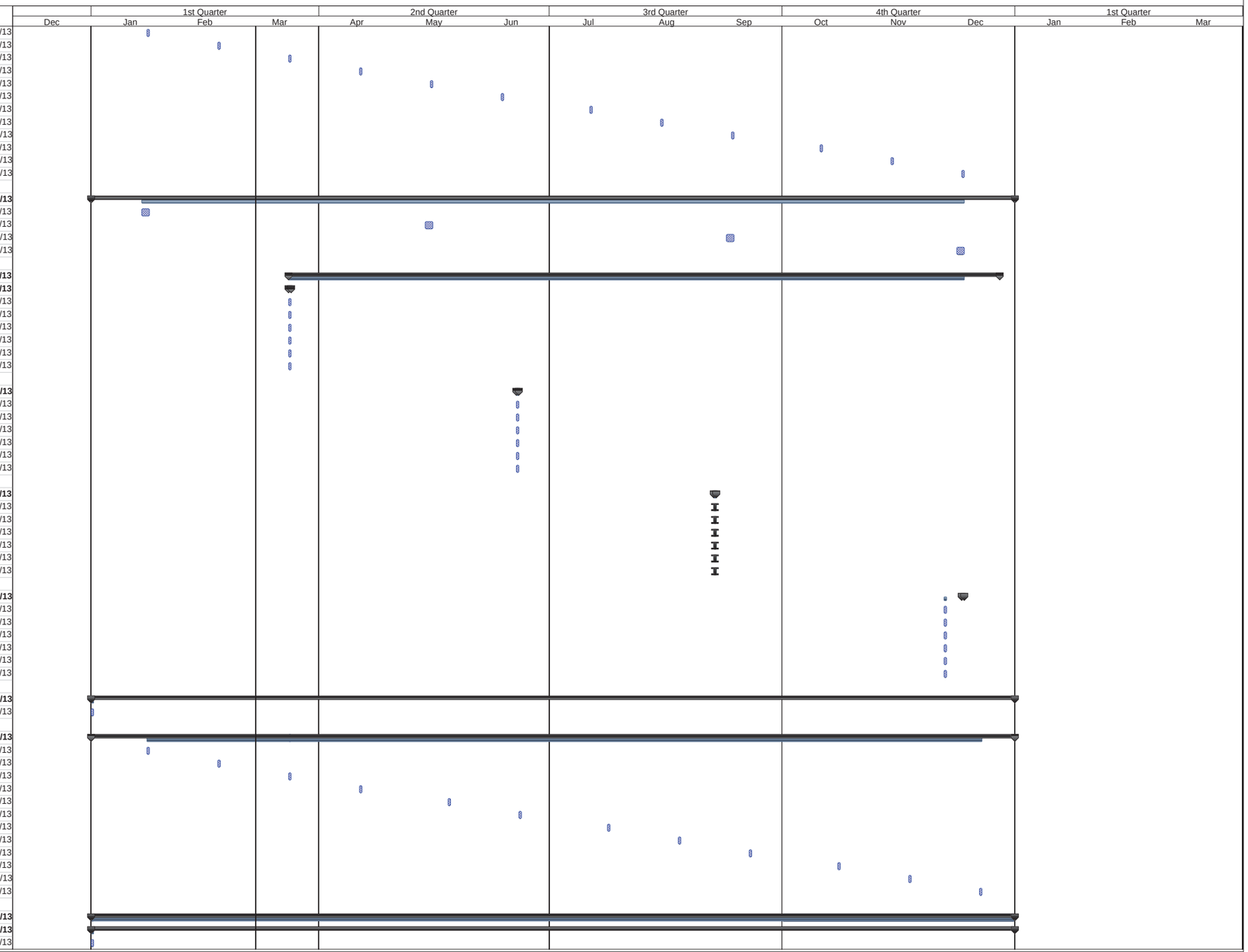


Project: 97-101 OM&M Schedule 2010
Date: Thu 3/7/13

Task | Rolled Up Task | Split | Group By Summary | Inactive Summary | Manual Summary Rollup | Finish-only
Milestone | Rolled Up Milestone | External Tasks | Inactive Task | Manual Task | Manual Summary | Progress
Summary | Rolled Up Progress | Project Summary | Inactive Milestone | Duration-only | Start-only

Figure 17.0
2013 OM&M SCHEDULE OF ACTIVITIES
Del Amo Waste Pits OU

ID	Task Name	Duration	Start	Finish
73	Monthly Perimeter Monitoring Wells 1	1 day	Wed 1/23/13	Wed 1/23/13
74	Monthly Perimeter Monitoring Wells 2	1 day	Wed 2/20/13	Wed 2/20/13
75	Monthly Perimeter Monitoring Wells 3	1 day	Wed 3/20/13	Wed 3/20/13
76	Monthly Perimeter Monitoring Wells 4	1 day	Wed 4/17/13	Wed 4/17/13
77	Monthly Perimeter Monitoring Wells 5	1 day	Wed 5/15/13	Wed 5/15/13
78	Monthly Perimeter Monitoring Wells 6	1 day	Wed 6/12/13	Wed 6/12/13
79	Monthly Perimeter Monitoring Wells 7	1 day	Wed 7/17/13	Wed 7/17/13
80	Monthly Perimeter Monitoring Wells 8	1 day	Wed 8/14/13	Wed 8/14/13
81	Monthly Perimeter Monitoring Wells 9	1 day	Wed 9/11/13	Wed 9/11/13
82	Monthly Perimeter Monitoring Wells 10	1 day	Wed 10/16/13	Wed 10/16/13
83	Monthly Perimeter Monitoring Wells 11	1 day	Wed 11/13/13	Wed 11/13/13
84	Monthly Perimeter Monitoring Wells 12	1 day	Wed 12/11/13	Wed 12/11/13
85				
86	**VI. Quarterly Full Scale Field Monitoring**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
87	1st Quarterly Full Scale Monitoring Event	3 days	Mon 1/21/13	Wed 1/23/13
88	2nd Quarterly Full Scale Monitoring Event	3 days	Mon 5/13/13	Wed 5/15/13
89	3rd Quarterly Full Scale Monitoring Event	3 days	Mon 9/9/13	Wed 9/11/13
90	4th Quarterly Full Scale Monitoring Event	3 days	Mon 12/9/13	Wed 12/11/13
91				
92	**VII. Quarterly Inspections**	**201 days**	**Wed 3/20/13**	**Wed 12/25/13**
93	**Ist Quarterly Inspection**	**1 day**	**Wed 3/20/13**	**Wed 3/20/13**
94	Cover System	1 day	Wed 3/20/13	Wed 3/20/13
95	Surface Water Drainage System	1 day	Wed 3/20/13	Wed 3/20/13
96	Subsurface Water Drainage	1 day	Wed 3/20/13	Wed 3/20/13
97	Security Fence	1 day	Wed 3/20/13	Wed 3/20/13
98	Access Road	1 day	Wed 3/20/13	Wed 3/20/13
99	Cap Gas Collection/Treatment	1 day	Wed 3/20/13	Wed 3/20/13
100				
101	**2nd Quarterly Inspection**	**1 day**	**Tue 6/18/13**	**Tue 6/18/13**
102	Cover System	1 day	Tue 6/18/13	Tue 6/18/13
103	Surface Water Drainage System	1 day	Tue 6/18/13	Tue 6/18/13
104	Subsurface Water Drainage	1 day	Tue 6/18/13	Tue 6/18/13
105	Security Fence	1 day	Tue 6/18/13	Tue 6/18/13
106	Access Road	1 day	Tue 6/18/13	Tue 6/18/13
107	Cap Gas Collection/Treatment	1 day	Tue 6/18/13	Tue 6/18/13
108				
109	**3rd Quarterly Inspection**	**1 day**	**Wed 9/4/13**	**Wed 9/4/13**
110	Cover System	1 day	Wed 9/4/13	Wed 9/4/13
111	Surface Water Drainage System	1 day	Wed 9/4/13	Wed 9/4/13
112	Subsurface Water Drainage	1 day	Wed 9/4/13	Wed 9/4/13
113	Security Fence	1 day	Wed 9/4/13	Wed 9/4/13
114	Access Road	1 day	Wed 9/4/13	Wed 9/4/13
115	Cap Gas Collection/Treatment	1 day	Wed 9/4/13	Wed 9/4/13
116				
117	**4th Quarterly Inspection**	**1 day**	**Wed 12/11/13**	**Wed 12/11/13**
118	Cover System	1 day	Wed 12/4/13	Wed 12/4/13
119	Surface Water Drainage System	1 day	Wed 12/4/13	Wed 12/4/13
120	Subsurface Water Drainage	1 day	Wed 12/4/13	Wed 12/4/13
121	Security Fence	1 day	Wed 12/4/13	Wed 12/4/13
122	Access Road	1 day	Wed 12/4/13	Wed 12/4/13
123	Cap Gas Collection/Treatment	1 day	Wed 12/4/13	Wed 12/4/13
124				
125	**VIII. Non-Routine Site Inspections - AS NEEDED**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
126	Post Rain and Post-Seismic Inspections	1 day	Tue 1/1/13	Tue 1/1/13
127				
128	**IX. Routine Site/Infrastructure Maintenance**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
129	Monthly Oxygen Generator Inspection & Maintenance 1	1 day	Wed 1/23/13	Wed 1/23/13
130	Monthly Oxygen Generator Inspection & Maintenance 2	1 day	Wed 2/20/13	Wed 2/20/13
131	Monthly Oxygen Generator Inspection & Maintenance 3	1 day	Wed 3/20/13	Wed 3/20/13
132	Monthly Oxygen Generator Inspection & Maintenance 4	1 day	Wed 4/17/13	Wed 4/17/13
133	Monthly Oxygen Generator Inspection & Maintenance 5	1 day	Wed 5/22/13	Wed 5/22/13
134	Monthly Oxygen Generator Inspection & Maintenance 6	1 day	Wed 6/19/13	Wed 6/19/13
135	Monthly Oxygen Generator Inspection & Maintenance 7	1 day	Wed 7/24/13	Wed 7/24/13
136	Monthly Oxygen Generator Inspection & Maintenance 8	1 day	Wed 8/21/13	Wed 8/21/13
137	Monthly Oxygen Generator Inspection & Maintenance 9	1 day	Wed 9/18/13	Wed 9/18/13
138	Monthly Oxygen Generator Inspection & Maintenance 10	1 day	Wed 10/23/13	Wed 10/23/13
139	Monthly Oxygen Generator Inspection & Maintenance 11	1 day	Wed 11/20/13	Wed 11/20/13
140	Monthly Oxygen Generator Inspection & Maintenance 12	1 day	Wed 12/18/13	Wed 12/18/13
141				
142	**X. Non-Routine Site/Infrastructure Maintenance - AS NEEDED**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
143	**Carbon Change-Out SVE/IBT - AS NEEDED**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
144	Carbon Change Out 1	1 day	Tue 1/1/13	Tue 1/1/13

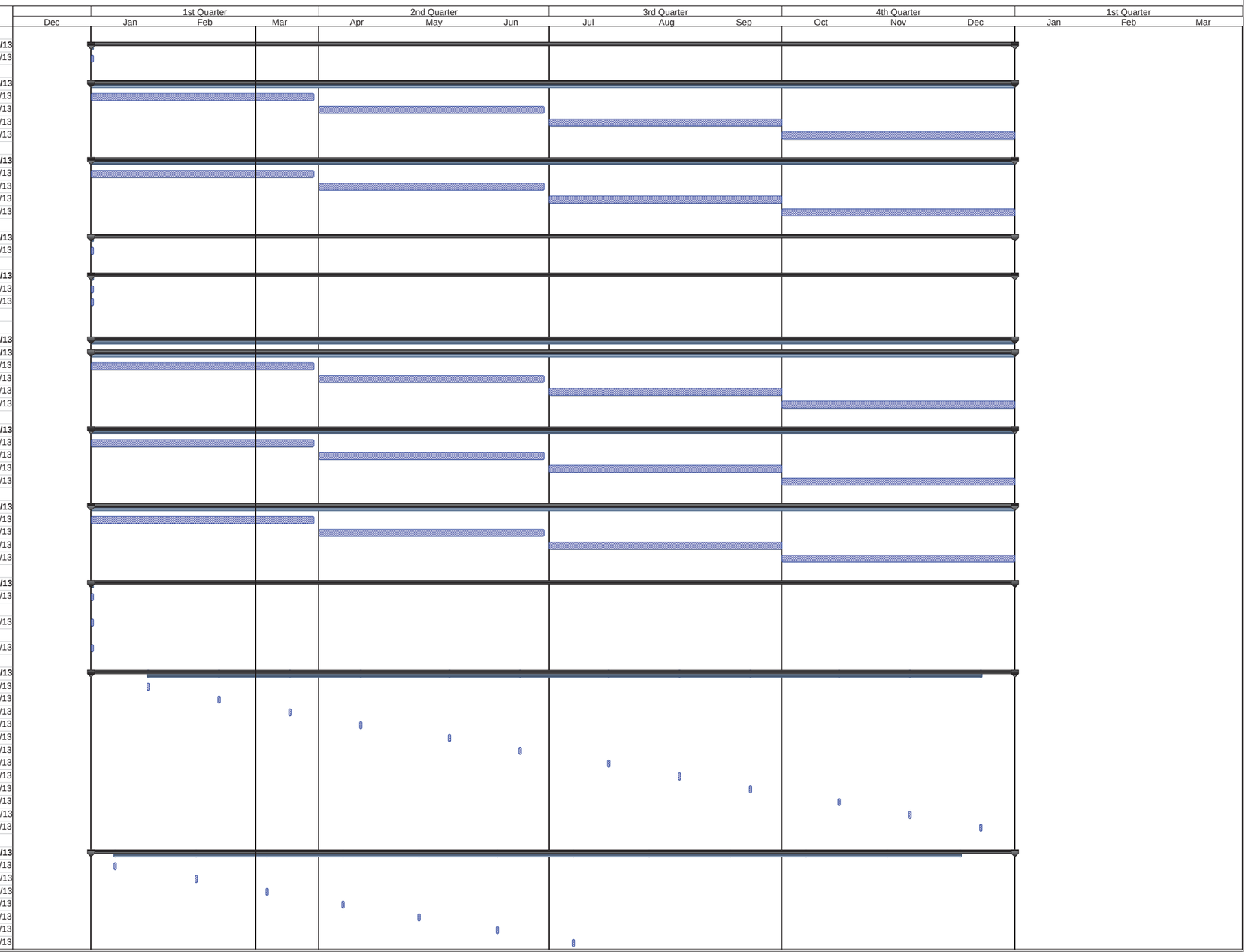


Project: 97-101 OM&M Schedule 2010
Date: Thu 3/7/13

Task | Milestone | Summary | Rolled Up Task | Rolled Up Milestone | Rolled Up Progress | Split | External Tasks | Project Summary | Group By Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | Progress

Figure 17.0
2013 OM&M SCHEDULE OF ACTIVITIES
Del Amo Waste Pits OU

ID	Task Name	Duration	Start	Finish
145				
146	**Carbon Change Out GCTS - AS NEEDED**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
147	Carbon Change Out 1	1 day	Tue 1/1/13	Tue 1/1/13
148				
149	**SVE/IBT & GCTS Maintenance**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
150	1st Quarter	64 days	Tue 1/1/13	Fri 3/29/13
151	2nd Quarter	65 days	Mon 4/1/13	Fri 6/28/13
152	3rd Quarter	66 days	Mon 7/1/13	Mon 9/30/13
153	4th Quarter	66 days	Tue 10/1/13	Tue 12/31/13
154				
155	**General Site Maintenance**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
156	1st Quarter	64 days	Tue 1/1/13	Fri 3/29/13
157	2nd Quarter	65 days	Mon 4/1/13	Fri 6/28/13
158	3rd Quarter	66 days	Mon 7/1/13	Mon 9/30/13
159	4th Quarter	66 days	Tue 10/1/13	Tue 12/31/13
160				
161	**Semi-Annual Pressure Testing- O2 Lines and Conveyance Piping**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
162	Manifold & Conveyance Piping 1	1 day	Tue 1/1/13	Tue 1/1/13
163				
164	**System Maintenance**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
165	Purging Condensate	1 day	Tue 1/1/13	Tue 1/1/13
166	Flow Adjustment	1 day	Tue 1/1/13	Tue 1/1/13
167				
168				
169	**XI. In-Line SVE/IBT Meter Calibration - AS Needed**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
170	**LEL**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
171	1st Quarter Maintenance	64 days	Tue 1/1/13	Fri 3/29/13
172	2nd Quarter Maintenance	65 days	Mon 4/1/13	Fri 6/28/13
173	3rd Quarter Maintenance	66 days	Mon 7/1/13	Mon 9/30/13
174	4th Quarter Maintenance	66 days	Tue 10/1/13	Tue 12/31/13
175				
176	**O2**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
177	1st Quarterly Maintenance	64 days	Tue 1/1/13	Fri 3/29/13
178	2nd Quarterly Maintenance	65 days	Mon 4/1/13	Fri 6/28/13
179	3rd Quarterly Maintenance	66 days	Mon 7/1/13	Mon 9/30/13
180	4th Quarterly Maintenance	66 days	Tue 10/1/13	Tue 12/31/13
181				
182	**Effluent PID**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
183	1st Quarterly Maintenance	64 days	Tue 1/1/13	Fri 3/29/13
184	2nd Quarterly Maintenance	65 days	Mon 4/1/13	Fri 6/28/13
185	3rd Quarterly Maintenance	66 days	Mon 7/1/13	Mon 9/30/13
186	4th Quarterly Maintenance	66 days	Tue 10/1/13	Tue 12/31/13
187				
188	**XII. In-Line Sensor Manufacturer Maintenance - AS NEEDED**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
189	LEL	1 day	Tue 1/1/13	Tue 1/1/13
190				
191	O2	1 day	Tue 1/1/13	Tue 1/1/13
192				
193	PID	1 day	Tue 1/1/13	Tue 1/1/13
194				
195	**XIII. Monthly Site H&S Inspections**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
196	Monthly Site H&S Inspection 1	1 day	Wed 1/23/13	Wed 1/23/13
197	Monthly Site H&S Inspection 2	1 day	Wed 2/20/13	Wed 2/20/13
198	Monthly Site H&S Inspection 3	1 day	Wed 3/20/13	Wed 3/20/13
199	Monthly Site H&S Inspection 4	1 day	Wed 4/17/13	Wed 4/17/13
200	Monthly Site H&S Inspection 5	1 day	Wed 5/22/13	Wed 5/22/13
201	Monthly Site H&S Inspection 6	1 day	Wed 6/19/13	Wed 6/19/13
202	Monthly Site H&S Inspection 7	1 day	Wed 7/24/13	Wed 7/24/13
203	Monthly Site H&S Inspection 8	1 day	Wed 8/21/13	Wed 8/21/13
204	Monthly Site H&S Inspection 9	1 day	Wed 9/18/13	Wed 9/18/13
205	Monthly Site H&S Inspection 10	1 day	Wed 10/23/13	Wed 10/23/13
206	Monthly Site H&S Inspection 11	1 day	Wed 11/20/13	Wed 11/20/13
207	Monthly Site H&S Inspection 12	1 day	Wed 12/18/13	Wed 12/18/13
208				
209	**XIV. Monthly Update**	**261 days**	**Tue 1/1/13**	**Tue 12/31/13**
210	Monthly Update January	1 day	Thu 1/10/13	Thu 1/10/13
211	Monthly Update February	1 day	Mon 2/11/13	Mon 2/11/13
212	Monthly Update March	1 day	Mon 3/11/13	Mon 3/11/13
213	Monthly Update April	1 day	Wed 4/10/13	Wed 4/10/13
214	Monthly Update May	1 day	Fri 5/10/13	Fri 5/10/13
215	Monthly Update June	1 day	Mon 6/10/13	Mon 6/10/13
216	Monthly Update July	1 day	Wed 7/10/13	Wed 7/10/13

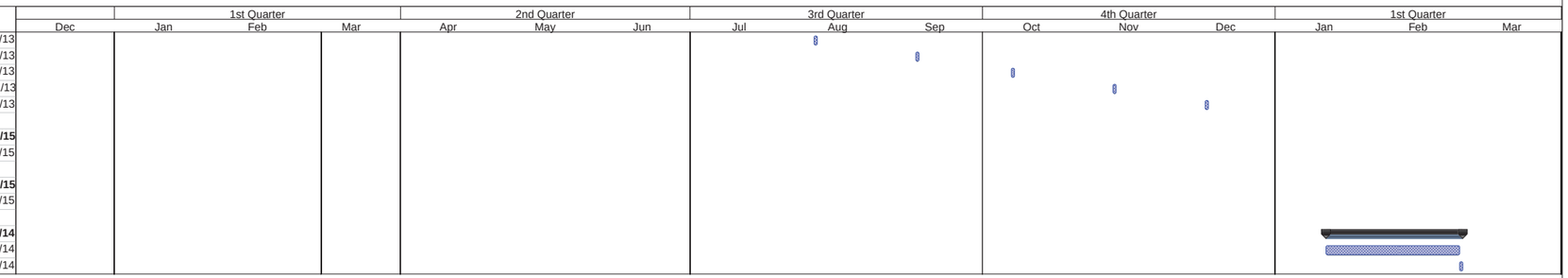


Project: 97-101 OM&M Schedule 2010
Date: Thu 3/7/13

Task | Milestone | Summary | Rolled Up Task | Rolled Up Milestone | Rolled Up Progress | Split | External Tasks | Project Summary | Group By Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | Progress

Figure 17.0
2013 OM&M SCHEDULE OF ACTIVITIES
Del Amo Waste Pits OU

ID	Task Name	Duration	Start	Finish
217	Monthly Update August	1 day	Fri 8/9/13	Fri 8/9/13
218	Monthly Update September	1 day	Tue 9/10/13	Tue 9/10/13
219	Monthly Update October	1 day	Thu 10/10/13	Thu 10/10/13
220	Monthly Update November	1 day	Mon 11/11/13	Mon 11/11/13
221	Monthly Update December	1 day	Tue 12/10/13	Tue 12/10/13
222				
223	**XV. Survey of Subsidence and Settlement**	**64 days**	**Thu 1/1/15**	**Tue 3/31/15**
224	Conduct Monument Surveys (Once every 5 years)	1 day	Thu 1/1/15	Thu 1/1/15
225				
226	**XVI. Conduct GCTS Confirmation Sampling Event**	**64 days**	**Thu 1/1/15**	**Tue 3/31/15**
227	Conduct Sampling Event (Once every 5 years)	1 day	Thu 1/1/15	Thu 1/1/15
228				
229	**XVII. Preparation of Draft Annual Report**	**31 days**	**Fri 1/17/14**	**Fri 2/28/14**
230	Prepare Draft of Pits Annual Site Report	30 days	Fri 1/17/14	Thu 2/27/14
231	Submit Draft Pits Annual Site Report To Agency	1 day	Fri 2/28/14	Fri 2/28/14



Project: 97-101 OM&M Schedule 2010
Date: Thu 3/7/13

Task | Rolled Up Task | Split | Group By Summary | Inactive Summary | Manual Summary Rollup | Finish-only
Milestone | Rolled Up Milestone | External Tasks | Inactive Task | Manual Task | Manual Summary | Progress
Summary | Rolled Up Progress | Project Summary | Inactive Milestone | Duration-only | Start-only

APPENDIX A

FIELD MONITORING RESULTS

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM
Title: Project Engineer

Sheet 1 of 1
Date: 1/5/2012
Time: 11:15

Verified By: SA
Title: Staff Scientist

Type of Monitoring Devices: PID, Velocicalc.
Weather Conditions: Sunny

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(x) Other Frequency (explain) Follow-up.

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	28.3
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	88	~~146~~ 144	~~165~~ 14.5
Effluent	116	175	12

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SA
Title: Staff scientist

Sheet 1 of 1
Date: 1/11/2012
Time: _____

Verified By: SM
Title: Project Engineer.

Type of Monitoring Devices: PID, Velocicalc
Weather Conditions: _____

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	22.3
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	77	146	35
Effluent	110	172	17

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: S. AIZAWA
Title: PE, Staff Scientist

Sheet 1 of 1
Date: 1/17/2012
Time: 12 Noon

Verified By: S. McGEOUGH
Title: PE

Type of Monitoring Devices: PID, Velocicalc.
Weather Conditions: _____

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(✓) Other Frequency (explain) Follow up.

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	40
2.	Outlet of Carbon 1	0.3
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	79	151	27
Effluent	105	178	17.4

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM
Title: Project Engineer

Sheet 1 of 1
Date: 1/23/2012
Time: 1:30 PM

Verified By: SA
Title: Staff scientist.

Type of Monitoring Devices: PID, Velocimetic.
Weather Conditions: Rain

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
(*) Other Frequency (explain) ~~Bi-weekly~~.

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	14.0
2.	Outlet of Carbon 1	0
3.	Outlet of Carbon 2	0
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	75	142	~~62~~ 52
Effluent	105	173	29

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SA
Title: Staff scientist

Sheet 1 of 1
Date: 1/30/12
Time: 12:30

Verified By: SM
Title: Project Engineer.

Type of Monitoring Devices: PID, Velocicalc.
Weather Conditions: Sunny.

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	24.2
2.	Outlet of Carbon 1	0.3
3.	Outlet of Carbon 2	0.2
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	78	140	35
Effluent	111	166	17

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: S. McGough
Title: Project Engineer.

Sheet 1 of 1
Date: 2/8/2012
Time: 11:45

Verified By: S. Aizawa
Title: Staff Scientist, PE

Type of Monitoring Devices: PID (3000) (Calib to 50 ppm) Velocicalc
Weather Conditions: Sunny 80°

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(✓) Other Frequency (explain) Bi Weekly

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	43.6
2.	Outlet of Carbon 1	0.9
3.	Outlet of Carbon 2	0.3
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	95	142	18
Effluent	116	168	18

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM / SH
Title: PE

Sheet 1 of 1
Date: 2/23/2012
Time: 11:45

Verified By: ZY
Title: PE Field Super

Type of Monitoring Devices: Velocalc PID
Weather Conditions: Sunny 75°

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly (✓) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	15.6
2.	Outlet of Carbon 1	9.7
3.	Outlet of Carbon 2	2.1
4.	System Effluent	0.2

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	78	142	60
Effluent	130	161	18

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Change out had been conducted after samples were monitored.

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SA
Title: PE

Sheet 1 of 1
Date: 3/1/12
Time: 11:19 AM

Verified By: IY
Title: PE

Type of Monitoring Devices: PID 2000, VELOCICALC, PUMP LUNG
Weather Conditions: COOL, CLOUDY, SUNNY

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) FOLLOW-UP

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	4.9
2.	Outlet of Carbon 1	0.0
3.	Outlet of Carbon 2	0.0
4.	System Effluent	0.0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	70	147	47
Effluent	113	162	14.5

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: S. AIZAWA
Title: Staff Scientist /PE

Sheet 1 of 1
Date: 3/8/2012
Time: 11 AM

Verified By: S. Mc GEOUGH
Title: PE

Type of Monitoring Devices: PID Velocicalc
Weather Conditions: 70° SUNNY

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(✓) Other Frequency (explain) Bi Weekly

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	1.0
2.	Outlet of Carbon 1	0
3.	Outlet of Carbon 2	0
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	81	155	21
Effluent	121	160	~~12.5~~ 12.5

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: S. Mc Clough
Title: PE

Sheet 1 of 1
Date: 3/14/2012
Time: 11.15 AM

Verified By: S. Aizawa
Title: Staff Scientist / PE

Type of Monitoring Devices: PID Vehicle
Weather Conditions: Sunny 68°

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(✓) Other Frequency (explain) Bi Weekly

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.5
2.	Outlet of Carbon 1	0
3.	Outlet of Carbon 2	0
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	83	146	38
Effluent	115	161	15

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: IJUS KO
Title: PE PM

Sheet 1 of 1
Date: 3/30/2012
Time: 1144

Verified By: S. McGOUGH
Title: PE

Type of Monitoring Devices: PID Velocalc.
Weather Conditions: DULL overcast 58°

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(✓) Other Frequency (explain) Bi Weekly.

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0
3.	Outlet of Carbon 2	0
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	73.5	139	55
Effluent	106	161	18.

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SA
Title: Project Engineer

Sheet 1 of 1
Date: 4/12/2012
Time: 10:40 AM

Verified By: SM
Title: Project Engineer.

Type of Monitoring Devices: PID. Velocicale.
Weather Conditions: Sunny.

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.4
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	78	143	39
Effluent	120	164	16

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SA
Title: Project Engineer

Sheet 1 of 1
Date: ~~13:15~~ 4/19/12
Time: 13:15

Verified By: JY
Title: Project Engineer

Type of Monitoring Devices: PID, Velocicalc
Weather Conditions: _____

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	1.0
2.	Outlet of Carbon 1	0.8
3.	Outlet of Carbon 2	0.4
4.	System Effluent	~~0.4~~ 0.2

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	80	149	45
Effluent	118	161	18

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SA
Title: Project Engineer.

Sheet ____ of ____
Date: ~~10:15~~ 5/2/12
Time: 10:15

Verified By: IY
Title: Project Engineer.

Type of Monitoring Devices: PID, Velocicalc.
Weather Conditions: _____

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(X) Other Frequency (explain) Follow-up

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.7
2.	Outlet of Carbon 1	0.7
3.	Outlet of Carbon 2	0.7
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	68	140	NA
Effluent	115	168	NA

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM
Title: Project Engineer

Sheet 1 of 1
Date: 5/9/2012
Time: 11:00AM

Verified By: SA
Title: Project Engineer

Type of Monitoring Devices: PID, Velocicalc.
Weather Conditions: Sunny.

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.3
2.	Outlet of Carbon 1	0.3
3.	Outlet of Carbon 2	0.4
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	91	140	40
Effluent	126	165	17.8

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: P B
Title: Field Tech

Sheet 1 of 1
Date: 5/15/2012
Time: 12:05pm

Verified By: S. Aizawa
Title: PE, Staff Scientist

Type of Monitoring Devices: PID Velocicalc
Weather Conditions: Sunny 70°F

Type of Inspection (check only one):

( ) Daily (✓) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.3
2.	Outlet of Carbon 1	0.3
3.	Outlet of Carbon 2	0.3
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	86.2	138	44
Effluent	133	155	14.4

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: IY
Title: PE

Sheet 1 of 1
Date: 5/23/12
Time: 11:45

Verified By: SA / SM
Title: PE

Type of Monitoring Devices: PUMP LUNG, VELOCICALC, MINIRAE PID
Weather Conditions: WARM, CLOUDS, 78°F, SUNNY

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.2
2.	Outlet of Carbon 1	0.2
3.	Outlet of Carbon 2	0.2
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	86	131	40
Effluent	130	154	16

Comments, Maintenance or Corrective Action (attach additional sheets if required):

	O_2	CO_2
EFFLUENT	14.0	5.0
INLET	15.0	4.2

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: S. AIZAWA
Title: PE, Staff Scientist I.

Sheet 1 of 1
Date: 5-31-12
Time: 10.40AM

Verified By: S. Mc CROUGH
Title: PE

Type of Monitoring Devices: PID Velocicalc.
Weather Conditions: SUNNY 80°

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(✓) Other Frequency (explain) Follow up.

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.4
2.	Outlet of Carbon 1	0.4
3.	Outlet of Carbon 2	0.4
4.	System Effluent	0.2

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	80	140	36
Effluent	128	164	18

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM
Title: PE

Sheet 1 of 1
Date: 6/6/12
Time: 13:15

Verified By: IY
Title: PE

Type of Monitoring Devices: PID, VELOCICALC
Weather Conditions: SUNNY, CLEAR, SLIGHT BREEZE

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly (X) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.3
2.	Outlet of Carbon 1	0.3
3.	Outlet of Carbon 2	0.3
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	82	131	27
Effluent	130	168	18

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Effluent ⇒ 14.9 - O_2, 4.8 - CO_2
Inlet ⇒ 14.6 - O_2, 4.8 - CO_2

ASTM D 1946 (Ref.)
8260 B STL

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: IY
Title: PE

Sheet 1 of 1
Date: 6/14/12
Time: 11:15

Verified By: SM
Title: PE

Type of Monitoring Devices: PID 2000, [redacted] VELOCICALC,
Weather Conditions: OVERCAST, COOL, 68 °F

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(X) Other Frequency (explain) FOLLOW-UP MONITORING

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0.0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	80	136	52
Effluent	120	156	24

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM
Title: Project Engineer

Sheet 1 of 1
Date: 6/21/12
Time: 11:00

Verified By: SA
Title: Staff Scientist

Type of Monitoring Devices: PID, Velocicalc
Weather Conditions: Sunny

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	79	144	52
Effluent	130	159	15

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SA
Title: Project Engineer

Sheet 1 of 1
Date: 7/5/12
Time: 10:40

Verified By: SM
Title: Project Engineer

Type of Monitoring Devices: PID. Velocicalc
Weather Conditions: Sunny

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent		149	78
Effluent		174	117

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM
Title: PE

Sheet 1 of 1
Date: 7/12/2012
Time: 11.30 AM

Verified By: TY
Title: PE

Type of Monitoring Devices: PID
Weather Conditions: Sunny 80°

Type of Inspection (check only one):

(✓) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(✓) Other Frequency (explain) Follow up.

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	NA	NA	NA
Effluent	NA	NA	NA.

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM
Title: PE

Sheet 1 of 1
Date: 7/19/2012
Time: _____

Verified By: ZY
Title: PE.

Type of Monitoring Devices: PID Velocicalc.
Weather Conditions: Sunny 85°

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(✓) Other Frequency (explain) Follow up.

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	92° F	134	NA
Effluent	139° F	158	NA.

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM
Title: PE

Sheet 1 of 1
Date: 7/27/2012
Time: 12.05pm

Verified By: SA
Title: Staff Scientist /PE

Type of Monitoring Devices: PID, Velocity.
Weather Conditions: _____

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(✓) Other Frequency (explain) follow up.

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	86	137	38
Effluent	120	165	27.

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SA
Title: Project Engineer

Sheet 1 of 1
Date: 8/2/2012
Time: 10:00

Verified By: SM
Title: Project Engineer

Type of Monitoring Devices: PID, Velocicalc
Weather Conditions: Sunny

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.2
2.	Outlet of Carbon 1	0.2
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	~~135~~ 83	135	46
Effluent	127	160	23

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM
Title: PE

Sheet 1 of 1
Date: 8/8/2012
Time: 1.30pm

Verified By: IY
Title: PE FS.

Type of Monitoring Devices: PID, Velocicalc.
Weather Conditions: Sunny 80°

Type of Inspection (check only one):

( ) Daily (✓) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.2
2.	Outlet of Carbon 1	0.2
3.	Outlet of Carbon 2	0.2
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	90°	132	NA
Effluent	130°	160	NA.

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SA
Title: Project Engineer

Sheet 1 of 1
Date: 8/16/2012
Time: _____

Verified By: SM
Title: Project Engineer

Type of Monitoring Devices: PID.
Weather Conditions: Sunny

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.3
2.	Outlet of Carbon 1	0.2
3.	Outlet of Carbon 2	0.2
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	84	NA	NA
Effluent	148	NA	NA

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SA
Title: Project Engineer

Sheet ____ of ____
Date: 8/29/12
Time: 13:30

Verified By: SM
Title: Project Engineer

Type of Monitoring Devices: PID, velocicalc
Weather Conditions: Sunny

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	97	131	Na
Effluent	141	160	Na

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: S. Mc Clough
Title: PE

Sheet 1 of 1
Date: 9/12/12
Time: 11.30 AM

Verified By: S. Aizawa
Title: PE, Staff Scientist

Type of Monitoring Devices: PID Velocalc.
Weather Conditions: 82° Cloudy Humid.

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(✓) Other Frequency (explain) follow up.

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0
3.	Outlet of Carbon 2	0
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	82	133	49
Effluent	136	157	19

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: S. M
Title: PE.

Sheet 1 of 1
Date: 9/18/2012
Time: 11AM

Verified By: S. AIZAMAN
Title: PE, Staff Scientist

Type of Monitoring Devices: PID, Velocicalc.
Weather Conditions: SUNNY 80°

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(✓) Other Frequency (explain) follow up.

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.2
2.	Outlet of Carbon 1	0.2
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	91	141	40
Effluent	133	157	20

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: Seamus McGeough
Title: Project Engineer

Sheet ____ of ____
Date: 9/24/12
Time: 10:15AM

Verified By: Shinta Aizawa
Title: Project Engineer

Type of Monitoring Devices: PID, Velocicalc.
Weather Conditions: Sunny.

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	~~145~~ 89	145	46
Effluent	130	155	21.5

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SA
Title: Project Engineer

Sheet 1 of 1
Date: 10/04/2012
Time: _____

Verified By: SM
Title: Project Engineer

Type of Monitoring Devices: PID, Velocicalc.
Weather Conditions: _____

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	87.1	150	—
Effluent	132	170	—

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SA
Title: Project Engineer

Sheet 1 of 1
Date: 10/09/12
Time: 11:45

Verified By: IY
Title: Field Supervisor

Type of Monitoring Devices: PID, Velocicalc
Weather Conditions: cloudy

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0
2.	Outlet of Carbon 1	0
3.	Outlet of Carbon 2	0
4.	System Effluent	0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	83	143	50.6
Effluent	122	165	22.0

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM
Title: PE

Sheet 1 of 1
Date: 10-18-12
Time: 2:45 PM

Verified By: IY
Title: PE

Type of Monitoring Devices: PID, VELOCICALC
Weather Conditions: SUNNY, 80c, BREEZE, CLEAR

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0.0
4.	System Effluent	0.0

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	88	139	NA
Effluent	110	160	NA

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM
Title: PE

Sheet 1 of 1
Date: 10-24-12
Time: 11:40 AM

Verified By: IY
Title: PE

Type of Monitoring Devices: PID, VELOCICALC
Weather Conditions: CLEAR, 70s, SLIGHT BREEZE

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.1
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	85	136	40
Effluent	115	164	23.5

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: SM
Title: PE

Sheet 1 of 1
Date: 10-30-12
Time: 1:40PM

Verified By: IY
Title: PE

Type of Monitoring Devices: PID Velmalc.
Weather Conditions: Sunny 72°F.

Type of Inspection (check only one):

( ) Daily ( ) Weekly ( ) Monthly ( ) Semi-Monthly
(✓) Other Frequency (explain) Follow up.

Vessel Operation:

(✓) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.2
2.	Outlet of Carbon 1	0.2
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	152	87	52
Effluent	163	120	20

Comments, Maintenance or Corrective Action (attach additional sheets if required):

Del Amo Waste Pits Superfund Site
Gas Collection and Treatment System
Torrance, California

Completed By: Shinta Arzava
Title: Project Engineer

Sheet 1 of 1
Date: 11/14/12
Time: 9:45

Verified By: Seamus McGeough
Title: Project Engineer

Type of Monitoring Devices: PID, Velocicalc
Weather Conditions: Sunny.

Type of Inspection (check only one):

( ) Daily (X) Weekly ( ) Monthly ( ) Semi-Monthly
( ) Other Frequency (explain) _____

Vessel Operation:

(X) Series, Carbon Vessel 1 to Carbon Vessel 2
( ) Parallel
( ) One Carbon Vessel

Sample Ports:		**VOCs (ppm)**
1.	System Inlet	0.2
2.	Outlet of Carbon 1	0.1
3.	Outlet of Carbon 2	0.1
4.	System Effluent	0.1

	Temperature (^{0}F)	**Air Flow (scfm)**	**Humidity (%)**
Influent	85	152	20
Effluent	120	171	22

Comments, Maintenance or Corrective Action (attach additional sheets if required):

APPENDIX B

FIELD DAILY REPORTS
(VIA CD-ROM)

APPENDIX C

SVE/IBT LABORATORY RESULTS
(VIA CD-ROM)

APPENDIX D

IN-LINE SENSOR DATA
(VIA CD ROM)

APPENDIX E

CARBON REACTIVATION REPORT/CERTIFICATION

California Carbon Co., Inc.

2825 E. Grant St., Wilmington, CA 90744 (562)436-1962 Fax: (562)437-1217
e-mail: CCarbon2@aol.com

CERTIFICATE OF REACTIVATION

DATE: February 26, 2013

CUSTOMER: Baker Corporation
5500 Rawlings Ave.
South Gate, CA 90280

CUSTOMER'S REFERENCE: PROFILE # 012-353-B
REF : C2Rem

MATERIAL RECEVIED: January – December 2012
61 Supersacks Non-Hazardous Carbon
Received via customers truck

MATERIAL REACTIVATED: Calendar Year 2012

WE HEREBY CERTIFY THAT THE MATERIAL REFERRED TO IN THIS REACTIVATION REPORT HAS BEEN REACTIVATED TO A MINIMUM OF 60% CTC, TESTED AS PER ASTM D3467, STANDARD TEST METHOD FOR CARBON TETRACHLORIDE ACTIVITY OF ACTIVATED CARBON. THIS IS THE INDUSTRY STANDARD FOR TESTING THE ADSORPTIVE CAPABILITY OF ACTIVATED CARBON. THE ACTIVATED CARBON WAS REACTIVATED AT CALIFORNIA CARBON'S FACILITY IN WILMINGTON, CALIFORNIA, AND PLACED INTO OUR REACTIVATED VAPOR CARBON POOL FOR SALE.

CERTIFIED BY:

Richard Liu
Vice President

APPENDIX F

INSPECTION FORMS

DEL AMO WASTE PITS OU

COVER SYSTEM INSPECTION FORM

Completed By: IY

Title: PE

Sheet 1 of 11

Date: 3/26/12

Time: 11:00 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain) _____

Item Description		Condition/Remarks
1.	Erosion	4
2.	Stressed Vegetation (Plant Die-Back)	4
3.	Sediment Build-Up	4
4.	Local Subsidence or Loss of Grade	4
5.	Water Ponding	4
6.	Turf Height	4
7.	Burrowing Animals	4
8.	Weeds or Undesirable Vegetation	4
9.	Evidence of Fires or Vandalism	4
10.	Soil Quality Check	4
11.	Unauthorized Traffic	4
12.	Slope Instability or Sloughing	4
13.	Survey Monuments	4
14.	Vertical Cracking	4
15.	Intrusions	4
16.	Evidence of Waste Pit Materials	4

DEL AMO WASTE PITS OU

COVER SYSTEM INSPECTION FORM

Sheet 2 of 11
Date: 3/26/12

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None at this time

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the Waste Pits OU.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

CAP GAS COLLECTION AND TREATMENT INSPECTION FORM

Completed By: IY

Title: PE

Sheet 3 of 11

Date: 3/26/12

Time: 11:00 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain) _____

Collection System Valves	Condition/Remarks
1. Adequate-Free Movement	4
2. Seals - Complete	4
3. Signs of Rust/Corrosion	3
Condensate Collection[3]	
4. Air Moisture Separator	4
Carbon Adsorbers	
5. Vessels	
- Exterior Damage	4
- FRP Grating and Mesh	4
Heavy Equipment	
6. Blower	
- General Motor Maintenance	4
- Drive Maintenance	4
- Bearing Maintenance	4
- Lubrication	4
- Structural Maintenance	4

DEL AMO WASTE PITS OU

CAP GAS COLLECTION AND TREATMENT INSPECTION FORM

Sheet 4 of 11

Date: 3/26/12

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

3. Continue observing slight rust of some components of the GCTS

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

(3) Initial condensate collected from the air moisture separator must be characterized to determine methods of appropriate disposal.

DEL AMO WASTE PITS OU

SURFACE WATER DRAINAGE INSPECTION FORM

Completed By: IY

Title: PE

Sheet 5 of 11

Date: 3/26/12

Time: 11:00 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain)_____

Item Description	Condition*/Remarks
SURFACE-WATER DRAINAGE SYSTEMS	
1. Washouts or Erosion of Contoured Grade	4
2. Ponding on Contoured Grade	4
3. Gullies and Ruts on Contoured Grade	4
4. Plugging of Drainage Culverts	4
5. Holes and Cracks in Swales or Catch Basins	4
6. Sediment Build-Up in Swales or Catch Basin	4
7. Surface Cracking of Swales/Catch Basins	4
8. Spalling of Swales/Catch Basins	4
9. Structural Failure of Swales/Catch Basins	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None at this time

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period.

DEL AMO WASTE PITS OU

SUBSURFACE WATER DRAINAGE INSPECTION FORM

Completed By: IY

Title: PE

Sheet 6 of 11

Date: 3/26/12

Time: 11:00 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
SUBSURFACE DRAINAGE SYSTEMS	
1. Holes and Cracks in Swales, Catch Basin	4
2. Plugging of Drainage Inlets	4
3. Sediment Build-Up or Debris in Catch Basin	4
4. Structural Failure of Catch Basin	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None at this time

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period

DEL AMO WASTE PITS OU

SECURITY FENCE INSPECTION FORM

Completed By: IY

Title: PE

Sheet 7 of 11

Date: 3/26/12

Time: 11:00 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
Perimeter Fence	
1. Breaks and Holes	4
2. Settlement Damage	4
3. Loose Posts/Tension	4
4. Rust/Corrosion	2
5. Ruts and Burrows Beneath Fence	4
6. Vegetation Overgrowth	4
7. General Signs of Deterioration	4
8. Vandalism/Animal/Wind Damage	4
Gates	
9. Adequate Movement of Hinges and Gates	4
10. Proper Function of Lock(s)	4

DEL AMO WASTE PITS OU

SECURITY FENCE INSPECTION FORM

Sheet 8 of 11
Date: 3/26/12

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

4. Sections of perimeter fencing on the northwest of the site will need repair/replacement in 2012.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the Waste Pits OU.
(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

ACCESS ROAD INSPECTION FORM

Completed By: IY

Title: PE

Sheet 9 of 11

Date: 3/26/12

Time: 11:00 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
Access Road	
1. Holes and Cracks	4
2. Vegetation Overgrowth	4
3. Settlement	4
4. Excessive Dispersion of Gravel	3
5. General Signs of Deterioration	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

4. Gravel has spilled over into concrete entryway of Site. Will be swept/shoveled back onto Site access road.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

SVE/IBT SYSTEM INSPECTION FORM

Completed By: IY

Title: PE

Sheet 10 of 11

Date: 3/26/12

Time: 11:00 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain) _____

Manifold	Condition/Remarks
1. Adequate-Free Movement	Y
2. Seals - Complete	Y
3. Visible Damage	Y
4. Sniff for signs of leaks	Y
Condensate Collection[3]	
5. Air Moisture Separator	Y
Additional System Components	
6. Carbon Adsorber Vessels	
- Exterior Damage	Y
- Vessel Configuration (A-B or B-A)	A-B
7. Blowers	
- General Motor Maintenance	Y
- Drive Maintenance	Y
- Bearing Maintenance	Y
8. Oxygen Generator	
- Signs of Rust/Corrosion	Y
- Mechanical Functioning	Y
- Oxygen Purity	Y

DEL AMO WASTE PITS OU
SVE/IBT SYSTEM INSPECTION FORM

Sheet 11 of 11
Date: 3/26/12

9.	System Sensors	
	- Visible Damage	4
	- Mechanical Functioning	2
10.	SVE Wellheads[4]	
	- Tee Flanges	4
	- Valves	4
	- Sniff for signs of leaks	4

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

7. Blower B is locked-out and non-operational during PME activities

8. O_2 generator is locked- and tagged-out and non-operational during PME activities

9. Certain system meters are non-operational and being maintenanced during the PME activities to streamline bringing back online in the future.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.
(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period.
(3) Condensate collected from (1) moisture separator (2) conveyance piping, and (3) from the carbon absorber vessels must be characterized to determine methods of appropriate disposal.
(4) Tee flanges monitored for leaks using a PID.

DEL AMO WASTE PITS OU

COVER SYSTEM INSPECTION FORM

Completed By: SM

Title: PE

Sheet 1 of 11

Date: 4/16/12

Time: 11:30 am

Type of Inspection (check only one):

( ) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain) _____

Item Description		Condition/Remarks
1.	Erosion	H
2.	Stressed Vegetation (Plant Die-Back)	H
3.	Sediment Build-Up	H
4.	Local Subsidence or Loss of Grade	H
5.	Water Ponding	H
6.	Turf Height	H
7.	Burrowing Animals	H
8.	Weeds or Undesirable Vegetation	H
9.	Evidence of Fires or Vandalism	H
10.	Soil Quality Check	H
11.	Unauthorized Traffic	H
12.	Slope Instability or Sloughing	H
13.	Survey Monuments	H
14.	Vertical Cracking	H
15.	Intrusions	H
16.	Evidence of Waste Pit Materials	H

DEL AMO WASTE PITS OU

COVER SYSTEM INSPECTION FORM

Sheet 2 of 11
Date: 4/16/12

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

Everything Satisfactory

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the Waste Pits OU.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

CAP GAS COLLECTION AND TREATMENT INSPECTION FORM

Completed By: SM

Title: PE

Sheet 3 of 11

Date: 4/16/12

Time: 11:30

Type of Inspection (check only one):

( ) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain) _____

Collection System Valves	Condition/Remarks
1. Adequate-Free Movement	4
2. Seals - Complete	4
3. Signs of Rust/Corrosion	3
Condensate Collection[3]	
4. Air Moisture Separator	4
Carbon Adsorbers	
5. Vessels	4
- Exterior Damage	4
- FRP Grating and Mesh	4
Heavy Equipment	
6. Blower	
- General Motor Maintenance	4
- Drive Maintenance	4
- Bearing Maintenance	4
- Lubrication	4
- Structural Maintenance	4

DEL AMO WASTE PITS OU

CAP GAS COLLECTION AND TREATMENT INSPECTION FORM

Sheet 4 of 11

Date: 4/16

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

3. Slight Rust on Some Areas of OCTS. Keep observing.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

(3) Initial condensate collected from the air moisture separator must be characterized to determine methods of appropriate disposal.

DEL AMO WASTE PITS OU

SURFACE WATER DRAINAGE INSPECTION FORM

Completed By: SM

Title: PE

Sheet 5 of 11

Date: 4/16/12

Time: 11.30

Type of Inspection (check only one):

( ) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain)_____

Item Description	Condition*/Remarks
SURFACE-WATER DRAINAGE SYSTEMS	
1. Washouts or Erosion of Contoured Grade	4
2. Ponding on Contoured Grade	4
3. Gullies and Ruts on Contoured Grade	4
4. Plugging of Drainage Culverts	4
5. Holes and Cracks in Swales or Catch Basins	4
6. Sediment Build-Up in Swales or Catch Basin	4
7. Surface Cracking of Swales/Catch Basins	4
8. Spalling of Swales/Catch Basins	4
9. Structural Failure of Swales/Catch Basins	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period.

DEL AMO WASTE PITS OU

SUBSURFACE WATER DRAINAGE INSPECTION FORM

Completed By: SM

Title: RE

Sheet 6 of 11

Date: 4/16/12

Time: 11:30

Type of Inspection (check only one):

( ) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
SUBSURFACE DRAINAGE SYSTEMS	
1. Holes and Cracks in Swales, Catch Basin	4
2. Plugging of Drainage Inlets	4
3. Sediment Build-Up or Debris in Catch Basin	4
4. Structural Failure of Catch Basin	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period

DEL AMO WASTE PITS OU

SECURITY FENCE INSPECTION FORM

Completed By: SM

Title: PE

Sheet 7 of 11

Date: 4/16/12

Time: 11.30

Type of Inspection (check only one):

( ) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
Perimeter Fence	
1. Breaks and Holes	4
2. Settlement Damage	4
3. Loose Posts/Tension	4
4. Rust/Corrosion	2
5. Ruts and Burrows Beneath Fence	4
6. Vegetation Overgrowth	4
7. General Signs of Deterioration	4
8. Vandalism/Animal/Wind Damage	4
Gates	
9. Adequate Movement of Hinges and Gates	4
10. Proper Function of Lock(s)	4

DEL AMO WASTE PITS OU

SECURITY FENCE INSPECTION FORM

Sheet 8 of 11
Date: 4/26/12.

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

4. Sections of Fence Rusted Recommend Replacement.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the Waste Pits OU.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

ACCESS ROAD INSPECTION FORM

Completed By: SM

Title: PE

Sheet 9 of 11

Date: 4/16

Time: 11.30

Type of Inspection (check only one):

( ) Quarterly ( ) After Seismic Event[1] (X) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
Access Road	
1. Holes and Cracks	4
2. Vegetation Overgrowth	4
3. Settlement	4
4. Excessive Dispersion of Gravel	3
5. General Signs of Deterioration	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

Sweep GRAVel Back onto Roadway from entry way at the front Gate.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

SVE/IBT SYSTEM INSPECTION FORM

Completed By: SM

Title: PE

Sheet 10 of 11

Date: 4/26

Time: 11.30

Type of Inspection (check only one):

( ) Quarterly ( ) After Seismic Event[1] (✓) After Heavy Rain[2]

( ) Other (explain) _____

Manifold	Condition/Remarks
1. Adequate-Free Movement	4
2. Seals - Complete	4
3. Visible Damage	
4. Sniff for signs of leaks	4
Condensate Collection[3]	
5. Air Moisture Separator	4
Additional System Components	
6. Carbon Adsorber Vessels	
- Exterior Damage	4
- Vessel Configuration (A-B or B-A)	A -> B
7. Blowers	
- General Motor Maintenance	4
- Drive Maintenance	4
- Bearing Maintenance	4
8. Oxygen Generator	
- Signs of Rust/Corrosion	4
- Mechanical Functioning	4
- Oxygen Purity	U

DEL AMO WASTE PITS OU
SVE/IBT SYSTEM INSPECTION FORM

Sheet 11 of 11
Date: _____

9. System Sensors
   - Visible Damage: 4
   - Mechanical Functioning: 2

10. SVE Wellheads[4]
   - Tee Flanges: 4
   - Valves: 4
   - Sniff for signs of leaks: 4

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

7. Blower B is Locked out for Duration of PME

8. O2 GEN is LOTO + Not operating During PME

9. Some INLINE SENSORS have Been Removed for Maintenance/CALIBRATION during PME.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.
(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period.
(3) Condensate collected from (1) moisture separator (2) conveyance piping, and (3) from the carbon absorber vessels must be characterized to determine methods of appropriate disposal.
(4) Tee flanges monitored for leaks using a PID.

DEL AMO WASTE PITS OU

COVER SYSTEM INSPECTION FORM

Completed By: SM

Title: PE

Sheet 1 of 11

Date: 6/26/12

Time: 10 AM.

Type of Inspection (check only one):

(√) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Item Description		Condition/Remarks
1.	Erosion	4
2.	Stressed Vegetation (Plant Die-Back)	2
3.	Sediment Build-Up	4
4.	Local Subsidence or Loss of Grade	4
5.	Water Ponding	4
6.	Turf Height	4
7.	Burrowing Animals	3
8.	Weeds or Undesirable Vegetation	4
9.	Evidence of Fires or Vandalism	4
10.	Soil Quality Check	4
11.	Unauthorized Traffic	4
12.	Slope Instability or Sloughing	4
13.	Survey Monuments	4
14.	Vertical Cracking	4
15.	Intrusions	4
16.	Evidence of Waste Pit Materials	4

DEL AMO WASTE PITS OU

COVER SYSTEM INSPECTION FORM

Sheet 2 of 11
Date: 6/26

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

2. Due to Nature of Seed PLANTED ONSITE "SPRING MIX" GRASS GOES DORMANT DURING THE SUMMER MONTHS but GROWS STRONGLY after first RAINS of Season OCT/NOV.

7. GOPHERS active in CERTAIN AREAS, WILL ADVISE BUGMAN to TREAT these areas more agressively.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the Waste Pits OU.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

CAP GAS COLLECTION AND TREATMENT INSPECTION FORM

Completed By: SM

Title: Pe

Sheet 3 of 11

Date: 6/26

Time: 10AM

Type of Inspection (check only one):

(✓) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Collection System Valves	Condition/Remarks
1. Adequate-Free Movement	H
2. Seals - Complete	H
3. Signs of Rust/Corrosion	~~H~~ 3
Condensate Collection[3]	
4. Air Moisture Separator	4
Carbon Adsorbers	
5. Vessels	H
- Exterior Damage	4
- FRP Grating and Mesh	4
Heavy Equipment	
6. Blower	
- General Motor Maintenance	4
- Drive Maintenance	4
- Bearing Maintenance	4
- Lubrication	4
- Structural Maintenance	4

DEL AMO WASTE PITS OU

CAP GAS COLLECTION AND TREATMENT INSPECTION FORM

Sheet 4 of 11

Date: 6/26

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

(3) Initial condensate collected from the air moisture separator must be characterized to determine methods of appropriate disposal.

DEL AMO WASTE PITS OU

SURFACE WATER DRAINAGE INSPECTION FORM

Completed By: SM

Title: PE

Sheet 5 of 11

Date: 6/26

Time: 10AM

Type of Inspection (check only one):

(✓) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain)_____

Item Description	Condition*/Remarks
SURFACE-WATER DRAINAGE SYSTEMS	
1. Washouts or Erosion of Contoured Grade	4
2. Ponding on Contoured Grade	4
3. Gullies and Ruts on Contoured Grade	4
4. Plugging of Drainage Culverts	4
5. Holes and Cracks in Swales or Catch Basins	4
6. Sediment Build-Up in Swales or Catch Basin	4
7. Surface Cracking of Swales/Catch Basins	4
8. Spalling of Swales/Catch Basins	4
9. Structural Failure of Swales/Catch Basins	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period.

DEL AMO WASTE PITS OU

SUBSURFACE WATER DRAINAGE INSPECTION FORM

Completed By: SM

Title: PE

Sheet 6 of 11

Date: 6/26

Time: 10AM

Type of Inspection (check only one):

(✓) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
SUBSURFACE DRAINAGE SYSTEMS	
1. Holes and Cracks in Swales, Catch Basin	4
2. Plugging of Drainage Inlets	4
3. Sediment Build-Up or Debris in Catch Basin	4
4. Structural Failure of Catch Basin	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

NONE

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period

DEL AMO WASTE PITS OU

SECURITY FENCE INSPECTION FORM

Completed By: SM

Title: PE

Sheet 7 of 11

Date: 6/26

Time: 1019

Type of Inspection (check only one):

(✓) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
Perimeter Fence	
1. Breaks and Holes	4
2. Settlement Damage	4
3. Loose Posts/Tension	4
4. Rust/Corrosion	2
5. Ruts and Burrows Beneath Fence	4
6. Vegetation Overgrowth	3
7. General Signs of Deterioration	4
8. Vandalism/Animal/Wind Damage	4
Gates	
9. Adequate Movement of Hinges and Gates	4
10. Proper Function of Lock(s)	4

DEL AMO WASTE PITS OU

SECURITY FENCE INSPECTION FORM

Sheet 8 of 11
Date: 6/26

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

4. Fence Rusted, Recomend Replace Section.

6. Brush along Fence in LADWP easment is high. Contact LAFD Fire abatement officer.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the Waste Pits OU.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

ACCESS ROAD INSPECTION FORM

Completed By: SM

Title: P-e

Sheet 9 of 11

Date: 6/26

Time: 10 AM

Type of Inspection (check only one):

(✓) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
Access Road	
1. Holes and Cracks	4
2. Vegetation Overgrowth	4
3. Settlement	4
4. Excessive Dispersion of Gravel	4
5. General Signs of Deterioration	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

SVE/IBT SYSTEM INSPECTION FORM

Completed By: SM

Title: Pe

Sheet 10 of 11

Date: 6/26

Time: 10 AM

Type of Inspection (check only one):

( ) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Manifold	Condition/Remarks
1. Adequate-Free Movement	4
2. Seals - Complete	4
3. Visible Damage	
4. Sniff for signs of leaks	4
Condensate Collection[3]	
5. Air Moisture Separator	4
Additional System Components	
6. Carbon Adsorber Vessels	
- Exterior Damage	4
- Vessel Configuration (A-B or B-A)	A -> B
7. Blowers	
- General Motor Maintenance	4
- Drive Maintenance	4
- Bearing Maintenance	4
8. Oxygen Generator	
- Signs of Rust/Corrosion	4
- Mechanical Functioning	4
- Oxygen Purity	4

DEL AMO WASTE PITS OU
SVE/IBT SYSTEM INSPECTION FORM

Sheet 11 of 11
Date: 6/26

9.	System Sensors	
	- Visible Damage	4
	- Mechanical Functioning	2
10.	SVE Wellheads[4]	
	- Tee Flanges	4
	- Valves	4
	- Sniff for signs of leaks	4

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

9. Sensors Removed for maintenance.

8. O2 Gen LOTO, Non operational during PME.

7. BLOWER B LOTO During PME.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.
(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period.
(3) Condensate collected from (1) moisture separator (2) conveyance piping, and (3) from the carbon absorber vessels must be characterized to determine methods of appropriate disposal.
(4) Tee flanges monitored for leaks using a PID.

DEL AMO WASTE PITS OU

COVER SYSTEM INSPECTION FORM

Completed By: IY

Title: PE

Sheet 1 of 11

Date: 9/28/12

Time: 13:00

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Item Description		Condition/Remarks
1.	Erosion	4
2.	Stressed Vegetation (Plant Die-Back)	2
3.	Sediment Build-Up	4
4.	Local Subsidence or Loss of Grade	4
5.	Water Ponding	4
6.	Turf Height	4
7.	Burrowing Animals	4
8.	Weeds or Undesirable Vegetation	4
9.	Evidence of Fires or Vandalism	4
10.	Soil Quality Check	4
11.	Unauthorized Traffic	4
12.	Slope Instability or Sloughing	4
13.	Survey Monuments	4
14.	Vertical Cracking	4
15.	Intrusions	4
16.	Evidence of Waste Pit Materials	4

DEL AMO WASTE PITS OU

COVER SYSTEM INSPECTION FORM

Sheet 2 of 11
Date: 9/28/12

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None at this time

2. Hydroseed "spring mix" still dormant, aboveground irrigation is being implemented but much of vegetation is still stressed. Will continue to observe.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the Waste Pits OU.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

CAP GAS COLLECTION AND TREATMENT INSPECTION FORM

Completed By: IY

Title: PE

Sheet 3 of 11

Date: 9/28/12

Time: 13:00

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Collection System Valves	Condition/Remarks
1. Adequate-Free Movement	4
2. Seals - Complete	4
3. Signs of Rust/Corrosion	3
Condensate Collection[3]	
4. Air Moisture Separator	4
Carbon Adsorbers	
5. Vessels	
- Exterior Damage	4
- FRP Grating and Mesh	4
Heavy Equipment	
6. Blower	
- General Motor Maintenance	3
- Drive Maintenance	3
- Bearing Maintenance	3
- Lubrication	3
- Structural Maintenance	3

DEL AMO WASTE PITS OU

CAP GAS COLLECTION AND TREATMENT INSPECTION FORM

Sheet 4 of 11

Date: 9/28/12

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

3. Continue observing slight rust on some components of the GCTS

6. Continue to observe and inspect blower functioning as designed due to age of blower and increased noise during operation.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

(3) Initial condensate collected from the air moisture separator must be characterized to determine methods of appropriate disposal.

DEL AMO WASTE PITS OU

SURFACE WATER DRAINAGE INSPECTION FORM

Completed By: IY

Title: PE

Sheet 5 of 11

Date: 9/28/12

Time: 13:00

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain)_____

Item Description	Condition*/Remarks
SURFACE-WATER DRAINAGE SYSTEMS	
1. Washouts or Erosion of Contoured Grade	4
2. Ponding on Contoured Grade	4
3. Gullies and Ruts on Contoured Grade	4
4. Plugging of Drainage Culverts	4
5. Holes and Cracks in Swales or Catch Basins	4
6. Sediment Build-Up in Swales or Catch Basin	4
7. Surface Cracking of Swales/Catch Basins	4
8. Spalling of Swales/Catch Basins	4
9. Structural Failure of Swales/Catch Basins	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None at this time

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period.

DEL AMO WASTE PITS OU

SUBSURFACE WATER DRAINAGE INSPECTION FORM

Completed By: IY

Title: PE

Sheet 6 of 11

Date: 9/28/12

Time: 13:00

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
SUBSURFACE DRAINAGE SYSTEMS	
1. Holes and Cracks in Swales, Catch Basin	4
2. Plugging of Drainage Inlets	4
3. Sediment Build-Up or Debris in Catch Basin	4
4. Structural Failure of Catch Basin	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None at this time

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period

DEL AMO WASTE PITS OU

SECURITY FENCE INSPECTION FORM

Completed By: IY

Title: PE

Sheet 7 of 11

Date: 9/28/12

Time: 13:00

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
Perimeter Fence	
1. Breaks and Holes	4
2. Settlement Damage	4
3. Loose Posts/Tension	2
4. Rust/Corrosion	4
5. Ruts and Burrows Beneath Fence	4
6. Vegetation Overgrowth	4
7. General Signs of Deterioration	
8. Vandalism/Animal/Wind Damage	4
Gates	
9. Adequate Movement of Hinges and Gates	4
10. Proper Function of Lock(s)	4

DEL AMO WASTE PITS OU

SECURITY FENCE INSPECTION FORM

Sheet 8 of 11
Date: 9/28/12

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

4. Sections of perimeter fencing on the northwest of the Site will need repair/ replacement in 2012.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the Waste Pits OU.
(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

ACCESS ROAD INSPECTION FORM

Completed By: IV

Title: PE

Sheet 9 of 11

Date: 9/28/12

Time: 13:00

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
Access Road	
1. Holes and Cracks	4
2. Vegetation Overgrowth	4
3. Settlement	4
4. Excessive Dispersion of Gravel	4
5. General Signs of Deterioration	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None at this time

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

SVE/IBT SYSTEM INSPECTION FORM

Completed By: IY

Title: PE

Sheet 10 of 11

Date: 9/28/12

Time: 13:00

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Manifold	Condition/Remarks
1. Adequate-Free Movement	4
2. Seals - Complete	4
3. Visible Damage	4
4. Sniff for signs of leaks	4
Condensate Collection[3]	
5. Air Moisture Separator	4
Additional System Components	
6. Carbon Adsorber Vessels	
- Exterior Damage	4
- Vessel Configuration (A-B or B-A)	A-B
7. Blowers	
- General Motor Maintenance	4
- Drive Maintenance	4
- Bearing Maintenance	4
8. Oxygen Generator	
- Signs of Rust/Corrosion	4
- Mechanical Functioning	4
- Oxygen Purity	4

DEL AMO WASTE PITS OU
SVE/IBT SYSTEM INSPECTION FORM

Sheet 11 of 11
Date: 9/28/12

9.	System Sensors	
	- Visible Damage	4
	- Mechanical Functioning	2
10.	SVE Wellheads[4]	
	- Tee Flanges	4
	- Valves	4
	- Sniff for signs of leaks	4

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

7. Blower B remains LOTO during PME activities (non-ops).
8. O_2 generator remains LOTO during PME activities (non-ops).
9. Some system meters are non-operational and being maintenanced during PME activities.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.
(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period.
(3) Condensate collected from (1) moisture separator (2) conveyance piping, and (3) from the carbon absorber vessels must be characterized to determine methods of appropriate disposal.
(4) Tee flanges monitored for leaks using a PID.

DEL AMO WASTE PITS OU

COVER SYSTEM INSPECTION FORM

Completed By: IY

Title: PE

Sheet 1 of 11

Date: 12/4/12

Time: 9:30 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Item Description		Condition/Remarks
1.	Erosion	4
2.	Stressed Vegetation (Plant Die-Back)	4
3.	Sediment Build-Up	4
4.	Local Subsidence or Loss of Grade	4
5.	Water Ponding	4
6.	Turf Height	4
7.	Burrowing Animals	4
8.	Weeds or Undesirable Vegetation	4
9.	Evidence of Fires or Vandalism	4
10.	Soil Quality Check	4
11.	Unauthorized Traffic	4
12.	Slope Instability or Sloughing	4
13.	Survey Monuments	4
14.	Vertical Cracking	4
15.	Intrusions	4
16.	Evidence of Waste Pit Materials	4

DEL AMO WASTE PITS OU

COVER SYSTEM INSPECTION FORM

Sheet 2 of 11
Date: 12/4/12

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None at this time

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the Waste Pits OU.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

CAP GAS COLLECTION AND TREATMENT INSPECTION FORM

Completed By: IY

Title: PE

Sheet 3 of 11

Date: 12/4/12

Time: 9:30 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

	Condition/Remarks
Collection System Valves	
1. Adequate-Free Movement	4
2. Seals - Complete	4
3. Signs of Rust/Corrosion	3
Condensate Collection[3]	
4. Air Moisture Separator	4
Carbon Adsorbers	
5. Vessels	
- Exterior Damage	4
- FRP Grating and Mesh	4
Heavy Equipment	
6. Blower	
- General Motor Maintenance	3
- Drive Maintenance	3
- Bearing Maintenance	3
- Lubrication	3
- Structural Maintenance	3

DEL AMO WASTE PITS OU

CAP GAS COLLECTION AND TREATMENT INSPECTION FORM

Sheet 4 of 11

Date: 12/4/12

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

3. Continue observing slight rust on some components of the GCTS.

6. Continue to observe and inspect blower functioning as designed due to age of blower and increased operation noise.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

(3) Initial condensate collected from the air moisture separator must be characterized to determine methods of appropriate disposal.

DEL AMO WASTE PITS OU

SURFACE WATER DRAINAGE INSPECTION FORM

Completed By: IY

Title: PE

Sheet 5 of 11

Date: 12/4/12

Time: 9:30 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain)_____

Item Description	Condition*/Remarks
SURFACE-WATER DRAINAGE SYSTEMS	
1. Washouts or Erosion of Contoured Grade	4
2. Ponding on Contoured Grade	4
3. Gullies and Ruts on Contoured Grade	4
4. Plugging of Drainage Culverts	4
5. Holes and Cracks in Swales or Catch Basins	4
6. Sediment Build-Up in Swales or Catch Basin	4
7. Surface Cracking of Swales/Catch Basins	4
8. Spalling of Swales/Catch Basins	4
9. Structural Failure of Swales/Catch Basins	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None at this time

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period.

DEL AMO WASTE PITS OU

SUBSURFACE WATER DRAINAGE INSPECTION FORM

Completed By: IY

Title: PE

Sheet 6 of 11

Date: 12/4/12

Time: 9:30 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
SUBSURFACE DRAINAGE SYSTEMS	
1. Holes and Cracks in Swales, Catch Basin	4
2. Plugging of Drainage Inlets	4
3. Sediment Build-Up or Debris in Catch Basin	4
4. Structural Failure of Catch Basin	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None at this time

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period

DEL AMO WASTE PITS OU

SECURITY FENCE INSPECTION FORM

Completed By: IY

Title: PE

Sheet 7 of 11

Date: 12/4/12

Time: 9:30 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
Perimeter Fence	
1. Breaks and Holes	Y
2. Settlement Damage	Y
3. Loose Posts/Tension	Y
4. Rust/Corrosion	Y
5. Ruts and Burrows Beneath Fence	Y
6. Vegetation Overgrowth	Y
7. General Signs of Deterioration	Y
8. Vandalism/Animal/Wind Damage	Y
Gates	
9. Adequate Movement of Hinges and Gates	Y
10. Proper Function of Lock(s)	Y

DEL AMO WASTE PITS OU

SECURITY FENCE INSPECTION FORM

Sheet 8 of 11
Date: 12/4/12

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

4. Perimeter fencing was replaced in 4th Quarter of 2012 and all fencing is in great condition. Will continue to observe and inspect as necessary.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the Waste Pits OU.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

ACCESS ROAD INSPECTION FORM

Completed By: JY

Title: PE

Sheet 9 of 11

Date: 12/4/12

Time: 9:30 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Item Description	Condition/Remarks
Access Road	
1. Holes and Cracks	4
2. Vegetation Overgrowth	4
3. Settlement	4
4. Excessive Dispersion of Gravel	4
5. General Signs of Deterioration	4

Condition/Remarks Key:

4 = Satisfactory

3 = Slight (Continue Observing)

2 = Moderate (Needs Scheduled Maintenance/Repair)

1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

None at this time

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.

(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24-hour period.

DEL AMO WASTE PITS OU

SVE/IBT SYSTEM INSPECTION FORM

Completed By: IY

Title: PE

Sheet 10 of 11

Date: 12/4/12

Time: 9:30 AM

Type of Inspection (check only one):

(X) Quarterly ( ) After Seismic Event[1] ( ) After Heavy Rain[2]

( ) Other (explain) _____

Manifold	Condition/Remarks
1. Adequate-Free Movement	4
2. Seals - Complete	4
3. Visible Damage	4
4. Sniff for signs of leaks	4
Condensate Collection[3]	
5. Air Moisture Separator	4
Additional System Components	
6. Carbon Adsorber Vessels	
- Exterior Damage	4
- Vessel Configuration (A-B or B-A)	A-B
7. Blowers	
- General Motor Maintenance	4
- Drive Maintenance	4
- Bearing Maintenance	4
8. Oxygen Generator	
- Signs of Rust/Corrosion	4
- Mechanical Functioning	4
- Oxygen Purity	4

DEL AMO WASTE PITS OU
SVE/IBT SYSTEM INSPECTION FORM

Sheet 11 of 11
Date: 12/4/12

9.	System Sensors	
	- Visible Damage	4
	- Mechanical Functioning	2
10.	SVE Wellheads[4]	
	- Tee Flanges	4
	- Valves	4
	- Sniff for signs of leaks	4

Condition/Remarks Key:
4 = Satisfactory
3 = Slight (Continue Observing)
2 = Moderate (Needs Scheduled Maintenance/Repair)
1 = Poor (Needs Immediate Maintenance/Repair)

Recommendations for maintenance or repair (attach additional sheets as needed):

7. Blower B LOTO during PME (non-ops mode).

8. O_2 generator LOTO during PME (non-ops mode).

9. Some system meters non-operational while SVE/IBT is in non-ops mode during PME.

(1) Refer to Table 3.3-2 of the OM&M Plan for frequency based on magnitude and distance from the site.
(2) For heavy rains exceeding 1.0 inches (per USEPA's letter dated December 6, 1999) within a 24 hour period.
(3) Condensate collected from (1) moisture separator (2) conveyance piping, and (3) from the carbon absorber vessels must be characterized to determine methods of appropriate disposal.
(4) Tee flanges monitored for leaks using a PID.

APPENDIX G

GROUNDWATER FIELD DATA SHEETS

BBC ENVIRONMENTAL, INC.

3593 Adams Avenue, San Diego, CA 92116

September 6, 2012

Mr. Ian Yusko
C_2REM
2382-B SE Bristol Street
Newport Beach, Ca 92660
Via Email: Mr. Ian Yusko < IYusko@C2rem.com >

RE: TRANSMITTAL OF THE GROUNDWATER SAMPLING FIELD DATA SHEETS FOR THE SEPTEMBER 2012 GROUNDWATER SAMPLING EVENT PERFORMED AT THE DEL AMO WASTE PITS LOCATED IN TORRANCE, CA.

Mr. Yusko:

Please find enclosed the field data sheets from the third quarter 2012 groundwater monitoring and sampling event performed by BBC Environmental, Inc. at the above referenced location on September 5th, 2012.

Should you have any questions with regards to this project, please do not hesitate to contact me directly at (619) 546-7165.

Thank you,
BBC ENVIRONMENTAL, INC.

Stephen Jeltema
Environmental Scientist

Enclosures(2): Groundwater Gauging Sheet dated September 5, 2012
Groundwater Sampling Field Data Sheets dated September 5, 2012

Telephone (619) 546-7165 Fax (619) 546-7175

Del Amo Waste Pits
20245 S. Vermont Avenue
Torrance, CA

Date: 9/5/2012
Time: 0740-1330
Technician: SMJ / ASJ

Well I.D.	DTP (ft)	DTW (ft)	Previous DTP (ft)	Previous DTW (ft)	Total Depth (ft)	Sampling Time	Well Box Description	Survey Point	Comments
						LF/HF			
PZL 0018	ND	43.62	ND	43.20	68.0	1052/111	M/D 2-3/4"	BM @ TOC	2" Well Casing
PZL 0019	ND	50.11	ND	49.77	65.4	1325/1351	M/D 2-3/4"	BM @ TOC	2" Well Casing
PZL 0020	ND	46.02	ND	45.46	67.8	1325/1338	E/W 2-15/16"	TOC to N	2" Well Casing
PZL 0022	ND	43.49	ND	43.14	62.0	1100	Monument	BM @ TOC	2" Well Casing
PZL 0024	ND	45.45	ND	45.11	--	1143	Monument	BM @ TOC	
PZL 0025	ND	48.11	ND	47.68	--	1229	Monument	TOC to N	
SWL 0008	ND	41.43	ND	41.07	60.8	1237	DWP - Allen Bolts	TOC to N	
SWL 0044	ND	46.51	ND	46.47	67.4	811	Monument	Notch @ TOC	No Lock / No Locking Lid
SWL 0051	ND	37.15	ND	36.70	57.2	1158	E/W 2-15/16"	TOC to N	
XMW 29	ND	48.84	ND	48.56	73.2	1013	DWP - Phillips Head	TOC to N	Watch for Aggressive Dogs
XP 02	ND	45.02	ND	44.92	76.4	1016	DWP - Allen Bolts	BM @ TOC	

NOTES: TOC = Top of Casing, BM = Black Mark
Equipment Blank: Collected at End of Day
Duplicate:

XMW-29 Located North of Powerlines, Approx 40 ft NE of NE Leg of Tower 1033F

GROUNDWATER SAMPLING FIELD DATA SHEET

Client, SS#	Del Amo Waste Pits	☐ Monitoring Only
Location	20245 S. Vermont Ave.	☐ Free Product Pump out Only
	Torrance, CA	☑ Monitoring and Sampling
Project #	Del Amo.4	☐

BBC Personnel Onsite / Times	S.Jeltema / A.Smith-Jones	Ar. 0700	/Dep. 1445
Contractor Personnel / Times	Cathleen - AFLOW	Ar. 0900	/Dep. 1500
CZ	REM - Jim, Seamus, Shoba (Trent)	Ar. 0700	/Dep. unk.

Monitoring Times / Order	0740 - 1330 / SMS SWL0044, ~~MW-29~~, PZL0018, SWL0051, 0008, PZL0020
Purging Times / Order	See Sheets / ASS ~~P02~~, PZL0022, 24, 25, 19
Sampling Times / Order	See Sheets

Monitoring Equipment	☑ Interface Probe (Sol / Her / ORS) ☐ Water Level Meter ☐ Hanna _____(pH/Cond/Temp/ORP) ☐ Orion (Cond) ☑ In-Situ Troll Flow Cell 50528 ☐ Hach (Turb) & YSI 6820 ☐ ICM- Dissolved Oxygen Meter _____
Purging Method/ Equipment	☐ Bailer ☑ Pump (Type: Grundfos) ☐ Bladder Pump ☐ Borehole Vol. ☑ Casing Vol. ☒ Low Flow ☐ Non-Purge
Borehole Volume:	BV(Gal) = 0.041 [CD^2 + P (BD^2 – CD^2)](WC) P = Assumed Porosity of 0.25
Casing Volume Multiplier	2" (0.17) 4" (0.65) 6" (1.5)
Purge Volume Readings	☑ Flow Meter ☒ Graduated Container
Decon Method	☑ 3 Stage ☐ Other (_____)
Field Duplicate Collected From	
Purge Water Destination	☐ Barrels On-Site (# of ___) ☑ AST On-Site ☐ Sanitary Sewer (Permit # _____) ☐ Treatment Facility (_____)
Notes / Comments	Low Flow @ PZL0018, PZL0019, PZL0020
Total Volume Purged This Event:	~354 gal MS/MSD @ SWL0044
Total Volume Purged (~~2011~~ 2012):	~354 gal Field Dup @ SWL0008
Well Repair	Dup - LF @ PZL0020

Signature	Date 09-5-~~11~~ 12	Page 1 of

GROUNDWATER SAMPLING FIELD DATA SHEET

Poject Name: Del Amo Waste Pits
Project No.
Sample Collected By SMJ/ASJ

Site Location: Torrence, CA
Well ID: PEL0018-LF
Date of Sampling: 9/5/12

EQUIPMENT

Purgeing Method: Low Flow
Meter ID: 50528/ 47884

Purging Equipment: Dedicated Grundfos RF2

PURGING INFORMATION

Measuring Point TOC to N
Casing Diameter 2"
Initial DTW (ft) (DTWi) 43.62
Final DTW (ft) 43.63
Total Well Depth (ft) 68.0
Screen Interval 48-68
PID Reading —

Approx. Depth To Pump Inlet: Dedicated

Notes: Well located near Rebar on Fenceline

Well Box Condition: ~~Flat~~; 3/4"; Fair; Ext. Seal Cracked
(SW) MD

149 Hz 4147 CPM: — R: — D: — PSI: —

FIELD CONDITIONS

Wind Direction Still
Weather Condition Partly Cloudy / Sl. Rain

Ambient Air Temp (F) 80°F

Time	Depth to Water	Volume Purged (mL)	Temp. C	Cond. (µS/cm)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)
1037	43.62	0	21.90	2770	251.8	-69	6.70	7.61
1042	43.63	820	22.03	2771	74.0	-70	6.72	3.78
1046	43.63	1320	22.68	2776	38.1	-63	6.73	1.54
1049	43.63	1660	22.80	2778	32.0	-64	6.73	1.51
1052	43.63	1970	22.94	2780	29.6	-64	6.73	1.48
1052	initiated Sampling							

Total Volume Purged (mL) 1970
Flow Rate During Purging (mL/min) 478

Sample Time 1052
Duplicate Yes ____ No X

SAMPLE CONTAINERS

Collected	Container Type	No.	Preservatives	Field Filtered?	Analyses
9/5/12	VOA	3	HCL	N	8260B
9/5/12	SVOCS - 1L Amber	1	None	N	8015B

GROUNDWATER SAMPLING FIELD DATA SHEET

Client, SS# Del Amo Waste Pits | **Well #** PZL0018 | **Sampled By** SMJ/ASJ

Well Information | Well Survey Point BM @ TOC

Casing Material PVC | Casing Diameter (in.)(CD) 2"

Constructed Well Depth (ft) 68.0 | Borehole Diameter (in.)(BD) 8"

Measured Well Depth (ft) Unk | Casing Vol 4.1 | Borehole Vol ----------

Depth to Product (ft) ND | Actual Purge Volume 12.4 (Gal)

Depth to Water (ft) (DTW) 43.62 | Product / Water Removed – / – (Gal)

Water Column (ft) (WC) 24.38 | Color Of Product –

Well Box Type and Location ☐ Emco Wheaton ☐ Pomeco ☒ M/D ☐ Vault (_____)

☐ DWP (Steel / Alum.) ☐ Alhambra ☐ Monument Box Location: _____

Well Box Security # of Bolts 2 ☐ 7/16" ☐ 1/2" ☐ 9/16" ☐ 5/8" ☒ 3/4" ☐ 5/16" ☐ ____

# of Bolts Broken Off Ø # of Bolts Missing Ø ☒ Cap ☐ Lock

Ext. Seal Condition ☐ Good ☒ Fair ☐ Poor (_____) ☒ Cracked ☐ None

Crown Height ☒ Good ☐ Fair ☐ Poor (_____) ☐ Depressed

☐ None (_____) ☐ Not Applicable (Monument Box)

Time	Volume (Gal)	Temp (°C)	pH	Cond (µMhos)	Turb-idity	D.O. (mg/L)	Color/ HC Odor
1101	Ø	21.73	6.71	2797	6.0	1.53	clear/slight
1102	4.1	22.71	6.75	2784	3.5	2.12	" / "
1104	8.3	21.98	6.75	2836	3.9	2.44	" / "
1106	12.4	21.96	6.75	2842	3.1	2.42	" / "
1106	12.4	Stopped	Purging				

Pumping Rate 2.5 GPM | 80% Recharge 48.49 | Sample Time 1111

Max Drawdown – | Recovery Depth 48.49 @ 1110 | Field Duplicate Y / (N)

Notes: _____

Recovery Rate: Fast

Hz 210 / 195 Replaced Cap ☐ Replaced Lock ☐

Signature [signature] | Date 09-5-~~11~~ 12 | Page of

GROUNDWATER SAMPLING FIELD DATA SHEET

Poject Name: Del Amo Waste Pits
Project No.
Sample Collected By SMJ/ASJ

Site Location: Torrence, CA
Well ID: PZL 0019-LF
Date of Sampling: 9/ 5 /12

EQUIPMENT

Purgeing Method: Low Flow
Meter ID: 50528/ 47884 / YSI

Purging Equipment: Dedicated Grundfos RF2

PURGING INFORMATION

Measuring Point TOC to N
Casing Diameter 2"
Initial DTW (ft) (DTWi) 50.11
Final DTW (ft) 51.03
Total Well Depth (ft) 67.2
Screen Interval 55-65
PID Reading —

Approx. Depth To Pump Inlet: dedicated system

Notes:
Well Box Condition: good crown height, fair exterior seal 200 ↓ 158 Hz
CPM: R: D: PSI:

FIELD CONDITIONS

Wind Direction West
Weather Condition overcast, calm, periodic light rain

Ambient Air Temp (F) 74°F

Time	Depth to Water	Volume Purged (mL)	Temp. C	Cond. (µS/cm)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)
1310	50.11	0	28.94	5149	18.6	-113	6.24	7.92
1315	50.78	3000	29.39	5062	1.7	-126	6.28	7.72
1319	50.87	4900	30.01	4917	0.3	-169	6.29	8.61
1322	50.95	5800	30.31	4916	0.1	-176	6.30	8.94
1325	51.03	6600	30.50	4930	0.1	-180	6.30	9.12
1325	initiated sampling							

Total Volume Purged (mL) 6600
Flow Rate During Purging (mL/min) *440

Sample Time 1325
Duplicate Yes ____ No ✓

SAMPLE CONTAINERS

Collected	Container Type	No.	Preservatives	Field Filtered?	Analyses
9/5/12	VOA	3	HCL	N	8260B
9/5/12	1L Amber	1	NONE	N	8015

GROUNDWATER SAMPLING FIELD DATA SHEET

Client, SS# Del Amo Waste Pits | **Well #** PZL0019 | **Sampled By** SMJ/ASJ

Well Information | Well Survey Point BM @ TOC

Casing Material PVC | Casing Diameter (in.)(CD) 2" .17

Constructed Well Depth (ft) 65.4 | Borehole Diameter (in.)(BD) 8"

Measured Well Depth (ft) 67.2 | Casing Vol 2.9 | Borehole Vol ----------

Depth to Product (ft) ND | Actual Purge Volume 8.7 (Gal)

Depth to Water (ft) (DTW) 50.11 | Product / Water Removed — / — (Gal)

Water Column (ft) (WC) 17.09 | Color Of Product

Well Box Type and Location ☐ Emco Wheaton ☐ Pomeco ☒ M/D ☐ Vault (_____)

☐ DWP (Steel / Alum.) ☐ Alhambra ☐ Monument Box Location:

Well Box Security # of Bolts 3 ☐ 7/16" ☐ 1/2" ☐ 9/16" ☐ 5/8" ☒ 3/4" ☐ 5/16" ☐

# of Bolts Broken Off 0 # of Bolts Missing 0 ☑ Cap ☑ Lock

Ext. Seal Condition ☐ Good ☑ Fair ☐ Poor (_____) ☐ Cracked ☐ None

Crown Height ☑ Good ☐ Fair ☐ Poor (_____) ☐ Depressed

☐ None (_____) ☐ Not Applicable (Monument Box)

Time	Volume (Gal)	Temp (°C)	pH	Cond (µMhos)	Turb-idity	D.O. (mg/L)	Color/ HC Odor
1338	1.7	29.69	6.41	4985	14.7	9.72	clear/strong
1340	2.9	29.91	6.44	4937	5.2	7.11	clear/strong
1342	5.8	29.99	6.40	4899	6.8	4.09	clear/strong
1345	8.7	30.02	6.40	4893	7.1	3.97	clear/strong
1345	8.7	stopped purging					

Pumping Rate ~1.2 GPM | 80% Recharge 53.53 | Sample Time 1351

Max Drawdown 56.68 | Recovery Depth 53.53 @ 1351 | Field Duplicate Y / N

Notes:

Recovery Rate: fast

Hz 170 Replaced Cap ☐ Replaced Lock ☐

Signature [signature] | Date 09-5-12 | Page of

GROUNDWATER SAMPLING FIELD DATA SHEET

Poject Name: Del Amo Waste Pits
Project No.
Sample Collected By (SMJ/ASJ)

Site Location: Torrence, CA
Well ID: PZ0020 -LF
Date of Sampling: 9/ 5 /12

EQUIPMENT

Purgeing Method: Low Flow
Meter ID: (50528/ 47884)

Purging Equipment: Dedicated Grundfos RF2

PURGING INFORMATION

Measuring Point TOC to N
Casing Diameter 2"
Initial DTW (ft) (DTWi) 46.02
Final DTW (ft) 46.02
Total Well Depth (ft) 65.4
Screen Interval 55-65
PID Reading —

Approx. Depth To Pump Inlet: Dedicated

Notes: Installed Dedicated Pump Pbs Event / THT odor
Well Box Condition: E/w ; 15/16 : 2 to 2 : good

Duplicate - LF CPM: — R: — D: — PSI: —

FIELD CONDITIONS

Wind Direction N-SS
Weather Condition Cloudy

Ambient Air Temp (F) 80°F

Time	Depth to Water	Volume Purged (mL)	Temp. C	Cond. (µS/cm)	Turbidity (NTU)	ORP (mV)	pH	DO (mg/L)
1301	46.02	0	23.14	7052	29.13	-78	6.26	5.20
1306	46.02	1420	25.01	7198	58.24	-70	6.25	3.77
1310	46.02	2100	25.01	7128	59.72	-79	6.27	3.60
1313	46.02	3000	25.17	6992	36.02	-85	6.28	3.07
1316	46.02	3520	26.93	6373	14.62	-95	6.31	3.14
1319	46.02	4160	27.18	6015	12.71	-99	6.33	3.01
1322	46.02	4670	27.02	5933	12.41	-101	6.33	3.00
1325	46.02	5190	27.19	5891	12.06	-102	6.33	3.06
1325	Dedicated Sampling							

Total Volume Purged (mL) 5190
Flow Rate During Purging (mL/min) 4.216

Sample Time 1325
Duplicate Yes X No

SAMPLE CONTAINERS

Duplicate - LF

Collected	Container Type	No.	Preservatives	Field Filtered?	Analyses
9/5/12	VOA	3	HCL	N	8260B
9/5/12	1L Amber	1	none	N	SVOCs

GROUNDWATER SAMPLING FIELD DATA SHEET

Client, SS# Del Amo Waste Pits | **Well #** PZL0020 | **Sampled By** SMJ/ASJ

Well Information | Well Survey Point BM @ TOC (SW) 3.7

Casing Material PVC | Casing Diameter (in.)(CD) 2"

Constructed Well Depth (ft) 68.0 | Borehole Diameter (in.)(BD) 8"

Measured Well Depth (ft) 67.7 | Casing Vol ~~37~~ | Borehole Vol ----------

Depth to Product (ft) NP | Actual Purge Volume 16.1 (Gal)

Depth to Water (ft) (DTW) 46.02 | Product / Water Removed — / — (Gal)

Water Column (ft) (WC) 21.68 | Color Of Product —

Well Box Type and Location ☒ Emco Wheaton ☐ Pomeco ☐ M/D ☐ Vault (_____)

☐ DWP (Steel / Alum.) ☐ Alhambra ☐ Monument Box Location: _____

Well Box Security # of Bolts 2 ☐ 7/16" ☐ 1/2" ☐ 9/16" ☐ 5/8" ☐ 3/4" ☒ 15/16" ☐ ____

# of Bolts Broken Off 0 # of Bolts Missing 0 ☒ Cap ☐ Lock

Ext. Seal Condition ☒ Good ☐ Fair ☐ Poor (_____) ☐ Cracked ☐ None

Crown Height ☒ Good ☐ Fair ☐ Poor (_____) ☐ Depressed

☐ None (_____) ☐ Not Applicable (Monument Box)

Time	Volume (Gal)	Temp (°C)	pH	Cond (µMhos)	Turb-idity	D.O. (mg/L)	Color/ HC Odor
1328	0	27.18	6.34	5806	931	7.04	Lt Brown/Strong
1330	3.9	24.74	6.41	4928	(SW) ~~88~~ 464	3.80	" / "
1333	7.4	24.51	6.42	4974	69	1.81	clear/Strong
1336	16.1	24.47	6.41	5007	31	1.79	" / "
1336	16.1	Stopped Purging					

Pumping Rate 4.4 GPM | 80% Recharge 50.35 | Sample Time 1338

Max Drawdown — | Recovery Depth 46.31 @ 1336 | Field Duplicate Y / (N)

Notes:

Recovery Rate: Fast

Hz 195 | Replaced Cap ☐ Replaced Lock ☐

Signature [signature] | Date 09-5 ~~11~~ 12 | Page of

GROUNDWATER SAMPLING FIELD DATA SHEET

Client, SS# Del Amo Waste Pits | **Well #** PZL0022 | **Sampled By** SMJ/ASJ

Well Information | Well Survey Point BM @ TOC

Casing Material PVC | Casing Diameter (in.)(CD) 2"

Constructed Well Depth (ft) 62.0 | Borehole Diameter (in.)(BD) 8"

Measured Well Depth (ft) 62.0 | Casing Vol 3.1 | Borehole Vol ----------

Depth to Product (ft) ND | Actual Purge Volume 9.4 (Gal)

Depth to Water (ft) (DTW) 43.49 | Product / Water Removed — / — (Gal)

Water Column (ft) (WC) 18.51 | Color Of Product —

Well Box Type and Location ☐ Emco Wheaton ☐ Pomeco ☐ M/D ☐ Vault (_____)

☐ DWP (Steel / Alum.) ☐ Alhambra ☒ Monument Box Location: _____

Well Box Security # of Bolts 0 ☐ 7/16" ☐ 1/2" ☐ 9/16" ☐ 5/8" ☐ 3/4" ☐ 5/16" ☐ ____

# of Bolts Broken Off 0 # of Bolts Missing 0 ☑ Cap ☑ Lock

Ext. Seal Condition ☑ Good ☐ Fair ☐ Poor (_____) ☐ Cracked ☐ None

Crown Height ☑ Good ☐ Fair ☐ Poor (_____) ☐ Depressed

☐ None (_____) ☐ Not Applicable (Monument Box)

Time	Volume (Gal)	Temp (°C)	pH	Cond (µMhos)	Turb-idity	D.O. (mg/L)	Color/ HC Odor
1053	0	22.71	6.41	2258	18.8	3.21	clear / none
1055	3.2	22.69	6.58	2297	7.6	3.14	clear / none
1057	6.4	22.79	6.42	2314	2.7	2.83	clear / none
1100	9.4	22.72	6.41	2317	3.1	2.75	clear / none
1100	9.4	stopped purging					

Pumping Rate ~1.3 GPM | 80% Recharge ~~46.59~~ 47.19 | Sample Time 1100

Max Drawdown 43.58 | Recovery Depth 43.58 @ 1100 | Field Duplicate Y / N

Notes:

Recovery Rate: fast

Hz 180 Replaced Cap ☐ Replaced Lock ☐

Signature [signature] | Date 09-5-12 | Page of

GROUNDWATER SAMPLING FIELD DATA SHEET

Client, SS# Del Amo Waste Pits | **Well #** PZL0024 | **Sampled By** SMJ/ASJ

Well Information | Well Survey Point BM @ TOC

Casing Material PVC | Casing Diameter (in.)(CD) 4"

Constructed Well Depth (ft) 65.0 | Borehole Diameter (in.)(BD) 10"

Measured Well Depth (ft) 68.2 | Casing Vol 14.79 | Borehole Vol ----------

Depth to Product (ft) ND | Actual Purge Volume 44.~~56~~4 (Gal)

Depth to Water (ft) (DTW) 45.45 | Product / Water Removed — / — (Gal)

Water Column (ft) (WC) 22.75 | Color Of Product —

Well Box Type and Location ☐ Emco Wheaton ☐ Pomeco ☐ M/D ☐ Vault (_____)

☐ DWP (Steel / Alum.) ☐ Alhambra ☒ Monument Box Location: _____

Well Box Security # of Bolts 0 ☐ 7/16" ☐ 1/2" ☐ 9/16" ☐ 5/8" ☐ 3/4" ☐ 5/16" ☐ ____

# of Bolts Broken Off 0 # of Bolts Missing 0 ☑ Cap ☑ Lock

Ext. Seal Condition ☑ Good ☐ Fair ☐ Poor (_____) ☐ Cracked ☐ None

Crown Height ☑ Good ☐ Fair ☐ Poor (_____) ☐ Depressed

☐ None (_____) ☐ Not Applicable (Monument Box)

Time	Volume (Gal)	Temp (°C)	pH	Cond (µMhos)	Turb-idity	D.O. (mg/L)	Color/ HC Odor
1121	0	22.53	6.52	2143	5.1	4.15	clear/none
1129	14.8	22.57	6.55	2123	10.5	3.11	clear/slight
1135	29.6	22.60	6.57	2125	12.2	3.03	clear/slight
1142	44.4	22.63	6.58	2127	9.2	2.96	clear/slight
1142	44.4	stopped	purging				

Pumping Rate 2.1 GPM | 80% Recharge 50.00 | Sample Time 1143

Max Drawdown 45.46 | Recovery Depth 45.45 @ 1143 | Field Duplicate Y / (N)

Notes:

Recovery Rate: fast

Hz 2051275 Replaced Cap ☐ Replaced Lock ☐

Signature [signature] | Date 09-5-12 | Page of

GROUNDWATER SAMPLING FIELD DATA SHEET

Client, SS# Del Amo Waste Pits | **Well #** PZL0025 | **Sampled By** SMJ/ASJ

Well Information | Well Survey Point BM @ TOC

Casing Material PVC | Casing Diameter (in.)(CD) 4"
Constructed Well Depth (ft) NP | Borehole Diameter (in.)(BD) 10"
Measured Well Depth (ft) 67.5 | Casing Vol 12.6 | Borehole Vol ----------
Depth to Product (ft) ND | Actual Purge Volume 37.8 (Gal)
Depth to Water (ft) (DTW) 48.11 | Product / Water Removed — / — (Gal)
Water Column (ft) (WC) 19.39 | Color Of Product —

Well Box Type and Location ☐ Emco Wheaton ☐ Pomeco ☐ M/D ☐ Vault (_____)
☐ DWP (Steel / Alum.) ☐ Alhambra ☒ Monument Box Location: _____

Well Box Security # of Bolts 0 ☐ 7/16" ☐ 1/2" ☐ 9/16" ☐ 5/8" ☐ 3/4" ☐ 5/16" ☐ ____
# of Bolts Broken Off 0 # of Bolts Missing 0 ☑ Cap ☑ Lock

Ext. Seal Condition ☑ Good ☐ Fair ☐ Poor (_____) ☐ Cracked ☐ None

Crown Height ☑ Good ☐ Fair ☐ Poor (_____) ☐ Depressed
☐ None (_____) ☐ Not Applicable (Monument Box)

Time	Volume (Gal)	Temp (°C)	pH	Cond (µMhos)	Turb-idity	D.O. (mg/L)	Color/ HC Odor
1204	0	22.78	6.40	3227	50.3	4.83	clear/none
1211	12.6	22.63	6.50	2490	18.5	5.92	clear/none
1218	25.2	22.69	6.37	3207	34.6	7.19	clear/none
1224	37.8	22.71	6.36	3340	19.8	7.44	clear/none
1224	37.8	stopped	purging				

Pumping Rate ~1.9 GPM | 80% Recharge 51.99 | Sample Time 1229

Max Drawdown 53.96 | Recovery Depth 51.99 @ 1229 | Field Duplicate Y / N

Notes:
Recovery Rate: fast
Hz 205 Replaced Cap ☐ Replaced Lock ☐

Signature [signature] | Date 09- 5 -12 | Page of

GROUNDWATER SAMPLING FIELD DATA SHEET

Client, SS# Del Amo Waste Pits | **Well #** SWL0008 | **Sampled By** SMJ/ASJ

Well Information Well Survey Point TOC to N

Casing Material PVC — Casing Diameter (in.)(CD) 4"

Constructed Well Depth (ft) NP — Borehole Diameter (in.)(BD) 10"

Measured Well Depth (ft) 60.8 — Casing Vol 12.6 — Borehole Vol ----------

Depth to Product (ft) ND — Actual Purge Volume 37.8 (Gal)

Depth to Water (ft) (DTW) 41.43 — Product / Water Removed — / — (Gal)

Water Column (ft) (WC) 19.37 — Color Of Product

Well Box Type and Location ☐ Emco Wheaton ☐ Pomeco ☐ M/D ☐ Vault (_____)

☒ DWP (Steel / Alum.) ☐ Alhambra ☐ Monument Box Location:

Well Box Security # of Bolts 2 ☐ 7/16" ☐ 1/2" ☐ 9/16" ☐ 5/8" ☒ 3/4" ☐ 5/16" ☒ Allen

# of Bolts Broken Off 1 # of Bolts Missing Ø ☒ Cap ☐ Lock

Ext. Seal Condition ☒ Good ☐ Fair ☐ Poor (_____) ☐ Cracked ☐ None

Crown Height ☒ Good ☐ Fair ☐ Poor (_____) ☐ Depressed

☐ None (_____) ☐ Not Applicable (Monument Box)

Time	Volume (Gal)	Temp (°C)	pH	Cond (µMhos)	Turb-idity	D.O. (mg/L)	Color/ HC Odor
1214	Ø	22.89	6.82	2180	24	2.84	clear/strong
1221	12.6	23.12	6.73	2294	33.3	3.12	" / "
1227	25.2	23.14	6.76	2308	42.7	3.81	" / "
1233	37.8	23.14	6.76	2332	41.0	3.87	" / "
1233	37.8	Stopped Purging					

Pumping Rate 420 GPM | 80% Recharge 45.30 | Sample Time 1237

Max Drawdown — | Recovery Depth 45.30 @ 1236 | Field Duplicate (Y) / N

Notes: Duplicate-1 Duplicate-1

Recovery Rate:

Hz 225 Replaced Cap ☐ Replaced Lock ☐

Signature [signature] | Date 09-5-17 | Page of

GROUNDWATER SAMPLING FIELD DATA SHEET

Client, SS# Del Amo Waste Pits | **Well #** SWL0044 | **Sampled By** SMJ/ASJ

Well Information Well Survey Point NOTCH @ TOC

Casing Material PVC — Casing Diameter (in.)(CD) 4"

Constructed Well Depth (ft) 65.5 — Borehole Diameter (in.)(BD) 10"

Measured Well Depth (ft) 67.4 — Casing Vol 13.6 — Borehole Vol ----------

Depth to Product (ft) ND — Actual Purge Volume 40.7 (Gal)

Depth to Water (ft) (DTW) 46.51 — Product / Water Removed — / — (Gal)

Water Column (ft) (WC) 20.89 — Color Of Product —

Well Box Type and Location ☐ Emco Wheaton ☐ Pomeco ☐ M/D ☐ Vault (_____)

☐ DWP (Steel / Alum.) ☐ Alhambra ☒ Monument Box Location: _____

Well Box Security # of Bolts ∅ ☐ 7/16" ☐ 1/2" ☐ 9/16" ☐ 5/8" ☐ 3/4" ☐ 5/16" ☐ ____

# of Bolts Broken Off ∅ # of Bolts Missing ∅ ☐ Cap ☐ Lock No lock

Ext. Seal Condition ☒ Good ☐ Fair ☐ Poor (_____) ☐ Cracked ☐ None

Crown Height ☒ Good ☐ Fair ☐ Poor (_____) ☐ Depressed

☐ None (_____) ☐ Not Applicable (Monument Box)

Time	Volume (Gal)	Temp (°C)	pH	Cond (µMhos)	Turb-idity	D.O. (mg/L)	Color/ HC Odor
0748	∅	22.73	6.64	2487	71	5.64	clear/none
0756	13.6	22.70	6.63	2477	34	2.77	" / "
0802	27.2	23.01	6.64	~~[illegible]~~ @ 2468	29	1.64	" / "
0808	40.7	23.00	6.63	2462	8.8	1.59	" / "
0808	40.7	Stopped Purging					

Pumping Rate 420 GPM | 80% Recharge 50.68 | Sample Time 0811

Max Drawdown — | Recovery Depth 46.75 @ 0811 | Field Duplicate Y / (N)

Notes: Groundwater @ 0800 - Restart ok MS/MSD

Recovery Rate: Fast

Hz 335 Replaced Cap ☐ Replaced Lock ☐

Signature [signature] | Date 09-5-12 | Page of

GROUNDWATER SAMPLING FIELD DATA SHEET

Client, SS# Del Amo Waste Pits | **Well #** SWL0051 | **Sampled By** SMJ/ASJ

Well Information Well Survey Point TOC to N

Casing Material PVC — Casing Diameter (in.)(CD) 4"

Constructed Well Depth (ft) NP — Borehole Diameter (in.)(BD) 10"

Measured Well Depth (ft) 57.2 — Casing Vol 130 — Borehole Vol ----------

Depth to Product (ft) ND — Actual Purge Volume 391 (Gal)

Depth to Water (ft) (DTW) 37.15 — Product / Water Removed — / — (Gal)

Water Column (ft) (WC) 20.05 — Color Of Product —

Well Box Type and Location ☒ Emco Wheaton ☐ Pomeco ☐ M/D ☐ Vault (_____)

☐ DWP (Steel / Alum.) ☐ Alhambra ☐ Monument Box Location: _____

Well Box Security # of Bolts 2 ☐ 7/16" ☐ 1/2" ☐ 9/16" ☐ 5/8" ☐ 3/4" ☒ 15/16" ☐ ____

# of Bolts Broken Off Ø # of Bolts Missing Ø ☐ Cap ☐ Lock

Ext. Seal Condition ☒ Good ☐ Fair ☐ Poor (_____) ☐ Cracked ☐ None

Crown Height ☒ Good ☐ Fair ☐ Poor (_____) ☐ Depressed

☐ None (_____) ☐ Not Applicable (Monument Box)

Time	Volume (Gal)	Temp (°C)	pH	Cond (µMhos)	Turb-idity	D.O. (mg/L)	Color/ HC Odor
1137	Ø	22.94	6.81	2240	4.4	2.50	clear/none
1140	130	22.97	6.82	2220	6.9	1.64	" / "
1146	261	22.94	6.83	2229	7.4	1.71	" / "
1150	391	22.89	6.82	2260	1.9	1.71	" / "
1150	391	Stopped Purging					

Pumping Rate 230 GPM | 80% Recharge 41.16 | Sample Time 1158

Max Drawdown — | Recovery Depth 41.16 @ 1158 | Field Duplicate Y (N)

Notes:

Recovery Rate: Fast

Hz 225 Replaced Cap ☐ Replaced Lock ☐

Signature [signature] | Date 09-5-12 | Page of

GROUNDWATER SAMPLING FIELD DATA SHEET

Client, SS# Del Amo Waste Pits | **Well #** XMW-29 | **Sampled By** SMJ/ASJ

Well Information | Well Survey Point TOC to N

Casing Material PVC | Casing Diameter (in.)(CD) 4"

Constructed Well Depth (ft) 75.0 | Borehole Diameter (in.)(BD) 10"

Measured Well Depth (ft) 73.2 | Casing Vol 15.18 | Borehole Vol ----------

Depth to Product (ft) ND | Actual Purge Volume 47.5 (Gal)

Depth to Water (ft) (DTW) 48.84 | Product / Water Removed - / - (Gal)

Water Column (ft) (WC) 24.36 | Color Of Product

Well Box Type and Location ☐ Emco Wheaton ☐ Pomeco ☐ M/D ☐ Vault (_____)

☒ DWP (Steel / Alum.) ☐ Alhambra ☐ Monument Box Location:

Well Box Security # of Bolts 2 ☐ 7/16" ☐ 1/2" ☐ 9/16" ☐ 5/8" ☒ 3/4" ☐ 5/16" ☒ Allen

# of Bolts Broken Off Ø # of Bolts Missing Ø ☒ Cap ☐ Lock Two

Ext. Seal Condition ☒ Good ☐ Fair ☐ Poor (_____) ☐ Cracked ☐ None

Crown Height ☒ Good ☐ Fair ☐ Poor (_____) ☐ Depressed

☐ None (_____) ☐ Not Applicable (Monument Box)

Time	Volume (Gal)	Temp (°C)	pH	Cond (µMhos)	Turb-idity	D.O. (mg/L)	Color/ HC Odor
0914	Ø	23.06	6.65	2462	5.0	4.47	clear/slight
0930	15.8	21.00	6.66	2232	6.0	3.46	" / none
0944	31.7	21.63	6.69	2248	9.5	3.58	" / "
0958	47.5	21.64	6.69	2258	4.8	3.37	" / "
0958	47.5	Stopped Purging					

Pumping Rate 4.0 GPM | 80% Recharge 53.71 | Sample Time 1013

Max Drawdown 62.71 | Recovery Depth 53.71 @ 1012 | Field Duplicate Y / (N)

Notes:

Recovery Rate: Med / Fast

Hz 195 Replaced Cap ☐ Replaced Lock ☐

Signature [signature] | Date 09-5-~~11~~12 | Page of

GROUNDWATER SAMPLING FIELD DATA SHEET

Client, SS# Del Amo Waste Pits | **Well #** XP-02 | **Sampled By** SMJ/ASJ

Well Information | Well Survey Point TOC to N

Casing Material PVC | Casing Diameter (in.)(CD) 4"

Constructed Well Depth (ft) NP | Borehole Diameter (in.)(BD) 10"

Measured Well Depth (ft) 76.4 | Casing Vol 20.4 | Borehole Vol ----------

Depth to Product (ft) ND | Actual Purge Volume 61.2 (Gal)

Depth to Water (ft) (DTW) 45.02 | Product / Water Removed — / — (Gal)

Water Column (ft) (WC) 31.38 | Color Of Product —

Well Box Type and Location ☐ Emco Wheaton ☐ Pomeco ☐ M/D ☐ Vault (_____)

☒ DWP (Steel / Alum.) ☐ Alhambra ☐ Monument Box Location: _____

Well Box Security # of Bolts 2 ☐ 7/16" ☐ 1/2" ☐ 9/16" ☐ 5/8" ☒ 3/4" ☐ 5/16" ☒ Allen

# of Bolts Broken Off 0 # of Bolts Missing 0 ☐ Cap ☐ Lock

Ext. Seal Condition ☑ Good ☐ Fair ☐ Poor (_____) ☐ Cracked ☐ None

Crown Height ☐ Good ☑ Fair ☐ Poor (_____) ☐ Depressed

☐ None (_____) ☐ Not Applicable (Monument Box)

Time	Volume (Gal)	Temp (°C)	pH	Cond (µMhos)	Turb-idity	D.O. (mg/L)	Color/ HC Odor
0933	0	23.73	7.06	760	7.0	2.78	clear/none
0948	20.4	22.42	6.68	1050	189.1	2.27	brown/none
1002	40.8	22.47	6.71	1083	160.2	1.93	brown/none
1014	61.2	22.10	6.70	1104	5.3	1.91	clear/none
1014	61.2	stopped	purging				

Pumping Rate ~1.5 GPM | 80% Recharge 51.30 | Sample Time 1016

Max Drawdown 51.63 | Recovery Depth 51.30 @ 1016 | Field Duplicate Y / (N)

Notes: no dedicated system; Located in Hanger facility; used BBC Pump

Recovery Rate: fast

Hz 250↑270↓230 Replaced Cap ☐ Replaced Lock ☐

Signature [signature] | Date 09-5-12 | Page of

APPENDIX H

GROUNDWATER LABORATORY RESULTS
(VIA CD-ROM)

APPENDIX I

GROUNDWATER
MANN-KENDALL ANALYSIS

Appendix I
Groundwater Mann-Kendall Analysis

XLSTAT 2012.1.01 - Mann-Kendall trend tests - on 2/7/2013 at 12:18:08 PM
Time series: Workbook = Mann-Kendall GW 2012.xlsx / Sheet = Sheet1 / Range = Sheet1!$B$22:$L$33 / 11 rows and 11 columns
Significance level (%): 5

Summary statistics:

Variable	Observations	Obs. with missing data	Obs. without missing data	Minimum	Maximum	Mean	Std. deviation
PZL0018	11	2	9	0.27	8000.00	1178.28	2698.72
PZL0019	11	2	9	180000.00	490000.00	329296.30	97817.92
PZL0020	11	0	11	260000.00	580000.00	439848.48	112027.91
PZL0022	11	3	8	0.50	2.40	0.79	0.66
PZL0024	11	2	9	0.50	120000.00	62629.74	45788.12
PZL0025	11	1	10	0.50	96000.00	13144.55	30375.65
SWL0008	11	0	11	220.00	97000.00	22502.02	29090.42
SWL0044	11	1	10	0.50	120000.00	47372.14	41230.10
SWL0051	11	1	10	0.50	12.00	4.85	4.28
XMW29	11	0	11	5700.00	580000.00	183148.48	194824.13
XP02	11	0	11	0.41	12.86	3.44	4.35

Mann-Kendall trend test / Two-tailed test (PZL0018):

Kendall's tau	0.423
S	15.000
Var(S)	91.000
p-value (Two-tailed)	0.142
alpha	0.05

The exact p-value could not be computed. An approximation has been used to compute the p-value.

Test interpretation:
H0: There is no trend in the series
Ha: There is a trend in the series
As the computed p-value is greater than the significance level alpha=0.05, one cannot reject the null hypothesis H0.
The risk to reject the null hypothesis H0 while it is true is 14.22%.

Continuity correction has been applied.

Ties have been detected in the data and the appropriate corrections have been applied.

Mann-Kendall trend test / Two-tailed test (PZL0019):

Kendall's tau	0.028
S	1.000
Var(S)	91.000
p-value (Two-tailed)	1.000
alpha	0.05

The exact p-value could not be computed. An approximation has been used to compute the p-value.

Test interpretation:
H0: There is no trend in the series
Ha: There is a trend in the series
As the computed p-value is greater than the significance level alpha=0.05, one cannot reject the null hypothesis H0.
The risk to reject the null hypothesis H0 while it is true is 100.00%.

Continuity correction has been applied.

Ties have been detected in the data and the appropriate corrections have been applied.

Mann-Kendall trend test / Two-tailed test (PZL0020):

Kendall's tau	-0.550
S	-30.000
Var(S)	164.000
p-value (Two-tailed)	0.024
alpha	0.05

The exact p-value could not be computed. An approximation has been used to compute the p-value.

Test interpretation:
H0: There is no trend in the series
Ha: There is a trend in the series
As the computed p-value is lower than the significance level alpha=0.05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.
The risk to reject the null hypothesis H0 while it is true is lower than 2.35%.

Continuity correction has been applied.

Ties have been detected in the data and the appropriate corrections have been applied.

Mann-Kendall trend test / Two-tailed test (PZL0022):

Kendall's tau	-0.356
S	-8.000
Var(S)	48.667
p-value (Two-tailed)	0.316
alpha	0.05

The exact p-value could not be computed. An approximation has been used to compute the p-value.

Test interpretation:
H0: There is no trend in the series
Ha: There is a trend in the series
As the computed p-value is greater than the significance level alpha=0.05, one cannot reject the null hypothesis H0.
The risk to reject the null hypothesis H0 while it is true is 31.57%.

Continuity correction has been applied.

Ties have been detected in the data and the appropriate corrections have been applied.

Mann-Kendall trend test / Two-tailed test (PZL0024):

Kendall's tau	-0.592
S	-21.000
Var(S)	91.000
p-value (Two-tailed)	0.036
alpha	0.05

The exact p-value could not be computed. An approximation has been used to compute the p-value.

Test interpretation:
H0: There is no trend in the series
Ha: There is a trend in the series
As the computed p-value is lower than the significance level alpha=0.05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.
The risk to reject the null hypothesis H0 while it is true is lower than 3.60%.

Continuity correction has been applied.

Ties have been detected in the data and the appropriate corrections have been applied.

Mann-Kendall trend test / Two-tailed test (PZL0025):

Kendall's tau	-0.733
S	-33.000
Var(S)	91.000
p-value (Two-tailed)	0.002
alpha	0.05

The p-value is computed using an exact method.

Test interpretation:
H0: There is no trend in the series
Ha: There is a trend in the series
As the computed p-value is lower than the significance level alpha=0.05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.
The risk to reject the null hypothesis H0 while it is true is lower than 0.22%.

Mann-Kendall trend test / Two-tailed test (SWL0008):

Kendall's tau	-0.491
S	-27.000
Var(S)	91.000
p-value (Two-tailed)	0.041
alpha	0.05

The p-value is computed using an exact method.

Test interpretation:
H0: There is no trend in the series
Ha: There is a trend in the series
As the computed p-value is lower than the significance level alpha=0.05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.
The risk to reject the null hypothesis H0 while it is true is lower than 4.05%.

Mann-Kendall trend test / Two-tailed test (SWL0044):

Kendall's tau	-0.778
S	-35.000
Var(S)	91.000
p-value (Two-tailed)	0.001
alpha	0.05

The p-value is computed using an exact method.

Test interpretation:
H0: There is no trend in the series
Ha: There is a trend in the series
As the computed p-value is lower than the significance level alpha=0.05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.
The risk to reject the null hypothesis H0 while it is true is lower than 0.09%.

Mann-Kendall trend test / Two-tailed test (SWL0051):

Kendall's tau	-0.750
S	-33.000
Var(S)	123.000
p-value (Two-tailed)	0.004
alpha	0.05

The exact p-value could not be computed. An approximation has been used to compute the p-value.

Test interpretation:
H0: There is no trend in the series
Ha: There is a trend in the series
As the computed p-value is lower than the significance level alpha=0.05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.
The risk to reject the null hypothesis H0 while it is true is lower than 0.39%.

Continuity correction has been applied.

Ties have been detected in the data and the appropriate corrections have been applied.

Mann-Kendall trend test / Two-tailed test (XMW29):

Kendall's tau	0.273
S	15.000
Var(S)	123.000
p-value (Two-tailed)	0.283
alpha	0.05

The p-value is computed using an exact method.

Test interpretation:
H0: There is no trend in the series
Ha: There is a trend in the series
As the computed p-value is greater than the significance level alpha=0.05, one cannot reject the null hypothesis H0.
The risk to reject the null hypothesis H0 while it is true is 28.30%.

Mann-Kendall trend test / Two-tailed test (XP02):

Kendall's tau	-0.187
S	-10.000
Var(S)	161.333
p-value (Two-tailed)	0.479
alpha	0.05

The exact p-value could not be computed. An approximation has been used to compute the p-value.

Test interpretation:
H0: There is no trend in the series
Ha: There is a trend in the series
As the computed p-value is greater than the significance level alpha=0.05, one cannot reject the null hypothesis H0.
The risk to reject the null hypothesis H0 while it is true is 47.86%.

Continuity correction has been applied.

Ties have been detected in the data and the appropriate corrections have been applied.

Historical Groundwater Data For Mann-Kendall Trend Test

Date	PZL0018	PZL0019	PZL0020	PZL0022	PZL0024	PZL0025	SWL0008	SWL0044	SWL0051	XMW29	XP02
May-94	0.51	41000	610000	0.5	75000	1200	100000			26000	37
Jul-94	0.64	380000	590000	0.5	84000	1400	100000			21000	0.78
Oct-94	0.75	450000	520000	1	51000	2600	91000			55000	0.8
Mar-95	0.5	640000	270000	0.5	140000	2200	55000			3700	0.6
Jun-95	0.5	380000	350000	0.5	120000	1900	25000	92000		6600	0.5
Oct-95	0.5	370000	400000	1.3	96000	12000	12000	110000	8.7	24000	0.92
Feb-96	0.68	300000	580000	0.5	100000	96000	11000	120000	8.7	96000	9.1
Jan-97	0.5	330000	540000		120000	28000	2300	63000	7.9	240000	0.5
Jan-98	0.27	180000	480000	0.5	73000	330	25000	55000	12	5700	0.41
Jan-99	0.53	490000	480000		40000	12	1700	49000	5	110000	2
July-00	1.4	330000	410000		42000	1	9300	24000	0.61	420000	1
Jan-04			510000	2.4		1.5	49000	5700	0.57	580000	0.5
Oct-06			290000	0.5			21000	56000	4	380000	7.6
Feb-11	20000	350000	530000	0.5			810	28	0.5	47000	0.5
Jun-11	2500	360000	410000	0.5	0.5	0.63	340	4.5	0.5	170000	9.5
Sep-11	3200	400000	370000	0.5	0.5	0.5	140	50	0.5	100000	0.5
Dec-11	6300	250000	190000	0.5	0.5	0.5	52	1.1	0.5	73000	0.5
Sep-12	2600	240000	260000	0.5	0.5	0.5	220	0.5	0.5	40000	0.5

Annual Averages For Mann-Kendall Trend Test

Year	PZL0018	PZL0019	PZL0020	PZL0022	PZL0024	PZL0025	SWL0008	SWL0044	SWL0051	XMW29	XP02
1994	0.6	290333	573333	0.7	70000	1733	97000			34000	12.9
1995	0.5	463333	340000	0.8	118667	5367	30667	101000	8.7	11433	0.7
1996	0.7	300000	580000	0.5	100000	96000	11000	120000	8.7	96000	9.1
1997	0.5	330000	540000		120000	28000	2300	63000	7.9	240000	0.5
1998	0.3	180000	480000	0.5	73000	330	25000	55000	12.0	5700	0.4
1999	0.5	490000	480000		40000	12.0	1700	49000	5.0	110000	2.0
2000	1.4	330000	410000		42000	1.0	9300	24000	0.6	420000	1.0
2004			510000	2.4		1.5	49000	5700	0.6	580000	0.5
2006			290000	0.5			21000	56000	4.0	380000	7.6
2011	8000	340000	375000	0.5	0.5	0.5	336	20.9	0.5	97500	2.8
2012	2600	240000	260000	0.5	0.5	0.5	220	0.5	0.5	40000	0.5